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Evaluation of scenario-based conflict management training

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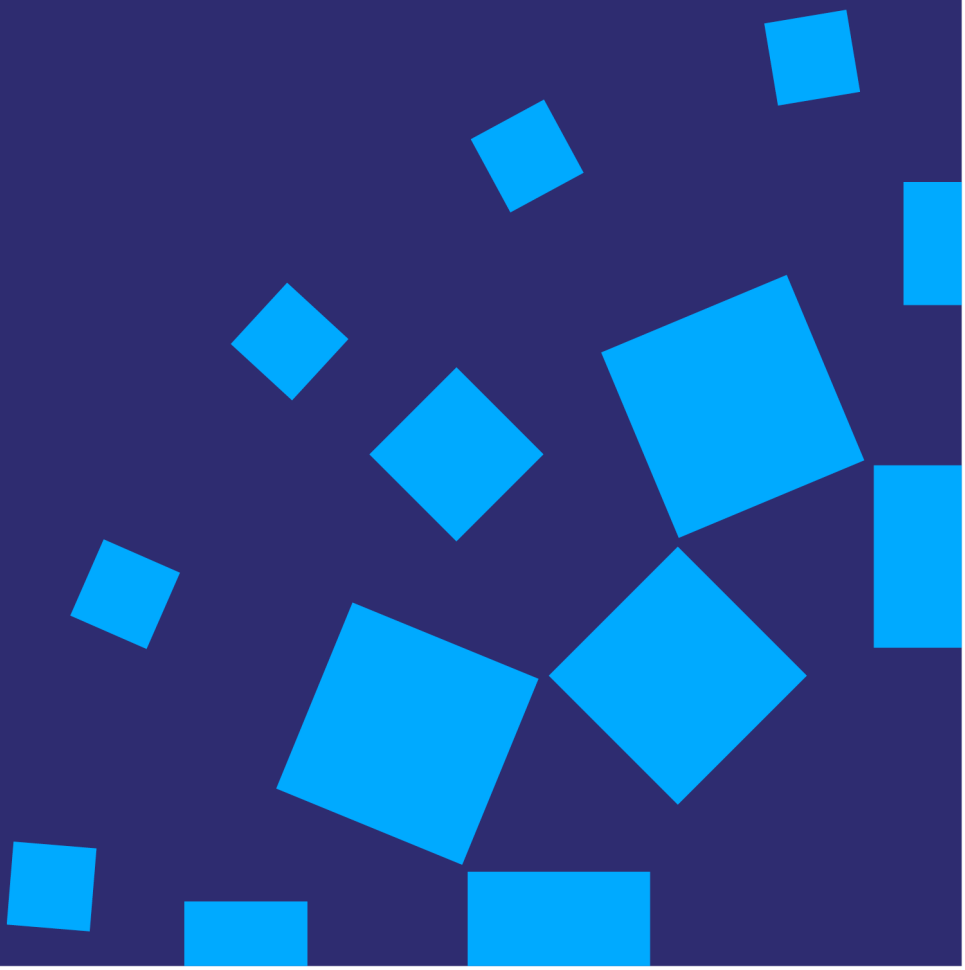

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Executive summary

A new two-day scenario-based public and personal safety training refresher course was delivered to over 2,000 officers in Avon and Somerset Police as a pilot in place of an old model of training based on repetitive exercises. After training there were significant reductions in

- the overall use-of-force
- officers going ‘hands-on’
- the number of people injured as result of officers having used force

Officers reported being significantly more confident in using almost all use-of-force tactics after training. Injuries to officers during use-of-force incidents did not increase. Officers were also significantly and substantially more satisfied with the new course than they were with previous safety training. The perceived likelihood of being assaulted and worry about being assaulted did not change significantly. Overall, this pattern of results suggests the new scenario-based refresher course has been effective in reducing force and improving public safety but without compromising officer safety.

Background

The Angiolini Review (2017) and the Officer and Staff Safety Review (2020) underlined the serious risk that use-of-force incidents can pose to public and police safety. In response, the College of Policing (the College) developed a new national curriculum for public and personal safety training (PPST) to replace forces’ own arrangements for safety training.

New curriculum

One element of the new curriculum was an annual, two-day refresher course for in-service officers. The curriculum for this course was designed to maintain and further develop the conflict management skills they were first taught during initial recruit training. It covered de-escalation (including verbal and non-verbal communication), physical restraint, use of personal protection equipment (like baton and incapacitant spray) and multi-officer tactics.

Unlike the old model of safety training that expected officers to develop ‘muscle memory’ by performing repetitive exercises in an artificial setting, the new curriculum focused exclusively on scenario-based and reflective learning. Officers were expected to practise and refine their skills by taking part in realistic role-plays and receiving personalised feedback in debriefing sessions after every scenario.

Refresher course pilot

The College delivered train-the-trainer events to Avon and Somerset Police training staff, who then developed a PPST refresher course that was tailored to local need and suitable for the force’s training facilities. Avon and Somerset Police piloted this refresher course between September 2021 and August 2022. At the end of the pilot, a total of 2,061 officers had received training.

Evaluation methods

The College carried out an impact evaluation to test effectiveness of the training, and a process evaluation to understand how the training had been implemented.

Impact evaluation

The impact evaluation aimed to find out whether the PPST refresher course had been effective in reducing officers’ use-of-force and improved officer confidence, attitudes and anticipated behaviour. The impact evaluation was based on the analysis of both use of force data and three surveys. The three surveys were issued to officers immediately before, immediately after and three months after the training.

The College approached the pilot as a quasi-experiment. Ordinarily, such an approach would involve comparing changes in outcomes for a fixed number of officers in a treatment group (who would be trained) with those for a fixed number of officers in a comparison group (who would not be trained), before and after the training was delivered to treatment group officers.

A variation on this general approach had to be used in Avon and Somerset because all officers were to have received training by the end of the pilot period. The evaluation used an innovative ‘stepped-wedge’ design that took advantage of the fact that the refresher course could only be delivered, incrementally, to small cohorts of officers over a 12-month period. The numbers of officers in the treatment and

comparison groups were, therefore, not fixed as is usually the case with traditional quasi-experiments. Instead, the number in the treatment group gradually went up every week, while the number in the comparison group went down, as new officers were trained.

The stepped-wedge design meant that outcomes for the treatment and comparison groups were compared every single week of the evaluation period. The stepped-wedge analysis explored whether a police officer who had received the training used force in each week after they had been trained. This was compared to both:

- that officer's own use of force prior to them receiving the training
- the use of force in that same week by other officers, who were yet to receive the training

This allowed the effects of the training to be isolated both from individual officer characteristics and from seasonal variations in the use of force. Of the 2,061 officers who were trained, 1,843 were eligible for inclusion in the analysis.

Process evaluation

The process evaluation was designed to understand officers' perceptions of the PPST refresher course, whether the training was delivered as intended and identify learning for implementation. The process evaluation was based on analysis of the officer surveys, interviews with nine training staff and 10 officers who attended the course, and observations of five training sessions.

Impact evaluation findings

Use of force

The results showed the refresher course had positive effects on outcomes. There were statistically significant reductions in both the proportion of officers who used force and the number of recorded use-of-force incidents. These reductions were mainly explained by officers being less likely to go 'hands-on' after training. There was no evidence that officers had disengaged from other policing activities. While there was a similar-sized reduction in the use of force on black people compared with on white people, the reduction for black people was not statistically significant, most likely because of small numbers. The proportion of officers who used force in

any given week reduced after they had been trained. A total of 11% of officers used force at least once in any given week during the pre-training period, compared to 10% of officers in the follow-up period, a statistically significant reduction of 9%.

- The number of use-of-force incidents also fell. On average, officers would have used force six times in the year before they were trained and five times in the year afterwards, a statistically significant reduction of one incident for every officer per year.
- These modest statistical changes translate into large 'real-world' reductions. Extrapolating the results, Avon and Somerset would have recorded around 1,200 fewer use-of-force incidents over a full 12 months (a 11% reduction).
- The overall reductions in the use of force were largely explained by officers being less likely to go 'hands-on' after training. Their use of physical force (such as restraint and unarmed tactics) reduced by 14% over the pilot period, while other uses of force remained unchanged.
- No consistent pattern of change was identified in number of calls for service received, the numbers of searches conducted, or the number of arrests carried out by officers during the pilot period. This suggests the training did not have any unintended consequences and had not inadvertently resulted in officers disengaging from other policing activities.
- While the training was not specifically designed to reduce racial disparities, this was tested due to the evidence of disproportionality in the use of force at a national level. While the numbers involved were small, the use of force on black people appeared to reduce by a similar amount as it did on white people (7% and 11% respectively). The reduction for white people was statistically significant, while the reduction for black people was not, most likely because of the small number of recorded use-of-force incidents involving black people.

Police and public safety

The results suggested the refresher course had been effective in improving public safety but without compromising officer safety. There was a statistically significant reduction in the number of people injured as a result of the police having used force. While there was a similar-sized reduction in the number of police officers injured

during use-of-force incidents, the reduction for police officers was not statistically significant, most likely because of small numbers.

- The likelihood that a member of the public would be injured during a use-of-force incident fell from 0.6% in any given week before training to 0.4% afterwards.
- Extrapolating this result, there would have been around 190 fewer people injured during use-of-force incidents in Avon and Somerset over 12 months. However, this result is less certain because injuries to the public are rare events.
- The likelihood that a police officer would be injured during a use-of-force incident appeared to reduce by a similar proportion (about a third) as it did for members of the public, falling from 0.3% in any given week before training to 0.2% afterwards. The reduction for members of the public was statistically significant, while the reduction for police officers was not, most likely because of the small number of incidents involving injury to a police officer recorded.

Officer confidence in managing conflict

Officers reported being significantly more confident in using almost all use-of-force tactics after training, a result that was sustained over time.

- Officer confidence in using almost all use-of-force tactics significantly increased immediately after training. This improved level of confidence was sustained at the three-month follow-up.
- Following training, there was no change in how likely officers perceived they were to be assaulted or how much they feared being assaulted on duty.

Process evaluation findings

Officer perceptions of training

Officers were much more satisfied with the new style of training and perceived it to be of high quality.

- When asked to compare with previous training, officer satisfaction was significantly and substantially higher after the new curriculum was introduced (with reference to the refresher course) compared to satisfaction before (with reference to old-style training).

- The perceived quality of safety training among officers also significantly increased following the introduction of the new curriculum.
- Interviewed shortly after training, officers tended to say they had not had sufficient opportunity to put their learning into practice. For the few who said they had, they felt the refresher course had helped them to assess situations for risk and be prepared for physical conflict.

Training development and delivery

Training staff felt the training achieved its aims and objectives, but that they would have benefitted from more structured support and trainer skills development throughout the implementation process.

- There was collective agreement among training staff on the broad aims of the training, although there was some disagreement about the initial design of the course and what the learning objectives were.
- Training staff interviewed felt their skills needed development to suit the new style of training. This need was felt more keenly by trainers who were police staff rather than those who were police officers.
- Training staff interviewed in Avon and Somerset felt more structured support given further in advance – including documentation and supervision – would have made the process of delivering the refresher course a lot smoother.
- Not all trainers interviewed felt the train-the-trainer sessions provided by the College were sufficient to develop the skills they felt were needed to deliver the course.

Implementation issues

Training staff and officers who attended the training agreed that 12 hours was sufficient time in which to complete the training and that ratios of one trainer for every six learners contributed to a safe and well-supported learning environment.

- Injuries to learners, and the fear of injury, were seen as some of the biggest implementation risks. Avon and Somerset did not have baseline statistics on injuries during training prior to implementing the refresher course but has since

introduced an exercise conducting officer (ECO), whose role is to monitor and prevent risky situations during training.

- Training staff and officers interviewed agreed that the ratio of one trainer for every six learners had benefits over larger group sizes in terms of participant safety and involvement.
- They also perceived the duration of the course (12 hours across two days) was sufficient to cover the training material.
- Training staff interviewed reported that certain groups of officers were reluctant to engage in the training, particularly those from plain-clothes teams.
- Respondents interviewed for the evaluation recommended several changes to the refresher course. First among these was how the course was situated alongside other pieces of refresher training, such as Taser and first aid. Respondents interviewed expressed a desire that the scenario-based training also incorporated elements from those other training programmes.

Conclusion and implications

Taken together, the impact and process evaluations of the refresher course pilot in Avon and Somerset paint a very promising picture for the new curriculum for PPST.

The reductions in overall use-of-force and injuries to the public – and lack of any increase in officer injuries on duty – suggest the refresher course had been effective. This pattern of results provides reassurance that scenario-based and reflective learning may be better than traditional methods of delivering safety training at preparing officers for their duties. The evaluation suggests the refresher course had:

- increased officer confidence to use almost all use-of-force tactics
- enabled them to manage confrontation effectively without needing to use force
- shown them how to use force in safer ways when it was necessary for them to use it

The training received overwhelmingly positive feedback from officers surveyed or interviewed, even if most of those interviewed had not had the chance to put their learning into practice when they were interviewed.

When encouraging or requiring forces to pilot, develop or use innovative training methods and practices, the College should:

- consider how these translate into a policing environment
- provide adequate support to forces during the transition to the new approach
- be aware of the resourcing implications for the force
- help ensure training staff have the skills to deliver the training

Finally, the relationships between the PPST refresher course and other training, such as for Taser and first aid, needs to be more clearly articulated so that officer learning is not compartmentalised and continues to be reinforced.

Acknowledgements

The authors would like to thank all 2,061 officers who participated in the training pilot. Those who took time out from their ordinary duties to help with the evaluation by completing one of the online surveys or being interviewed also deserve extra thanks. Special mention should also go to the officers and staff of Avon and Somerset's training team who helped design and deliver the training to their force – they were very welcoming of the pilot evaluation and all the questions that went with it.

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Contents

1. Introduction

Overview of training experiment

This report summarises the implementation and evaluation of scenario-based conflict management training. It was introduced as a public and personal safety training (PPST) refresher course for police officers. The intended focus of the course was to improve officer safety skills to help keep police officers and members of the public safe. The pilot training was developed by the College of Policing (the College) in partnership with Avon and Somerset Police and Professor Chris Cushion from Loughborough University. It was implemented as a stepped-wedge quasi-experiment by Avon and Somerset and involved 2,061 officers being trained incrementally between September 2021 and August 2022.

Research was carried out by the College to examine whether the pilot training had had an impact on officer behaviour, confidence and attitudes (an impact evaluation), and to explore the quality and nature of implementation (a process evaluation). The purpose of the pilot and the related research was to help ensure that the new national PPST curriculum, to be implemented in 2023/24 delivered the expected outcomes for officers and the public.

Background to training pilot

The Angiolini Review (2017) and Officer and Staff Safety Review (NPCC, 2020) underlined the serious risk use-of-force incidents can pose to public and police safety. The Angiolini Review (2017) examined deaths in police custody and found that restraint techniques were a significant, contributory factor and, despite this, there was no consistency of training police officers in restraint techniques across England and Wales. The review recommended mandatory and accredited national training for police. The Officer and Staff Safety Review (NPCC, 2020) was commissioned in response to concerns about rising assaults and increased violence against police officers. It found that a notable proportion of officers were not satisfied with the safety training they received and at risk of repeat victimisation. In response to these findings, the College developed a new national curriculum for PPST to replace forces' current personal safety training arrangements.

The curriculum, its related lesson plans, learning materials and trainer guides have been co-designed by the College, practitioners and academics. The new approach seeks to minimise the risks to public and police safety during use-of-force incidents, and address concerns expressed in reviews and recent research about the consistency and quality of current personal safety training delivery. The new curriculum aims to ensures PPST is delivered more consistently and focuses on the most effective skills officers need to manage high-risk situations.

The curriculum forms the basis of a 12-hour, two-day training course. During these days, officers are expected to learn by participating in a series of realistic role-play scenarios, which simulate situations they are likely to deal with on a regular basis. Each scenario has different levels of complexity that are randomised for every time an officer takes part, to help develop their skills. Every scenario is followed by a debrief to help officers improve and support their continuing professional development (CPD).

Evaluating police PPST

Provisional versions of the learning standards and training materials were prepared by the College for piloting in a police force during the autumn of 2021. It was agreed that the pilot training was to be implemented as a stepped-wedge quasi-experiment – this involves all study participants starting in the control group and moving to the treatment group once they have completed the new training. While the final version of the new PPST curriculum is to include all ranks, the training pilot focused on frontline police officers who routinely encounter the public and thus may have to use force.

The College conducted two related pieces of research to understand whether the pilot training had ‘worked’ and (if so) how – an impact evaluation (carried out in collaboration with King’s College London) and a process evaluation. Emerging findings from these evaluations informed the development of the final versions of learning standards and related training materials for rollout across England and Wales. Use of the research in this way sought to ensure that the College’s approach to designing and implementing national training was evidence-based and considered the learning from the pilot.

Evidence base

Police training and behaviour change

There is a substantial body of evidence from outside policing that work-based training is effective and can have measurable, positive impacts on outcomes that include behavioural measures (for example, Arthur and others, 2003; Salas and others, 2012; Taylor and others, 2005). However, systematic reviews have highlighted a general lack of literature on the impacts of police training, whether initial training for new recruits (Belur and others, 2019) or continuous development for in-service officers (Huey, 2018).

A College rapid evidence assessment (REA) (Wheller and Morris, 2010) identified promising evidence from healthcare that simulation-based training may have some advantage over more traditional classroom methods. Simulation training was seen to deliver additional gains in knowledge, critical thinking ability, satisfaction and confidence. Brief opportunities for additional training built into a professional's working day (such as training integrated into their routine practice) was also found to be more likely to change behaviour, compared with traditional classroom training (Wheller and Morris 2010). A more recent College REA (Critchfield and others, unpublished) found good evidence to suggest that experiential methods such as scenarios or simulations, appeared to be effective at changing behaviour in assessment conditions and the workplace. They found experiential methods were particularly effective when participants were given the opportunity to practise in a simulated environment before being evaluated in a related assessment. Combinations of experiential and instructor-led training also appeared to be effective for similar reasons. Similarly, Salas and others (2012) suggest that demonstration, practice and feedback are critical components of training by allowing learners to make errors and have them corrected, encouraging self-reflection.

Critchfield and others' (unpublished) review showed that police training currently relies on only a few traditional teaching and learning methods. A large proportion of the studies included in the REA only explored instructor-led training, which was also found to be effective at changing behaviour. But this does not mean it is the most effective training type used in, or available to, policing.

There are positive examples and good evidence from training evaluations on other topics that also adhere to the recommended training principles. First, a single site randomised controlled trial (RCT) tested the impact of training on the perceived quality of interactions between Greater Manchester Police officers and crime victims (Wheller and others, 2013). The three-day training package used role-plays and personalised feedback alongside traditional classroom methods. The trial showed the training had positive effects on officer attitudes, officer behaviours in realistic post-training role-plays, and victim satisfaction. Second, a multi-force stop and search training RCT (Quinton and Packham, 2016) found that a one-day classroom training session had small, positive effects on officers' knowledge, attitudes and anticipated behaviours immediately after the training was delivered, with some effects sustained at a three-month follow-up. However, no effects were found on recorded stop and search practices and substantial variation was observed in the training delivered by the six pilot forces.

Use of force context

From 1 April 2021 to 31 March 2022, Home Office statistics showed 608,164 use-of-force incidents were recorded by police forces in England and Wales (see **Police use of force statistics, England and Wales: April 2021 to March 2022**, including full definitions for the recording terminology). According to the Home Office data, 'use of force' is defined as a situation in which a police officer uses any tactic that involves either:

- contact with a member of the public (including compliant handcuffing and limb restraints)
- the drawing or aiming of a piece of police equipment (such as a baton, irritant spray, Taser or firearm)

No injury needs to be caused for a use of force to be recorded. Tactical communications or verbal threats are not considered a use of force. One 'use-of-force incident' refers to 'one officer's use of force involving one person'. Different types of force may have been used in one incident.

Of those 608,164 use-of-force incidents, 19,758 (3%) of incidents involved the officer sustaining an injury and 29,148 (5%) involved the person subjected to force being

injured as a result. Injuries are determined by the reporting officer in three broad categories: severe injury (includes fractures, deep cuts or lacerations, any injury damaging an internal organ or impairing any bodily function, any injury requiring admission to hospital), minor injury (includes anything outside of severe or that requires simple first aid at the scene) or no injury. Recent analysis of police use-of-force data (Quinton and others, 2020) found the use of unarmed force by police was associated with increased risk of injury to, and hospitalisation of, the person subjected to force but also with increased risk to officers of being assaulted or injured (relative to the use of handcuffs). In recognition of the inherent dangers with restraint, the Angiolini Review (2017) recommended mandatory police training on restraint and greater consistency in the use of force.

Home Office (2023a) statistics also showed 40,330 assaults on police in England and Wales (including British Transport Police) in the year ending March 2023, a 2.2% decrease from the year ending March 2022 (Home Office, 2022b). This is the first decrease in recorded assaults against police offences measured since the year ending March 2015. The number of recorded assaults against police offences increased steadily between March 2015 and March 2022, including in the years affected by the COVID-19 pandemic and its associated lockdowns. The findings from the Officer and Staff Safety Review (2020) suggested that only around two-thirds of assaults on police were recorded. Over 90% of officers responding to a national survey (Clark-Darby and Quinton, 2020) alongside the Officer and Staff Safety Review felt assaults had ‘gone up’ in recent years, with two-thirds saying it was ‘likely’ they would be assaulted in the next 12 months.

Training to improve police and public safety

Police safety training has been recommended for all officers below the rank of superintendent since its inception in the mid-1990s (NPCC, 2020). In general terms, police safety training is equipment-based, with an emphasis on batons, incapacitant sprays and handcuffs. But officers also receive other modules of training on unarmed skills, de-escalation techniques and the medical and legal implications of using force.

The earliest reviews of police safety training (for example, Her Majesty’s Inspectorate of Constabulary, 2007) recommended a minimum training time of 12 hours, that training be delivered annually at a minimum and that it needs to be

evaluated for effectiveness and assured for quality. On its creation, the College did not adopt the minimum 12-hours guidance, instead focusing on ‘learning outcomes’, the unintended consequence being an erosion of the contact time students had. The Officer and Staff Safety Review (NPCC, 2020) found that the available self-defence, arrest and restraint (SDAR) group records suggested safety training across England and Wales included unrelated activities such as fitness testing and first aid. It found training delivery was both inconsistent and sporadic, with a range from five hours a year of refresher training in some forces (such as Norfolk and Suffolk) up to 16 hours a year in others (such as Cheshire).

Observational research and experiments in current police safety training in England and Wales have criticised it for:

- encouraging pre-emptive use of force with ambiguous guidelines (Buttle, 2007)
- not suitably preparing officers for stressful conflict situations (Renden and others, 2015)
- being based on ‘traditional’, ‘militaristic’ models of training rooted in obsolete and counter-productive practices (Cushion, 2022)
- being disjointed or unrealistic, disadvantaging female officers and with little ‘time on task’ (Cushion, 2020)

Cushion’s (2020) ‘time on task’ observations showed that officers spent over half of their training time passively observing or listening. He speculated that officers might be less able to put their training into practice in real-life situations as a result. Recent survey research as part of the Officer and Staff Safety Review (2020) showed that around one-third of officers were not satisfied with the safety training they had received.

