Department of Health Studies

Safe at Home Program Evaluation
(Phase 1: Research Methodology)

Prepared for:

District of Columbia Department of Aging and Community Living (DACL)

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Executive Summary

DACL collaborated with American University's Department of Health Studies (AU) from July 2022-September 2022 to evaluate the Safe at Home (SAH) program. The overarching goal of the evaluation is to determine the reach, impact, and outcomes of SAH in reducing falls and fear of falls among clients, and to provide recommendations for how to structure the SAH 2.0 program. This preliminary Phase 1 evaluation report includes three primary research objectives: 1) describe the methodology for collecting post-program survey data among clients served; 2) collect and analyze data via phone surveys from clients who completed the SAH program between October 2021-March 2022, and; 3) conduct descriptive data analysis on SAH program data from FY 2016-2022.

Recruitment letters were mailed to SAH clients (n=492) who had home modifications completed between October 2021-March 2022 inviting them to participate in a brief survey about their experience. Surveys were administered by three trained research assistants via phone to respondents who provided informed consent. The survey response rate was 54.9% (n=241). The post-program survey included: questions about satisfaction with the SAH, questions about number, location, and severity of falls since the program adaptations were completed, and the Falls Efficacy Scale (FES) was administered to examine fear of falling.

Survey respondents (n=241) reported high levels of satisfaction with the SAH program overall and with specific components of the program, with 89.2% (n=215) reporting they were 'completely satisfied' with the program. Most clients served, 78.8%, did not have a fall since the SAH home modifications were completed. Of the 21.2% of individuals who reported a fall, most reported having one fall since the completion of program (range 1-6 falls). The 21.2% of respondents who reported a fall is lower than both the US and the DC average reported by the CDC. The majority of fall reported, 75.5%, occurred inside the home, which is consistent with national and local data. In addition, 80% of the falls reported did not require medical attention. FES scores above 70 are indicative of high fear of falling during everyday activities. The respondents in the post-program survey had a median FES score of 26 and a mean score of 32.5 (sd 22.6, range 10-100), indicating relatively low fear of falling.

The SAH program served 4,753 older adults or adults with disabilities in FY 2016-2022, the majority of whom were women (79%) and over age 60 (92%). Almost 50% of clients live in Ward 7 and Ward 5. Twelve percent (n=572) of clients returned for a 'second episode'. In FY 2016-2022 there were 11,361 intake applications completed of which 58% were ineligible for the SAH program (n=6,620). The majority of ineligible participants, 94.5% (n=3719) were aged 60 or older. The two most common reasons for ineligibility were incomplete documents (58%) and unresponsive/no longer interested (31%).

The key takeaways from this preliminary evaluation include:

1. SAH program satisfaction is high (89.2%)
2. Likelihood of falls after home modification is low (78.8% report no falls, and severity is low among those who had a fall/s)
3. Confidence in daily activities without falling is high (FES Score mean 32.5/median 26)
4. High number of ineligible intake applications (60% due to incomplete documents)

BACKGROUND

Fall Trends in United States

Falls impact the health and independence of older adults and adults with disabilities. Older adults and adults with disabilities are at risk for falls and fall-related injuries. According to the Department of Health and Human Services' (HHS) Administration for Community Living (ACL), both the US population of older adults and adults with disabilities are growing. Older adults are among the fastest growing demographic in the US.[1] Moreover, the number of adults 85 or older, who may have greater service needs and risk for falling, is estimated to double, from over 6 million individuals in 2019 to over 14 million individuals in 2040.[2]

Most falls occur in the home. Further, individuals who fall are more likely to fall again.[3] Falls also have financial implications to individuals, their caregivers/families, and the health care system. In addition to being the leading cause of death from unintentional injury among older adults, falls are the leading causes for emergency department visits for unintentional injuries. Adults who have fallen may have fears about falling again which may be associated with reduced activities, which increases frailty and increased risk for a fall. Women report falls and fall related injuries more frequently than men; however, men have higher rates of fatal falls compared to women.[4]

Risk of falling does increase with age. However, falls are preventable by decreasing modifiable risk factors, raising awareness about fall prevention, promote preventive behaviors, and improving screening and referrals for those at fall risk.[5] Recent research suggests that many falls can be prevented through a variety of comprehensive evidence-based interventions.[6] For the past two decades, the CDC has maintained a compendium of falls prevention interventions[7] that have demonstrated, in randomized controlled trials, to reduce falls and fall risk among older adults. Some interventions address multiple fall risk factors, such as removing or reducing potential fall hazards in the home environment; others address individual fall risk factors, such as exercise programs to improve balance. Both impact and outcome studies of home assessment and home modification programs studies suggest significant positive health outcomes for older adult participants.

[1] U.S. Department of Health and Human Services, Administration for Community Living, 2020 Profile of Older Americans, May 2021.

[2] CDC, National Center for Injury Prevention and Control, Web–based Injury Statistics Query and Reporting System (WISQARS).

[3] Special Committee on Aging, United States Senate (2019) Fall Prevention: National, State, and Local Solutions to Better Support Seniors. https://www.aging.senate.gov/imo/media/doc/SCA_Falls_Report_2019.pdf

[4] Moreland B, Kakara R, Henry A. (2020) Trends in Nonfatal Falls and Fall-Related Injuries Among Adults Aged ≥65 Years - United States, 2012-2018. MMWR;69(27): 875-881.doi:10.15585/mmwr.mm6927a5.

[5] Ambrose AF, Paul G, Hausdorff JM. (2013) Risk factors for falls among older adults: a review of the literature. Maturitas;75:51–61.

[6] United States Government Accountability Office. Older Adults and Adults with Disabilities: Federal Programs Provide Support for Preventing Falls, but Program Reach is Limited. July 2022. GAO-22-105276. https://www.gao.gov/assets/gao-22-105276.pdf

[7] Stevens JA and Burns E. A CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults. 3rd ed. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2015.

