Consumer Product Safety Commission (CPSC) Staff's Statement on EurekaFacts Report on "SCOA Survey Findings from the Washington DC Metro Area Door-to-Door Pilot, Final Submission September 15, 2020"

November 18, 2020

In 2020, CPSC's Smoke and Carbon Monoxide Alarm (SCOA) survey was conducted in the Washington, D.C., metropolitan area. The report, "SCOA Survey Findings from the Washington DC Metro Area Door-to-Door Pilot," presents the results of a portion of the CPSC-funded contract with EurekaFacts to conduct a nationally representative survey of smoke and carbon monoxide (CO) alarm usage in U.S. residential occupancies. The results of the full SCOA survey are intended to update the data from the national smoke alarm survey performed in 1992, and to collect new data on CO alarms to assist in developing improvements to codes and standards for the manufacturing and implementation of these life safety alarms. Staff concluded that an in-home survey would provide an updated national estimate of operability of smoke and CO alarms with the specificity to answer key questions about use. An in-home survey would also generate data to create a demographic profile of households that do not have operable alarms. Staff insight into such homes would help CPSC focus future efforts to decrease the number of households without operable alarms.

EurekaFacts experienced low response rates during the initial execution of the survey, jeopardizing successful completion. Staff then worked with EurekaFacts to develop a new plan to improve the response rate for the remainder of the survey. The new plan included revising the screening instrument to raise the appeal, urgency, and information on the public benefit of the study, as well as streamlining messaging for greater efficiency in screening potential participants. To improve data-collection effectiveness, CPSC staff and EurekaFacts developed a door-to-door methodology. The door-to-door method eliminated mail/phone recruitment of survey participant households and replaced it with random door-to-door recruitment.

EurekaFacts initiated a pilot program of the D2D method in the Washington, D.C. metro area in December 2019, to evaluate its efficacy to use for the rest of the national survey. Completed in March 2020, the pilot program provided positive results. The response rate was increased from 0.023% (original method) to 3.5% (D2D method) and a cooperation rate increased to 17.4% (D2D method) from 3% (original method). EurekaFacts completed the attached report to document the D2D pilot survey.

Consumer Product Safety Commission (CPSC)

SCOA Survey Findings from the Washington DC Metro Area Door-to-Door Pilot

Draft Report

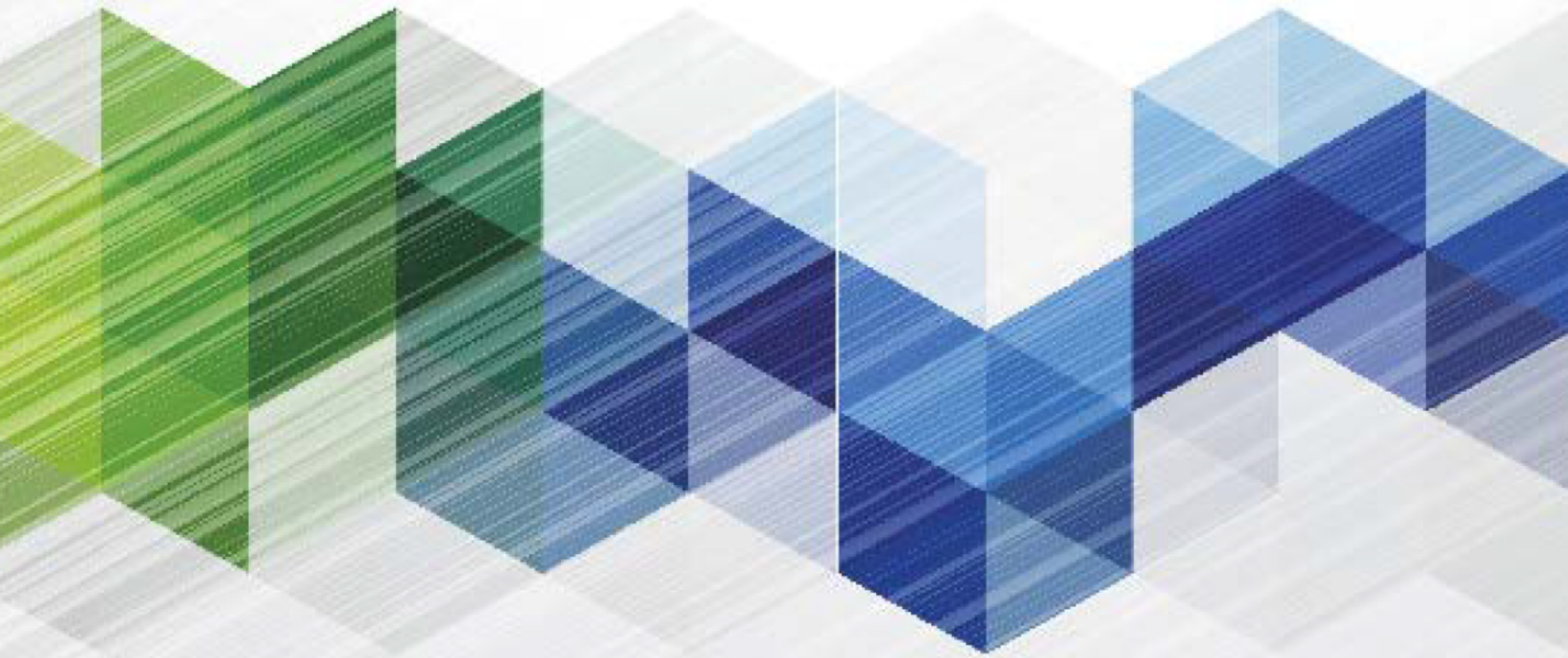
April 3, 2020

Revised Submission

June 25, 2020

Final Submission

September 15, 2020



Smart Research Solutions

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1. Introduction

Background and Research Goals

The U.S. Consumer Product Safety Commission (CPSC) contracted with EurekaFacts to conduct the *Survey on Usage and Functionality of Smoke and Carbon Monoxide Alarms in Households* (SCOA survey). This is an in-home quantitative assessment of the functionality of residential smoke and carbon monoxide (CO) alarms, as well as resident use and knowledge of smoke and CO alarms.

For the purposes of this report, smoke/CO detectors, alarms, and similar devices are referred to as "alarms." This is the common terminology for fire services, technicians, and standards organizations, among other stakeholders, in this research. For the survey instrument administered to the general public, alarms were referred to as "detectors." In cognitive interview testing of the survey instrument, the respondents best understood the alarms that were the subject of the survey when referred to as "detectors" and identified this term as most common in their vernacular.

The original recruitment effort was a multi-mode design that included mailing pre-notification letters to randomly selected households followed by phone calls to determine eligibility. EurekaFacts recruited heads-of-household by phone to complete the in-home interviews. EurekaFacts had significant difficulty contacting potential respondents and recruiting them for the in-home portion of the SCOA survey through this multi-mode approach. Due in part to low response and cooperation rates, scheduling difficulties and budgetary challenges presented by the original sampling method, EurekaFacts worked with CPSC to craft a revised data collection method.

Methodology Overview

The SCOA survey was redesigned to become an in-person door-to-door study, so that after being initially notified of the survey via door hangers, potential participants would be recruited at their front door to immediately complete the survey. This removed the need for multiple attempts to contact a household, schedule a visit, and confirm the interviewer and respondent availability to meet at the household. This approach also eliminated the potential for drop-off due to the multiple stages required for scheduling an in-person visit. This door-to-door methodology was successfully piloted in the Washington, DC metro area.

EurekaFacts completed 130 in-person surveys across 11 weeks, focusing data collection on eight weekends between December 21, 2019 and March 1, 2020. In total, the completed surveys were fielded in 21 randomly selected Washington metro area U.S. Census tracts. The completed household surveys from each tract were done in proportion to the share of occupied housing units per tract in the Washington metro area.

The integrity of the original design was kept intact but modified for the new approach. The pre-notification letter was exchanged for a door hanger notification hung in the randomly selected neighborhoods and households prior to the arrival of the field interviewers (See door hanger in Appendix A, Figure 3A-6).

As part of the original research design, CPSC staff estimated that 10 percent of US households do not have smoke alarms installed. The true incidence is not known; however, a 2007 national cross-sectional telephone survey of 9,684 U.S households found that 95 percent of households report having at least one installed smoke alarm.[1] The actual proportion will be assessed and revised based on data collection efforts for this project. In the original design, these non-alarm households, once screened for presence or absence of alarms, were not eligible to participate in the in-home interview because they had no alarms for testing. Instead, to gather data on the fire/CO safety behaviors and attitudes among non-alarm households, the participants in the current survey were eligible for a 10-minute phone interview to measure the characteristics of these households, excluding the metrics on alarm testing.