Other forms of training have proved effective at reducing police use of force. An REA by the College on conflict management considered international evidence, drawn from a range of sectors, on the effectiveness of interventions in minimising the need to use force in conflict situations (Dryer-Beers and others, 2020; see also, Giacomantonio and others, 2019). It found that scenario-based conflict management training appeared to be the most effective intervention by increasing participants’ knowledge and confidence in dealing with aggression, as well as improving adjacent behaviours such as emotional control, how to remain calm, interpersonal

communication skills and building rapport or empathy. However, no conclusive link was found between the training and real-world behaviour, such as a reduction in assaults or use of force by police.

Similarly, there is growing evidence that police training in procedural justice can have a positive impact on officer attitudes and behaviour, and on public perceptions of policing (Weisburd and others, 2022). Studies have started to explore the use of procedural justice training to reduce use of force, mainly focused on reducing the use of lethal force by police in the United States. Wood and others (2020) found that a one-day procedural justice training course delivered by the Chicago Police Department training academy was sufficient to reduce use of force by police and reduce complaints against the police. However, an issue in their analysis caused uncertainty about the magnitude of the observed effect (Wood and others, 2021). McLean and others (2020, see also Wolfe and others, 2020) evaluated the effects of a multi-faceted social interaction training programme in two police forces in the US. This training was delivered by a private provider during rollcalls and other on-duty hours to avoid the need for traditional academy training. The analysis found that officers who participated prioritised procedurally fair communication with the public and deprioritised physical control during hypothetical police-public encounters compared to officers who did not participate in the training. While the findings of the study demonstrated support for social interaction training for police, they highlighted that the training was complex to schedule, reliant on a broad spectrum of training staff and its extended duration led to issues of participant fatigue and training fidelity.

Engel and others (2022) detailed the implementation of a comprehensive training programme, the Police Executive Research Forum's Integrating Communications, Assessment and Tactics (ICAT) programme. This programme instructed officers from the Louisville Metropolitan Police Department (LMPD) in both de-escalation tactics and critical thinking skills to help them manage police-public encounters with the potential for conflict. Their evaluation also used a stepped-wedge evaluation design based on official police reports, in this case as an RCT, to assess the frequency of police use of force before and after training. This RCT was conducted alongside panel surveys of both frontline officers and their supervisors to assess attitudes, confidence and competence.

Engel and others (2022) found that the ICAT de-escalation training delivered in the LMPD had its intended effect – not only was the training well received but it also changed officers' attitudes towards use of force, with officers strongly supporting the notion that force should only be used as a last resort. The observed impact on officer behaviour was also clear, with statistically significant decreases in reported monthly uses of force by between 16% and 52%, dependent on the division in question. Engel and others (2022) felt their results demonstrated the importance of comprehensive de-escalation training being reinforced through policy, supervision and established managerial accountability.

Structure of the report

Chapter 2 outlines the design and delivery of the pilot training and briefly describes how the pilot was implemented as a stepped-wedge quasi-experiment. Chapter 3 provides an overview of the aims of the evaluation and the research methods used. Chapter 4 summarises the results of the impact evaluation, where Chapter 5 described the results of the process evaluation. The final chapter seeks to bring the research results together, draw out their main conclusions and discuss the wider implications of the work.

2. Implementation

The new curriculum was co-designed by the College, academics and a subject matter expert group. The design of the refresher course for the new curriculum was focused on a small number of common conflict management scenarios alongside a scale of resistance, which could be used in combination with any scenario. The College approached the pilot of the new curriculum refresher course as a quasi-experiment, using a variation known as a 'stepped-wedge' design. This design ensured all eligible officers in Avon and Somerset could receive the new training but also be divided into suitable treatment and comparison groups. Avon and Somerset Police implemented the new curriculum from 1 September 2021 and the pilot ran for 12 months until 31 August 2022, with 2,061 officers attending and completing the training.

Designing the pilot training

The new curriculum was innovative in terms of training delivery and directive in terms of training content. It represented a radical change, as safety training had traditionally used repetitive exercises of the physical techniques preferred by trainers. This older approach aimed to create 'muscle memory' by automating officers' physical response regardless of context. Where once considered a 'one-size-fits-all' approach, this traditional, linear approach often increased the amount of instruction required and reduced practical time spent on task in training sessions (Cushion, 2020; Staller and others, 2021; Cushion, 2022).

An experience-based, iterative process was instigated by the College in developing the new PPST curriculum. This started with the appointment of a subject area specialist to lead the development of the curriculum. This specialist created a subject matter expert (SME) group with representatives from the College and forces across England and Wales. The group reviewed current practice against the best available evidence identified through a review of the recent literature undertaken by an external academic expert (Professor Cushion).

The SME group also attended demonstrations of scenario-based training in contexts other than policing, such as in a secure environment or for secure patient transport.

The group also identified the most common environments and circumstances in which the police and public were in conflict and where force may be used by reviewing national use of force data from the Home Office, body-worn video footage and incident logs.

These points of conflict were broadly defined into six plausible scenarios which were refined by the SME group and mapped onto potential subject behaviours. The learning outcomes of the curriculum were agreed by SME group members and they mapped specific techniques from the existing safety training manual onto the scenarios.

Once the six scenarios had been defined, the intention was to run a short pilot of the scenario-based training for Avon and Somerset Police's training staff prior to the formal launch of the pilot. During this pilot, it became apparent that Avon and Somerset Police's training staff were unfamiliar with a scenario-based approach to learning and lacked the necessary skills to deliver the training. So, instead of simply rolling out the pilot, the academics and College staff devised two train-the-trainer sessions to upskill all Avon and Somerset training staff in a formal setting. After the completion of these two train-the-trainer sessions, Avon and Somerset Police was in a better position to start the pilot.

The new curriculum represented a significant investment in the front line. It directly responded to increased levels of risk faced daily by officers, their concerns about safety and their views on their current safety training (NPCC, 2020). The training aimed to support frontline officers so they were better able to:

- manage conflict safely
- assess threats
- use force where necessary

Box 1: Distinctive features of new PPST curriculum

- Uses an innovative approach to training delivery:
  - scenario-based training tailored to needs of individual officers
  - officers learn by receiving personalised feedback from peers and trainers, and reflecting on their own performance in scenarios

- Includes a range of skills officers need to manage conflict safely, in addition to physical skills, such as:
  - recognising and responding to vulnerability
  - decision making
  - identifying and managing bias
- Enables a national response to emerging evidence on risks to public and police safety.
- Will also involve CPD for PPST trainers, with a view to building their skill levels and ensure effective delivery of the new curriculum.

The PPST refresher course was designed to be a national standard, ensuring that individuals who are responsible for dealing with conflict operationally are equipped with the necessary skills, confidence and competence. The PPST refresher course is a two-day, annual course devised to support all officers and staff to maintain the required PPST skills, ensuring they can resolve possible conflict situations safely without using force, where possible. The PPST refresher aims to prevent officers and staff from becoming victims of assault and enable them to deploy safe and effective tactics and techniques, with a view to keeping the public, colleagues and themselves safe. The training is for all police officers who deal with conflict situations during their duties.

The overall purpose of the PPST refresher is to:

- provide those responsible for dealing with conflict operationally with the necessary knowledge, skills and confidence to ensure their own, colleagues and the public's safety
- confirm competence via annual assessment

The aims of the learning are to:

- improve the safety of officers and reduce the risk of injury to officers and others
- refresh personal safety knowledge and skills and ensure confidence and competence
- enable officers to identify and apply good practice approaches when managing conflict

- ensure learners can understand and apply legislation and policies when managing conflict
- ensure officers can safely and legally use personal protective equipment (PPE), including batons, incapacitant spray and handcuffs, when managing conflict

The programme has several co-requisites and is not designed to be delivered in isolation. These co-requisites include:

- edged weapon awareness
- first aid training
- mental health learning programme

To successfully complete the PPST refresher, learners must meet the assessment criteria set out in the PPST assessment strategy. It is the responsibility of the force to assess the PPST refresher and provide feedback to the learner. Where necessary, the force may also be required to support the implementation of an action plan and risk assessment. The PPST refresher has been designed to be delivered locally by forces, or organisations under licence, over two consecutive days on an annual basis.

Delivering the pilot training

Avon and Somerset Police provided a unique opportunity for evaluation as it was the first force to replace its old-style safety training refresher course with the new curriculum. Avon and Somerset Police implemented the new curriculum from 1 September 2021 and the pilot ran for 12 months until 31 August 2022. After train-the-trainer courses delivered by the College, Avon and Somerset Police made their own plans to deliver the training, which were monitored by the College. Over the course of the pilot, Avon and Somerset Police's training team had capacity to offer training to 2,699 officers with 2,296 officers eligible to attend, of whom 2,061 attended and completed the training.

Split over two days, the training in Avon and Somerset commenced with the job-related fitness test (JRFT) and a first aid refresher course. While these took place in the time allotted for the PPST refresher, they were not formally part of the pilot or its evaluation. Their inclusion was based on the force's operational requirements and

the fact that the pilot course only contained five training scenarios, where the final training will deliver six.

After the JRFT and the first aid refresher, the training staff delivered a briefing covering the content and expectations of the PPST refresher course. This briefing also contained safety information, and this portion was adjusted over the course of the pilot to address any emergent concerns. After the briefing, the training staff led a warm-up and then a demonstration of how the scenarios would unfold. The demonstration involved two trainers role-playing members of the public for the 'fight in the street' scenario (see below). Two learners were selected from the audience to be the police officers and the lead trainer walked them through the scenario. They also demonstrated the speeds at which the scenario could be set on a scale of one to 10, with one being a slow-motion walkthrough to practise in a controlled manner and 10 being a full-speed conflict interaction. The intention of this scale was to enable the trainers to allow controlled interactions between the role-players. These were used in conjunction with 'play', 'pause' and 'rewind' terminology to allow for situations to be repeated or examined more closely.

In addition to the speed control, the levels of resistance were briefed (Table 1), as were the relevant commands for stopping scenarios in case of emergency.

Table 1: Levels of subject resistance

Level	Description
Compliant	The individual will follow instructions, will not resist and not cause any sort of distraction to the officer. The individual may question the officer but not argue.
Verbal resistance	The individual will verbally resist the officer. The individual should be obstructive and question what the officer is doing and why they are doing it. The individual may use physical gestures, including hand gestures and other non-verbal cues.
Passive resistance	The individual may ignore instructions given by the officer and use their body weight and strength to physically resist what the officer wants them to do. Once under control the individual will generally be physically compliant but will continue to be verbally obstructive.

Active resistance	The individual will actively try to evade the officer, by struggling, pulling arms away, walking or running away. Once under control, the individual may continue to be verbally obstructive and, where relevant, refuse to do what the officer has said.
Aggressive resistance	This is assaultive behaviour where the individual will look to attack or assault the officer. The individual may throw objects (such as foam bottles) or threaten use of prop weapons (gesturing with rubber knives) and, after the initial assault, the individual may continue to resist through repeated assaults or a change to active resistance. Once under control, the individual may continue to be verbally obstructive and, where relevant, refuse to do what the officer has said.
Aggravated resistance	This is the highest level that the individual will use. It encompasses all previous steps and the actual use of weapons against officers. It is important that the trainer keeps good control of the scenario, ensuring subjects are briefed accurately and speeds are set and controlled throughout.

Five scenarios were split across the two days, although their order was not fixed. After the main briefing, learners were broken down into groups, each with a trainer to lead them. Importantly, the trainers highlighted that the learners would be playing both roles in the scenarios throughout the day – that of the police officers and the members of the public. The training staff were there to brief the scenarios, control them for safety, assess learner performance throughout the day and debrief learners to develop learning, but not to participate as role-players. They also made it clear that the learners would be expected to rely on the training and skills they already had, and that no time would be dedicated to a formal re-teaching of skills. Instead, should learners in a trainer's group struggle with something in particular, the trainer would pause the scenario and lead a 'breakout' teach for the area of concern to all learners in their group.

The five scenarios were chosen by the SME group of practitioners and academics as representing common demands for conflict management by police. They were selected because they were broadly applicable across policing specialities and

would have enabled officers to practise skills that would be required in a wide range of situations. Every scenario was allocated up to two hours of time. Example briefings for the scenarios are presented below.

Table 2: Scenarios and example briefings

Scenario	Example briefing
Custody	You are at a police station and in the company of other colleagues. Together, you must take a recently arrested individual from a police vehicle into the custody suite for booking in.
Domestic	You are called to a residential property following a report from a concerned neighbour about the couple that live there. The neighbour has heard a loud voice shouting, followed by a loud bang and then silence.
Fight in the street	You are called to a local pub following a report of people fighting in the street outside.
Stop and search	You have been assigned to search the local area following reports that a phone has been taken from a car on a nearby street and an individual was seen on that street, looking in car windows and loitering. You have just spotted an individual matching the description you were given.
Vulnerable person	You are called to a local park following a report from a concerned member of the public. They are worried about another individual in the park who they perceive to be acting strangely.

A sixth scenario (public order/drunk and disorderly) is to be included in the final version of the PPST refresher course.

At the beginning of the second day, learners were given a recap of the key points from the first briefing and led through a different set of warm-ups. An example timetable of the two-day course is presented below.

Table 3: Example timetable for two-day PPST refresher

Day 1	
09:00	Introduction and briefing to the JRFT
09:15	Warm-up and JRFT
09:45	First aid training
11:30	PPST briefing and warm-up
12:00	‘Fight in the street’ scenario
13:00	Lunch
13:45	Continue ‘fight in the street’ scenario
14:15	‘Stop and search’ scenario
15:30	End of day 1
Day 2	
09:00	PPST briefing and high-intensity warm-up
09:45	‘Domestic’ scenario
11:00	‘Vulnerable person’ scenario
13:00	Lunch
13:45	‘Custody’ scenario
15:30	End of day 2

Stepped-wedge quasi-experiments

Stepped-wedge quasi-experiments are not common in policing research (see Engel and others, 2022), even though they are widely used in other fields. Their use is recommended when an intervention is to be implemented universally but can only be delivered to groups of eligible recipients incrementally over time, meaning control conditions cannot be maintained for the duration of the experiment. There tend to be fewer ethical concerns about stepped-wedge experiments because the intervention is eventually delivered to all eligible recipients.

Officers were defined by Avon and Somerset Police as eligible for the refresher course if they:

- were likely to come into contact with the public in the course of their duties
- needed to refresh their personal safety skills in the next 12 months

Avon and Somerset Police's force resource unit were responsible for ensuring officers were allocated to the new PPST refresher course and that they successfully completed it before their expiry date.

Due to the need to keep officers' skills current, it was not possible to randomly assign officers to cohorts, or randomly select which cohort attend training. Instead, officers were assigned to cohorts according to when they were required to complete their annual refresher training. As this requirement was based on when they were last trained, assignment to treatment or comparison groups cannot be considered systematically randomised. However, the method of assignment would not have introduced any additional bias.

As a stepped-wedge quasi-experiment, two time periods were established.

- A **pre-pilot comparison period** of 48 weeks (1 October 2020 to 31 August 2021) during which the old model of personal safety training was still being delivered. 52 weeks of pre-pilot comparison data was requested, but only 48 weeks of data were available because of a change in recording practices.
- A **pilot period** of 52 weeks (1 September 2021 to 31 August 2022) during which the refresher course was delivered to officers and officers moved from the comparison group into the intervention group.

In week one of the pilot period, the first cohort of officers attended the training and joined the treatment group. All other officers, yet to attend the training, continue to form the comparison group. In week two, a second cohort was trained, thereby switching from the comparison group to the treatment group. In each subsequent week, a new cohort attends training, meaning the treatment group grows and the comparison group shrinks over the course of the experiment. This process is illustrated in Figure 1 below.

Figure 1: Overview of the stepped-wedge design

	Pre-pilot comparison period			Pilot period				
	01/10/2021	**…**	**23/08/2021**	**30/08/2021**	**06/09/2021**	**13/09/2021**	**…**	**22/08/2022**
	Week 1	**…**	**Week 48**	**Week 1**	**Week 2**	**Week 3**	**…**	**Week 52**
Cohort 1	Comparison	Comparison	Comparison	Intervention	Treatment	Treatment	Treatment	Treatment
Cohort 2	Comparison	Comparison	Comparison	Comparison	Intervention	Treatment	Treatment	Treatment
Cohort 3	Comparison	Comparison	Comparison	Comparison	Comparison	Intervention	Treatment	Treatment
Cohort 4	Comparison	Comparison	Comparison	Comparison	Comparison	Comparison	Intervention	Treatment
…	Comparison	Comparison	Comparison	Comparison	Comparison	Comparison	Comparison	Treatment
Cohort 52	Comparison	Comparison	Comparison	Comparison	Comparison	Comparison	Comparison	Intervention

3. Evaluation

The College carried out an impact evaluation to test effectiveness of the training, and a process evaluation to understand how the training had been implemented. The research team used a variety of methods including analysis of police-recorded data, surveys of officers, observations of training sessions and in-depth interviews with both officers who had received the training and training staff.

Evaluation framework

The College evaluation framework was split into two to understand the implementation of the training pilot and its effect.

The impact evaluation aimed to test hypotheses about the effects of the pilot training on officer confidence, attitudes and behaviour, to understand whether the training had 'worked'. The process evaluation aimed to explore research questions regarding the quality and nature of training implementation in the pilot forces, and the context and mechanisms of change.

Research aims and methods

Table 4 details the core research questions that comprise the impact and process evaluations, as well as the hypotheses and which methods were used to answer each of the questions.

The research team used five main research methods:

- analysis of police-recorded data drawing on the stepped-wedge design
- surveys of officers administered before and immediately after training, and at a three-month follow-up
- observations of five training sessions
- in-depth interviews with nine members of the training staff
- in-depth interviews with 10 officers who had received the training

Table 4: Research questions, hypotheses and methods

Research question	Hypothesis	Methods
What was the impact of training on the use of force?	Trained officers will use less force overall	▪ Analysis of police-recorded data
What was the impact of training on the types of force officers used?	Trained officers will use different types of force to untrained officers	▪ Analysis of police-recorded data
What was the impact of training on public and officer safety during use-of-force incidents?	Incidents involving trained officers will be less likely to result in injuries to members of the public and police officers	▪ Analysis of police-recorded data
What was the impact of training on officer confidence to use use-of-force tactics?	Trained officers will be more confident in using tactics immediately after PPST refresher course and at a three-month follow-up (compared to after the old-style of training)	▪ Officer surveys ▪ Officer interview ▪ Training observations
What was the impact of training on officer attitudes on assaults?	Trained officers will report being less worried about being assaulted on duty	▪ Officer surveys ▪ Officer interviews

Research question	Hypothesis	Methods
How was training course perceived by officers?	Trained officers will be more satisfied with the new PPST refresher course (compared to the old-style training)	▪ Officer surveys ▪ Officer interview ▪ Trainer interviews ▪ Training observations
Was the intervention delivered as intended?	–	▪ Officer surveys ▪ Officer interview ▪ Trainer interviews ▪ Training observations
What were the main implementation issues?	–	▪ Officer interviews ▪ Trainer interviews ▪ Training observations

Due to the complex nature of the stepped wedge design, academics from King's College London (KCL) were appointed via open competition to provide specialist support for the impact evaluation. They worked in collaboration with College researchers who conducted all other data collection and analysis. KCL were responsible for the overall design and delivery of their respective research work, which was subject to quality assurance by the College's principal investigator. They took the lead in developing the data collection instruments and had sole responsibility for their analysis.

While the process evaluation sought to learn generally about local delivery and implementation (including both enablers and barriers), it also had a specific focus to examine the following key areas of concern.

- **Training-related injuries:** Injuries incurred during training were anticipated because the refresher course was scenario based and learners were required to have direct contact with peers in a manner akin to martial arts training. Training-related injuries were monitored to see if their rate or severity were higher than could have been reasonably expected.
- **Trainer to learner ratios:** Feedback was sought from training staff about the appropriateness of the trainer to learner ratio given the possibility of training-related injuries and the need for training staff to monitor and minimise the risk of injury as well as ensure the quality of training delivery.
- **Course duration:** Training staff and learners were asked whether the two days allocated to the refresher course was sufficient and the time was well spent.

Police-recorded data

The first source of data, available for most officers involved in the pilot (see strategy below), was the statistical data derived from officer records of use-of-force incidents. In line with national requirements, every officer was expected to record details about their use(s) of force on a member of the public during an incident. Records included:

- officer details (including unit and collar number)
- the date, time and location of the incident
- the number of people on whom the officer used force (to enable records to be linked if an incident involved multiple people)

- basic demographic information about the person subjected to force (officer-defined age, gender and ethnicity)
- the reason for use of force
- the specific tactic(s) used by the officer
- whether the person subjected to force was in possession of a weapon
- whether the officer was threatened, spat at, assaulted or injured
- whether the person subjected to force received a serious or minor injury, as a result of that force being used

Measures

Use of force

The primary use of force outcome was whether, in any given week, a police officer used force on one or more occasions. This was a binary indicator – the officer either used force or they did not.

This binary outcome was chosen in preference to a continuous measure (for example, the number of times an officer used force in any given week) as it simplified the statistical model and provided more robust, easier to interpret answers. A statistical model using a continuous outcome was, nevertheless, applied to the data, the results of which are reported in chapter four.

Other measures were analysed to provide context and help explain any changes in the use of force associated with training. The analysis looked to identify any:

- changes in the types of force used by the officers (see Appendix A for details)
- changes in levels of other policing activities as a check on whether training had inadvertently led to officers becoming disengaged
- differences in the effects of training on the use of force on black people compared to white people

The analysis used officer-defined ethnicity data and combined data for the black ethnic group and the mixed black ethnic group into a single category. A lack of data meant subgroup analysis for other ethnic groups had to be discontinued.

Public and police safety

Similarly, two harms analyses were also conducted, investigating:

- whether the subject was injured during the use-of-force incident
- whether an officer was injured during the use-of-force incident

These harms analyses considered whether the decision to use (or not use) force, in line with the training, increased the risk of injury to either party.

Analytical strategy

The exploration of the use of force data was conducted as a stepped-wedge quasi-experiment with an 11-month (48 week) pre-pilot comparison period, between 1 October 2020 and 31 August 2021, alongside a 12-month (52 week) pilot period, between 1 September 2021 and 31 August 2022. Participants' completion of the training was required as part of their role as a police officer, which ensured a sufficient sample size for analysis.

All analyses were conducted using fixed effects regression analysis in Stata, reflecting the nature of the data containing a well-balanced panel of officers and weeks, with fixed effects at the level of the officer. In all regressions, the outcome measures are regressed on the treatment variable. The correlation between time and treatment, which is a feature of stepped-wedge experiments, is variously handled through the inclusion of week fixed effects, week-in-year fixed effects and a linear time trend, with the former serving as the main analysis.

