

## Research Article

# The Feasibility of Using Body Worn Cameras in an Inpatient Mental Health Setting

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## ABSTRACT

**Background:** A study of police wearing body worn cameras showed a reduction in complaints, and a decrease in occurrences and crimes. Mental health staff working in inpatient settings do not routinely wear cameras. The aim of this project was to examine the feasibility of using body worn cameras in an inpatient mental health setting.

**Method:** Calla supplied 12 Reveal cameras which were worn by the Prevention and Management of Violence and Aggression team and nursing staff on five psychiatric inpatient wards in Northampton and England following training.

**Results:** The training provided prepared staff to use the cameras effectively. There were very few technical issues with the body worn cameras though some refinement to the harness is required to improve comfort. Both staff and patients considered that their use in an inpatient mental health setting

was beneficial. Compared to the same period the year before, there was a reduction in complaints and incidents during the duration of the pilot. The cost of equipment was £7,649 and storage of footage for three months was £569. Other costs were for staff time, 48.5 hours to set up and seven hours per week to maintain.

**Conclusion:** We have demonstrated that it is feasible to employ body worn cameras in an inpatient mental health setting. Their use is acceptable to both patients and staff. Costs could be offset by the reduction in complaints, incidents and restraints, but further research is required to support this.

**MeSh Headings/ Keywords:** Mental health; Body worn camera; Inpatients

## Background

Body worn cameras (BWC) are mobile audio and video capture devices that allow the wearer to record what they see and hear. These devices can be secured to various parts of the body using different types of attachment. The advantages of professionals wearing a camera include transparency, identifying integral problems within the organisation and improving evidence documentation [1].

BWCs are used internationally by police officers. A randomized controlled field trial carried out in the USA suggested that police BWCs reduce the prevalence of use-of-force by the police as well as the incidence of citizens' complaints against them [2]. In England, an evaluation of their use in Hampshire and the Isle of Wight also showed a reduction in complaints, and a decrease in occurrences and crimes [3].

In their 2015 report regarding the use of body worn cameras in health care settings, the International Association for Healthcare Security and Safety (IAHSS) Foundation [1] describe some examples in the United Kingdom which claim that the use of BWCs on security officers can decrease violence in health facilities [4]. However, there are no published evaluations available to support these claims. A report from the Greater London Authority in 2014 [5], found that nearly 66,000 frontline workers, including nurses, were recipients of physical or verbal attacks in the past three years and recommended the trial of body worn cameras to see if they assist in reducing crimes against workers.

There are a number of perceived benefits from wearing body worn cameras which include: strengthening health care professionals' accountability by documenting incidents;

preventing confrontational situations by improving health care professionals' conduct and the behaviour of patients being recorded; resolving incidents and complaints by providing a more accurate record of events; identifying and correcting internal problems by revealing staff who engage in misconduct; strengthening health care professionals' performance by using footage for training and monitoring; and improving evidence documentation for investigations. Body worn cameras have some limitations: the camera does not follow the eyes of the wearer as the event occurs; it is unable to capture a 360 degree view of the situation that might be occurring; the wearer may be unsure when to turn the body worn camera on; and a camera can never replace a thorough investigation.

There are no set of universal industry standards for the use of body worn cameras in healthcare settings. Each department or facility need to develop their own set of standards, roles and responsibilities, and policies and procedures to comply with governance requirements [1]. In a qualitative appraisal of the use of CCTV cameras in Broadmoor Hospital (a high-security psychiatric hospital in England), patients believed the absence of sound recording led to a lack of context when reviewing the images [6]. This was one of the reasons that BWCs were introduced. The nurse wears the clearly marked camera which is usually switched off. It displays a red light when in use. The employment of the BWCs has been judged to be useful by both nursing staff and patients [6], but no report on their feasibility or effectiveness has been published to date.

This pilot project using BWCs in a mental health setting took place at Berrywood Hospital, which is a psychiatric facility in Northampton, England, run by Northamptonshire Healthcare NHS Foundation Trust (NHFT). The five wards in the pilot included one male and one female recovery, one low secure unit, one acute admission and one intensive care. At present CCTV cameras are not employed in ward settings; however, there are CCTV Systems in use in other areas of NHFT such as car parks and corridors. These are commissioned, governed and managed in accordance with the Information Commissioner's Officer Code of Practice 2014. The CCTV systems are in place to deter malicious and inappropriate behaviour, detect crime, and promote staff and patient safety.

