

REPORT ON THE EFFICACY AND SAFETY OF BOLAWRAP®

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1 Substance of instruction

We have been instructed by Emergency Protection Ltd to review BolaWrap® and associated literature to assist in its evaluation for possible introduction into UK policing. To achieve this, we have reviewed the literature provided by the company, conducted a literature review and attended a demonstration of the device on 7 April 2020 at Emergency Protection’s premises in Shrewsbury.

This report was written by Mr Baskind with input from Dr Bleetman and Mr Turner.

Résumés of the report authors are provided at Appendix 1.

2 Introduction

BolaWrap® is a hand-held remote restraint device that discharges an 8 foot bola-style Kevlar® tether at 513 feet per second to entangle a subject at a range of 10-25 feet. It is offered as a less injurious method of restraint than Conducted Energy Devices (“CED”) and other methods of restraint.



Each cartridge contains an eight-foot Kevlar® tether. Each tether has a 4-hooked anchor on either end. Quick refresh enables reload time of 3-8 seconds. Powered by a .380 partial charge blank, the BolaWrap® exits at 513 feet per second and wraps between 1-3 times around the subject at a range of 10-25 feet. Kinetic energy decays rapidly with distance after discharge.

3 Managing incidents involving violence and disturbed behaviour

Violence and aggression is endemic in society. In the Introduction to the Conflict Management Module of the National Police Chiefs' Council/UK College of Policing police personal safety manual (the "Police Personal Safety Manual") it is explained that:

The nature of policing is such that conflict is sometimes inevitable. This can range from verbal abuse or minor assault to serious public disorder or a possible assault with a lethal weapon. The appropriate police response in such situations will vary greatly. On some occasions a police presence alone may be sufficient, in other circumstances it may be necessary to resort to the deployment of large numbers of officers or even lethal force options.

Police officers receive training in a number of skills designed to keep them and the public safe. These skills range from communication and de-escalation skills to unarmed defence and arrest skills as well as training in a range of equipment including handcuffs and limb restraints, baton, irritant spray and, where appropriate, police dogs, CEDs and firearms.

A hierarchy of use-of-force options is provided to police officers to manage different threat levels. Each use-of-force modality carries a degree of risk ranging from tactical communications (0% risk of harm), through to use of a firearm which can carry a near 50% mortality rate.

When evaluating BolaWrap® (or any other use-of-force option) it is necessary to consider both efficacy and safety to police officers, subjects and any third parties in the immediate environment. We have provided at Tables 2 and 3 below our assessment of the potential risk of injury to the subject and police officer of different interventions and use-of-force options, in comparison to BolaWrap®.

4 The range of options currently available to police

Police officers and certain police staff receive initial and refresher training in managing violence and aggression including the use of force. The Police Personal Safety Manual is the high-level manual of guidance and exists for the guidance of chief officers in carrying out their duty to provide appropriate training and policies, and for police officers and police staff who may be required to deal with conflict as part of their role. The Police Personal Safety Manual should be used in conjunction with the Guidance on Personal Safety Training published in 2009 on behalf of the (then) Association of Chief Police Officers. The Police Personal Safety Manual is intended to be a reference point for officer safety tactics and procedures for all relevant personnel.

The Police Personal Safety Manual provides general guidance on use-of-force issues and includes a directory of techniques, all of which have been the subject of medical and legal review. Although it is not intended that officers or staff should be trained in all of the techniques set out in the Police Personal Safety Manual, individual forces are required to ensure that only techniques contained in the manual are taught to force personnel. This means that individual forces will be able to select techniques from the manual that may be required for specific policing problems or specialist roles under the umbrella of the police national Personal Safety Training Programme. This approach enables flexibility whilst, at the same time, recognises that the understanding of the techniques and the standard by which competence is measured should be uniform.

