



OPEN ACCESS

A qualitative positive deviance study to explore exceptionally safe care on medical wards for older people

Ruth Baxter,¹ Natalie Taylor,² Ian Kellar,³ Rebecca Lawton^{1,3}

► Additional material for this paper is available in online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjqs-2018-008023>).

¹Yorkshire Quality and Safety Research Group, Bradford Institute for Health Research, Bradford, UK

²Cancer Research Division, Cancer Council, Sydney, Australia

³School of Psychology, University of Leeds, Leeds, UK

Correspondence to

Dr Ruth Baxter, Yorkshire Quality and Safety Research Group, Bradford Institute for Health Research, BD9 6RJ, UK; ruth.baxter@bthft.nhs.uk

Received 27 February 2018

Revised 22 December 2018

Accepted 20 January 2019

Published Online First

13 February 2019



© Author(s) (or their employer(s)) 2019. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Baxter R, Taylor N, Kellar I, *et al.* *BMJ Qual Saf* 2019;**28**:618–626.

ABSTRACT

Background The positive deviance approach seeks to identify and learn from those who demonstrate exceptional performance. This study sought to explore how multidisciplinary teams deliver exceptionally safe care on medical wards for older people.

Methods A qualitative positive deviance study was conducted on four positively deviant and four slightly-above-average matched comparator wards, which had been identified using routinely collected NHS Safety Thermometer data. In total, 70 multidisciplinary staff participated in eight focus groups to explore staff perceptions about how their teams deliver safe patient care. A thematic analysis was conducted in two stages: first to identify the tools, processes, strategies, and cultural and social contexts that facilitated safety across all wards; and second to generate hypotheses about the characteristics that facilitated 'positively deviant' patient care.

Results Based on identifiable qualitative differences between the positively deviant and comparison wards, 14 characteristics were hypothesised to facilitate exceptionally safe care on medical wards for older people. This paper explores five positively deviant characteristics that healthcare professionals considered to be most salient. These included the relational aspects of teamworking, specifically regarding staff knowing one another and working together in truly integrated multidisciplinary teams. The cultural and social context of positively deviant wards was perceived to influence the way in which practical tools (eg, safety briefings and bedside boards) were implemented.

Conclusion This study exemplifies that there are no 'silver bullets' to achieving exceptionally safe patient care on medical wards for older people. Healthcare leaders should encourage truly integrated multidisciplinary ward teams where staff know each other well and work as a team. Focusing on these underpinning characteristics may facilitate exceptional performances across a broad range of safety outcomes.

BACKGROUND

Despite efforts to improve patient safety, rates of error and harm remain stubbornly unchanged.^{1–3} The prevailing approach to safety management has been to understand the *absence* of safety, yet patient

care 'goes right' far more frequently than it 'goes wrong'.⁴ In recognition of this, there have been calls to adopt a more positive approach to safety management.^{4–6}

The positive deviance approach seeks to identify and learn from those who demonstrate exceptional performance despite facing similar constraints as others.^{7 8} Bradley *et al*⁹ have proposed a four-staged framework to apply this approach within healthcare organisations. Positive deviants are identified using concrete, widely endorsed and accessible performance measures (stage 1). Qualitative methods are used to generate hypotheses about how positive deviants succeed (stage 2). These hypotheses are tested in larger, more representative samples (stage 3), and then positively deviant practices or characteristics are disseminated to others (stage 4).

Previous applications of the approach have predominantly addressed specific processes or outcomes of care,¹⁰ such as hand hygiene compliance^{11–13} or the incidence of healthcare-associated infections.^{14 15} Although these applications are worthwhile, latent upstream factors (eg, organisational, environmental and team factors) are known to contribute to downstream errors and harm.^{16 17} Solely focusing on specific safety issues may engender narrow or reductionist interventions, which may fragment improvement efforts¹⁸ and create unintended consequences.¹⁹ For example, falls prevention initiatives that restrict patient movement may increase pressure ulcers and/or deconditioning. By exploring how positive deviants succeed on a broad range of safety outcomes, we sought to uncover some latent characteristics that underpin success.

The positive deviance approach has typically been applied to identify and explore the exceptional performance of individuals and/or healthcare organisations.¹⁰ This is despite most patient care being delivered by clinical microsystems such as multidisciplinary ward teams.²⁰ At ward level, some of the latent factors that facilitate success may not be within a team's direct control (eg, the organisation's teaching status, procurement and local commissioning). Notwithstanding the importance of understanding these factors, it is more useful for improvement to explore the modifiable factors that teams can learn from and manipulate.^{7 19} In highly technological environments (eg, intensive care) a human factors or design lens may illuminate modifiable factors that facilitate success, whereas a cultural lens may be more appropriate in specialties such as older people's medicine. Modifiable factors may include the concrete tools, processes and strategies that teams use (eg, board rounds and bed-side boards to display falls risks), as well as the abstract cultural and social context within which they operate, for example, teamwork, communication, leadership, and the team's shared norms, values and beliefs—that is, 'the way we do things around here'.