Washington, DC (DC) Demographic Profile

There are several key demographic trends in DC that are relevant to DC's priorities for expansion of services and partnerships to prevent falls among older adults and adults with disabilities. Washington, DC (DC) has a total population of ~685,000 residents, among which 113,644 (16.5% of total population) are adults 60 or older.[8] However, this is the largest growing segment of the DC population across all eight Wards. Moreover, nearly 1 in 4 adults have a disability; over 45% of older adults have a disability.[9]

In DC, the rate of falls among older adults is 28.4% and the death rate from falls per 100,000 people is 70, which is comparable to the US national average. The rate of reported falls and falls-related injuries and deaths varies significantly across underserved DC Wards and demographic segments. More older adults live in Wards 3, 4, and 5 compared to other Wards and almost 60% of older adults live alone. Approximately 50,000 older adults live in Wards 7 and 8, the areas of DC with the least access to health services and highest proportion of individuals who are low-income.[10]

As the COVID-19 pandemic has challenged every sector and aspect of life, there is an even greater need to support older individuals and adults with disabilities[11], given that loneliness and social isolation also negatively impact physical health.[12]

Safe at Home Program (SAH)

In January 2016, DC Mayor Muriel Bowser established the innovative Safe at Home program (SAH) with the Department of Aging and Community Living (DACL) and administered by Home Care Partners, to offer comprehensive services to the underrepresented aging population in DC and adults with the disabilities. DACL's mission is to: 1) advocate, plan, implement, and monitor programs in health, education, and social services for seniors; 2) promote longevity, independence, dignity, and choice for DC residents with disabilities regardless of age, and caregivers; 3) ensure the rights of older adults and their families, and prevent their abuse, neglect, and exploitation; 4) uphold the core values of service excellence, respect, compassion, integrity, and accountability, and; 5) lead efforts to strengthen service delivery and capacity by engaging community stakeholders and partners to leverage resources.

[8] DC Office on Aging (DACL). 2019-2022 District of Columbia State Plan on Aging. https://dacl.dc.gov/sites/default/files/dc/sites/dacl/page_content/attachments/DACL%20State%20Plan%20on%20Aging_0.pdf

[9] Okoro CA, Hollis ND, Cyrus AC, Griffin-Blake S. Prevalence of Disabilities and Health Care Access by Disability Status and Type Among Adults-United States, 2016. MMWR Morb Mortal Wkly Rep 2018;67:882–887. DOI: http://dx.doi.org/10.15585/mmwr.mm6732a3external icon

[10] DC Policy Center (2018). A portrait of DC's Older Adults. https://www.dcpolicycenter.org/publications/a-portrait-of-d-c-s-older-adults/

[11] Malani P, Kullgren J, Solway E, Hoffman G., Singer D., Kirch M. (2021) National Poll on Healthy Aging Physical Functioning and Falls During the COVID 19 Pandemic. https://deepblue.lib.umich.edu/bitstream/handle/2027.42/168424/0239_NPHA-Falls-report-FINAL-08022021.pdf

[12] Holt-Lunstad, J. (2017) The Potential Public Health Relevance of Social Isolation and Loneliness: Prevalence, Epidemiology, and Risk Factors, *Public Policy & Aging Report*, Volume 27, Issue 4, Pages 127–130. https://doi.org/10.1093/ppar/prx030

SAH promotes aging-in-place for older adults and adults with disabilities by providing in-home accessibility adaptations (e.g., grab bars, safety railings, stair lifts, and bathtub cutouts) to reduce the risk of falls and reduce barriers that limit mobility for DC residents. SAH also incorporates one access point for referrals and screening. Aging adults are referred to the program by contacting the DACL Intake/Referral and Assistance line and completing a falls risk assessment. Home care partners, senior wellness centers, community-based organizations, and/or health care providers can also refer adults 60 and older or adults with a disability to SAH.

Adults 60 or older or adults 18 or older with disabilities who are DC homeowners or renters of their primary residence and who have an income at or below 80% of the Area Median Income are eligible to participate in SAH. In May 2019, DACL implemented a new cost-share component to increase SAH eligibility to individuals earning up to 100% of the Area Median Income (maximum of $72,550 annually for an individual or $82,550 for a married couple). Clients may be considered for eligibility for SAH participation for two episodes. The SAH Program provides up to $6,000 of preventative modifications for clients at "low falls risk." SAH refers all projects over the $6,000 and clients who score a "high falls risk" to the Department of Housing and Community Development's Single Family Residential Rehabilitation Program.

SAH eligibility criteria also includes assessment of fear of falling and falls risk, determined at intake over the phone. SAH uses evidence-based assessments to quantify fall risk and modification recommendations. Given the multifactorial risk of falling, SAH uses a variety of standardized assessments and a minimum of three assessments on each client. The assessments include: 1) SAFER home safety assessment completed pre and post to determine the number of safety hazards; 2) Falls Efficacy Scale (FES) completed pre and post to determines the level of "fear of falling"; 3) Falls Risk of Older People is a multifactorial fall risk assessment measures cognition, medication, and history of falls.

Since the launch of SAH, DACL has served more than 5,000 residents installing safety adaptions. DACL received the National Association of Area Agencies on Aging (n4a) Innovations Award in the Home & Community-Based Services category for the Safe at Home Program in 2017.[13]

EVALUATION METHODOLOGY

DACL and Home Care Partners collaborated with American University's Department of Health Studies (AU) for Phase 1of the SAH evaluation from July 11, 2022- September 30, 2022 to describe the methodology to evaluate the effectiveness of SAH to reduce falls and fear of falling among program clients, as well as satisfaction with the program. Phase 1 of this project describes the research evaluation methodology. This report describes design of the research methodology and preliminary analysis to evaluate the reach, impact, and outcomes of the Safe at Home Program operated during Fiscal Year 2016-Fiscal Year 2022.

