KENT FIRE & RESCUE SERVICE

EVALUATION OF SAFE & WELL VISITS 2019/20

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Author Biographies

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Lynsey is a behavioural science researcher with interests in behaviour change and social psychology. She joined KFRS in 2019 as the Senior Researcher in the Customer Experience and Behaviour Change team. Her role is to support and implement research and intervention evaluation on customer safety behaviour change initiatives. Lynsey is a chartered psychologist and also works part-time as a Lecturer at City, University of London.

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Su is a researcher in the field of developmental psychology, with a particular interest in understanding associations between general cognitive abilities and learning. She was a Researcher in the KFRS Customer Experience and Behaviour Change team between 2019 and 2020, where she evaluated the effectiveness of customer safety and behaviour change activities. She is currently a Research Fellow at the University of Surrey.

Richard Stanford-Beale

Richard leads the Customer Experience and Behaviour Change team at Kent Fire & Rescue Service. He has worked for KFRS since 2007 in various project and management roles. Richard led a review of community safety in 2015/16 which introduced a stronger focus on behaviour change. Safe & Well visits have been a particular interest since he evaluated home visits for his MA in 2010. More recently, in 2020 he has supported the development of NFCC guidance for person-centred home fire safety visits.

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Safe and Well evaluation

1 Introduction

In 2018 Kent Fire & Rescue Service (KFRS) commissioned the National Social Marketing Centre (NSMC) to develop an evaluation framework around its customer safety interventions. The aim of this was to provide guidance on methods and data collection tools which could be implemented to determine the effectiveness of the interventions, and identify areas for improvements (NSMC, 2018). Based on the logic model (see section 6.1), which was designed around all customer safety activity, the current evaluation of Safe & Well visits considers short term outcomes (e.g. recall of information, change in knowledge/awareness, equipment fitted, and actions taken), some medium term outcomes (e.g. applying knowledge to behaviour, intention to change behaviour), and to some degree the long term outcome of self-reported behaviour change. In line with the NSMC recommendation, the evaluation used a cross-sectional post-intervention survey, using primarily qualitative, open-ended questions to gain depth of information, and allowed participants to offer explanation for their responses. In addition we sought feedback from staff who deliver Safe & Well (S&W) visits, via focus groups, to combine with customer feedback to give a more rounded view of the impact S&W visits have on customer safety. Responses were analysed using thematic content analysis.

Note that at the time of this evaluation all home visits undertaken by KFRS are referred to as Safe & Well visits. This includes visits undertake by operational crews and a team of specialists.

1.1 Safe & Well visits in context

According to Home Office statistics, the number of Accidental Dwelling Fire (ADF) attended by Fire & Rescue Services (FRS) nationally has been relatively stable since 2012/13 (Home Office, 2019). In Kent and Medway, the number of ADF's attended in 2018/19 totalled 523, including eight fatalities and 167 casualties. For April 2019 to February 2020, ADFs attended were 430, including four fatalities and 112 casualties. This highlights the need for customer safety interventions that encourage behaviours associated with fire safety and reducing risk of fires. Since 2004, promoting safety has been part of the statutory function of Fire & Rescue Services (FRS), and there is an expectation that one avenue to achieve this is to deliver S&W visits (home safety visits). The primary aim of S&W visits within Kent is the prevention of fatalities and casualties in ADFs, with the wider benefit of improving safety and wellbeing.

Safe & Well visits in Kent are currently offered to households that include anyone aged over 70 years, anyone aged under five years (including pregnant women), smokers, or

people with long-term health conditions. S&W visits are one of a number of customer safety and prevention-based intervention activities offered by Kent Fire and Rescue Service (KFRS), including educational school-based programmes, community-based safety events, and road safety education. In the most recent financial year (2019/20), the S&W team have completed 11,234 and stations 9,060 (provisional figures). Whilst this shows that a large number of visits are being completed, it does not evidence whether there is any behavioural impact of the current S&W provision. That is, the quantity of visits might be high, but there has until now been little evidence of quality of content (in relation to behaviour change and increased safety).

The quality of evidence evaluating home fire safety interventions has been found to be very low (Senthilkimaran, Nazari, MacDermid, Roche, & Sopko, 2019), meaning that despite a general trend suggesting that home fire safety interventions improve knowledge and behaviour, we cannot be confident that reductions in ADF's is attributable to the intervention, or generalizable across different types of intervention. A major limitation with a number of previous studies is the assumption that increased quantity of intervention and observed decrease in number of fires are causally linked[1]. Furthermore, the content of evaluation varies and is not always focused on whether the intervention changes safety behaviours. A recent NFCC survey found that only nine of the 14 FRS's that responded were using *any* form of evaluation of S&W visits, and of those most were either focused on quality assurance or were non-specific about how the evaluation is conducted (personal communication with Joanne Mann at Humberside FRS). This makes it difficult to judge how effective S&W visits are in changing behaviour to encourage safer actions.

1.2 Evidence from other Safe and Well evaluations

S&W visits in the UK have developed over many years since around 1999 and promoting fire safety became a statutory function as part of the 2004 Fire and Rescue Service Act. Home Fire Safety Checks were partially funded by the government from 2004 to 2008. Since then each fire & rescue service has developed their own visits with little guidance, although the National Principles for Safe & Well were published in 2015 and new guidance for a person-centred home fire safety visit is currently being developed by the NFCC. As a result the core fire safety content of S&W visits across UK FRSs is broadly similar and at least more similar than to S&W visits (or equivalent[2]) in other countries.

[1] Similar pitfalls are evident in other research such as the evaluation of the Fire Kills campaign in 2009 which identified changes in sales of smoke alarms, and the occurrence of smoke alarms in ADF incidents, assuming that changes were a direct result of media campaigning (Evans & Wright, 2009), further highlighting the need to consider customer behaviour in evaluation research.

[2] This paper refers to all visits as S&W since this is the current (at the time) approach taken by KFRS. All visits to a customer's home are referred to as S&W visits, although other FRS's differentiate S&W

Therefore, this review focuses on research from the UK and in particular, research that aims to evaluate the effectiveness of S&W visits by FRS's. A systematic review of interventions was conducted which included studies of any fire safety intervention globally (Senthilkumaran et al., 2019). Only studies including an intervention evaluation with a comparison group (other intervention or control) were included, leaving a total of ten papers. Of those only three were conducted in the UK, and of those only one with adults (or not a schools programme). This single study evaluated an injury prevention briefing, and therefore may not be typical of home fire safety visits as defined in other research papers. Overall, the review and meta-analysis identified that the little evidence that does exist is low quality and shows little to no impact of the identified interventions. However, the interventions all differed, and were conducted in different countries, making comparison very difficult. The authors also acknowledge the difficulty in accounting for fires that do not occur and how to assess the impact of intervention based on preventing something. With that in mind, they support a focus on knowledge and behaviours that might be indicative of future safety.