For survey administration using the OMB-approved revised door-to-door methodology, EurekaFacts dropped the phone recruitment effort and phone data collection effort. All potential participants, independent of alarm status in the household, are recruited and screened for eligibility to participate in the study at their door. Screened participants whose households do not have alarms, or have alarms that are connected to a security dispatch, are eligible for a 20-minute face-to-face survey in their home to measure fire/CO safety characteristics of the households, excluding the metrics on alarm testing.

The estimated 20-minute survey and the full one-hour survey that includes alarm testing

[1] Ballesteros, M. F., & Kresnow, M. (2007, March-April). Prevalence of Residential Smoke Alarms and Fire Escape Plans in the U.S.: Results from the Second Injury Control and Risk Survey (ICARIS-2). *Public Health Reports 122*, 224–231.

are both incorporated into the field data collection tools under the revised design. These revised methods allow qualified households, once screened for eligibility, to participate in either version of the study immediately. In total, EurekaFacts conducted 130 in-person surveys: 119 full-length (i.e., households with smoke or CO alarms not connected to a security system) and 11 short interviews (i.e., households without smoke and CO alarms or with alarms connected to a security system).

For a detailed description of the methodology, approach, recruitment and data collection strategies, see Appendix A. For a detailed breakdown of the sampling disposition, response rate, and cooperation rate, see Appendix B.

2. Door-to-Door Quantitative Survey: Detailed Findings

We captured 130 SCOA survey responses through structured survey questions. Survey respondents are Washington, DC metro area heads-of-household, but we used the household itself (referred to as “households”) as the overall unit of analysis. We analyzed these data using descriptive statistics, including frequencies to distill findings from survey participant responses. EurekaFacts often combined response options or collapsed them for concise reporting. Percentages are unweighted.

Additionally, some results are reported based on counts. Certain questions are only asked to a subset of households, so these responses and other findings with a limited number of responses are best reported without percentages, so as not to be mistaken or confused to be results evaluated based on the full sample.

The results of this analysis are presented in this section and structured thematically: a summary of the outcome of alarm testing; respondent attitudes and knowledge of smoke alarms and behaviors regarding these products; respondent attitudes and knowledge of CO alarms and behaviors regarding these products; and overall characteristics of the physical household and residents.

The margin of error for the full survey sample (N=130) using a 95 percent confidence interval is +/- 8.6 points. The margin of error for questions just asked of those with smoke alarms (N=119) using a 95% confidence interval is +/- 9.0% points.

2.1 Smoke and CO alarm testing summary

About one-quarter (24%) of surveyed households had at least one smoke or CO alarm that was not fully functional. In total, 185 alarms were tested, with nearly one-in-five (19%) requiring corrective action (battery or alarm replacement). Households were well-equipped with smoke alarms but one-third (33%) lacked CO alarms.

2.1.1 Alarm testing results

Figure 2.1.1-1 shows a summary of the outcome of alarm testing. Overall, 81% of all alarms were fully functional during initial testing; 10% were not initially working due to a battery issue (missing or old battery); the remaining 9% were non-functioning, even when power was restored, and were collected or advised to be replaced. Of the 16 non-functioning alarms, 11 are smoke alarms, three are CO alarms, and two are combination smoke/CO alarms. The 16 non-functioning alarms ranged in manufacturer year from 1997 to 2015, with an average manufacturer year of 2009.

Figure 2.1.1-1: Results of alarm testing

About 1-in-5 alarms required corrective action

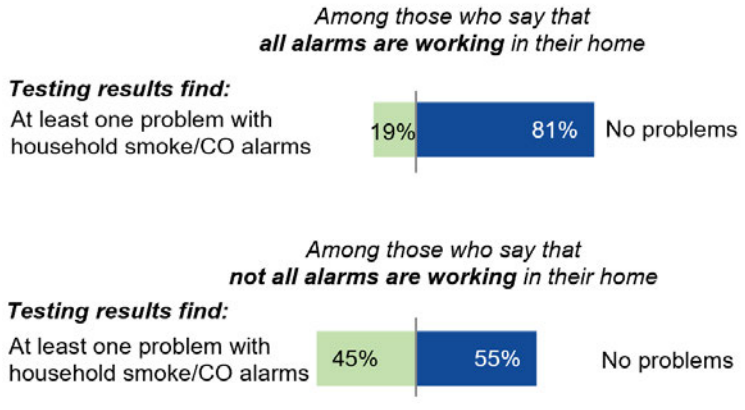
Alarms that …	**%**
Function (No action required)	**81**
Do not function	**19**
Alarm non-functioning, unrelated to power source	9
Battery needed to be replaced	8
Battery missing	2
	100

Source: Q75. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020. N=185 alarms in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

Figure 2.1.1-2 shows the respondent knowledge of smoke/CO alarms functional condition. Heads of household largely made accurate assessments of the functionality rate of their alarms. A solid majority of households (81%) said that "all" of their alarms (smoke and CO, if applicable) were working, and in empirical testing, 76% of

Figure 2.1.1-2: Self-reporting on the functionality of household alarms compared with actual testing results

Nearly 1-in-5 households who said they have all working alarms have functional issues during testing



Source: Q11a/Q24 by Q75. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020. N=119 in DC pilot. Note: Percentages read across. Percentage figures may not add to 100% due to rounding.

households had all working alarms. Among those who reported having working alarms, 19% owned an alarm that was not fully operational during the initial testing, either due to the battery or the alarm itself.

Outcomes of alarm testing for the few households that did not say "all" of their alarms were operational are evenly split. Among these 20 households, about half appear to make a correct assessment of their alarm operability.

Figure 2.1.2-1: Distribution of types of alarms

Nearly all had a smoke alarm, but only two-thirds had a CO alarm

% of households with …	**%**
Smoke alarms only	**32**
Smoke and CO alarms	**67**
Total with smoke alarms	*98.5*
No alarms	**1.5**
	=100

Source: S15, S19. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. N=130. Note: Percentages read down. Total households with and without alarms is shown with decimal for precision.

2.1.2 Types of alarms

Among all 130 households, nearly all (98.5%) had smoke alarms installed in the home; however, only two-thirds (67%) also had a CO alarm. Consequently, about one-third of households lacked CO alarms (100%-67%=33%). In total, 35% of residents were missing vital equipment to alert residents of a fire or CO incident: 33% lacked CO alarms and 2% did not have any alarms. A total of 119 households qualified for the full-length interview, which included testing of their alarms. The remaining 11 households either had no alarms or had security alarms that call emergency services when set off. This second group of households completed a short interview querying behaviors, attitudes, and experiences related to smoke/CO alarms, without testing any alarms.

In total, 185 alarms were tested across the 119 households that completed the full-length interview. Two-thirds (67%) of alarms tested were smoke alarms. The remaining one-third of alarms tested were about evenly split between CO alarms (17%) and combination smoke/CO alarms (16%). The heads of households were knowledgeable about the location of their alarms, with 86% able to report the locations of all alarms in their home.

2.2 Smoke Alarms: Household attitudes, behaviors, and knowledge

More than nine-in-ten of the surveyed Washington area households (94%) placed high importance on having smoke alarms installed in the home. In addition, the vast majority of area households (92%) felt safe with their current smoke alarms, including 60% who said they are very safe.

2.2.1 Smoke alarms nearly universal in Washington area homes, seen as essential

Nearly all surveyed Washington metro area households (99%) had at least one smoke alarm. In homes with smoke alarms, the overwhelming majority (92%) believed that their alarms would make a sound to alert them if smoke or fire were present. When asked about the importance of having smoke alarms, more than nine-in-ten (94%) said that it is "extremely necessary" to have smoke alarms installed in the home. And, in assessing their fire safety, the vast majority (88%) believed that they are safe – either very safe (60%) or mostly safe (27%) – with their current smoke alarms.