[13] DC Office on Aging (DACL). 2019-2022 District of Columbia State Plan on Aging. https://dacl.dc.gov/sites/default/files/dc/sites/dacl/page_content/attachments/DACL%20State%20Plan%20on%20Aging_0.pdf

Evaluation Objectives

The overarching goal of this project is to evaluate the reach, impact, and outcomes of the SAH program in reducing falls and fear of falls among clients, and to provide recommendations for how to structure the SAH 2.0 program. The preliminary Phase 1 evaluation report includes three primary research objectives:

- **Objective 1**: Describe the methodology for collecting post-program survey data among clients served, including the analysis plan;
- **Objective 2**: Collect and analyze data via phone surveys from clients who completed the SAH program between October 2021-March 2022, and;
- **Objective 3**: Conduct descriptive data analysis on SAH program data from FY 2016-2022.

Table 1 describes the timeline of activities for Phase 1 of the SAH evaluation project.

Table 1. Timeline and Tasks Completed

Date Initiated	Evaluation Task	Date Action Completed
August 2022	Data Agreement	August 25, 2022
	SharePoint data transferred to AU	August 30, 2022
September 2022	IRB approval	Submitted August 26, 2022 Approved September 8, 2022
	Drafted and mailed letter inviting clients served to participate post-program phone survey	September 2, 2022
	RA training	September 7, 2022
	Developed and pre-tested survey instrument	September 1-12, 2022
	Created tracking sheets and Qualtrics data collection tool	September 6, 2022
	Collected post-program phone survey for clients who completed SAH program Oct 2021-March 2022	September 12-30, 2022
	Formulated research and analysis methodology to examine agreed upon key outcome questions	September 2022
	Cleaned data, conducted descriptive statistical analysis and drafted report	September 26-Dec 19, 2022

Data Sources

The data agreement between DACL and AU was executed August 25, 2022. DACL transferred data to AU from their Customer Service Tracking and Reporting System (CSTARS) database and SharePoint files. DACL transferred the SharePoint data on SAH clients for Fiscal Year 2016 through Fiscal Year 2022 and clients' names, addresses, and phone numbers for

clients served from October 1, 2021-March 31, 2022 for the post-program survey (see **Appendix A** for list of data fields). The AU team used this information to contact the clients served on behalf of DACL by mail and phone. SPSS (Version 28) was utilized to analyze the data using descriptive statistics and inferential statistics to examine associations between variables of interest.

Definitions & Terms

- '***older adult'*** refers to an individual who is 60 years of age or older
- '***disability***' is documented for SAH program eligibility to confirm difficulty with at least one of six functioning domains—mobility, hearing, cognition, independent living, vision, and/or self-care.
- '***clients served***' are individuals who have completed the SAH program. This is used interchangeably with the term '***completed projects***'
- '***enrollment***' is number of referrals to the SAH program. **Note**: If an individual is enrolled in the SAH program, they would not be included in the '***clients served***' list if they did not complete the SAH program.
- '***home assessment'*** includes multiple assessments to evaluate home safety and assess potential hazards or risks in the home, how the individual functions in the home environment, and factors that may hinder or prevent independent living.
- ***'home modification'*** refers to changes to make a home environment safer to support the individual living independently in the home. Modifications may include structural, non-structural, and/or adaptive equipment.
- '***second episode'*** refers to clients who request additional SAH services after program completion. Second episodes are permitted if the client moves from one residence in DC to another residence in DC and is in need of SAH modification at the second residence; >3 years have elapsed since the completion of prior SAH services, or: the client experiences a significant change in medical status that affects mobility.
- ***'impact studies'*** estimate what would have happened in the absence of the program or aspect of the program.
- ***'outcome studies'*** assess the extent to which a program has achieved certain objectives, including how the program achieved these objectives.

Protection of Human Subjects

The AU research team implemented several precautions to ensure the privacy, confidentiality and protection of information provided by all clients, as well as a high post-program survey participation rate. Institutional Review Board (IRB) approval was granted (#2023-106) on September 9, 2022 (see **Appendix B** for approval letter). Verbal informed consent was provided by respondents before the post-program phone survey questions were administered.

Data were collected via phone, recorded in Qualtrics using a secure link, and stored on AU computers encrypted with a password. The data were stored as Excel files generated from Qualtrics survey form and SPSS data files for data analysis. All data was stored on password-

protected AU computers only accessible by the authorized owner of the computer. All names and personal identifying information were removed prior to data summary and analysis. Data were de-identified during data analysis and contain unique client IDs.

Invitation to Participate in Post-Program Survey

The AU research team drafted a letter to invite all clients who completed the SAH program recently (between October 1, 2021 and March 31, 2022) to participate in a brief phone survey. Rinaldo Washington, Program Manager DACL, approved and signed the letter. The letter was mailed to the eligible clients served (n=492) on September 2, 2022 (see letter in **Appendix C**).

Research Assistant (RA) Training

Three AU undergraduate students who are public health majors were hired and trained to assist with survey data collection, clean and recode data, and conduct descriptive data analyses. Preference was given to students who have completed the CITI Human Subjects certification for conducting ethical research with human subjects.

Research Assistant (RA) training was conducted the week of September 6, 2022, which included pre-testing survey items. During the training the RAs reviewed the phone survey script, practiced asking questions/probes slowly and clearly, and role-played interviewing techniques with the research team. Emphasis was placed on effectively developing rapport and answering clarifying questions regarding the purpose of the survey.

Survey Instrument Development & Pre-Testing

Best practices for survey design were followed for the development, pre-testing, and administration of the post-program phone survey. This included clarity and brevity of questions to reduce respondent burden, specificity in questions and response options, and a mix of open and close-ended questions with 'don't know' options included. Demographic questions were not asked as that information is available within DACL data and will be matched post data collection during data cleaning and analysis.