In the UK, evaluation of S&W visits is still developing and of the evaluation studies that were accessible for this report, each one differed in its approach. For example, Cheshire FRS compared CFRS data to a comparison group comprised of 37 other non-metropolitan FRS, counting the number of S&W visits per 100,000 population between 2001/02 and 2010/11 (Arch & Thurston, 2012). They used 'number of ADF's' and 'injuries resulting from ADF's' as a measure of success of the S&W visits, assuming that a reduction in these numbers indicated effective adoption of S&W advice. Similarly, Essex FRS evaluated a pilot intervention of S&W visits carried out by trained volunteers in 2016/17, comparing the number of ADF's before and after the pilot intervention period (Yannitell & Chatsiou, 2019). Both studies concluded that the delivery of S&W visits was associated with fewer ADF's, but assume that the number of S&W visits delivered is the driver of the fire activity.

Some studies have considered the knowledge and behaviours of S&W customers following a visit. For example, Avon FRS interviewed 15 customers before, within two weeks, and within three months of their visit (Williams & Manning 2016). The majority of the people interviewed reported making changes, and sustaining those changes at three months post-visit. However, they identified that this was only the case for simple and easy to implement behaviours, and especially cost-free to the homeowner. Similarly, other research with Avon FRS identified particular reasons for not adopting safer behaviours included disruption to existing routines that could lead to distress (Bird, Tapp, Lancaster, & Clark, 2010). However,

from Home Fire Safety Check/Visits. For consistency we refer to all visits conducted by FRS personnel at the customers' home as S&W throughout the paper.

this was not directly evaluating S&W visits, but rather assessing attitudes towards fire safety among older adults.

One of the more robust evaluations of S&W visits was conducted by Cordis Bright on behalf of LFB (London Fire and Emergency Planning Authority, 2013). The strength of their evaluation lies in the multifaceted approach, combining incident data, self-reported behaviour, and employee views. Analysis of authority data showed that in the six and a half years up to 2006, customers who received a S&W visit were ten times less likely than those who did not receive a visit to experience an ADF. The research also highlighted that homes who had received a S&W visits were more likely to become aware of the fire sooner (<5 minutes) and the fires were more likely to be rated as 'slight' or 'moderate' than 'significant' or 'severe' fires than where S&W visit were not conducted. The interviews with S&W customers found that only some had made changes to their behaviour, but most felt they had learnt new information. Similarly to Avon FRS' study, LFB customers reported carrying out simple, cost-free behaviours, and reasons for not adopting any change were mostly due to perception of low risk and therefore not needed, or competing rationale such as not closing doors because that made them feel 'hemmed in'.

KFRS have also previously looked at ways to gather feedback regarding S&W visits. In 2010 questions about the impact of S&W visits were included in public consultation, and showed that 40% of respondents reported having changed their behaviour as a result of safety messaging received via KFRS (Kent Fire & Rescue Service, 2010). Furthermore, research carried out as part of an MA by a KFRS employee sought feedback via postal survey from S&W customers (Stanford-Beale, 2010). Survey responses showed that 65% of customers reported changing their behaviour after the S&W visit, and the 32% who reported no behaviour change said that it was because they already followed the advice anyway. A quarter of the respondents reported that one change was the regular testing of smoke alarms, and 70% stated that they tested alarms more regularly after than before the visit. This seems promising, although other research suggests that smoke alarm testing and knowledge of smoke alarm status is often over-estimated (Chen, Gielen, & McDonald, 2003). Furthermore, within the KFRS study, open-ended responses seemed to sit at odds with the quantitative response that most people were checking their alarms. In the qualitative responses, only 18 respondents mentioned checking smoke alarms as an active behaviour. In fact, despite high proportions of quantitative responses suggesting behaviour change, there was far less evidence of this in the qualitative responses. This might support the notion that simply ticking a box encouraged responses in line with what might be expected, rather than a true reflection of behaviour.

Although not directly evaluating S&W visits, some research has investigated knowledge and memory of a video-based fire safety intervention aimed at 12 older adults (Lehna,

Merrell, Furmanek, & Twyman, 2017). This showed that fire safety knowledge was low at baseline (despite the majority of participants having had a S&W visit), but significantly increased at follow-up (T2 immediately after video) and retention (2 weeks later), and there was no significant difference between T2 and T3 (indicating that recall had not improved, nor had it fallen back below T2). This suggests that an educational video could also support the increase in, and retention of, knowledge relating to home fire safety.

1.3 Rationale

Safe and Well visits are carried out by fire services across the country, however the effectiveness of these interventions is rarely reviewed. There are two ways of evaluating the effectiveness of the intervention; one is to look for changing patterns in incident data that may be attributed to S&W visits, and the other is to assess the impact at a customer level. To date, studies undertaken in this field have tended to focus on assessing the impact of visits based on changes in incident numbers. The challenge with this method is that it is difficult to directly attribute any change in incident numbers to S&W interventions due to the huge number of additional, unmeasured variables that may have affected the number of incidents at any given time. Therefore, for this study, it was decided that a more informative evaluation would measure customers' self-reported changes in their behaviour resulting from the visit. To supplement this, we also used staff feedback via focus groups on perceptions of the impact of visits and likelihood of behaviour change.

Following the structure of a pre-defined evaluation framework (NSMC, 2018) we adopted a cross-sectional post-intervention evaluation of customer experiences during S&W visits. Qualitative data were collected through telephone interviews and were then thematically analysed, and trends in responses are reported below. To supplement this, we also conducted focus groups with staff who deliver S&W visits to allow triangulation of experiences. Outcome measures were based on the short, medium, and long term outcomes identified in the logic model (see section 6.1).

2 Method

2.1 Organisation of Safe and Well visits in Kent

There are multiple routes by which a customer may receive a S&W visit in Kent. The Safe and Well officers are specialists and carry out visits that are pre-booked. This may be through the customer contacting the team directly (self-referral), or someone contacting the team to book on the customer's behalf- including friends, families, local authorities, the ambulance service, and charities. In contrast, station firefighters mostly visit addresses from

a dataset containing customer details who are over 70 years old, and these visits are not pre-booked. Firefighters attend these addresses on the fire engines, in case they need to respond to an emergency call. Where firefighters feel that the customer would benefit from a more in-depth visit, they can refer them on to the Safe and Well officers for a follow-up visit.

2.2 Customer experience

2.2.1 Design and participants

A qualitative investigation of customer experiences of S&W visits was undertaken to assess the likelihood of the customers' changing their behaviour and impact on their fire safety. Responses were collected from a sample of 199 customers who had received a S&W visit within the previous six months (January to June 2019). As part of the sampling process, it was decided that any customer who may be considered vulnerable, and therefore may have been accompanied at the time of visit, may not have been able to answer the questions accurately by themselves, or may have been distressed by the call, were excluded before sampling began. This included any customer who was identified as having severe dementia, any report of domestic abuse, or had a post-visit risk assessment score of 9 or 10 (out of 10) and therefore required follow-up visits. This left 794 customers who were visited by S&W officers, and 464 visited by Stations.

For the customers visited by S&W officers, the selection criteria was to include customers in every area of Kent & Medway (as represented by the first two letters of their postcode), a spread of referral types, and a spread of months when the visit was carried out. The sample to be contacted was then filtered to match the demographics of the whole sample of customers who had received a visit (after the initial exclusions were applied), e.g. for age, smoking behaviour, and disability. The response was 24%. Therefore, it was decided that there would be no sampling criteria applied to customers visited by stations as the initial sample was already of an appropriate size to achieve 100 responses.

