

# BMJ Open Quality Flip the Triangle: using quality improvement methods to embed a positive behaviour support approach on a medium secure forensic ward for men with intellectual disabilities

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## ABSTRACT

Incidents of violence and aggression are serious concerns on a secure ward for people with intellectual disabilities and are often met with increases in physical and restrictive interventions. However, these interventions are usually high risk for both patients and staff and are ineffectual in promoting long-term behaviour change. This study aimed to promote positive culture change and embed the evidence-based practice of positive behaviour support by shifting focus and efforts from the use of physical and restrictive interventions to manage crises to intervening positively and proactively to prevent crises from occurring. The key drivers for change involved increasing access to positive engagement opportunities, expanding the staff team's repertoire of proactive interventions through training and skill development and supporting staff well-being and resilience. Change ideas occurred alongside a shift in culture that promoted the development of a learning culture, psychological safety and consideration of contextual fit. Quality improvement methods helped the project increase the rate of positive and proactive interventions from 70.65% in December 2018 to 97.18% in January 2020. Increases in staff's knowledge, confidence and safety were also reported. Lessons and limitations of the project are discussed.

## PROBLEM

Shoreditch Ward is a 14-bedded medium secure service for men with intellectual disabilities in East London. The service provides assessment and treatment to men over the age of 18 who have committed a criminal offence and/or are currently displaying high levels of challenging behaviour that cannot be safely managed in lower levels of security. Service users on Shoreditch Ward also present with multiple comorbidities including autism, Attention Deficit Hyperactivity Disorder, psychosis and personality disorder. The service receives referrals from across London boroughs and the patient population represents men from a range of ethnicities and varying degrees of socioeconomic status.

As a forensic service, we are particularly skilled at risk assessment and risk management. However, this meant much of the team's focus was directed at managing incidents of violence and aggression when our patients were experiencing a 'crisis' episode. Intervening at crisis points could commonly be associated with the most risk to both patients and staff and often involved physical and restrictive interventions. Focusing on crisis situations could also mean patients displaying 'settled' behaviours were sometimes overlooked and their positive behaviour was not acknowledged or reinforced.

While Shoreditch Ward had positive behaviour support (PBS) plans to proactively manage challenging behaviour in place for its service users, there was still a high incidence of violence and aggression on the ward. To explore this further, the team undertook an exercise to analyse the daily safety plans developed in 'Safety Huddles'. This highlighted that the most common plans were 'low-threshold for seclusion, give pro re nata (PRN) and maintain boundaries'. It became clear that the PBS plans were lacking 'contextual fit', did not involve the whole multidisciplinary team (MDT) and there was no system in place to operationalise and implement the plans in clinical practice.

The 'Flip the Triangle' quality improvement (QI) project aimed to develop a model of care and culture on the ward to take an embedded and multidisciplinary PBS approach. This involved 'flipping' the attention and effort of our staff team to increase focus on positive and proactive interventions to manage and prevent challenging behaviours (eg, violence and aggression) before they occur. Therefore, the project's primary aim was to increase and maintain our positive and proactive interventions to a rate of 95% by January 2020.



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## BACKGROUND

Incidents of violence and aggression are a serious concern for mental health services and evidence suggests QI methods can be an effective tool to examine and implement changes to reduce violence in mental health and secure settings.<sup>1,2</sup> Recent research found physical assaults to be the most common form of incidents on an intellectual disability secure ward,<sup>3</sup> and incidents of violence and aggression are most likely to be managed through a number of physical and restrictive practices, including restraint, seclusion and medication.<sup>4</sup>

The ethics of using physical and restrictive interventions have been contested by researchers, policymakers and advocacy groups, with these interventions often described as aversive and traumatising while also proving ineffectual in creating long-term behavioural change.<sup>5,6</sup>

