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Microsystems culture change: a refined theory for developing person-centred, safe and effective workplaces based on strategies that embed a safety culture

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Abstract

Background: Attending to culture is central to developing workplaces that are safe and effective – those that prioritise learning to support continuing quality, person-centred relationships and the wellbeing of providers and recipients of care. Culture at the microsystems level, where care is experienced and provided, directly impacts on staff and patients but is generally given much less attention than organisational cultures at the meso level. This paper presents a refinement of a previously published middle-range theory of culture change derived from a concept analysis of effective workplace culture. It draws on findings from a project that set out to embed a safety culture and grow quality improvement and leadership capability through a regional patient safety initiative in frontline teams across four acute NHS hospital trusts in south-east England.

Aims and objectives: To refine theoretical understanding about how to recognise and develop effective workplace cultures at the microsystems level based on practical insights from the Safety Culture Quality Improvement Realist Evaluation (SCQIRE) project.

Methods: The evaluation approach for the SCQIRE project combined realist evaluation and practice development methodology. Realist evaluation was selected to answer the question 'what works for whom and why when embedding a safety culture, improvement capability and leadership in frontline teams?' Key to this approach is the local development, testing and refinement of 'CMO' relationships between: contexts (C); mechanisms, for example triggers and explaining why components work (M); and outcomes (O). Drawing on project data, the enablers, attributes and consequences of an effective workplace culture have been used to critically examine the factors that contributed to frontline teams' ability to create and sustain a safety culture.

Findings: A total of 24 CMO relationships resulted in four emerging programme theories that described what worked, why and for whom in relation to: 1) frontline teams developing their safety culture; 2) facilitators working with frontline teams to embed safety culture, quality improvement and leadership; 3) organisations supporting frontline teams; and 4) the patient safety collaborative initiative.

Conclusions: It is concluded that the close relationship between person-centred values, ways of working and continuing effectiveness mean it is not possible to develop a safety culture without also being person-centred in relationships. Other theoretical refinements proposed include greater emphasis on the role of appreciative active learning, person-centredness in everyday relationships and an integrated approach to learning, development and improvement embedded at both micro and

meso levels. The theory strengthens individual enablers of safety culture, with particular attention given to quality clinical leadership based on an inclusive, participative, collaborative approach involving all stakeholders, and to facilitation that embraces all the skills required for learning, developing and improving with person-centred values. Organisational enablers emphasise the need for a corporate body of facilitators to support frontline teams, as well as the role of senior organisational leaders in enabling a bottom-up approach to supporting quality and innovation.

Implications for practice:
- Safety and person-centred values are interdependent with ways of working in relationships and ongoing team effectiveness. None of these can be considered without the others
- Investment in quality clinical leadership is essential for the development of high-performing teams, safety culture, achievement of shared meanings and direction, and valuing of engagement of both staff and patients
- Facilitators supporting frontline teams require corporate support and a wide range of skills including leadership, the ability to promote engagement in co-creating meaning, and appreciative learning that draws on the workplace as a powerful resource
- Senior organisational leaders need to model organisational values in every situation but also be skilled at enabling frontline teams to become empowered through supporting a bottom-up approach to innovation and change

Keywords: Realist evaluation, microsystems culture change, practice relationships, safety culture, quality improvement, workplace facilitation, clinical leadership

Introduction

Why is culture important?
Culture remains a vital factor for those interested in achieving transformation in healthcare provision at micro-, meso- and macrosystem levels. This is echoed in the commonly cited phrase 'culture eats strategy for breakfast', attributed to Peter Drucker's work (Torbin, 2014). More formally, culture reflects the assumptions, values and beliefs that inform social norms in particular settings (Schein, 1990). In healthcare, most attention appears to be given to organisational culture (meso level), particularly in respect of its failures to provide safe and effective care (Mannion and Davies, 2018), but practice development predominantly, although not exclusively, focuses on the microsystems level, where healthcare is both provided and experienced (Nelson et al., 2002; Berwick, 2008). A culture of safety is defined by the Institute for Healthcare Improvement as 'an atmosphere of mutual trust in which all staff members can talk freely about safety problems and how to solve them, without fear of blame or punishment' (IHI, 2010).

Therefore, culture has the greatest potential to impact directly on staff providers and recipients of healthcare. This paper builds on a previously published concept analysis that identifies the enablers, attributes and consequences of effective workplace cultures in healthcare (Manley et al., 2011a). It proposes refinements to a theory of culture change at the microsystems level, drawing on data and findings from the SCQIRE project, which used realist evaluation methods to determine the effectiveness and impact of a safety collaborative initiative to address the question: 'What works, why and for whom when embedding a safety culture in frontline teams?'

Theory of culture change before the SCQIRE project
Before the SCQIRE project, Manley et al. (2011a) published a concept analysis framework identifying the enablers and consequences of a person-centred, safe and effective culture at the microsystems level. The term 'effective' was used to convey the use, generation and blending of different evidences in practice (Rycroft-Malone, 2004a). The framework identified individual and organisational enablers: five essential attributes reflected in 10 core values, which were clustered into three groups displayed in Figure 1 (group 1: person-centred; group 2: ways of working and group 3: effective care).

Figure 1: Three clusters of values required for an effective workplace culture (Manley et al., 2011)
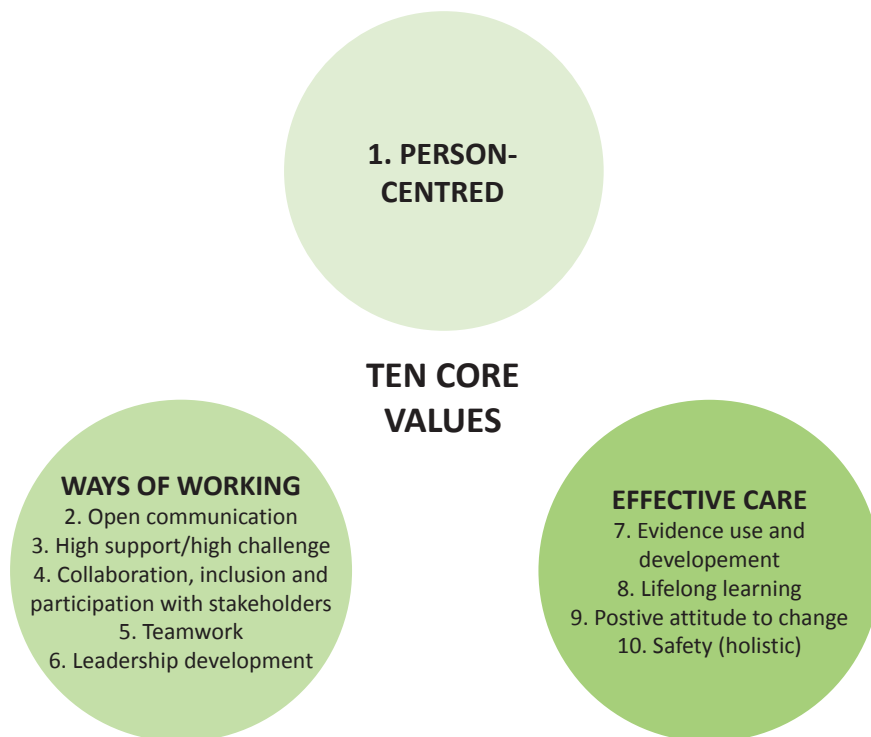
The concept analysis framework (Manley et al., 2011a) was translated into a theory of culture change, a middle-range theory that informed the SCQIRE project and the methods used to evaluate it (Box 1).