***Table 1**: Participant demographics for the Safe and Well (S&W) Officers and Station Safe and Well visit surveys*

	S&W team target	**S&W team actual**	**Station actual**
Total	100	99	100
Eldest resident 70+	71%	86 (87%)	-
Youngest resident <5	8%	5 (5%)	-
Disability	77%	78 (79%)	-
Some issue with dementia		12 (12%)	2 (2%)
Smoking	20%	18 (18%)	8 (8%)
Pre-assessment		4.2 (range 0 to 7)	4.1 (range 2 to 8)
Post-assessment		2.7 (range 0 to 6)	2.6 (range 0 to 7)
Average change		1.4 (range 0 to 4)	1.4 (range -2 to 6)

The sample who had visits from S&W officers had a higher percentage of older participants than the target and a lower percentage of customers with young children than the target. This may be due to the time of day our calls were being made, when working-age customers were more likely to be out at work. The percentage of customers with a disability and who smoke were much closer to the target.

2.2.2 Materials and procedure

Customers were contacted separately depending on whether they had received a S&W visit conducted by S&W officers (N=99) or by firefighters from their local station (N=100). Each customer was contacted and asked whether they would complete a short interview over the phone there and then (see **section 6.2**). Where a call was not answered, one additional attempt was made to contact the customer before they were removed from the sample. Interviews typically lasted between 5 and 10 minutes, and questions focused on customer behaviour and whether the customer had made any changes to their home and/or behaviour based on the visit. There were also some general quality assurance questions asked relating to customer experience of the S&W visit.

2.3 Staff experience

2.3.1 Design and participants

A qualitative investigation of employee experiences of S&W visits was undertaken to assess the perceived likelihood of customers' behaviour change and the impact of fire safety education. Focus groups were held with ten S&W officers and 40 firefighters from eight

stations geographically dispersed across the county, all participants had delivered S&W visits within the last six months.

2.3.2 Materials and procedure

The focus group discussions centred around the general processes of conducting Safe and Well home visits, but also included questions that specifically asked whether they felt that customers were likely to change their behaviour based on the advice given during a visit, and whether risk was likely to be reduced after the visit. Focus group questions can be found in **section 6.3**. Focus groups were carried out during a S&W officer team meeting (N=10) in February 2020, or at stations during September – October 2019 (in groups of 4-12), and typically lasted between 90-120 minutes.

3 Results

3.1 Customer experience

3.1.1 Recall of safety messages

Almost all customers remembered having a S&W visit – only one customer in the S&W officer sample initially did not recall the visit, but remembered when prompted. All customers recalled advice given to them during the visit; around half of the customers required a prompt to jog their memory (52.5% of S&W officer customers and 47.0% of Station customers). There was a wide range of advice remembered by customers, with the largest group of remembered advice relating to smoke alarms and other alarms in the home (**Figure 1**). Advice around closing internal doors, having an escape route and keeping it clear, and switching off appliances when not in use was also recalled. The profile of remembered advice was broadly similar between the two sample groups, although more Station customers recalled action around installing smoke alarms and information about escape routes, while more customers who had a visit from S&W officers recalled information about closing internal doors and switching off appliances.

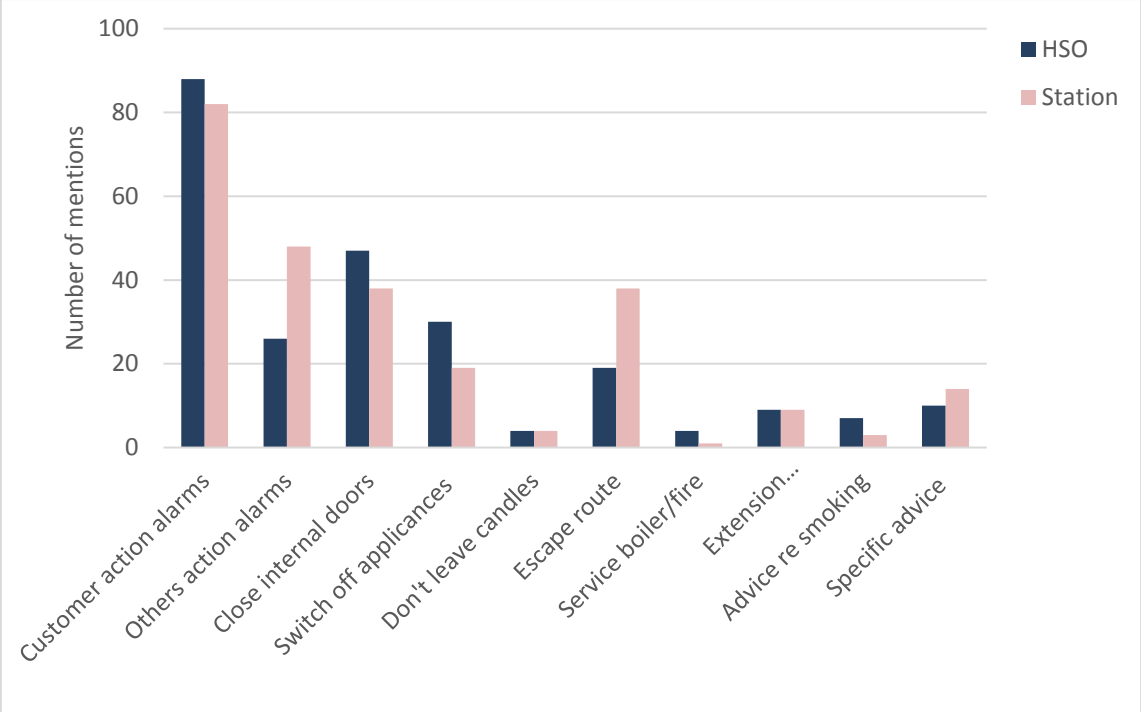


***Figure 1**: Number of mentions of different types of advice recalled by customers in each sample.*

A paired-sample t-test determined that the number of each type of response were not significantly different between the S&W officers and Station customers, $t(9) = 0.342$, $p = .740$. This indicates that similar amounts of information were remembered by customers in both groups.

Almost all customers felt that the advice given to them at their S&W visit was either 'very useful' or 'useful'. Only three customers in the S&W officer sample and one Station customer felt the advice was not useful. There were some differences between the two samples (**Figure 2**), with a higher number of customers who had been visited by the S&W officers commenting that the visit gave them *new* information, encouraged new habits, and provided new equipment. In contrast, a higher number of Station customers made more general positive comments.