In the UK, a number of government policies and strategies aim to reduce physical and restrictive practices in intellectual disability services. While early literature focused on removing access to restrictive practises (eg, closing seclusion rooms, outlawing restraint), modern literature recognises the complex systemic changes needed to successfully reduce restrictive practices. Focusing on simply reducing or eliminating restrictive practises without the appropriate supportive structures can contribute to a culture of fear and blame within mental health services.<sup>7</sup> What is now recommended is a service-wide cultural shift towards recognising and improving leadership, education, support, service user involvement, preventative action and the therapeutic environment.<sup>8</sup>

The National Institute for Health and Care Excellence guidelines<sup>9,10</sup> recommend a move towards positive and proactive approaches to manage challenging behaviour. PBS is a person-centred approach that understands challenging behaviour to be driven by unmet needs. Positive and proactive interventions involve making environmental and interpersonal changes to support individuals to meet their needs through alternative, positive strategies, while also teaching new skills in order to increase quality of life.

While the efficacy of PBS approaches has been studied in a number of different contexts, a recent study<sup>11</sup> was the first to examine the effectiveness of this model in a medium secure setting for men with intellectual disabilities. PBS was found to be an effective method for reducing the frequency, severity and management difficulty of aggressive challenging behaviour.

Collaborative safety (CS) plans<sup>12</sup> are a whole-team approach to PBS whereby multidisciplinary professionals, service users and their families collaborate together to develop meaningful plans. CS plans have been developed based on the time-intensity model of escalation<sup>13</sup> and incorporate background information and a brief formulation of challenging behaviour, baseline presentation, triggers, three phases of escalation (early, mid and late), crisis and postcrisis, in addition to strategies to manage each phase. The ethos of this six-page document is that it

is a live and accessible document that is regularly updated and reviewed as new learning is achieved.

Due to the flexibility and adaptability of the CS plans, they are designed to consider the 'contextual fit' of the PBS approach. Contextual fit refers to the 'congruence between the behaviour support intervention and the values, skills, resources, and routines of those who will implement the intervention',<sup>14</sup> and can be associated with the effectiveness and sustainability of the approach.<sup>15</sup>

Therefore, the culture and values of a service can be key for the successful and effective implementation of PBS approaches. A 'Psychologically Safe' culture refers to a culture in which all members of a team feel able to share ideas and opinions without concern they will be judged negatively by other members of the team.<sup>16</sup> Psychological safety has been associated with greater team effectiveness as it can create a 'learning culture' whereby individuals feel comfortable and confident engaging in learning behaviours; asking questions, speaking up, sharing ideas, listening to feedback, taking positive risks and trying new things.<sup>17</sup>

## MEASUREMENT

Physical and restrictive practice data comprised the number of days spent in seclusion, days on enhanced observations, incidence of restraint, incidence of intramuscular rapid tranquilisation and number of doses of PRN medications (including sedative medications prescribed as regular). The number of positive and proactive interventions was initially collected through reviewing daily entries in each patient's electronic record; for example, leave, 1:1s, therapeutic sessions, references to de-escalation, facilitating family contact. Data were collected weekly and each week, the percentage of positive and proactive versus physical and restrictive data was calculated and entered into the QI life system. Baseline data were collected between October and December 2018 and we found that 70.65% of our interventions were positive and proactive. We also measured the staff team's confidence responding to service users' challenging behaviour, understanding of service users' challenging behaviour and how safe the staff felt working on Shoreditch Ward.

## DESIGN

The project's primary aim was to increase and maintain our positive and proactive interventions to a rate of 95% by January 2020. Although defining and collecting data regarding physical and restrictive interventions was relatively straightforward, defining and collecting data for positive and proactive interventions was more complex. We initially measured positive and proactive interventions by reviewing notes on the electronic system; however, it was noted that this system may not truly reflect the breadth of interventions delivered. This was changed early on in the project to a 'dots based' system. Every morning, a chart with each patient's initials at the top was placed

on the inside of the door to the nursing office. When a staff member had engaged in a positive and/or proactive interaction with a patient, they placed either a light blue or a deep blue circular sticker under the patient's initials. Operational definitions of light blue and deep blue dots were cocreated and shared among the team. 'Light blue' interventions consisted of 'everyday' and 'routine' positive and proactive interventions aimed at keeping a patient at baseline (eg, supporting a patient to attend work, escorting them to the barber, making them a cup of tea, having a short 1:1). 'Deep blue' interventions required additional thinking or effort from the staff team. For example, careful consideration by the MDT and planning among escorting staff to safely organise a home visit for a service user who has not been home for a number of years or engaging in a period of proactive de-escalation once a service user has entered an escalation phase.