The 10-item post-program survey included a brief introduction describing the SAH program and purpose of the phone survey, informed consent to participate, program satisfaction (2 questions), feedback on SAH (2 questions), fall history since SAH modifications completed including location and severity (5 questions), and fear of falling (Fall Efficacy Scale). The respondent also had the opportunity to provide feedback/comments/suggestions about the SAH program in a final open-ended question (see Phone Survey Script in **Appendix D**)

The draft phone survey was reviewed by Tori Goldhammer, Clinical Manager of the Safe at Home Program at Home Care Partners. The survey was then pre-tested and revised with minor revisions. DACL suggested including information if a respondent expressed a need for food or other health services; this was included in the list of contact information for RAs to share at the end of the survey. Minor revisions included adding in a voicemail message and adding in an option for the survey to be completed by a "support person." The survey was tested with

hypothetical data to make sure that the skip logic programming within the Qualtrics survey worked as intended. The RAs also provided feedback for minor revisions for clarity. For example, a section was added to the beginning of the phone script for leaving a voice message. Additionally, the phrase "without falling" was added to each activity in FES scale to ensure the respondents clearly understood each question.

Data Monitoring & Tracking

An Excel spreadsheet was created for RAs to track all the calls attempted and surveys completed, including time and date of attempted calls, name of RA assigned to each client (divided alphabetically), and any follow-up requests. RAs also noted call progress: complete, completed by support person, not willing to participate, follow up requested, left a message, or not working number, deceased. Each RA was assigned ~150-175 calls each (n=492 total). The tracking sheets were stored in Microsoft Teams with password-protected files. The AU team met each Monday to check in regarding call progress, updates, and discuss any issues with data collection procedures.

Data Collection Procedures

Phone surveys were completed September 12, 2022-September 30, 2022. All calls were made at AU in the Department of Health Studies offices from phones with (202) extension between the 9am-8pm Monday-Saturday. Verbal informed consent was provided before the administration of survey items. The RAs recorded the clients' response to the 10-question phone survey in Qualtrics.

Data Cleaning & Analysis Plan

Survey data was transferred from Qualtrics to IBM SPSS Statistics software (Version 28) for cleaning, recoding, and analysis. Analysis of data was conducted on password-protected computers by the research team.

The survey sample included in this report includes 241 respondents. Statistical analyses were performed using SPSS with the alpha level of significance at $p < 0.05$ and 95% confidence intervals calculated for all effect estimates. The data analyses are planned in the following steps:

1) **Demographic characteristics** (age, gender, ward) were examined and summarized. The post-program phone survey sample will be compared with the overall number of SAH clients served using chi-square tests of independence for categorical variables.

2) **Descriptive statistics** (means, standard deviations, counts, frequencies) and distributions obtained for all survey items to summarize measures, including fall history and fear of falling.

3) **Bivariate analysis** conducted for select variables to examine associations and relationships between pre and post changes in falls and fear of falling.

4) **Fall rate and FES scores changes over time** calculate to examine baseline-post-evaluation assessment differences. Mean scores for each item, as well as summary scores, will be compared using paired t-tests for all assessments. Analysis of covariance will be used to compare groups for each of the change scores, controlling for baseline data and independent variables for all assessments.

5) **Determination of the impact and reach** of the SAH program will be determined when all data is obtained and included in the September 30, 2023 final report. Between group differences for each outcome will be evaluated with repeated measures mixed effects models using R, which are robust to missing data because they allow subjects with differing numbers of repeated measures to remain in the analysis.

RESULTS

The results are organized in the section below according to the evaluation objectives: **Objective 2**) Collect and analyze data via phone surveys from clients who completed the SAH program between October 2021-March 2022, and **Objective 3**) Conduct descriptive data analysis on SAH program data from FY 2016-2022.

These analyses will inform the key research questions including: Who is most likely to complete the SAH program? Who obtains the most benefit from participation in the SAH program? What were clients' overall satisfaction with the SAH program? Do home modifications lead to decreased fall risk and reduced fear of falling?

Survey Sample

Of the 492 clients included in the DACL data file, 241 respondents completed the phone survey between September 12-30, 2022 for a response rate of 54.9%. The time to complete the post-program survey averaged 14.6 minutes (mean)/13.0 minutes (median) (SD= 7.7 minutes, ranging from 4.9 minutes to 44.4 minutes). Table 2 describes the call attempts and completed surveys by each RA, including response rate calculations.

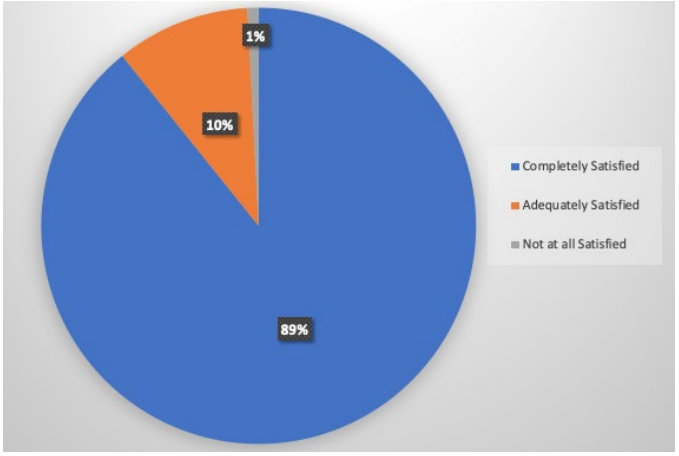
Table 2. Call Breakdown and Response Rate

Calls	**RA1**	**RA2**	**RA3**	**TOTAL**
Clients on list	171	149	172	**492**
Ineligible (*non working number, disconnected, deceased, etc*)	20	17	16	**53**
Calls completed *(surveys completed)*	76	86	79	**241**
Response Rate ***Calls Completed/ (Calls Made-Ineligible)***	**50.3%**	**65.2%**	**50.6%**	**54.9%**

SAH Program Satisfaction

The overall satisfaction with the SAH program was very high, across all demographic characteristics; 89.2% (n=215) of respondents reported they were 'completely satisfied,' 10.0% (n=24) were 'adequately satisfied,' and 0.8% (n=2) were 'not at all satisfied' with their experience with the SAH program. These findings are consistent with the FY 2021 program satisfaction results.