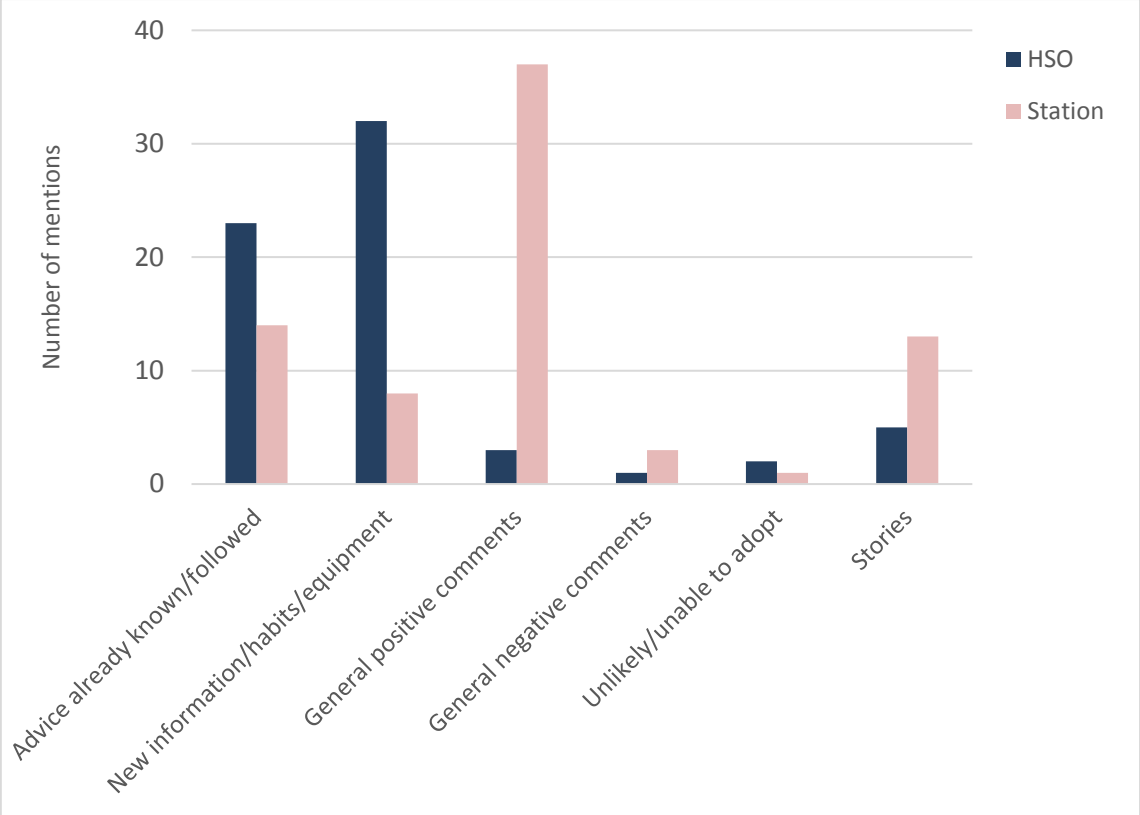


***Figure 2**: Number of customers reasons for following (or not) the advice given during S&W visit.*

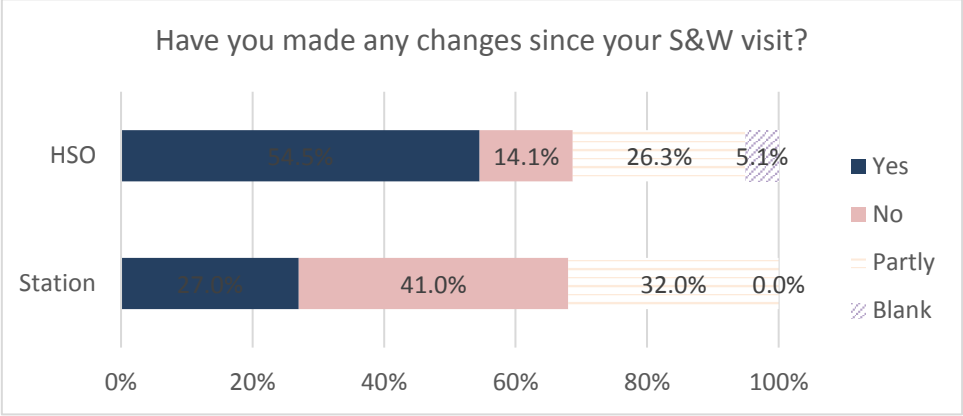
3.1.2 Behaviour change

Customers were asked whether they made changes after the visit. Here, there were some differences between the two sample groups, with a higher proportion of customers saying that they had made no changes as a result of the Station visit (41.0%) compared to the HSO visit (14.1%) (**Figure 3A**). This was reflected in double the proportion of customers saying they had made a change since the HSO visit (54.5%) compared to the station visit (27.0%)[3]. This may be indicative of HSO's visiting the most at risk customers and delivering a more in-depth service than stations (reflected in qualitative feedback from staff and Figure 3B).

The reasons given for not making changes after the visit are grouped in **Figure 3B**, revealing that a large proportion of Station customers were already following the advice and therefore felt they did not need to make changes.

[3] A chi-square test showed that this difference was statistically significant, $X^2(3, N= 137)= 22.81$, $p<.001$

A.



B.

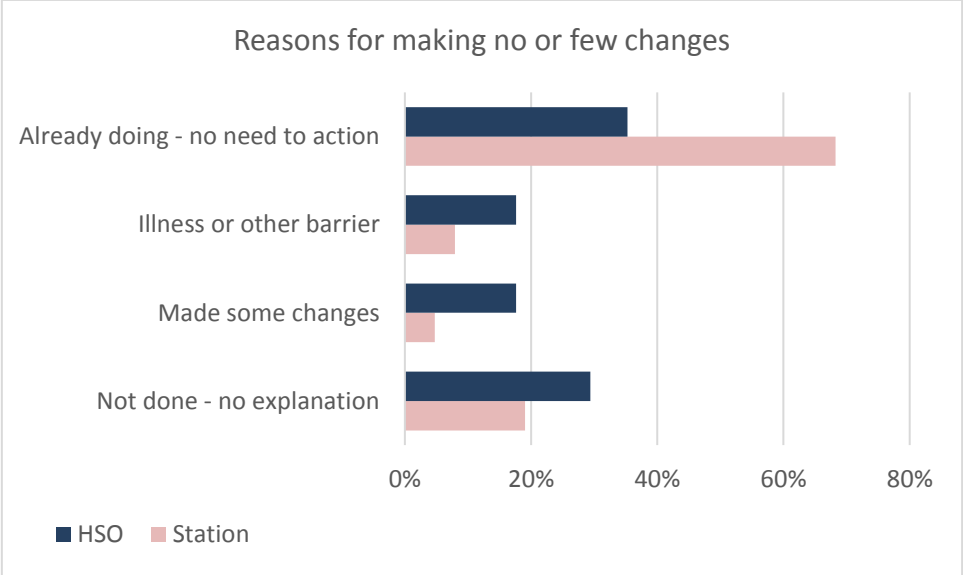


***Figure 3**: Customer responses about changes made after the visit. **A.** Proportion of customers making a change. **B.** Reasons for customers not making a change or only making some changes.*

Customers confirmed they made a variety of changes as a result of the visit, and the profile of change was similar between the two samples. Some differences, which may be expected due to different scope of visits between S&W Officers and stations include more responses relating to smoke alarms and appliances in station visits, but more on smoking and specific advice in S&W Officer sample. The most frequent changes made were to test smoke alarms, keep internal doors closed overnight, and to switch off unused appliances. Some customers responded that they had made changes but didn't elaborate about specifics.

