Patient Experience And Reflective Learning (PEARL) PROTOCOL

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V1

To accompany application ref 14/156/23 to the HS&DR Programme in response to the commissioned call on Patient Experience research

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The aim of the PEARL project is to improve outcomes for patients and families by using patient experience to enhance the behavioural skills of clinical staff in acute care.

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CONTENTS

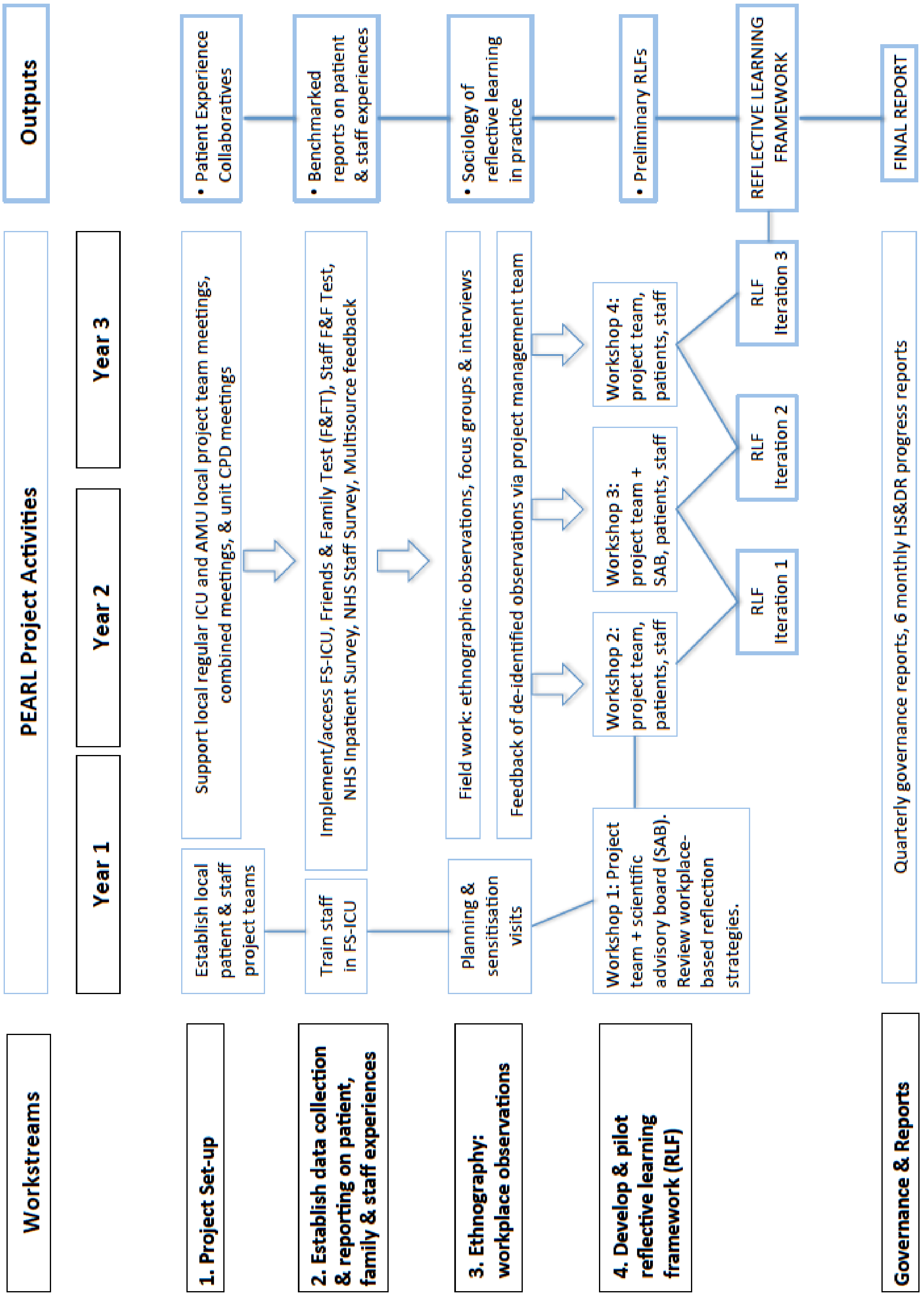
PROTOCOL SUMMARY	
Title	Patient Experience and Reflective Learning
Acronym	PEARL
Sponsor name & Ref	Queen Elizabeth Hospital Birmingham
Funder Name & Ref	
Aim	To create a reflective learning framework for staff in acute medical units and intensive care units
Design	Mixed methods: quantitative & qualitative study linking experiential and performance measures with iterative feedback through ethnography and behaviour change theory.
Primary outcome/deliverable	A reflective learning framework with content adaptable to local context.
Secondary deliverables	Establishment of local reflective learning groups, demonstrating collaboration between patients and clinicians, and between acute medicine and intensive care medicine. Report on patient, relative and staff perceptions of barriers to and facilitators of the use of experiential data to influence personal and organisational performance. Synthesis of local patient and staff experiential surveys with observations of workplace-based practice and behaviours. Report on local implementation of data on patient and staff experience to improve performance: transitions from System 1 to System 2 thinking. Presentation of reflective learning framework to healthcare professional organisations for consideration for inclusion in national training programmes.
Collaborating centres	3 Trusts in England
Population	Acutely and critically ill patients and their families, and the staff caring for them.
Locations	The Acute Medical Unit (AMU) and Intensive Care Unit (ICU) in each hospital.
Experiential measures	• Family Satisfaction questionnaire (FS-ICU) • Friends and Family Test (patients/family) • Friends and Family Test (staff) • De-identified consultant Multisource Feedback • NHS In-patient survey • NHS staff survey • Ethnographic observations and interviews
Performance measures	• Locally held returns to the Society for Acute Medicine's clinical quality indictors, and national benchmarking audit • Locally held returns to the Intensive Care National Audit and Research Centre case mix programme (standardised mortality ratios, nighttime discharge, post-ICU mortality rates) • Hospital-level measures (eg: Safety Thermometer)

Enduring Memories: contrasting family experiences of critical illness

Free-text responses to family satisfaction survey in a University Hospital ICU, 2010-12

I think senior management must clearly value their ICU staff as the atmosphere in the hospital unit was positive and very functional – brilliant!	*There are a few members of staff who are worth their weight in gold. If only all or most of the ICU staff had their outlook knowledge and expertise, then you would have no problems.*
Doctors were extremely caring, compassionate & thoughtful with their time & explanations.	*I felt very excluded in the care and decisions of my partners care, even down to never being able to speak to a dr? It would be an improvement or atmosphere where the family member was welcomed rather than merely tolerated.*
The communication from the nurses was excellent.	*Some members of staff made no effort to explain updates procedures to myself or patient, made no effort to include patients worries or fears.*
The professionalism was outstanding. Any questions answered thoroughly, putting my mind at ease straight away.	*Whilst aware it was not me in hospital, I did feel some staff perceived me being in the way. I tried to keep out the way and didn't stay long, but I was quite distressed, as was my partner.*
We had excellent care and attention for our late mother and ourselves. You did all you could but it was not to be and we fully accepted this.	*Although I realise that one can't tie up a bed/position with a dead body for long as it is valuable, but I did feel I was hurried away from my wife a little quickly. I would have liked to have spent a little longer in a calmer atmosphere before having to say goodbye – forever!*

Fig 1. PROJECT PLAN



PLAIN ENGLISH SUMMARY

No one reading Robert Francis' report of 2009 could fail to be moved by the harrowing descriptions by patients and relatives of the deficiencies in care experienced at Mid-Staffordshire Hospital. The final report conclusion exposed the multi-layered and complex nature of the causes of failure, with a clear aspect of that failure being the dangerous combination of individual denial of responsibility within an inhibited system.

Most of the failings of Mid Staffs may therefore be interpreted as a consequence of interactions between practitioner attitudes and behaviours on the one hand, and resources and structures on the other. These types of attitudes and behaviours are common enough in everyday social interactions, but become lethal within high-risk environments when there is a power imbalance between participants.

The aviation industry recognised this many years ago and focused the entire workforce on safety; flattening working hierarchies, standardising practice and using the principles of 'crew resource management'. However, in the healthcare setting, evidence that 'non-technical skills' training having a durable impact is not dependable. There are several challenges to training in non-technical skills: underlying attitudes are often obscure; the training environment is often artificial; the opportunity for reflection is greatly limited; the impact fading quickly; and the practitioner is not directly harmed by any error.

Our research proposal focuses on the implementation of reflective learning; a central component of educational theory and practice. We define reflective learning in our proposal as "an experiential process of personal insight development" or more simply, it is the process of internally examining and exploring an issue of concern that is triggered by an experience, which in turn creates and clarifies meaning and results in a changed conceptual perspective.

Our overall aim is to develop a theory-based framework to promote reflective learning which links patient experience as directly and immediately as possible, to both a group and an individual performance. Through the use of questionnaires, interviews and observations we will develop an understanding of how patients, relatives and staff understand the experience of travelling through the health system, how quality is perceived, and how attitudes and behaviours affect the overall patient experience. We will characterise individual and organisational barriers and facilitators of good practice. Building on existing quality control processes in hospitals, we will organise information on the patient experience in a form that can be easily understood. This information will be fed back to clinicians during organised quality improvement meetings where they will be mentored in the art of reflective practice so that, rather than being defensive, staff incorporate the ideas of self-criticism and continual improvement into their normal working lives.

We will develop this into a framework of workplace-based reflective learning tools and processes with potential for incorporation in national training programmes. In short, and more importantly, we shall develop and pilot a tool for 'culture change'; applying those so valuable lessons from the Francis Report outcome.

We will locate this project in the acute medical and intensive care units of three hospitals for the very reason that these are high-risk environments in which vulnerable emergency patients benefit from multidisciplinary team (MDT) based care requiring a high level of integrated team working. The project builds on our previous successful patient experience work.

BACKGROUND

This protocol responds to the HS&DR programme's commissioned call for research into methods of using patient experience to improve health services and care, and to a recent call for patient experience data to be used systematically to improve care quality [Coulter 2014]. It will also make use of outputs from current work funded by the HS&DR programme, the Family Reported Experiences Evaluation (FREE) Study [http://www.nets.nihr.ac.uk/projects/hsdr/11200356] which is testing the psychometric properties of the FS-ICU and then evaluating reliability in a cohort study due to report in 2015. We will also develop links with other researchers in this field, notably HS&DR 14/156/08 (http://www.nets.nihr.ac.uk/projects/hsdr/1415608).