Box 1: Theory of culture change prior to the SCQIRE Project

Theory of culture change

(Derived from Manley et al., 2011a)

Culture change in frontline teams involves embedding the core values of holistic safety, person-centredness, teamwork and effective ways of working through:
- Individual enablers, specifically: transformational leadership; skilled facilitation; and role clarity
- Organisational enablers, specifically: a flattened transparent management; organisational readiness; and human resource management support for organisational values
- Embedding values in local formal systems of evaluation, learning, development and stakeholder participation that reflect and sustain them

Effective workplace cultures will be recognised by:
- Consistent achievement of standards and goals; evidence-based and continuous development, improvement and innovation in practice linked to the needs of patients
- Empowered and committed staff
- Flourishing of all involved

A brief overview of the SCQIRE project is provided next, to facilitate understanding about how the findings – namely four programme theories about how to develop safety cultures at microsystems levels in frontline teams – were distilled. Programme theory 'is simply a description of the mechanism by which a programme achieves (or is expected to achieve) its effects' (Davidson, 2006, p 38).

Background
The PSC initiative
The Safety Culture, Quality Improvement, Realist Evaluation (SCQIRE) project focused on a patient safety collaborative (PSC) initiative developed by a regional academic health science network. The PSC initiative comprised three interventions and involved providing support to four large NHS acute trusts in the South East of England through:
- Opportunities to learn from the Yorkshire and Humber Improvement Academy in relation to the use of safety huddles and other quality-improvement tools
- Use of the Teamwork Safety Climate Survey (Sexton et al., 2006)
- Action learning support for organisational facilitators' teams supporting frontline teams

Safety huddles provide a forum for discussion of patient safety issues in real time to allow for the detection of risk factors, identification and resolution of issues, and prevention of harm. Huddles create a forum for examining care processes, troubleshooting and resolution of conflict in patient care, but can also be used to share and celebrate best practice and ensure that patients receive quality care during hospitalisation.

Later, the opportunity for staff from each of the NHS trusts to attend a four–day Institute of Health improvement Accelerated Patient Safety Programme was also provided. The purpose of the PSC initiative was to:
- Support frontline teams through leadership to use quality improvement skills
- Develop and embed a safety culture in everyday work by using the workplace as the main resource for learning, improving and transformation
- Provide organisational support focusing on facilitators who were supported across organisations through action learning to share insights and learning across sites.

A total of 10 frontline teams were involved, including: two accident and emergency departments; a clinical decision unit; ambulatory care; two maternity areas; and wards specialising in and designated as providing support for people living with respiratory and renal conditions or frailty.

Evaluation questions
Our team was commissioned to evaluate the initiative to uncover the strategies that work best when embedding a safety culture in frontline teams. The specific evaluation questions were:
1. What is the impact of the PSC initiative on patient safety culture, quality improvement capability and leadership?
2. What works for whom, in what context and why? (This question embraces the strategies for impacting on safety culture, leadership, quality improvement capability and also transferable learning across contexts)

A third question informed the methods used to answer, alongside other data sources, the two questions above:
3. What are the experiences of, and impact on, participants and stakeholders involved with the PSC initiative?

Project assumptions
Commissioners' and evaluators' shared assumptions about the PSC initiative were that transformation does not happen through top-down change, training and raising awareness, but through individual and collective development of self-awareness, and that this in turn enables self-empowerment and then implementation of learning, supported and challenged by teams with a shared purpose and shared values using a systematic approach and leadership. These assumptions informed the choice of the realist evaluation approach alongside practice development methodology to optimise collaborative learning towards person-centred, safe and effective care.

Methodology, methods and programme theories
The SCQIRE project combined realist evaluation and practice development methodology. Realist evaluation was selected to answer the question: 'What works for whom and why when embedding a safety culture, improvement capability and leadership in frontline teams?' Key to this approach is the local development, testing and refinement of 'CMO' relationships between:

- Contexts (C)
- Mechanisms (M) – for example, triggers and explaining how components work
- Outcomes (O)

As Wong et al. (2017, pp 2-3) argue, realist evaluation is well suited to addressing 'the wicked problems of contemporary health services research, such as how to improve quality and assure patient safety consistently across the service'.

Context in realist evaluation describes the particular conditions for the introduction of programmes or interventions that are relevant to the operation of mechanisms (Wong et al., 2017). Mechanisms refer to 'the ways in which any one of the components or any set of them, or any step or series of steps, brings about change' (Pawson and Tilley, 2004, p 7). A number of interrelated middle-range theories reflected the evaluation team's predispositions and acted as a basis for developing the programme theories, including the theory of culture change at the microsystems level (Box 2).

> ### Box 2: Theories informing programme theory development in the SCQIRE project
>
> - Developing frontline culture – the ways things are done around here, which includes living a set of values around person-centredness, holistic safety, and ways of working that are effective, supported by organisational enablers (Manley et al., 2011; West et al., 2014)
> - Safety culture emphasises safety values and safety practice, human factors, and increasingly a focus on what works across systems and how improvement can be achieved through the Safety 2 model (Nieva and Sorra, 2003; Hollnagel et al., 2015)
> - Organisations have a role in supporting microsystems (frontline teams) as the organisation can only be as good as the microsystems of which it is composed (Nelson et al., 2002; Berwick, 2008)
> - Organisations enable microsystems by having in place systems for learning, evalaution and governance (Plsek and Wilson, 2001; Manley et al., 2011a)
> - Transformational leadership and holistic rather than technical facilitation, together with other contextual factors, influence successful implementation of evidence into practice (Rycroft-Malone et al., 2004a), culture change and use of the workplace as the main resource for learning, development and improvement (Manley et al., 2011a; Manley and Titchen, 2017; Martin and Manley, 2017)

Practice development methodology complemented the realist evaluation approach and informed how the evaluation team worked with the four NHS acute trusts – termed case study sites – and 10 frontline teams, as well as the methods used. Two principal investigators were responsible for supporting one case study site each and a third was responsible for the remaining two sites. Principle investigators gathered data using a range of methods collaboratively with facilitators and frontline teams. However, it was the facilitators and frontline teams who decided what to do with the data and feedback. Insights into explanatory relationships between contexts, mechanisms and outcomes were developed by the evaluation team and shared with facilitators and an advisory board for critique and embellishment.