Extensive resources are typically used to explore how positive deviants succeed;¹⁰ for example, 158 interviews and 11 one-day or two-day site visits were conducted to explore variation in cardiac mortality rates.^{21–23} As positive deviance is positioned as a community-driven approach,²⁴ its methods should be accessible to organisations that are tasked with improvement (eg, improvement bodies, clinical networks and national audits). Building on previous research,^{25 26} this study addresses stage 2 of the Bradley *et al*'s⁹ framework to explore how multidisciplinary teams deliver exceptionally safe care on medical wards for older people (ie, perform best on a broad safety outcome). While acknowledging the benefits of ethnography,²⁷ pragmatic methods were used to assess whether this could be achieved using limited time and resources.

METHODS

Study design and overview

A qualitative study was conducted in four positively deviant and four matched comparison wards clustered within five National Health Service (NHS) Trusts (organisations). Focus groups and brief field notes were used to capture staff perceptions about the modifiable factors that facilitate safety. In line with some previous applications of the approach,^{23 28 29} researchers and staff were blinded to ward performance levels in order to maximise confirmability—the extent to which findings were grounded in the data. Although uncommon within qualitative research, blinding may help to minimise bias when implementing the positive deviance approach.³⁰

Identifying positively deviant wards

Positively deviant wards were identified through a rigorous process as part of a previous study.²⁶ In brief, NHS Safety Thermometer (ST) data were analysed from 34 medical wards for older people clustered within 13 NHS Trusts in the Yorkshire and the Humber region of England. The ST provides a monthly composite measure of 'harm-free care' and so was used as a proxy for measuring ward-level safety. It is the UK's only routinely collected, broad measure of safety that is accessible at ward level,^{31 32} and it demonstrates strong correlations with staff and patient perceptions of safety.³³

ST data were extracted over a 12-month period, and cross-sectional and temporal analyses were conducted to identify five positively deviant wards that performed best in the region, outperformed their respective NHS Trusts, consistently outperformed over 12 months and demonstrated performance variations attributable to more than chance alone. Comparison wards (n=5) that demonstrated slightly-above-average ST performance were also identified. Positive deviants are typically compared with negative deviants (the worst performers),¹⁰ but if positive deviance is to be distinguished from other asset-based approaches, the factors that facilitate exceptional performance should differ from those that facilitate good or average performance. Negative deviants maximise the contrast between performance groups but do not necessarily facilitate an understanding about the distinction between good and excellent. Comparator wards were matched to the positively deviant wards by the type of NHS Trust (teaching, foundation, district general), a measure of deprivation³⁴ and patient gender (although one positively deviant ward had to be matched to a comparator ward that cared for patients of the opposite gender).

Two of the 10 wards identified were unable to participate in this study due to prior involvement in a patient safety research study (positively deviant ward) and persistent staffing problems (comparator ward). Nevertheless, previous applications have come close to thematic saturation when sampling 6–10 sites.³⁰

Participants and recruitment

To explore a diverse range of perspectives, around eight representatives of the multidisciplinary team were recruited on each ward using opportunity and maximum variation purposive sampling.³⁵ Participants included healthcare assistants, nurses, doctors, physiotherapists, occupational therapists, domestics and administrative staff.

Procedure

One 60 min focus group was conducted on each ward. As safety culture represents *shared* perceptions (attitudes, beliefs and values) of the importance of safety,^{36–38} focus groups facilitated team reflections and provided multidisciplinary perspectives on the

concrete tools and cultural contexts that enable safe care. Focus groups also provided a pragmatic method that could be scheduled around existing ward structures (eg, nursing or multidisciplinary team [MDT] meetings), and they were perceived to be easier to accommodate than individual interviews.

Focus groups were loosely guided by an adapted version of the Manchester Patient Safety Framework (MaPSaF), a qualitative, theoretically underpinned tool designed to assess safety culture.^{39–41} MaPSaF guidance suggests teams should spend 70 min assessing their performance,⁴² but as we sought to use pragmatic methods the researcher met with the tool's developer, Professor Dianne Parker, to shorten it. The adapted tool (online supplementary file 1) contained five dimensions of safety culture relating to the priority of safety, commitment to improvement, communication, teamworking and learning from incidents. Staff individually rated their ward's safety culture, and subsequent semistructured discussions (online supplementary file 2) were guided by the dimensions that staff perceived their team to excel in. Conversations, though, were not limited to these MaPSaF dimensions; staff were prompted to discuss anything they considered relevant to their success, including how they overcome any challenges faced.

People are not always consciously aware of the factors that facilitate their success,⁴³ and so brief observations were conducted to provide context and additional insight into how teams succeed. Field notes were written at two distinct points. First, as part of the previous study²⁶ and prior to conducting the focus groups, the researcher spent 10–20 hours on each ward collecting staff and patient survey data. During some of this time, brief contextual field notes were made regarding the extent to which teams appeared to deliver safe care, for example, through hand hygiene behaviours, answering patient call bells and the quality of patient interactions. Second, field notes were written following each focus group to capture team dynamics (eg, openness, camaraderie and the extent to which staff could share different opinions). Field note guidance (online supplementary file 3) was derived from the validated Observational Teamwork Assessment for Surgery tool⁴⁴ and a recent process evaluation of a patient safety intervention.⁴⁵ Blinding was maintained throughout data collection.