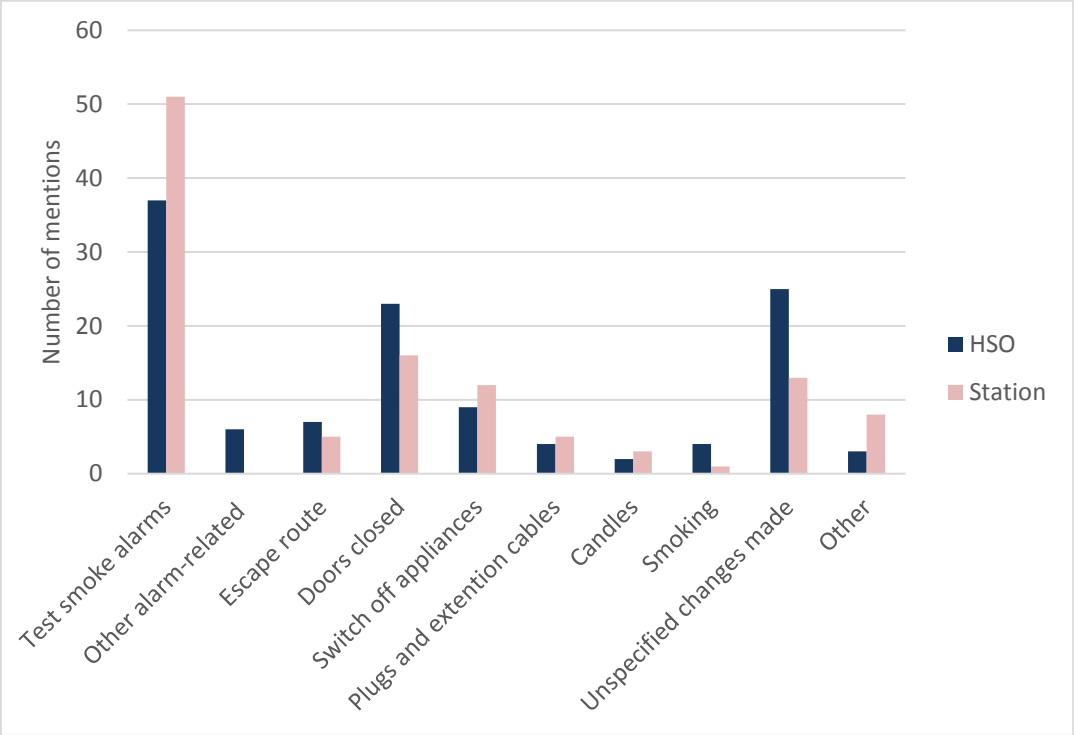


***Figure 4**: Reported changes made by customers in each sample.*

In both samples, almost all customers said they were still following the advice; two customers in the S&W officer sample said they were no longer following the advice, and one Station customer said they only followed the advice for a while.

3.1.3 Impact of visit

Most customers in each sample felt that the visit had raised their awareness of fire risks; 82% of S&W officer customers and 64% of Station customers. The most frequently-given comments for these customers was that the visit generally made them more aware and more alert, they thought about risks more consciously, and it made them stop and think. Where customers said the visit had *not* raised their awareness (that is, no change- not a decrease), the comments generally reflected that they were already very safety conscious and were aware of the risks.

The majority of customers, 74.7% of S&W officer customers and 56% of Station customers, felt that the changes had made their home either ‘a lot’ or ‘a little’ safer (see Table 2 for breakdown). The actions recorded by the S&W officers and Stations were very different. S&W officers delivered a variety of checks and equipment to the customers (e.g. smoke alarms to 56 customers, CO alarms to 13 customers, white goods assessments to 56 customers, and falls assessments to 20 customers), whereas Stations recorded either

smoke alarms (to 33 customers) or no actions. This is not surprising given that stations are only able to fit smoke alarms, and do not carry other equipment with them to visits. Although a lack of recording white goods assessments and falls assessments may reflect a differing focus between S&W officers and Stations on administrative tasks; it may also reflect differing needs of the customers each group visited.

Table 2. *Do you feel that making these changes [this change] has made your home safer?*

	S&W Officer (%)	Station (%)
Yes, a lot	42.4	24
Yes, a little	32.3	32
Don't know	5.1	2
Not at all	5.1	4
No answer	15.2	38

The majority of customers said that they could not think of other organisations that would provide the type of information or advice received during the Safe and Well home visit; 85% of customers visited by S&W officers and 94% of Station customers.

At the start and end of S&W visits a subjective score is recorded, assessing the overall safety of the customer from 0 (lowest) to 10 (safest). The overall change in safety assessment score was the same for both samples, at 1.4[4] . In both groups, the average pre-assessment score was around 4 and lowered to around 2.5 after the visit, suggesting that there is a generally lower risk assessment made within the customers sampled here (e.g. the average is below mid-point to begin with) - see **Table 1** for more detail on this. It is important to note that this is based on a specific sample in which customers received one visit, and the more complex cases were deliberately removed. There was very little difference in the scoring between samples; both demonstrated a small improvement in customer safety rating as a result of the visit.

3.2 Staff experience

3.2.1 Safety messaging

The S&W officers who took part in the focus group, commented that the customers were often already aware of the potential risks and hazards, and were already exhibiting fire-safe behaviours. Nonetheless, the officers commented that the information was well-

[4] Note that pre-assessment scores ranged from 0-8 across the samples, and post-assessment scores ranged from 0-7. Since complex cases were removed from the sample, there were no scores higher than 8 included in the sample, so the 1.4 point change is within the range of 0-8.

received by their customers. One suggestion from firefighters was that some messaging could be tailored to risks associated with a particular season, to ensure they share the most relevant information with customers.

Both officers and firefighters acknowledged that some behaviours are difficult to change, and that one visit is unlikely to be sufficient – it may raise awareness but not necessarily lead to a change in behaviour. S&W officers are able to visit on more than one occasion those customers who are most at risk of a fire which they felt allows them to identify whether any change has been made, and to monitor whether the situation is deteriorating. Sometimes, it takes some time for a suitable level of trust to be built up between customer and officer before advice is followed. Therefore, officers felt that additional visits are required to build a rapport.

Officers were very aware that the level of information shared with each customer should be appropriate to the customer's needs. For example, if a customer is likely to feel overwhelmed by the volume of information, the officers will only share one or two key messages, most pertinent to the risk of fire. They detailed that more information may be recorded, but they make a dynamic assessment of what is likely to stay with the customer and have the greatest impact on their behaviour. Officers also stated that where possible, with the customer's consent, they share information with the customer's carer or family members. This ensures that the customer is supported in making any changes to their behaviour or living environment. Further, feedback from firefighters was that it is useful to explain to customers *why* they are offering particular advice, although this wasn't explicitly linked to behaviour change and so provides a possible opportunity for training.

Both officers and firefighters reported positive and negative views of having firefighters attend non-booked visits with a fire engine. On the one hand, this could lead to additional S&W visits from neighbours who come out to chat to the firefighters, and also helps to demonstrate to customers that the visits are legitimate. On the other hand, they felt it could make customers feel intimidated or embarrassed, in particular firefighters mentioned that some customers refused entry because they were unsure.