Figure 1. How Satisfied are you with the SAH Program Overall? (n=241)



The specific SAH program components were also rated highly. The majority of respondents, over 80%, indicated they were 'completely satisfied' with the specific program components. Table 3 describes the program components and satisfaction levels.

Table 3. How Satisfied are you with the Specific Components of the SAH Program? (n=241)

	Satisfaction Levels (n=241)		
	Not at all satisfied	Adequately Satisfied	Completely Satisfied
Plans for home modifications	2 (0.8%)	31 (12.9%)	208 (86.3%)
Comfort moving around home after home modifications installed	5 (2.1%)	38 (15.8%)	198 (82.2%)
Contractors who performed the modifications	5 (2.1%)	41 (17.0%)	195 (80.9%)
Sufficient clean up on behalf of the contractors	5 (2.1%)	37 (15.4%)	199 (82.6%)
Timeliness of the home modifications	4 (1.7%)	28 (11.7%)	208 (86.7%)

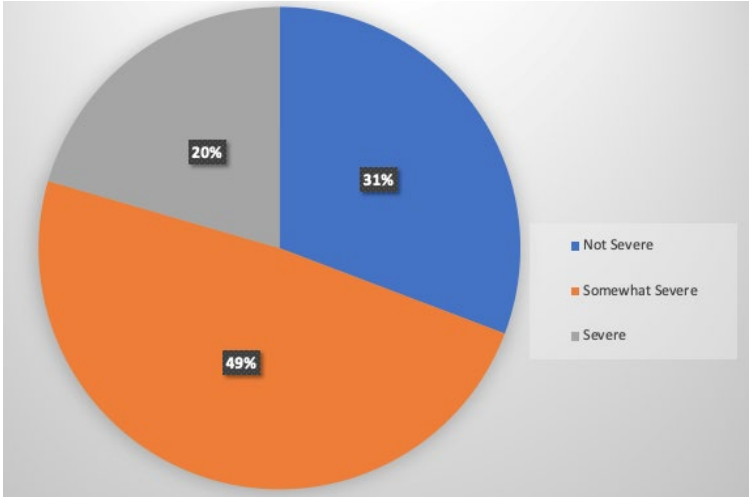
Respondents were asked an open-ended question about the home modifications they found to be most helpful. In order of frequency the five most helpful modifications respondents noted were: handrails, chair lift, grab bars in bathroom, shower chair, and toilet seat.

Falls Since SAH Modifications Completed (Number, Location, Severity)

The majority of the respondents, 78.8% (n=190), stated that they had not fallen since the SAH program home modifications were completed. Of the 21.2% (n=51) of individuals who reported a fall, most reported having one fall (54.9%, n=28) since the completion of program (range 1-6 falls). The 21.2% of respondents who reported a fall is lower than both the US and the DC average reported by the CDC. For falls reported inside the home, the respondent was asked about location and severity of each fall. Seventy-five percent (n=80) of the 106 falls reported occurred inside the home, which is consistent with national and local data.

Figure 2 illustrates the self-reported severity of falls reported to have occurred inside the home (n=80). Severity was defined as: 1) not severe: able to get up easily; 2) somewhat severe: needed assistance from family/friend/neighbor etc; 3) severe: went to doctor/health care provider for medical attention. Note that the figure refers to number of falls, not individuals; an individual may have reported >1 fall.

Figure 2. Self-Reported Severity of Falls Inside the Home



Fear of Falling (FES Scores)

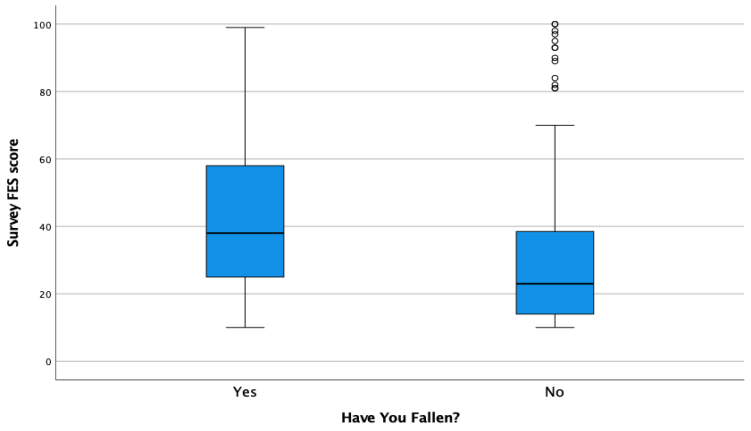
Fear of falling was measured by the Fall Efficacy Scale (FES).[14] The FES asks respondents to rate how confident they are in doing ten daily activities without falling on a scale of 1 to 10, with 1 being very confident and 10 not confident at all. The ten activities include: taking a bath or shower, getting in and out of bed, getting dressed and undressed, and walking around the house and stairs.

[14] Tinetti, M., D. Richman, et al. (1990). Falls efficacy as a measure of fear of falling. Journal of Gerontology 45(6): P239.

Ratings for the items are summed to give an overall score ranging from 10 to 100. Lower scores indicate more confidence in not falling. Scores of above 70 are indicative of high fear of falling during everyday activities. The FES has good test-retest reliability (.71). The respondents in the survey (n =239) had a median FES score of 26 and a mean score of 32.5 (SD = 22.6, range 10-100). Two respondents did not complete the FES questions because they were not mobile (both were wheelchair bound). There were 20 respondents (8%) who had FES scores > 70 in the survey. However, only 7 respondents had a FES score > 70 and reported a fall indicating most of the respondents with a high fear of falling did not report a fall.