The content of personal safety training typically includes the following areas: legal issues; communication/conflict management/de-escalation skills; medical issues, including positional asphyxia and acute behavioural disturbance/excited delirium; breakaway and restraint techniques, including pressure points, take-down and floor restraint skills, distraction strikes, edged-weapon skills, control skills, team skills, vehicle skills and SPEAR (Spontaneous Protection Enabling Accelerated Response); equipment skills, including baton, handcuffs, mechanical restraint and irritant spray.

In addition, specialist officers have other options available to them; notably firearms, CEDs (Taser) and dogs.

5 The risk factors associated with each of the above options

The police service faces many challenges when dealing with challenging, violent and aggressive behaviour. In this report, we are concerned with the efficacy and safety of the various tactics used by police officers when dealing with these challenges.

All physical interventions carry risk, some greater than others, to officer, subject and third parties in the immediate environment. In broad terms, the risks associated with manual restraint include abrasions, concussion, fractures, internal injuries, psychological trauma, positional asphyxia, unconsciousness and death. These risks are greater, and in many cases significantly greater, where the subject has certain underlying medical or health conditions, which include obesity, cardiovascular disorders, extremes of BMI, use of alcohol or drugs, mental health disorders and extremes of age. In addition, the use of force on subjects displaying acute behavioural disturbance is especially hazardous.

A significant part of the risk is often found in the initial contact where officers attempt to gain control of the subject. The longer it takes officers to bring the subject under control the greater is the risk of harm, including death. Tactics to minimise this initial struggle should be encouraged.

All of these factors indicate two things. First, there is a need to minimise the use of all kinds of restraint and, second, a need for safer alternative forms of containing a subject who is presenting a risk to himself or others.

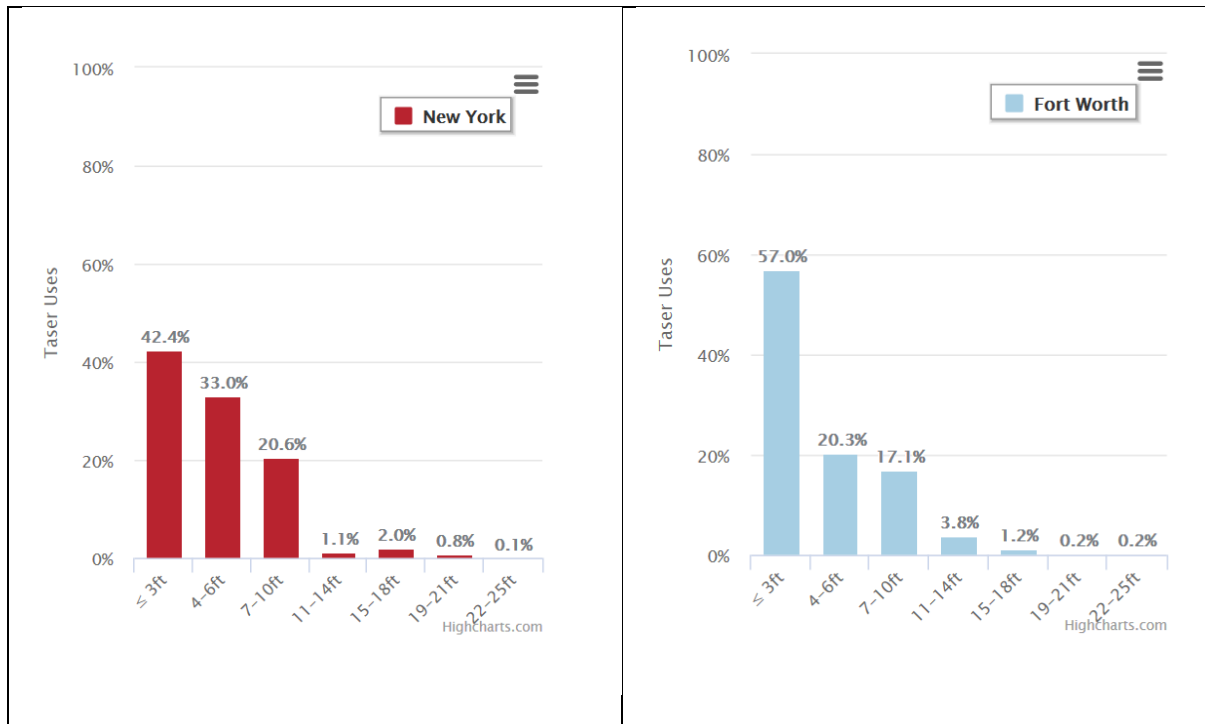
These challenges have increased following the Covid-19 pandemic. Restraining a person often requires a significant amount of close body contact with an obvious risk of infection. Government 'safe-distancing' guidelines are extremely difficult to follow and are almost totally incompatible with most applications of restraint. Regrettably, there is already evidence of individuals weaponising Covid-19 by coughing and spitting into officers' faces. This has led to an increased call for officers to be equipped with appropriate PPE, including spit and bite guards.¹