The use of a fixed effects model predicated on the completion of use of force forms means that those officers who did not record a use of force in both the pre-pilot comparison period and the pilot period are retained in the model but do not contribute to the analysis. The fixed effects model controls for 218 officers in the sample who did not use force in either period, and so the findings are predicated on the analysis of the behaviour of the remaining 1,843 officers. The implications of this are minor and are discussed in the 'Evaluation limitations' section at the end of this chapter.

For those 1,843 participants who completed the training and went on to use force, 100 data points were recorded per participant (48 pre-pilot comparison weeks and 52 pilot weeks), for a total of 184,300 observations. The sample size was fixed by

the fact all officers who completed the training and used force were included. The number of steps in the stepped-wedge was set by the need for everyone to have completed the training within a 12-month period. Participants were not blinded for allocation, as officers were aware of whether they had been treated. Similarly, the analysts could not be blinded to allocation because of the nature of the stepped-wedge design.

For each officer-week pair, data was merged on use-of-force incidents for that officer in that week. This derived the primary outcome measure, which is a binary indicator of whether that officer used force at all during that week. It also provides a secondary measure of how many times force was used in that week by that officer. In essence, the analysis explored whether a police officer who had received the training used force in each week after they had been trained. This was compared to both:

- that officer's own use of force prior to them receiving the training
- the use of force in that same week by other officers, who were yet to receive the training

This allowed the effects of the training to be isolated from both individual officer characteristics and from seasonal variations in the use of force.

The analysis is based on intention to treat – where an officer was scheduled to receive training in a particular week, but ultimately received it later, they are analysed as though they received treatment when intended. This both simplifies the model and accounts for most non-completions where officers had to attend the training twice due to being injured in the first session. In these cases, officers may have completed a significant amount of the training before dropping out, so will be considered trained compared to an officer who was not yet exposed to the training. The intent-to-treat approach is recognised as the preferred approach in experiments that experience design-related problems (Imbens and Rubin, 2015).

In addition to linear regression, robustness checks were conducted using logistic regression for all binary outcome measures and conduct regression inference analysis.

Officer surveys

Officers were surveyed at three points during the evaluation.

- **Pre-training survey:** administered to officers up to four weeks before they were due to attend training.
- **Post-training survey:** administered to officers four to eight weeks after they attended training.
- **Follow-up survey:** administered to officers 12 to 16 weeks afterwards.

The first pre-training surveys were sent on 10 January 2022 – about three months after the pilot began – to allow the training staff to be more experienced in the delivery of the training and resolve any teething problems.

Those who had attended the training between 1 September 2021 and 10 January 2022 were offered a modified version of the post-pilot survey to capture their feedback on the training between one week and three months after their refresher course. For reasons of accessibility, the results of both the main and modified survey are reported together.

The surveys were administered using SmartSurvey, an online survey platform. Every week, Avon and Somerset Police provided College researchers with two lists of email addresses – one for the officers due to be trained that week and the other for officers who were trained the week prior. Email addresses were provided for 2,002 officers out of the 2,061 who were recorded to have attended training.

College researchers uploaded the address lists to SmartSurvey and scheduled the automatic delivery of links to the appropriate online survey. Weekly reminder emails were automatically sent to non-responders over the next three weeks, giving officers four weeks to complete the survey.

A total of 1,054 responses were received from 763 respondents across the three surveys. Table 5 details the number of officers who completed the surveys. Response rates for the individual surveys ranged between 20% and 27% but were in keeping with those for other police workforce surveys (for example, NPCC, 2020). It is not possible to exclude the possibility of non-response bias.

Table 5: Survey response rates

Survey	Number of officers sent survey	Number of officers who responded	Response rate (%)
Pre-training	1,485	290	19.5
Post-training	2,002	537	26.8
Follow-up	1,093	227	20.8

Measures

The survey instruments included various Likert scales and single-item measures (see Appendices B-F for the full questionnaires). Several measures were common to all surveys, allowing assessment of change over time. Survey measures included the following.

- **Confidence in managing conflict.**
  - Frequency of using conflict management skills (all surveys).
  - Confidence in using conflict management skills (all surveys).
  - Experience of being assaulted on duty (pre-training and follow-up surveys).
  - Perceived likelihood of being assaulted on duty (pre-training and follow-up surveys).
  - Fear of being assaulted on duty (pre-training and follow-up surveys).
- **Satisfaction with and perceptions of training.**
  - Perceived training quality of the most recent course attended, whether old-style or new PPST refresher course (all surveys).
  - Injuries received during the most recent course attended, whether old-style or new PPST refresher course (pre- and post-training surveys).
  - Satisfaction with the most recent course attended, whether old-style or new PPST refresher course (pre- and post-training surveys).
  - Rating of PPST refresher course organisation and logistics (post-training survey).
- **Anticipated use of force behaviours.**

- Prioritisation of action during a potential use of force encounter (all surveys).

Analytical strategy

The original plan was to analyse the survey data as a panel, which would have allowed the responses of individual officers to be tracked over time. However, of the 763 officers who responded to any of the surveys, only 225 had responded to more than one and 43 had responded to all three.

Instead, to enable the analysis of change over time with significant quantities of missing data from each wave, multi-level fixed effects models were created for each survey question. Creating multi-level fixed effects models is an imperfect solution. Some questions were suitable for a multi-level fixed effects model without alteration, where others required a scale measure. Scale measures were created by combining response categories and were tested for reliability using Cronbach's alpha. All scale measures were suitable for analysis except those relating to anticipated behaviour.

Unfortunately, we were unable to create suitable response measures using our data for anticipated officer behaviour. We had wanted to examine how officers said they would act in response to a variety of vignettes related to PPST. To draw some tentative conclusions from the vignettes, we have performed *t*-tests on the available matching sample that responded to each vignette in the survey, as well as basic cross-sectional analysis on the trends across all respondents. These findings are covered briefly in Appendix G. The appendix also contains the vignettes reproduced in full.

Summary tables of the analysis are presented in the Findings chapter and full analysis tables are available in Appendix H.

Training observations

A total of five training sessions were observed by two College researchers over a two-month period. Specific sessions were chosen based on the availability of training staff. The observations were carried out towards the end of the pilot (August and September 2022) to give training staff the opportunity to become experienced with training delivery and iron-out any issues with the course. The researchers made handwritten notes during the sessions based around a series of prompts (see Appendix I), which were typed-up and analysed thematically in Excel.

Training staff interviews

In-depth semi-structured interviews were carried out with nine members of training staff. These included full-time trainers, associate trainers and force training leads. Purposefully sampling was used to select interview participants. All were volunteers who had responded positively to a general call for trainers to be interviewed or when asked during an observed training session.

The training staff interviews focused on following topics (see Appendix J for the full topic guides):

- the new approach to PPST
- the support provided by the College (for example, curriculum, related learning materials and train-the-trainer events)
- the process of translating the curriculum into the refresher course
- the experience of delivering the refresher course
- the perceived response to, and impact of, the refresher course

All interviews were carried out by College researchers in person or via Microsoft Teams. The interviews were audio-recorded and transcribed using Microsoft Teams. The transcripts were checked against the audio-recording for clarity and accuracy.

Officer interviews

In-depth semi-structured were also carried out with 10 police officers who had been on the new PPST refresher course. The methods of sampling, data collection and data analysis for the officer interviews were the same as for the training staff interviews. The only difference was the use of a different topic guide (see Appendix K. The officer interviews focused on the following issues:

- satisfaction with the refresher course
- views on training content and delivery
- comparisons with the old-style training
- perceived use of course content in practice
- perceived impact of the refresher course

Evaluation limitations

One limitation with the use of force analysis is that it is predicated on the self-reporting of incidents by police officers and on their recollections to complete a use of force form accurately. For this review, this is particularly problematic in the case of reporting officer-defined levels of subject injury, as it is unlikely the officer who used force will be present for any medical attention delivered after the incident. However, the data supplied by Avon and Somerset Police to the College for this evaluation was the same data it supplied to the Home Office as part of their annual data requirements. While the Home Office acknowledges data quality issues with the statistics, they are classed as official statistics as the limitations are known and the impact of them is well understood. For this evaluation, there was no more suitable source of data available or that could be collected instead.

Another potential issue is the timing of the use of force analysis. With the pilot period fixed between September 2021 and August 2022, and thus the pre-pilot comparison period between October 2020 and August 2021, both are covered by the effects of the COVID-19 pandemic and its resulting lockdowns and restrictions in England and Wales. During these periods, patterns of crime and policing were different than at other times (Aitkenhead and others, 2022). Fortunately, stepped-wedge designs must account for time in their analysis to avoid apparent outcome change being confused with underlying trends. To manage this in the stepped-wedge design, fixed effects were included for each of the 100 weeks of the pre-pilot and post-pilot periods. This approach is more flexible, allowing each week to vary in its own terms without risking an overestimation of effect. More detail on this approach and the mapping of week-by-week effects are available in Appendix L. An analysis of other policing data from Avon and Somerset is also included in Chapter 4 to contextualise the results of the impact evaluation.

However, the stepped-wedge design does still have some inherent limitations. Given that all officers move from the control group to the treatment group along the course of the pilot, any logistical issues that arise can lead to a contamination effect. For example, during the pilot, it was found that some officers had attended the training multiple times, usually as a result of being injured during their first attempt. Similarly, towards the end of the pilot, some officers who had completed the training early in

the pilot were found to be repeating the training as their ticket was expiring in the next month or so. These issues were recorded very rarely and, where possible, have been screened out of the analysis using collar numbers. Their impact on the final results will be minimal.

The controlling for 218 officers who did not use force at all in the fixed effects model has also had a small impact on the use of force data analysis strategy. Their exclusion does not change the internal validity or robustness of the study, as the sample is balanced from the approach to allocating officers to cohorts. However, the external validity is slightly affected, as the baseline use of force is then overstated – there are no officers with zero uses of force represented in the analysis. This means the absolute magnitude of the effects are also slightly overstated but the relative magnitude (such as percentage changes), and the absolute number of uses of force prevented, remain unaffected.

As the intended panel survey analysis was not possible because of the distribution of survey responses, the fixed effects exploration of the survey data also brings its own limitations. Furthermore, the need to combine survey responses into scales does mask individual contributions even if it provides a better indicator of the overall direction of change. Finally, as a whole, the surveys have relatively low response rates, but these rates are comparable to other police workforce surveys conducted by the College (NPCC, 2020).

With regards the other aspects of process evaluation, the officers who participated in the training were aware that they were taking part in a pilot and were, by the nature of a stepped-wedge design, transitioning from the comparison group into the treatment group. This means they were not ‘blinded’ to the intervention. There is a potential that this knowledge may have affected what feedback they chose to disclose. Furthermore, use of force receives substantial public scrutiny, so officers’ interpretations of the purpose of the intervention were likely to have been affected by the wider debates on public safety.

The research team also had limited influence over the selection of officers for observation or interviews, for a number of logistical reasons. It was also not possible in all cases to know what influenced officers to participate in the process evaluation, as this was sometimes managed via staff from the participating force. Therefore,

given the non-random nature of the sample of officers involved, findings related to officer behaviour or opinions may not be transferable to a wider population of trained officers.

4. Impact evaluation findings

The results were consistent with the refresher course having had positive effects on outcomes. There were statistically significant reductions in both the proportion of officers who used force and the number of recorded use-of-force incidents. These reductions were mainly explained by officers being less likely to go 'hands-on' after training. The results suggested the refresher course had been effective in improving public safety but without compromising officer safety. There was a statistically significant reduction in the number of people injured as result of the police having used force. Officers reported being significantly more confident in using almost all use-of-force tactics after training, a result that was sustained over time.

Use of force

The impact evaluation sought to establish whether the pilot training changed the use of force in Avon and Somerset Police during the rollout of the pilot and compared to the 11 months beforehand.

Table 6, below, shows the headline results of the primary regression analyses, which were explored using three models.

Table 6: Training effects on the use of force

	Model 1	Model 2	Model 3
	Binary **Whether officer used any force (yes/no)**	**Binary** **Whether officer used any force (yes/no)**	**Continuous** **How many times officer used force (n)**
Comparison group mean	0.11	0.11	0.14
Change in propensity	-10.9%***	-8.0%**	-9.9%***

	Model 1	Model 2	Model 3
	Binary **Whether officer used any force (yes/no)**	**Binary** **Whether officer used any force (yes/no)**	**Continuous** **How many times officer used force (n)**
Treatment group mean	0.10	0.10	0.13
Controls	Week of year, year	Week overall	Week of year, year

Significance: * p < 0.05, ** p < 0.01, *** p < 0.001

Proportion of officers who used force

Models 1 and 2 are constructed as binary models, based off whether an officer uses force at least once in a given week. For Model 1, the given weeks are controlled for the week of the year to account for seasonal changes, whereas for Model 2 the given weeks are controlled for the week of the pilot period.

Model 1 finds that, during the pre-pilot comparison period, 11.2% of the officers used force at least once in any given week. This can be expressed as 112 uses of force per week per 1,000 officers or, converting to our known pilot sample of 1,843 officers, approximately 206 uses of force per week or 10,734 uses of force per year. Model 1 then demonstrates a 1.3% reduction in the use of force during the pilot period, from 11.2% of officers to 9.9%. Once again, this could be expressed as 99 uses of force per week per 1,000 officers or, for our sample, approximately 183 uses of force per week or 9,488 uses of force per year. This is a reduction of approximately 1,246 uses of force, or a 10.9% decrease.

Alternatively, this can be expressed as Model 1 showing that, on average, each officer used force 5.82 times during the pre-pilot comparison period and 5.15 times during the pilot period. This is a reduction of 0.67 uses of force per officer per year. While a small effect at the individual officer level, the implications are magnified for an organisation with several thousand police officers.

Number of use-of-force incidents

Model 3 instead uses a continuous model, accounting for the number of times officers used force – it is controlled on given weeks of the year the same as Model 1.

The three regressions produce broadly similar results and all three find a statistically significant reduction in the use of force by officers involved in the pilot. These results were robustness tested using regression inference analysis (see Heß, 2017), with 100 replications. The findings remained statistically significant at the 1% level.

Due to the observed reduction in the use of force by officers involved in the pilot, further analysis was conducted to understand whether these findings were sustained over the course of the pilot or whether the effect attenuated. An additional regression analysis showed that the effects of Model 1 do not seem to attenuate over the time period described in the data, only that there is a small amount of variation between treatment groups.

Types of force used

Table 7 below shows, for each use of force category, whether the participant made use of that particular level of force in any given week. The details of what each category contains can be found in Appendix A. The analysis follows the main regression specification for Model One in Table 6 in the previous section, with the outcome measure replaced by a binary indicator of the specified use of force. It shows a statistically significant reduction in use of physical force and statistically insignificant reductions in the propensity of officers to use compliant restraint or use a weapon. There was also a non-significant increase in the drawing or aiming of weapons. The largest absolute decrease was for the use of physical force, which reduced by 14% in propensity to use, while the propensity to use weapons fell by the largest relative amount (23.8%). However, this should be interpreted with caution given how uncommon the use of weapons by officers is, equating to six uses per week per 1,000 officers.

Table 7: Training effects on use of different types of force

	Compliant handcuffing	Weapon drawn or aimed	Physical force used	Weapon used
Comparison group mean	0.03	<0.01	0.08	<0.01
Change in propensity	-4.2%	+10.1%	-14.0%***	-23.8%
Treatment group mean	0.03	<0.01	0.07	<0.01

Significance: * p < 0.05, ** p < 0.01, *** p < 0.001

Other policing activity

To check the training did not have any unintended consequences and had not inadvertently resulted in officers disengaging from other policing activities, the number of calls for service was examined as were the numbers of searches and arrests carried out by officers. This also helps explore whether any changes in use of force are as a result of external factors, such as the restrictions during the COVID-19 pandemic.

Table 8 shows there was no consistent pattern of change. The number of calls for service attended by officers went down slightly during the pilot period compared to the pre-pilot comparison period. The number of searches fell by one-fifth in Avon and Somerset, which was less than the 26% decline in searches across England and Wales. In contrast, the number of arrests in Avon and Somerset was higher during the pilot period than the pre-pilot comparison period.

Table 8: Other policing activity in Avon and Somerset and across England and Wales

Police activity	Number recorded					
	Avon and Somerset			England and Wales*		
	Pre-pilot comparison period (09/20 to 08/21)	Pilot period (09/21 to 08/22)	Difference	2020/21	2021/22	Difference
Calls for service attended	173,058	166,146	-4.0%	-	-	-
Stop and searches	5,721	4,572	-20.1%	694,203	516,642	-25.6%
Arrests	17,058	17,814	+4.4%	645,225	663,036	-2.8%

*Source: Home Office, 2022c

Ethnicity

Given the evidence of racial disproportionality in the use of force at a national level (Home Office, 2023b) other analysis was carried out to explore whether there were similar or different changes in use of force for people from different ethnic groups.

Table 9 below shows the effects of training on the use of force on white people and black people.

In line with the main results, the table points to a statistically significant reduction in the use of force on white people after training (-11%). The propensity for officers to use force on black people also reduced (-7%). However, while the reduction for black people was of a similar size, it was not statistically significant. This is most likely because of the small number of recorded use-of-force incidents involving black people.

Table 9: Effects of training on use of force by ethnicity

	Force used on white people	Force used on black people
Comparison group mean	0.10	<0.01
Change in propensity	-11.3%***	-7.3%
Treatment group mean	0.09	<0.01

Significance: * p < 0.05, ** p < 0.01, *** p < 0.001

Police and public safety

Analysis was carried out to examine whether the introduction of the new PPST refresher was associated with improved police and public safety. The analysis focused on whether officers or those subjected to police force were injured during use-of-force incidents.

Table 10 shows there was a significant reduction in the likelihood of the person subjected to police force being injured. The propensity for members of the public to be injured during use-of-force incidents involving treatment group officers was a third (33%) lower than it was for those during incidents involving comparison group

officers. There was a similar sized (28.3%) reduction in injuries to officers during use-of-force incidents, but the change was not statistically significant.

The reduction in injuries after training may appear large in percentage terms. However, the likelihood of injury during use-of-force incidents was already small – particularly officer injury – meaning a large reduction in the actual number of injuries was unlikely to have occurred.

Table 10: Training effects on injuries during use-of-force incidents

	Injuries to officers	Injuries to persons subjected to police force
Comparison group mean	<0.01	0.01
Change in propensity	-28.3%	-32.9%**
Treatment group mean	<0.00	<0.01

Significance: * p < 0.05, ** p < 0.01, *** p < 0.001

Officer confidence in managing conflict

Self-confidence in personal safety tactics

Before they undertook the training, officers were asked to self-assess their confidence in using a range of tactics for managing conflict – based on the old-style training they received:

- verbal and non-verbal de-escalation
- unarmed strikes and blocks
- restraint
- takedowns and ground pins
- handcuffs
- baton
- incapacitant spray

To test whether officers' confidence increased after participating in the new PPST refresher course, officers were asked the same questions again both immediately after PPST refresher course and at a three-month follow-up.

Table 11 shows the mean confidence score across all statements for each time point for all eligible survey respondents. Table 11 demonstrates there was a statistically significant increase in officer confidence in using conflict management tactics before (pre-training average = 3.2) and after training (post-training average = 3.5). Importantly, the improved level of confidence that was found immediately after training was sustained over time (three-month follow-up average = 3.5). For more information on the model, please see Tables 22 and 23 in Appendix H.

Table 11: Self-reported confidence in personal safety tactics (1-4 scale)

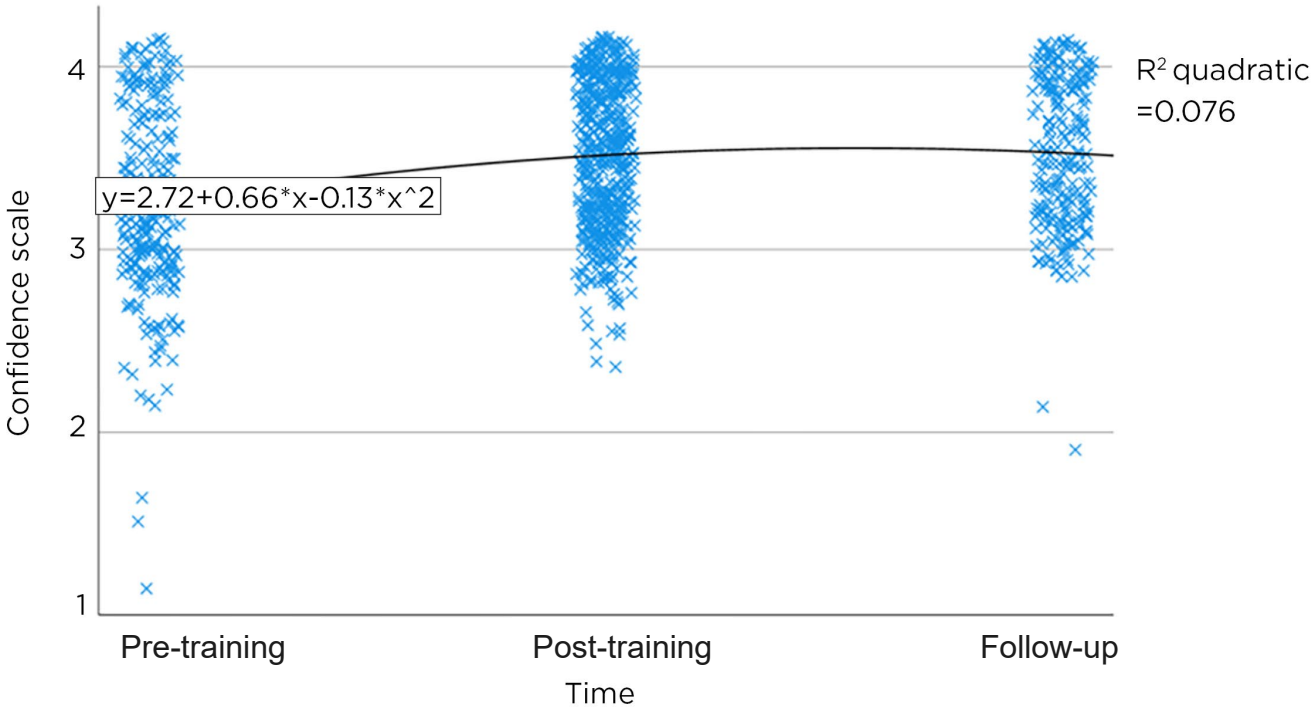
Survey (n = 763)	Average score*	Change
Pre-training	3.2	-
Post-training	3.5	Significant increase
Follow-up	3.5	Sustained

*Note: Mean of responses to seven questions with four-point response scales: very confident = 4, fairly confident = 3, not very confident = 2, not confident at all = 1.