3.2.2 Behaviour change

S&W officers felt that overall the home visits were effective in changing customer behaviour, and firefighters felt that most customers were happy to act on the advice they were given. Their perception was that the information they share and actions they carry out make customers think more about their safety. They felt that the information is valued by the customer because it comes from professionals and experts, and they appreciate the tailored advice they receive. Firefighters felt that the advice probably changed customer behaviour, when the customer had the appropriate living conditions and the advice was easy and

feasible for them to implement. The S&W officers identified some behaviours they felt were harder to change than others (**Table 3**).

Table 3: *Behaviours identified by the Safe and Well officers that they feel are harder and easier to change.*

Harder-to-change behaviours	**Reasons**
Testing smoke alarms weekly	National campaigns ask for alarms to be tested monthly. Although manufacturer guidelines state to check weekly, customers rarely read these. Officers find it easier to ask customers to check their alarms regularly / frequently.
Contact the fire service if the smoke alarm does not work	Customers often live with noisy smoke alarms and will only call for help when they're at their wit's end.
Hoarding	A compulsive behaviour. Possible symptom of OCD or autism.
Charging electrical items overnight	Reasons weren't shared, but it may be a lack of awareness about this as a fire hazard, as well as needing to change people's habits
Easier-to-change behaviours	**Reasons**
Closing internal doors at night	Where customers have concerns, there are solutions to be suggested, such as improved bed-time routine or moving animal feed bowls into a room.

The officers felt that some customers do not feel at risk or feel that they are not going to have an incident. In these situations, they explain to the customer what risks they may have, to raise their awareness, and how those risks could be reduced. The officers also identified some differences in the ability to change behaviour between the customer groups (**Table 4**).

Table 4: *Customer groups identified by the Safe and Well officers that they feel would find behaviour change more challenging.*

Customer group	Comments
Most at risk	Officers felt that they may not be reaching all of the highest priority customers, since they are likely the hardest to reach people
Additional welfare concerns	Customers with additional needs, such as addictive behaviours (substance abuse) or mental health issues – most will need more than one visit before they can make any change
Elderly	Older customers who have ingrained habits or find it harder to take on new information find it hard to change.
Smoking	Difficult to change smoking behaviour. Officers can only do the best they can to ensure customers smoke in the safest possible way
Younger customers with multiple needs	Customers who are lone parents, living in overcrowded conditions, or with financial concerns, may have priorities other than fire safety.

Firefighters also commented on the difficulty of changing customer's behaviour if they have been living a certain way for several decades. There were also some challenges identified with visiting older customers who had not pre-booked, such as the difficulty of gaining admittance into some customer's dwellings, and that sometimes these customers are not the most at risk.

4 Discussion

Overall the results suggest that S&W visits are well received by customers, and there is some evidence, albeit tentative, that S&W visits may be an effective way to encourage fire safety behaviours. There are also a number of points that can be taken from these results to learn from going forward, and so a series of recommendations are made at the end of this section.

4.1 Recall of safety information

Customers demonstrated good recall of safety messages, although around half of the customers required a prompt for some or all of the messages. This indicates that visiting customers and sharing safety messages is a good method of widening awareness of risks and how to overcome these, but a single visit is not likely to embed best practice. The

feedback suggests that in some cases S&W visits raise awareness and increase knowledge around fire safety behaviours, but the evidence for sustained behaviour change is only tentative. This suggests that some form of follow-up or reminder might be useful to maintain the safety messages delivered during the S&W visits. Previous research found that many customers thought that TV advertising and follow-up phone calls would be the most appropriate way to do this (Stanford-Beale, 2010).

The recalled messages were brief, and many participants did not elaborate very much on details. Nonetheless answers included testing smoke alarms, closing internal doors, having an escape route which was kept clear, and switching off electricals when not in use. All the recalled safety messages related to things that the customer needed to do to remain safe, rather than simply identifying risks and hazards. However, there is behaviour change research that suggests in many contexts, increased awareness is not enough to maintain the new behaviour (Bada et al., 2019; Smith, 2005; Trieu et al., 2017). Furthermore, there didn't seem to be much variation in the amount of information customers recalled (regardless of time elapsed since the visit). The telephone survey may in itself have acted as a reminder of the relevant information by association with the fire service making fire-related information in memory more salient. This could therefore be a useful behaviour change technique to follow-up and keep fire safety in customers' minds (Sniehotta, Scholz, Scwarzer, et al., 2005). In fact, the researcher who made the telephone calls asked customers, if they were able, to check their smoke alarms during the call, which meant that customers were reminded of the behaviour, and we were able to check that they had a working alarm.

Although almost all customers rated the visits as 'useful' or 'very useful' (similar to Stanford-Beale, 2010), there were some differences between the samples with regards to the way in which customers described the usefulness; most customers visited by S&W officers identifying that they gained *new* information or equipment and identified new habits as a result of the visit. A large proportion of customers also reported that much of the advice shared was already known or followed. Customers visited by Stations made more general positive comments about the usefulness of the visit rather than specifics relating to the messaging. This may be explained by the different methods of contacting the two samples to arrange the visit; those who pre-booked a visit likely expected certain information to be shared, while those who had not pre-booked were generally grateful for the visit and focussed on the positive nature of the experience rather than the content.

4.2 Changes in behaviour

Customers responded that they made a number of changes. The most frequently-given response was that they now tested smoke alarms, closed doors at night, switched off

appliances and made unspecified changes. The reported changes in customer behaviour were similar between the S&W Officers and Station samples, indicating that the messaging and actions were received in a similar way regardless of who was carrying out the visit. This may support the idea above, that differences in perceived usefulness of the information varied by the customer's knowledge and motivation, rather than delivery. This would be useful to explore further since motivation is a key driver of behaviour change.

That being said, it is also well-known that people generally overstate their actions in relation to, for example, owning and testing smoke alarms. In fact research suggests that despite almost 100% self-reported compliance with owning a working smoke alarm, actual figures could be as low as 25%, suggesting that people are not testing their smoke alarms (and therefore not aware that they are not working; Chen, Gielen, & McDonald, 2003). It is therefore important to view these results with caution. It would be useful to follow-up with customers to test their smoke alarms, or to ask them to test them during research interviews. This may highlight whether they really are checked, or whether customers are physically able to check themselves. It would still not answer the question of how regularly this is done, and the easiest solution to this would be to verify with technology (e.g. feedback from the alarm itself about usage).

The biggest difference between the samples was that a larger proportion of the Station sample said that they did **not** make changes after their visit (41% compared with 14%). The vast majority of Station customers (69%) who did not make a change explained that this was due to them already doing the advised behaviour. This is positive from a customer safety point-of-view, but raises questions about the current Station targeting and method of reaching customers. As the Station visits target a particular subset of customers that meet the eligibility criteria, and they are not pre-booked, the results here suggest that this leads to visits being undertaken with customers who may not need a visit. However, the Station S&W visit may have served as a reassurance for these customers, as they agreed to allow the firefighters to carry out the visit, even if it did not lead to a change in their behaviour. Although, as above, it is possible that customers are overstating the behaviours, and may in reality only be enacting selected behaviours.

An important point to note is that although the remembered safety information and subsequent actions were similar between samples, some of the highest-risk customers who were visited by the Safe and Well officers were excluded from this study. It is possible that they remembered advice and the ability or willingness to put this into practice in those customers may be different from the sample included here. For example, customers who are living with dementia, or who remain highest risk after a visit (perhaps due to severe mobility

issues or who have additional mental health issues) are likely to have been given different information, and may have responded to that information in a different way. Furthermore, customers with more complex needs would likely be offered follow-up visits and may be involved in a care plan with partner agencies which may influence the ability and/or likelihood of being able to follow the advice.