In many situations it will be safer to control a person whilst maintaining a distance. Police officers already have options that enable them to control a person whilst maintaining a degree of distance, including batons, irritant spray, CEDs, dogs and firearms. It will be seen from Table 2 below that BolaWrap® is likely to present a much lower risk of injury to the subject than many of the alternatives available to police officers.

It might be helpful to compare typical distances from the subject when officers deploy CEDs compared to BolaWrap®. Data from New York City and Fort Worth police departments show that officers most often use CEDs (Tasers) inside 6 ft from the subject, with a significant number within 3 ft, both of which are closer than the recommended 7-15 ft range of the X2 and X26P Tasers (see Table 1 below). By contrast, BolaWrap® is designed to be deployed from a greater distance of between 10- 25 feet and, if deployed at an appropriate stage, will likely reduce the subject's capacity to struggle significantly and the corresponding need to escalate the use of force. Both of these likely outcomes will minimise the need for excessive close-quarters contact and the need for officers to deploy other equipment, such as a CED. The deployment range of BolaWrap® is considerably outside the 4ft – 6ft reactionary gap referred to in the Police Personal Safety Manual as the recommended gap providing officers with more time to react and respond to subject aggression and avoiding any need for the officer to have to invade the subject's personal space, which may help reduce the subject's anxiety and prevent them from becoming violent.

¹ see, for example, evidence given on 6 April 2020 to the Home Affairs Select Committee by Chief Superintendent Paul Griffiths (President of the Police Superintendents Association) and Sergeant Simon Kempton (Operational Lead for Covid-19 at the Police Federation of England and Wales)

Table 1. Taser usage by distance



6 The challenges brought about by the changing environment in which police operate

There is an increasing pressure on police resources in an increasingly violent society. The sight of a single officer attending an incident is now not uncommon. The carrying of knives and other weapons is becoming increasingly common as are the problems associated with mental ill-health and the consumption of psychoactive substances resulting in individuals exhibiting extreme violence with ‘super-human’ strength.

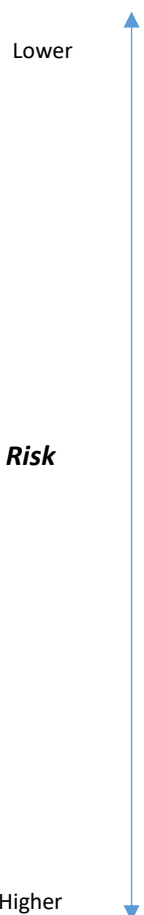
All of these factors increase the risk to police officers and members of the public with a particular concern where restraint is needed. The current range of options available to officers need enhancing. Given the limited amount of time that officers are able to devote to personal safety training and the levels of fitness needed, additional options need to be relatively light in terms of the additional training needed.

7 Where might BolaWrap® fit within a use-of-force hierarchy for policing

We have ranked the various options in terms of potential risk of injury to the subject and have considered where BolaWrap® fits within this hierarchy. A more detailed assessment of risk can be found in the medical review at Appendix 1.

A Freedom of Information request is pending to the police national use-of-force reporting programme to elucidate the relative risk of the various use-of-force modalities. It is anticipated that this will confirm the relative risks contained in Tables 2 and 3 which contain our expert opinion.