Practice development methodology focuses on the core values of person-centred, safe and effective care and an approach that is collaborative, inclusive and participative, working 'with people' rather than 'on them' (McCormack et al., 2006; Manley et al., 2008). This perspective underpinned the original effective workplace culture framework (Manley et al., 2011a). Therefore, the evaluation methods used in the SCQIRE project embraced opportunities for mutual learning and sharing insights to inform action at both organisational (meso) facilitator level or frontline practice (micro) level, as set out in Table 1.

Ethical approval
Ethical approval was granted through the Health Research Authority (reference number IRAS ID 206879).

Table1: Methods used to address evaluation questions 1-3	
Evaluation question	**Methods**
1. What are the experiences of, and impact on, participants and stakeholders involved with the PSC initiative? • Individuals delivering the safety culture interventions • Frontline teams undertaking the assessments of their safety culture • Organisations in which the assessments are taking place (particularly, the executives/boards of these trusts) • Patient safety collaborative (PSC) team	1.1. Stakeholder evaluation (Guba and Lincoln, 1989) using claims, concerns and issues 1.2. Individuals delivering the programme • Pre- and post-cognitive mapping, in relation to confidence • Qualitative 360-degree feedback in relationship to leadership • Self-assessment about leadership • Pre- and post-initiative hopes, fears and expectations • Emotional touchpoints in relation to the QI Pyramid (Gabbay et al., 2014) 1.3. Review of programme evaluation data
2. What is the impact of the PSC initiative on patient safety culture, quality improvement capability and leadership?	2.1. Teamwork Safety Climate Survey (Sexton et al., 2006) 2.2. Critical ethnographic observations of practice in rotation to explore: • Safety, learning and other key values – espoused, lived and embedded • QI tools and processes experienced • Leadership behaviours 2.3. Review of local dashboard quality and safety data relevant to specific frontline teams 2.4. Questionnaire to establish level of embeddedness with the specific intervention, based on normalisation theory (May et al., 2016)
3. What works for whom, in what context and why?	3.1. Identifying attributes, enablers and consequences through interrogating the literature to generate draft CMO relationships at individual, team and organisational levels 3.2. Generating intermediary CMO relationships for each team and site 3.3. Consensus conference with all participating sites and stakeholders to review and critique draft intermediary CMO relationships from sites and literature 3.4. Refining and retesting over remainder of project and of post-project data 3.5. Translating CMO hypotheses into statements about what works, why it works and for whom it works 3.6. Triangulating data across literature and sites 3.7. Critique by expert international advisory panel on two occasions

Table 2 summarises the process of analysis across the two key phases of the project.

Table 2: Overview of the process of analysis of SCQIRE data	
Literature review data	**Case study site data**
1. Literature review on following topics: • Patient safety • Safety culture, leadership and quality improvement capability	1. For each site, all available project datasets analysed (observations of practice; claims, concerns and issues; emotional touchpoints; 360-degree feedback; pre- and post-cognitive mapping and self-assessments) and aligned to a CMO template linked to its original evidence source by each principal investigator for sites 1-4 1.1 Interim CMO relationships for each site shared with project teams by each principle investigator, using data analysis available at the midpoints
2. All literature read to generate themes by two members of research team 2.1. Themes mapped against concept analysis framework for each of two literature areas above: • Enabling factors • Attributes • Consequences 2.2. Framework themes aligned to the following three levels of concept analysis framework: • Individual • Team • Organisation/service/system 2.3. Themes amalgamated for both literature reviews to describe the enabling factors, attributes and consequences that reflect an integrated concept embracing safety culture, leadership and quality improvement, and patient safety concepts at individual, team and organisational levels by project chief investigator (KM) 2.4. Themes aligned to CMO relationships at individual, team and organisational levels by whole research team	2. For each team within each site, each item of data was labelled with its own descriptor and then aligned to CMO relationships across one of four areas relevant to the project: • The frontline team and safety culture • Senior facilitators/leaders working with frontline teams to embed safety culture and quality improvement in frontline teams • Patient safety collaborative initiative used in context of acute trusts • Patient safety collaborative initiative used with facilitators/frontline teams This resulted in 10 different sets of CMO relationships across four organisations. This analysis was undertaken by each principal investigator and verified with a second team member. Linked to stories and case studies.
3. Hypothesis written for each CMO statement derived from the literature developed by chief investigator CMO and hypotheses derived from the literature were reviewed by an international advisory board	3. CMO relationships for all four sites amalgamated to synthesise theoretical insights for each of the four areas above in relation to: • What works? (including what does not work) • Why it does work? • For whom it does work? (undertaken by chief and principle investigators)
International advisory board review process questions 1. From your professional expertise and experience, do the relationships identified reflect and embrace all the factors involved in embedding a safety culture in practice teams? 2. Are there any concepts missing that you would have expected to have been identified? 3. Are there any concepts that need to be explained or described more simply/fully? 4. Are there any other comments you would like to make?	
Revision based on advisory board feedback • Add in any insights from Site 1 • Add in additional insights from pre- and post-cultural tools, organisational metrics and safety culture normalisation tools • Provide stories that illustrate what works and does not work from data • Amalgamate literature hypotheses and insights from case study site • Finally, what works, why and for whom, with stories to illustrate this Final revisions sent to reviewers	

The theoretical insights emerging from the literature generated preliminary CMO configurations, which identified the contextual factors combined with mechanisms that explain what works and for whom.

Data emerging from each of the 10 frontline teams were analysed independently to generate further CMO configurations for each team, with common areas synthesised at the case study level and then across all four case study sites. A total of 24 CMO relationships resulted in four emerging programme theories that described what worked, why and for whom, in relation to:
- Frontline teams developing their safety culture
- Facilitators working with frontline teams to embed safety culture, quality improvement and leadership
- Organisations supporting frontline teams
- The patient safety collaborative initiative

Programme theories 1-3, presented in Box 3, are most relevant to refining insights into how effective cultures are developed and recognised. Theory 1 provided most challenge to the theory of culture change, with its focus on the attributes and consequences of an effective culture, whereas programme theories 2 and 3 contributed more to refining the individual and organisational enablers of an effective workplace culture.