Figure 2.2.1-1: Household views on smoke alarms

% of households who say that …	
It is important to have a smoke alarm (detector) installed in your home	%
5 - Extremely Necessary	94
4	3
3	1
2	1
1 - Not at all necessary	0
Don't Know	1
	100
Home is ____ with current smoke alarms (detectors)	%
Net: Very/mostly safe	**88**
Very safe	60
Mostly safe	27
Moderately safe	9
Net: Slightly/not at all safe	**3**
Slightly safe	2
Not at all safe	1
Don't know	1
	100

Source: Q14 (N=130)/Q9 (N=119). CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

2.2.2 Knowledge of smoke alarms

About three-quarters of heads of households said that they know how to install (72%) and maintain (76%) a smoke alarm in good working order. When asked about how often an old smoke alarm should be replaced, the most frequent answer was once every ten years (35%), followed by once every 2-5 years (25%). Less than one-in-ten (8%) head of households said they do not know when to replace an old smoke alarm.

About half (52%) of households said that they test their smoke alarms at least once a year, while another three-in-ten (29%) said that they never use the test button to test these alarms. (The recommended frequency of alarm testing is dependent on manufacturer instructions.) Of those who said they never test the smoke alarms in their home, some claimed that they do not know how to test their alarms, while others reported that they are unable to reach the alarm.

Figure 2.2.2-1: Knowledge about smoke alarms

% of households saying that they know …	
How to install a smoke alarm (detector)	**%**
Yes	72
No	28
Unsure	0
	100
How to maintain a smoke alarm (detector) in good working order	%
Yes	76
No	20
Unsure	4
	100

Source: Q12 (N=128). CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

A sizeable minority of surveyed Washington metro area households experienced nuisance alarms. About one-third (34%) said that, during the last 12 months, their smoke alarms have gone off when there was no fire. A solid majority (78%) of those who experienced a smoke alarm going off when there was no fire sometime in the last 12 months, said that the nuisance alarm(s) were very likely attributable to cooking.

Figure 2.2.2-3: Testing frequency of smoke alarms

% of households who …	
Test home smoke alarms (detectors)	**%**
Never	32
Once every few years	11
Once every year	24
Once every 6 months	20
Once every 3 months	7
Once every month	3
Other	3
	100

Source: Q10a (N=119). CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

When it comes to actual fires, only five households (4%) experienced accidental fires in the past 12 months. Among the small number of households that did experience an accidental

fire, three said that they were alerted about the fire by their smoke alarms, and two households were not alerted by their alarms. In one instance, the resident's smoke alarm did not sound and the consumer stated there was insufficient smoke to reach the alarm.

When it comes to searching for information about smoke and CO safety, only about one-in-five households (22%) said that in the past they have searched for this type of information. Internet searches and contact with local fire departments are the most cited sources for smoke and CO safety.

2.3 CO Alarms: Household attitudes, behaviors, and knowledge

The majority of surveyed Washington area households (77%, Very/mostly safe) held a positive view of having a carbon monoxide alarm installed in the home. Most said that it is extremely necessary to have CO alarms, while at the same time, just half said that they know something about CO alarms.

2.3.1 Majorities see necessity of having CO alarms, feel safe with their alarms

Overall, two-thirds (67%) of surveyed Washington metro area households had a CO alarm. When asked about the operability of their CO alarms, the vast majority of households (85%) believed that their alarms(s) would alert them if carbon monoxide were present. On the importance of *household* CO alarms, about seven-in-ten (72%) said it is "extremely necessary" to have a CO alarm installed in their home. When assessing the risk of CO poisoning, about three-quarters (77%) said that their home is "very" or "mostly" safe from a carbon monoxide incident with the CO alarms they currently have in the home, including 58% who said they are **"**very safe."

Figure 2.3.1-1: Household views on CO alarms

% of households who that say …	
It is important to have a CO alarm (detector) installed in your home	**%**
5 - Extremely Necessary	72
4	11
3	8
2	5
1 - Not at all necessary	4
Don't Know	2
	100
Home is ___ with current CO alarms (detectors)	%
Net: Very/mostly safe	**77**
Very safe	*58*
Mostly safe	*20*
Moderately safe	12
Net: Slightly/not at all safe	**4**
Slightly safe	*3*
Not at all safe	1
Don't know	7
	100

Source: Q27 (N=130)/Q20 (N=87). CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

2.3.2 Knowledge of CO alarms

Only about half of surveyed Washington metro area residents (51%) said that they are knowledgeable about CO alarms. Residents were most likely to report having only "some" knowledge of CO alarms compared to just 10% who reported having "a lot" of knowledge about such alarms. Despite a lack of familiarity with CO alarms, most heads of household (62%) affirmed that if there were high levels of CO in their home that a CO alarm would alert them.

Figure 2.3.2-1: Knowledge about CO alarms

Households were confident in how to install and maintain a CO alarm

% of households saying that they know …	
How to install a CO alarm (detector)	**%**
Yes	80
No	19
Unsure	1
	100
How to maintain a CO alarm (detector) in good working order	%
Yes	74
No	20
Unsure	6
	100

Source: Q31a/b. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. N=81. Note: Percentages read down and may not total to 100% due to rounding.

On others measures of CO alarm awareness, eight-in-ten households (80%) said that they know how to install a CO alarm and about three-quarters (74%) said they know how to maintain a CO alarm in good working order. When asked about how often a CO alarm should be replaced, the most cited answer was once every two to five years (33%), followed by once every 10 years (25%). Less than one-in-ten (9%) said they do not know how often to replace a CO alarm.

Figure 2.3.2-2: Testing frequency of CO alarms

% of households who …	
Test home CO alarms (detectors)	**%**
Never	35
Once every few years	10
Once every year	27
Once every 6 months	16
Once every 3 months	7
Once every month	4
Other	1
	100

Source: Q23. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. N=81. Note: Percentages read down and may not total to 100% due to rounding.

When asked how often they use the test button to test the CO alarms in their home, more than half (56%) said they test the alarm(s) at least once a year (the recommended frequency), while another third (35%) said that they have never done so.

When asked to describe, in their own words, the reasons why people have a CO alarm in their home, about one-third (32%) said that it makes them feel safe, 26% said it is helpful in detecting CO, while others said because it is required by law (14%), it came with the property

(11%), or they own generators/fuel-burning appliances (11%).

From all sources, nuisance alarms or safety incidents, households have far fewer incidents of CO alarms activating compared to smoke alarms. Only a small share of households (7%) reported that their CO alarms have gone off in the last 12 months. Of those survey participants who had their CO alarm sound, from the independent accounts of participants, three unplugged or disconnected the CO alarm, two reset the CO alarm, one removed the battery, one called the fire department, and another ventilated their home.

Most of the surveyed Washington area households (89%) did not know anyone who had experienced a CO incident. On sources of information about CO safety, only 22% of households said that they look for CO safety news or information. As with smoke and fire safety, internet resources and contacts with a local fire department were reported as the most common sources of information about CO alarms and/or safety.

2.4 Household characteristics and household risk factors

Based on the household characteristics – both physical and behavioral – described by surveyed Washington Metro area residents, some households are at a higher risk than others of a fire or CO incident, including majorities who own fuel-burning appliances (84%) or cook on a daily basis (83%), and about one-in-ten where a member of the household smokes (11%). In addition, households that include persons with disabilities, such as hearing impairments (14%) or a "physical, mental or other health condition that prevents them from conducting day to day activities" (11%), may be especially vulnerable during a fire or CO event.

In terms of physical structure, the majority of households interviewed in the Washington metro area are detached single family homes. About seven-in-ten homes (72%) were built before 1980, and close to half of residents (46%) have lived in their homes for up to 10 years.

2.4.1 Household fire and CO incident risk factors

Overall, 84% of all surveyed Washington metro area households have at least one fuel-burning appliance. A fuel-burning appliance consists of any appliance that uses gasoline, natural gas, propane, oil, wood pellets, coal, or kerosene. Owning a fuel burning appliance introduces greater vulnerability to carbon monoxide poisoning or an accidental fire. The most common fuel-burning appliances found in the surveyed homes are water heaters (81%), furnaces or boilers (78%), and fuel-burning kitchen appliances (73%). Just over a third of households reported owning a wood- or pellet-burning fireplace or stove (36%) and fewer than two-in-ten own a charcoal grill (18%), gas dryer (14%), gasoline (or gas) powered generator (11%), or other type of fuel-burning appliance (4%).