Table 2. Potential risk of injury to the subject of different interventions and use-of-force options



1.	De-escalation/tactical communication from close quarters
2.	Primary control skills (eg. escorting)
3.	BolaWrap®
4.	Handcuffs
5.	Physical restraint, strikes, kicks, ground restraints, etc.
6.	Irritant spray
7.	CED (Taser)
8.	Dogs
9.	Baton
10.	Police vehicles as 'weapons'
11.	Firearms

As a remote-restraint device, it is our opinion that BolaWrap® has a number of unique advantages, including:

1. It enables officers temporarily to restrain a subject from a safe distance.
2. If deployed at an appropriate stage, BolaWrap® will likely reduce the subject's capacity to struggle significantly and the corresponding need to escalate the use of force.
3. BolaWrap® provides enhanced protection for officers and third parties in situations where the subject is carrying a knife or other weapon.
4. BolaWrap® does not incapacitate through the delivery of chemicals, electricity, pain or impact (unlike irritant spray, CEDs, restraint locks or batons) even with multiple simultaneous deployments by multiple officers.
5. Multiple simultaneous deployments of BolaWrap® by multiple officers does not increase pain but is likely to increase the effectiveness of restraint.
6. BolaWrap® has a distinctive look and its deployment appears far less aggressive than CEDs and firearms.
7. The loud bang together with rapid application of the Kevlar® cord will likely distract the subject providing officers with a valuable opportunity to advance and safely control the subject in a controlled and collaborative manner.
8. It promotes, from a safe distance, proactive opportunities for the officers and subject to engage verbally from the point of initial contact and during the containment phase, thus enhancing communication, de-escalation, forging positive relationships to improve collaboratively the outcome of the later stages of arrest and detainment.
9. It provides opportunities for officers to apply low-level physical supportive holding to provide reassurance to the subject and assist in the gathering of intelligence and completing dynamic risk assessments.
10. Once contained, BolaWrap® provides attending officers with controlled time to assess the risks and consider the dynamic decision-making process and reflect on appropriate action (next levels of safe containment, escorting, transporting, treatment requirements, etc.).
11. BolaWrap® can assist in containing subjects in situations where reasoning with the subject has failed or is likely to fail, for example, due to intoxication or mental ill-health.
12. Although BolaWrap® 'wraps' the subject, it does not prevent movement to the extent seen with some other forms of restraint, thus categorising it as a less-restrictive intervention. It also seems unlikely that the application of BolaWrap® will result in positional asphyxia. Officers


are able to manoeuvre the subject's hands sufficiently to apply handcuffs before removing the cord.

13. Successful containment of the subject's limbs promotes less physical force and greater subject autonomy enabling natural positional adjustments to promote breathing, etc. and/or as instructed by the observing officer.
14. Once compliance has been established, BolaWrap® can obviate the need to take the subject to the ground where many restraint-related fatalities occur. It can also obviate the need for other high-risk positions, such as hyperflexion of the torso/neck.
15. Mental health crisis. BolaWrap® is likely to offer immediate containment opportunities when the effects of the untreated mental health crisis are unresolved and significantly reduce the risk of harm that could lead to either the intended or accidental ending of life to self or others. BolaWrap® also has the advantage of avoiding side effects of CEDs that may further exacerbate the subject's physical and cognitive functioning.
16. There are potential positive effects of significantly driving and reshaping cultures and gaining public support for the device by way of educational and informational guidance whereby the positive aspects of BolaWrap® can be evidenced.

Table 3. Potential risk of injury to police officer of different interventions and use-of-force options

In Table 3, we consider the potential risk of injury to police officers with different interventions and use-of-force options. In our opinion, both CEDs and BolaWrap® rank equally with the lowest potential risk of injury to the officer but when compared to the potential risk of injury to the subject (see Table 2 above), we conclude that BolaWrap® is overall the safer alternative.