This study provides only a snapshot of customers who received a single visit, and therefore, there are likely to be differences between the S&W officer and Station samples unmeasured through this study, driven by customers with more complex needs. This was emphasised in the focus group meetings with staff, who felt that visits were effective in changing behaviour, however there were behaviours and customer groups which were identified as being harder to change, even after a number of visits. Similarly, previous research identified that there is potential that behaviour change occurs in populations that are lower risk, rather than within the groups where the change would have a greater impact on fire safety (Stanford-Beale, 2010). The current S&W process is such that risks are assessed during the visit and prioritised based on greatest fire risk. On some occasions it is not possible to address every concern in one visit and further visits are booked which may include the involvement of other agencies. At any follow-up visits the officer carries out a complete review of all risks to evaluate if anything has changed since the previous visit. It is notable that these additional steps in the process were not highlighted by the staff during focus groups, and so emphasises the need to join up behaviour change potential with current practice as part of the S&W training. A move towards case management, already planned in Kent, may highlight the difference in needs and approaches to behaviour change for customers with complex needs who are less likely to be influenced during a single visit.

4.3 Impact of the visit

The majority of customers felt that the visit had made their home feel safer, supporting the previous KFRS evaluation (Stanford-Beale, 2010). This was also supported by the change in ratings given by both S&W officers and Stations at the beginning and end of the visit. This may be reflected in the fact that customers felt the visit had changed how they thought about fire risk and safety, increasing their awareness and thinking about their behaviours more consciously. There was also evidence that customers felt that the fire service was best placed to offer such advice, as experts. In combination this may suggest that S&W visits provide an opportunity for customers to get tailored advice from experts, which shapes their knowledge to be more focused on fire safety behaviours. Furthermore, being in their own homes provides concrete examples for staff to link to, making the advice more relevant to the customers. Research on learning and memory shows that learning new

information in the same context in which it is remembered or later needed is linked to better recall (Seddon, 2019). Furthermore, there is evidence from falls prevention research that multiple home visits are most effective in reducing falls, especially for those with complex or multiple issues (Centre for Reviews and Dissemination at York University; NICE, 2013). There is clear overlap with the types of customers eligible for S&W visits, and therefore this approach may transfer to S&W effectiveness. This is something that could be explored further, and integrated into training for those delivering S&W visits.

Additionally, customers indicated that there were no other organisations they could think of who would offer the advice and support given by the Fire Service. This highlights the importance of running interventions such as S&W visits, and making safety information available to customers, as customers are not necessarily aware of other places where this information would be available. This was supported by staff perceptions that the information that was shared with customers was valued because it came from experts.

4.4 Limitations and Future research

This evaluaton attempts to address a gap in existing research that assumes changes in the frequency of Accidental Dwelling Fires (ADFs) is causally linked to delivery of S&W visits, without understanding whether the visit impacted behaviour. This means that the change in ADFs could be due to a number of other factors or changes within households. However, the study is not without limitations that could be addressed in future evaluation studies.

A potential limitation with data collected by a FRS for their own evaluation purposes is the potential to increase socially desirable answers or demand characteristics, where the participant aims to respond in a way that they think the researcher wants. It may be difficult to overcome this, but certainly paper-based surveys where the FRS logo is present may heighten this effect, and so by using telephone interviews where the researcher was able to explain to the customer the purpose of the call we aimed to have reduced this as much as possible. We were able to reach 200 S&W customers, which is a large sample for interview research, but also represents only a tiny fraction of the overall number of customers who have been visited. For this exploratory research it was deemed more appropriate to gain in-depth attitude research to inform future research and to allow the service to better understand ways to improve the S&W process to integrate behaviour change. Once changes have been implemented it would be useful to follow-up and re-assess the impact of S&W visits. Furthermore, training could support staff delivering S&W visits to gather useful data to continually feed into evaluation and improve the service.

Additionally the current research looked at a single visit, and only communicated with customers at a single time point. It would therefore be useful for future research to consider the best way to gather feedback from customers who may have more complex situations and rely on others to support or carry out the safety behaviours on their behalf. This would help to identify who best to target in ensuring that those customers remain as safe as possible and at reduced risk of experiencing an ADF. Furthermore, longitudinal study would allow the assessment of any long-term changes to behaviour, or to explore for how long customers are enacting the information learned during their S&W visit. This would also allow the investigation of whether multiple and follow-up visits change behaviour more effectively or change the behaviour of the higher risk customers who display multiple risky behaviours.

Future research could be carried out to determine whether improved targeting of Safe & Well customers, based on a model of risk that combines socio-demographic data with real incident data results in a greater level of impact in terms of customer behaviour change.

4.5 Conclusions and Recommendations

This study has focussed on the impact of S&W visits in terms of changing customer behaviour, and the use of information delivered by S&W Officers and station staff. The evaluation was designed to measure whether the visits increase awareness of fire safety best practice, and whether that translated into more fire safe behaviours being enacted. Overall, customers reported a good recall of safety messages, with prompting at times, and most reported carrying out the recommended safety behaviours. Based on the findings gathered from this research, and learning throughout the process a number of recommendations are made to support fire and rescue services to implement effective behaviour change into business as usual for S&W delivery.

1. **Integrating behaviour change into S&W visit.** There could be some overlap in the methodology used to deliver S&W visits with behaviour change counselling, a technique developed from motivational interviewing to support long-term behaviour change which has been found effective in medical (Butler et al., 2013; Spollen et al., 2010), road safety (Johnston, et al., 2002), and health related (Harland et al., 1999; Resnicow et al., 2001) contexts. It would therefore be useful to explore training in behaviour change counselling for delivery teams to maximise the potential benefit to change fire safety behaviour, and to enhance conversations around behaviour change to feedback on the process and likelihood of change to keep track over time. This would be especially useful for customers who require more than one visit or show multiple risk behaviours that may need addressing over time.

2. **Training** on behaviour change and research would also benefit a more joined up approach to working. Since FRS staff are visiting customers and witnessing their behaviours, it would be useful for them to gather information to feed into continuous evaluation. For example, by training the intervention delivery teams in behaviour change processes, they could include in their discussions with customers questions to gather insight on what works and how, which can then be fed into future practice. Furthermore, the results from this study showed that differences in perceived usefulness of the information varied by the customer's knowledge and motivation, rather than delivery. Since motivation is a key driver of behaviour change it is important that those delivering the intervention can spot signs of someone lacking motivation to change and be able to tailor the information to counter this.
3. **Consistency in recording S&W visit.** The results highlight the importance of training and guidance to ensure records of visits are accurate and that any assessment of risk is consistent across teams.
4. **Customers with complex needs.** Although the results from this study suggest that many customers report following the advice from a S&W visit, there are a subset of customers with more complex needs who were not included in this study. It is therefore recommended to seek out a way to discuss fire safety behaviours with these customers and/or their carers to explore whether the S&W visit advice is also being followed for those who require support or input from other services. It may be that additional guidance needs to be given to those in support roles rather than the customer themselves, which has implications for practice.
5. **Targeting the most 'at risk' customers.** Both the customer and staff feedback suggested that we may be reaching customers who are already carrying out a number of fire-safe behaviours/actions in their homes. Therefore, the targeting of customers who are most likely to exhibit fire risks, and be the most in need to guidance, advice, and support could be improved. It would be useful to consider an alternative approach to assessing baseline measures of fire risk to aid the assessment of improvement and behaviour change. For example, it may be useful to encourage self-assessment for customers to identify their current behaviours in combination with known socio-demographic and incident data. It is also interesting that many customers felt that they already knew or followed fire safety practices, and as such it may be useful to look at differences between customers who pre-booked a visit (i.e. self-referred) vs those who did not (i.e. not expecting a visit) as to whether the information is used differently, perhaps whether one group has identified, for themselves, a potential risk.