The QI team adopted an approach of flexible membership and invitations to QI meetings were open to all staff members (including bank and student staff) in order to promote a bottom-up approach and redistribution power and involvement across the professional hierarchy. There was a core multidisciplinary team who attended all meetings which included representations from psychology, nursing, speech and language and occupational therapy, alongside the QI coach.<sup>18</sup> QI meetings were consistently held weekly and attendance would often be between 8 and 12 people.

As the project evolved, the importance of coproduction and meaningful service user involvement became imperative. Our service users could sometimes struggle to engage in large meetings and we were aware of different needs and priorities among our patient group. Therefore, to include a diversity of views, we developed creative and meaningful ways to help service users input to the project and held several focus groups to understand what care and support was important to them. Service users identified 10 domains of care that they valued

(table 1) which were illustrated on to a 1.5 m diameter Perspex wheel. Symbols sat like a clock round the edge of the disc and patients could 'blue dot' next to a domain if they recognised the type of care they value or in the middle if they were unsure. The wheel was photographed once a month to record where our care was most/least highly perceived and valued. This approach allowed us to monitor and respond flexibly to the experiences of different patient cohorts.

In order to achieve our aim, the team noted three important drivers for change (please see figure 1): (1) staff having the knowledge, understanding and confidence to be able to implement proactive strategies, (2) staff needed their well-being to be acknowledged and supported to have the resilience to implement changes, and (3) maximising the number of opportunities for positive engagement between service users, staff and families.

## STRATEGY

The strategy for improvement involved implementing 'Plan, Do, Study, Act' (PDSA) cycles in line with the three drivers for change. Figure 2 provides a visual timeline for each cycle of change.

### Increasing access to positive engagement opportunities

The aim of this series of PDSA cycles was to create more opportunities for positive engagement. It was hypothesised that this would allow staff and service users to develop more positive and supportive relationships, reduce power inequalities and support service users to remain calm at their baseline presentation.