Data were collected by RB as part of a PhD studentship. RB has a background in health psychology and previously worked in the NHS. On completing data collection, and while still blinded, RB ranked each ward and wrote brief field notes.

Analysis

Focus groups were audio-recorded and transcribed verbatim. Data were analysed in two stages: first to explore how all teams achieved safe patient care; and second to identify the positively deviant

characteristics that facilitated 'exceptionally safe' care. This two-staged analysis has previously been used 'to identify prominent differences in themes between [positive and negative deviants].'²⁴ (page 4)

During the first stage, blinding was retained and an inductive thematic analysis⁴⁶ was conducted to generate a thematic framework of factors that facilitate safety across all wards. Data were also coded to identify the practical tools and processes that staff use to deliver safe patient care. Blinding was removed for the second stage of the analysis, where factors within the thematic framework were analysed to explore differences between the positively deviant and comparison wards. Field notes provided contextual information to facilitate decisions about whether factors were positively deviant characteristics or not, for example, by supporting and exemplifying the focus group data or by highlighting discrepancies between what staff said and did. Factors were hypothesised to be positively deviant characteristics if identifiable qualitative differences existed between the two performance groups.

RB conducted the analysis and RL and NT independently second-coded a quarter of all transcripts. Researchers met regularly to discuss similarities and differences between wards and to resolve coding queries. Agreement was reached through consensus discussion. Meetings were also held with 18 staff (predominantly ward managers, matrons and consultants) on each of the participating wards to feed back and member-check the positively deviant characteristics.

FINDINGS

Focus groups involving 70 multidisciplinary staff were conducted on eight wards. Participants included 23 nurses, 14 healthcare assistants, 15 allied health professionals (AHPs), 10 doctors, and 8 ward clerks or domestics. The researcher's blinded perceptions of safety did, in the main, support the identification of positively deviant wards using ST data.²⁶ The researcher's perceptions and contextual information about each ward (eg, environment, staffing, organisational pressures and patient case-mix) are provided in online supplementary file 4.

The thematic framework of behavioural and cultural factors that facilitate safe patient care is presented in online supplementary file 5. In total, 14 positively deviant characteristics were identified (table 1). These manifested themselves in two ways: characteristics that were only discussed by staff on positively deviant wards; or, more commonly, characteristics where identifiable qualitative differences existed between the positively deviant and comparison wards, for example, where positively deviant ward staff discussed a characteristic in substantially different ways from comparison ward staff. This paper focuses on the five emboldened characteristics within table 1 that staff emphasised most during focus groups and feedback meetings (eg,

Table 1 How positive deviants succeed and the extent to which these characteristics were displayed across wards

Positively deviant characteristics	Spread of positively deviant characteristics across wards									
	Theme within thematic framework					Comparison wards				
	T1W1	T2W3	T2W6	T5W10	T1W2	T2W5	T3W8	T4W9		
Knowing each other	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Trust	✓		✓							
A multidisciplinary approach	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Integrating ward-based AHPs	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Working together	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Feeling able to ask questions or for help	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Setting expectations	✓	✓	✓	✓	✓	✓	✓	✓	✓	
It is a pleasure to come to work	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Learning from incidents	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Acquiring additional staff	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Stable and static teams	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Focus on discharge	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Directorate support	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Keeping patients and relatives informed	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Patient-centred care	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Characteristics highlighted in *italic* are discussed in more depth in this paper.

Ward pseudonyms are constructed using T (number)=the NHS Trust identifier and W (number)=the ward identifier. AHPs, allied health professionals.

through multidisciplinary staff agreement within and across teams, tone, gesture and time spent discussing them).

How positive deviants succeed

Staff on positively deviant wards were passionate about the importance of *knowing one another*, as it helped them to support one another to deliver safe patient care. Friendly, personal connections between staff members were perceived to facilitate communication, influence their ability to contribute different perspectives, encourage them to work beyond silos and to be more broadly involved in patient care. The importance of knowing each other was apparent across professional grades and roles regardless of whether staff were permanent or temporary team members. Some staff highlighted knowing one another specifically in relation to doctors and the effect that relationships had on eroding barriers, reducing professional hierarchies and increasing approachability. In contrast, comparison ward staff were more superficial in their descriptions, referring simply to the benefits of knowing someone's name in order to complete tasks and activities.

T2W3: positively deviant ward (comparing themselves with wards that do not perform so well)

Physiotherapist: And all of a sudden, all of the things that probably make a very safe ward are lost because you don't know who the ward - like you know the name of the staff nurse, but you don't know who she is, and where she is in her career, and what her passions and things are.

Although staff rotations disrupt relationships, incoming staff considered it easier to join cohesive teams that already knew each other well. One positively deviant ward (T2W6) considered this to be integral to their success and so deliberately invited junior doctors to nursing/ward team meetings and incorporated introductions at their daily safety briefing. Over time this helped to build relationships.