NHFT employs a Prevention and Management of Violence and Aggression (PMVA) team which includes full time staff, a part-time administrator and a number of part-time ward based instructors, all based at Berrywood Hospital. They provide training, clinical support and advice on the prevention and management of violence and aggression across the Trust. They work closely with their service user colleagues in both policy development and co-produced training packages in order to reduce conflict and containment in mental health and learning disability services in the Trust.

The aim of this pilot project was to examine the feasibility of using body worn cameras in an inpatient mental health setting. A number of specific objectives were set:

- To find out whether wearing the camera is comfortable and if it causes restriction
- To test and refine information technology support and security requirements

- To determine the level of training and support required by staff using the BWCs
- To explore the experience of staff using BWCs, practical issues faced, their perceptions of its usefulness
- To explore the experience of staff who work alongside colleagues who are wearing BWCs, practical issues faced, their perceptions of its usefulness
- The acceptability of staff wearing BWCs to patients
- To observe any change in the level of reported incidents
- To examine the costs of utilising BWCs.

## Method

### Intervention

Calla supplied 12 Reveal cameras free of charge to NHFT for the purpose of this pilot. The cameras are protected by a pin number so data cannot be downloaded if the camera gets lost. The date and time, and the amount of storage time are displayed on camera. Calla also provided and administered the secure cloud-based solution which stores the recordings that have been captured.

Data from all cameras was uploaded to Calla's secure cloud from one computer located in the reception area. One member of the nursing staff on each of the five wards at Berrywood Hospital, a member of the PMVA team and the night manager wore a BWC during their shifts. These members of staff were chosen because they are trained in full range of interventions from a PMVA perspective. They chose to wear a harness camera fitting. This fitting was selected as it can go over the uniform and it is sturdy and practical. Extra harnesses were available to allow for washing. The staff wore the camera at all times; it was switched off and then activated when an incident occurred. The use of the BWC device can be categorized in four separate phases of operation:

- a. Collecting the camera from the charging/docking bay (located in reception). This includes: switching the device on and checking that it is operating accordingly.
- b. Attaching the device, and the robustness/ergonomics of the camera. It is invariably worn on the on left side of the chest of the outer garment.
- c. Using the camera to record an incident. This includes: travelling to the incident; switching the camera on by sliding the function button (an audible beep, active light illuminates and the front display screen then shows); sliding the function button back after the incident to switch off.
- d. Returning the camera to the docking station. On completion of a shift, the camera is docked, data is uploaded and unit is re-charged.

Staff from each ward may respond to an incident on another ward. It was agreed that all staff wearing a camera would record the incident. Staff wearing cameras were guided in their training to talk to the camera to give their thoughts about what they can see and what they intend to do. If staff decided to switch the camera off because they feel this could be exacerbating the situation, they were advised to say they are going to do so and

why. If it was appropriate to record the sound but not visuals, staff were directed to turn the camera around. They were instructed to explain to patients and other staff that the wearing of the camera is for their safety.

### Preparatory work

Before the intervention could be introduced to the wards there was a need to adapt the Trust's security policy, implement the necessary information technology (IT), comply with Information Governance (IG) regulations, develop and deliver appropriate training, and inform patients and visitors.

**Trust BWC policy:** The related policies and procedures are described in NHFT's Security Policy; staff were advised to adhere to this policy when using the BWCs. A Standard Operating Procedure (SOP) was written by the second author for insertion into the policy. This was based on the West London Mental Health trust's photography policy for Broadmoor Hospital and the Commissioner's Officer Code of Practice 2014.

**Information Technology:** For the correct IT to be put in place, the IT team commissioned by Northamptonshire Healthcare Foundation Trust: liaised with Calla in relation to the IT elements that needed to be implemented; bundled and deployed software (identified during details scoping); provided technician support for the installation of docking stations; proxy changes where identified; and analysed the bandwidth requirements for data transfer and its effect on core services using the NHFT network.