The Mid-Staffordshire Hospital enquiry appropriately stimulated national policy initiatives to use patient experience to improve care. However, our prior work shows that clinicians – and particularly doctors – are often disengaged by multiple policy initiatives [Dixon-Woods 2012, 2013]. Quality and performance metrics have greater impact on clinician behaviour when there is professional ownership, and when metrics are linked to particular patients or events with whom there is a direct fiduciary relationship.

We therefore propose to examine techniques and contextual influences for acquiring and using patient experience in a vulnerable population (acutely and critically ill patients and their families) in two emergency settings in hospital: the acute medical unit (AMU) and the intensive care unit (ICU). Both these areas are important in terms of patient volumes, acuity, costs and outcomes, and both provide access to measures of case mix and performance. They also offer useful contrasts in terms of patient dependence, staffing, length of stay, and workload. We will develop a process to collect and present data on patient experience of different types ranging from questionnaire responses to complaints. This information will be analysed by the local project teams and fed back to staff, where possible using existing continuing professional development fora. The aim is to encourage engagement in reflection and enhance the natural desire of healthcare staff to maximise the psychological welfare of patients and their families. Adopting the MRC's guidance on using a theory-driven approach for complex interventions [MRC 2014] and the principles described by Davidoff et al [Davidoff 2015], we have developed an outline programme theory to describe this process, linking current theories on behaviour change [Michie 2011] to those on reflective learning (Fig 2).

Patient Experience: Sources of information

Patient experience is embedded in NHS England's Outcomes Framework, forms a key component of the Care Quality Commission's assessment regimen, and should be the central focus of all healthcare professionals. Patient experience is currently sourced through multiple routes, including local hospital surveys, the NHS Friends and Family 'test' [www.england.nhs.uk/ourwork/pe/fft/], the NHS In-Patient Survey [www.cqc.org.uk/cqc_survey/3], complaints [www.hscic.gov.uk/catalogue/PUB11490], and the Health Service Ombudsman [www.ombudsman.org.uk]. Staff opinion is accessed via the NHS Staff Friends and Family 'test', and the NHS Staff Survey [www.nhsstaffsurveys.com]. To these experiential measures can be added 1665 routinely collected performance indicators [www.indicators.ic.nhs.uk/webview] information on commissioning (CQUIN) [www.institute.nhs.uk/commissioning/pct_portal/cquin.html], the NHS Safety Thermometer [www.hscic.gov.uk/thermometer], healthcare associated infections from Public Health England, critical incident and never event reports [NHS England], and Hospital Episode Statistics. In terms of individual performance, surgeon-specific outcomes are now available for many procedures, but the only nationally mandated measure of non-technical skills is multisource feedback used for appraisal of doctors, the results being known only to the individual doctor and to the revalidation responsible officer.

Patient experience and organisational performance:

These diverse data are used by national regulatory and monitoring agencies to benchmark performance by health care providers. Trusts produce monthly quality reports for their Boards, and generate clinical 'dashboards' at ward level. The way performance data is used at the clinical front-line is dependent on contextual factors such as senior leadership, clinical ownership, and relevance. However, a recent survey of more than 2000 NHS clinicians and managers published by the King's Fund [http://www.kingsfund.org.uk/publications/culture-and-leadership-nhs] showed that 43% of staff do not have confidence in their organisation to manage inappropriate behaviours; almost 40% believed that patient feedback would not be used effectively.

Although there is evidence supporting the incorporation of patient experience to improve care [Doyle 2013, Reeves 2013], most research has focused on elective care or outpatient settings: of 55 studies reviewed by Doyle and colleagues [Doyle 2013], only six examined patient experience in emergency settings, and five of these referred solely to acute myocardial infarction. A recent analysis of data from the adult in-patient survey found lower levels of satisfaction amongst emergency admissions compared with elective admissions. Patients who were likely to have received their care exclusively in the Acute Medical Unit expressed lower levels of satisfaction with communication, information, involvement, privacy and pain control [Sullivan 2013]. Other reviews find that the association of patient experience with changes in organisational or clinician behaviour is at best tentative [Picker Institute 2011; DeCourcy 2012; Coulter 2014], while over-reliance on the Friends and Family 'test' as a summary measure [Appleby J 2013] means that it functions primarily as a target to be met at Board level rather than as an instrument for acquiring valuable free-text insights pertinent to front-line staff.

High-reliability organisations manage risk in part through proactive distributed participative reflection [McCrae 2014], a social process involving all players including managers as well as front-line staff. Reflection requires the deliberate conversion of data into action, usually involving a change in processes – that is, in behaviours. In the NHS there is no shortage of data, but there is a deficiency in participative reflection at the level of individual clinicians. Organisational performance data are used by national organisations and are examined in detail by Trust Boards when they impact on public performance ratings and financial incentives and sanctions, but they do not usually directly influence individual clinicians. A Cochrane review of the effectiveness of audit and feedback [Ivers 2012] found very variable outcomes, and concluded that 'studies of audit and feedback should directly compare different ways of providing feedback'. Interventions in this area must therefore focus on barriers to and facilitators of engagement in reflection.

Patient experience and individual performance:

Patient experience is influenced mainly by the actions of clinical staff, and in particular their non-technical (behavioural) skills [Robert 2011; Glickman 2010; Schoenfelder 2011; Sofaer 2005]; 'backroom' organisational and managerial aspects are important but less visible and immediate to patients. Indeed, there are significant gaps between clinical and managerial staff in their perceptions of local approaches to optimising patient satisfaction [Rozenblum 2012]. Deficiencies in the non-technical skills of clinicians magnify the impact of technical failures, and contribute to complaints [Clwyd 2013], disciplinary procedures, and costs of care. Variability in non-technical skills is well-recognised throughout medicine, including intensive care [Reader 2006; Dixon-Woods 2012; 2013]. Variation in attitudes and performance drive unreliable care and errors [Levy 2010; Bion 2010; Matching Michigan 2013; Bognar 2008; Bahaziq 2011], with adverse consequences for patients. Differences in perceptions and lapses in communication can result in protracted litigation [Tracey 2014; Aintree 2013], and are a major cause of referral to the National Clinical Assessment Service

[NCAS 2009]. The analysis of the adult in-patient survey by Sullivan and colleagues [Sullivan 2013] which focused on acute medical admissions, showed important opportunities to improve information and communication, involvement, and access to doctors by family members. This evidence demonstrates the need for effective methods of enhancing the non-technical skills of clinicians. One approach is workplace-based reflective learning.

Workplace-based feedback and reflective learning:

Technical and non-technical skills are acquired and refined through practice, performance feedback, and reflection. This is well-established for technical skills training through curricula, competencies, and audit; but less so for non-technical skills because of the complexity and variety of human attitudes and behaviours, and the impact of contextual factors.

Reflective learning is conventionally acquired through competency-based training assessments, clinical audits, and morbidity and mortality reviews. Training in non-technical skills has focused particularly on teamworking [Brock 2013] and in a large retrospective study [Young-Xu 2011] applying the principles of crew resource management [Musson 2004] appears to be associated with reductions in surgical mortality, supporting calls for human factors training to be fully integrated into undergraduate and postgraduate education [Bion 2010 & 2013; Flin 2010]. Trainees learn most about professional behaviour through apprenticeship-based role models in the workplace [Mook 2011; van Mook 2010], emphasising the importance of reflective learning in context and the impact of contextual factors [Kaplan 2010] such as the pedagogic environment and the 'hidden curriculum' of staff behaviours [Gaiser 2009]. Analysis of contextual barriers and facilitators to workplace-based learning is a necessary prelude to designing educational interventions [Lloyd 2014].

Performance feedback to aid reflective learning may be provided by trainees [Fluit 2013], clinical reflection [de Cossart 2012], audit of performance [Agnes 2010], ethnographic observation, [Dixon-Woods 2010, 2013], or video techniques [Carroll 2008], and through patient and family satisfaction surveys [Striker 2009]. Examples of workplace-based reflective learning in action include the use of feedback of satisfaction survey results at hospital level combined with requirements for improvement [Rozenblum 2012], and facilitated feedback of patient experience to nurses [Reeves 2013]. An example of a theoretical model and framework for workplace-based reflection is given by Krogstie et al [2013]. Debriefings play a useful role [Couper 2013] and could be developed in the workplace. Multisource feedback could also be used to enhance reflection by comparing the difference in self- and peer assessments [Violato 2006; Kruger 1999; Archer 2013].