Adopting a *multidisciplinary approach* and working collaboratively was discussed extensively across all wards; however, positively deviant ward staff were more emphatic about its importance. They exemplified how the multidisciplinary team was involved in all aspects of patient care and how role boundaries were blurred. This facilitated patient-centred care and enabled staff to support their colleagues. Everyone's contributions were encouraged and valued; staff felt listened to, were actively involved in ward activities and were kept informed of the bigger picture rather than just being told essential information. This created a shared awareness about a patient's care plan and the risks they faced, and it engendered a sense of responsibility towards patients and the team. Positively deviant wards particularly emphasised the importance of involving non-professional staff (eg, health-care assistants and domestics) in ward activities such

as meetings/briefings, quality improvement projects and documentation. Comparison ward staff described their multidisciplinary approach in far more generic and abstract terms: "*It does feel quite 'MDT' doesn't it.*"

Most participating wards had dedicated AHPs (physiotherapists and occupational therapists) who work on their ward rather than across several different wards. The true *integration of these ward-based AHPs* into the wider team was considered to be positively deviant. AHPs were fully involved in all aspects of patient care, contributed to discussions and worked closely with others. Notably, they felt like important team members. This in turn led to the AHPs being more effectively involved in patient care.

T2W3: positively deviant ward

Occupational Therapist: I feel like I've been really well accepted, you know to the team, and I think it's just everyone feeling like they're equal, you know and playing an equal part in patients' care. And I think that's a huge thing. Coz if you feel valued you step up to the mark, you know.

The only comparison ward to highlight this (T2W5) described the practical benefits of having greater access to AHPs such as increased referrals and quicker discharges. Two positively deviant wards (T1W1 and T2W6) directly sought to improve the integration of their AHPs by creating dedicated workspaces so that therapists could complete tasks on the ward (eg, documentation). This provided greater opportunities for staff to have informal discussions and ask questions, and it more effectively engaged AHPs in ward conversations. Ward T2W6 also altered their pharmacist's work schedule so that they could participate in a daily safety briefing.

Positively deviant wards described an extremely integrated way of *working together*, which happened throughout the day and involved staff from different professional groups and levels of experience. Staff worked beyond silos contributing to multiple aspects of patient care and they trusted one another's judgements. Although this was considered to make their teams more effective, staff often struggled to describe how, referring to a 'feeling they got' and a lack of distinction between 'them and us'. The only comparison ward to discuss this characteristic simply referred to interactions between senior nursing and medical staff.

Positively deviant ward staff *felt able to ask questions or for help* and emphasised the emotional impact of feeling comfortable to approach others without concern. This ensured that problems were raised with the wider team and it enabled information to be checked immediately and/or passed on to others without delay. Again, this was apparent across staff grades and professional groups and was particularly evident for new team members (eg, rotating

Table 2 The commonly used practical tools that staff perceived to facilitate the delivery of safe patient care

Practical tool	Positively deviant wards				Comparison wards			
	T1W1	T2W3	T2W6	T5W10	T1W2	T2W5	T3W8	T4W9
Verbal handovers		✓	✓	✓	✓		✓	✓
Handover sheets	✓	✓		✓			✓	✓
Safety briefing		✓	✓			✓	✓	
Board round				✓	✓		✓	✓
MDT meeting	✓		✓				✓	✓
Ad-hoc meetings		✓	✓		✓			
Ward-based AHPs*	✓	✓	✓	✓		✓		
AHPs write in medical notes*	OT and Physio	Physio	Physio	OT and Physio				
Bedside boards		✓	✓				✓	✓
Ward boards		✓		✓			✓	✓
Patient activities			✓	✓		✓		✓
Cohorting							✓	✓
Intentional rounding	✓				✓	✓	✓	
Innovative strategies	Discharge to assess			Dementia care, rotating discharge nurse		Morning routine	Diabetes and sepsis trolleys	

Ward pseudonyms are constructed using T (number)=the NHS Trust identifier and W (number)=the ward identifier.

*Explicit differences between the positively deviant and comparison wards were observed in relation to these two strategies. However, having ward-based AHPs and enabling AHPs to write in the medical notes were not considered to be positively deviant as they will have required implementation at a Trust (organisational) level. Comparison wards within Trusts 1 and 2 are also highly likely to use these 'tools'.

AHPs, allied health professionals; MDT, multidisciplinary team; NHS, National Health Service; OT, occupational therapy; Physio, physiotherapy.

doctors or student nurses) who felt that staff were warm, approachable and very willing to help them. A single comparison ward mentioned this strategy via non-emotive, practical and task-orientated scenarios.

T1W1: positively deviant ward

Junior Doctor: Starting as a new doctor, I was quite worried about meeting all these new patients; that I didn't know a huge amount about elderly medicine and how it all worked. But actually the consultants and registrars that we've had on the ward have all been really supportive and I wouldn't have any qualms at all about calling [consultant] on the phone this afternoon and saying 'I've just got this quick question what do you think we should do about this?'