#### PDSA 1.1: pedometers

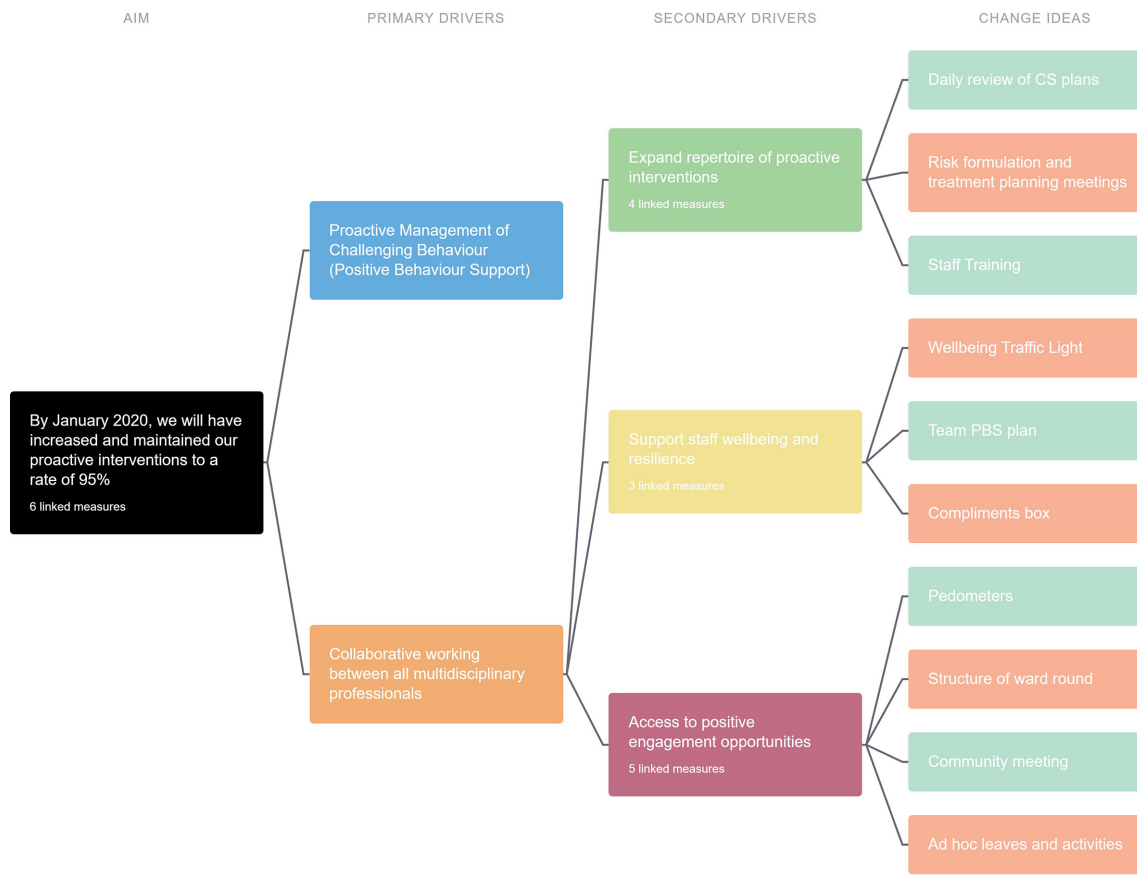
We provided all staff and patients with pedometers to measure the steps taken throughout each day. This provided many of our service users with positive engagements that they would not have otherwise had. For example, asking each other how many steps they had opened the door to engagement in an informal and non-confrontational way and often both staff and service users invited each other to go for walks and spend additional time together working on a shared goal. Additionally, we gave certificates to service users with high step counts and therefore recognised the efforts of service users who sometimes struggled to engage in more formal or structured activities. This approach fostered a sense of 'community' with our service users as it dismantled the 'them and us' culture as we were all working towards a common goal.

#### PDSA 1.2: structure of ward round

We built on the idea of challenging the existing 'them and us' culture by adapting the structure of ward round. Previously, this had been staff led with the same list of agenda items; however, we adapted this by using a whiteboard to list the agenda items the patient wanted to talk about, focusing on positive achievements and adapting to

**Table 1** Domains of care identified by service users

Domain of care	Description
Doing things for myself	Independence
Going out	Community access
Being together	Spending time with staff, feeling connected and engaged and communicating well
Trying something new	Engaging in new experiences and occupational roles
Seeing me	Person-centred care
Being flexible	Least restrictive care
Everyday jobs	Activities of daily living
Family	Facilitated contact with family
Having fun	Leisure and relaxation
Being on time	Responsive and timely care



**Figure 1** Flip the Triangle driver diagram. CS, collaborative safety; PBS, positive behaviour support.

their communication style. This promoted self-efficacy, communication and problem-solving skills.

#### PDSA 1.3: community meeting in community

To build on skills development, we changed our community meeting from 1 hour on the ward to spending an afternoon outside of the hospital in the park 'as a community'. Due to the number of staff who attended, it provided robust opportunities to take positive risks for service users who had commonly spent less time in the community.

#### PDSA 1.4: ad hoc leaves and activities

We recognised how much service users enjoyed and valued being in the community and we decided to trial safely managed 'ad hoc' leaves and activities. This was in addition to structured and planned activities as many of our patients enjoyed being spontaneous and having the freedom to make choices and try new things at the times they felt most able.

#### PDSA 1.5: increased family contact and family meals

We noticed that there were still service users who struggled to engage in group activities and we found that service users greatly valued increased contact with families. Therefore, we prioritised building relationships with families, supported home visits and developed 'family

meals' whereby a service user invited their family to the ward for a meal they had prepared.