Furthermore, we consider that the timely use of BolaWrap® would likely have obviated the need for CED deployment in many conflict scenarios. We recommend, therefore, that the potential role for BolaWrap® is tested in reconstructions and in scenarios in which a CED was deployed.



1=	CED (Taser)
1=	BolaWrap®
2.	De-escalation/tactical communication from close quarters
3.	Dogs
4.	Firearms
5.	Primary control skills (eg. escorting)
6.	Baton
7.	Irritant spray
8.	Handcuffing
9.	Police vehicles as 'weapons'
10.	Physical restraint, strikes, kicks, ground restraints, etc.

8 Efficacy of BolaWrap®

Comparisons of BolaWrap® to CEDs seem natural. The Police Personal Safety Manual explains that there are several reasons why CEDs may not produce the desired effect, these being: thick or loose

clothing; low muscle mass; close range; limited probe spread; single probe hit; total miss; defective cartridge; defective CED; probe placement; wires break; and obese subject. Many of these limitations do not arise with BolaWrap®.

BolaWrap® is a new device with limited operational experience to date. Accordingly, we recommend scenario reconstruction and operational trials so that the likely efficacy of the device can be determined to minimise any operational risks to police officers, subjects and third parties in the immediate environment.

Subject to satisfactory testing, and given the relatively low risk of injury to officers, subjects and third parties in the immediate environment, we recommend that BolaWrap® should be provided to all front-line officers. As with any significant operational change, we recommend that a trial is established to test the results in a small number of police areas prior to any national rollout being considered.

9 Guidelines for use of BolaWrap®: practical and safety issues

The efficacy and safety of BolaWrap® can be enhanced by strict adherence to a set of protocols which we assume will be produced before any potential release of the device for operational use. Further considerations are presented in the medical risk assessment which appears at Appendix 1.

We would be happy to advise further on this but as a minimum we recommend the following issues are covered:

General

(a) The use of BolaWrap® must be in accordance with the National Decision Model for Policing and use-of-force protocols. Its use must be justified and reasonable.

(b) A protocol for the use of BolaWrap® should be drawn up. The protocol should set out the circumstances under which BolaWrap® might be used and any restrictions on its use. A general statement setting out the circumstances where BolaWrap® should not ordinarily be used should be provided. These circumstances should be informed by risk assessment. We have not carried out a risk assessment but list below the circumstances where we consider thought should be given to where BolaWrap® should not ordinarily be used unless there is a risk of the subject harming themselves or others in circumstances where, taking account of all relevant circumstances, an officer reasonably believes that other options (including taking no action) would not be effective and would

present a greater danger to the subject, officers or others:

- (i) as a means to aid transportation or as a substitute for approved restraining devices
- (ii) on a subject who is handcuffed or otherwise restrained and under control
- (iv) subjects who are in close proximity to water that could present a risk of drowning
- (v) subjects who are in close proximity to dangerous objects such that they could injure themselves if they fall or stumble into them
- (vi) subjects who are detained in a police vehicle or ambulance
- (vii) subjects whose location, position or activity could cause collateral injury, such as falls from height, those operating vehicles or heavy plant/equipment, or falling into traffic or heavy equipment

Identification errors

To control the risk of an officer confusing and discharging the BolaWrap® instead of another device (such as Taser):

- (a) the BolaWrap® should be provided in a different colour to such other devices; and
- (b) officers should not hold the BolaWrap® at the same time as another device.

Limitations

Common with all kinds of physical intervention, BolaWrap® has limitations. The operational range of BolaWrap® is between 10-25 feet. Acknowledging this distance should be incorporated into officer training. Training should also recognise that the device might fail to deliver the intended outcome which may necessitate deployment of a more hazardous intervention, weapon or device.

The efficacy of BolaWrap® needs to be determined through scenario reconstruction and through operational use-of-force reporting if/when introduced into UK policing.