The practical tools, processes and strategies that support safety

In addition to the cultural characteristics, staff identified a number of practical tools, processes and strategies that facilitated safe care (table 2). None of these were considered to be positively deviant as explicit differences were not observed between the two performance groups—staff on positively deviant and comparison wards discussed using similar numbers and types of tools. However, as described above, the positively deviant characteristics influenced how some of these tools were implemented, and this was perceived to make the difference between good and exceptional performance.

DISCUSSION

In total, 14 positively deviant characteristics relating to the cultural and social context of the ward were identified on medical wards for older people, many of which are supported by existing literature. Integrated multidisciplinary teams have previously been associated with positive deviance,²² high-performing clinical microsystems²⁰ and improved outcomes for older people (eg, place of discharge, quality of life and readmission rates).⁴⁷ Effective integration on positively deviant wards highlights an understanding that the mere physical presence of multidisciplinary staff does not lead to integrative and collaborative ways of working that benefit patient outcomes.⁴⁸ It may only be through overcoming the various barriers to effective multidisciplinary working (eg, professional silos, hierarchies and distributed teams⁴⁹) that positively deviant teams succeed.

Furthermore relational coordination—relationships based on shared knowledge, goals and mutual respect—has also been linked to high performance, particularly when work is characterised by high levels of task interdependence and uncertainty,^{50 51} and a positive safety culture has been identified as a necessary prerequisite to successfully implementing ward-level improvement.⁵² Together, some of the findings suggest that staff within positively deviant teams experience high levels of psychological safety (which facilitates interpersonal risk taking⁵³) and possess shared mental models (a common understanding of shared

goals, roles and how to achieve these^{49 54}). Psychological safety has previously been associated with high-performing teams^{55 56} and hospitals,⁵⁷ and shared mental models underpin effective teamwork⁵⁴ and may promote high reliability (consistently high levels of safety).⁵⁸

It is well recognised that *how* staff do things, and the environment or context within which they do it, are equally as important as *what* staff do.⁵⁹ Although various tools, processes and strategies to support safe patient care were identified, positively deviant and comparisons wards did not differ in their use of them. Instead, positively deviant characteristics were perceived to influence the ways in which they were implemented. For example, an underpinning multidisciplinary approach (positively deviant characteristic) meant that unqualified staff were invited to safety briefings (how the strategy was implemented), which was considered to make them more effective. This supports the notion that there are no ‘silver bullets’ to achieving exceptionally safe patient care and aligns with research by Curry *et al*,²² who found no differences in the processes and protocols used by positively deviant and low-performing hospitals.

Currently, there is equivocal evidence about how to develop effective multidisciplinary working cultures.⁶⁰ Some positively deviant teams purposively developed the characteristics over time, for example, by creating AHP workspaces and incorporating introductions at safety briefings. Moreover, some of the characteristics listed in table 1 may contribute to, or be the product of, those that have been highlighted. Based on associations between employee engagement and positive safety cultures,⁶¹ the ‘stability’ of positively deviant teams may help build relationships and trust, and facilitate perceptions that it is a ‘pleasure to come to work’. Further research could usefully explore how positive deviance is achieved over time, although regular staff rotations, the complexity of healthcare^{62 63} and a lack of conscious awareness as to how cultures develop⁴³ make this challenging to assess.

It may also be difficult to operationalise the positively deviant characteristics in other settings. Their abstract nature makes them difficult to define and measure, and thus it is difficult to assess the extent to which positively deviant characteristics are displayed. Staff often lack insight about how care is delivered on other wards and so teams may incorrectly perceive themselves to ‘already do that on this ward’, particularly when culture change takes time and is at odds with the fast pace of healthcare where quick and easy fixes prevail.

It is typically assumed that safe care is achieved by addressing multiple discrete aspects of safety; various ward-level initiatives are prescribed to ameliorate specific errors and harm (eg, actioning national patient safety alerts⁶⁴). Yet this study raises questions about the lens we apply to improvement and suggests that focus

should also be dedicated to improving the cultural contexts that underpin a range of safety outcomes. Although this proposition is unsurprising, the balance is yet to be struck—healthcare organisations do not typically facilitate relationships, integration and multi-disciplinary working as a means to promote safety. Furthermore, rather than mandating initiatives from the top down, wards should be supported to tailor them to their specific contexts.^{65–68} At a national level, organisations such as the Care Quality Commission and NHS Improvement may wish to consider these findings when monitoring, assuring and regulating healthcare organisations.