Figure 2.4.1-1: Homes with a fuel burning appliance

84% of all households owned a fuel-burning appliance

% of households that own fuel burning…	**%**
Water heater	81
Furnace or boiler	78
Kitchen appliances	73
Wood or pellet fireplace/stove	36
Charcoal grill	18
Gas dryer	14
Gas powered generator	11
Other	4
Does not own any	16

Source: Q4. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020. N=130 in DC pilot. Note: Percentages are from a select all that apply list and do not add to 100%

A garage is a common place that American households store flammable substances. Four-in-ten households (40%) surveyed in the Washington metro area have an attached garage, which the majority of respondents said is used primarily to store a vehicle (34 out of 52

households).

Thirty of 52 households with an attached garage unit use it to store tools, lawn equipment, or sports equipment. Only 3 out of 54 households report using their garage to house fuel burning appliances.

Figure 2.4.1-2: Fire and CO risky behaviors

83% of all households cook everyday

Percent of households that are …	**%**
Cooking using an oven or stove	
Every day	83
A few times per week	16
A few times a month	2
	100
Smoking	
Yes	11
No	86
Don't know/refused	3
	100

Source: Q36/Q98. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020. N=130 in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

When it comes to everyday household risk of a fire or CO accident, not surprisingly, daily household cooking is a common practice. About eight-in-ten households (83%) said that they use an oven or stove every day to cook meals. Only 17% of households reported cooking with a stove or oven less often.

Another behavior that may increase the risk of a fire is the smoking of cigarettes, cigars, hookahs, or pipes within the home. Only 11% of households reported that someone in their home is a smoker, while most do not live with someone who smokes (89%).

Households at a greater risk during a fire or CO incident

Households that include individuals with disabilities may experience greater safety risks during a fire or CO incident. More than one-in-ten surveyed Washington area households reported having a household member who is deaf or hard of hearing (14%). Only one household reported having an alarm connected to a tactile notification device, such as a bed or pillow shaker (1%). Other consumers who may be at a higher risk during a fire or CO incident are those who have experienced any physical, mental, or other health conditions that have lasted 6 or more months making it difficult to carry out day to day activities; these constitute 11% of the households interviewed in the Washington metro area.

2.4.2 Composition of sampled homes

The homes surveyed in the Washington metro area consisted entirely of single-family dwellings of which 78% are detached housing units and 22% are attached housing units such as townhomes or row houses. Although apartment-style housing units were located within the randomly selected tracts in the Washington area primary sampling unit, interviewers were unable to recruit participants from these housing units. Sealed buildings, "no trespassing" signs and no soliciting zones, as well as access limitations set by neighborhood associations, made it difficult to recruit sample participants from these dwelling types. (Please see Appendix C for more on the challenges of data collection at apartment/condo complexes.)

Figure 2.4.2-1: Home characteristics

% of households that are …	
Single family homes	**%**
Attached single family homes	22
Detached single family homes	78
	100
Unit construction date	%
2010 or later	5
Between 2000 and 2009	12
Between 1990 and 1999	5
Between 1980 and 1989	24
Between 1970 and 1979	15
Between 1960 and 1969	5
Before 1960	28
Don't' know	7
	100

Source: S1 & Q3. CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020. N=130 in DC pilot. Note: Percentages read down and may not total to 100% due to rounding.

About three-in-ten household units (28%) were built before 1960, another quarter (24%) were built between 1980 and 1989. Newer housing units (those constructed in the year 2000 or later) form 17% of the sample. Most of the residents interviewed owned (85%) rather than rented (15%) their homes. About half of the residents said they have lived in their home for 10 years or less (46%). Another third (32%) have lived in their home for 11 to 30 years and about one-in-ten (11%) claim to have lived in their home for more than 30 years.

3. Appendices

Appendix A. Detailed methodology

Three-Stage Sampling Design

EurekaFacts adopted a proportional multistage sampling approach to select housing units for the SCOA survey. The full design of the door-to-door methodology consists of the following steps:

1. At the first stage, a random sample of 24 metropolitan areas is selected as primary sampling units among the 389 metropolitan statistical areas in the U.S., using the 2013-2017 American Community Survey 5-year estimates. The sample is stratified first by U.S. Census Region (Northeast, South, West, Midwest) and then by metro area population size (those with a population of 1 million or more and those with less than 1 million resident), ensuring the number of Primary Sampling Units (PSUs) selected for each region is proportional to the number of occupied housing units (OHUs).

Figure 3A-1: Proportionate sampling of occupied housing units

The Washington Metro area contains 10.9% of occupied housing units out of 389 total MSAs

	All U.S.	Washington Metro Area
Sample Size	1,185	130
Sample of US Census tracts	192	21
Total housing units out of 24 metro areas	20.6 million	2.3 million
Housing unit proportions	(100%)	(10.9%)

Source: 2013-2017 American Community Survey 5-Year Estimates.

2. At the second stage, a random sample of residential census tracts is selected in proportion to the number of OHUs within each of the 24 metropolitan areas selected at the first stage from the 2013-2017 American Community Survey 5-year estimates. Also at this stage, an additional random sample of Census tracts within non-metropolitan areas are selected. These tracts are located adjacent to or near each PSU.

3. At the third stage, a random walk door-to-door sampling method[2] is conducted in each Census tract, allowing field interviews to directly recruit respondents from randomly selected occupied housing units for the in-home survey.

For the pilot door-to-door study in the Washington metro area, the following sampling and survey administration adjustments were made to each step:

1. During the first stage, the 24 metropolitan areas had been approved by CPSC to complete the study through the original SCOA survey design, an address-based sampling multi-mode method was implemented. Ultimately, the Washington-Arlington-Alexandria, DC-VA-MD-WV metropolitan area was selected as the pilot location for the door-to-door methodology, to maximize monitoring of survey administration and to contain costs. (EurekaFacts, the prime contract vendor, is headquartered in Rockville, MD within the Washington metro area.) This metro area replaces one of the 24 PSUs of comparable size and demographic profile that was randomly selected in the sampling design and located within the South U.S. Census region. This substitution allowed for careful oversight of data collection, field teams, response rate and the calibration of study design and needs by EurekaFacts.

2. At the second stage of sampling, a random sample of residential Census tracts was selected in proportion to the number of OHUs in the Washington metro area, relative to the other 23 metropolitan areas selected at the first stage (192 Census tracts multiplied by the proportion represented by the Washington Metro area

[2] Random walk door-to-door sampling methodology is a simplified cluster sampling method developed by the World Health Organization. For more see that following citation, accessed online, March 31, 2020: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4894817/

(10.9%)). This selection was adjusted based on the replacement of the Washington metro area for the Houston metro area. However, a non-metropolitan tract was not selected for sampling, as this was a pilot location meant to determine overall feasibility.

3. The third stage consisted of the proposed door-to-door random walk method for each randomly selected Census tract to recruit participants for the in-home study. A detailed description follows.

This overall approach makes it possible to calculate the probability of selection for each sample unit at every stage by consistently accounting for population size. Consequently, as reliable calculations for design effect and sampling error can be made for the whole study. In addition, this approach retains the integrity of a probability-based survey design, where the findings are representative of housing units in the U.S. (or in the pilot location's case, the Washington, DC metro area) within a calculable level of precision.

Specific Tract Selection and Quotas

Twenty (20) Census tracts were randomly selected for fielding and assigned soft quotas. A list of all tracts in the metro area were downloaded from the Census Bureau and appended with the most current demographic data from the American Community Survey estimates. From the 179 total Washington Metro area Census tracts, 20 Census tracts were randomly selected for sampling. Additionally, each tract was appended with a random number using a random number generator formula, to create 20 sets of potential tracts (each containing 20 Census tracts). Sets were eliminated from the pool if they include significant areas of non-residential property (i.e., highway interchanges or large commercial facilities) or were in impractical locations for sampling (e.g., safety concerns), until a final set of 20 was selected.

Once the set of tracts was determined, each tract was proportionally assigned estimated/target completes. These "soft" quotas are based on the proportion of OHUs in each tract relative to the sum of all 20 tracts divided by the metro area quota (128 completes). Inclusion of replacement or supplementary tracts do not change the quotas for all other tracts. For further detail regarding replacing or supplementing tracts, see Appendix D.