**Information Governance:** The IT team provided NHFT with expert advice in relation to compliance with the Data Protection Act and IG. A full privacy impact assessment and completion of the self-assessment tool from the surveillance camera commissioner were recommended. Actions from these included: display of fair processing notices; agreed retention periods for recorded data; confirmation of compliance for information security on both devices; and cloud storage and data processing agreements with Calla.

**Training:** Training to use the cameras was provided by Calla at Berrywood Hospital. The duration of training is 90 minutes and includes:

- The purpose of wearing a camera
- Description of how the camera works – no infra-red so it sees what you see
- Practical aspects of collecting, using and returning the camera
- Security of data, use of log in
- How the data is stored and how to search for footage (only ward matrons have access to footage and this is from their own ward)
- How to send footage to the police if necessary.

Ward managers and/or a member of the PMVA team cascaded this training to ward staff. Additionally, two members of the PMVA team and the night managers received further training as administrators. They were shown how to appraise

the videos and to keep footage for 31 days unless there is an incident that needs to be reviewed.

**Informing patients and visitors:** All wards were provided fair processing notices in the form of with posters which were displayed in areas of high visibility. These stated that: the cameras record video and audio information, but only when activated by the wearer; staff wearing the cameras will clearly let people know when they begin any recording; cameras will be activated if staff believe that safety may be compromised when responding to incidents; and all recorded data will be processed in accordance with the Data Protection Act 98. The posters were regularly replaced if removed by patients. Staff verbally informed patients about the cameras by including prompts in morning meetings, patient experience groups and community meetings.

### Data collection

1. To find out whether wearing the camera is comfortable and if it causes restriction we asked staff to complete a questionnaire.
2. To test and refine information technology support requirements, the IT team provided a summary of queries and actions taken.
3. To determine the level of training and support required by staff using the BWCs we asked for immediate feedback following the training and then after two months. We used evaluation forms specifically created for this purpose.
4. To explore the experience of staff using BWCs and those who work alongside them, practical issues faced, and their perceptions of its usefulness, we carried out surveys and a focus group.
5. To find out the acceptability of staff wearing BWCs to patients we created a patient questionnaire. This was given to all patient's resident in the five participating wards during a designated week.
6. To observe any change in the level of reported restraints (identified as low level supportive holds and emergency responses), incidents (identified as verbal abuse and/or violence) and complaints of incidents we compared routinely collected data during the period of this study with routinely collected data for the same time period before the intervention.
7. To examine the expenditures of utilising BWCs we have identified which costs should be measured:
  - a. Setting up the service by determining staff time to deliver and attend training, staff costs to create and agree policies, IT costs, cost of cameras and storage factors.
  - b. Continuing to provide the service – staff time to download recordings, IT input, servicing and repairing cameras, storage.

### Participants

The participants included:

1. All nursing staff on the wards where BWCs are being used
2. Staff in the response team who are using BWCs
3. Patients on the wards where BWCs are being used.

### Analysis

Descriptive analysis was used to compare patient outcomes before and after the intervention. Thematic analysis was employed for the patient and staff questionnaires.

### Approvals

The protocol and related materials were given approval by the trust's Innovation and Research Department. The project was given approval by the trust's executive governance committee.

### Results

#### Training and support required by staff using the BWCs

Initial training was provided by Calla and then cascaded to ward staff by the participants.

**Initial training for using BWCs provided by Calla:** The initial training was undertaken by nine staff from Berrywood Hospital including five Ward Matrons, one night Manager, and the three members of the PMVA team. Participants were asked to score the course delivery and their confidence to use the cameras, with five being 'agree strongly' and one being 'disagree strongly'. All scored five for each of the following areas: the structure of the training was easy to follow; adequate time was allocated for discussion; the trainer listened and responded to questions; understanding how using BWCs can be of benefit; confidence in collecting the camera from the docking bay, switching it on, checking the date and that it is operating accordingly; attaching the camera to the harness securely; feeling capable of using the camera to record an incident and switching it off afterwards; assured in returning the camera to the docking station on completion of their shift. They all answered positively to the question asking if they felt confident in cascading the training. Comments were asked for but none were given.