Within this study focus groups provided a feasible and efficient method which worked well within existing ward structures (eg, MDT meetings). However, despite the relatively large and diverse sample, theoretical saturation may not have been reached. Moreover, staff were often not aware of how their wards compared with others, and so failure to mention a tool or characteristic may simply reflect a lack of conscious awareness, an inability or unwillingness to articulate it, or a perceived lack of salience to the facilitation of safety. The findings will also have been influenced by the adoption of a cultural lens; different characteristics may have been uncovered had a different lens (eg, human factors and resilience engineering) or framework (eg, Donabedian⁶⁹ and Lawton *et al*⁷⁰) been used to guide data collection. Ethnographic methods can ameliorate some of these challenges,⁷¹ but improvement organisations (eg, national audit teams) rarely have the resources and qualitative expertise required. To maximise theoretical saturation improvers could either conduct additional focus groups or further explore emergent findings within a smaller sample.³⁰ Ultimately, pragmatic methods may provide a more comprehensive understanding of exceptional performance when positive deviance is applied to specific rather than broad outcomes or processes of care.

In addition to the limitations outlined above, our findings may have been influenced by identifying positively deviant wards using ST data. Although our previous research supported using ST data as a proxy measure for ‘safe’ care,²⁶ there are challenges to identifying positive deviants,⁷² and the wards’ performances on other aspects of safety (eg, medication safety) remain unknown. Furthermore, the relative importance of each positively deviant characteristic can only be inferred, and the extent to which they actually facilitate exceptionally safe care remains unknown.

In one of the first UK applications of the positive deviance approach, pragmatic methods were used to identify 14 characteristics that are hypothesised to facilitate exceptionally safe care. None of the characteristics were specific to medical wards for older people and so it may be possible to generalise them to different clinical microsystems. Developing these

positively deviant characteristics may facilitate exceptional levels of safety across a range of outcomes.

Twitter @RuthMBaxter @LawtonRebecca

Acknowledgements The authors are extremely grateful to all of the ward staff who supported this study, and to Professor Dianne Parker for her support in adapting the MaPSaF tool. The authors would also like to thank the reviewers and editorial team for their helpful comments in revising this manuscript. RB, RL and IK are members of the NIHR Collaboration for Leadership in Applied Health Research and Care, Yorkshire and Humber—Evidence Based Transformation Theme. The research was supported by the NIHR CLAHRC Yorkshire and Humber (www.clahrc-yh.nihr.ac.uk).

Contributors RB, RL, NT and IK were involved in the design of the overall study. RB collected and analysed the data with input and guidance from RL, NT and IK. RB wrote the first draft of the manuscript, and all authors have contributed to the drafting and reviewing of it. All authors have approved the final version of this manuscript for submission.

Funding This article was funded by the Health Foundation, PhDs in Improvement Science.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval Research ethics approval was granted by South East Scotland Research Ethics Committee (ref 14/SS/1085) and permissions were gained from all NHS Trusts involved.

Provenance and peer review Not commissioned; externally peer reviewed.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0>