This is particularly notable as self-reported officer confidence for these skills was high before the new training took place. Figure 2 is a ‘jitter plot’, that shows each respondent’s combined answers over each wave of the survey. Ordinarily a scatter plot would be used, but for categorical responses, this would simply group each respondent around a point on the scale. A jitter plot applies an amount of ‘jitter’ to each respondent’s lateral position, enabling all responses to be seen individually. A line of best fit has also been added.

This jitter plot shows that for the post-training survey, the responses are much more densely clustered around the higher levels of the scale. This indicates not only an increase in respondents, but also that they are reporting consistently higher scaled scores. The follow-up survey shows this effect is largely sustained, confirmed by the results of Table 11.

Figure 2: Jitter plot of self-reported confidence in personal safety tactics



When looking at the tactics individually, the high levels of self-reported confidence in skills pre-training is particularly stark. For example, before the new training was even delivered, 100% of respondents considered themselves very (74%) or fairly (26%) confident in using verbal and non-verbal de-escalation. The ratio only increased slightly after the training, with more respondents reporting they were very confident (86%) in their ability. The lowest levels of confidence, both pre-training and post-training, among respondents were reported for takedowns and ground pins.

Perceived contribution of training to building confidence in personal safety skills

To further understand whether the training improved officer confidence, respondents were also asked to agree or disagree with the following statements in relation to the most recent training they had received – whether for the old-style personal safety course in the pre-pilot survey or the new PPST refresher course in the post-pilot and follow-up surveys.

- Training has given me the communication skills I need to de-escalate confrontation.

- I know from training how best to calm someone down who is aggressive.
- I have been trained how to manage conflict without using physical force.
- Training has given me the physical skills I need to keep safe.
- I know from training how best to restrain someone.
- I have been trained how to go 'hands-on' when necessary.
- Training has shown me how to use situational awareness to prevent me being assaulted.
- I know from training how best to carry out a dynamic risk assessment.
- I have been trained in what threats to look out for in conflict situations.

Table 12 shows the mean agreement score across all statements for each time point for all eligible survey respondents. For more information on the model, please see Tables 24 and 25 in Appendix H.

Table 12: Agreement that training has contributed to personal safety skills (1-5 scale)

Survey (n = 763)	Average score*	Change
Pre-training	3.6	-
Post-training	4.1	Significant increase
Follow-up	4.1	Sustained

*Mean of responses to nine statements with five-point response scales: strongly agree = 5, agree = 4, neither agree nor disagree = 3, disagree = 2, strongly disagree = 1.

As can be seen, there was a statistically significant increase in overall agreement with the statements between the average pre-training score (3.6) and the average post-training score (4.1). Between the post-training and the follow-up, the improved level of agreement has been sustained with an average follow-up period average score of 4.1.

Agreement with all statements increased following the PPST refresher course. Fewer than half (46%) of the respondents to the pre-survey agreed that their old training gave them the communication skills to de-escalate, compared to 69% of

respondents post-training and 75% of respondents after the follow-up period. For the new style of refresher course, across all questions, a higher of proportion of respondents strongly agreed with the statements, driving the statistically significant increase in the scale score seen in Table 12.

Perceived risk of and worry about assaults

In both the pre-pilot and follow-up surveys, respondents were asked about their experiences of being assaulted. In the pre-training survey almost all (87%) of the 290 respondents said they had been assaulted at some point in their career, with two fifths (42%) having been assaulted in the 12 months before the survey. Of those assaulted in the past 12 months, three quarters (75%) had been assaulted once or twice, while 31 respondents (25%) had been assaulted three or more times.

In the follow-up survey, 40 of the 227 respondents (17.6%) had been assaulted in the three months between attending the PPST refresher course and answering the questionnaire. Of those, 34 had been assaulted once or twice and the remaining six had been assaulted three or more times.

Respondents were asked how likely they thought it was they would be assaulted in the next 12 months (Table 13) and how worried they were about being assaulted (Table 14). The tables show the mean score across likelihood (Table 13) and worry (Table 17) for each time point for all eligible survey respondents. For more information on the models, please see Tables 26-29 in Appendix H.

Table 13: Perceived likelihood of being assaulted on duty in next 12 months (scale from 1 to 4)

Survey (n = 763)	Average score*	Change
Pre-training	2.2	-
Follow-up	2.0	Non-significant decrease

*Mean of responses to one question with a four-point response scale: very likely = 4, fairly likely = 3, not very likely = 2, not likely at all = 1.

Table 14: Worry about being assaulted on duty in the next 12 months (scale from 1 to 4)

Survey (n = 763)	Average score*	Change
Pre-training	2.9	-
Follow-up	2.9	No change

*Mean of responses to one question with a four-point response scale: very worried = 4, fairly worried = 3, not very worried = 2, not worried at all = 1.

The perceived likelihood of being assaulted and worry about being assaulted did not change significantly after training. This result was confirmed with a t-test for the subset of respondents who completed the question in both the pre-training and follow-up surveys (n=70). This means, despite the positive outcomes from the new PPST refresher course in other areas, it does not appear to have had an impact on respondents' perceived likelihood of being assaulted or fear of being assaulted.

5. Process evaluation findings

Officers were much more satisfied with the new style of training and perceived it to be of high quality. Training staff felt the training achieved its aims and objectives, but that they would have benefitted from more structured support and trainer skills development throughout the implementation process. Training staff and officers who attended the training agreed that 12 hours was sufficient time in which to complete the training and that ratios of one trainer for every six learners contributed to a safe and well-supported learning environment.

Where quotes are presented in this chapter, they are intended to be illustrative examples.

Reported behaviour

Of the ten officers interviewed, only half reported having used any form of PPST skills since they had received the training. One said they had only used compliant handcuffing and did not have any further feedback, two stated that they were comfortable using PPST techniques already and did not do anything different as a result of the training.

Of the two remaining, one said they had found it helpful to have the training in mind as they were able to de-escalate the situation and did not resort to using force. They found it reassuring to have confidence in risk assessing the situation and creating a plan to resolve it physically should they need to. The final officer used a takedown technique to bring someone to the floor and stated:

> It felt a lot more controlled and not so much a physical battle. It's more using sort of the mechanics of the situation to my advantage, rather than trying to use sort of strength or size to make a difference, because previously some of the techniques we've been taught before wouldn't work on some stronger individuals who maybe are a bit more muscular and so you'll often find it difficult to try and sort of you'd be battling with them effectively.
>
> **Learner 6**

Officers rating of training

Satisfaction with training

Overall, survey respondents were highly satisfied with the new PPST refresher course they received, in contrast to their reported satisfaction with the old style of training. Table 15 shows the mean satisfaction score across all statements for each time point for all eligible survey respondents. For more information on the model, please see Tables 30 and 31 in Appendix H.

Table 15: Officer satisfaction with safety training refresher courses (1-5 scale)

Survey (n = 763)	Average score	Change
Pre-training (old refresher course)	3.7	-
Post-training (new refresher course)	4.6	Significant increase

*Mean of responses to one question with a five-point response scale: Very satisfied = 5; Fairly satisfied = 4; Neither satisfied nor dissatisfied = 3; Fairly dissatisfied = 2; Very dissatisfied = 1)

Table 15 demonstrate a substantial, statistically significant increase in the average satisfaction score between the pre-pilot period (3.7) and the post-pilot period (4.6).

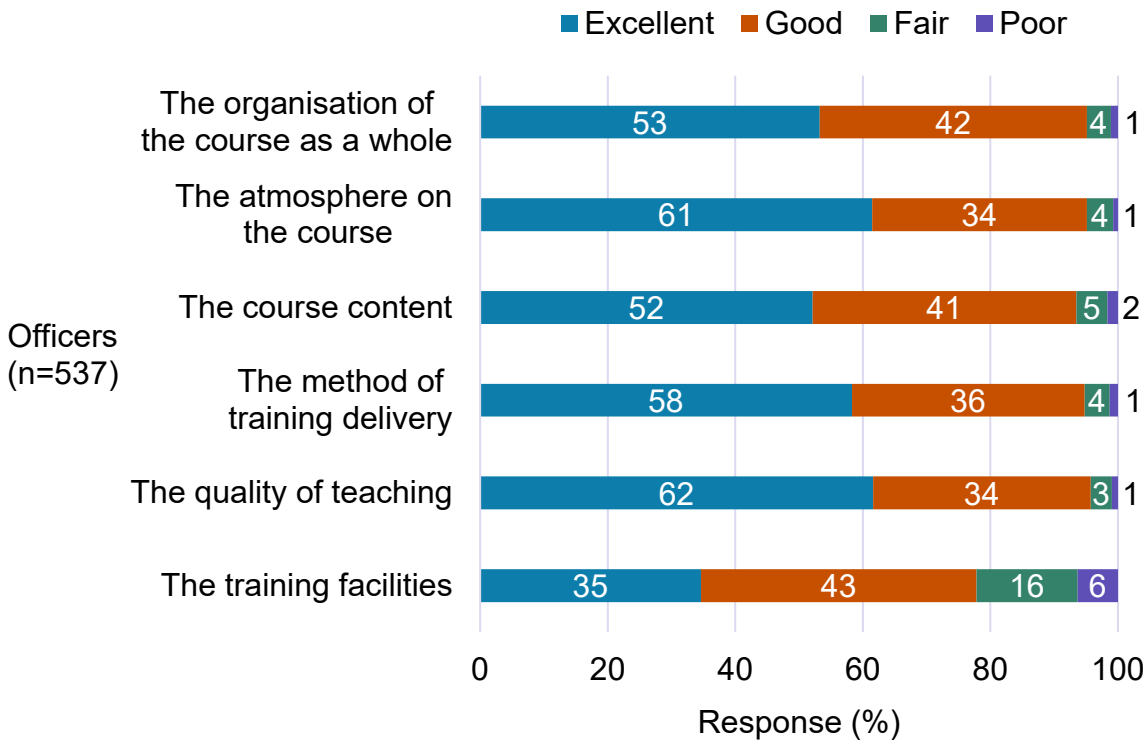
Perceived quality of refresher course

In the post-training survey, respondents were also asked to rate the quality of a number of facets of the course. Five out of the six aspects of training were rated as ‘excellent’ or ‘good’ by at least 90% of respondents (see Figure 3).

Over half respondents thought the organisation of the course (53%), the atmosphere on the course (61%), the training content (52%) and its method of training delivery (58%) and the quality of teaching (68%) were excellent.

Only the facilities in which the training took place received a lower score. Even then, 78% of respondents said the facilities were ‘excellent’ or ‘good’.

Figure 3: Perceived quality of new PPST refresher course



Perceived quality of personal safety tactics training

As well as self-reporting satisfaction, survey respondents were also asked to assess the perceived quality of a set of tactics:

- risk assessment and decision-making
- verbal and non-verbal de-escalation
- unarmed strikes and blocks
- restraint
- takedowns and ground pins
- handcuffs
- baton
- incapacitant spray

Table 16 shows the mean quality score across all statements for each time point for all eligible survey respondents. For more information on the model, please see Tables 32 and 33 in Appendix H.

Table 16: Perceived quality of personal safety tactics training (1-5 scale)

Survey (n = 763)	Average score*	Change
Pre-training	3.7	-
Post-training	4.3	Significant increase
Follow-up	4.3	Sustained

*Mean of responses to eight questions with five-point response scales: excellent = 4, good = 3, fair = 2, poor = 1, not covered during course = 0.

Table 16 shows a statistically significant increase in the perceived quality of the training of personal safety tactics immediately after the course, from a pre-training average of 3.7 to post-training average of 4.3. At the three-month follow-up, the average score remained at 4.3, demonstrating a sustained perception of improved training quality compared to the pre-training average.

Overall, between 80% and 91% of respondents considered the new training on any given tactic to have been ‘excellent’ or ‘good’. Baton training received the lowest level of approval, even though 80% considered it ‘excellent’ or ‘good’. Three months after training, the majority of respondents (>80%) still considered the new training on each given tactic to have been ‘excellent’ or ‘good’.

Perceived suitability of refresher course design

Finally, the survey respondents were also asked to agree or disagree with a number of statements about the design of new training. These statements were a mixture of positively coded (agreement as positive) and negatively coded (disagreement as positive) statements, intermingled and asked in the same question.

- Positive coded:
  - gave me personalised feedback that helped me refine my skills
  - gave me opportunities to practise that helped me refine my skills
  - was tailored to my specific needs
  - was relevant to the demands of my job
- Negative coded:
  - was too short

- was too long
- was too unrealistic
- was too repetitive
- was too easy
- was too challenging
- involved too few role-plays
- involved too much waiting around

For analysis purposes, the statements were recoded all in the same direction, with agreement as positive. Table 17 shows the mean agreement score across all statements for each time point for all eligible survey respondents. For more information on the model, please see Tables 34 and 35 in Appendix H.

Table 17: Summary of changes between surveys for perceived suitability of refresher course design

Survey (n = 763)	Average score*	Change
Pre-training (old refresher course)	3.2	-
Post-training (new refresher course)	4.1	Significant increase

*Mean of responses to 12 questions with five-point response scales: strongly agree = 5, agree = 4, neither agree nor disagree = 3, disagree = 2, strongly disagree = 1.

These findings indicate that both respondents' agreement with the positive coded statements increased and disagreement with the negative coded questions also increased – from a pre-training average of 3.2 to a post-training average of 4.1. This means respondents considered the new refresher course was much better than the old style of training at delivering personalised feedback and giving opportunities to practise their skills. They also felt it was better tailored to their needs and more relevant to the demands of their job.

Similarly, it indicated that survey respondents felt the training was about the right length, was realistic, was neither too challenging nor too easy and involved an appropriate number of role-plays with little waiting around.

In the interviews, all officers commented on how enjoyable they found the training, with some commenting that they felt their colleagues would perform better and remember more content because the training was enjoyable. More specifically, in the interviews, officers reported they found:

- the scenarios realistic and complex, and they liked the emphasis some scenarios had on de-escalation and other communication skills
    - the realism of the scenarios was increased by both the use of modular foam walls – the ULTIMAT Defence Ltd 'Black Wall System' – and a range of training safe props that together enabled each scenario to have different room layouts hidden from initial view and different configurations of threats and challenges, even when scenarios were repeated
- the scenarios, and some of the warm-ups, were physically challenging but generally perceived to be at the right intensity to keep everyone involved
- the feedback sessions were frequent enough between the scenarios and, almost always, appropriate and appreciated

Delivery of intervention

Agreement on broad purpose

Interviews with the trainers were near unanimous when discussing what the ideal outcome of the course was for them. The trainers saw the course's purpose as increasing officer and staff confidence and competence in the use of force and the decisions on which that relies:

> So, I mean, first and foremost, I think by the end of it, they need to be able to be operationally competent so they can deal with things with confidence out on the street.
>
> **Trainer 9**

Officers interviewed agreed with this, although some interviewees maintained they were confident before undertaking the refresher training. For some trainers and learners, the confidence and competence came with an improvement in officer and staff safety. For others, this confidence and competence was associated with a reduction in complaints against use of force.

Lack of clarity

While these overarching outcomes were agreed on, the trainers discussed significant challenges they faced during the initial design and delivery of the course. First, trainers felt the academic contributions to the course design were theoretically sound but highlighted a lack of practical understanding on how to apply the theory to an operational policing environment.

This issue was further complicated by a difference in expectations about how the theory was supposed to translate into practical training delivery with officers:

> [W]e did find it difficult to implement at the start, just based on the fact that I'm not sure any of us really knew what it was supposed to look like. We kind of understood the coaching methodology and we understood the concepts behind the scenario-based training […] but actually bringing that together as something that was a straight two days of training for 20/40/60 police officers […] that was quite difficult. […] because we didn't have more detailed information about what was expected from us.
>
> **Trainer 4**

Furthermore, there was a perceived lack of agreement on the learning outcomes of the course and how they were to be evidenced. Trainers wanted the College to be much clearer with the force about how structured the training was meant to be to meet the learning outcomes. They felt that, while the training was designed to be flexible, this flexibility had unintended consequences, and trainers could assume that simply following the scenarios would lead to all learning outcomes appearing over the two days of training.

One trainer described wanting a much clearer relationship between the proposed learning objectives and the assessment of candidates, for example via a checklist. They argued that this was a necessary accountability mechanism should a complaint be made for something an officer does on duty. However, the trainer felt they were not empowered by the College during the pilot to make accurate assessments for every single learning outcome for every single learner.

The flexibility inherent to the course design did have its positives. Some felt it allowed the trainers to inject their own relevant experiences and tailor the course to participants' needs:

> So I think it's just having a knowledge of what is now, what are the list of techniques and things like want to get out of the whole of the five scenarios and if they present themselves in different scenarios, it's just having that skill to go 'Right, look at this now', and the flexibility to do that.
>
> **Trainer 2**

This flexibility allows other aspects of the force's strategic threat and risk assessment (STRA) to be added to PPST that might not be trained elsewhere and that benefit from an annual refresher. Avon & Somerset chose to include water rescue throw lines within their PPST, building it into the 'Vulnerable person' scenario to enable all officers to practise with the devices. The training staff acknowledged that this would present differently in all forces and the College would need to recognise and allow that flexibility.

Trainer and learner skills

Trainers felt the quality of the learners' skills was one of the key reasons the course designers were out of touch with the policing environment. Fundamentally, the trainers felt that the scenarios were good, and a positive way to consolidate training. However, they still felt there was a need for all learners to receive a refresh of basic, technical skills at the start of the training or during the course, and not just as a breakout teach for those struggling:

> So, I think adding scenarios to training is really, is a really good way of consolidating and bringing all together the skills that officers and staff have learnt. My personal opinion is that there is still a place for a skills check within that, so I think that an hour of refreshing on the basic skills handcuffing etc, prior to doing this training, I think there will be a good place for that still because, I'm an officer of 22 years, but I still think coming back after a year just to refresh on all the application of handcuffs before you get checked into a scenario would be beneficial.
>
> **Trainer 6**

This was potentially linked to the non-contact training officers had undertaken during the COVID-19 pandemic. This contributed to a greater enthusiasm for the training:

> I think some of the newer student officers, who perhaps came through with COVID and haven't really had a lot of physical OST and hands-on stuff, they've been all for it. [T]hey've been really keen and […] I think people have been […] fed up with the old kind of training, so to get kind of a bit more realistic training. There's been […] a lot of positivity about it at the end of the day.
>
> **Trainer 1**

All the trainers identified the new style of training was very different and included a substantial shift in the methods of delivery. They felt this necessitated a change in their skills. The trainers' language focused on aspects of coaching or assessing, as opposed to instructing, and taking a learner-focused approach to the sessions:

> And that has totally changed now to a much more learner-led approach where it's about meeting the needs of the learner rather than this one-size-fits-all […] I would say we've moved from instructor-led to a much more facilitative sort of coaching/mentoring approach which seems to be going down really well with the learners.
>
> **Trainer 5**

Training staff did receive training in additional, relevant skills as part of the train-the-trainer course in preparation for the delivery of the new training but for some staff, this was not enough.

> The trouble we've had, like I did mention earlier, is trainer ability, now, with the new techniques and stuff that come with the training, they need more time to nail the techniques because, at the moment, they're [just] running through the four days' train-the-trainer, which is telling you the method of training, why we're doing it and how we're doing it, how you implement it, and here's a few techniques. But actually doing those techniques and properly nailing those techniques, we haven't had that yet. And that, unfortunately, is letting the training down on our side, and that's not the College, that's our department.
>
> **Trainer 3**

Trainers who were members of police staff, rather than police officers, noted that they needed to improve their skills in many areas to prepare for the training. The training's approach to scenarios included an emphasis on legislation, policy and powers:

> But now you have to learn, well obviously if you're a cop you already know it, but for police staff, we need to learn powers, policy and all of the other things that come with it – powers of entry, powers of arrest, search a person powers, all of that good stuff and, actually, how to be a police officer even though you're not one. So actually, it's a completely different role, it's completely different from the job description for what I was employed to do.
>
> **Trainer 3**

This identified a need among the training staff for ongoing CPD, particularly given the planned increases in staffing, to cope with demand, and the greater emphasis the force will have for police staff trainers in future.

Support for trainers

One of the core criticisms from the training staff in Avon and Somerset was that the College did not have enough of a visible presence, particularly at the start of the pilot:

> If I'm being completely honest, I think there could have been some more support from the College. They have come down twice, I think since I've been in post. And [College representative] has been helpful in saying exactly how it should look and he's been helpful with the trainers and respect of that, but yeah, it has been very much a sort of trial and error with what we're doing.
>
> **Trainer 6**

In general, the training staff perceived the quality of what the College provided was good, it just needed to be implemented earlier in the process and given more often:

> No, the only thing I would just like to add is you know obviously as a pilot force that the relationship with [the College and its staff] has been really good and really informative […] My only feedback would be that all of that needed to be in place when we started.
>
> **Trainer 9**

In particular, the efforts of the College-coordinated PPST working group were well received, as was the understanding that the College was running into its own resourcing issues:

> And then we had some support from the College, maybe five or six days where the lead from the College attended and just gave a little bit of feedback but not enough in my opinion, bearing in mind that obviously there was only one individual in that role […] but there was nowhere near enough support from the College in terms of material or, you know, the speed of getting the material out. So the vast majority of the material that exists now I have written over the course of the, of the year, really […] We were

> very lucky on that practitioner group that is full of proactive and very knowledgeable and experienced police officers and trainers. So people quite quickly found their role. I wouldn't say it was directed at all. People found their own little niches and grooves of where they, where they could help and chip in.
>
> **Trainer 5**

However, the responsibility within the force fell disproportionately onto one individual, who felt that had been a gap in the support offered. This highlighted a need for both a recognition of the workload as well as ongoing CPD for PPST trainers, both from within the force and from the College itself, as with other areas of College business:

> Yeah, so, for example, command band trainers in public order. They get their conference, their annual conference, where they get some uplift and some training and that is on a national level. Yeah. So within force, we have one day, CPD. If there was two-day CPD, one of those CPD days could be done by the College.
>
> **Trainer 7**

Train-the-trainer

Some of this desire for support was evident in the feedback for the train-the-trainer sessions run by the College. Training staff in Avon and Somerset felt the sessions were inconsistent in their delivery, with one trainer saying they were perceived by some staff as disorganised:

> It was interesting, there was a very pronounced lack of, what I would describe as traditional structure to that course. And I think part of that was deliberate, but it came across, certainly to people who come from very disciplined backgrounds, even within the police service, [it] came across as disorganised... And it almost lost people.
>
> **Trainer 5**

Similarly, others felt that the train-the-trainer sessions were only successful because the attendees were already qualified training staff with a high level of personal safety skills, enabling the attendees to work through any problems as they happened.