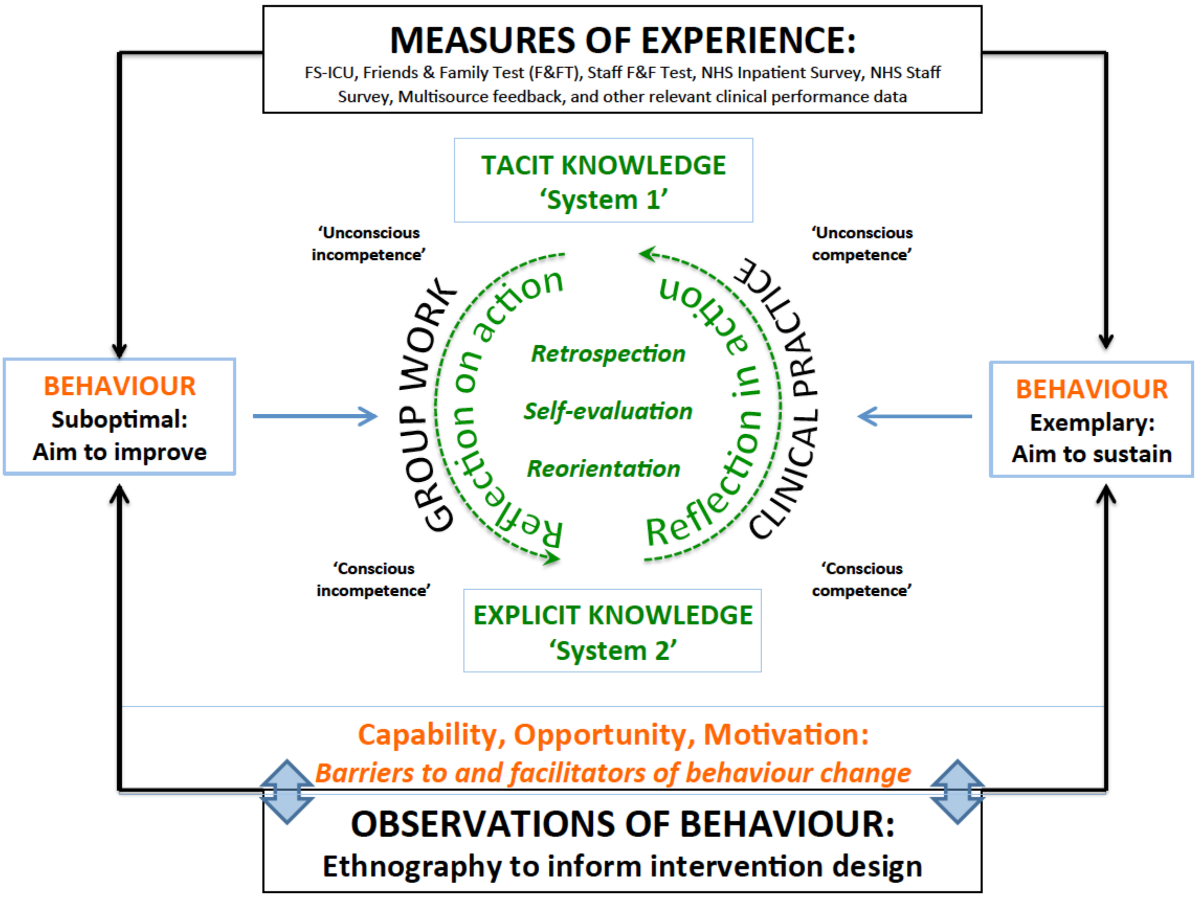
Although patients can offer important insights into the quality of teamworking and communication, linking this to the performance of individual members of staff in acute care areas like the Intensive Care Unit and Acute Medical Unit is made difficult by the impact of acute illness on recall (delirium 74% in the ICU), by the mortality of critical illness (25%-30%), by sampling biases, and the combination of shift working and multidisciplinary team involvement. In the ICU families spend long hours by the patient's bedside, and become sophisticated in their observations of clinical practice. For intensive care the GMC has therefore approved the use of group, rather than individual, feedback of patient and family experience through questionnaires.

Although behavioural skills at undergraduate and postgraduate level are acquired and assessed through competency-based training, following completion of postgraduate training the structures and processes for workplace-based life-long reflective learning are less formalised; in practice, the only structured feedback consultants receive is through multisource feedback undertaken every 5 years as part of revalidation. The annual NHS In-Patient Survey started in 1998, and while this shows a trend towards improvement [Picker 2005], the data are not specific to individuals, and are not incorporated in routine professional reflective learning. The General Medical Council (GMC) has recently [General Medical Council 2012] mandated that both peer assessment and patient experience be incorporated in individual specialist revalidation through multisource feedback, but this only needs to be performed every five years. It will also form part of nursing revalidation as this is implemented across the NHS, but is not yet a mandated requirement [Nursing and Midwifery Council]. There is in effect no standard approach for incorporating patient experience in workplace-based reflective learning [Sheldon 2011]. How then can patient experience be used to optimise clinician behaviour?

Programme theory: Integrating theories of reflective learning with theories of behaviour change

PEARL requires that the experiences of patients, families and staff, and relevant clinical performance data, are collected and fed-back to staff in the Intensive Care Units (ICUs) and Acute Medical Units (AMUs) in a manner that fosters interprofessional reflective learning at group and individual level to optimise clinician behaviour and thereby the experiences of patients, families and staff. The project therefore brings together theories of behaviour change with theories of reflective learning as recommended by the MRC [2014] for developing and evaluating complex interventions. The PEARL programme theory is presented in Fig 2, and in annotated form in the Appendix. We will integrate two theories: one on behavioural theory relating to engagement of the staff in the whole process of reflection in social groups that lies at the heart of our proposal; the other specific to reflective learning.

FIGURE 2: PEARL PROGRAMME THEORY (*annotated version as attachment*)



Behavioural theory: A recent review [Michie 2014] of nineteen behaviour change frameworks has assimilated them in the form of the Behaviour Change Wheel, at the heart of which is 'COM-B'. The central tenet of COM-B is that Capability, Opportunity, and Motivation interact to generate Behaviour. Capability is further divided into physical and psychological capability. Motivation is divided into reflective and automatic; and Opportunity divided into social and physical opportunity (examples in Appendix 1a-c). It has been used in a range of health contexts to make a 'behavioural diagnosis' of what needs to change in order for the desired behaviour to occur (Michie, Atkins & West, 2014). This model has been used successfully to effect improvements in teamworking in an emergency department [Frykman 2014], and is consistent with the Daniel Kahneman's conceptualisation of 'fast and slow thinking' [Khaneman 2011]: System 1 is fast, automatic, relies on heuristics, and is likely to be engaged frequently in the setting of acute and emergency healthcare when rapid decision-making is needed in conditions of complexity and stress. System 2 is slower, more reflective and analytical. We will use COM-B as our diagnostic instrument to evaluate staff engagement in reflective learning, focusing on barriers to and facilitators of such engagement. Barriers and facilitators include capabilities (e.g.: difficulty making time because of irregular service demands), opportunities (e.g.: the social milieu may be unfavourable) and motivation (e.g.: staff feel intuitively resentful at the implication that they are not good communicators). Engagement is a necessary but insufficient condition for the program to succeed; engagement must also be accompanied by effective reflective learning.

Reflective learning theory: Reflective learning and practice is so central to pedagogic principles that it has virtually achieved the status of received wisdom. However, there is no universally agreed definition, theoretical model, or set of methods of implementation for reflective practice [Mann 2009, Black 2010]. We define reflective learning as an experiential process of personal insight development, in which one's own and others' experiences are used to enable change in behaviours. Models of reflection involve three fundamental processes in knowledge development: retrospection, self-evaluation and reorientation [Quinn 1988], presented as a four-stage cycle by Kolb [Kolb 1984] and by Krogstie [Krogstie 2013]. Our programme theory takes into account the notion that the knowledge which we will seek to develop is largely tacit. The theory of tacit knowledge has developed in recent years with much empirical support. Of considerable relevance to the PEARL project, it has been shown that tacit knowledge can beget explicit knowledge [Nonaka 2009]. The corollary is that we expect to find that participants are increasingly able to find language to describe at least some aspects of the knowledge they acquire, thereby reducing the cost of communicating with peers [Smith 2001]. However, the conversion of tacit to explicit knowledge is a two-way street, so explicit knowledge can eventually be internalised; unconscious incompetence becoming conscious competence and then unconscious competence (Table 1), with best practice becoming normalised and habit-forming [Vogel 2015]. Tacit and explicit knowledge mirror Kahneman's System 1 and System 2 thinking respectively, as described above.

Table 1. LOGIC FLOW: REFLECTIVE LEARNING IN ACTION

System 1 →	System 2 →	System 2 →	System 1
Unconscious incompetence	Conscious incompetence	Conscious competence	Unconscious competence
Communication skills suboptimal: talks rather than listens.	*Gradual feedback from multiple sources (MSF, FS-ICU, staff surveys). Benchmarking.*	*Observes other colleagues undertaking family discussions, adopts listening approach.*	*Routinely pauses during consultations to ask families for their views*

Social Context:

A feature of tacit knowledge is that it is often acquired in a social context – part of social cognitive theory [Bandura 1977]. This is crucial to the design of our intervention, since the learning sessions will involve a group process. Certain members of the group may have sapiential authority which can be used to strengthen or weaken participation in the group [Bion 1943]; the ethnographer will be alert to the possibilities of positive and negative re-enforcement in this setting. The idea of reflection is integral to the development of tacit knowledge and its conversion, where feasible, to explicit knowledge: theoretically reflection is most powerful when it is part of a group displaying a positive attitude. Reflection is also more effective when undertaken as a shared, rather than an individual activity [Aronson 2011]. Participants will be encouraged to go beyond identifying an alternative plan for similar future situations and identifying reasons for the particular outcome, to a process in which underlying beliefs, frameworks and power relationships are questioned and thus incorporated into reoriented action plans [Aronson 2011]. Eliciting implicit knowledge as part of reflection has been achieved using causal maps [Kothari 2012] based on the work of Ambrosini and Bowman [Ambrosini 2001].

Outputs:

Output 1: The Reflective Learning Framework: We hypothesise that individuals will move from reflection *on* action during group work to reflection *in* action as they provide patient care [Schon 1983]. Evidence suggests that feedback and reflection are most effective when combined into a single intervention [Anseel 2009]. We will assist staff in the ICUs and AMUs to develop an integrated approach to feedback and reflection [Sargeant 2009], taking into account the impact of techniques of feedback [Smither 2005; Van Manen 1991]. Participants will also be helped to distinguish between probabilities and values, between knowing how to reach objectives and in selecting which objectives to prioritise.

We do not wish to over-specify the way in which these interactions should occur, for two reasons. First, implicit knowledge (allied to Schön's concept of 'professional artistry' [Finlay 2008]) is likely to play an important part in the development of the framework; and second, we will use an adaptive process to modify the programme theory in the light of experience as the project proceeds. Local project teams will be asked to keep in mind the twin overarching objectives, of helping staff learn how to maximise patient and family psychological welfare and to become more zealous of doing so.

We describe the likely format and content of the reflective learning framework in Workstream 4 below.

Output 2: Impact on patient and staff experience: As this is a developmental project located in three centres and not a randomised controlled trial across many, we will not be able to state definitively that the reflective learning framework will improve the experience of patients or staff. We will however be able to track secular trends in surveyed measures of experience in these three centres, determine the opinions of patients, relatives and staff, and contrast their experiences with the observations of the ethnographers over time. The Reflective Learning Framework will be subjected to a sense check through presentation to national professional training organisations. Given a positive outcome from the pilot phase in Workstream 4, we would wish to apply for funding for a large-scale cluster-randomised step-wedge trial of the Reflective Learning Framework.