Box 3: Programme theories 1-3 arising from the SCQIRE project

1. Frontline teams working to achieve a safety culture
Frontline teams working to achieve a safety culture with quality clinical leadership have an impact on both patient and staff experience. This is achieved through the mechanisms of:
- Developing team effectiveness
- Living safety, person-centred and learning values
- A sense of shared meaning, direction and behaviour

2. Facilitators working with frontline teams to embed safety culture, quality improvement and leadership
Frontline teams – supported by facilitators whose skillset allows them to uphold core values around person-centred approaches, safety, collaboration, inclusion and participation, transformational leadership, continuous improvement and learning – enable others to reflect and learn, participate and co-create a shared sense of meaning, and use their skills for systematic improvement customised to specific contexts. Safety and learning is enhanced because staff feel supported, engaged and empowered.

3. Organisations supporting frontline teams
For the full potential of both the patient safety initiative and skilled facilitation to be optimised and sustained with frontline teams, there is a need for: strong organisational values modelled by senior managers and leaders at every level; buy-in from executive teams reflected in genuine organisational commitment; and integrated systems for learning, development and improvement, support and capacity building for facilitators.

The findings from the SCQIRE project will now be reframed by revisiting the Effective Workplace Culture concept analysis framework (Manley et al 2011a) to enable refinement of the attributes, enablers and consequences, and the theory of culture change at microsystems level. To protect anonymity of sites, data illustrations will be linked only to the method or stakeholder group.

Insights from SCQIRE in relation to Attributes, Enablers and Consequences of Effective Workplace Cultures
Attributes of an effective workplace culture
Attributes refer to the characteristics of effective workplace cultures, embracing what would be observed and experienced. Programme theory 1 resulted from identifying eight CMO relationships that explained what works for whom and why, and what does not work in frontline teams in terms of embedding safety culture. Table 3 highlights two of the eight examples of CMO relationships identified.

Table 3: Examples of the CMO relationships in programme theory 1 synthesised from the literature and analysis of data from 10 frontline teams across four sites							
What works?	**Why? (mechanisms)**	**For whom does it work?**	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**Literature theme**
Context: frontline teams and safety culture							
Clinical leadership in frontline teams that model respectful relationships and person-centred values and actively listen to and value patient and service-user expertise	• Consistently enables and endorses person-centred, respectful relationships between all staff members and with service users, with a can-do attitude, and attention given to both patient and staff wellbeing • Service users and staff feel heard and listened to and become empowered	• All staff groups in clinical setting – promotes their wellbeing and safety • Service users and stakeholders present in clinical setting, as the focus is on the person • Service users – improvement in their experiences and safety • Team – priorities addressed	S1.1	S1.2 S2.4	S3a2	S4.P13 S4.P22 S4.P31 S4.P33 S4.P41 S4 P4.2	L1a L2 L4
Teamworking with consistently good leadership and team members' willingness to engage and collaborate for improvement	• Team members have shared purpose and plan, work to same purpose, collaborate and help each other, and share responsibilities • High support, high challenge for effective team behaviours to enable everyone to flourish • Team dynamics have an impact on patient outcomes	• Team members and their beneficiaries – service users and other teams benefit from clear expectations and role clarity • Team – focused priorities and plans are achieved	S1.1 S1.2	S2.1 S2.18	S3a.1	S4.P11 S4.P12 S4.P21 S4.P22 S4.P31 S4.P33 S4.P42	L1a L2 L3 L9

In the context of quality clinical leadership, observations of practice identified it as optimising safe clinical decision making for patient and staff wellbeing. This was linked to respectful multidisciplinary relationships, formed through shared team values, clarity of purpose, clear communication and the ability to act on feedback for improvement. In addition, it was essential to listen to and value the contributions of team members when developing collaborative holistic action plans for patients and their families. When quality clinical leadership was not present – as observed in one setting – there was clear evidence of a negative impact on staff and patient wellbeing, and on the safety culture. When this was later rectified through providing experienced quality clinical leadership, a marked transformation in how the culture was experienced was observed and measured, which positively impacted on staff wellbeing and patient safety.

What was striking in programme theory 1 was the relationship between the values of person-centredness, safety and effectiveness. The following story from observing practice illustrates this integration.

> 'The patient looks unkempt in the emergency department, he needs to take some medication and requests bottled water as can't drink tap water, which the team gracefully accommodate without making a judgement – the nurse comes back with bottled water for the patient from his own supplies' (Observations of practice).

The patient needed to take his medication before he could be safely discharged. What was important to the patient as a person was that he was treated sensitively and without judgement. This interaction between safety and person-centred values is accentuated in Table 3, where positive consequences observed in staff and patients embraced safety and wellbeing as a result of quality clinical leadership that modelled respectful relationships, person- centred values, active listening and valuing patient and service-user expertise.

'Staff were observed to be respectful of each other, supportive and listened to, and valued each other's contributions. There was a spirit of goodwill, commitment to doing the best for their patients as a team, and a real sense of joined-up decision making' (Observation of practice).

Clinical leadership that lived person-centred and safety values achieved safety and wellbeing outcomes through the mechanism of service users and staff feeling consistently listened to and heard, and this resulted in empowerment and improved experiences. In addition, quality clinical leadership across CMO relationships was specifically linked to three other themes relevant to the cultures observed: effective teamwork; shared meanings; and safety behaviours and environments. This was evidenced through observations of safety huddles across different teams, as well as feedback received from staff. Clarity of expectation, good teamworking and communication, with everyone feeling listened to with a focus on collaborative solutions, were associated with good leadership.

'Each team member was given the opportunity to speak up in urgent care. They remind each other of the current waiting time, talk about concerns, reference patients, confirm doctors' roster so they know who is available, and maintain notes from huddles. They work together to resolve issues. Creating solutions as a team, exploring problems from all sides' (Observation of practice).

'The safety huddles give individual members of the team a time to voice concerns to others and ask for assistance' (Claims, concerns and issues).

'Good implementation and teamwork... Involving all members of the team... Everyone involved from reception to doctors' (Observations of practice).

Opportunities to develop shared understandings were observed to be based on using the evidence base and shared meanings about what works in relation to reducing risks and harm, and recognising and acting on deterioration.

'It was evident that all views were respected and valued; at one point the meeting stopped to allow a conversation regarding the evidence base for how blisters should be cared for – to pop or not – facilitated by the ward sister. The whole team listened attentively to the exchange with interest – MDT all stopped and listened as seen as being valuable – ward sister did this for her dissertation' (Observation of practice).

These cultures were driven by questions about how practice can be improved. Questioning, challenging and checking regardless of status and role meant everyone was encouraged to ask questions, including junior staff and students. In effective teams, this felt safe and the norm – a no-blame culture enabled errors and harms to be picked up and acted on promptly. Confidence to challenge across professional boundaries meant human factors and other safety issues could be addressed regardless of status. The following observation illustrates this:

'The pharmacy technician reviews the medication chart and highlights to the senior doctor that the two drugs prescribed by the Dr should not be given together. Dr responded "thank you for pointing this out", demonstrating respectful exchange' (Observation of practice).