These respondents felt, because of this reliance on the attendees to deal with problems as they arose, the train-the-trainer sessions did not explore the minutiae of how the training courses were supposed to be delivered in sufficient depth:

> For two whole courses, […] it was like 'We want you to do this, but we're not gonna tell you how to do it', so that seemed like madness.
>
> **Trainer 3**

Part of this was because of the narrow window between the delivery of the train-the-trainer courses and the start of the pilot. This problem was then exacerbated by how quickly the training evolved through the course of the pilot, making some of the prior knowledge out of date:

> I don't think anybody knew so for us it evolved very, very rapidly, so we did the pilot train-the-trainer course here at Avon and Somerset in September 2021 and we finished that course on the Friday and we went live on the following Tuesday, with live students who, so the biggest thing for me there was, not having any time to upskill my trainers and that that was a massive risk.
>
> **Trainer 5**

Implementation issues

Injuries

One of the major concerns throughout the pilot was potential for the scenario-based training to result in a greater number of training-related injuries compared to the old style of training. Trainers reported that because of some injuries early in its implementation, this created a 'rumour mill' and this made some learners reluctant to participate because of the fear of injury:

> There's been some reluctance amongst people to buy into it because I've heard about injuries. But I think the programme itself has evolved, and when it was first rolled out, I think it was last September, we started rolling it out. I think the risk of injury

> was greater to start with, but there have been changes to the way it's run to mitigate against that now.
>
> **Trainer 2**

Over the course of the pilot, for the 2,061 officers trained, 96 reported an injury or near miss (5%). Unfortunately, data on injuries were not recorded consistently prior to the start of the Avon and Somerset pilot. Even accounting for reduction in incidents over the COVID-19 lockdowns due to non-contact training, Table 18 shows an increase in minor injuries.

Table 18: Training-related injuries during safety training

	2018/19	2019/20 (COVID)	2020/21 (COVID)	2021/22
Major injury	0	1	0	5
>7 days off work	0	0	0	3
Minor injury	11	15	7	83
Non-injury accident	0	1	0	5
Totals	11	17	7	96

There was a slight indication that injuries were decreasing during the 12-month pilot of the PPST refresher course. However, major injuries and injuries leading to more than seven days off work remained rare and were therefore hard to predict (see Figure 4).

Figure 4: Percentage of learners injured per month

In the post-training survey, 112 respondents (20%) reported some form of injury following the new PPST refresher course. While the majority (104) were reported as minor, and did not require time off work, eight injuries were reported that did require time off work. The rate of reported injuries in the survey (112 for 537 respondents) is greater than the number of official injury reports received, suggesting that underreporting still occurred. Furthermore, during some of the observations, a number of potentially serious injuries were witnessed but not reported, including a wayward training baton strike and a minor head injury from falling.

From the incident reports, the injuries were broadly grouped into a number of categories relating to their cause from their descriptions. This analysis was based on explicit mentions of occurrences within the incident reports and so is indicative but not comprehensive. It was difficult to untangle the data due to multiple mechanisms being present in many incidents, as well as some incidents providing no details regarding mechanism at all. The most commonly identifiable causes of incidents were:

- ‘Takedowns’ (which includes ‘taking to the floor’), present in a third (35%) of incidents

- ‘Restraint’ (which includes ‘grapples/ing’ and ‘escorts/ing’), present in nearly a quarter (24%) of incidents.

Unfortunately, the third highest category was incidents where an injury had been reported but no other details were provided. This was also recorded distinctly from another category of uncertainty where a specific injury was reported but the participant was unsure of the cause – for example, when an injury was only noticed on their return home after the training.

Ratios of trainers to learners

One of the other major points of discussion was what an appropriate group size was per trainer. It became apparent through interviews with training staff that a ratio of one trainer per six learners (1:6) had originated from the COVID-19 regulations that were in place when the training was designed. The possibility of learners being in a ‘bubble’ meant that, if learners stayed with the same group and same trainer, only one group would need to isolate in the case of sickness rather than the whole cohort. However, the trainers also said it became clear as the pilot progressed that 1:6 was not only a ratio that worked but it also had specific benefits:

> In the early stages of the pilot, it was very apparent that six was the maximum number that the trainer could cope with because there was a role for everybody. They [the students] were very active in the scenarios and you [the trainer] could manage the people who weren’t involved in the scenarios, either doing some task activities or having other roles within the scenario…you maximise the activity time of the students for the whole two days.
>
> **Trainer 5**

Some of the trainers appreciated that a degree of flexibility was needed and that, given the issues of non-attendance or odd cohort sizes, approximate group sizes close to 1:6 were still workable. During one of the course observations, a trainer remarked that remaining flexible allowed for the release of training staff to other duties where appropriate. For example, there was a course with 24 learners booked so it was assigned four trainers. On the day, there were only 20 attendees, so the

trainers decided to split the learners into three groups (two of seven and one of six) as opposed to four groups (each of five). This meant the extra trainer could be released to assist with other training taking place at the venue. However, another member of training staff mentioned a reluctance to do this when safety was being considered:

> Say for instance there's 21 people walk through the door, yeah? Instead of going well, actually, let's run three groups of seven. We will actually always go. No, actually we, they, we much prefer to run three fives and a six.
>
> **Trainer 9**

The general opinion was that any smaller than a 1:5 ratio brought its own challenges in getting the most out of the scenarios:

> And there are critical numbers of being too few. You cannot do it as one trainer to four [students] because then there aren't enough students to role-play and recreate enough realistic scenarios.
>
> **Trainer 7**

During two of the observations, smaller groups of four or five learners had to join with another group to complete the custody scenario (Scenario 5). This was to ensure there were enough people to take all the roles in the scenario.

With larger groups, trainers were mostly concerned about safety or learners becoming idle:

> Once you start to go beyond that ratio, it's my belief that there's a definite compromise on safety because it's very, very difficult for the coach to watch all of those people. And because it's so active and dynamic, normally to stop something from happening that is unsafe, you physically have to be involved.
>
> **Trainer 5**

> If there's three sat out and four in the scenario, you say, right, do this, you turn your back and bang, [those three] are off talking about the weather, whatever they're doing next week, so it's not manageable.
>
> **Trainer 3**

Overall, the trainers were critical of the old style of training, with its large group sizes and learning by rote. The training staff believed the ratio was critical to defining the new style of PPST:

> Gone are the days of standing around waiting for 26 pairs to go before it's your turn.
>
> **Trainer 5**

Officers interviewed tended to agree, identifying that the group sizes were appropriate for ensuring every member was actively engaged and that mixing of the groups (for example, less experienced officers grouped with more experienced officers, or Taser-trained officers with non-Taser trained officers) greatly improved willingness of learners to share peer feedback and the quality of the feedback given:

> I think that also being in a smaller group also helps that because you kind of get to know each other over the course of the two days and yeah, you obviously start to feel more comfortable around each other and I think no one in my group anyway, seemed to sort of shy away from asking anything.
>
> **Learner 4**

> [W]hat is good is that it went from me being new […] and then it went kind of through the ranks and through different other parts of policing, I thought it was good. You can kind of speak to everybody, listen to their experiences.
>
> **Learner 7**

Exercise conducting officer

In Avon and Somerset, as well as a ratio of one trainer per six learners, an additional Exercise Conducting Officer (ECO) is present on all courses. This role was usually

filled by a lead trainer and they provided overall supervision of the training session. Opinions among the training staff were split on the value of the ECO. Some trainers felt the ECO was essential for safety or improved the ability of the training team to focus on struggling learners:

> My personal view is that the role of the ECO, if we hadn't had an ECO, there would have been more injuries and the reason for that is, when you're a trainer you're completely immersed in your six and you're engaged in the learning and sometimes it is a real challenge for those trainers to bring out all the learning and also, the whole time, be mindful of safety.
>
> **Trainer 7**

However, other trainers felt the ECO was rarely able to intervene in preventing injuries and their time would have been better spent conducting the training, even if they performed a role in regulating the sessions or helped new trainers:

> So, personally, I think the role of the ECO needs to go…I don't really see the point in them, because, actually, every injury we've had, no ECO has stopped any of those. So really, is there a need for them?
>
> **Trainer 3**

> I think that having one person whose role is literally to stand there and watch for safety, I think that might be a bit of a waste of a trainer. However, I do see the benefit of having someone there who's reining everybody in, so if you've got a new trainer that they can see that it's kicking off there and they deal with that. But I think maybe the way that we do it is a bit much where you don't get involved, you don't co-train with anyone, you just stand there and you watch and you hope that no one's going to injure themselves. I don't know whether there's any benefit safety wise from having someone there watching the whole lot.
>
> **Trainer 4**

During the observations, it was apparent that the ECO primarily acted as the lead for the session, providing the briefings and running the timing of the day. When the learners were in their group with a trainer, the ECO would then take a background role, occasionally assisting one of the other trainers with a demonstration for their group or ensuring that takedowns were observed and controlled, where possible.

Training time

As mentioned earlier, the inclusion of the JRFT and a first aid refresher at the beginning of the course reduced the overall contact time for the PPST refresher course. During the observations, the average time spent on each activity was recorded, as shown by Table 19.

Table 19: Average time spent on each activity

Activity	Average time
PPST content	**8 hrs 45 mins**
Briefings	1 hr
Warm-ups	30 mins
Custody	1 hr 30 mins
Domestics	1 hr 15 mins
Fight in the street	1 hr 45 mins
Stop and search	1 hr
Vulnerable person	1 hr 45 mins
Other content	**1 hr 45 mins**
JRFT	30 mins
First aid refresher	1 hr 15 mins
Breaks	**1 hr 30 mins**
Total	**12 hrs**

The observations found the average time spent delivering the PPST refresher course was nine hours across the two days. Excluding the JRFT and first aid refresher shows there is ample time for the proposed sixth scenario to be included in the 12 hours.

Most training staff believed that there was enough time allocated to the course to run through each scenario and give each learner multiple opportunities to take part. Some trainers mentioned that there were occasionally particular groups that would have benefited from more time. Only one trainer felt that the two days was not long enough to get through what they wanted. Similarly, officers interviewed found the course was the right length, and the trainers generally made the best use of that time, dividing it between the different scenarios without spending too long on one issue. Some also mentioned that having it across two days allowed for reflection and recovery between each half of the course.

However, some trainers identified a disconnect between the time-on-task focus of the training contrasting with the fact that officers only attend the course annually, contributing to the skills fade between the session:

> I know, it's time on task time on task repetition, repetition, repetition, repetition. I get it. Muscle memory. But the problem is, it's two days every year. How can you do muscle memory for two days every year?
>
> **Trainer 1**

Officer reluctance

Another issue that the training staff highlighted was a perceived reluctance from certain teams who had been assigned to do the training, believing that it was not relevant to them or their role, in some cases with it being escalated:

> There's been a certain reluctance among some students to want to do the new programme. From my perspective, I've seen that more with the specialist teams, so the regional teams, the surveillance teams, the more the investigation type teams have had less buy-in to start with.
>
> **Trainer 2**

This was not an isolated report. Several trainers mentioned facing issues with particular teams and evidence of this was seen during some of the observations. Officers from plain clothes teams often emphasised how the scenarios were not relevant to their roles as they were unlikely to attend domestics or fights in the street. The training staff remained firm in their reasoning that anyone who is in a potentially confrontational role or carried PPE needed to undertake the training.

In direct contrast, several of the officers interviewed as part of the process evaluation came from non-frontline or non-uniform roles and they were unanimous in their praise for the training and their overall level of satisfaction (see above).

Other suggestions for change

It is difficult to reconcile the feedback on improvements for the course, as both learners and trainers made a wide range of suggestions, some of which are more appropriate to be dealt with at a force level and do not impact the evaluation of the national course. However, in brief, the following were recurrent themes in the conversations.

- **The role of first aid in the training.**
    - As mentioned previously, Avon and Somerset Police ran a first aid refresher course on the morning of the first day of the PPST refresher course. This was a short, classroom-based session with a handful of practical activities (for example, CPR on a resuscitation doll).
    - At the start of the PPST pilot, trainers from Avon and Somerset incorporated first aid skills fully into the PPST scenarios. Subsequently, on the advice of the College, due to the need to evaluate the impact of the PPST in isolation, the first aid element was removed from the sessions.
    - Many of the trainers perceived this to be a detrimental change, and that often situations that involve the use of PPST skills will result in the need for first aid. Trainers saw it as part of a holistic approach to scenario-based training and that officers may need to use several skills during a particular incident.
    - Similarly, some learners felt they had not had the opportunity to practise during the initial first aid refresher and that building the learning into the scenarios would have improved their first aid skills.

- **The role of Taser in the training.**
  - Taser provided a particular challenge in the PPST refresher course. While Taser is bound by its own curriculum and Taser-equipped officers must undergo a separate annual refresher course to revalidate in the use of the device, Taser has a role to play in situations with the threat or risk of violence.
  - Initially, learners used live Tasers without cartridges during the PPST refresher, but shortly into the pilot these were replaced with dummy Tasers.
  - Training staff, many of whom were also Taser trainers, were concerned that the dummy Tasers were not a like-for-like replica for the live Taser and may promote unhelpful practices that would not work on a live Taser.
  - The use of the dummy Tasers, which simply made a quiet noise when the trigger was pressed, was also seen by training staff to be disruptive to the scenario. The trainer would need to qualify whether the Taser use had or had not been effective, and the role-players would need to react promptly in line with the trainers' suggestion. This often led to awkward pauses or gaps as the role-players figured out what was going on.
- **The role of vehicles in the training.**
  - Both trainers and learners identified that use of force frequently occurs in and around police vehicles, and that incorporating vehicles into the training would bolster confidence.
- **The focus on equipment.**
  - Some trainers felt there was still too great an emphasis on use of equipment, particularly with regard to breakout teaches, rather than physical skills.
- **The need to change the scenarios every year.**
  - Both learners and trainers suggested the scenarios should be reviewed, refreshed, enhanced or altered on an annual basis, otherwise the training would run the risk of becoming predictable.
  - Trainers felt that the new and innovative approach had momentum and, if it became business as usual, negative elements of old-style training, such as instructing by rote, were more likely to make a return.

6. Conclusion and implications

Taken together, the impact and process evaluation for the new PPST refresher course paint a promising picture, particularly in light of the overwhelmingly positive feedback received from participating officers. The findings contribute to the growing evidence base for the positive impacts of training for police that emphasises de-escalation. The new PPST curriculum is a novel, scenario-based approach to de-escalation and officer safety skills. The training was delivered to all eligible officers in Avon and Somerset Police and evaluated for both impact and process measures.

Use of force

The stepped-wedge analysis showed a measurable and statistically significant decrease in use of force by officers who had completed the PPST refresher course. It showed that, compared to 11% of comparison group officers who used force in any given week, treatment group officers were between 0.9% points and 1.2% points less likely to use force. The largest reductions were seen for use of ‘hands-on’ tactics. While these reductions are modest, they equate to a reduction of 0.67 uses of force per officer per year. For the 2,061 officers involved in the pilot, a reduction of 0.67 uses of force per officer equates to 1,246 fewer uses of force for Avon and Somerset Police. Furthermore, in the resulting uses of force, members of the public were a third less likely to be injured than they were the year before, which is likely linked to the most significant reduction being for ‘hands-on’ tactics, identified as the riskiest force for officers to use (Quinton and others, 2020).

There was also evidence of a small, but statistically significant, improvement to public safety. The likelihood that a member of the public would be injured during a use-of-force incident fell from 0.6% in any given week before training to 0.4% afterwards. Extrapolating this result, there would have been around 190 fewer people injured during use-of-force incidents in Avon and Somerset over 12 months. However, this result was less certain because injuries to the public were rare events.

A promising reduction was also seen in use of force on black people. While the result was not statistically significant, this is likely because so few cases of use of force against black people were recorded, compared to uses of force against white people, in Avon and Somerset for duration of the pilot period. It is hoped that the experiences

of other forces rolling out the training will be able to verify the impact of the new refresher course on race disproportionality in the use of force.

All of these reductions took place alongside business as usual for Avon and Somerset Police. Use of force reduced against a backdrop of slightly reduced demand but increased numbers of arrests. Finally, the changes occurred with no increased risk of injury on duty to those officers who had received the new PPST.

Police safety skills

The responses from the surveys, interviews and observations demonstrate learners were, on the whole, highly satisfied with the new PPST refresher course, particularly in comparison to the old style of PST training. Alongside this increased satisfaction, officers reported an increased confidence in using personal safety skills. This confidence was sustained after a three-month follow-up, implying the training has a sustained effect on participants.

Survey respondents reported the new refresher course delivered higher quality training on a range of tactics and agreed that it better prepared them for their role. In interviews, officers praised the exclusive use of scenarios and found the frequent feedback sessions useful for their development. The facilities for the training were generally appreciated, with the range of props and the modular walls adding realism and making the scenarios complex to deal with. Officers reported finding the sessions physically challenging and with an appreciated emphasis on de-escalation and other communication skills.

While specific self-efficacy measures were not part of this study's design – it reported sustained increases for reported satisfaction with the training, reported perceptions of the training being high quality and reported confidence in personal safety skills, taken alongside measurable reductions in police use of force and injuries to members of the public. Taken together, these begin to imply that high quality, enjoyable training leads to improvements in confidence that can result in real-world benefits.

It is interesting to note that the training did not have a similar, statistically significant effect on police attitudes towards assault. The minor and insignificant changes in attitudes to both perceived likelihood of assault and worry about being assaulted

imply that sufficient safety training is not the primary predictor of these attributes. It is likely that the perceived likelihood and associated fear of being assaulted are multi-faceted items, entrenched in other areas of police practice (for example, areas policed, team composition or strength).

Finally, the inconclusive findings regarding anticipated behaviours in the vignettes highlight the difficulties with panel-based research. While we can infer a general level of prioritisation shifting towards building rapport and active listening, we also saw prioritisation of being prepared to use pieces of equipment. This may imply an improved level of risk assessment alongside the emphasised use of de-escalatory tactics, but there is no way to be sure. Using vignettes to understand anticipated behaviour change can be a helpful exploratory tool, but careful consideration needs to be given to the conditions that underpin its analysis.

Training delivery

The findings from the process evaluation indicate that the intervention was broadly delivered as intended, but this was contingent on the efforts and skills of a small group of people at Avon and Somerset. The training staff generally felt unclear on how theoretical elements of the design were supposed to interface with the reality of the police training environment and felt there was an expectation on them to make it work, even when a skills deficit was identified. The College, while faced with its own resourcing issues, provided the best support it could but this was perceived as not enough. Overwhelmingly, the training staff at Avon and Somerset feel that more structured support, including documentation and supervision, given further in advance, would have made the process of delivering the training a lot smoother.

Injuries were a major concern for this new style of training but a lack of suitable prior statistics have meant that drawing conclusions from the pilot's injury statistics is challenging. Initially, the reported injury rate implies that one in 20 (4.7%) learners will report an injury or near-miss during the course of their refresher training – this would equate to at least one per class. However, the vast majority (91.6%) of those reports are either non-injury accidents or minor injuries that were dealt with during the course of the training and led to minimal absences from work. Inherently, scenario-based training carries more risks than other forms of training, particularly when focused on the full contact elements of police work.

In line with what has been learnt about injuries, the training staff in Avon and Somerset Police believe that a ratio of 1:6 is safe, effective and has specific benefits over other similar ratios, particularly in ensuring all students are engaged throughout the training. While a small degree of flexibility is required for when group sizes do not neatly match up, extending the ratio beyond 1:7 or below 1:5 is perceived to be detrimental to the aims of the training and the safety of students. Training staff in Avon and Somerset also remain divided on the benefits of the ECO. There is not enough evidence currently to firmly recommend the use of ECOs, although Avon and Somerset have had positive experiences using them.

Most of the trainers believed that there was enough time allocated to the course and to cover the learning outcomes in sufficient depth. Similarly, the learners felt that they had enough time to take part in each scenario without becoming bored or inactive. This indicates that the PPST refresher has been allocated enough time and Avon and Somerset's experience shows that there is sufficient time in the day to replace the first aid refresher with a sixth scenario.

The reluctance of officers from certain roles to take part in the training was unexpected, given the overwhelmingly positive feedback on the training from both the survey and the interviews with officers. Its prevalence in interviews with the trainers and the fact it was observed during the PPST sessions means that it is more widespread than a single instance. The College may wish to emphasise in the scenario briefings that they build on skills relevant to managing conflict and the themes (for example, entering an unknown premises, looking to detain a potentially violent individual) are comparable even if they can be used to describe different events and responsibilities (for example, a domestic or a search for a wanted individual). It may be that examples of other similar scenarios can be provided so trainers can tailor their simulations for their group. It is also noted that other PPST courses are being created for specialist roles and that these recommendations may have a greater part to play in their development rather than for the national PPST refresher course.

Finally, the position of the new PPST refresher course needs to be considered alongside other existing courses, such as those for Taser and first aid. The overlap between curriculums and the opportunities the scenario-based training presents should not be overlooked. Furthermore, the future of the PPST refresher course

needs to consider whether there are steps the College can take to maximise the learning potential around officers' daily duties and how the training can be kept innovative, avoiding stagnation and capitalising on officers' enthusiasm for this style of training delivery.

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Appendix A: Types of force used

The type of force used by officers in the pilot was also examined. All possible uses of force were extracted from Avon and Somerset Police's use of force form and sorted into categories. Some tactics were decided to be 'out of scope' as the included pieces of equipment have their own curriculum and are not used in a PPST setting.

The categories designated out of scope were:

- attenuating energy projectile (AEP) launcher aimed
- AEP launcher fired
- dog deployed
- dog bite
- firearms aimed
- firearms used
- horse deployed

Conducted energy devices (CEDs) such as Taser were included in the analysis as, while the devices have their own curriculum, dummy Tasers were available to trained officers to use with their PPST skills in the scenarios. The remaining tactics were divided into four categories defined as compliant restraint, weapon drawn or aimed, use of physical force and use of weapon. See Table 20 for the full categories.

Table 20: Categories for types of use of force

Category	Includes
Compliant handcuffing	▪ Compliant handcuffing
Weapon drawn or aimed	▪ Baton drawn ▪ CED (Taser) aimed ▪ CED (Taser) arced ▪ CED (Taser) drawn ▪ CED (Taser) red dot ▪ Irritant spray – CS drawn

Category	Includes
	▪ Irritant spray – PAVA drawn
Use of physical force	▪ Ground restraint ▪ Limb/body restraints ▪ Non-compliant handcuffing ▪ Other/improvised ▪ Unarmed skills/physical restraint
Use of weapon	▪ Baton used ▪ CED (Taser) drive stun ▪ CED (Taser) fired ▪ CED (Taser) three-point contact ▪ Irritant spray – CS used ▪ Irritant spray – PAVA used

Appendix B: Survey privacy notice

The College of Policing has been provided your details to evaluate the impact of new personal safety training that is being introduced in Avon and Somerset. The results will shape how the training is implemented across England and Wales.

The College conducts widespread surveys of officers and staff across the service and external partners. The College recognises that surveys are an essential method of understanding College performance and ensuring resources are best allocated to activities in the public interest.

This privacy notice aims to give you information on how the College of Policing collects data when you participate in our surveys. This privacy notice supplements other notices and is not intended to override them.

All College surveys are voluntary.