Populations and pathways: the acutely ill patient

Each year approximately 5M patients are admitted as emergencies to hospitals in England, and at any one time around 50% of hospitalised patients are acutely ill. These patients follow diverse pathways, have complex needs, a substantially increased risk of adverse outcomes, experience care from multiple clinicians across time and locations, and have lower overall satisfaction with their care. The recent national review of physician training [Shape of Training 2013] importantly recommends that training be restructured to create a workforce with generic acute care skills, and that such training should be informed by patient experience. Virtually all acute medical admissions will transit the acute medical unit; the most severely ill will require admission to the intensive care unit. These two locations therefore offer an opportunity to compare and improve patient experience on this complex pathway, with the results likely to have generic relevance to all health systems as they evolve to meet current needs.

The Acute Medical Unit (AMU) is generally the first point of admission to hospital, usually from the emergency department or following direct referral from the community. Around 3.5M patients are admitted to AMUs annually, of whom 40% may be discharged home from the AMU within 48 hours, and 60% are transferred to general or specialist wards for continuing care. Specialist acute physicians will generally work 12 hour shifts daytime in the AMU, providing twice-daily ward rounds; weekend cover may be provided by acute physicians, or by a general physician on duty. Capturing patient experience in this fast-moving environment presents a significant challenge. As described above, data extracted from the In-patient Survey likely to represent patient experience in AMUs showed opportunities to improve communication, information, involvement, privacy and pain control [Sullivan 2013].

Intensive Care Units (ICUs) received approximately 200,000 patients per year to the 202 adult ICUs in England, at a cost of approximately £1Bn (1% of the NHS budget). Nurse:patient ratios are either 1:1 or 1:2. Intensive care specialists generally conduct two ward rounds a day, seven days a week. These patients are one of the most vulnerable populations in healthcare [Bion 2004], requiring burdensome technical support for multiple failing organ systems, and experiencing a mortality rate of around 30% [Hutchings 2009]. Providing reliable care in this complex environment requires both high-level technical and non-technical (behavioural) skills. Non-technical skills include effective teamworking, situational awareness and leadership; the ability to integrate information across locations and over time, to coordinate communication and actions, and to provide care with compassion. Patient Experience research to improve intensive care outcomes has recently been prioritised by an Intensive Care Research Foundation initiative funded by the James Lind Alliance (www.ics.ac.uk/icf/james-lind-alliance).

Patient experience specifically in AMUs has yet to be formally characterised, but as described above, recent analysis of data from the adult in-patient survey focussing on acute medical admissions demonstrated good outcomes in terms of teamworking, but important opportunities for improvement in many other aspects of patient experience [Sullivan 2013]. The need to incorporate such experience in quality improvement activities has been endorsed by a recent consensus statement [Edwards 2013]. While there is generally high satisfaction (80%) with the quality of care in ICUs measured using the Family Satisfaction Questionnaire for Intensive Care Units (FS-ICU) [Heyland 2001; Striker 2007; Heyland 2002], from an industrial perspective, a ‘failure rate’ of 20% would constitute a major incident [Macrae 2014]. Narrative feedback shows opportunities to improve the domains of communication, teamworking, shared decision-making, and bereavement care. These relational aspects of patient and family experience in intensive and acute care are reflected in the King’s Fund literature review and report ‘What matters to patients’ [Robert 2011].

In summary, we hypothesise that translating patient experience into sustained changes in clinician behaviour in acute care settings will be facilitated by a structured framework for workplace-based reflective learning.

AIM

To create a reflective learning framework for staff in acute medical units and intensive care units to improve patient and family experience of the acute care pathway in hospital.

STUDY DESIGN AND SETTINGS:

A 3-year mixed-methods study located in 3 intensive care units and 3 acute medical units in England.

OBJECTIVES

Overall: to create a reflective learning framework for staff in acute medical units (AMUs) and intensive care units (ICUs), combining feedback of patient and family experience with other sources of experiential, qualitative and quantitative information, with the long-term aim of optimising staff engagement in promoting the psychological welfare of acutely and critically ill patients and their families.

Objective 1: Establish local acute care patient experience collaborations between patient representatives, clinical staff and managerial staff working in AMUs and ICUs in 3 Trusts in England.

Objective 2: Establish collection of local data on patient, family and staff experience. We will use the Family Satisfaction Questionnaire (FS-ICU), Friends and Family Test (patients and staff), NHS In-Patient Survey, NHS Staff Survey, and de-identified consultant multisource feedback. We will compare response rates, demography, comments, and track changes over time. FS-ICU format will be based on outputs from the HS&DR-funded FREE Study [http://www.nets.nihr.ac.uk/projects/hsdr/11200356]

Objective 3: Understanding context through ethnography. (Commissioning brief Q1 and Q3). Ethnographers will observe workplace-based practices and undertake interviews with families, clinicians, managers and executives to determine how these groups perceive patient experience, quality of care, and barriers to and opportunities for improvement. These observations will be used to inform Objective 4; ongoing observations during the pilot phase will feed into iterative stages of the design process.

Objective 4: Develop and pilot a reflective learning framework to improve patient experience (Commissioning brief Q4). Using a stakeholder co-design approach with iterative small-cycle testing we will create a theory-based reflective learning framework to incorporate patient experience in routine bedside practice. Where appropriate patient experience will be accompanied by other safety, quality and performance measures obtained from local audit systems. The framework will guide hospitals in how they may overcome barriers (ranging from practical time constraints to psychological discomfort in discussing personal attitudes) in implementing effective reflective practice.

Objective 5: Dissemination and further research. As part of the dissemination strategy, we will offer the reflective learning framework as a resource for national multidisciplinary training programmes through our partner organisations in acute and intensive care medicine, nursing and allied health professional programmes (Commissioning brief Q2 and Q4). We will also propose a national cluster randomised step-wedge trial of the framework for large-scale evaluation of impact on patient outcomes.

RESEARCH PLAN: SUMMARY

PEARL is a 3-year mixed methods project conducted in the Intensive Care Units (ICUs) and Acute Medical Units (AMUs) of three centres: the Queen Elizabeth University Hospital Birmingham; Newcastle University Hospital; and Heartlands Hospital (Heart of England Foundation Trust). There are 4 interlinked Workstreams.

Workstream 1: Set-up. Appoint local project leads and identify suitable opportunities for staff to congregate for feedback and reflection. Agree local arrangements for project delivery. Establish processes for acquiring, analysing, reporting and benchmarking data from family satisfaction survey, local performance and quality data, and de-identified multisource feedback responses. Obtain ethics approval for patient surveys and ethnography. Support group work, unit feedback and ICU/AMU project teams.

Workstream 2: Establish collection of local data on patient, family and staff experience. This will include the Family Satisfaction Questionnaire (FS-ICU), Friends and Family 'test', NHS In-patient survey, the Staff Friends and Family 'test' and the NHS Staff survey. The patient experience instruments will be offered to families of all patients who remain in the ICU or AMU for more than 24 hours. We will incorporate learning from current work being undertaken by the HS&DR programme (http://www.nets.nihr.ac.uk/projects/hsdr/081819213). Where appropriate patient experience will be accompanied by other safety, quality and performance measures obtained from local audit systems.

Workstream 3: Conduct ongoing ethnographic observations to inform development of the framework. Ethnographers will observe clinical practice, interview families, clinicians, managers and executives, and determine how they characterise quality of care, and explore barriers to and opportunities for behaviour change. Ethnographers will observe feedback of experiential and quality and performance metrics in ICUs & AMUs and obtain views about credibility, utility and impact. De-identified observations will be fed into the development of the reflective learning framework. As the project proceeds, ethnographers will observe reflective learning sessions and workshops, and conduct focus groups with participating staff about their experiences of reflective learning, and barriers and facilitators. This data will be incorporated iteratively into the development of the framework and toolkit for reflective learning.

Workstream 4: Develop and pilot a reflective learning framework to improve patient experience. Using the data acquired from Workstream 2 and Workstream 3 and the steps described in the programme theory (Fig 2), we will develop a reflective learning framework for use in routine clinical practice to promote staff engagement in optimising patient and family experience. We will develop the framework using workshop-based stakeholder co-design with iterative testing at a local level. The framework is likely to take the form of a toolkit describing the people, policies, processes and techniques required to maximise staff engagement in reflection focused on patient and family wellbeing, and a protocol for implementation of the tools and techniques.

RESEARCH PLAN: DETAILS

WORKSTREAM 1: SET-UP

Background

Behaviour-change interventions are critically dependent on the active support and leadership of clinical, managerial and executive (Board-level) staff, as well as endorsement and promotion by national professional organisations. The proposed project is supported by national professional organisations and by senior clinical collaborators in each of the three participating hospitals. Through them we will engage local staff in the project and find out how collaborator groups concerned with patient experience can incorporate reflective learning in their work programmes.

AMUs and ICUs share much in common, but are not traditionally linked in terms of shared quality improvement structures and processes. To achieve these linkages we will make use of our own prior work [Matching Michigan 2012; Dixon-Woods 2010, 2012, 2013, 2014] and that of others [Brock 2013, Agnes 2010, King's Fund toolkit] in improvement projects.

Aims

1. Create effective reflective learning collaborations in each participating centre with linkages between AMU and ICU, and between centres.
2. Establish the project infrastructure for Workstreams 2-4.
3. Obtain institutional and Ethics approvals for patient surveys and ethnographic observations.

Methods

Staff: We will appoint a local PEARL project medical and nursing lead (LPL) in each AMU and ICU, where appropriate doing this through endorsement of those already undertaking a similar role. The Trust Medical Director will be asked to invite an executive member of the Board to support both areas and chair the local project groups. The AMU and ICU LPLs will meet regularly to share experiences and harmonise approaches to reflective learning. The LPLs in each Trust will invite AMU and ICU staff to join a collaborative improvement group, the members of which may also contribute to the focus groups for Workstreams 3 and the Workshops in Workstream 4. These groups will have managerial representation to help bridge perceptual gaps [Rozenblum 2013].

Patient and Relative Groups: We will ask the AMU and ICU local project leads in each Trust to establish a combined patient and relative group to participate in the project though membership of the local project team, the focus groups and workshops, and as advisors for the development of the Reflective Learning Framework. Patients and their relatives will be invited to join this group through existing contacts or lay groups.

Structures & processes: We will characterise and utilise existing quality improvement structures and processes for each area (for example, mortality meetings, journal clubs, multidisciplinary team meetings etc). We will agree methods for collecting, analysing and reporting locally-owned data on patient experience and quality and performance metrics.