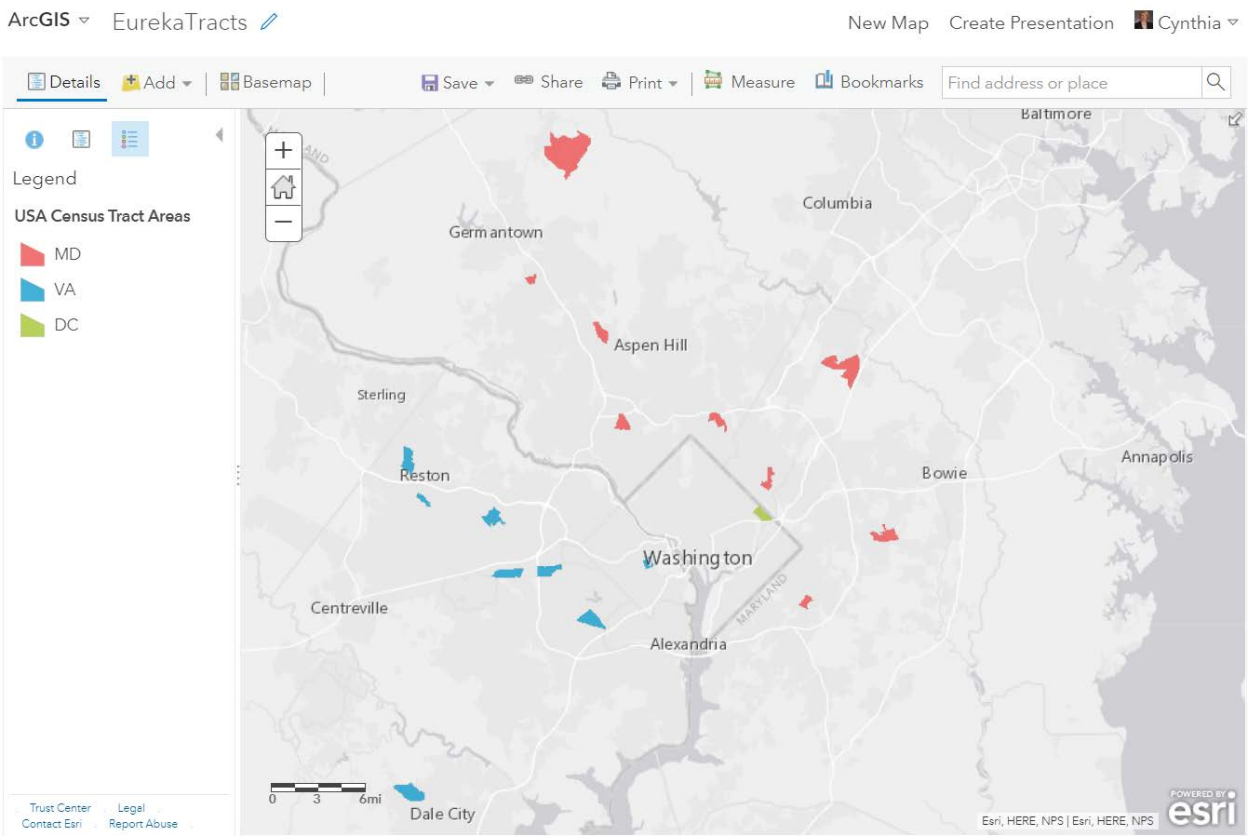
See the following table for a detailed breakdown of the tract locations, quotas, and completes for fielding in the Washington metro area.

Figure 3A-2: Summary of Washington metropolitan area tracts completed for the pilot door-to-door SCOA survey

Tract Reference #	Tract ID	County	State	Quota	Completes
1	24021750702	Frederick	MD	7	**6**
2	24021752202	Frederick	MD	5	**9**
3	24021775600	Frederick	MD	6	**3**
4	24031700206	Montgomery	MD	7	**10**
5	24031700822	Montgomery	MD	3	**3**
6	24031700902	Montgomery	MD	5	**6**
7	24031702200	Montgomery	MD	6	**6**
8	24031704503	Montgomery	MD	5	**9**
9	24033800208	Prince George's	MD	10	**9**
10	24033802107	Prince George's	MD	6	**3**
11	24033803522	Prince George's	MD	5	**4**
12	24033806200	Prince George's	MD	6	**7**
13*	51013101803	Arlington	VA	9	**2**
14	51059450100	Fairfax	VA	9	**9**
15	51059460300	Fairfax	VA	4	**6**
16	51059461700	Fairfax	VA	9	**8**
17	51059480802	Fairfax	VA	5	**4**
18	51059482302	Fairfax	VA	7	**6**
19	51153901226	Prince William	VA	6	**6**
20r*	11001009000	Washington	DC	8	**5**
21**	51059451900	Fairfax	VA	9 (7)	**9**
				Quota= 128	**TOTAL= 130**

CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020. *Note 1: The original tract 20 was not feasible for fielding and replaced. The replacement tract is named tract 20r.**Note 2: Due to the low completion rate for a high-quota tract, tract 13 was supplemented with completes from tract 21.

Figure 3A-3: Summary of Washington metropolitan area tracts completed for the pilot door-to-door SCOA survey



Tract Walking Maps and Pre-Notification

To ensure a variety of areas within a tract were solicited for participation, tracts were divided into sections and two areas were selected for fielding. An overall map of the tract was divided into four sections/quadrants and labeled according to the four intercardinal directions (i.e., NE, SE, NW, and SW). Two quadrants were selected for walking where the combination of fielding areas included different housing types (as applicable) and different sections/sub-neighborhoods within a tract.

Tract maps provided the boundaries and guidelines both for distribution of the pre-notification door hanger and for field teams to walk. An overall tract map displays the tract boundaries, quadrant divisions, and tract information. The pre-fielding coordinator used online mapping tools to determine which two areas to place teams. The detailed tract maps list the starting address, tract information, street names, and boundaries. These maps were used to

distribute the door hangers, and the route was highlighted. Field teams used the highlighted route to guide their walking through the neighborhood.

Below are examples of what the overall and detailed tract maps look like:

Figure 3A-4: Example of overall tract map (tract 15)