Pre-deployment responsibilities

- (a) BolaWrap® should only be considered where the officer can safely approach the subject within its operational range.
- (b) Where circumstances permit, officers should provide the subject with a clear warning of their intention to use BolaWrap®. Officers should give sufficient time for the warning to be heeded, unless

to do so would unduly place any person at risk, or would be clearly inappropriate or pointless in the circumstances of the incident. The warning “Bola, Bola” would appear to be appropriate. The purpose of this warning is:

- (i) to provide the subject with a reasonable opportunity to comply with the officer’s instructions
 - (ii) to provide other officers and other relevant persons with a warning that BolaWrap® might be deployed
- (c) The BolaWrap® aiming laser should never be intentionally directed at the eyes of the subject or any other person.
- (d) Where reasonably practicable the deploying officer should ensure that there are sufficient other officers present to assist with any post-deployment issues including taking the subject into custody.

Tactical issues

- (a) Officers should aim at the subject’s lower legs and/or their lower arms.
- (b) Care should be taken to avoid a subject’s face, head, neck, chest or groin areas. Officers should monitor the condition of the subject in the event of accidental contact with these areas until the subject is examined by appropriate medical personnel.
- (c) Should the initial application of BolaWrap® prove ineffective in gaining control of the subject, further applications should be considered in accordance with officer training. Provided it is safe to do so, officers may wish to check whether the Kevlar® cord and/or the anchor hooks have made proper contact. Officers should also consider whether the subject might comply with instructions provided or whether any other options or tactics may be more effective.

Post-deployment safety issues

- (a) Following deployment of BolaWrap® the Kevlar® cord should be cut by officers with an approved cutting device but no attempt should be made to remove hooks that might become embedded in the subject’s skin. Medical personnel only should remove hooks that have been embedded in the subject’s skin.
- (b) The Kevlar® cord must be cut prior to the subject being transported.

Post-deployment evidence issues

- (a) The used cartridge, Kevlar® cord and hooks should be maintained as evidence. Similar protocols to Taser and firearms should be followed.
- (b) Any warning given should be documented on use-of-force forms by the officer using the BolaWrap® and any other officers present in accordance with normal use-of-force reporting requirements. Where no warning is given, the reasons for this should be documented.

10 Recommendations

As set out in this report, we now present our recommendations.

1. BolaWrap® is a new device with limited operational experience to date. Accordingly, we recommend scenario reconstruction and operational trials so that the efficacy of the device can be determined to minimise any operational risks to police officers, subjects and third parties in the immediate environment.
2. We recommend that the potential role for BolaWrap® in UK policing is tested in reconstructions and in scenarios in which a CED was deployed so that a reasonable comparison can be made.
3. We recommend that Guidelines and Protocols should be drawn up for the use of BolaWrap®
4. We recommend that BolaWrap® use should be included within the national use-of-force reporting process so that its efficacy and association with injury can be identified and monitored.
5. Subject to satisfactory testing, and given the relatively low risk of injury to officers, subjects and third parties in the immediate environment, we recommend that consideration should be given to BolaWrap® being provided to all front-line officers.

11 Declaration of interest statement

The Authors have been paid by Emergency Protection Ltd for their time in researching and producing this report. We have not entered into any arrangement with Emergency Protection Ltd or any other party where the amount or payment of our fee is in any way dependent on the outcome of this report. We know of no conflict of interest of any kind, other than which we have disclosed in this section. Dr Bleetman is a serving member of SACMILL, a UK Ministry of Defence advisory body. (Scientific Advisory

Committee on the Medical Implications of Less-Lethal Weapons). He has advised the current chair of SACMILL that he is undertaking this medical review for BolaWrap who has cleared this with the Surgeon General. In the event that BolaWrap is brought before SACMILL for evaluation, Dr Bleetman will not be part of that process.

APPENDIX 1– Résumés of the report authors

Mr Eric Baskind

I am a consultant in violence reduction and the safer use of force, and senior lecturer in law at Liverpool John Moores University. I am also Chair of the Centre for Physical Interventions, British Self Defence Governing Body.