The personal information that we have been provided is your name, email address, force and your collar number. We are using this information to conduct an evaluation and triangulate your survey responses with force data. On completion, the results will be aggregated and reported on anonymously.

The lawful basis for processing your information is under Article 6(1)(e) of the UK GDPR for the performance of a task carried out in the public interest and in the exercise of official authority vested in us.

We will hold your information for as long as is necessary for the completion of the project to allow for publication and in line with the College Retention Schedule. After this period your information will be securely disposed of. All information is held securely on our College network.

The anonymised reports will be shared with your police force and will be published by the College later this year. The College takes its data protection responsibilities very seriously. You have certain rights under data protection legislation regarding your personal information.

For more information about your rights, please see our full **privacy notice**, which can be found on the legal page of our website. You can also contact our Data Protection Officer by emailing: **Data.Protection@college.police.uk**

Appendix C: Pre-training survey

Thank you for taking part in this survey. By responding, you will help us to evaluate the impact of new personal safety training that is being introduced in Avon & Somerset. The results will shape how the training is implemented across England and Wales.

Please complete this survey **before** undertaking the new personal safety training refresher course.

We will ask you about your role, your experiences of being assaulted on duty, and your views about the personal safety training you have received to date. The survey is not an exam or test, and simply seeks for your point of view.

The survey should take about 10 minutes to complete. You can save your responses and finish the survey at another time. The success of this survey depends on as many officers taking part as possible.

If you have any comments or questions about the survey, please email **personalsafety@college.police.uk**

1. Have you undertaken the new personal safety training refresher course any time since October 2021?	▪ Yes [route] ▪ No
In the first set of questions, we would like to ask you about your current role.	
2. What is your substantive rank?	▪ Constable ▪ Sergeant ▪ Inspector ▪ Chief inspector ▪ Superintendent ▪ Chief superintendent ▪ Chief officer

3. What is your current role in Avon & Somerset?	▪ Custody ▪ Investigations ▪ Neighbourhoods ▪ Public protection ▪ Response ▪ Roads ▪ Specialist operations (eg, firearms, public order, dogs) ▪ Other
4. In general, how often do you have to manage conflict in your current role?	▪ Daily ▪ Weekly ▪ Monthly ▪ Quarterly or less often ▪ Never
5. How regularly do you use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs f. Baton g. Incapacitant spray	▪ Always ▪ Often ▪ Sometimes ▪ Rarely ▪ Never
6. How confident are you in your ability to use each of the following when managing conflict? a. Verbal and non-verbal de-escalation	▪ Very confident ▪ Fairly confident ▪ Not very confident

b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs f. Baton g. Incapacitant spray	▪ Not confident at all
This section is about your experiences of being assaulted on duty and how safe you feel.	
7. When were you last assaulted on duty?	▪ Less than 1 year ago [route] ▪ 1-2 years ago ▪ 3-5 years ago ▪ More than 5 years ago ▪ Never been assaulted
8. How many times have you been assaulted on duty in the past 12 months?	▪ 1-2 times ▪ 3-5 times ▪ 6-10 times ▪ More than 10 times ▪ Don’t know
9. How likely do you think it is that you will be assaulted on duty in the next 12 months?	▪ Very likely ▪ Fairly likely ▪ Not very likely ▪ Not likely at all
10. How worried are you about being assaulted on duty in the next 12 months?	▪ Very worried ▪ Fairly worried ▪ Not very worried ▪ Not worried at all

The next set of questions are about the last time you attended a personal safety training course.	
11. When did you last attend a personal safety training course?	▪ Less than 1 year ago ▪ 1-2 years ago ▪ More than 2 years ago
12. How good was the training you received on each of the following during the last personal safety training course you attended? a. Risk assessment and decision-making b. Verbal and non-verbal de-escalation c. Unarmed strikes and blocks d. Restraint e. Take downs and ground pins f. Handcuffs g. Baton h. Incapacitant spray	▪ Excellent ▪ Good ▪ Fair ▪ Poor ▪ Not covered during course
13. How much do you agree or disagree with each of the following statements about the last personal safety training course you attended? [random order] The course… a. Gave me personalised feedback that helped me refine my skills b. Gave me opportunities to practise that helped me refine my skills c. Was tailored to my specific needs d. Was relevant to the demands of my job e. Was too short	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

f. Was too long g. Was too unrealistic h. Was too repetitive i. Was too easy j. Was too challenging k. Involved too few role-plays l. Involved too much waiting around	
14. Did you receive any injuries during the last personal safety training course you attended?	▪ Yes – I was injured and needed time off work ▪ Yes – I was injured but did not need time off work ▪ No – I was not injured
15. Overall, how satisfied or dissatisfied were you with the last personal safety training course you attended?	▪ Very satisfied ▪ Fairly satisfied ▪ Neither satisfied nor dissatisfied ▪ Fairly dissatisfied ▪ Very dissatisfied
16. Thinking more broadly about the training you have received, how much do you disagree or agree with each of the following statements? [random order] a. Training has given me the communication skills I need to de-escalate confrontation b. I know from training how best to calm someone down who is aggressive c. I have been trained how to manage conflict without using physical force	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

d. Training has given me the physical skills I need to keep safe e. I know from training how best to restrain someone f. I have been trained how to go ‘hands-on’ when necessary g. Training has shown me how to use situational awareness to prevent me being assaulted h. I know from training how best to carry a dynamic risk assessment i. I have been trained in what threats to look out for in conflict situations	
We would now like to ask how you would go about managing two different incidents that have the potential for confrontation. There are no right or wrong answers; we simply want your opinion.	
You are responding to a call about someone threatening people in the town centre. You drive to the location and see a dishevelled man staggering around, swearing at shoppers, and spitting on the floor behind them as they pass by. As you approach, the man swears at you and starts waving a crutch towards you in the air.	
17. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority

e. Going ‘hands-on’ f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	
You are responding to a call for back-up from a colleague who’s stopped a vehicle for a minor traffic offence. You don’t know the officer, but he has a reputation for rubbing people up the wrong way. Pulling over, you see the officer in a heated discussion with three young men. As you get out your car, the officer makes a sarcastic comment to one of the men, who starts to square up to the officer.	
18. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going ‘hands-on’ f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority
This final section asks a series of demographic questions for monitoring purposes.	
19. When did you join the police as an officer?	▪ YYYY

20. How was sex recorded at birth?	▪ Female ▪ Intersex ▪ Male ▪ Prefer not to say ▪ Other (please specify)
21. What is your gender identity?	▪ Female ▪ Male ▪ Prefer not to say ▪ Prefer to self-describe ()
22. Is your gender identity the same as the sex you were assigned at birth?	▪ No ▪ Yes ▪ Prefer not to say
23. What is your ethnic background?	▪ Asian/Asian British ○ Bangladeshi ○ Chinese ○ Indian ○ Pakistani ○ Any other Asian background, please describe ▪ Black/African/Caribbean/ Black British ○ African ○ Caribbean ○ Any other Black/African/ Caribbean background, please describe

	▪ Mixed/Multiple ethnic groups ○ White and Asian ○ White and Black African ○ White and Black Caribbean ○ Any other Mixed/ Multiple ethnic background, please describe ▪ White ○ English/Welsh/ Scottish/Northern Irish/ British ○ Gypsy or Irish Traveller ○ Irish ○ Any other White background, please describe ▪ Other Ethnic Group ○ Arab ○ Any other Ethnic Group, please describe ○ Prefer not to say ▪ Description (if required)

Appendix D: Post-training survey

Thank you for your interest in this second, follow-up PST evaluation survey. You may still participate in this survey if you did not complete a survey prior to undertaking your PST refresher course.

If you did complete a survey prior to undertaking your PST refresher course, some of the questions that follow may be familiar to you. This is by design will allow us to see whether and how attitudes have changed over time. As before, your answers will help inform the new national personal safety training curriculum.

The survey should take about 10 minutes to complete. You can save your responses and finish the survey at another time. The success of this survey depends on as many officers taking part as possible.

If you have any comments or questions about the survey, please email **personalsafety@college.police.uk**

1. Have you undertaken the new personal safety training refresher course any time since October 2021?	▪ Yes ▪ No [route]
In the first set of questions, we would like to ask you about your current role.	
2. What is your substantive rank?	▪ Constable ▪ Sergeant ▪ Inspector ▪ Chief inspector ▪ Superintendent ▪ Chief superintendent ▪ Chief officer
3. What is your current role in Avon & Somerset?	▪ Custody ▪ Investigations ▪ Neighbourhoods

	▪ Public protection ▪ Response ▪ Roads ▪ Specialist operations (eg, firearms, public order, dogs) ▪ Other
4. In general, how often do you have to manage conflict in your current role?	▪ Daily ▪ Weekly ▪ Monthly ▪ Quarterly or less often ▪ Never
5. How regularly do you use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs f. Baton g. Incapacitant spray	▪ Always ▪ Often ▪ Sometimes ▪ Rarely ▪ Never
6. How confident are you in your ability to use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs	▪ Very confident ▪ Fairly confident ▪ Not very confident ▪ Not confident at all

f. Baton g. Incapacitant spray	
The next set of questions refer to the personal safety training refresher course you will have attended recently.	
7. During your recent personal safety training refresher course, how good was the training you received on each of the following? a. Risk assessment and decision-making b. Verbal and non-verbal de-escalation c. Unarmed strikes and blocks d. Restraint e. Take downs and ground pins f. Handcuffs g. Baton h. Incapacitant spray	▪ Excellent ▪ Good ▪ Fair ▪ Poor ▪ Not covered during course
8. How much do you agree or disagree with each of the following statements about the personal safety training refresher course you attended recently? [random order] The course… a. Gave me personalised feedback that helped me refine my skills b. Gave me opportunities to practise that helped me refine my skills c. Was tailored to my specific needs d. Was relevant to the demands of my job e. Was too short f. Was too long	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

g. Was too unrealistic h. Was too repetitive i. Was too easy j. Was too challenging k. Involved too few role-plays l. Involved too much waiting around	
9. Did you receive any injuries during the personal safety training refresher course you attended recently?	▪ Yes – I was injured and needed time off work ▪ Yes – I was injured but did not need time off work ▪ No – I was not injured
10. Overall, how satisfied or dissatisfied were you with the personal safety training refresher course you attended recently?	▪ Very satisfied ▪ Fairly satisfied ▪ Neither satisfied nor dissatisfied ▪ Fairly dissatisfied ▪ Very dissatisfied
11. Thinking more broadly about the training you have received, how much do you disagree or agree with each of the following statements? [random order] a. Training has given me the communication skills I need to de-escalate confrontation b. I know from training how best to calm someone down who is aggressive c. I have been trained how to manage conflict without using physical force d. Training has given me the physical skills I need to keep safe	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

e. I know from training how best to restrain someone f. I have been trained how to go 'hands-on' when necessary g. Training has shown me how to use situational awareness to prevent me being assaulted h. I know from training how best to carry a dynamic risk assessment i. I have been trained in what threats to look out for in conflict situations	
12. How would you rate each of the following about the personal safety training refresher course you attended recently? a. The organisation of the course as a whole b. The atmosphere on the course c. The course content d. The method of training delivery e. The quality of teaching f. The training facilities	▪ Excellent ▪ Good ▪ Fair ▪ Poor
We would now like to ask how you would go about managing two different incidents that have the potential for confrontation. There are no right or wrong answers; we simply want your opinion.	
You are responding to a call from someone concerned about the safety a neighbour. You arrive at the neighbour's house to find a middle-aged man, in distress, banging on the door with one of his fists. He then shouts aggressively through the letter box that he wants to see his kids. As he starts pacing towards you, you notice a brick in his other hand.	

13. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going ‘hands-on’ f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority
You are driving around an area looking for a young male involved in a robbery. You spot someone matching the description in a nearby street. You pull up next to the man and notice he has something bulky in his pocket. You ask him to wait. He says you have no reason to stop him, and threatens to punch you if you come any closer.	
14. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going ‘hands-on’ f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority

This final section asks a series of demographic questions for monitoring purposes.	
15. When did you join the police as an officer?	▪ YYYY
16. How was sex recorded at birth?	▪ Female ▪ Intersex ▪ Male ▪ Prefer not to say ▪ Other (please specify)
17. What is your gender identity?	▪ Female ▪ Male ▪ Prefer not to say ▪ Prefer to self-describe ()
18. Is your gender identity the same as the sex you were assigned at birth?	▪ No ▪ Yes ▪ Prefer not to say
19. What is your ethnic background?	▪ Asian/Asian British o Bangladeshi o Chinese o Indian o Pakistani o Any other Asian background, please describe ▪ Black/African/Caribbean/ Black British o African o Caribbean

	○ Any other Black/ African/Caribbean background, please describe ▪ Mixed/Multiple ethnic groups ○ White and Asian ○ White and Black African ○ White and Black Caribbean ○ Any other Mixed/ Multiple ethnic background, please describe ▪ White ○ English/Welsh/ Scottish/Northern Irish/ British ○ Gypsy or Irish Traveller ○ Irish ○ Any other White background, please describe ▪ Other Ethnic Group ○ Arab ○ Any other Ethnic Group, please describe ○ Prefer not to say ▪ Description (if required)

Appendix E: Post-training survey (modified)

Thank you for taking part in this survey. By responding, you will help us to evaluate the impact of new personal safety training that is being introduced in Avon & Somerset. The results will shape how the training is implemented across England and Wales.

We will ask you about your role, your experiences of being assaulted on duty, and your views about the personal safety training refresher course you have recently attended. The survey is not an exam or test, and simply seeks for your point of view.

The survey should take about 10 minutes to complete. You can save your responses and finish the survey at another time. The success of this survey depends on as many officers taking part as possible.

If you have any comments or questions about the survey, please email **personalsafety@college.police.uk**

1. Have you undertaken the new personal safety training refresher course any time since October 2021?	▪ Yes ▪ No [route]
In the first set of questions, we would like to ask you about your current role.	
2. What is your substantive rank?	▪ Constable ▪ Sergeant ▪ Inspector ▪ Chief inspector ▪ Superintendent ▪ Chief superintendent ▪ Chief officer
3. What is your current role in Avon & Somerset?	▪ Custody ▪ Investigations ▪ Neighbourhoods

	▪ Public protection ▪ Response ▪ Roads ▪ Specialist operations (eg, firearms, public order, dogs) ▪ Other
4. In general, how often do you have to manage conflict in your current role?	▪ Daily ▪ Weekly ▪ Monthly ▪ Quarterly or less often ▪ Never
5. How regularly do you use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs f. Baton g. Incapacitant spray	▪ Always ▪ Often ▪ Sometimes ▪ Rarely ▪ Never
6. How confident are you in your ability to use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs	▪ Very confident ▪ Fairly confident ▪ Not very confident ▪ Not confident at all

f. Baton g. Incapacitant spray	
The next set of questions refer to the personal safety training refresher course you will have attended recently.	
7. How good was the training you received on each of the following during the personal safety training refresher course you attended recently? a. Risk assessment and decision-making b. Verbal and non-verbal de-escalation c. Unarmed strikes and blocks d. Restraint e. Take downs and ground pins f. Handcuffs g. Baton h. Incapacitant spray	▪ Excellent ▪ Good ▪ Fair ▪ Poor ▪ Not covered during course
8. How much do you agree or disagree with each of the following statements about the personal safety training refresher course you attended recently? [random order] The course… a. Gave me personalised feedback that helped me refine my skills b. Gave me opportunities to practise that helped me refine my skills c. Was tailored to my specific needs d. Was relevant to the demands of my job e. Was too short	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

f. Was too long g. Was too unrealistic h. Was too repetitive i. Was too easy j. Was too challenging k. Involved too few role-plays l. Involved too much waiting around	
9. Did you receive any injuries during the personal safety training refresher course you attended recently?	▪ Yes – I was injured and needed time off work ▪ Yes – I was injured but did not need time off work ▪ No – I was not injured
10. Overall, how satisfied or dissatisfied were you with the personal safety training refresher course you attended recently?	▪ Very satisfied ▪ Fairly satisfied ▪ Neither satisfied nor dissatisfied ▪ Fairly dissatisfied ▪ Very dissatisfied
11. Thinking more broadly about the training you have received, how much do you disagree or agree with each of the following statements? [random order] a. Training has given me the communication skills I need to de-escalate confrontation b. I know from training how best to calm someone down who is aggressive c. I have been trained how to manage conflict without using physical force	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

d. Training has given me the physical skills I need to keep safe e. I know from training how best to restrain someone f. I have been trained how to go 'hands-on' when necessary g. Training has shown me how to use situational awareness to prevent me being assaulted h. I know from training how best to carry a dynamic risk assessment i. I have been trained in what threats to look out for in conflict situations	
12. How would you rate each of the following about the personal safety training refresher course you attended recently? a. The organisation of the course as a whole b. The atmosphere on the course c. The course content d. The method of training delivery e. The quality of teaching f. The training facilities	▪ Excellent ▪ Good ▪ Fair ▪ Poor
We would now like to ask how you would go about managing two different incidents that have the potential for confrontation. There are no right or wrong answers; we simply want your opinion.	
You are responding to a call about someone threatening people in the town centre. You drive to the location and see a dishevelled man staggering around, swearing at shoppers, and spitting on the floor behind them as they pass by. As you approach, the man swears at you and starts waving a crutch towards you in the air.	

13. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going 'hands-on' f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority
You are responding to a call for back-up from a colleague who's stopped a vehicle for a minor traffic offence. You don't know the officer, but he has a reputation for rubbing people up the wrong way. Pulling over, you see the officer in a heated discussion with three young men. As you get out your car, the officer makes a sarcastic comment to one of the men, who starts to square up to the officer.	
14. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going 'hands-on' f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority

This final section asks a series of demographic questions for monitoring purposes.	
15. When did you join the police as an officer?	▪ YYYY
16. How was sex recorded at birth?	▪ Female ▪ Intersex ▪ Male ▪ Prefer not to say ▪ Other (please specify)
17. What is your gender identity?	▪ Female ▪ Male ▪ Prefer not to say ▪ Prefer to self-describe ()
18. Is your gender identity the same as the sex you were assigned at birth?	▪ No ▪ Yes ▪ Prefer not to say
19. What is your ethnic background?	▪ Asian/Asian British o Bangladeshi o Chinese o Indian o Pakistani o Any other Asian background, please describe ▪ Black/African/Caribbean/ Black British o African o Caribbean

	○ Any other Black/ African/Caribbean background, please describe ▪ Mixed/Multiple ethnic groups ○ White and Asian ○ White and Black African ○ White and Black Caribbean ○ Any other Mixed/ Multiple ethnic background, please describe ▪ White ○ English/Welsh/Scottish/ Northern Irish/British ○ Gypsy or Irish Traveller ○ Irish ○ Any other White background, please describe ▪ Other Ethnic Group ○ Arab ○ Any other Ethnic Group, please describe ○ Prefer not to say ▪ Description (if required)

Appendix F: Follow-up survey

Thank you for your interest in this, the third and final PST evaluation survey.

You may still participate in this survey, even if you did not complete either of the other two surveys.

If you did complete either of the other surveys either prior to or just after taking your PST refresher course, some of the questions that follow may be familiar to you. This is by design, it will allow us to see whether attitudes have changed over time. As before, your answers will help inform the new national personal safety training curriculum.

The survey should take about 10 minutes to complete. You can save your responses and finish the survey at another time. The success of this survey depends on as many officers taking part as possible.

If you have any comments or questions about the survey, please email **personalsafety@college.police.uk**

1. Have you undertaken the new personal safety training refresher course any time since October 2021?	▪ Yes ▪ No [route]
In the first set of questions, we would like to ask you about your current role.	
2. What is your substantive rank?	▪ Constable ▪ Sergeant ▪ Inspector ▪ Chief inspector ▪ Superintendent ▪ Chief superintendent ▪ Chief officer
3. What is your current role in Avon & Somerset?	▪ Custody ▪ Investigations

	▪ Neighbourhoods ▪ Public protection ▪ Response ▪ Roads ▪ Specialist operations (eg, firearms, public order, dogs) ▪ Other
4. In general, how often do you have to manage conflict in your current role?	▪ Daily ▪ Weekly ▪ Monthly ▪ Quarterly or less often ▪ Never
5. How regularly do you use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins e. Handcuffs f. Baton g. Incapacitant spray	▪ Always ▪ Often ▪ Sometimes ▪ Rarely ▪ Never
6. How confident are you in your ability to use each of the following when managing conflict? a. Verbal and non-verbal de-escalation b. Unarmed strikes and blocks c. Restraint d. Take downs and ground pins	▪ Very confident ▪ Fairly confident ▪ Not very confident ▪ Not confident at all

e. Handcuffs f. Baton g. Incapacitant spray	
This section is about your experiences of being assaulted on duty and how safe you feel.	
7. Have you been assaulted since completing your recent personal safety refresher course?	▪ Yes [route] ▪ No
8. How many times have you been assaulted since completing your recent personal safety refresher course?	▪ 1-2 times ▪ 3-5 times ▪ 6-10 times ▪ More than 10 times ▪ Don't know
9. How likely do you think it is that you will be assaulted on duty in the next 12 months?	▪ Very likely ▪ Fairly likely ▪ Not very likely ▪ Not likely at all
10. How worried are you about being assaulted on duty in the next 12 months?	▪ Very worried ▪ Fairly worried ▪ Not very worried ▪ Not worried at all
The next set of questions refer to the personal safety training refresher course you will have attended recently.	
11. How good was the training you received on each of the following during the personal safety training refresher course you attended recently? a. Risk assessment and decision-making	▪ Excellent ▪ Good ▪ Fair ▪ Poor

b. Verbal and non-verbal de-escalation c. Unarmed strikes and blocks d. Restraint e. Take downs and ground pins f. Handcuffs g. Baton h. Incapacitant spray	▪ Not covered during course
12. Thinking more broadly about the training you have received, how much do you disagree or agree with each of the following statements? [random order] a. Training has given me the communication skills I need to de-escalate confrontation b. I know from training how best to calm someone down who is aggressive c. I have been trained how to manage conflict without using physical force d. Training has given me the physical skills I need to keep safe e. I know from training how best to restrain someone f. I have been trained how to go ‘hands-on’ when necessary g. Training has shown me how to use situational awareness to prevent me being assaulted h. I know from training how best to carry a dynamic risk assessment i. I have been trained in what threats to look out for in conflict situations	▪ Strongly agree ▪ Agree ▪ Neither agree nor disagree ▪ Disagree ▪ Strongly disagree

We would now like to ask how you would go about managing four different incidents that have the potential for confrontation. There are no right or wrong answers; we simply want your opinion.

You are responding to a call about someone threatening people in the town centre. You drive to the location and see a dishevelled man staggering around, swearing at shoppers, and spitting on the floor behind them as they pass by. As you approach, the man swears at you and starts waving a crutch towards you in the air.

13. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going 'hands-on' f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority

You are responding to a call for back-up from a colleague who's stopped a vehicle for a minor traffic offence. You don't know the officer, but he has a reputation for rubbing people up the wrong way. Pulling over, you see the officer in a heated discussion with three young men. As you get out your car, the officer makes a sarcastic comment to one of the men, who starts to square up to the officer.

14. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going 'hands-on' f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority
You are responding to a call from someone concerned about the safety a neighbour. You arrive at the neighbour's house to find a middle-aged man, in distress, banging on the door with one of his fists. He then shouts aggressively through the letter box that he wants to see his kids. As he starts pacing towards you, you notice a brick in his other hand.	
15. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going 'hands-on' f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority

You are driving around an area looking for a young male involved in a robbery. You spot someone matching the description in a nearby street. You pull up next to the man and notice he has something bulky in his pocket. You ask him to wait. He says you have no reason to stop him, and threatens to punch you if you come any closer.	
16. How much of a priority would you give to each of the following actions when managing this incident? a. Building a rapport with the person b. Creating a safe distance c. Reassuring the person about what is happening d. Listening to what the person has to say e. Going 'hands-on' f. Giving clear commands in a loud voice g. Drawing your baton, irritant spray or Taser h. Firmly telling the person to calm down	▪ Very high priority ▪ Fairly high priority ▪ Neither high priority nor low priority ▪ Fairly low priority ▪ Very low priority
This final section asks a series of demographic questions for monitoring purposes.	
17. When did you join the police as an officer?	▪ YYYY
18. How was sex recorded at birth?	▪ Female ▪ Intersex ▪ Male ▪ Prefer not to say ▪ Other (please specify)

19. What is your gender identity?	▪ Female ▪ Male ▪ Prefer not to say ▪ Prefer to self-describe ()
20. Is your gender identity the same as the sex you were assigned at birth?	▪ No ▪ Yes ▪ Prefer not to say
21. What is your ethnic background?	▪ Asian/Asian British o Bangladeshi o Chinese o Indian o Pakistani o Any other Asian background, please describe ▪ Black/African/Caribbean/ Black British o African o Caribbean o Any other Black/African/ Caribbean background, please describe ▪ Mixed/Multiple ethnic groups o White and Asian o White and Black African o White and Black Caribbean

	○ Any other Mixed/ Multiple ethnic background, please describe ▪ White ○ English/Welsh/Scottish/ Northern Irish/British ○ Gypsy or Irish Traveller ○ Irish ○ Any other White background, please describe ▪ Other Ethnic Group ○ Arab ○ Any other Ethnic Group, please describe ○ Prefer not to say ▪ Description (if required)

Appendix G: Anticipated behaviours

Impact on anticipated behaviours

In this section, we wanted to examine how officers said they would act in response to a variety of vignettes related to PPST. Respondents were asked about four vignettes – two (threatening behaviour and traffic stop) appeared in the pre-pilot survey, two (concern for safety and robbery suspect) in the post-pilot survey, and all four in the follow-up survey. The vignettes were written with the help of serving officers to create situations where use of force may become justified but is not immediately warranted.

On reviewing each vignette, respondents were asked to rate: 'How much of a priority would you give to each of the following actions when managing this incident?'

- Building a rapport with the person
- Creating a safe distance
- Reassuring the person about what is happening
- Listening to what the person has to say
- Going 'hands-on'
- Giving clear commands in a loud voice
- Drawing your baton, irritant spray or Taser
- Firmly telling the person to calm down

Respondents were asked to rate each of the eight actions as 'Very high priority', 'Fairly high priority', 'Neither high priority nor low priority', 'Fairly low priority' or 'Very low priority'. Answers were not mutually exclusive or scaled. Respondents could place all items at the same level if they deemed it appropriate to do so.

With the intended analysis as a panel survey unfeasible due to the changing response rates, it was decided to approach the vignette analysis in a similar manner to the other survey analyses, by using a fixed effects multi-level model. To improve the validity of the model, the listed actions were combined into two scales. One was based on behaviours from the College's (2020) best practice conflict management guidance. The other contained more immediate actions or instructions for conflict resolution (see Table 21).

Table 21: Proposed vignette response categories for multi-level fixed effects models

Best practice conflict management skills	Instructions and actions
▪ Creating a safe distance ▪ Building a rapport with the person ▪ Reassuring the person about what is happening ▪ Listening to what the person has to say	▪ Giving clear commands in a loud voice ▪ Firmly telling the person to calm down ▪ Drawing your baton, irritant spray or Taser ▪ Going 'hands-on'

Our hypothesis expected officers to prioritise best practice conflict management skills, in line with their new training, while deprioritising more confrontational actions and instructions.

Unfortunately, reliability testing using Cronbach's alpha indicated that the majority of the combined scales were not suitable for analysis in a fixed effects multi-level model.

Therefore, to draw some tentative conclusions from the vignettes, we have performed *t*-tests on each matching sample that responded to each vignette in the survey, as well as basic cross-sectional analysis on the trends across all respondents. These findings are covered briefly below. Each subsection starts with the vignettes repeated in full.

Threatening behaviour

> You are responding to a call about someone threatening people in the town centre. You drive to the location and see a dishevelled man staggering around, swearing at shoppers and spitting on the floor behind them as they pass by. As you approach, the man swears at you and starts waving a crutch towards you in the air.

When comparing all survey respondents, most of the statements remained stable between the pre-pilot and follow-up surveys. Highest priority was given to creating a safe distance and giving clear commands in a loud voice both before and three months after the training had taken place. Lowest priority was identified for drawing equipment or going ‘hands-on’, although both increased following the refresher course.

For the cohort who completed the question for both the pre-pilot and follow-up surveys (n=84), the increases for both going ‘hands-on’ (2.9 to 3.1) and ‘drawing your baton, irritant spray or Taser’ (2.2 to 2.5) were statistically significant. The change in direction for building a rapport with the person was not statistically significant but creating a safe distance did change in a significant manner (4.5 to 4.6).

Traffic stop

> You are responding to a call for back-up from a colleague who’s stopped a vehicle for a minor traffic offence. You don’t know the officer, but he has a reputation for rubbing people up the wrong way. Pulling over, you see the officer in a heated discussion with three young men. As you get out your car, the officer makes a sarcastic comment to one of the men, who starts to square up to the officer.

The traffic stop vignette painted a complicated picture. Comparing each individual statement from all respondents of both surveys with each other, the priorities change in both directions, albeit by a small amount (<0.3) in either direction. However, for the respondents who completed the question for both the pre-pilot and follow-up surveys (n=84), none of the changes in direction for any of the statements were statistically significant.

Concern for safety

> You are responding to a call from someone concerned about the safety of a neighbour. You arrive at the neighbour’s house to find a middle-aged man, in distress, banging on the door with one of his fists. He then shouts aggressively through the letter

> box that he wants to see his kids. As he starts pacing towards you, you notice a brick in his other hand.

Despite the fact that no further training was provided between the post-pilot and follow-up surveys, respondents' opinions on priority of action still changed. When comparing all respondents to the post-pilot and follow-up survey, creating a safe distance and giving clear commands in a loud voice remained the highest priority at both points. However, for the respondents who completed the question for both the post-pilot and follow-up surveys (n=127), the decreases for building rapport (3.6 to 3.3) and listening to what the person has to say (4.0 to 3.5) were both statistically significant, as was the increase for drawing your baton, irritant spray or Taser (3.8 to 4.1).

Robbery suspect

> You are driving around an area looking for a young male involved in a robbery. You spot someone matching the description in a nearby street. You pull up next to the man and notice he has something bulky in his pocket. You ask him to wait. He says you have no reason to stop him and threatens to punch you if you come any closer.

Once again, creating a safe distance and giving clear commands in a loud voice both remain the highest priorities immediately after training and after the three-month follow-up. Building rapport, listening and calming the person down all decline slightly, while going 'hands-on' and drawing equipment increase slightly.

For the respondents who completed the question for both the post-pilot and follow-up surveys (n=127), the decreases for building rapport (3.6 to 3.3) and listening to what the person has to say (3.5 to 3.2) were both statistically significant, as was the increase for drawing your baton, irritant spray or Taser (3.4 to 3.7). There was also a statistically significant increase in giving clear commands in a loud voice (4.3 to 4.5).

Appendix H: Multi-level modelling tables

To accurately interpret the reporting of the fixed effects multi-level models, two formulae must be considered. First, when the model concerns two data points, the formula for a straight line is employed. The equation of a straight line is y = a + bx where:

- x is the value we have from our data
- a is a constant (it sets how far 'up and down' on the chart our line is)
- b is the slope of the line, how much it rises by when x increases

Second, where the model concerns three data points over time, the formula for a curved line is employed instead. The equation for a curved line is y = a + bx + cx^2 where:

- x is the value we have from our data
- a is a constant (it sets how far 'up and down' on the chart our line is)
- b is the slope of the line, how much it rises by when x increases
- c is the number we multiple x-squared by

Officers' confidence in managing conflict

Self-confidence in personal safety tactics

Before they undertook the training, officers were asked to self-assess their confidence in using a range of tactics for managing conflict – based on the old-style training they received. Table 22 summarises the fixed effects model used, where Table 23 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 11 in the main report.

Table 22: Estimates of fixed effects for self-reported confidence in personal safety skills

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.720	0.098	1037	27.736	<0.001	2.527	2.912
b	**Time**	0.656	0.106	1037	6.203	<0.001	0.449	0.864
c	**Time^2**	-0.129	0.026	1037	-4.884	<0.001	0.181	-0.077

With three time points involved (pre-pilot, post-pilot and follow-up), the analysis follows a curved line equation ($y = a + bx + cx^2$) where, in this case, a = 2.720, b = 0.656 and c = -0.129.

Table 23: Summary of change between surveys for self-reported confidence in personal safety skills (Very confident = 4; Fairly confident = 3; Not very confident = 2; Not confident at all = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.720 + (1 * 0.656) + (1 * 1 * -0.129) = 2.720 + 0.656 -0.129	= 3.247	N/A
Post (x=2)	2.270 + (2 * 0.656) + (2 * 2 * -0.129) = 2.270 + 1.312 + (4 * -0.129) = 2.270 + 1.312 - 0.516	= 3.516	↑
Follow-up (x=3)	2.270 + (3 * 0.656) + (3 * 3 * -0.129) = 2.270 + 1.968 + (9 * -0.129) = 2.270 + 1.968 - 1.161	= 3.527	↑

Perceived contribution of training to building confidence in personal safety skills

Attendees were also asked to agree or disagree with a number of statements in relation to the most recent training they had received – whether for the old-style personal safety course for the pre-pilot survey or the new PPST refresher course for the post-pilot and follow-up surveys. Table 24 summarises the fixed effects model used, where Table 25 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 12 in the main report.

Table 24: Estimates of fixed effects for agreement that training has contributed to personal safety skills

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.652	0.156	1037	17.008	<0.001	2.346	2.957
b	**Time**	1.117	0.168	1037	6.636	<0.001	0.786	1.447
c	**Time^2**	-0.021	0.042	1037	-4.979	<0.001	-0.291	-0.127

With three time points involved (pre-pilot, post-pilot and follow-up), the analysis follows a curved line equation ($y = a + bx + cx^2$) where, in this case, a = 2.652, b = 1.117 and c = -0.021.

Table 25: Summary of change between surveys for agreement that training has contributed to personal safety skills (Strongly agree = 5; Agree = 4; Neither agree nor disagree = 3; Disagree =2; Strongly disagree = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.652 + (1 * 1.117) + (1 * 1 * -0.209) = 2.652 + 1.117 -0.209	= 3.560	N/A

Time period	Calculation	Average score	Change from pre-training
Post (x=2)	2.652 + (2 * 1.117) + (2 * 2 * -0.209) = 2.652 + 2.234 + (4 * -0.209) = 2.652 + 2.234 - 0.836	= 4.050	↑
Follow-up (x=3)	2.652 + (3 * 1.117) + (3 * 3 * -0.209) = 2.652 + 3.351 + (9 * -0.209) = 2.652 + 3.351 - 1.881	= 4.122	↑

Perceived risk of and worry about assaults

Respondents were asked how likely they thought it was they would be assaulted in the next 12 months. Table 26 summarises the fixed effects model used, where Table 27 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 13 in the main report.

Table 26: Estimates of fixed effects for perceived likelihood of being assaulted on duty in the next 12 months

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.210	0.087	504	25.508	<0.001	2.039	2.380
b	**Time**	-0.045	0.041	504	-1.102	0.271	-0.124	0.349

With two time points involved (pre-pilot and post-pilot), the analysis follows a straight line equation (y = a + bx) where, in this case, a = 2.210 and b = -0.045.

Table 27: Summary of changes between surveys for perceived likelihood of being assaulted on duty in the next 12 months (Very likely = 4; Fairly likely = 3; Not very likely = 2; Not likely at all = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.210 + (1 * -0.045) = 2.210 - 0.045	= 2.165	N/A
Follow-up (x=3)	2.210 + (3 * -0.045) = 2.210 - 0.135	= 1.965	↓

Respondents were also asked how worried they were about being assaulted in the next 12 months. Table 28 summarises the fixed effects model used, where Table 29 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 14 in the main report.

Table 28: Estimates of fixed effects for worry about being assaulted on duty in the next 12 months

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.909	0.071	504	41.060	<0.001	2.770	3.048
b	**Time**	0.005	0.033	504	0.158	0.875	-0.060	0.070

With two time points involved (pre-pilot and post-pilot), the analysis follows a straight line equation (y = a + bx) where, in this case, a = 2.909 and b = 0.005.

Table 29: Summary of changes between surveys for worry about being assaulted on duty in the next 12 months (Very worried = 4; Fairly worried = 3; Not very worried = 2; Not worried at all = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.909 + (1 * 0.005) = 2.909 - 0.005	= 2.914	N/A
Follow-up (x=3)	2.909 + (3 * 0.005) = 2.909 - 0.015	= 2.924	↑

Officers' rating of training

Satisfaction with training

Overall, survey respondents were highly satisfied with the training they received. Table 30 summarises the fixed effects model, where Table 31 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 15 in the main report.

Table 30: Estimates of fixed effects for officer satisfaction with safety training refresher courses

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.745	0.106	812	25.982	<0.001	2.538	2.952
b	**Time**	0.915	0.061	812	14.918	<0.001	0.794	1.035

With two time points involved (pre-pilot and post-pilot), the analysis follows a straight line equation (y = a + bx) where, in this case, a = 2.747 and b = 0.915.

Table 31: Summary of change between surveys for officer satisfaction with safety training refresher courses (Very satisfied = 5; Fairly satisfied = 4; Neither satisfied nor dissatisfied = 3; Fairly dissatisfied = 2; Very dissatisfied = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.745 + (1 * 0.915) = 2.745 + 0.915	= 3.660	N/A
Post (x=2)	2.745 + (2 * 0.915) = 2.745 + 1.830	= 4.575	↑

Perceived quality of personal safety tactics training

As well as self-reporting satisfaction, attendees were also asked to assess the perceived quality on a set of seven tactics. Table 32 summarises the fixed effects model, where Table 33 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 16 in the main report.

Table 32: Estimates of fixed effects for perceived quality of personal safety tactics training

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.479	.0156	1037	15.940	<0.001	2.174	2.785
b	**Time**	1.557	0.168	1037	9.274	<0.001	1.227	1.886
c	**Time^2**	-0.319	0.042	1037	-7.617	<0.001	-0.401	-0.237

With three time points involved (pre-pilot, post-pilot and follow-up), the analysis follows a curved line equation ($y = a + bx + cx^2$) where, in this case, a = 2.497, b = 1.557 and c = -0.319.

Table 33: Summary of changes between surveys for perceived quality of personal safety tactics training (Excellent = 5; Good = 4; Fair = 3; Poor = 2; Not covered during course = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.479 + (1 * 1.557) + (1 * 1 * -0.319) = 2.479 + 1.557 -0.319	= 3.717	N/A
Post (x=2)	2.479 + (2 * 1.557) + (2 * 2 * -0.319) = 2.479 + 3.114 + (4 * -0.319) = 2.479 + 3.114 - 1.276	= 4.317	↑
Follow-up (x=3)	2.479 + (3 * 1.557) + (3 * 3 * -0.319) = 2.479 + 4.671 + (9 * -0.319) = 2.479 + 3.114 - 2.871	= 4.279	↑

Perceived suitability of refresher course design

Finally, the survey respondents were also asked to agree or disagree with a number of statements about the new training. These statements were a mixture of positively coded (agreement as positive) and negatively coded (disagreement as positive) statements, intermingled and asked in the same question. Table 15 summarises the fixed effects model, where Table 16 describes the findings for each time point for all eligible survey respondents. For an overview of the results, see Table 17 in the main report.

Table 34: Estimates of fixed effects for perceived suitability of refresher course design

							95% CI	
		Estimate	SE	df	t	Sig	LB	UB
a	**Intercept**	2.333	0.065	812	36.031	<0.001	2.206	2.460
b	**Time**	0.869	0.038	812	23.127	<0.001	0.795	0.943

With two time points involved (pre-pilot and post-pilot), the analysis follows a straight line equation (y = a + bx) where, in this case, a = 2.333 and b = 0.869.

Table 35: Summary of changes between surveys for perceived suitability of refresher course design (Strongly agree = 5; Agree = 4; Neither agree nor disagree = 3; Disagree =2; Strongly disagree = 1)

Time period	Calculation	Average score	Change from pre-training
Pre (x=1)	2.333 + (1 * 0.869) = 2.333 + 0.869	= 3.202	N/A
Post (x=2)	2.333 + (2 * 0.869) = 2.333 + 1.738	= 4.071	↑

Appendix I: Observation topic guide

Introduction

- What are the facilities like? Enabling?
- What physical resources (for example, mats, training weapons) are needed to deliver the training? Are there enough of them?
- How is the course introduced?
- How are the trainers introduced?
- Is there a fitness test or warm-up?
- How are students grouped/paired up?
    - Any evidence of a ‘hidden curriculum’?

For each scenario

‘Time on task’. The timing, content and duration of each element of the course was noted to produce an overview of each course’s ‘micro-structure’, which is the moment-to-moment nature of the course. Specific attention was paid to what individual officers were doing (activity types) and with whom (individual, pairs, groups) and what trainers were doing (for example, giving instruction/feedback, demonstrating/modelling). This enabled the type and duration of learning activities to be recorded, as well as giving an insight of the pedagogy employed by the instructors.

- How is the scenario introduced?
- Student reaction to the scenario?
- Time on task?
    - How many students are alert, paying attention, taking notes, asking questions?
    - [In numbers or percentages, possibly assess every 30 mins or more and in general]
- Are students safe?
- Level of supervision?
- Any variation visible between groups?

Delivery

- What were the trainers' style(s) of delivery?
- How did the officers respond to, and engage with, the trainers, training material and method of delivery?
- Were officers able to voice their own opinions and reflect on/discuss their practice?
- What questions, comments, issues or challenges were raised by officers during the training?
- How did the trainers respond to these questions, comments, issues or challenges, and were their responses effective?
- What were the dynamics like in the classroom between the officers, and between the officer and the trainers?
- Do you think there were the right number of trainers allocated to each session?

Wrap-up

- Did anything happen to reinforce or undermine any of the training?
- How long did stuff take?
- What do you perceive the response to the course has been?
- Did officers articulate the connection to their everyday roles?
- How were the students at the end of the first day versus the end of the course?
- Have any injuries been reported?

Appendix J: Trainer interview schedule

The following interview schedule should be used as a guide for your interview with trainers and force leads. Certain questions are identified as specifically for force leads, though if they appear relevant to any trainer, please feel free to ask them. The timings provided should serve as a rough guide for how long you should spend on each section, but please also feel free to explore relevant issues as they arise.

Preface

Thank you for taking part in this research. Your interview today will contribute to the evaluation of the new personal safety training refresher course. Your views and feedback will help the College to improve the training and understand what worked, what didn't and why. Do you have any questions about the research before we begin?

Your contribution will be reported anonymously in any reports emerging from this study, and we would like to audio-record the interview to ensure we accurately record what you've said. The recording will not be shared outside of the research team and anonymous quotes may be used in our reports from this research. Is that OK?

[Force leads only] Given your unique role in the development of this pilot, there may be instances where we would want to quote you or cite your statements directly, with attribution. In those instances, we would first confirm the specific quote with you and the context in which it would be placed, and you'd have the right to decline the use of any attribution in our report.

Your participation in this interview is completely voluntary and, if at any time in the interview you wish to end your participation, you are free to stop without providing any reason. Are you happy to begin?

[If yes to all, begin recording and ask them to confirm again that they understand the research and are happy to be recorded. If no to recording, take contemporaneous notes.]

Introductory questions (5 mins)

- Tell us a little bit about yourself and your role in Avon and Somerset Police?
  - How long have you been with the police?
  - How long in this role?
  - Kinds of training provided?
  - What other roles have you held?
- Can you tell me a bit about your history with PST, both as a trainer and officer – have you had to use your PST training regularly?
  - Has the way you use that training changed since you started working for the police? If so, in what ways?

Implementation of the training (10 mins)

- What role have you had in the implementation of the new personal safety training curriculum?
- At a high level, what are your thoughts on the new approach to PST?
- **[Force leads only]** Can you tell me about the process of translating the curriculum into a course?
- How have you found implementing the new curriculum?
  - What were barriers or enablers for implementation?
  - What is your experience of delivering the new course?
- What skills do you have that you think helped with the implementation of the new training?
  - What sort of skills are important for trainers?
- How were decisions reached to focus on certain topics and deliver elements in particular ways in the trainings you provided? Were you allowed to make your own modifications?
  - Was this done by you alone, or with the support of others?
  - How did you go about making these modifications and developing the materials?
  - Did you need to consult others in the force before making these changes?

- Did you make any changes to the training after your first few sessions? If so, why?
    - Did you share these changes with the other trainers?

Relationship with College (10 mins)

- **[Force leads only]** Can you tell me about your experience with the College of Policing in designing this training?
    - Were roles and responsibilities clear?
    - Was the purpose of the training clear?
    - Were the materials they provided useful?
- What sort of support has been provided by the College (for example, curriculum-related learning materials, and train-the-trainer events)?
    - How useful have you found them?
    - Did the College provide the kinds of support you needed to effectively deliver the training?
    - What could the College have done better?
- What did you think of the train-the-trainer session?
    - Have you received any feedback from trainers regarding the event?

Delivery of the training (10 mins)

- What physical resources (for example, mats, training weapons) did you need to deliver the training?
    - Were they easy to obtain?
    - Was there anything extra you would have liked to help deliver the training?
- Do you think there were the right number of trainers allocated to each session?
    - How was that number decided on?
    - Do you think having more/fewer trainers in each session would have made it easier/harder to deliver?
    - Is it about the number of trainers or is it the skills those trainers have?
- What kinds of messages did you use to introduce the training?