#### Expanding repertoire of proactive interventions

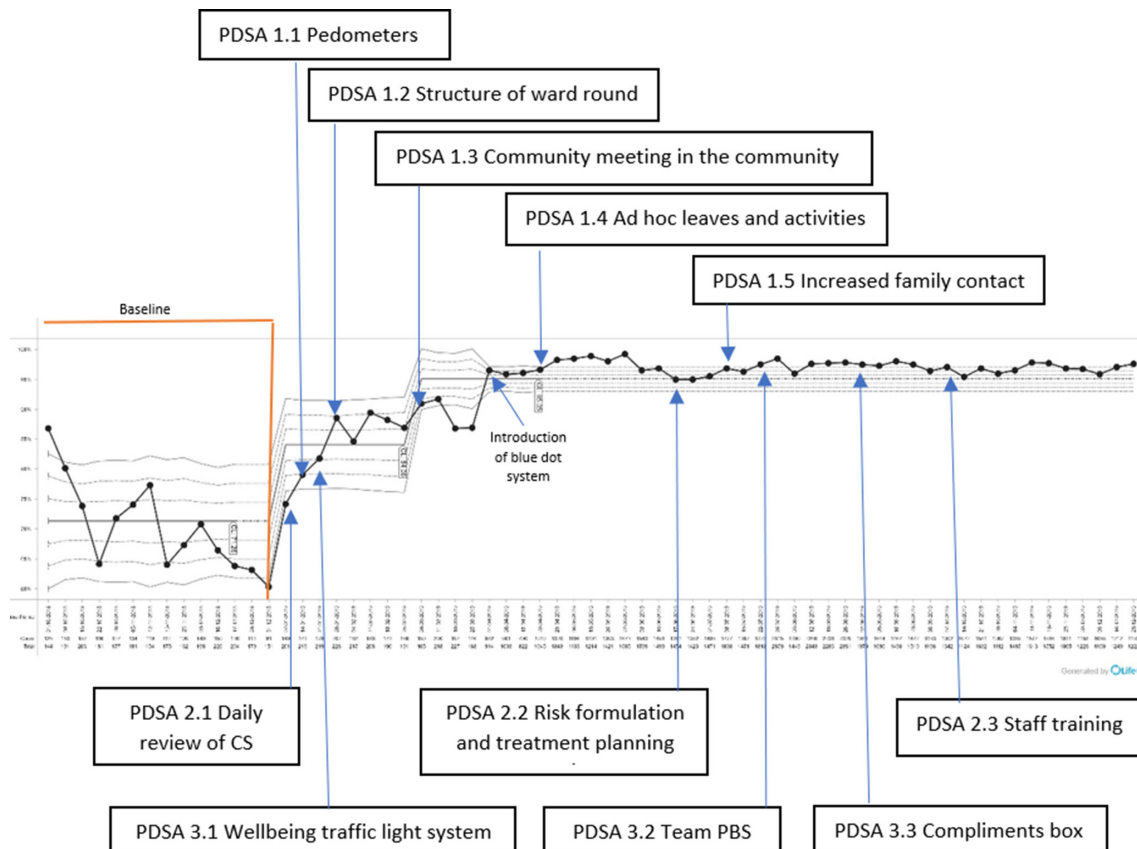
The aim of this series of PDSA cycles was to increase the staff's knowledge and understanding of each service user's unique presentation and of evidence-based approaches to work with them. We hypothesised that greater knowledge and understanding would result in a wider range of effective strategies at the disposal of staff that, in turn, would reduce patients escalating into crisis.

#### PDSA 2.1: daily review of CS plans

The CS plans were reviewed and updated daily within our existing 'safety huddle' structure. Safety huddles had previously not involved planning alongside the CS plans so the change idea involved a member of staff actively referring to the CS plan, facilitating proactive discussions and writing down learning on a daily basis.