6. **Long term/ongoing evaluation.** The current evaluation looked only at a snapshot of experiences at a single time point, and following one visit. Whilst this gives us a good picture of the current landscape, it does not allow us to track any changes or the impact of adjustments to practice on the outcomes (customer behaviours). Therefore, it is recommended that evaluation is embedded into S&W delivery to enable a constant review of behaviours and behaviour change messaging/techniques that are or are not effective in different contexts and for different customer groups.
7. **Prompting and following up.** Half of the customers in the current sample required a prompt to remember the information and advice from their S&W visit. This suggests that some form of reminder or follow-up to reiterate advice would be useful. This would also provide an opportunity to re-check customer behaviour. For example, it is recommended that during a follow-up visit or phone call a customer could be asked about their fire safety behaviours which benefits evaluation, whilst also acting as a prompt for the guidance. Reminders could be sent by text or email, but in order to assess the impact of the information/reminder, it would still be necessary to speak to the customers themselves.
8. **Asking customers about their behaviour.** It is well acknowledged in behaviour change and fire risk research that many self-reported behaviours are overstated. Typically only a small proportion of people who claim to have working smoke alarms actually have working alarms that they have tested. Part of this may be due to the way that people are asked to report this behaviour. For example, the 'correct' answer is to say that you regularly check the alarm, so just asking for a yes/no response is not effective. It would be recommended to ask in such a way that attempts to overcome this problem, such as 'when was the last time you checked your alarm?' This could also tie in with the above recommendation to follow-up with customers after a visit. During the follow-up customers could be asked to test their alarm or enact a behaviour to ensure the advice is followed. This has the double benefit of reducing the socially desirable responding, and checking that equipment is safe and working.

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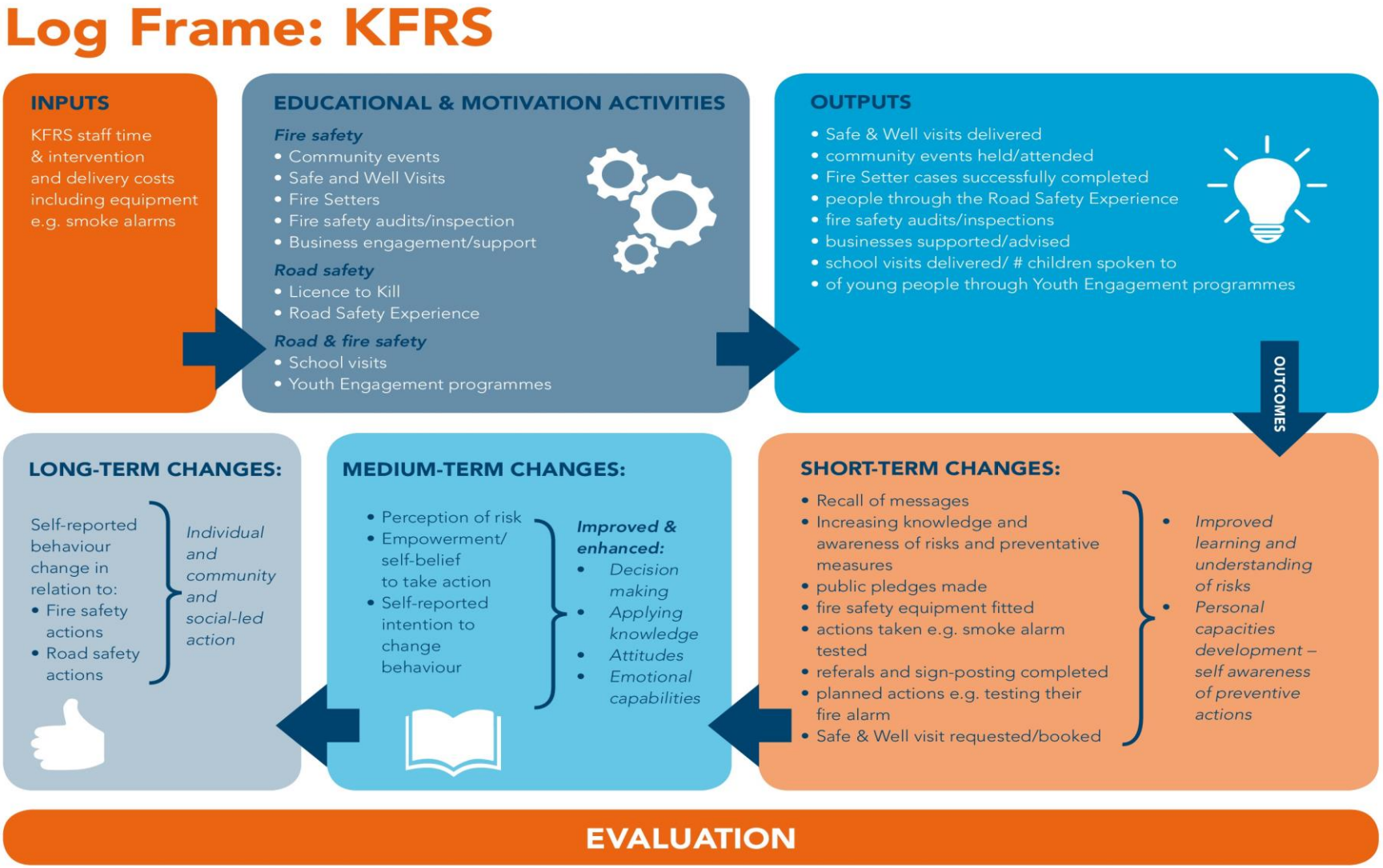
6 Appendices

6.1 NSMC Logic model



6.2 Key customer survey questions

- Can you tell me about any advice you were given during the visit?
- Was this advice useful?
- Based on that advice, can you tell me about any changes you agreed to make after your Safe and Well home visit?
- Did you make those changes after the visit?
- Do you feel that making these changes has made your home safer?
- Are you still following the advice?
- Do you feel your awareness of fire risks has changed as a result of your Safe and Well visit?
- Overall, were you satisfied with the service you received during the Safe and Well visit?
- Would you recommend a Safe and Well visit to others including friends and family?

6.3 Key focus group questions

- Do you think that customers change their behaviour based on Safe and Well home visits?
- What works well?
- What could we do differently to encourage behaviour change?
- Are there any noticeable differences between customer groups regarding the likelihood of following advice?