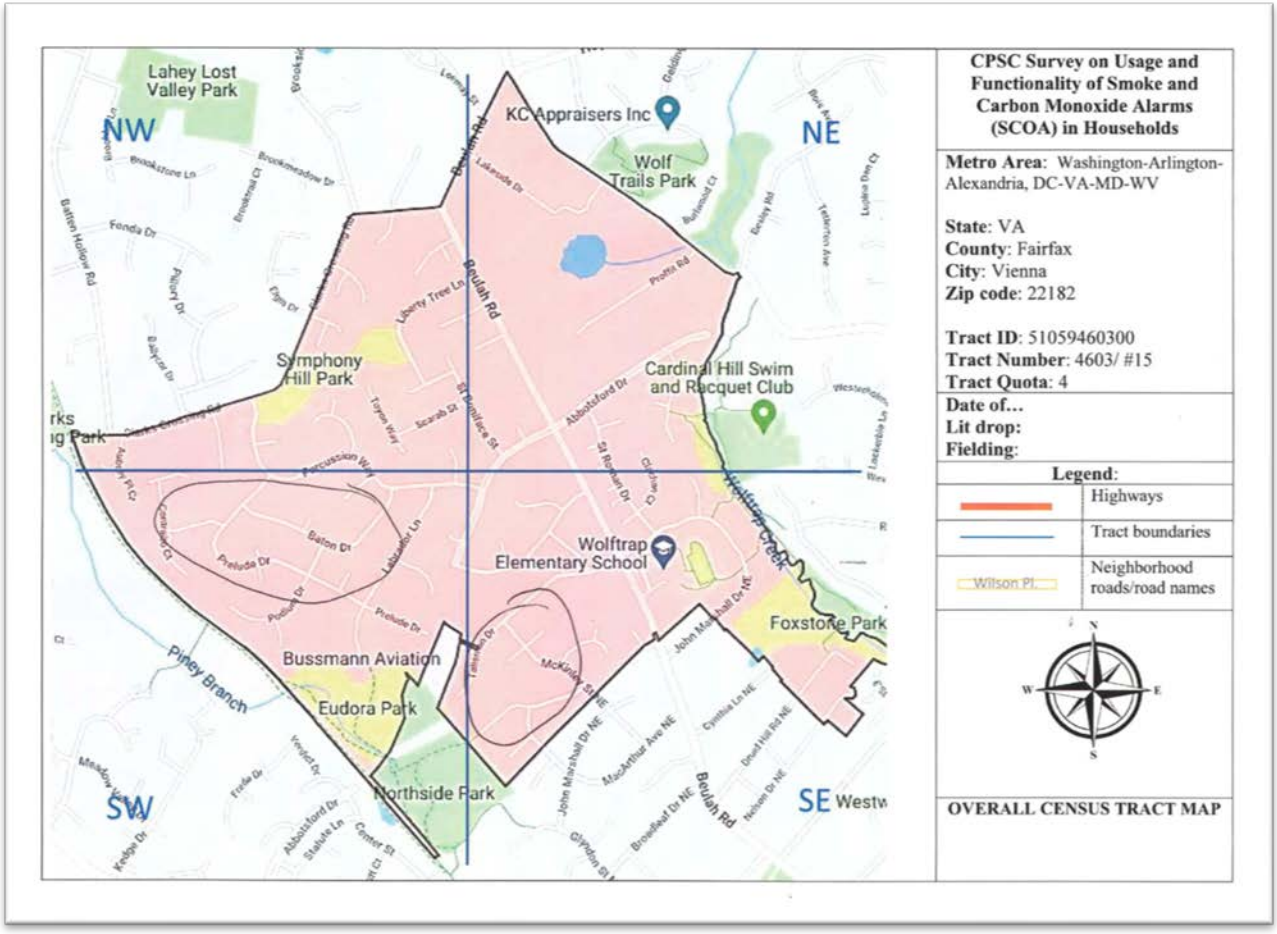
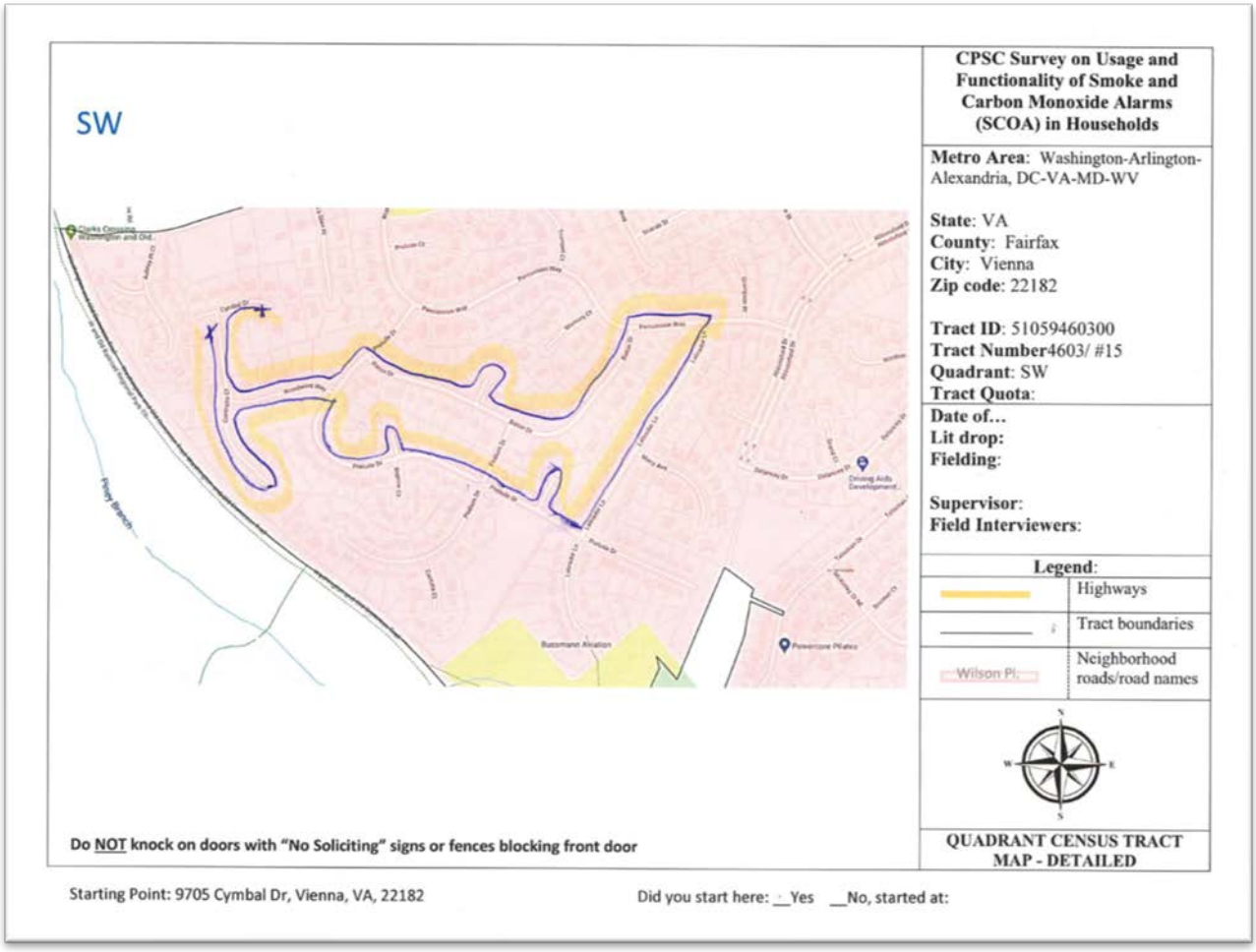


Figure 3A-5: Example of detailed tract map (tract 15)

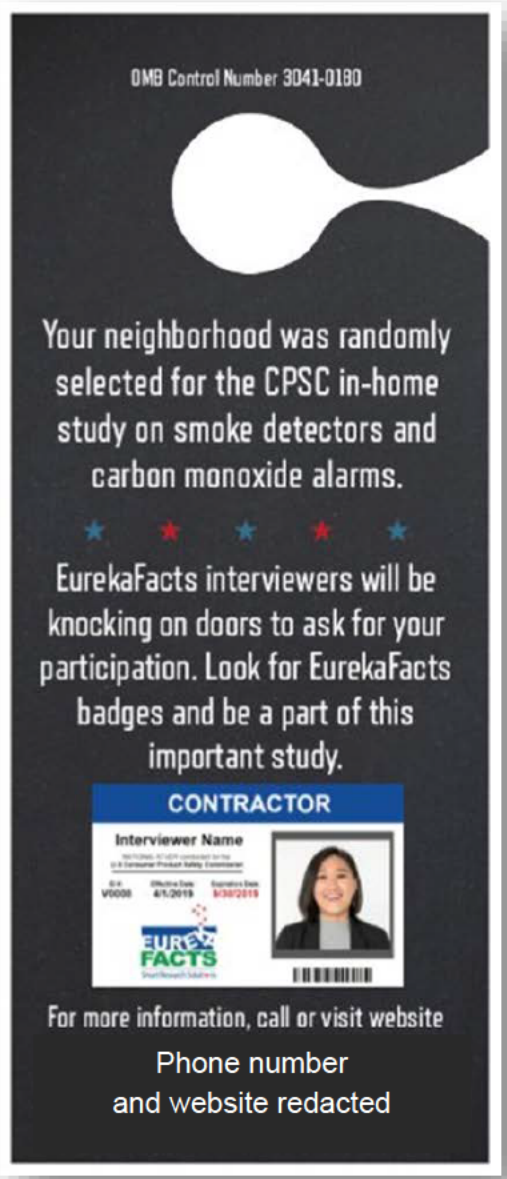


Door hangers were distributed to the selected households in a fielding location to notify neighborhoods and residents of the SCOA survey and that fielding teams would be in their area. Typically, 160 door hangers were hung in each tract, about 80 in each of the two selected quadrants/locations. This was based on the practical number of houses a team could attempt to recruit and ultimately complete three to four surveys/interviews in one day.

Door hangers included information about the study and organization conducting the interviews and further contact information to learn more. When they returned to the homes to make their pitch at the door, field teams would show residents one of the door hangers to jog the resident's memory of previously receiving one. The use of the highlighted maps ensured field teams would make contact at homes that received a door hanger. If all 80 homes in one

quadrant were contacted in-person and time remained in the day, field teams would move on to other houses within the tract. The door hanger was used as a recruitment tool for these households, as they may have some familiarity with them since they were publicly visible in the neighborhood. The door hangers concisely present information about the study while field teams present their pitch (see Figure 3A-6).