The strategies that were recognised as optimising safe clinical decision making for patient and staff wellbeing were: respectful interprofessional relationships formed through shared team values; clarity of purpose; clear communication; and the ability to act on feedback for improvement, as well as listening to and valuing the contributions of team members to the development of collaborative holistic action plans for patients and their families. Where team values focused on improving practice, then learning in and from action resulted because team values were experienced in practice, often through the transformational leadership approaches of clinical leaders and facilitators.

> *'You have a welcoming and enthusiastic personality and this makes it easy for staff to ask questions, report adverse events. This supports learning and enhances safety'* (360-degree feedback received by facilitator).

The main purpose of the PSC initiative was to embed a safety culture in everyday work by using the workplace as the main resource for learning and transformation. So shared learning was an aim of the initiative across the four organisations, but within the frontline teams a focus on learning supported by quality clinical leadership was linked with successful change, illustrated below in relation to introducing safety huddles. Where an incremental approach was used, similar to using a plan-do-study-act (PDSA) cycle to guide implementation, it was customised to the setting, with integral learning and peer review.

> *'We have introduced "safety huddles" on the ward. These have undergone some small changes to enable them to "work" and for staff to feel that they are valuable. I attended a ward manager course, which has been valuable particularly in respect of peer support and learning'* (Claims, concerns and issues).

Realist evaluation also helps to clarify what doesn't work. In the context of introducing safety huddles, when quality clinical leadership was absent there was a clear negative consequence for their success. Much data were derived from using observations of practice as a method, with organisational facilitators or team members working with the evaluation team members. The method was subsequently recognised, particularly by organisational facilitators, as a powerful tool for developing staff ownership, celebrating collective learning appreciatively, identifying dissonance between values and behaviours, and providing direction for improvement.

> *'Observations of practice tool works and was a really interesting exercise, providing small bits of information about relationships. Bigger patterns also emerged about the micro-interactions. The observations work was interesting, dynamic and seemed to be quite positive'* (Facilitator).

Observations of practice enabled culture to be experienced through a different lens and also the human factors that could impact on safety were noted. It identified when there was a dissonance between values espoused and values lived but also enabled positive appreciative feedback to be celebrated, which influenced staff confidence and satisfaction.

To summarise, the attributes of safety cultures are recognised by a set of values that are articulated, embedded, integrated and observed in action:
• Person-centredness in all relationships, with patients, each other and interprofessionally
• A focus on holistic safety and its integration with being person-centred with staff and service users
• Ways of working that embrace learning actively and appreciatively

Observations of practice was recognised as a powerful tool for engaging staff in celebrating excellence and also for recognising dissonances between values and actions in order to guide action and improvement.

Enablers of an effective workplace culture

The findings from the SCQIRE project outlined above identified how safety cultures are recognised in frontline teams and how the context and mechanisms combine to account for the outcomes arising in programme theory 1. There were also insights from programme theories 2 and 3 that informed understanding of the enablers of effective workplace cultures in frontline teams.

The individual enablers of transformational leadership and broad facilitation expertise are evidenced in the examples provided above, interrelated with the attributes described. Where quality clinical leadership and facilitation expertise co-existed with shared values, there was greater potential for impact. A focus on role clarity was more implicit in the findings and resulted from good teamwork, particularly evident in the safety huddles described above and also in the second CMO example in Table 3, where role clarity was also an outcome of leadership and effective teamwork.

Notable organisational enablers were drawn from programme theories 2 and 3 and fell into four themes:
- Organisational values expressed and lived by senior managers and leaders
- Coordinated systems
- Organisational leadership and organisational readiness
- Facilitator support to grow capacity and capability

Organisational values expressed and lived by senior managers and leaders

Values that conveyed a genuine commitment to safety in frontline teams were recognised by staff as enabling. An example of this is conveyed in the feedback received by a senior manager and facilitator from her team:

'You have very clear standards for the delivery of care and I have never known you to compromise these standards. This sends a clear message to staff encourages and inspires similar standards' (360-degree feedback from staff member to senior manager and facilitator).

Coordinated systems

Organisations need to take a whole-systems approach, with highly integrated, coordinated systems for enabling safety, quality improvement, learning and governance. This was lacking across all the organisations, so the potential for organisational learning was not optimised across sites. For example, a number of simultaneous improvement projects within an organisation was experienced as project overload:

'Risk of project fatigue may impact on staff time and engagement with the initiative' if not carefully managed' (Facilitator).

'As an organisation we had too many ward projects (competing for attention at the same time). It may be difficult to get focus on their work if competing with other projects going on across the trust' (Facilitator).

Facilitators recognised their role as enablers of integrated governance approaches to promote organisational learning, as they connect micro- and macro-levels of the organisation and provide vital resources that connect people. This was generally not built on by organisations because of a lack of understanding of the initiative and its potential usefulness to the organisational learning. Effective and clear leadership by trust boards seen to be authentically engaged by frontline staff was important, but not always evident – this has a negative impact on the potential for organisational systems to be integrated.

'I was concerned about the lack of buy-in and engagement by the trust board (organisationally, they are outwardly interested but this has not played out in sustainable interest). We're all doing different things, and with no common approach, the patient safety intervention loses its value' (Facilitator).

An observation of a board meeting highlighted this and underlined that effective board leadership is crucial for supporting frontline improvement projects, as reflected in Box 4.

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Box 4: Observations of board meeting at one site (field notes)

- There was clear enthusiasm and leadership exhibited by the facilitators, who articulated the value of the project and its methods for sustainable innovation in the trust
- There were no members of the acute services present to support the four project teams; they had all left the meeting and therefore did not provide any feedback
- The same questions that were asked at my first visit were being asked of me again at the second visit, which created concerns about wider engagement with the project
- The board members present did not appear to have a clear understanding of the initiative or its potential usefulness to the organisation and the board
- The board of one trust chosen to be part of the project did not have a strategy for growing and sustaining the model with frontline practice teams
- There was no clear leadership within the room or any champions other than the project facilitators speaking up about how to integrate the initiative into the trust's future plans for quality improvement, leadership and innovation at the frontline of practice
- There was no clear strategy in place that demonstrates how the trust will embed, grow and sustain the work at the frontline

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Organisational leadership and organisational readiness
A common theme arising from facilitator experiences was the importance of senior managers and leaders having an approach that was bottom-up, non-hierarchical, non-power driven, and supportive of development, with readiness to learn characteristic of learning organisations.

> *'The (safety) initiative empowers staff to make their own choices about projects rather than being told what to do… and has a generalisable methodology that can be rolled out across the trust and empowers staff from the grassroots with a democratising effect. It provides an opportunity for the organisation to look at the culture within teams and to consider a different way of working from bottom up. It has given a greater insight into our strengths and weaknesses as a team [of facilitators] and has shown us that we can manage meaningful changes without outside interference/support'* (Emotional touchpoint, facilitator).