Web-based experiential data: A secure web-based tool will be developed for electronic data capture of responses to patient, relative and staff survey instruments for each unit. These will be accessible directly by respondents from the AMU and the ICU using a Trust- and Unit-specific web-link, with results reported to each centre in real time as responses are received. We will develop an optical character recognition tool for encoding paper-based questionnaires where these are preferred by patient or family respondents. Distribution techniques are described in Workstream 2, including denominator data. Survey results will be collated centrally, and reports issued to each centre ‘in real time’ as responses are received. Local data will be owned by each Trust. The following survey instruments will be distributed:

- Family satisfaction survey (continuously distributed)
- Patient Friends and Family ‘test’ (continuously distributed)
- NHS In-patient survey generic questions (continuous)
- Staff Friends and Family ‘test’ (annual)
- NHS Staff survey (annual)

Clinical Performance Data: Trust-level metrics will be accessed from the Health and Social Care Information Centre and other publicly available NHS databases.   Through the local project leads we will work with Trust informatics Departments to access locally held data on unit-specific performance (for example, complaints rates and pressure ulcer rates; and delayed discharges or out-of-hours discharges from the locally-held repository for the Intensive Care National Audit and Research Centre care case mix programme). We will seek permission from staff to access de-identified records of peer assessments of consultants and trainees through multi-source feedback.

WORKSTREAM 2: ESTABLISH COLLECTION OF LOCAL DATA ON PATIENT, FAMILY AND STAFF EXPERIENCE.

Background

There are multiple methods for accessing feedback from patients, families and staff, but little information on the best methods for doing so, or on the way the data impact on staff and organisational behaviour, particularly in acute care environments in which staff working shifts come together for short periods as ill-defined 'teams' to provide care to vulnerable patients at increased risk of adverse outcomes. Some acutely ill, and most critically ill patients lack capacity to provide feedback, and this information must therefore be sourced from their families if they have had sufficient opportunity to observe practice. Approaches need to be appropriately modified when surveying families of patients who die. Elderly and young respondents are likely to differ in their preferences for paper-based versus internet-based survey techniques. Staff experiences similarly need to be incorporated in organisational learning and aspirational quality development. Multisource feedback has the potential to enhance reflection by facilitated feedback of the difference in self- and peer assessments [Violato 2006; Kruger 1999; Archer 2013]. The purpose of Workstream 2 is for acute medical units (AMUs) and intensive care units (ICUs) to develop practical experience in the use of these surveys, to obtain quantitative and qualitative data, and to package them in a way that can be easily assimilated.

Aims:

1. Develop practical experience in AMUs and ICUs in survey techniques.
2. Iteratively develop preferred reporting formats with AMUs and ICUs.
3. Evaluate electronic and paper-based approaches to accessing patient and family feedback.

Methods

We will obtain experiential information from local and national surveys and multisource feedback. Relevant performance data may include critical incidents, complaints, timeliness of admission and discharge, and data from the GMC trainee survey. In WS4 these data will be combined with workplace observations of behaviour made by social scientists (ethnographers) in WS3.

Patient and relative experience in the AMUs and ICUs will be recorded using the Family Satisfaction Survey (FS-ICU) [Wall 2007], the Adult In-Patient Survey, and the Friends and Family Test (F&FT) including the free-text component. Only those questions of generic relevance will be presented from the In-Patient core survey to minimise survey volume; duplicate questions between surveys will be removed. The surveys will be offered at unit discharge to those patients with capacity and to all families of patients who have been in the AMU, and to families of patients who have been in the ICU, for 24 hours or more. Consent will be sought for use of the anonymised data: respondent gender and age will be requested but no patient identifiers. Denominator data will be collected from Trust databases to calculate response rates. Survey forms will be returned to the central project team where they will be digitised, analysed, and reported to each Trust's local project lead. Free-text responses will be transcribed and analysed using NVivo.

Staff ratings in the AMUs and ICUs will be measured using the NHS Staff Core Survey and the Staff F&FT. Only a web-based format will be provided. The surveys will be offered by email over a two month period each year to maximise response opportunities. Denominator data will be collected to calculate response rates, which will be fed back to the local project leads weekly. Free-text will be transcribed and themes analysed using NVivo software.

De-identified peer-based multisource feedback (MSF) records for AMU and ICU consultants will be accessed with their permission either from Trust records or from the MSF service provider. Perceptual gaps will be determined from the difference in self- and peer-assessments by grouping results for each MSF item into quartiles by mean assessor score, and presenting the mean self-assessments within each quartile [Violato 2006].

These data will be used together with the insights gained from the ethnography in Workstream 3 to develop the reflective learning framework in Workstream 4.

WORKSTREAM 3: ETHNOGRAPHY: WORKPLACE OBSERVATIONS

Introduction

Ethnography can provide unique insights into real-world clinical practice and the views of patients, families and staff to characterise how patients and staff perceive quality of care and view barriers to and opportunities for improvement. Staff attitudes and organisational barriers and facilitators [Maben 2012; Lloyd 2014] can be exposed to view by an impartial observer. Ethnographers are able to observe feedback of experiential and quality and performance metrics in ICUs & AMUs and obtain views about credibility, utility and impact. These (de-identified) observations can be incorporated formatively into the development of the feedback processes and of the reflective learning framework in Workstream 4. Observations of reflective learning sessions and workshops, and interviews and focus groups with participating staff, will be important in informing the development and refinement of the reflective learning intervention.

Aims

- Explore how the variety of stakeholders conceptualise quality of care, and the position of patient and carer experience in this;
- Systematically describe the approaches used to feedback experiential and quality and performance metrics in ICUs & AMUs;
- Obtain staff views about credibility, utility and impact of different approaches to feeding back patient experience data;
- Explore the extent to which patients and carers feel existing data feedback reflects their experience in a meaningful way, and how to maximise the likelihood that feedback this will be meaningful to staff and patients;
- Explore staff engagement with reflective learning based on patient experience data, and identify how reflection can be promoted in a group setting;
- Identify the factors that impact on the extent to which reflection is translated into action at the front line of practice;
- Identify the barriers and facilitators to implementing a reflective learning programme;
- Generate learning to inform the development and modification of the framework for reflective learning based on patient experience.

Methods:

Ethnographic work will be conducted in each of the 3 participating hospitals. This will include (i) an initial phase of data collection focused on describing current use of patient experience data, exploring options for the feedback of data as part of the reflective learning process, and investigating barriers to and opportunities for improvement. Findings from this phase will feed into the development of the pilot reflective learning framework; (ii) a second phase of data collection focused on: observations of reflective learning sessions, workshops and reflective practice in action in day to day practice; and interviews and focus groups with participating staff about engaging with patient experience data and turning reflection into action. The data from this phase will feed into iterative stages of development of the reflective learning framework.

During the first year (phase 1) we will undertake two to three visits to each hospital to observe practices in ICUs and AMUs. The data collected will consist of field notes from observations and informal chats with hospital staff about the practices of collecting, compiling, feeding back, and responding to experiential data alongside other quality indicators. We will also collect documents related to feedback of patient experience and quality data such as meeting notes and copies of posters. The researcher will also aim to collect data on salient features of the local systems, social factors, and organisational context that may impact on feeding back and responding to experiential data. A structured observation guide will be developed. This will detail the aims of the observations and the topics and issues on which data should be collected during observations.

We will also conduct interviews with 6-8 members of staff at each site about their views on the feedback of patient experience data, how this data is used, the impact on practice, their views on optimising the process of feedback, and barriers to and opportunities for improvement. The development of the topic guide will be informed by a theoretical framework, the COM-B model (Figure 3 [Michie et al. 2011]). Staff will be purposively sampled to include those in a variety of roles working at the frontline, as well as staff in quality improvement, managerial and executive roles. Interviews will be conducted face-to-face or by telephone if preferred. Each interview will be tailored to the individual staff member's role, and will also explore issues that arise during observations.

We will invite up 6-8 patients and carers at each site who have had experience of care in AMU or ICU, to participate in focus groups at each site, (or individual interviews if preferred) about their experiences of care and opportunities for improvement. Discussions will focus on what is currently good about patient experience, what needs to improve, and the underlying causes. We will also ask patients and carers to reflect on how experiential data can be presented and used in meaningful ways. Focus group topic guides will follow the same theoretical structure as the staff interviews [Michie et al. 2011]. The focus groups will be lead by a trained moderator. Transcribed anonymised and edited outputs will be fed back to the local teams for comment and then assimilated in a combined report. This information will feed into development and iterative moderation of feedback processes and the toolkit and protocol for reflective learning in Workstream 4.

During years one to three (phase (ii)), the ethnographer will also conduct ongoing observations of reflective learning sessions and workshops to characterise successes and challenges in implementing reflective learning in the three sites. Three focus groups will be held in each site with 6-8 members of staff from ICU and AMU who are involved in the reflective learning process. Focus groups will explore emergent experiences of reflective learning, and barriers and facilitators to engaging with patient experience data and to translating reflection into action. During years two and three we will also conduct one to two observational visits to each site with a focus on observing how and why patient experience data and reflective learning is being translated into action in day to day practice. These data will feed formatively into iterative revision and modification of the reflective learning framework.

Regular debriefing sessions will be conducted between the qualitative lead and the study researcher, to ensure that the data collection remains focused on core topics, and that emerging themes are explored and used to inform subsequent data collection. The qualitative team will also meet regularly with the PI and core team to enable ongoing dialogue about qualitative findings as part of the process of developing the revised feedback and reflective learning processes. Their observations will be non-attributable to individual participants and will be de-identified before they are processed by the project team and submitted to the participating centres. This material will be discussed by the ICU and AMU local project teams (senior and junior clinical staff, patients and relatives, and managers) before wider dissemination to all staff in the units.

Analysis of data will be on-going over the course of the fieldwork period. Interviews and field notes will be transcribed verbatim and coded using NVivo. Analysis will draw on elements of grounded theory, in particular, the constant comparative approach [Glaser 1967] and will remain grounded in the data. We will use techniques developed through our experience of conducting large scale ethnographic studies to enable us to manage the large amounts of data generated, and to move quickly from data to interpretation. These include regular debriefs and the production of summaries of data by site and across sites, organised by research questions and emerging themes.