Figure 3A-6: SCOA survey door hanger distributed in Washington, DC tracts



Data Collection: Interview Types and Fielding Teams

Due to the importance of direct smoke alarm testing data to the SCOA study, two types of interviews are part of the SCOA survey. Depending on the status of their smoke alarm, respondents were eligible to participate in either the full-length (60 minute) or short (20 minute) in-home interview. Residents who have a smoke alarm that is not connected to a central or security system that would notify the police or fire department were eligible for the full-length in-home interviews. These respondents were asked questions related to their attitudes and knowledge about their smoke and CO alarms and behaviors related to smoke and CO safety; then their smoke and CO alarms were tested for operability. The absence of a security alarm that notifies first responders allows for direct testing of alarms, removing the liability from fielding teams of setting off false alarms to emergency services. Faulty alarms were collected, and a new alarm was provided for free. Additionally, new batteries were provided, if needed. Interviews lasted no longer than 60 minutes and participants were compensated with a $50 gift card for their completion of the survey. The initial study design included an incentive equal to $25; for the redesign, OMB approved an increase of the allowable incentive to $50.

Respondents who didn't have a smoke alarm, or had a smoke alarm that was connected to a central or security system, were eligible to participate in a shortened version of the survey. This included many of the same survey questions, but without the alarm testing portion. These interviews lasted no longer than 20 minutes and participants received a $10 gift card for their time.

In either case, a qualified two-member fielding team conducted the recruitment and participation of respondents. Each team member presented themselves professionally, displayed study badges (as shown on the door hanger), and completed complementary tasks during the data collection procedure. One team member, the interviewer, took the lead on recruiting participants at their door and were responsible for administering the survey questions to the participant. The other team member, the inspector, took the lead on conducting the alarm testing portion of the survey. Both team members were trained in each role in order to support the other as needed.

Technology and Confidentiality

Fielding teams used two technology platforms for two distinct data collection efforts. Qualtrics was the primary software utilized for collecting the survey data of qualified participants.

Additionally, Zoho Forms was used to log contacts that did not result in a completed interview, including cases in which no one was home or the household did not qualify to participate. This screen-out data was captured to determine the reasons and frequency for non-participation and to ascertain any common characteristics of households that did not want to participate.

Each field team member used a tablet to record their respective data. Interviewers filled out the interview and housing information in Qualtrics to prepare for a potential interview, and the inspectors filled out corresponding information in Zoho, in case the household did not participate. Once all data was pre-filled, the field team made in-person contact with the household. If the resident was successfully recruited, the interviewer continued data collection in Qualtrics and the inspector deleted the Zoho case. If no contact was made or recruitment was unsuccessful, the interviewer deleted the Qualtrics entry and the inspector completed the Zoho form with the reason for non-participation and any demographic information of the resident at the door. This method provided each field team member with an essential task for survey data collection and monitoring sample disposition (see Appendix B for more information).

These two technology platforms were selected for their overall functionality, practicality in the field, and data security. Qualtrics and Zoho Forms each have apps allowing for offline data collection for later uploading to cloud accounts. This allows for seamless data collection in unknown locations without the worry about data or Wi-Fi connectivity. Qualtrics is a secure data collection platform endorsed by the federal government. Qualtrics has FedRAMP authorization, ISO 27001 certification, and FISMA compliance, ensuring data security. Zoho also upholds high standards of organizational and network security to guarantee data is secure, isolated, encrypted, and accessible only to the research team. To further safeguard participant data, all respondents were assigned a unique identifier (ID) number for tracking and disposition purposes. This ID is not linked to a participant’s name.

Appendix B. Sample disposition: Recruitment, screening, and response rate

Part of the method for the revised door-to-door sampling design approach involves notifying households within each randomly selected Census tract with a pre-notification door hanger prior to the dates of scheduled survey recruitment in each tract. Fielding days occurred on weekends and holidays and consisted of interviewers knocking on doors and recruiting participants in person. A total of 3,680 households were notified of the study occurring in their neighborhood through the receipt of a door hanger that included a description of the study, contact information, and the dollar amount ($) of the survey incentive. We completed 130 household interviews in the Washington metro area. Based on the number of household interviews completed, the door-to-door method resulted in a 3.5% response rate (completed interviews (130)/notified households (3,680)).

Figure 3B-1: Washington metro area SCOA survey response rate and cooperation rate

Response rate	**3.5%**
Cooperation rate	**17%**

CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020.

Interviewers were able to have face-to-face recruitment interactions with 20% (747) of the notified households. Once an interviewer initiated the recruitment process, there was a 17% chance of participant cooperation that resulted in a completed interview.

The Non-Cooperative and Ineligible Households

Interviewers were able to reach 2,325 households in the Washington metro area by arriving in front of the property and attempting to gain direct contact with potential head-of-household residents. Of all homes reached by an in-person interviewer during the field period, 68% of households were unable to commence the screening process, primarily because the participant did not answer the door (either because they were not home or chose not to answer) but also because of locked buildings preventing entry. The remaining 32% of households communicated with an interviewer in-person or using a video

Figure 3B-2: Notified and screened households

Number of households notified	***3680***
Number of households reached by interviewer	***2325***
Initial contact outcomes …	*% (counts)*
No answer or no to access building	68% *(1578)*
Participants screened	32% *(747)*
	100
Screening outcomes …	%
Completed interview	17%
Participant refusal	78%
Only a minor present	3%
Other	2%
	100

CPSC SCOA Survey, Dec 21, 2019 – Mar 1, 2020 in DC pilot. Percentages read down and may not total to 100% due to rounding.

surveillance device. Based on the households that went through the screening process with an interviewer during fielding, 78% refused participation, in most cases due to a lack of interest in the study or citing time constraints. In other cases, potential households were not screened for eligibility because only a minor was home at time (3%). Once the screening process was underway, there were refusals based on unwilling to sign the consent, language barriers, and refusing interviewers entry into homes, among other reasons (accounting for 2% of screen-outs). The remaining 17% of all households participated in the screening process, were judged eligible and then completed the survey.

A Comparison of the Original and Revised Sampling Design

Figure 3B-3: Methodology outcomes

Methodology	Fielding dates	Total weeks	Response rate	Cooperation rate
Address-based sampling multi-mode recruitment approach	Jan. 1 - May 30, 2019	23 weeks	.09%	3.0%
Door-to-Door household random walk method sampling approach	Dec. 21, 2019 - March 1, 2020	11 weeks	3.5%	17.4%
Change		*-12 weeks*	*+3.41%*	*+14.4%*

CPSC SCOA Survey Methodology in DC pilot.

The original, address-based sampling approach consisted of a pre-notification letter, reminder letter, and a telephone recruitment strategy that yielded a significantly lower response rate and cooperation rate than that of the revised door-to-door sampling method.

During the implementation of the original phone recruitment method, 10,480 address records were purchased of occupied household units within the randomly selected tracts in North and South Carolina in the Charlotte metro area PSU, and New Bern, NC metro area PSU. Potential participants were mailed a pre-notification letter explaining the purpose and objectives of the study, along with the incentives of the study (free alarm testing, replacement batteries and alarms, and a $25 incentive). This was followed by 23,702 phone calls made to participants through a multi-call design strategy, of which 301 households were reached by a calling agent and 35 participants completed screening where they scheduled an in-home or over-the-phone interview.

All combined efforts resulted in nine (9) total in-home and over-the-phone interviews,

a .09% response rate, equivalent to 9/100th of 1% (9 completes out of 10,480 notified residents). Once a participant was reached by an interviewer and screened, the cooperation rate was 3.0% (9 completes out of 301 interactions).

From December 21, 2019 – March 1, 2020, EurekaFacts implemented the new survey sampling and administration process following the OMB approved approach, fielding the survey in the Washington Metro Area Primary Sampling Unit (PSU). On March 1, 2020, EurekaFacts completed 130 interviews in the Washington Metro Area, fulfilling survey quotas for the PSU. The new methodology was a success and under the revised method, the response rate reached 3.5% and cooperation rate reached 17.4%. Between the original method and the revised method, the response increased by a factor of almost 40, from .09% to 3.5%. Similarly, the cooperation rate increase by a factor of almost 6, from 3.0% to 17.4%.

Appendix C. First 50 survey completes: Challenges, adjustments, and lessons learned

EurekaFacts took special care during the launch and initial fielding period to refine the door-to-door methodology. The first 50 completed interviews were collected over nine fielding days between December 21, 2019 and January 25, 2020. The cases are a combination of multiple tracts in Maryland and Virginia, and range in demographic composition (e.g., race/ethnicity, social economic status). In total, 46 are full-length interviews and 4 are short interviews, conducted in proportion to the overall sample consisting of approximately 10% estimated short interviews, and as described in the OMB approved package, OMB Control # 3041-0180.