It is also important to note that the mean FES score among those who reported a fall (n=51) was 42.4 (SD = 22.6) which was significantly higher than the mean FES score of 29.8 (SD = 21.9) among those who did not report a fall (n=188) ($p < .001$, t =3.6, df =237) (Figure 3). Fear of falling and number of falls is positively correlated; higher FES score is associated with greater number of falls reported (r =0.44, $p < .01$, n =51).

Figure 3. Fall Occurrence and FES Scores (n=239)



Among those who reported a fall, those who reported 2 or more falls (n=23) also had a higher FES score (M =54.1, SD =23.3) compared to those who reported 1 fall (M =32.8, SD = 17.1) ($p < .001$, t =3.8, df =49). This indicates that who fell more often also report a greater fear of falling compared to those who fell one time or did not fall.

Client Feedback

The respondents had the opportunity to provide any further comments or suggestions, the overwhelming majority of which were positive about the SAH program experience. Selected quotes include:

- *"Wished the program was longer!"*
- *"Very grateful for the Safe at Home program and confident about all aspects of the program."*
- *"Like the program, recommended it to friends!"*

- *"Glad to participate in program! fantastic program!!"*
- *"Pleased with service."*
- *"I thank you all for everything you have done for me!"*

The following descriptive statistics analyses were performed based on the DACL provided data from FY 2016-2022:

Demographic Characteristics Survey Sample and Clients Served

As of September 2022, 4,753 older adults or individuals who are disabled have had home modifications completed by the SAH program. The majority of SAH clients are women (79%) and over age 60 (92%) both by FY year of participation and overall. Almost 50% of clients live in Ward 7 and Ward 5. Table 4 compares the demographic characteristics of survey sample respondents with clients served FY 2016-2022. The two groups are similar and there are no significant statistical differences, indicating that the sample is representative of the larger SAH population.

Table 4. Demographic Characteristics of Survey Sample and SAH Population

	Survey Sample (n=241)		**SAH Population (n=4753)**	
	n	*%*	*n*	*%*
Gender				
Female	193	80.1%	3766	79.4%
Male	48	19.9%	974	20.5%
Age				
<=60	22	9.1%	360	7.6%
>60+	219	90.9%	4393	92.4%
Ward				
1	8	3.3%	212	4.5%
2	3	1.2%	80	1.7%
3	6	2.5%	84	1.8%
4	44	18.3%	848	17.9%
5	52	21.6%	985	20.7%
6	28	11.6%	452	9.5%
7	50	20.7%	1200	25.3%
8	50	20.7%	891	18.8%
TOTAL	241	100%	4753	100%

Barriers to Enrollment and Full SAH Participation

In FY 2016-2022 there were 11,361 intake applications completed of which 42% (n=4,741) were evaluated by a contractor and 58% were ineligible for the SAH program (n=6,620). Of the ineligible applicants, 39% (n=2,557) did not have reason listed for ineligibility. The majority of ineligible participants, 94.5% (n=3719) were aged 60 or older. Thirty-eight percent (n=4,325)

intake received DC Public Benefits and there is no difference in those who eligible or ineligible by DC Public Benefit.

For those who were ineligible with a reason provided, the two primary reasons (accounting for 89%) were: 1) incomplete documents and 2) unresponsive/no longer interested. Table 5 details the list of ineligibility reasons, in order of most common to least common.

Table 5. Reasons Ineligible for SAH Program (n=4,063)

Reason Ineligible	N	Percent
Incomplete documents	2353	57.9%
Unresponsive/not interested	1270	31.3%
Not income eligible	136	3.3%
Died	109	2.7%
Other	107	2.6%
No modifications needed	60	1.5%
Moved	18	0.4%
Not disability eligible	10	0.2%
Total	**4063**	**100%**

Of SAH participants FY 2016-22, 24.9% had their first contractor visit in 2019 (n=1181). Twelve percent (n=572) of clients returned for a 'second episode' (2nd time participating in SAH program). Table 6 details the number and % of first contractor visits by year.

Table 6. First Contractor Visit by Year (n=4,741)

Year	n	Percent
No date	188	3.9%
2016	1	0.02%
2017	327	6.9%
2018	998	21.1%
2019	1181	24.9%

2020	576	12.2%
2021	941	19.9%
2022	529	11.2%
Total	**4741**	**100%**

Limitations

There are several study limitations to note. Survey data on number of falls, fall location, and fall severity was self-reported by the clients and thus subject to recall bias. Respondents may have provided responses they think are expected, which may contribute to response bias. The FES items may have caused some confusion as the respondents are asked to give a lower number for higher confidence; the RAs attempted to reduce errors by reading each statement carefully and slowly, repeating as necessary.

NEXT STEPS

The SAH programs aims to prevent falls and reduce fear of falling to improve health outcomes for older adults and adults with disabilities in DC. In collaboration with DACL and Home Care Partners, AU collected and analyzed data to examine populations at risk for falls and to inform future SAH 2.0 program efforts.

Including a 6-month to 1-year follow-up is necessary for the SAH program to assess fall history since time of modification and allow for continued monitoring of the program's efficacy and sustained success.

The next steps in the SAH evaluation include activities to determine the reach, impact, and outcomes through:

1. Additional analyses of post-program survey data, including stratification by participant demographic variables of interest and fall risk;
2. In depth review of all data for FY 2016-22 to determine key question to be answered.

These analyses will inform the key evaluation questions including: Who is most likely to complete the SAH program? Who obtains the most benefit from participation in the SAH program? What were clients' overall satisfaction with the SAH program? Do home modifications lead to decreased fall risk and reduced fear of falling?