My particular research focus is concerned with the evaluation of the many different systems of managing disruptive, aggressive and violent behaviour which include de-escalation, communication, behavioural management, disengagement and restraint.

I am experienced across a broad range of systems used by the Prison and Police services, healthcare including secure hospital establishments, and other institutional settings providing secure accommodation, schools and other kinds of educational establishments including the juvenile secure estate, as well as those methods used by security personnel within the fields of personal safety and public order.

Much of my work is involved in devising and advising on effective and safer methods of dealing with disruptive, aggressive and violent behaviour and the related question of assessing risk to identify and inform subsequent strategies for the reduction of and coping with such behaviours and in the reduction in the use of physical interventions and restraints generally.

I have published articles in peer-reviewed professional journals and chapters in professional textbooks. I also speak several times a year at conferences, many of which I chair. My papers focus on a range of related topics including violence-reduction strategies, the use and misuse of physical restraint and the current thinking on the use of non-pain inducing techniques, prone-restraint positions and mechanical restraint devices.

I serve on a number of steering and expert groups including the Security Industry Authority, College of Policing, the four UK High Secure Hospitals and ProtectED.

I have advised numerous other bodies including the BBC, the Howard League for Penal Reform, various Inquiries and the Parliamentary Resources Unit. I have appeared in a number of high-profile Inquires including the Lord Carlile Independent Inquiry into the Use of Physical Restraint in Prisons, Secure Training Centres, and Local Authority Secure Children's Homes and served as a Commissioner to the National Independent Commission on Enforced Removals with specific responsibility for the

management of violence and aggression and the use of restraint. The Commission was chaired by The Lord Ramsbotham, GCB, CBE, formerly Chief Inspector of Her Majesty's Prisons, and was established in March 2012 following the death under restraint of Mr Jimmy Mubenga during his deportation from the UK in 2010.

I have been instructed as an expert witness both in the UK and in other countries in more than 3,000 cases including by the Ministry of Justice/Home Office, Prison Officers' Association, Police Federation and Scottish Prison Service in a range of cases where issues of physical intervention/restraint have arisen both in training and operationally. I have considerable experience of dealing with cases involving deaths in custody and giving evidence at Inquests and Fatal Accident Inquiries.

Dr Anthony Bleetman

I am in full-time active clinical practice as a consultant in Emergency Medicine, formerly serving as Clinical Director of Urgent Care at Kettering General Hospital NHS Foundation Trust. Prior to taking this post, I was Lead Consultant in Emergency Medicine at the North West London Hospitals NHS Trust.

I hold the position Honorary Clinical Associate Professor at the University of Warwick Medical School.

I hold a part time contract as a Senior Emergency Physician in Beilinson Hospital, Israel.

I served in the Israeli Defence Forces in a number of roles between 1981 and 1991.

I completed medical school in 1989. I trained on a surgical rotation in Glasgow and received the FRCSEd in 1993. I commenced higher specialist training in Accident and Emergency Medicine in 1994 and was appointed Consultant in Accident and Emergency Medicine at Birmingham Heartlands Hospital in 1996. The hospitals evolved into a Foundation Trust incorporating three hospitals and I served as clinical lead for Emergency Medicine at Good Hope Hospital until May 2010 prior to moving to London to assume the lead for Emergency Medicine at North West London Hospitals NHS Trust.

I received a PhD in Occupational Health from the University of Birmingham in 2000.

I direct Advanced Trauma Life Support courses and regularly instruct on other accredited life support and resuscitation courses.

I served as Clinical Director for HEMS for West Midlands Ambulance Service and continued to fly on air ambulances providing an emergency medical and trauma service until 2013. In 1992, I was awarded the Diploma in Immediate Medical Care by the Royal College of Surgeons of Edinburgh. I was awarded the Queens Golden and Diamond Jubilee Medals for my pre-hospital emergency work.

I have written and exercised multi-agency major incident plans. I sat on government advisory committees for disaster and emergency planning.

I am a medical advisor to the Ministry of Defence serving on SACMILL (Scientific Advisory Committee on Less Lethal Weapons).