Facilitator support to grow capacity and capability
The building in of facilitators of learning, development and improvement – where it happened – supported clinical leadership and frontline teams. From an organisational perspective, two sites had experienced facilitators who were sophisticated in working together. They knew what needed to be done across the organisation in order to develop knowledge, skills and competence to measure improvement, and to build capacity and capability for sustainable quality improvement and patient safety.

> *'Creating an environment where staff feel able to give things a go and make small-scale changes without needing to seek permission and where it is okay to fail'* (Facilitator).

Experienced facilitators were able to 'make meaning' as a process for engagement within organisations and show potential for managing upwards, which breaks the mould of the top-down management approach to transformation.

> *'Being embedded in the team is a crucial enabler, and how much ownership the team takes and adds value. Teams are eager to make changes they feel add value but currently feel they need "permission" to do so. I am very comfortable [facilitating change] because they're my team and I've known them for years, which is positive and negative – but allows for more adult conversations about things. This is as much about a commentary of me as a team member as it is about the project. With this sort of "bottom up" project there is less need to micro-manage and you can step back. The team had the opportunity to focus on something they feel is important and to see that they are able to make meaningful changes'* (Site facilitator).

The availability of organisational facilitators with the full range of skills required to enable frontline teams to achieve their potential was a key component of programme theory 3. These facilitation skills and approaches were transformational and person-centred in nature, and embraced an integrated approach to facilitation of learning, development and improvement. The detail arising from the programme theory in terms of what works and why is presented in Table 4.

Table 4: Facilitation: what works and why when enhancing safety and learning (Manley et al. 2016)	
What works?	**Why does it work?**
1. Facilitators who are confident transformational leaders: • Role model values, active listening, engagement and learning • Inspire and stimulate improvement • Challenge and address safety issues/barriers • Use varied approaches 2. Facilitators with personal attributes: approachable, visible, present, self-aware, compassionate and fair 3. Facilitators who place service users at the heart of improvement 4. Facilitators who welcome feedback from stakeholders and act on it 5. Facilitators who support frontline teams with local knowledge and skills to: • Build relationships • Co-create shared meaning, reflection, and positive change • Integrate safety and improvement actions with activities already happening • Create a learning and safety culture • Use quality improvement tools systematically to ensure the team is going in the right direction • Use observations of practice to 1) celebrate achievements and 2) identify dissonances with shared values 6. Facilitators who constantly look to embed improvement and safety into practice and provide staff development 7. Facilitators who integrate new developments/ideas	Staff feel supported because: • They are given time and listened to • It's easy to ask questions and report adverse events • Staff feel trusted and valued. Micro-management is removed, which also increases accountability Staff are engaged, enabled and empowered to: • Participate in collaborative change • Know what best practice is • Have clarity of role and expectations, and shared meaning about what is expected *Through*: • Creating safe spaces for conversations and reflections and thinking about how things can be improved • Good relationships and shared meanings enabling challenge, new ideas and embedding of values • Service-user feedback driving improvement • Positivity

Effective facilitation for positive safety cultures in frontline teams requires an eclectic skillset. Skills that are specifically relevant include the ability to: develop clarity of purpose in the moment of practice in different contexts; integrate multiple agendas; and support staff on their journey (Martin and Manley, 2017). These are also core features of facilitators that draw on the workplace as the main resource for learning, developing and improving (Manley et al., 2009) as well as knowledge translation and mobilisation (Rycroft-Malone et al., 2002; 2004a,b).

The other organisational enablers were viewed by frontline teams as vital for empowering staff to make their own choices about projects rather than being told what to do, highlighting the opportunity for organisations to look at culture within teams and consider a different way of working, from the bottom up, to grow and sustain innovation.

In summary, the impact of organisational enablers on frontline teams potentially influences whether they are supported and empowered to grow and flourish. Most important is the need to support the development of quality clinical leaders as well as skilled facilitators who can embrace all the skills and qualities required for learning, development and improvement, including making meaning. A wide range of skills is needed but the most important are those of enabling engagement, participation and meaning with all key stakeholders.

Consequences of an effective workplace culture
There was a strong value placed by staff on examining frontline safety culture, as they recognised it as a major influence on their experiences and commitment:

> *'Good that it's focusing on the frontline as this is such a huge influence on new staff coming in'* (Claims, concerns and issues).

Whether staff were committed, empowered and focused on living explicit values was directly linked to the quality of clinical leadership and the culture. This was evident when considering whether goals and objectives were achieved – for example, whether safety huddles were successfully implemented.

Less successful outcomes of huddles were explained by a less collaborative approach with not all parties actively or voluntarily involved, a lack of shared meaning, a lack of focus on consistent sustainable action, or a reluctance to speak out. Quotes from claims, concerns and issues reflected this:

> *'Sometimes nurses are not involved in the safety huddles'*
> *'During busy periods huddles may be omitted'*
> *'Staff didn't know why they were doing huddles within the context that the project was thought to be about bladder care, communication, teamwork, staff morale'*
> *'Staff not speaking up in a large group, feeling intimidated'*
> *'Nothing gets followed up'*

Where staff were enabled to focus on their self-awareness, resilience and the impact of their behaviours on others, commitment, empowerment and safety initiatives were more successfully implemented.

> *'I have learned that resilience is essential and that finding out what does not work is just as important as what does. Working on the SCQIRE project has empowered staff from all bands to believe they can effect change. The team appear to be very enthusiastic about the project, very pleased to see it has been successful and feel very positive about the impact it is having on their working relationships with wards and with each other. The success of the safe transfer and a new communication tool has led to a safer environment for patients. The work done on this project can be replicated for other safety initiatives'* (Facilitator, emotional touchpoints).

Discussion

The SCQIRE project findings point to a strong link between building relationships with patients and staff and living person-centred safety values through these relationships. This association ratifies the interrelationships between values experienced in frontline teams and cultures reflecting these values, observed in the behaviour and safety actions of staff. Clinical leadership is proposed here as pivotal in enabling effective teamwork through working with shared values and meanings that determine whether those values became the norm for the way things were done (Akhtar et al., 2016). This has an effect on the safety behaviours of staff and their creativity in the workplace.

Enabling frontline staff to develop a positive focus and collaborative understanding of what works to support a safety culture helps to facilitate everyday work, support team resilience, anticipate developments and events, and maintain the capacity to respond effectively to the inevitable surprises (Hollnagel et al., 2015). Hollnagel and colleagues illustrate the importance of moving from a Safety 1 culture, preoccupied with management of risk, risk avoidance and blame, to a Safety 2 culture that involves supporting teams and organisations to join the dots between leading for excellence, safety culture and quality improvement. A framework of appreciative inquiry, such as 'learning from excellence' (learningfromexcellence.com/resources-and-evidence/videos/) and appreciative framing (Sharp, 2018) can promote achievement of intended objectives.