**Administrator training provided by Calla:** The three members of the PMVA team were trained to act as administrators. This included uploading, storing, accessing and deleting recordings. They were asked to score between one and five as described above. All scored five for the structure of the training being easy to follow, having adequate time for discussion, the trainer listening and responding to questions, and uploading recordings. Mean scores for the other tasks, storing recordings, accessing recordings and deleting recordings were lower at 4.7, 4 and 4.5 respectively.

Participants were asked for suggestions to improve the training, one suggested:

'Would have been good to have a 'live' session to play/learn/make mistakes with'. Other comments included:

'Will feel more confident when I've had a go'

'Will see when I have my own login (stored, access, delete)'

**Cascaded training:** The training was cascaded to 25 staff members from the five participating wards; they included charge nurses, matrons, ward managers, staff nurses, and health care assistants. In the main, scores for all areas of the training were five with the lowest score being four. Comments for improvement included:

'Show the playback quality'

'Have more devices to practice with'

Other comments included:

'Look forward to the feedback and evaluation'

'Really good and proud to be involved in study'

**How well the training prepared staff for practice:** Two months into the pilot, staff who wore the cameras were asked whether the training prepared them for the situations they encountered. Thirty-eight staff responded to this question. Eighty-seven percent felt that they were ready, with 42% stating they were fully prepared and 45% were mostly prepared following a little practice. Twelve percent of staff stated that they did not attend any training. Comments included:

'Like anything new, it took time to fully get to grip with it'

'I had to decide when to use it in real situations'

'Rather easy to get on with, just have a play around and soon figured it out'

Ninety-five percent of the 39 respondents who wore the cameras stated that they were prepared for any queries regarding body worn cameras from patients and relatives, with 56% being fully prepared and 39% after a little practice. Comments included:

'I knew what to say and how to say it to allay patient and relatives' fears'

'General conversations around who has access to footage'

Staff involved in the focus group thought that the only aspect not covered in the training was that there is a delay before filming starts after switching on the camera, and they only found this out on looking at the footage. This has taught them to be more mindful about switching it on quickly.

Twenty-two staff who did not wear the cameras and therefore did not attend the training responded to the same question, i.e. were they prepared for any queries regarding body worn cameras from patients and relatives. Eighty-two percent said they were prepared, with 68% being fully prepared and 14% after a little practice.

#### Information technology support requirements

There were a few minor problems in setting up the software. Initially it could not connect to Calla's web servers. This was because the trust's internet proxy server was blocking the connection. It was rectified by putting a rule in place for the software to be allowed the connection. On the first attempt, the cameras did not upload the videos to Calla's web servers. This was because the company's server was down and the problem

was soon rectified. The IT department were not asked to help with any problems during the period of the pilot.

There were no concerns raised with BWCs in terms of IG.

### Comfort whilst wearing the camera

Staff were asked to describe the level of comfort they experienced when wearing the camera and whether it restricted their movements in any way. Thirty-six staff responded. Only one person described wearing the camera as restrictive. Thirty-six percent of staff had no issues wearing the camera and 64% described some level of discomfort.

**No issues:** Overall staff described wearing the camera as being comfortable and unrestrictive:

‘There was no discomfort- the holdalls are easy to use and free from restrictions’

‘I don't experience any movement restriction in any way’

‘No discomfort really. The cameras felt slightly strange, at first. But fine when I'd got used to it.’

**Discomfort:** Most of the discomfort seemed to relate to the harnesses and the difficulty in adjusting them to fit. A number of female staff reported problems due to their anatomy. Comments included:

‘Feel like they dig into your arm pits and if not adjusted well they move a lot’

‘Quite awkward to wear for females, camera sat between breast and armpit’

‘As a lady with boobs it kind of made me a bit uncomfortable’

‘Dependent on which harness you get sometime no matter how much you attempt to adjust they dig in your armpit’

‘Too tight under the arm, if loosened camera harness slipped pointing camera at floor’

‘I found the harness pulled on my neck and caused a headache’

### Operational difficulties faced by staff

Staff were asked to describe any operational difficulties they encountered when using the camera and how these were resolved. Thirty-four nurses who wore the camera responded. Eighty-eight percent reported that there were none. The problems encountered were minor and included:

- One user did not fix the camera very well to the attachment and it fell off while bending down.
- On a few occasions, a user found the camera would switch on if knocked.
- One nurse found that the camera they were issued with was not working, i.e. it would not turn on at all, or record. They reported it and the situation was resolved quickly.
- The harness has to be completely removed to remove fleece when warm and there is difficulty in wearing it over a coat or jacket.