REFERENCES

- Baines R, Langelaan M, de Bruijne M, *et al*. How effective are patient safety initiatives? A retrospective patient record review study of changes to patient safety over time. *BMJ Qual Saf* 2015;24:561–71.
- Landrigan CP, Parry GJ, Bones CB, *et al*. Temporal trends in rates of patient harm resulting from medical care. *N Engl J Med* 2010;363:2124–34.
- Shojania KG, Thomas EJ. Trends in adverse events over time: why are we not improving? *BMJ Qual Saf* 2013;22:273–7.
- Hollnagel E, Braithwaite J, Wears RL. *Resilient health care*. UK: Ashgate, 2013.
- Vincent C, Amalberti R. *Safer healthcare: strategies for the real world*. Springer Open, 2016.
- Vincent C, Burnett S, Carthey J. *The measurement and monitoring of safety*. UK: The Health Foundation, 2013.
- Lawton R, Taylor N, Clay-Williams R, *et al*. Positive deviance: a different approach to achieving patient safety. *BMJ Qual Saf* 2014;23:880–3.
- Marsh DR, Schroeder DG, Dearden KA, *et al*. The power of positive deviance. *BMJ* 2004;32900225169600033:1177–9.
- Bradley EH, Curry LA, Ramanadhan S, *et al*. Research in action: using positive deviance to improve quality of health care. *Implement Sci* 2009;4.
- Baxter R, Taylor N, Kellar I, *et al*. What methods are used to apply positive deviance within healthcare organisations? A systematic review. *BMJ Qual Saf* 2016;25:190–201.
- Marra AR, Guastelli LR, de Araújo CMP, *et al*. Positive deviance a new strategy for improving hand hygiene compliance. *Infect Control Hosp Epidemiol* 2010;31:12–20.
- Marra AR, Guastelli LR, de Araújo CM, *et al*. Positive deviance: a program for sustained improvement in hand hygiene compliance. *Am J Infect Control* 2011;39:1–5.
- Marra AR, Noritomi DT, Westheimer Cavalcante AJ, *et al*. A multicenter study using positive deviance for improving hand hygiene compliance. *Am J Infect Control* 2013;41:984–8.
- Ellingson K, Muder RR, Jain R, *et al*. Sustained reduction in the clinical incidence of methicillin-resistant *Staphylococcus aureus* colonization or infection associated with a multifaceted infection control intervention. *Infect Control Hosp Epidemiol* 2011;32:1–8.
- Jain R, Kralovic SM, Evans ME, *et al*. Veterans Affairs initiative to prevent methicillin-resistant *Staphylococcus aureus* infections. *N Engl J Med* 2011;364:1419–30.
- Reason J. Understanding adverse events: human factors. *Qual Health Care* 1995;4:80–9.
- Vincent C, Taylor-Adams S, Stanhope N. Framework for analysing risk and safety in clinical medicine. *BMJ* 1998;316:1154–7.
- Sutcliffe KM, Paine L, Pronovost PJ. Re-examining high reliability: actively organising for safety. *BMJ Qual Saf* 2017;26:248–51.
- Dixon-Woods M, Martin GP. Does quality improvement improve quality? *Future Hosp J* 2016;3:191–4.
- Nelson EC, Batalden PB, Huber TP, *et al*. Microsystems in health care: Part 1. Learning from high-performing front-line clinical units. *Jt Comm J Qual Patient Saf* 2001;28:472–93.
- Cherlin EJ, Curry LA, Thompson JW, *et al*. Features of high quality discharge planning for patients following acute myocardial infarction. *J Gen Intern Med* 2013;28:436–43.
- Curry LA, Spatz E, Cherlin E, *et al*. What distinguishes top-performing hospitals in acute myocardial infarction mortality rates? A qualitative study. *Ann Intern Med* 2011;154:384–90.
- Landman AB, Spatz ES, Cherlin EJ, *et al*. Hospital collaboration with emergency medical services in the care of patients with acute myocardial infarction: perspectives from key hospital staff. *Ann Emerg Med* 2013;61:185–95.
- Positive Deviance Initiative. Positive Deviance Initiative 2017 [cited 2018 3rd June]. Available: <https://positivedeviance.org/>
- Baxter R, Taylor N, Kellar I, *et al*. Learning from positively deviant wards to improve patient safety: an observational study protocol. *BMJ Open* 2015;5:e009650.
- Baxter R, Taylor N, Kellar I, *et al*. Identifying positively deviant elderly medical wards using routinely collected NHS safety thermometer data: an observational study. *BMJ Open* 2018;8:e020219.
- Mays N, Pope C. Qualitative research: observational methods in health care settings. *BMJ* 1995;311:182–4.
- Assefa Y, Lynen L, Wouters E, *et al*. How to improve patient retention in an antiretroviral treatment program in Ethiopia: a mixed-methods study. *BMC Health Services Research* 2014;14.
- Gabbay RA, Friedberg MW, Miller-Day M, *et al*. A positive deviance approach to understanding key features to improving diabetes care in the medical home. *Ann Fam Med* 2013;11(Suppl 1):S99–S107.
- Rose AJ, McCullough MB. A practical guide to using the positive deviance method in health services research. *Health Serv Res* 2017;52:1207–22.
- NHS Quality Observatory. NHS Safety Thermometer 2013 [cited 2017 12th May]. Available: <https://www.nhs.uk/quality/safety-thermometer/>