The key insights from SCQIRE essentially relate to embedding safety culture and growing improvement and leadership capacity in frontline teams. They are relevant to understanding the concept of workplace culture at the microsystems level and have informed the proposed refinement of the programme theory about how effective person-centred cultures are both developed and recognised.

Refining the theory of culture change as a result of the SCQIRE project

Theoretically, focusing first on the attributes of an effective workplace culture, the main changes proposed involve refining the relationships between values and making subtle changes in two values. Previously, 10 values clustered into the three groups were identified as required in practice. However, the interrelationship between the values was not made explicit. We argue, in the light of the SCQIRE findings, that it is not possible to create a safety culture unless person-centred relationships are experienced by both staff and patients. The integrated nature of the three value clusters therefore needs to be emphasised. In addition, the importance of learning appreciatively and building on what works was identified as a key focus of Safety 2 rather than Safety 1 behaviours, and as a feature of good facilitation and leadership. Therefore, strengthening this aspect of active learning is proposed. This needs to be linked with the strong inquiry and questioning approach experienced in cultures that accentuate safety as well as the high challenge that complements high support in facilitative leadership. In the SCQIRE project, observations of practice enabled many examples of 'being' person-centred with others to be witnessed. For this reason, it is proposed to focus more on how the action element of living the values of being person-centred in relationships might be recognised in practice. The new relationships of the value clusters are now presented in Figure 2.
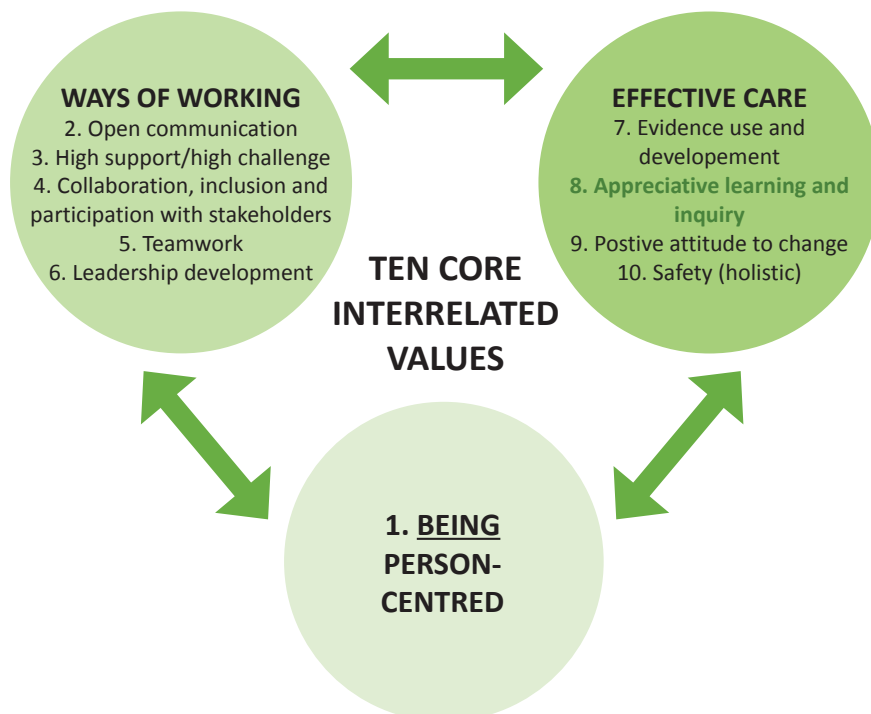
Adaptability and openness to change is a characteristic of effective leadership and this quality enables 1) workplaces to be proactive with change, and 2) staff to ask questions about everyday practice. These features characterise a continuous approach to safety and improvement and identify effective, high-performing teams.

Safety was already present in the original theory as 'holistic safety' rather than just technical safety. The role of holistic safety is recognised in the SCQIRE project as a complex concept with multiple facets that integrate a number of key values in everyday practice. The remaining values identified previously are endorsed strongly in the SCQIRE project – specifically the need for high support and high challenge, leadership development, the CIP principles of collaboration, inclusion and participation, and teamwork. The potential for these values to be lived and experienced, and their meaning in practice, are primarily dependent on quality clinical leadership and expert facilitation. Organisational enablers cannot guarantee effective workplace cultures at the microsystems level, although they do have a role in enabling them through ensuring that wider organisational learning and systems support frontline teams rather than make it harder for them.

Other attributes of effective workplace cultures previously identified are endorsed. However, there is a need to address how values are embedded in local and appreciative formal systems of evaluation, learning, development, improvement and stakeholder participation. This is because these systems can sustain values if 'form follows function'. Such systems would not just be evident at a microsystems level but endorsed by their presence at an organisational/systems level too when combined with other organisational enablers.

Reviewing the enablers previously identified in the substantive theory of culture change (Manley et al., 2011a) has provided further endorsement of some and refinement of others, based on the SCQIRE project findings. The individual enablers have been strongly endorsed, specifically transformational leadership, skilled facilitation (to engage staff in co-creating meaning and shared purpose), and role clarity.

Leadership is recognised as the main strategy for developing and embedding workplace cultures that are safe, effective and person-centred, and in which learning is valued (Manley et al., 2011a). Role clarity was particularly evidenced where good leadership enabled effective team huddles with clarity of purpose and co-constructed expectations and structure. A focus on collective and compassionate leadership, where everyone is a leader of something, is also a key aspect of good clinical leadership (West et al., 2014; 2017). In today's social era, leadership is associated with the ability to grow social capital and the recognition that individuals can complement each other through using social networks for collective action (Stodd, 2016). The role of facilitation came into its own and informed a key programme theory in the SCQIRE project as, without the full range of skills required, it was not possible to enable shared direction and meanings to be developed to guide everyday actions. The ability to engage and support frontline teams and enable their leaders to be supported was highlighted as a key facilitation skill; an example of its importance was experienced when teams needed guidance about how to make sense of data from the Texas safety culture team tool – a tool used in the study to assess safety culture in frontline teams (Sexton et al., 2006) – and how to work with the findings.