#### PDSA 2.2: risk formulation and treatment planning meetings

To build on the everyday learning about our service users, we implemented risk formulation and treatment planning meetings to replace the Historical Clinical Risk Management (HCR-20) update meetings. Rather than focusing solely on the risk, we used the 5Ps formulation model to develop a team understanding of the service



**Figure 2** Graph to show percentage of positive and proactive interventions versus physical and restrictive interventions alongside timeline of PDSA cycles. CS, collaborative safety; PBS, positive behaviour support.

user as a whole person. We then used the formulation to make plans for treatment across multidisciplinary professionals, which often involved joint working.

### PDSA 2.3: staff training

To continue developing staff knowledge and understanding and to induct new starters into the ‘Flip the Triangle’ model of care we developed a staff training package of 10 weekly 2-hour sessions following an action learning set model. Topics included autism, communication, attachment and trauma and PBS.

### Supporting staff well-being and resilience

The aim of this series of PDSA cycles was to support staff well-being and resilience as we recognised that staff often work in challenging circumstances (eg, in the face of significant violence, aggression, sexual violence and racism). We hypothesised that developing structures that recognise the impacts of challenging behaviour and support and praise our staff for their hard work would help them feel safer, valued and more confident to implement PBS.

### PDSA 3.1: well-being traffic light system

We added a well-being traffic light system to our daily safety huddle. This asks our staff to rate their well-being level on a green, amber, red scale without the need to disclose any further information to respect their

confidentiality. We use the staff ratings to offer informal support to our staff during the day (eg, we had a ‘repair’ box on the ward that contained tissues, sweets, etc to help staff through the day) and to plan our shifts. For example, we would not pair a ‘red’ staff member with a patient in crisis.

### PDSA 3.2: team PBS

We expanded on this initial change idea by developing a ‘team collaborative safety plan’. Through consultation with the whole team, we considered what the time is like when we are at ‘baseline’, what triggers the team to escalate, what the escalation looks like and how we can recognise if the team is at ‘crisis’. We then use the team PBS to monitor and proactively develop plans to support effective team functioning.

### PDSA 3.3: compliments box

A strategy identified through examining the team PBS was to provide each other with positive feedback and recognition. We developed a ‘compliments box’ that all staff could add to when they recognised positive and proactive work or felt supported by their colleague. We opened the box and read all the entries every month at team away days.



## RESULTS

Our main outcome measure was the percentage of positive and proactive interventions. At baseline, the rate of positive and proactive interventions was 70.65%, and at the end of the yearlong active phase we maintained a rate of 97.18% (please see [figure 2](#)). We met our initial aim of achieving a rate of 95% within approximately 4 months and there was very little variation in the data, suggesting sustained gains. Overall percentage changes were due to both an increase in positive and proactive interventions (which increased to an average of approximately six times the rate of baseline) and a decrease in physical and restrictive interventions (which decreased on average by approximately one-quarter from baseline).

Blue dot data were monitored for accuracy; a random sample of completed charts was cross-examined with data entered on the spreadsheet every 3 months.

At baseline, staff's confidence responding to challenging behaviour of service users' behaviours was 17.6 (out of 25) and this increased to 20.6 at the end of the active phase. An increase was also observed for staff understanding of the behaviours (19.1 at baseline, 20.3 at the end of the active phase). There was also an increase in staff feeling safe, which had increased from 3.9 (out of 5) at baseline to 4.3.

## LESSONS AND LIMITATIONS

A key learning point that emerged from involvement in the Flip the Triangle project was that it required an embedded and whole-team approach in order to make a cultural shift. The QI methodology, including implementing change ideas and meeting regularly to reflect and act on PDSA cycles, helped develop a learning culture on the ward. This model of hypothesis testing also aligned particularly well with the model of PBS and therefore strengthens PBS as an embedded approach across the whole team. The development of the learning culture appeared to have a reciprocal relationship with the team moving to a position of psychological safety; the increased emphasis on learning rather than blaming helped individuals to feel more comfortable sharing creative ideas, generating hypotheses and taking positive risks.

The team often commented on taking a 'why not?' position when confronted with entrenched practice, policies and procedures that acted as barriers to potential positive engagement opportunities. The 'why not?' approach helped junior members of the team feel empowered to question existing practice which, in turn, created more flexibility within the restrictive forensic system.