- The harness smells as is usually worn close to staff's skin. This was resolved by doing a wash routine but one nurse thought that this affected the elastic and then it felt less secure.

Seventy-nine percent of the 14 respondents who did not wear a camera reported they observed no operational difficulties. One stated that staff were not taking them back to the docking station in reception after use. Problems observed included difficulties adjusting the harness and problems switching the camera on and off.

### Practical issues faced by staff

Sixty-four percent of the 39 staff wearing cameras who responded to the question asking what were the practical issues encountered, reported that there were none. The rest said any issues were minor and easily resolved. Twenty-three staff who did not wear a camera were asked if they observed any practical issues; 69% did not, 22% they were minor and easily resolved and 9% said the wearer needed assistance to continue to use the camera.

On viewing the footage, it was usually clear why the situation had been filmed. There was only one episode in which it was not, this was because the wearer had not stated why they were going to film.

The cameras did not switch back on after the first monthly generator test during the pilot. In order for them to be recognized again by the software they had to be disconnected from the docking station and then re-docked. This procedure is now carried out routinely after the test is complete.

### Staff perceptions of the usefulness of BWCs

All staff were asked to give their opinions with regard to the usefulness of BWCs in an inpatient psychiatric setting. Table 1 shows that staff wearing the cameras are much more positive about the benefits of wearing a camera. Comments from wearers included:

‘I think it prevents lots of aggression and puts patients' minds at ease knowing there is a record of what happened.’

‘I have seen a few occasions where the incident had de-escalated and believe this to have been helped by the camera being turned on. It would be good to see some sort of footage used in training if appropriate to do so.’

‘Feel more reassured when having to utilize restraint techniques that cameras are activated and capturing the incident.’

‘I am fully in support of the technology being used permanently in the future. I can see nothing but positives from it with recourse to its potential in reducing/de-escalating violent incidents.’

Comments from staff who did not wear the cameras were more mixed in opinion;

‘They cause more problems because the responding staff will only capture from the time of arrival hence does not give a clear picture of what has been happening prior to that.’

‘Body worn cameras have got pros and cons, nursing staff

**Table 1:** Comparison of camera wearers' perception of the usefulness of with BWC those not wearing a camera.

Staff opinion	Camera (n=41)	No camera (n=23)
They do not make very much difference	2%	9%
They cause more problems	0%	13%
They can prevent confrontational situations because staff behave more professionally	61%	48%
They can prevent confrontational situations because patients improve their behavior if being filmed	90%	61%
They provide an accurate record of events so incidents may be resolved more quickly	90%	87%
They may reveal when staff are not behaving professionally	59%	48%
Footage can be used for training purposes	73%	65%

feel they are being watched for wrong doing and on the other hand patients do feel intimidated by their use.'

'Initially skeptical, however can see that body worn cameras have had a positive impact on both patients and staff.'

'Patients have changed their behavior when they were told it was being filmed. Useful to have a record in case of any complaints about restraint and it makes staff more aware of their body language.'

Examples were given by staff in the focus group where they felt the use of BWCs may have changed behavior:

- A female patient kicking a door stopped when told she was being filmed.
- A gentleman who had a habit of hitting staff seemed to stop.

The PMVA team reported that they were impressed with staff behavior when reviewing the footage, for example:

'It was good to see the staff remaining caring and compassionate even when they were faced with physical aggression.'

Staff who were not wearing cameras were asked whether they encountered any issues because they were not wearing a camera and their colleagues were; 96% said they did not and the rest said the issues were minor.

### The acceptability of staff wearing BWCs to patients

Patients on the five wards taking part in the pilot were asked for their feedback regarding the cameras via a written questionnaire. In the main these were handed out by staff designated for the task, for example, one ward employed their apprentice and a bank nurse, another ward used a patient. Sixty-four patients were resident at the time. Only one form was not returned. Six patients opted not to complete the form and 57 completed it.