- safetythermometer.nhs.uk/index.php?option=com_content&view=article&id=1&Itemid=101
- 32 Power M, Stewart K, Brotherton A. What is the NHS safety thermometer? *Clinical Risk* 2012;18:163–9.
 - 33 Lawton R, O'Hara JK, Sheard L, *et al.* Can staff and patient perspectives on Hospital safety predict harm-free care? An analysis of staff and patient survey data and routinely collected outcomes. *BMJ Qual Saf* 2015;24:369–76.
 - 34 Office of the Deputy prime minister. the English indices of deprivation 2004: summary (revised). *Uk: Office of the Deputy Prime Minister* 2004.
 - 35 Kitzinger J. Qualitative research. Introducing focus groups. *BMJ* 1995;311:299–302.
 - 36 Flin R. Measuring safety culture in healthcare: a case for accurate diagnosis. *Safety Science* 2007;45:653–67.
 - 37 Halligan M, Zecevic A. Safety culture in healthcare: a review of concepts, dimensions, measures and progress. *BMJ Qual Saf* 2011;20:338–43.
 - 38 Weaver SJ, Lubomski LH, Wilson RF, *et al.* Promoting a culture of safety as a patient safety strategy: a systematic review. *Annals of Internal Medicine* 2013;158(5 (Part 2):369–74.
 - 39 Parker D. Managing risk in healthcare: understanding your safety culture using the Manchester patient safety framework (MaPSaF). *J Nurs Manag* 2009;17:218–22.
 - 40 Parker D, Lawrie M, Carthey J, *et al.* The Manchester patient safety framework: sharing the learning. *Clinical Risk* 2008;14:140–2.
 - 41 Westrum R. A typology of organisational cultures. *Qual Saf Health Care* 2004;13(suppl_2):ii22–7.
 - 42 National Patient Safety Agency. Manchester Patient Safety Framework (MaPSaF) 2006 [cited 2018 21st Jan]. Available: <http://www.nrls.npsa.nhs.uk/resources/?entryid45=59796v>
 - 43 Schein EH. *Organizational culture and leadership*. 3rd edition. San Francisco, CA, US: Jossey Bass, 2004.
 - 44 Sevdalis N, Lyons M, Healey AN, *et al.* Observational teamwork assessment for surgery: construct validation with expert versus novice raters. *Annals of Surgery* 2009;249:1047–51.
 - 45 Sheard L, O'Hara J, Armitage G, *et al.* Evaluating the PRASE patient safety intervention - a multi-centre, cluster trial with a qualitative process evaluation: study protocol for a randomised controlled trial. *Trials* 2014;15.
 - 46 Braun V, Clarke V. Using thematic analysis in Psychology. *Qual Res Psychol* 2006;3:77–101.
 - 47 Tanaka M. Multidisciplinary team approach for elderly patients. *Geriatr Gerontol Int* 2003;3:69–72.
 - 48 Liberati EG, Gorli M, Scaratti G. Invisible walls within multidisciplinary teams: disciplinary boundaries and their effects on integrated care. *Soc Sci Med* 2016;150:31–9.
 - 49 Weller J, Boyd M, Cumin D. Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare. *Postgrad Med J* 2014;90:149–54.
 - 50 Gittell J H. Relational coordination: Coordinating work through relationships of shared goals, shared knowledge and mutual respect. In: *Kyriakidou O, Özbilgin MF.* UK: Relational perspectives in organizational studies: A research companion. Edward Elgar Publishing Ltd, 2006: 74–94.
 - 51 Gittell JH, Godfrey M, Thistlethwaite J. Interprofessional collaborative practice and relational coordination: improving healthcare through relationships. *J Interprof Care* 2013;27:210–3.
 - 52 Caris MG, Kamphuis PGA, Dekker M, *et al.* Patient safety culture and the ability to improve: a proof of concept study on hand hygiene. *Infect Control Hosp Epidemiol* 2017;38:1277–83.
 - 53 Edmondson A. Psychological safety and learning behavior in work teams. *Adm Sci Q* 1999;44:350–83.
 - 54 Salas E, Sims DE, Burke CS. Is there a “Big Five” in Teamwork? *Small Group Research* 2005;36:555–99.
 - 55 Delizonna L. High-performing teams need psychological safety. Here's how to create It. *Harvard Business Review* 2017;August 24th.
 - 56 Duhigg C. What Google learned from its quest to build the perfect team 2016 [cited 2018 5th October]. Available: <https://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html?smid=pl-share>
 - 57 Taylor N, Clay-Williams R, Hogden E, *et al.* High performing hospitals: a qualitative systematic review of associated factors and practical strategies for improvement. *BMC Health Services Research* 2015;15.
 - 58 Wilson KA, Burke CS, Priest HA, *et al.* Promoting health care safety through training high reliability teams. *Qual Saf Health Care* 2005;14:303–9.
 - 59 Bate P, Robert G, Fulop N, *et al.* *Perspectives on context*. UK: The Health Foundation, 2014.
 - 60 Petit dit Dariel O, Cristofalo P. A meta-ethnographic review of interprofessional teamwork in hospitals: what it is and why it doesn't happen more often. *J Health Serv Res Policy* 2018;23:272–9.
 - 61 Daugherty Biddison EL, Paine L, Murakami P, *et al.* Associations between safety culture and employee engagement over time: a retrospective analysis. *BMJ Qual Saf* 2016;25:31–7.
 - 62 Braithwaite J, Churruca K, Ellis LA. Can we fix the uber-complexities of healthcare? *J R Soc Med* 2017;110:392–4.
 - 63 Plsek PE, Greenhalgh T. Complexity science: the challenge of complexity in health care. *BMJ* 2001;323:625–8.
 - 64 NHS Improvement. Patient Safety Alerts 2018 [cited 2018 15th October]. Available: <https://improvement.nhs.uk/resources/patient-safety-alerts/>
 - 65 Hawe P. Lessons from complex interventions to improve health. *Annual Review of Public Health* 2015;36:307–23.
 - 66 Hawe P, Shiell A, Riley T. Complex interventions: how “out of control” can a randomised controlled trial be? *BMJ* 2004;328:1561–3.
 - 67 Leykum LK, Pugh J, Lawrence V, *et al.* Organizational interventions employing principles of complexity science have improved outcomes for patients with type II diabetes. *Implementation Science* 2007;2.
 - 68 Lilford RJ. Implementation science at the crossroads. *BMJ Qual Saf* 2018;27:331–2.
 - 69 Donabedian A. Evaluating the quality of medical care. *The Milbank Memorial Fund Quarterly* 1966;44:166–206.
 - 70 Lawton R, McEachan RR, Giles SJ, *et al.* Development of an evidence-based framework of factors contributing to patient safety incidents in hospital settings: a systematic review. *BMJ Qual Saf* 2012;21:369–80.
 - 71 Schein EH. Organizational culture. *American Psychologist* 1990;45:109–19.
 - 72 O'Hara JK, Grasic K, Gutacker N, *et al.* Identifying positive deviants in healthcare quality and safety: a mixed methods study. *J R Soc Med* 2018;111:276–91.