The QI approach allowed the whole team to come together around a shared goal and use common language that transcended professional boundaries and hierarchies. For example, PBS principles and language were often held by the psychologist, but 'Flip the Triangle' condensed complex PBS principles into a short phrase and shared operational definition that was held by everyone.

There were several limitations to consider regarding the blue dot data collection system. Despite regular discussions concerning the operational definitions of 'what constitutes a light or deep blue dot' by its nature this was a subjective system of collecting data and therefore may be open to bias. Each time staff members added a light or deep blue dot to the chart, they needed to use their personal judgement to consider which was most appropriate (without independent assessment) and some staff members may have overestimated or underestimated the role of the care they provided. Additionally, due to the nature of working on a busy ward, there are likely to have been instances whereby staff forgot to record every positive and proactive intervention they engaged in. Again, this may have led to skewed data as busy days, where more interventions were being offered, may have produced relatively less dots than quieter days where dots may have been recorded more accurately.

While there were limitations with the blue dot data collection system, it also proved key in facilitating cultural change. Although we discussed trialling simpler methods of data collection, the existing system required staff to 'stop and think' and move away from an automatic and reactive approach to an approach of mindfully and responsively providing care. It allowed both staff and their colleagues to recognise the positive and proactive care they provided, their skills and achievements and therefore motivated them to keep providing quality care. On reflection, it was important that the data collection system integrated with existing processes on the ward (the ward was already familiar with recording dots due to previous QI projects), therefore helping the project to have contextual fit. The blue dot feedback system for service users also helped to have frequent, meaningful conversations with service users about care and helped staff understand how their care was recognised or received, allowing us to be responsive and make continued adaptations.

An additional limitation of the project was that we struggled to find a robust system of data management. A huge amount of data was collected on a daily basis through various systems (eg, blue dot charts, medication charts, DATIX, Rio) and therefore developing a method of managing and reporting the data on a weekly basis became quite difficult, especially during busy periods on the ward. If we were to conduct the project again, we would create more robust data management systems that would allow for weekly reviews of data in QI meetings. Due to the challenges around data management, in combination with unintended but positive impacts of the dots-based data collection systems it has been more challenging to isolate which elements of the project have promoted the most significant change. We would encourage services who want to embed PBS on their ward to examine the key areas of change highlighted by this project and replicate or adapt our change ideas by examining their individual context and existing structures. For example, increasing access to positive engagement opportunities, expanding repertoire of proactive interventions and supporting staff

well-being and resilience will all be important drivers for change, but we suggest a service should also examine how they will create and support a learning culture, how they will move their team to a position of psychological safety and how they will use existing structures and values of the team to ensure changes have contextual fit.

## CONCLUSION

The project team met their aim of increasing positive and proactive interventions to a rate of 95% by January 2020. This was achieved and maintained with minimal variation in data over a number of months. This project has added to existing literature by demonstrating how QI methodology can support cultural change in a service and assist the successful implementation of PBS as an active and embedded whole-team approach. To sustain the continued improvement, the team will continue to meet weekly as they transition into the quality control phase. It will also be important to continue to induct new starters to this model of working and be responsive to feedback. The Flip the Triangle project has had a significantly positive impact on the ward culture and the care of patients with intellectual disabilities and therefore the project team would be keen for the approach to be shared with other services. We have presented the project at several trusts across the UK and Ireland and have made a film to disseminate staff and service user accounts of the project journey. The team are committed to continue to promote the use of QI to help other teams and services shift their focus towards positive and proactive interventions to improve the lives of those living with intellectual disabilities in secure services.

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**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

**Patient consent for publication** Not required.

**Ethics approval** The QI project was not subject to ethical review from an institution as this was not required to undertake QI activities. However, careful consideration was given to any potential ethical impacts of this project and all activities were

performed under supervision of a suitably trained QI coach and QI sponsor and followed the ethical guidelines set out by Lynn *et al*.

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**Data availability statement** Data are available upon request.

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