Institutional approval will be required for the ethnographer to observe clinical practice. Staff will need to be informed that observation of practice is taking place, and will have the right to refuse observations if they wish. Information sheets will be provided for both staff and patients in the clinical areas in which the observations are taking place. Site-specific feedback will be integrated into ongoing development and revision of the reflective learning, and analysis of data will include case study descriptions by site as well as identification of cross-case themes. Data will be carefully anonymised and will not be attributable to specific individuals.

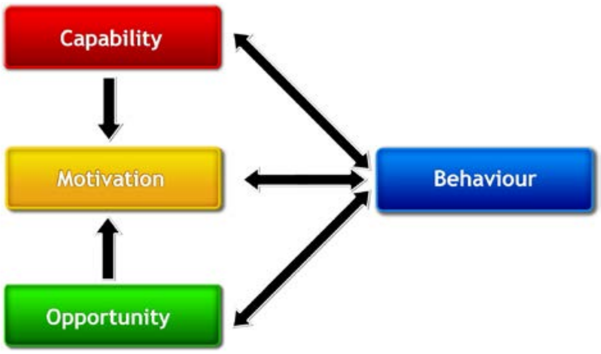
WORKSTREAM 4: DEVELOP AND PILOT A REFLECTIVE LEARNING FRAMEWORK TO IMPROVE PATIENT EXPERIENCE.

Introduction

PEARL seeks to condition automatic aspects of behaviour by using patient experience to engage clinicians in developing more reflective thought processes. In Workstream 4 we will ask patients, relatives, clinicians and managers to use information on patient experience (WS2) and clinician behaviour (WS3) to develop and pilot a framework for reflective learning. Fig 2 (and the annotated animated version attached in Powerpoint format) presents graphically our programme theory of the interplay between behaviour change and reflective learning.

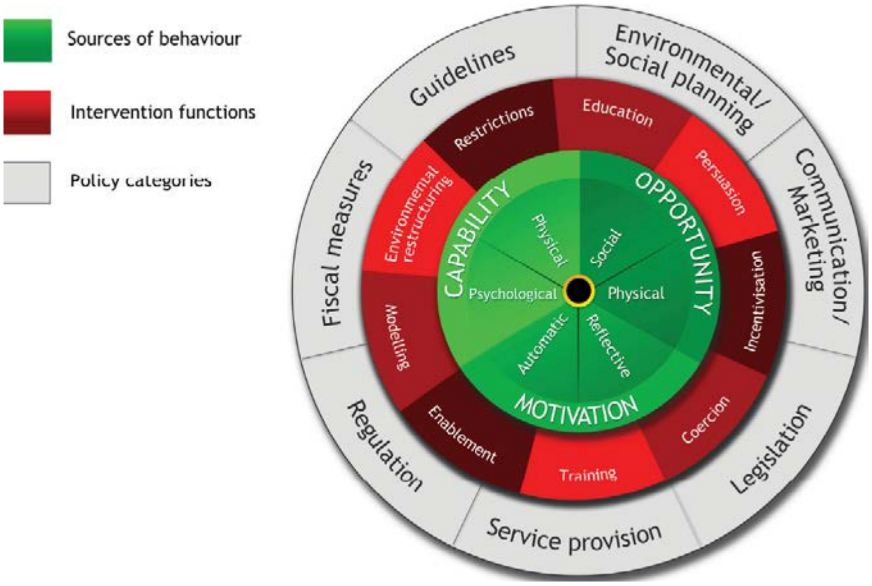
We define reflective learning as a process of personal insight development, involving the capacity to learn from one's own and others' experiences. Effective reflective learning should reinforce desirable behaviours and modify and improve undesirable behaviours. However, the challenge of changing behaviour through conventional pedagogic interventions is well known. There is also a difficult balance to be struck between group and individual learning, between motivation and discouragement, and between 'breakdown' and 'breakthrough' as emphasised by the psychoanalyst Wilfred Bion. As TS Eliot said, 'Mankind cannot bear very much reality'. There are numerous theoretical models of behaviour change and systems for categorising behavioural interventions, but most fail to capture all intervention types or to provide a method for linking interventions to behavioural targets [Michie 2011]. We will manage these issues by using COM-B (Fig 3, described in the introductory section above) as the diagnostic tool, and the Behaviour Change Wheel [Michie 2011] (Fig 4) as the conceptual backing for developing the reflective learning framework.

Fig 3: COM-B



COM-B (Fig 3) is one of 19 behaviour change frameworks included in the Behaviour Change Wheel (BCW) [Michie 2011] (Fig 4), a widely cited and tested synthesis which places sources of behaviour (COM-B) at the hub, linked to nine intervention functions, and seven enabling policy categories (Appendix 1a-c). Explicit linkages between COM-B, intervention functions and policy categories [Michie 2014] permit a comprehensive, systematic approach to intervention design. This model has been used successfully to effect improvements in teamworking in an emergency department [Frykman 2014].

Fig 4: The Behaviour Change Wheel.



MIND-SPACE is another of the 19 behaviour change theory incorporated in the BCW. It was developed as a method for considering behaviour modification for public policy management [Dolan 2010]. The acronym refers to Messenger, Incentives, Norms, Defaults, Salience, Priming, Affect, Commitments, and Ego (Table 2). These elements also represent potential tools for changing behaviours. MIND-SPACE also has six enabling actions: Enable (context), Encourage (sanctions and facilitators), Engage (co-production), Exemplify (leadership and organisation), Explore (evidence) and Evaluate (post-implementation). We will make use of these contextual factors when applying the BCW as our diagnostic tool.

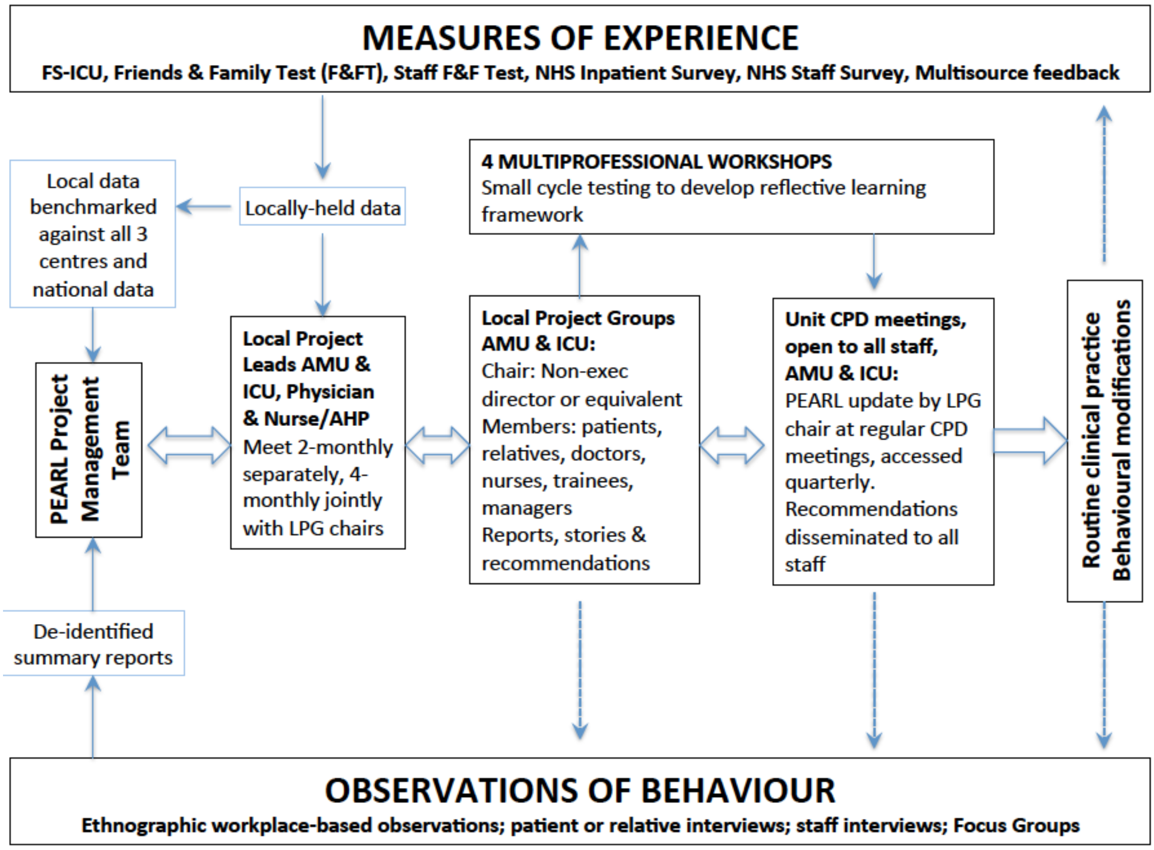
Table 2: ‘MIND-SPACE’ Contextual Factors	
Messenger	Who communicates information
Incentives	Risk aversion
Norms	Behaviour of others
Defaults	Path of least resistance
Salience	Novelty and relevance
Priming	Subconscious clues
Affect	Emotional associations
Commitments	Adherence to public promises
Ego	Personal gratification

Knowledge conversion: Recent behavioural sciences research has emphasised the interplay between tacit or implicit knowledge (the more automatic non-reflective components of behaviour – Daniel Kahneman’s System 1 thinking) – and explicit knowledge (the more analytical, reflective, slower System 2) [Khaneman 2011]. These two components, automaticity and reflection, are represented in the motivational element of COM-B. Implicit knowledge is inarticulate, rooted in actions, practice, ideals and emotions; explicit knowledge is accessible, conscious, can be articulated, and has a universal character [Nonaka 2009]. Implicit knowledge may be accessed to some extent through narrative, story-telling, and interactions in the workplace [Kothari 2012] and captured using techniques such as causal mapping [Ambrosini 2001]. Both exist along a continuum permitting knowledge conversion in either direction (Table 1). Importantly, the interplay between implicit and explicit knowledge, knowledge conversion, is a largely social task [Bandura 1977; Kothari 2012]; we hypothesise that the vector may be context-sensitive, with conversion to explicit knowledge achieved through group work (reflection *on* action), while the conversion of explicit to implicit knowledge occurs through immersion in the workplace (reflection *in* action) (Fig 2).

Knowledge conversion is essential if patient experience is to stimulate behaviour modification through reflection. Kahneman's System 1 is likely to be engaged frequently in the setting of acute and emergency healthcare when rapid decision-making is needed in conditions of complexity and stress. Acute care practitioners commonly rely on heuristics, pattern recognition and social norms to determine appropriate courses of action rapidly [Klein 1999]. This involves focusing on certain external 'clues' at the expense of others. Patient experience may not be a priority clue under these circumstances, and if repetitively discounted could become sidelined. Group work will therefore promote engagement of System 2 thinking and greater self-awareness, which with practice will be returned to System 1 as intuitive and increasingly normalised implicit knowledge.