I was awarded my PhD by the University of Birmingham for work on developing body armour for the police. This arose from my development work for the Home Office and the Police Federation on officer safety programmes, addressing protection from knives and bullets. I continue to work for the police on these programmes and am the first doctor to qualify as a police instructor for unarmed defensive tactics, safe prisoner restraint, handcuffing, tactical communication skills, incapacitant sprays and knife defence. Through this interest, I have been able to offer opinions on use of force, and injuries sustained during arrest and detention.

I have been involved in developing strategies to protect health workers against aggression and violence in the Health Service. I have completed studies for the Department of Health and other national bodies to identify ways of improving staff and subject safety. I am engaged in developing safe physical interventions and effective training strategies across a number of agencies.

I served on the guidelines development group of the Joint Royal Colleges Ambulance Liaison Committee.

I have published numerous articles in peer-reviewed professional journals.

Mr Peter Turner

I am an experienced specialist with a demonstrated history spanning over 30 years of working within high secure and forensic mental health settings. Skilled in the design and delivery of violence reduction and least restrictive clinical and operational strategies to predict, prevent and manage acute behavioural disturbances.

I have extensive experience of working with some of the most vulnerable and violent groups who require enhanced support to proactively deliver safe recovery focussed care within very challenging settings and unique set of circumstances. I provide direct oversight, support and supervision to multi-disciplinary teams to develop proactive cultures and whole system approaches to provide safe, responsive and consistent levels of care.

I have developed a sound knowledge base and understanding of best practice guidance, relevant laws and legislation, biological and social influences and associated risks pertaining to this complex subject matter. I have gained vast experience of designing theoretical and physical PMVA training programmes for hospital, care and public authority environments. I am Chair of the high secure service PMVA manual steering group with the responsibility of overseeing, developing and maintaining consistency of approaches across all of the UK high secure estates, including numerous NHS services and private care environments that work under the auspices of the developed model. Part of this work is the designing and testing of all physical restraint procedures before being considered legally and ethically safe for inclusion into the hierarchy of response options for all service line populations.

I have led in the design, innovation and testing of high secure escort vehicles, emergency response equipment, mechanical restraints, de-escalation furniture and environments, redevelopment programmes to improve environmental safety, personal safety and therapeutic alliance, large scale hospital rebuild projects and purpose-built use of force training centres.

I have developed effective leadership skills to lead and manage large service improvement projects to reduce violence and the unnecessary use of restrictive interventions. With high clinical and operational responsibilities for developing individualised and group care pathways, along with being available 24/7 to provide expert advice to service leads, clinical teams and other stakeholders.

I have extensive experience of the operational responsibility of leading teams and the decision-making process to advise the operational command structure in the management and resolution of high-risk incidents involving individuals and large-scale disturbances with serious and sustained intent of harming themselves and/or others.

I have extensive teaching and lived operational experience of the use of specialised equipment i.e. handcuffs, mechanical restraint devices, public order equipment, method of entry and crime scene preservation.

I am efficient in the analysis of incident data and reviewing of CCTV and body-worn camera footage, which is essential to the continuous cycle of learning and improving practice. My combined expertise is often called upon to lead/support serious incident reviews to ascertain factual information during localised reviews and during legal proceedings.

I continue to work closely with many public authority agencies to share best practices and to seek essential learning opportunities as well as maintaining a sound knowledge base of the use of equipment and procedures that may be considered necessary during incidents that may require a collaborative multi-agency approach.

More recently, and through such collaborative work, I have made significant contributions to the reduction of violence and the use of physical restraints (including prone restraint) within the West Yorkshire police custody settings.

I sit on many national groups including the NHS England expert reference group to reduce the use of restrictive practice within commissioned mental health services.

Within this field of expertise, I provide advice to many leading experts and public authorities during national policy writing, best practice guidance reviews, individual clinical care pathway reviews, procedural and operational consultations, training programme reviews and general advice/support to multi-disciplinary teams, organisations and trainers.