#### Being informed that body worn cameras were in use:

Patients were asked if they were made aware that some of the nurses were wearing body worn cameras on their ward. Sixty-eight percent of those who completed the form said that had been made aware (Table 2). The patients who reported that they had not been made aware were from three of the wards with half of these being from one ward.

#### Patients' view on body worn cameras and behaviour:

Patients were asked whether staff wearing BWCs would have an effect on staff and patient behaviour. Overall, 68% thought

**Table 2:** Methods of being informed about BWCs identified by patients (n=39).

Method	No of patients (%)
Posters	20 (51)
Informed on admission	5 (13)
Informed at morning meeting	15 (38)
Given written information	5 (13)
Other	1 (3)

**Table 3:** Number of patients who think that staff wearing BWCs changes behavior (n=57).

Opinion	Staff behavior	Patient behavior
It makes no difference	30%	35%
They might be more careful what they say	32%	28%
They may be less likely to be violent or aggressive	n/a	40%
They may be more professional	35%	n/a

that staff behaviour would change and 63% thought it would change patient behaviour (Table 3). Just under a third of patients thought that both staff and patients would be more careful what they say and just over a third thought staff would behave more professionally. Two fifths of patients thought that patients may be less likely to be violent or aggressive. Comments made by patients in regard to behaviour were positive:

'It may make staff more confident to approach and help distressed patients, it makes them feel safer at work so happier and more able to help patients.'

'Wear all cameras for my own good.'

'I feel sorry for patients who are still at a point where there is some level of control over behaviour - it will certainly act as a deterrent or tool to de-escalate.'

### Benefits and problems of staff wearing cameras identified by patients

All patients were asked what they considered were the benefits and problems with staff wearing BWCs; 42 patients composed a written explanation. Of these, 83% described the benefits which included: safety for everyone; respect for staff; better treatment for patients; accurate recording; and clarifying situations in possible unjust accusations. Examples of comments are:

'Better behaviour from staff and patients, also clarity of any issues because of video.'

‘Staff have evidence of patients kicking off.’

‘Makes things safer for clients and staff.’

‘Able to record specific actions and dialogue between patients and staff.’

Twenty-four percent of the 42 patients who responded listed a problem with staff wearing cameras; 10% of them also listed a benefit, meaning 14% provided a negative view only. Problems comprised of: concerns regarding the improper use of the camera; worry about who sees the footage; and having a negative effect on patients. Examples of comments include:

‘When you have to react quickly do you really have time to think about turning the camera on?’

‘Who views or will view the pictures, what happens after they have been viewed?’

‘It causes patients to be more irritable and angry when they think they are being observed.’

‘I could see some patients may see as a threat.’

### The level of reported incidents

Clinicians working at NHFT report clinical incidents using the Datix system. This system can be used to manage incident reporting, risk registers, complaints, claims, requests for information, safety alerts and CQC standards in the UK. Incidents were measured by checking the number submitted during the time period of pilot project and comparing this with the number in the same time period the year before (Table 4). We were able to check for the number of physical restraints as a record is kept routinely by the PMVA department (Table 4).

It can be seen from table 4 that verbal abuse has increased on three of the wards. The staff on Ward 4 report that for one month of the pilot they had a particularly challenging group of patients. Violence has reduced on three of the wards and increased on two. Restraints can be classified as low level supportive holds and emergency restraints used in situations where there is a high or immediate risk of harm. Low level restraint increased on two wards, reduced on two wards and stayed the same on one. Emergency restraint reduced on three of the wards.

### Complaints

Three complaints were made during the period of the pilot, one of which was withdrawn. None of these were related to a particular incident or restraint. During the comparison time period the year before, three patients made complaints and one withdrew. One patient made six complaints and the other made two; both patients complained about an instance of restraint.

The first patient thought restraint was a last resort and did not consider that staff had talked to her and calmed her down. She reported that restraint was used inappropriately and with excessive force, and she was not informed about an injection.

### The costs of utilising BWCs

We have described the cost of setting up the service and the cost of continuing to provide the service.