APPENDIX A. List of Data Fields

DACL shared the following data elements with AU regarding individuals enrolled in DACL's SAH program from CSTARS from Fiscal Year 2018 to Fiscal Year 2022. These data were transferred to AU in an Excel file with the following four tabs:

Tab 1: Client Demographics:

- Name (for completed participants from October 1, 2021-March 31, 2022 only)
- Address (for completed participants from October 1, 2021-March 31, 2022 only)
- Phone Number (for completed participants from October 1, 2021-March 31,2022 only) .
- Age
- Ward
- Gender

Tab 2: Enrollment Data:

- Referral Received Date
- Referral Type
- Number of previous episodes
- Receipt of DC Public Benefits
- Ineligibility Reason

Tab 3: Project Data:

- Date sent to contractor
- Dates of contractor visits

Tab 4: Number of Adults Served by:

- Ward
- Age
- Gender

APPENDIX B. IRB Approval Letter

AMERICAN UNIVERSITY

WASHINGTON, DC

INSTITUTIONAL REVIEW BOARD
OFFICE OF RESEARCH INTEGRITY

September 8, 2022

Anastasia Snelling
Protocol #: IRB-2023-106
Title: Safe at Home Program Evaluation

Determination date: September 8, 2022

Dear Anastasia Snelling, Melissa Hawkins,

On September 8, 2022, the above-mentioned protocol was reviewed by the IRB and it was determined that this research meets one or more of the criteria for exemption. You may now begin the research.

This research was determined to qualify for exemption under the following category or categories of the Code of Federal Regulations Title 45 §46.101(b):

*"**Category 2.(iii).** Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:*
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7)."

Any unanticipated problems that involve risks to subjects or others must be reported to the IRB in accordance with American University policies and procedures.

If you have any questions regarding this approval, please contact the IRB office at 202-885-3447.

On behalf of the Institutional Review Board and the Office of Research Integrity

APPENDIX C. Letter Inviting Participation in Survey

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF AGING AND COMMUNITY LIVING

September 2, 2022

Dear First Name/Last Name,

We hope this letter finds you well. As a recent participant of the Safe at Home Program through the DC Department of Aging and Community Living, you are invited to complete a brief phone survey about your experience with the program. The Safe at Home Program may have provided home modifications and/or safety adaptations in your home to decrease your risk of falling.

During the short phone survey, a Safe at Home representative will ask you a few questions regarding your experience and satisfaction since completing the program. Your opinion and feedback is important to improve the program for DC residents. Please expect a call sometime after September 12, 2022.

We look forward to speaking with you!

All the best,

Rinaldo Washington
Program Manager
Email: Rinaldo.Washington@dc.gov
Phone: (202) 316-3097
Website: https://dacl.dc.gov/

(202) 724-5626 | 500 K Street, N.E., Washington, D.C. 20002

APPENDIX D. Phone Survey Script

Q0 Research assistant to enter: (client name)

○ First Name (1) _____

○ Last Name (2) _____

MESSAGE IF VOICEMAIL:
Good [*morning/afternoon/evening*]. I am calling from the DC Safe at Home Program to speak with [*First Name, Last Name*]. We are calling everyone who completed the program to hear your experiences and satisfaction with the program. I will try to give you a call back [*day, date or you can say tomorrow/ this week*]. Thank you and hope to speak with you soon.

INTRODUCTION IF CALL IS ANSWERED:
Good [*morning/afternoon/evening]*. May I please speak with [*First Name, Last Name]*?

My name is [*First Name, Last Name*] and I am calling from the DC Safe at Home Program. I am following up on a letter you may have received recently from Mr. Rinaldo Washington of the Department of Aging and Community Living. We are calling everyone who completed the program to hear your experiences and satisfaction with the program.

Do you have 5-10 minutes to speak with me now?

[Below are responses ONLY if participants ask—'*What is SAH program?' Why are you calling me?' 'I don't remember being in this program.']*

The Safe at Home Program is administered by the DC Department of Aging and Community Living. It provides changes and modifications to your home to improve safety and reduce your risk of falling. Some of the changes may have been include: Handrails, Grab bars, Bathtub cuts, Shower seat, or a Stair lift. We are calling everyone who completed the program to hear your opinions and satisfaction with the program.

[*More info:*] Safe at Home is a grant funded home modification program that has served over 5,000 DC residents since 2016. The program is administered by Home Care Partners. It assesses the needs and determines the most appropriate home modifications increase safety in your home. The goal of the program is to decrease home safety hazards so you can live in your home independently and safely.

○ No - Ok, when would be a good time for me to call back? This should take about 10-15 minutes of your time. Thank you and I look forward to speaking with you soon. [Enter new day/time to call on TRACKING SHEET]. [survey ends] (1)

○ Yes - Great, thanks so much. This should take about 10-15 minutes. (2)

Display This Question:

If MESSAGE IF VOICEMAIL: Good [morning/afternoon/evening]. I am calling from the DC Safe at Home Pro... = Yes - Great, thanks so much. This should take about 10-15 minutes.

Consent **INFORMED CONSENT**

Your decision to take part in this phone survey, or not, is part of an informed consent process. The purpose of the survey is to ask about your satisfaction with the Safe at Home program and experiences since completing the program. It is expected that it will take 5-10 minutes of your time. There are no known possible harms or burdens of taking part in the survey. Possible benefits may be to improve the Safe at Home Program. Any feedback you provide or answers given will not affect your participation the Safe at Home Program or any other DC programs. Your information will be not shared with anyone outside of the research team. Your personal information will not be connected with the answers provided in the phone survey. It is your choice to take part or not.

Do you agree to participate in this short phone survey? Do you have any questions for me before we begin?

- ○ Yes (1)
- ○ No - This completes our conversation. Thank you for your time. [survey ends]. (2)

Skip To: End of Survey If INFORMED CONSENT Your decision to take part in this phone survey, or not, is part of an informed... = No - This completes our conversation. Thank you for your time. [survey ends].

Page Break

Q1 First, I'd like to ask about your experience with the Safe at Home program.