Refining the theory of effective workplace cultures in relation to organisational enablers
The SCQIRE project emphasised the role of organisational enablers – specifically, the need to develop a corporate body of skilled facilitators who can embrace leadership, learning, development and quality and who are skilled at using the workplace as a key resource. This has already been identified in terms of transforming the workforce more broadly (Manley et al., 2016). In order to achieve effectiveness, facilitators need to have a passion for the job, and to be embedded with frontline teams so they have a good understanding of issues, relationships and skillsets, and the knowhow to get the best out of the team. Such facilitators help frontline teams integrate several agendas at once. Facilitators need the skillset and competences of clinical facilitation and transformational leadership, self-awareness and emotional resilience to be effective in their role (Day, 2014; Martin and Manley, 2017). Refinements to the organisational enablers proposed are therefore: collaborative and authentic senior leadership; modelling shared values in every situation, with a focus on supporting bottom-up change, organisational readiness, and a role for human resources in recruiting for shared values. There is also potential for understanding how the PSC initiative can inform organisational learning – an aspect of organisational readiness (Weiner, 2009). The PSC initiative embraced individual, team, pathway and organisational enablers, as well as identifying and addressing barriers by using appreciative framing to identify what works so that participants can build on it positively. Finally, refinements are proposed to increase the recognition of effective workplace cultures in terms of their positive consequences: values that are lived in practice, committed staff and evidence of high-performing teams – all endorsed by the SCQIRE findings.

In summary, workplace cultures that are person-centred, safe and effective will be recognised by the characteristics in Figure 3. These characteristics are also proposed as a proxy for achieving more widespread health, quality and wellbeing outcomes. (Manley et al., 2011b)

Figure 3: Indicators for recognising person-centred, safe and effective workplace cultures
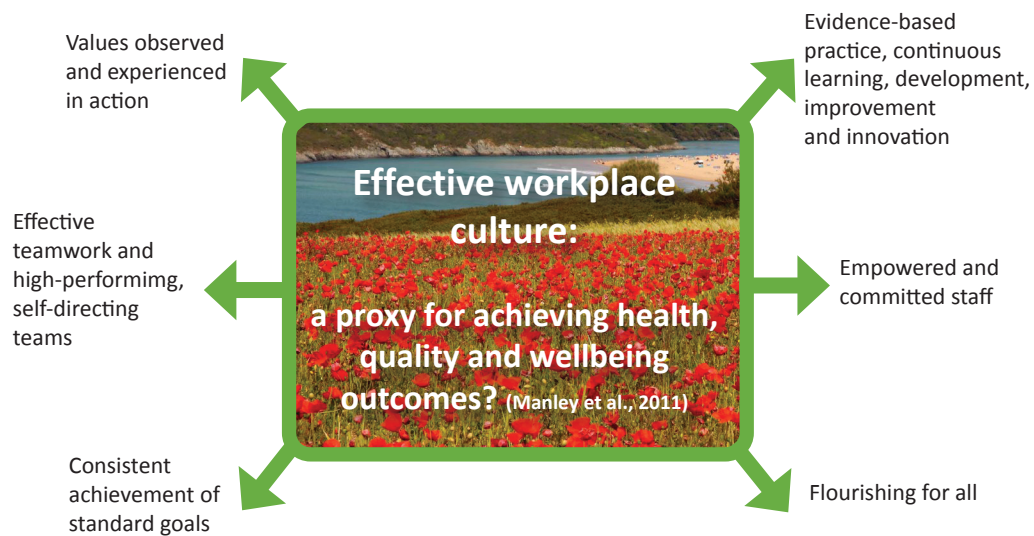
Realist evaluation combined with practice development methodology guided the approach taken to answer the SCQIRE question, what works for whom and why when embedding a safety culture in frontline team? Realist evaluation begins with and ends with theory. The SCQIRE project provided an opportunity to refine the theory for culture change originally based on the effective workspace culture framework (Manley et al., 2011a). Box 5 identifies the proposed refinements.

Box 5: Refined theory of culture change

(Refinements in bold)
Culture change in frontline teams involves **integrating values** about effective care, (including holistic safety and **appreciative learning and inquiry**) **with being person-centred in all relationships**, and ways of working that build effective teams through:
- Individual enablers – specifically, transformational leadership, skilled facilitation **(that engages staff in co-creating meaning and shared purpose)**, and role clarity
- Embedding values in local and **appreciative** formal systems of **evaluation, learning, development, improvement and stakeholder participation that reflect and sustain them**
- Organisational enablers – specifically: **collaborative and authentic senior leadership; focus on supporting bottom-up change**; organisational readiness; and human resource management's role **in recruiting for shared values**
- Embedding values **in integrated organisational systems for learning, development and improvement, based on appreciation of what works, and growing organisational capacity and capability in leadership and facilitation**

Effective workplace cultures will be recognised by:
- Values observed and experienced in practice
- Effective teamwork – **high-performing, self-directing teams**
- Consistent achievement of standards and goals, evidence-based and continuous **development, improvement and innovation in practice** linked to the needs of patients
- Empowered and committed staff
- Flourishing for all involved

Limitations
The limitations of this analysis fall into three main areas for consideration.
1. Philosophically, as no knowledge is value free (Guba and Lincoln, 1994), both the SCQIRE project and this analysis are based on a shared predisposition towards specific values considered important by the research team – namely person-centred compassionate relationships, and safe and effective care that is embedded through approaches that are collaborative, inclusive and participative of all stakeholders. Other lenses may accentuate different perspectives and aspects.

2. Although the focus of the SCQIRE project was on four different acute NHS trusts in the South East of England and 10 different teams, we were not able to discriminate subtle differences in impact between the 10 different acute contexts involved in the study in the resulting programme theories, so the perspectives resulting are generic. This suggests the need to focus more deeply and for longer periods on different practice contexts in order to refine theoretical insights in the future.

3. The project focused on microsystems/frontline teams in large acute hospitals. Exploration of other microsystems across the health economy may highlight different contextual factors and mechanisms for achieving outcomes.

Conclusions

The programme theories generated by the SCQIRE project described what strategies work for whom and why when embedding a safety culture and promoting quality improvement and leadership capacity in frontline teams. SCQIRE enabled a challenge to previous understanding about how to develop and recognise effective workplace cultures at the microsystems level and the organisational enablers that support them. A refined theory of culture change in frontline teams is therefore advocated. Realist evaluation starts with and ends with theory, and refinement of programme theories is one of the standards expected of realist evaluation (Wong et al., 2017).

The authors assert that culture change in frontline teams involves integrating and embedding three clusters of interdependent values associated with being person-centred, ways of working and effective care. It is not possible for frontline teams to live safety values unless they are also person-centred and highly effective as teams. We argue that the key enablers to developing effective workplace cultures are quality clinical leadership and skilled facilitation at both frontline (micro) and organisational (macro) levels. Other organisational enablers reflective of a learning organisation can assist in developing such cultures but without the microsystems enablers are unlikely to achieve this.

The importance of focusing on frontline teams and how they are supported and enabled is emphasised because this is where care is both provided and experienced. It is proposed that while organisational enablers can support their development, it is not a guarantee of effective frontline cultures – the key factors are quality clinical leadership and facilitation where core values are lived through person-centred relationships, effective teamwork and shared meanings underpinned by appreciative learning.

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