- Why did you use this approach? (If you've witnessed their training approach, ask specifically about this)

- Clearly there was a lot of material that could have been covered on this topic. Which areas of the training did you choose to focus on and why?
  - Were there any areas you chose to de-emphasise in the training?
- How well received was the training?
  - Were there any areas of the training you felt were particularly well received?
  - Were there any areas of the training that you thought weren't well received?

Response and impact (10 mins)

- **[Force leads only]** What is, for you, the ideal outcome that you could imagine from this training?
- What do you perceive the response to the course has been?
  - Have you received any formal or informal feedback (either individually or collectively)?
- What do you perceive the impact of the course has been?
  - Are you aware of any operational uses of skills taught in this new course?

Closing questions (if time allows/not already answered) (5 mins)

- If you could make any changes to the training, what would they be?
  - Are there any skills related to PST that you would like to build in particular that weren't addressed or weren't adequately addressed in the training?
- What would be the most important message you would give to the training designers for the next version of the training?

Appendix K: Officer interview schedule

The following interview schedule should be used as a guide for your interview with officers who have undertaken the new PST refresher course in Avon and Somerset. The timings provided should serve as a rough guide for how long you should spend on each section, but please also feel free to explore relevant issues as they arise.

Preface

Thank you for taking part in this research. Your interview today will contribute to the evaluation of the personal safety training refresher course as part of the new PST curriculum. Your views and feedback will help the College to improve the training and understand what worked, what didn't and why. Please remember, it is the training that is being evaluated here – not you. There are no right/wrong answers. We would like you to be as open and as honest as possible. Please don't tell us what you think we want to hear; we are completely impartial about the training. Do you have any questions about the research before we begin?

Your contribution will be reported anonymously in any reports emerging from this study and we would like to audio-record the interview to ensure we accurately record what you've said. The recording will not be shared outside of the research team and anonymous quotes may be used in our reports from this research. We aim to interview 20 officers across the force in total, which means that none of the quotes could be attributed to you. Is that OK?

Your participation in this interview is completely voluntary and, if at any time in the interview you don't want to answer specific questions or wish to end the interview, you are free to do so. Are you happy to begin?

[If yes to all, begin recording and ask them to confirm again that they understand the research and are happy to be recorded. If no to recording, take contemporaneous notes.]

Introductory questions (5 mins)

- It would be helpful if you could provide some background about yourself. Can you tell me about your current role?
    - How long have you been with the police?

  - What other roles have you held?
- Can you tell me a bit about your history with PST training – have you had to use your PST training regularly?
  - Has the way you use that training changed since you started working for the police? If so, in what ways?
  - When was the last time you received PST training?

The training course (15 mins)

- [At a high level, what are your thoughts on the new scenario-based training?]
- On the day of the training, how was the training introduced? Do you remember what the trainer said at the start of the day?
  - What did you think of their introduction?
- Which parts of the training did you think were most helpful/enjoyable?
  - Did you find any of the scenarios particularly useful/enjoyable?
- Were there any parts of the training that you thought were unhelpful?
- How did you feel about the length and format of the training?
  - Was it too long/short?
  - Were certain parts over or under-emphasised?
  - Did you find yourself inactive/bored at any point?
  - Facilities/equipment/props – were they good enough?
- Did the trainer(s) seem effective?
  - Did they know the material?
  - Were their answers to your questions clear and helpful?
  - Were you able to express your opinions during the training session?
  - Were there any instances where you withheld your opinion?
  - Was the group an appropriate size?
- Did you learn anything new in the training? If so, what was new?
- [How did this training compare with previous PST refresher courses you have attended?]

- [Could you tell us a little about the previous PST refresher course you attended before the new refresher course?]
- [In what ways does it compare with the new style of PST refresher course you attended recently?]

Using the training (15 mins)

- Since you've taken the training, have you had to use any of the skills from the course?
  - [if yes] What was the context?
  - [if yes] Can you talk me through what happened?
    - Did these go well? Why or why not?
    - Would you have done anything differently prior to receiving the training? If so, what?
- Have you tried to do anything differently in potential use-of-force encounters, based on the training? If so, what?
  - [if yes] Did you find this effective?
- Has the training had any impact on the way you see de-escalation/verbal communication and the use of force?
- Have there been any barriers to using the training?
  - For example, differing guidance at the force level, supervisors' instructions, operational requirements.
  - Was there anything in the training, for example regarding de-escalation before an incident, that isn't always possible in reality?
    - If yes, can you elaborate?
- What is, for you, the ideal outcome that you could imagine from this training?

Closing questions (5 mins, if time allows)

- Do you have any suggestions of how the training might be made better?
- Were there any areas you would have liked to spend more time on?
- Are there any skills related to PST that you would like to build in particular, that weren't addressed or weren't adequately addressed in the training? Is there

anything that I haven’t had a chance to ask that you think should be included in our study, particularly about how to train de-escalation and PST skills?

Appendix L: College of Policing stepped-wedge analysis protocol

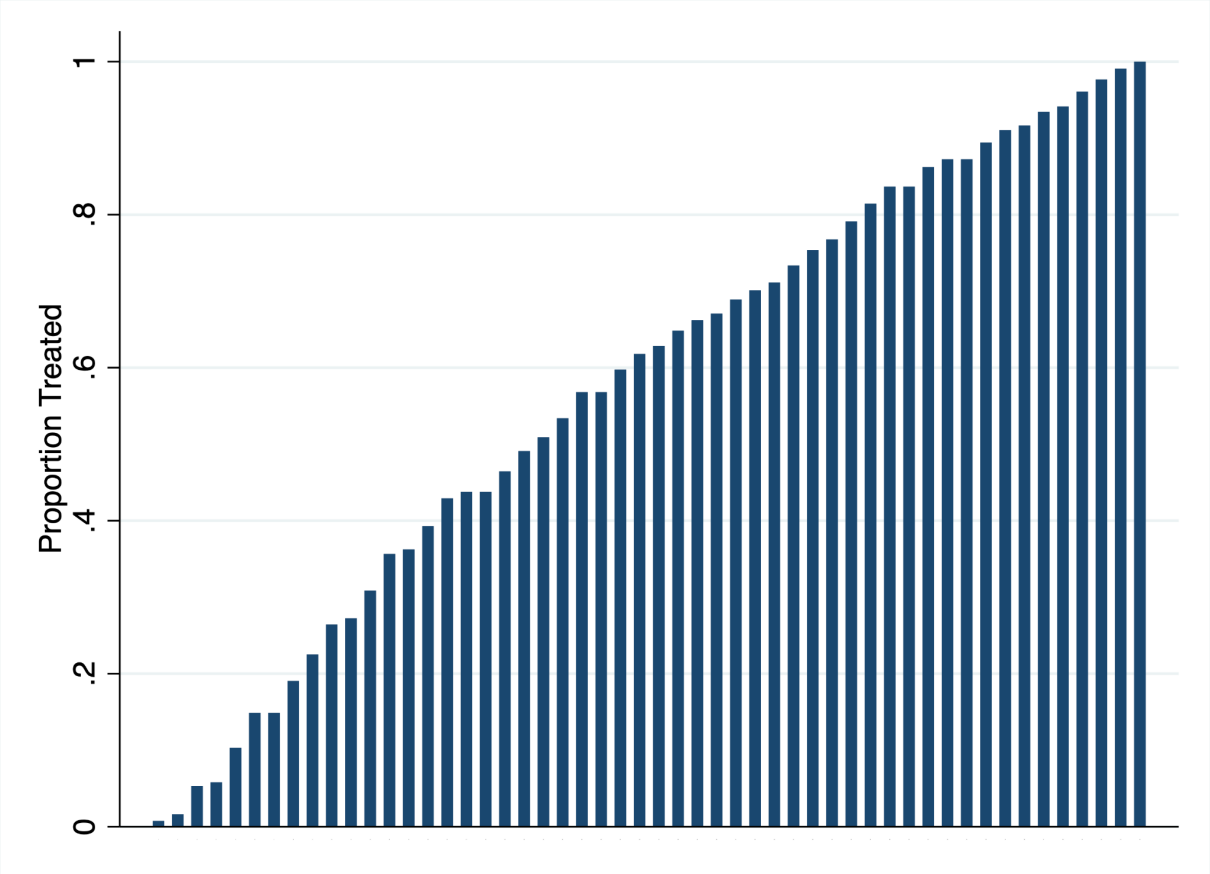
This document serves as an analysis protocol for a stepped wedge design quasi-experiment of police personal safety training in Avon and Somerset Police. The quasi-experiment is evaluating the impact of a new public and personal safety training (PPST) refresher course based on the new national PPST curriculum, designed and delivered by the College of Policing. The new curriculum aims to deliver PPST more consistently and focus on effective skills for officers to manage high risk situations. This change in focus may lead to a reduction in use of force, officer assaults and subject injuries.

Experimental design

The evaluation uses a two-armed stepped-wedge design quasi-experiment, with 52 steps (in which participants are randomly assigned to be treated in one of 52 weeks over the course of the year). Three of these steps are empty because no training took place in these weeks.

There are 1,843 participants randomly assigned to be treated over the course of the year – shown by Figure 5, below. By the end of the year, all participants have been treated.

Figure 5: Assignment of participants



Data description

Our data consist of two datasets – an assignment dataset and an outcome dataset.

The assignment dataset contains a ‘dummy collar number’ for each participating officer in the pilot, and the week and date on which they were treated. A small number of participants are identified twice in the dataset, and two are identified three times. In these cases, participants appear multiple times because they were unable to attend their initial training sessions. For intention to treat analysis, we take participants’ first training date as the point at which they were treated, even though this might cause us to underestimate the effects of the intervention.

We use this data to create a new dataset with one observation per participant/week, for the 52 weeks of the pilot and the 48 weeks prior to the pilot, for a total of 184,300 observations. We then create a binary treatment indicator set to one for the week in which the participant is treated and all weeks thereafter.

The outcome dataset contains data on every incident of use of force in Avon and Somerset Police both during and before the pilot period. We create a week-of-year and year identifying variable and use these, as well as the dummy collar number to merge this dataset into the expanded assignment dataset.

Once merged, we use these data to create new variables indicating a binary use of force associated with a dummy collar number/week pair, and a measure of how many uses of force per week. The figures below show the pattern of binary use of force over the course of the years in our data and over the course of the weeks of each year. This shows a fairly clear week-by-week pattern, particularly in 2021 and 2022. The same pattern, at lower levels appears in 2020 (most likely a result of lockdowns due to the COVID-19 pandemic).

Figure 6: Pattern of binary use of force over the weeks of 2020-2022

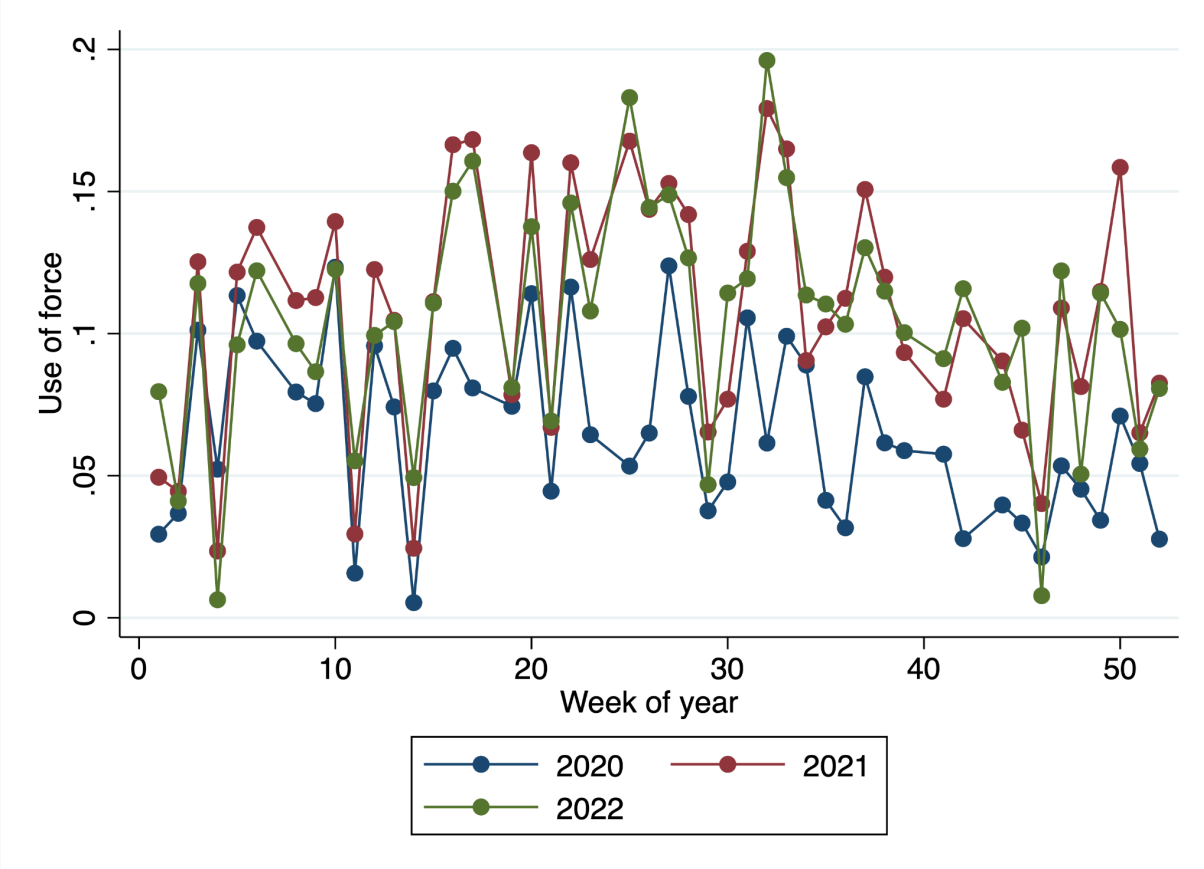
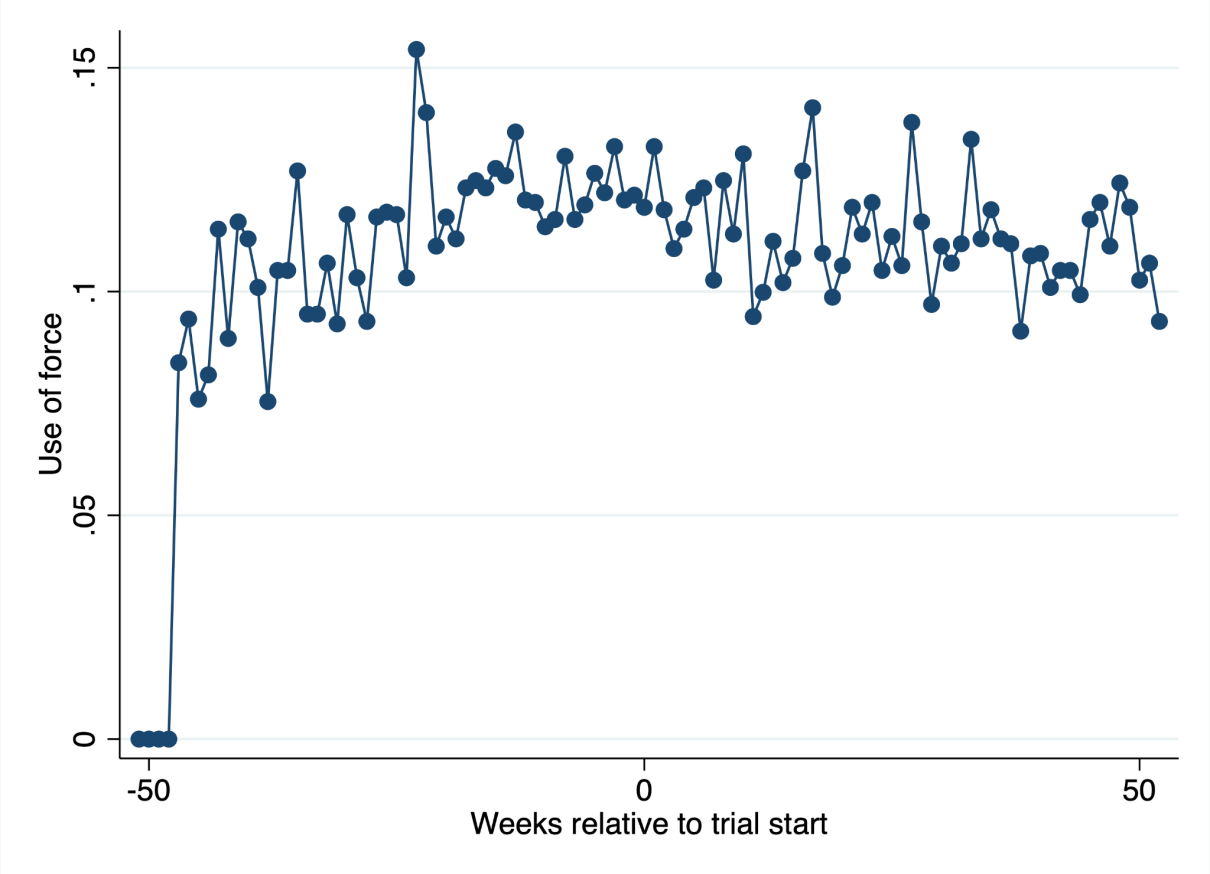


Figure 7: Pattern of binary use of force during the weeks of both pre-pilot comparison period and pilot period



Analysis strategy

The analysis strategy for a stepped-wedge design quasi-experiment differs from a canonical stepped-wedge design randomised control trial (RCT) in multiple ways.

First, each individual appears as an observation in each time period, and so we treat each individual as a cluster with multiple observations, necessitating clustering our standard errors at the level of the individual.

Secondly, although the experiment is quasi-random, treatment is correlated with time, with later time periods being more likely to be treated than earlier ones. As such, we need to control for the time structure of the data in our analysis. There are a number of ways of approaching this challenge. Instead of treating time continuously and estimating a trend line, we opt for a vector of 104 fixed effects, one for each week in our data. This approach has the advantage of being more flexible, allowing each week to vary in its own terms rather than adhering to a linear trendline. In addition, a trendline starting in 2020, where we see much lower levels of use of

force per week, with an increase in 2021, will forecast a continued rise in 2022, and hence tend to overestimate forecast levels of use of force, and so overestimate the effect of the treatment at reducing that.

Our primary regression analysis is specified as

$$F_{it} = \alpha + \beta_1 D_{it} + \Gamma_1 W_t + \Gamma_2 I_i + \epsilon_i$$

where:

- F_{it} is a binary indicator of whether or not participant i used force in week t.
- α is a regression constant
- D_{it} is a binary indicator of treatment, based on whether participant i is treated in week t or not.
- W_t is a vector of 104 binary week indicators for the two years in our data.
- I_i is a vector of participant level fixed effects.
- ϵ_i is a standard error clustered at the level of the participant

Robustness checks

To robustness check our analyses, we will conduct a number of alternate versions of our primary analyses, including:

- using a week of year measure rather than a week's overall measure to control for potential seasonal variation
- including year fixed effects in the above model for years
- conducting the analysis only for the pilot period
- excluding data from 2020

Following Thompson and others, we will not make use of random effects due the risk of misspecification.

In addition to these tests, we will use randomisation inference to robustness check our results.

Secondary analysis

Alongside our main analysis we will conduct some secondary analysis looking at a number of other groups/effects.

Type of force

As well as looking at use of force in general, we are interested in the level of force used by officers, as it is possible that the training leads to a reduction in the level of force used by officers but does not lead to a reduction in use of force overall.

Levels of force used are coded as a set of four binary indicators of force level, with one being the lowest and four being the highest, following the table below provided by Avon and Somerset Police.

Table 36: Categories for types of use of force

Category	Includes
Compliant handcuffing	▪ Compliant handcuffing
Weapon drawn or aimed	▪ Baton drawn ▪ CED (Taser) aimed ▪ CED (Taser) arced ▪ CED (Taser) drawn ▪ CED (Taser) red dot ▪ Irritant spray – CS drawn ▪ Irritant spray – PAVA drawn
Use of physical force	▪ Ground restraint ▪ Limb/body restraints ▪ Non-compliant handcuffing ▪ Other/improvised ▪ Unarmed skills/physical restraint
Use of weapon	▪ Baton used ▪ CED (Taser) drive stun ▪ CED (Taser) fired ▪ CED (Taser) three-point contact ▪ Irritant spray – CS used ▪ Irritant spray – PAVA used

Longer term effects

First, we will look at longer term effects. To do this, we respecify our analysis as follows:

$$F_{it} = \alpha + \beta_1 + \Gamma_1 W_t + \beta_2(S_{it}) + \Gamma_2 I_i + \epsilon_i$$

where:

- S_{it} is a measure of how many weeks it has been since individual i has been treated

Force and ethnicities

The data provided by Avon and Somerset Police identifies the ethnicity of the person whom officers interact with using a number of standardised codes. Given the focus on a racial and ethnic divide in terms of use of force by police, it is important to consider whether there are differential effects in the use of force towards members of different ethnicities.

As with our other analyses, we do not have a denominator for interactions with members of any particular ethnicity, and so our outcome measure identifies whether or not a particular police officer uses force in a given week against a member of a given ethnicity. This means that our analysis will tell us whether, for example, the use of force towards black members of the public declines in terms of the propensity of a police officer to use this force but cannot tell us anything about rates of use of force towards black people in the population.

As such, we conduct this analysis using the same analytical model as our main analysis, but where the binary indicator of use of force is replaced with a binary indicator of use of force towards a particular group, divided into four categories:

- white
- black and mixed black heritage
- Asian and mixed Asian heritage
- Gypsy, Roma or Traveller

Force and gender identity

We will also analyse data on use of force by gender, following a similar principle to ethnicity, where force can be used against participants coded as being in one of three groups:

- male
- female
- any other gender identity

'Any other gender identity' merges 'non-binary' and 'trans' identities on account of each having a very small number of uses of force related to it.

Balance checks

All participants in this pilot are in both the treatment and control groups. As such, treatment and control groups are mechanically balanced on all observable characteristics. Instead, we test balance in terms of when participants become treated. Our data are not particularly rich, and as such the only option for balance checks is to regress use of force prior to the beginning of the pilot on when in the pilot participants are treated. The results of this regression can be seen below:

Table 37: Use of force regressions model (Clustered at the level of the participant)

	Use of force (n=95,386) **Beta (SE)**
Week assigned to treatment	-0.0008*** (0.0001)
Constant	0.1232 (0.005)

Significance: * p < 0.05, ** p < 0.01, *** p < 0.001

As we can see there is a statistically significant imbalance in the use of force in the period prior to the intervention being delivered, according to whether a participant is treated earlier or later in the data. The difference is qualitatively small – just 0.08% lower week on week. However, this imbalance justifies the inclusion of individual fixed effects based on the pre-pilot comparison period data to control for this imbalance.

About the College

We're the professional body for the police service in England and Wales.

Working together with everyone in policing, we share the skills and knowledge officers and staff need to prevent crime and keep people safe.

We set the standards in policing to build and preserve public trust and we help those in policing develop the expertise needed to meet the demands of today and prepare for the challenges of the future.

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