Some of the questions ask about 'home modifications'. A modification is an in-home adaption provided by the Safe at Home program that reduces the risk of falls. Modifications may include items like handrails, stair lifts, bathtub cuts, raised toilet seats, shower seats and many more.

Overall, how satisfied are you with the Safe at Home Program? [*read all the responses*]

- ○ Not at all satisfied (1)
- ○ Adequately satisfied (2)
- ○ Completely satisfied (3)

Q2 For each of the statements I read, can you please indicate how satisfied you are with these **specific** parts of the Safe at Home program?

[*Read this statement and response options for each of the below*]

How satisfied are you with…

	Not at all (1)	Adequately (2)	Completely (3)
Plans for home modifications (1)	○	○	○
Comfort moving around your home after home modifications were installed (2)	○	○	○
Contractors who performed the modifications (3)	○	○	○
Sufficient clean up on behalf of the contractors (4)	○	○	○
Timeliness of the home modifications (5)	○	○	○

Q3 Which home modification would you say has been most helpful to you? *[open-ended, can probe with list below*]

Probe Examples: Handrails, Grab bars, Bathtub cuts. Shower seat, Stair lift

_____

_____

_____

_____

Q4 Now I am going to ask you about any recent falls. Have you fallen, either inside your home or outside your home, since the Safe at Home program modifications were completed, since [***INSERT MONTH, YEAR program completed from TRACKING SHEET***]?

[*PROBE: this question is referring to any fall at all, no matter how serious]*

- ○ Yes (1)
- ○ No (2)
- ○ Not sure/don't remember [PROBE: do you want a little more time to think back if you remember falling, having an injury, or visiting a doctor because of a fall?] (3)

Skip To: Q9 - (FES) If Now I am going to ask you about any recent falls. Have you fallen, either inside your home or out... = No

Skip To: Q9 - (FES) If Now I am going to ask you about any recent falls. Have you fallen, either inside your home or out... = Not sure/don't remember [PROBE: do you want a little more time to think back if you remember falling, having an injury, or visiting a doctor because of a fall?]

Display This Question:

If Now I am going to ask you about any recent falls. Have you fallen, either inside your home or out... = Yes

Q5 How many times have you fallen since [**INSERT MONTH, YEAR program completed**]?

[*Enter exact number or range that they give]*

Not sure/don't remember. [*PROBE: can you estimate the number of falls?*]

_____

Display This Question:

If Now I am going to ask you about any recent falls. Have you fallen, either inside your home or out... = Yes

Q6 How many of these [*insert number given from previous question*] falls were **inside your home**?

[*Enter exact number or range that they give*]

Not sure/don't remember. [*PROBE: can you estimate the number of falls INSIDE your home?*]

_____

Display This Question:

If Now I am going to ask you about any recent falls. Have you fallen, either inside your home or out... = Yes

Q7 Now, I'd like to ask about the **severity** of each fall **inside your home**. You said you have had [*insert number answered in Q6*] falls inside your home since [*date]*.

For the ___ fall, would you say the fall was...[*read all response options*]

	Not severe. You were able to get up easily (1)	Somewhat severe. You needed assistance from family/friend/neighbor/etc (2)	Severe. You went to doctor/health care provider for medical attention (3)	Not Applicable (4)
1st fall (1)	○	○	○	○
2nd fall (2)	○	○	○	○
3rd fall (3)	○	○	○	○
4th fall (4)	○	○	○	○
5th fall (5)	○	○	○	○
6th fall (6)	○	○	○	○
7th fall (7)	○	○	○	○
8th fall (8)	○	○	○	○
9th fall (9)	○	○	○	○
10th fall (10)	○	○	○	○

Display This Question:

If Now I am going to ask you about any recent falls. Have you fallen, either inside your home or out... = Yes

Q8 Was the ___ fall inside your home in an area where modifications were provided by the Safe At Home program?

[PROBE: where did you fall?]

	Yes (1)	No (2)	Not sure/don't remember (3)	Not Applicable (4)
1st fall (1)	○	○	○	○
2nd fall (2)	○	○	○	○
3rd fall (3)	○	○	○	○
4th fall (4)	○	○	○	○
5th fall (5)	○	○	○	○
6th fall (6)	○	○	○	○
7th fall (7)	○	○	○	○
8th fall (8)	○	○	○	○
9th fall (9)	○	○	○	○
10th fall (10)	○	○	○	○

Page Break

Q9 - (FES) Now, I'm going to ask you a few questions about your concerns about falling.

On a scale from 1 to 10, with 1 **being very confident and 10 being not confident at all,** how confident are you that you can do the following activities without falling? [*read statement before each of the below items]*

	Very confident				Somewhat confident				Not confident at all		
	1	2	3	4	5	6	6	7	8	9	10
Take a bath or shower without falling ()											
Reach into cabinets or closets without falling ()											
Walk around the house and stairs without falling ()											
Prepare meals not requiring carrying heavy or hot objects without falling ()											
Get in and out of bed without falling ()											
Answer the door or telephone without falling ()											
Get in and out of a chair without falling ()											
Get dressed and undressed without falling ()											
Personal grooming (i.e. washing your face) without falling ()											
Get on and off of the toilet without falling ()											

Page Break

Closing remarks Those are all the questions I have for you. Thank you so much for your time!

Do you have any questions or final comments for me?

[If they want to talk to someone or have additional questions about]:

- *Safe at Home Program: Tori Goldhammer, Clinical Manager, Safe at Home program at Home Care Partners,* 202-642-6309, tgoldhammer@homecarepartners.org
- *Survey or Survey Questions: Stacey Snelling, Chair, Dept of Health Studies,* stacey@american.edu
- *Rights as a Participant: Matt Zembrzuski, IRB Coordinator, American University, (202)885-3447 irb@american.edu]*
- Other DC services to assist with food, housing, Covid vaccines, etc: please refer them to the DACL Intake and Referral Line - 202-724-5626.

_____

_____

_____

_____

_____