#### Setting up the service

- Staff costs to deliver and attend training and staff costs to create and agree policies. Time spent on training was 90 minutes for nine trainers who between them trained 25 staff for a 90minute period. One senior member of staff wrote the policy which took three hours.
- IT costs. The IT technician spent 48.5 hours to set up the service and deal with any problems. This was less than the 51.5 hours they had estimated.
- Cost of cameras. The cameras and related equipment were provided free of charge for this project. The costs to purchase are: camera and software £6,540; accessories £1,109.

#### Continuing to provide the service

- Staff time to upload recordings and review recordings required three hours of time per week from a senior member of the PMVA team.
- Sorting out problems with the cameras required three hours of time per week from a junior member of the PMVA team and one hour per week from the senior member. The IT Service Desk Manager confirmed that they did not have any calls regarding BWCs or the software.
- Storage was provided free of charge for this project but would have cost £569 for the three-month period.

### Discussion

The education prepared staff effectively to use the cameras. The session evaluations showed little difference in the effectiveness of the initial training and the cascaded training, demonstrating this as an effective method of preparing staff to use BWCs. The training may be enhanced if more cameras are made available for practice during the sessions. Consideration should be given to providing an additional practical session to increase staff confidence before using the cameras in practice. Some staff reported that they did not receive any training but were required to wear a camera. A plan should be put in place

**Table 4:** The number of incidents and restraints during the period of time when BWCs utilized compared with the same period the year before.

Incident	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5	
	Pre	Pilot	Pre	Pilot	Pre	Pilot	Pre	Pilot	Pre	Pilot
Verbal abuse	0	3	0	5	2	0	3	8	8	8
Violence	16	14	6	13	16	8	26	47	17	5
Supportive hold	5	1	1	3	3	1	8	17	1	1
Emergency restraint	4	10	1	4	16	2	15	2	5	0

to ensure all staff expected to wear the camera receive training.

Often a concern with using new technology is the amount of time required to ensure it is working successfully. However, there were very few technical hitches when setting up the software and as the clinical staff trained to be administrators were able to deal with any problems (which were minor), the IT department did not have to be called out.

There were some issues with the harness that staff wore to secure the camera. Calla will use this feedback to develop a better solution for the healthcare environment. Operational and practical problems were minor and easily dealt with. Some of these may not have occurred if staff had been given the opportunity for more practice. Sometimes cameras were not returned to the docking station. This required staff to go to another part of the hospital, so it may have been difficult when they were busy or short of staff. Docking cameras into stations located on each individual ward should resolve this matter.

Most staff involved in the pilot were very positive about the benefits of utilising BWCs. This concurs with the views of the nurses wearing them in Broadmoor [6] and provides further evidence of their acceptability to mental health nurses.

Advising staff and patients about the cameras was carried out using a variety of methods. However, nearly a third of patients still reported that they had not been made aware that they were in use and all reported different ways of finding out. Given the nature of the patients' illness where cognition is often affected [7] it may be advisable to be particularly proactive in advertising their use and to provide further written materials. The staff are already planning to have the BWC information included in the ward welcome pack.

The patients involved with this pilot were positive about the benefits of staff wearing cameras alleviating any apprehensions that they may find them objectionable. Again, this aligns with the views of patients at Broadmoor who also judged them to be useful [6]. As this was a feasibility pilot, we were limited in the types of questions we could ask patients. It would be useful to have more of their insights; we are planning to carry out research in order to gain this.

The increase in verbal abuse during the pilot suggests that the patients during this period may have displayed more challenging behaviour than the comparison period. Despite this, the level of violent incidents and emergency restraints decreased on three out of the five wards. There is a need for a longer period of measurement and analysis of other factors such as staffing and the severity of patients' illness to determine whether the use of BWCs had an effect on reducing violence and restraints.

There were no complaints regarding restraints during the pilot period of BWCs compared to two in the same period a year earlier. Though encouraging, the time period is too short and the numbers are too small to suggest that this was due to staff wearing cameras. Further research is required to measure this precisely.

The costs of setting up and delivering the service were reasonably small. There is the potential to make savings if complaints and incidents are reduced.

## Conclusion

By carrying out this pilot, we have demonstrated that it is feasible to employ body worn cameras in an inpatient mental health setting. Their use is acceptable to both patients and staff. Costs could be offset by the reduction in complaints, incidents and restraints but further research is required to support this.

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