Feedback provided by a moderator has been shown to be a more effective method of encouraging reflection than written feedback alone [Reeves 2013]. For this reason we will ask local project leads to appoint a moderator to facilitate group learning; this individual will be a 'critical friend' of each unit, such as a non-executive director, a chaplain, or a retired member of staff. The moderators will support staff in using quantitative and qualitative data from Workstreams 2 and 3 for reflection, acknowledging what is good while maintaining focus on what could be better. Data and information flows and the various working groups are shown diagrammatically in Fig 5, below. The local project groups will need some initial training in workplace-based reflective learning, for their own benefit and to enable them to act as role models and leaders in the larger staff meetings and in the workplace generally. We will provide this during the first Workshop in Year 1 (Fig 1).

Fig 5: DATA AND INFORMATION FLOWS (Workstream 4 linking WS2 and WS3).



Methods

Using the location-specific and benchmarked data acquired from Workstream 2 (patient experience) and de-identified information from Workstream 3 (ethnography), we will develop a reflective learning framework to incorporate patient experience in routine bedside practice (Fig 5). We will do this using a stakeholder co-design approach [King's Fund (a) and (b)] with iterative small-cycle testing.

Step 1: Structures and scheduling

The local medical and nursing local project leads for each AMU and ICU will hold bi-monthly meetings to review reports and plan the local project team meetings.

Each local project group (LPG) will hold quarterly meetings. As described in Workstream 1, each AMU and ICU local project lead will assemble a multidisciplinary local project group for their unit, chaired by a Non-Executive Director (NED) or equivalent external 'critical friend'. The LPGs will include patients, staff, a medical trainee, and a manager. Patients are central to stakeholder co-design of patient experience interventions, and will be drawn from the joint AMU/ICU patient and family groups established in Workstream 1. These local project groups and patient groups will also provide members for the Focus Groups in Workstream 3 (ethnography) and the Workshops in this Workstream 4.

All unit staff will be accessed quarterly through reporting from the LPG using existing fora such as continuing professional development (CPD) meetings, clinical handover meetings, and briefing notes.

Step 2: From Data to Information

Patient experience: While some of the measures of patient and relative experience drawn from the various surveys in Workstream 2 are accessible directly by each centre from Trust dashboards, the family satisfaction survey is not available in this way (and neither are the patient and staff Friends and Family tests reliably location-specific) so must be reported via the central project team for analysis. This permits benchmarking against the three centres in the project and against NHS England-wide performance data for the other metrics before reporting back to each centre through the local project leads. Results from the Family Satisfaction Survey will be supplemented by colour-coded bar charts for each item, and by an importance-performance plot which compares the % 'excellent' ratings for each item, with Spearman's correlation coefficient of each item with the overall weighted average summary score.

Ethnographic behavioural observations and focus group outputs undertaken in Workstream 3 will be de-identified, collated by the qualitative research group at Leicester, and returned to the local project leads via the central project team. Materials will take the form of short reports incorporating verbatim statements, to be made available both to the local project groups and to all unit staff at their quarterly meetings.

Observations of the local project groups and the general staff meetings will be made intermittently by ethnographers, and this will also form part of the feedback as the project proceeds.

Step 3: From Information to Action

The PEARL programme theory of how patient experience may promote reflective practice and better care has been described earlier in the Background to the project and in the introduction to this Workstream. The theory is presented graphically in Fig 2 and in annotated form as an attachment to the protocol. We hypothesise that the provision of quantitative and qualitative information in a social context will stimulate the conversion of implicit to explicit knowledge through group reflection *on* action; and that awareness of best practice will become implicit and normalised through reflection *in* action during clinical practice.

The local project teams will need exposure to models of workplace-based reflective learning to supplement their own experiences and understanding. We will do this in the first of four workshops planned during the study, using a mix of presentations from the project team content experts and discussion by the participants. The emphasis will be on integrating pedagogic theory with practical methods of reflection, including processes and activities which others have found useful, pitfalls to avoid, and methods of structuring discussions. An example is given by Krogstie et al [2013] which they term the CSRL model (originally 'computer-supported reflective learning') developed from earlier work by Boud [1985] and other sources. Their four stages of reflection include specific practical steps for conducting a reflection session which offers a useful framework for the local project teams.

Workshops:

The workshops will include representation from the three participating centres, incorporating the patient and relative 'pathfinder' groups (as soon as these are established), the local PI and research nurse, the clinical project lead for each acute medical unit and intensive care unit, the local project non-executive lead, and a trainee doctor, supplemented by members of the project management team, the ethnographer, and the chair of the scientific advisory board. The Study Steering Committee members will be invited to attend should they wish to do so.

The format for each workshop will be plenary presentations from 10:00h -12:30h, a break for lunch, followed by interactive group work in the afternoon, with the programme closing at 16:30h.

During the morning session each centre will be asked to give progress reports, with additional information from the project team on quantitative and qualitative measures of patient experience, ethnographic observations of behaviour (de-identified and non-attributable), and discussion of facilitators and barriers to the incorporation of patient experience in routine professional development. During the first workshop the presentations will focus on 'initial conditions' rather than progress. We will also record the participants' opinions about likely barriers and facilitators during the first workshop and compare these prior expectations with the reality of their experience as the project unfolds.

During the afternoon session participants will form discussion groups to consider various methods for promoting workplace-based reflective learning. The groups will be moderated by content experts from within the project team. The outputs from these groups will be used to develop the RLF toolkit (see below). The final plenary session will be used for feedback from the discussion groups, and to determine which tools/interventions each centre will elect to prioritise.

Piloting:

In the interval between workshops, the three centres will progressively incorporate patient feedback in their routine work, using group activities (professional development meetings, pathfinder group meetings, senior staff meetings) to focus on those behaviours amenable to improvement (Fig 5).

Local project teams will be asked to discuss the quantitative and qualitative information provided, and to supplement this with their own perceptions and intuitions, using events and stories from everyday practice and the materials from the Workshops. The chair will ensure that the Chatham House Rule is respected. Sufficient time must be given for individuals to consider the material at their disposal. The members of the group will be aware that the outputs from their deliberations will need to achieve support from the staff as a whole, including those who may be less engaged than the project group members. Each member will therefore need to act as a role model. Analysis by each local project team will seek to identify causes, mitigating factors and preventative actions for non-constructive behaviours. Positive commentary and examples of best practice will be collated concurrently, for dissemination to the staff.

The conclusions of each local project group meeting must be conveyed to the staff for further discussion and reflection at routine continuing professional development (CPD) meetings and to all staff through diverse methods of communication. Key messages and examples of best practice could be conveyed to the clinical staff by the senior doctor and senior nurse at clinical handovers as a ‘message for the day’, and could also form the subject of short end-of-day debriefings.

It is likely that a substantial proportion of the feedback received will be positive, and this should be used to give the staff confidence in their abilities and empower them to strive for even greater levels of excellence through constructive self-criticism. The presence of patient and family representatives at meetings will help maintain focus.

Areas for improvement may need to be prioritised. The Family Satisfaction Survey can be used to identify those aspects of experience seen as most important by respondents – usually aspects of communication, involvement in decision-making, and access to medical staff. Teamworking and interprofessional working relationships between staff may be identified as needing improvement by patients and relatives as well as by staff members themselves. Underlying beliefs, frameworks and power relationships will need to be examined if changes in behaviour are not to be short term and superficial in nature.

Measures of success: Uptake and impact will be evaluated though ethnographic observations and targeted staff surveys. Barriers to and facilitators of improvement efforts will be categorised using the COM-B approach (Fig 2 and Fig 3). Data from the various measures of experience (Workstream 2) will be used to monitor progress, and the local teams supported by regular teleconference calls between the local project leads and the project management team. Annual site visits by the chief investigator and project manager will be arranged in addition to the four plenary workshops.

Step 4: Development of the Reflective Learning Framework

Principles:

The aim of the Reflective Learning Framework (RLF) is to maximise the behavioural capacities, opportunities and motivation of health care staff so that acutely ill patients and their families have the best possible experience of their journey through the health system. The RLF will therefore focus on patient-staff interactions; will be located as close to the bedside as possible; will be rooted in action rather than theory; will include data-based and experiential material to engage both the deliberative and the emotional capacities of staff; and will aim to normalise and integrate best practice with minimal additional demands on staff time. Recent evidence from surgical patient safety research [Flynn 2015; McCulloch 2015] suggests that combining individual- and team-based interventions with systems-level interventions has greater impact than either alone; the RLF will therefore be directed at multiple constituencies, from front-line staff and patients, to 'back room' or systems-level managers and executives. The RLF will be co-designed with patients and their families.

Format and Content:

The reflective learning framework (RLF) will be presented in printed and electronic formats. The central element of the framework will be a toolkit and protocol containing guidance on optimising patient experience which can be adapted to maximise local ownership.

The RLF will likely have four sections:

I. A background literature review of patient experience and methods for optimisation which will be updated during the project.
II. Diagnostics: Locally generated (and where available, nationally benchmarked) quantitative and qualitative information on patient experience as described in Fig 2 (PEARL programme theory) – measures of experience and observations of behaviour from the six units in the three centres.
III. A toolkit.
IV. A protocol for implementation, adapted to local context.

Toolkit:

The toolkit will provide guidance on methods of optimising patient experience, including but not limited to the following domains, mapping the RLF to the programme theory shown in Fig 2.