During the five-week period to collect the first 50 cases, field teams debriefed the project research team on their experiences. They shared success stories, challenges, strategies, and emerging patterns with the research team. These lessons learned in the first few weeks informed ways to improve, and modifications to the overall fielding strategy and logistics to increase efficiency and participation.

Key lessons learned are presented below.

Door hangers are critical to successful fielding. Door hangers enhanced credibility of field teams, generated interest for participation, and provided information in a succinct and visually distinct form. Many participants commented on how the door hangers caught their attention and prompted them to search for information about the study, either online, through the phone number, or by talking with their neighbors. While some interviews were completed without the participant receiving or recalling the door hanger, field teams often reported how the door hanger was instrumental in priming residents' interest and decision to participate.

Testing alarms without being in the home is a viable option to gain completes. Some heads of household are interested in the study but unwilling to let strangers in the home. Field teams were able to successfully offer the alternative of testing alarms outside (if they have battery power). Several participants were willing to complete the survey on their front porch and bring alarms outside to test and provide all relevant information about the alarms (location in home, interconnected or standalone, etc.).

Complexes with property managers are burdensome to canvas. As a government-sponsored study, the field teams conducting the SCOA survey are not considered solicitors or engaging in soliciting; however, locked buildings, restricted access, parking restrictions, and unwilling property managers on premise made it difficult to recruit in apartment and condo complexes. Calling the property managers in advance would be necessary to more easily gain access to these households. The time needed for these contacts was logistically not possible under tight timelines to complete the door-to-door pilot tract sampling.

Recruitment strategies and refusal aversion must be adapted by area and household. Field teams noticed that certain communities were more responsive to certain techniques or language. Wealthier communities were usually less interested in the $50 incentive and more willing to participate for altruistic reasons, such as interest in the research goals and overall safety. Field teams used the official CPSC letter (original pre-notification letter) and official credentials to convince heads of households who were uncertain about the legitimacy of the study. Other concerns regarding time commitment or the belief that the study is only for those who don't know their alarms are working were mitigated with focused language to counter those misconceptions and redirect potential respondents to the positive outcomes of participation.

Families with young children are a challenge to recruit. Asking for participation of households with younger children is a challenge because the head of household is too preoccupied with the children to focus on the survey. Days of the week when children are not in the home are preferable for recruiting this demographic.

Late-morning and mid-afternoon knocking times are most successful. Field teams would only knock on doors in daylight hours, starting no earlier than 10:00 AM. Participants were most receptive earlier in the day or midday before residents became unavailable due to plans and obligations scheduled for later in the day. The average starting time for the first 50 interviews was 1:43 PM. Participation sharply dropped off after 3:30 PM.

An experienced field interviewer can conduct the survey solo. After conducting the study as part of a pair and gaining experience, a confident and organized field interviewer can administer the survey as an individual, if needed. The interviewer would need to remain in constant contact with the other team and supervisor, but it is a potential and efficient alternative if a two-person team is unavailable.

Appendix D. Tract challenges

High Burden Census Tracts

Census tracts are determined to be high burden if they produce no or minimal completes or are impractical or unsafe for fielding. A high-burden tract is replaced entirely if fielding is not possible. A high-burden tract is supplemented with another tract if the number of completed interviews is drastically under quota but has at least two completes (necessary for any weighting). In each case, the new/additional tract is randomly selected and of comparable size, measured by number of occupied housing units.

Two tracts in the original list of 20 Washington metro area tracts were determined to be high-burden tracts. Tract 20 was deemed impractical for fielding because the entire tract consisted of inaccessible condos owned by a property management company. The buildings are locked which poses challenges for distributing door hangers and for knocking on individual units. As such, this tract was replaced with a new tract – tract 20r. Additionally, tract 13 was determined to be high-burden because only two interviews were completed after two days of fielding and residents began displaying hostility towards field teams. Tract 13 has a quota of nine completes, so the supplemental tract, tract 21, had to produce seven to nine completes.

A new tract must have a comparable number of OHUs in order to properly substitute for the high-burden tract's quota. To select a new/additional tract, the tracts are sorted by total OHUs and 10 tracts are designated as a possible replacement (five with higher and five with lower OHUs). The new tract is chosen through random number assignment and takes on the quota of the high-burden tract.

Underperforming Census Tracts

Some Census tracts do not rise to the level of being high burden, but certain factors may cause them to underproduce the needed number completes and require additional effort. For example, day of the week, distance between homes, and high incidence of security systems impacted the completion rate in certain tracts.

These challenges were mitigated through additional fielding efforts. If there was a high incidence of residents who did not answer or were not interested in participating, field teams knocked on doors of homes that did not receive door hangers. This maximized the field teams' time within a tract in a day and led to some success. If a tract ultimately did not produce many

completes, a second fielding day was planned for a different day of the week. For example, one tract has numerous churches which was not optimal for the original Sunday fielding date; the additional Saturday fielding date proved successful in completing that tract's quota. Revisiting a tract included picking a new set of 160 houses, creating the needed maps, distributing door hangers, and sending two fielding teams.

Appendix E. Field teams: Onboarding, logistics, and quality control

EurekaFacts provides comprehensive training to all staff and interviewers involved in the execution of the CPSC SCOA survey project. A large component of training is an hour-long presentation administered in person or by video. The training covers a variety of subjects including, but not limited to, the objectives of the study, fielding details and instructions, survey administration techniques, alarm testing procedures, and interviewer expectations. Once each interviewer completes the training, they sign an acknowledgement of receipt. This form must be on file before an interviewer is allowed to work on the project. Meetings are also held with interviewers prior to fielding to answer any questions or concerns. During in-person training sessions interviewers can gain hands-on learning on how to test alarms using model smoke and CO alarms. Checklists and quick reference guides are also provided to interviewers to reference while in the field.

Additionally, on their first day of the job, interviewers shadow an experienced teammate through the tasks of recruiting respondents, interviewing, and testing alarms, among other core tasks. This allows for the new interviewers to learn interviewing techniques and test procedures being implemented in real time. A similar method is imposed when new supervisors are on boarded. New supervisors take on the role of an interviewer on their first day in the field to gain an understanding of and experience with the specific tasks they will be supervising.

Quality Control and Supervision

The supervisor is responsible for supporting interviewers during field data collection by having additional materials prepared, monitoring the field progress, and by making decisions based on the daily cooperation rates observed. The supervisor is also responsible for ensuring the recruitment quotas for the tract are met and adjusting the walking route interviewers follow, the recruitment teams, or the locations/quadrants fielded in the tract, as needed. Furthermore, supervisors upload all data collected during fielding each day and are responsible for monitoring that the data and meta-data are imputed correctly (e.g., tract #, date, unique ID). The supervisor then reports to the research team a daily summary of interviews completed, daily achievements, and lessons learned.

The research team then reviews the uploaded data for consistency and quality. The information on smoke and CO alarms is matched to submitted photographs during the interview, and modifications are made to the data on a rolling basis. Overall fielding progress is

continuously monitored by the research team based on the tracts fielded and interviews completed.

Interviewer Safety

The safety of each interviewer is a high priority for EurekaFacts. To keep staff safe, each interviewer is required to wear a hi-visibility safety vest and is provided with an identification badge. Interviewers and supervisors are asked to maintain constant contact during recruitment hours using mobile phones. Power banks (or battery chargers) were also provided to interviewers to ensure that communication devices always remain charged. The supervisor is also tasked with driving by recruitment locations to visually monitor the safety of the teams. Interviewers are also instructed during the training process to withdraw from an interview if they feel unsafe or in danger for any reason.

Teams are also composed of two interviewers to increase safety while recruiting. To further protect interviewers, door-to-door recruitment is scheduled only during daylight hours. Interviewers are continuously instructed to practice safety techniques such as only taking out one gift card per household instead of the entire pack of gift cards. Teams are only allowed to carry a maximum of six $50 gift cards during fielding. Supervisors are to maintain a maximum of six extra gift cards in a combination locked safe to replenish teams when gift cards are needed.

As previously noted, an experienced interviewer could conduct fielding alone; however, the preference is to use teams of two. Neighborhood safety is assessed before and during fielding to determine the viability of using a solo team. If conditions are met, individuals are permitted to recruit and conduct surveys individually with additional monitoring and check-ins from the field supervisor.

These safety methods were very successful. No safety incidents were reported during the Washington metro area field period.