<u>Structures</u>:

- Establishing patient and relative 'pathfinder' groups representative of the local population
- Pathfinder group involvement in clinical quality improvement initiatives
- Unit-based professional development activities to support learning and quality improvement
- Executive and managerial support

<u>Measures of experience</u>

- Surveys and quantitative methods
- Qualitative methods for analysing patient and staff experience
- Workplace-based debriefing techniques

<u>Observations of behaviour</u>

- Barriers and Facilitators
- Role models: characteristics, positive and negative
- Behavioural modifiers: checks, challenges and sanctions
- Staff non-engagement
- Approaches to 'difficult conversations'

<u>Learning from experience</u>

- Using performance feedback: debriefing, surveys, multisource feedback
- Methods of reflection and engagement in critical self-appraisal
- Mirrors: sensitivity to signals, learning from others
- Use of patient and staff feedback for staff appraisal & revalidation
- Strategies for managing positive and negative feedback: breakdown or breakthrough
- Techniques and styles of communication between staff and patients and their relatives
- Managerial and executive engagement: linking back room functions to front-line activity

Protocol:

The protocol will describe succinctly how the various elements of the toolbox may be deployed to promote reflective learning in the workplace as a normal part of routine clinical and professional development activities. The programme theory (Fig 2) provides an adaptive pathway which can be used with local testing by the participating centres to gain experience of 'what works' in their context. Some components of the toolbox will take precedence, for example establishing the patient and relative Pathfinder groups, and gathering local 'diagnostic' information on experience and behaviours.

In developing the protocol, we will take into account prior experience within our group on implementing quality improvement interventions [Dixon-Woods 2014; Matching Michigan 2013], recognising the need for local ownership of initiatives, the importance of the diagnostic phase, the constraints imposed by systemic or organisational factors, and the potential of single individuals to enhance or impede efforts to change behaviour. We will work with other experts in this field, including members of our advisory board which incorporates the Oxford Health Experiences Institute, and other researchers in this area, including those funded by the HS&DR Programme [Donetto 2016].

ETHICS

We will apply through IRAS for ethics approval for the ethnographic component, as this is the only element which lies outside 'usual care'. Institutional approval will be required for the ethnographer to observe clinical practice. Staff will need to be informed that observation of practice is taking place, and will have the right to refuse observations if they wish. Information sheets will be provided for both staff and patients in the clinical areas in which the observations are taking place. The observations will be anonymised and following editing and coding will not be attributable to specific sites or individuals. Ethnographic interviews with staff will be voluntary and anonymous. According to our interpretation of current NRES/IRAS guidance (http://www.nres.nhs.uk/applications/guidance/research-guidance/?entryid62=66988) this project is a service evaluation (it evaluates an existing form of health care delivery, and the intervention is not a research treatment). No patient-identifiable data will be collected. Survey questionnaires are not mandatory, and consent will not be sought from staff. For the avoidance of doubt consent will be sought from patients or relatives for the satisfaction survey.

DISSEMINATION

The Intensive Care Foundation supported by the UK Intensive Care Society has recently undertaken a James Lind Alliance priority setting partnership to determine areas for future critical care research (http://www.ics.ac.uk/icf/james-lind-alliance/). Several hundred participants, including patients and their families, prioritised "How can we use the experiences of patients and families to improve intensive care?" The PEARL project directly addresses this issue, thereby securing a substantial level of support from this important stakeholder engagement exercise. The project team has endorsement from the multidisciplinary UK Critical Care Leadership Forum representing 21 multiprofessional and patient organisations involved in intensive care, and from the Society of Acute Medicine representing acute physicians. The CCLF includes the Intensive Care Society (ICS) and the UK Faculty of Intensive Care Medicine (FICM) which has responsibility for the ICM postgraduate training programme.

The CCLF's partner organisations all have national conferences, active memberships and PPI representatives. The UK Faculty of Intensive Care Medicine is responsible for postgraduate training in ICM, and can incorporate pedagogic materials in its competency-based training programme for life-long learning. The reflective learning framework will be offered to national healthcare training organisations for incorporation in their curricula.

Two of the project advisory board partners, HEXI and ICUSteps, have sophisticated mechanisms for promoting professional and public engagement. For 10 years HEXI (Oxford Health Experiences Institute) (http://hexi.gtc.ox.ac.uk/) has collated and disseminated patient and carer experiences of health care across multiple domains. ICUSteps [http://www.icusteps.org/] has 9 years expertise specifically in supporting patients and their relatives who have suffered critical illness.

Research findings will be submitted for publication by high-impact scientific journals in the disciplines of patient safety, health services research, implementation science, and intensive care medicine. Reports to the HS&DR Board will be made according to current requirements, and will include powerpoint presentations.

PATIENT AND PUBLIC INVOLVEMENT

The PEARL project puts patients and the public at the centre of our research. We have three levels of involvement: individual co-applicants; PPI organisational participation in the scientific advisory board; and at national level through our endorsing organisations.

The concept for PEARL has been elaborated through close collaboration with the patient and relative 'Pathfinder' Group founded 5 years ago for the Intensive Care Unit at the Queen Elizabeth Hospital Birmingham. The members of this group are collaborators in several nationally-funded research projects. Our two PEARL PPI collaborators have direct experience, one as the patient, the other as a relative, of complex medical care delivered in different locations and across a long period of time. The collaborating centres will also be invited to establish patient and family groups to participate fully in co-design of the reflective learning framework.

Organisational PPI representation comes through the Oxford Health Experiences Institute (http://hexi.gtc.ox.ac.uk/) which has ten years of expertise in collating and disseminating patient and carer experiences of health care across multiple domains, and ICUSteps [http://www.icusteps.org/] with nine years expertise specifically in the experiences and support of patients and their relatives who have suffered critical illness.

Partner organisations (UK Faculty of Intensive Care Medicine, Critical Care Leadership Forum) have PPI representation integrated at Board level.

We will follow the tenets of good practice by re-imbursing PPI representatives for their time. We will also organise educational opportunities for PPIs in the form of seminars, workshops, and workplace-based observation of clinical practice in the acute care environment. PPI colleagues will be invited to continue the collaboration in follow-on grant applications.

We are keen that the PPI representatives in PEARL can disseminate their experience to others in similar projects. The West Midlands NIHR CLAHRC will arrange a PPI 'Summit' to which the PEARL PPI collaborators and those from other projects will be invited to share experiences and develop generalisable guidance for others.

CONFLICTS OF INTEREST

None known. Professor Bion was the Foundation Dean of the Faculty of Intensive Care Medicine and is the chair of the UK Critical Care Leadership Forum. Dr Brett is the President of the UK Intensive Care Society. Prof Bion is chief investigator of the HS&DR-funded HiSLAC project (www.hislac.org).

MANAGEMENT & GOVERNANCE

Research Timetable

We expect the project to take three years to complete, with a further three months (unfunded) to complete the major publication. If the project and budget were to be approved, we anticipate that we could start work within 6 months of contracts being exchanged, to allow time for research staff appointments.

Project set-up at the three participating centres will require six months, with a further three to establish the patient and relative groups. The four workstreams are staged so that outputs from the preceding workstream can be absorbed by the one that follows. The timetable is shown in Fig 1 of the attached protocol which is also presented as the uploaded flowchart.

Research Management Arrangements

The project will be directed by Professor Bion with the co-applicants and the collaborators under the governance of the Study Steering Committee. A core project management group will be formed to deal with the day-to-day conduct of the research. The management group will include the project manager who will be appointed (as a full collaborator) with responsibility for project timelines, budget, reports and coordination. The project steering committee will be supported by the Scientific Advisory Board (SAB) chaired by Dr Steve Brett, who has undertaken extensive work in patient experience and is President of the Intensive Care Society. The SAB brings together individuals with special expertise in patient experience, behaviour change, data management, psychology, quality improvement, nursing, and acute care. Project progress will be reported to the HS&DR Board in the usual way, with additional reporting to the major stakeholder groups, the Society of Acute Medicine and the UK Critical Care Leadership Forum.

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Appendix 1a: COM-B model components and examples

COM-B model component Definition	***Example***
Physical capability Physical skill, strength or stamina	*Having the skill to take a blood sample*
Psychological capability Knowledge or psychological skills, strength or stamina to engage in the necessary thought processes	*Understanding the impact of CO_2 on the environment*
Physical opportunity Opportunity afforded by the environment involving time, resources, locations, physical barriers	*Being able to go running because one owns appropriate shoes*
Social opportunity Opportunity afforded by interpersonal influences, social cues and cultural norms that influence the way that we think about things, e.g. the words and concepts that make up our language	*Being able to smoke in the house of someone who smokes but not in the middle of a boardroom meeting*
Reflective motivation Reflective processes involving plans and evaluations	*Intending to stop smoking*
Automatic motivation Automatic processes involving emotional reactions, impulses and reflex responses that arise from associative learning and/or innate dispositions	*Feeling anticipated pleasure at the prospect of eating a piece of chocolate cake*

Appendix 1b: Behavior Change Wheel intervention function definitions and examples

Intervention function	**Definition**	***Example of intervention function***
Education	Increasing knowledge or understanding	*Providing information to promote healthy eating*
Persuasion	Using communication to induce positive or negative feelings or stimulate action	*Using imagery to motivate increases in physical activity*
Incentivization	Creating an expectation of reward	*Using prize draws to induce attempts to stop smoking*
Coercion	Creating an expectation of punishment or cost	*Raising the financial cost to reduce excessive alcohol consumption*
Training	Imparting skills	*Advanced driver training to increase safe driving*
Restriction	Using rules to reduce the opportunity to engage in the target behavior (or to increase the target behavior by reducing the opportunity to engage in competing behaviors)	*Prohibiting sales of solvents to people under 18 to reduce use for intoxication*
Environmental restructuring	Changing the physical or social context	*Providing on-screen prompts for physicians to ask about smoking behavior*
Modelling	Providing an example for people to aspire to or imitate	*Using TV drama scenes involving safe-sex practices to increase condom use*
Enablement	Increasing means/reducing barriers to increase capability (beyond education and training) or opportunity (beyond environmental restructuring)	*Behavioral support for smoking cessation, medication for cognitive deficits, surgery to reduce obesity, prostheses to promote physical activity*

Appendix 1c. Behavior Change Wheel policy category definitions and examples

Policy Category	**Definition**	**Example**
Communication/ marketing	Using print, electronic, telephonic or broadcast media	*Conducting mass media campaigns*
Guidelines	Creating documents that recommend or mandate practice. This includes all changes to service provision	*Producing and disseminating treatment protocols*
Fiscal measures	Using the tax system to reduce or increase the financial cost	*Increasing duty or increasing anti-smuggling activities*
Regulation	Establishing rules or principles of behaviour or practice	*Establishing voluntary agreements on advertising*
Legislation	Making or changing laws	*Prohibiting sale or use*
Environmental/social planning	Designing and/or controlling the physical or social environment	*Using town planning*
Service provision	Delivering a service	*Establishing support services in workplaces, communities etc.*