**Creating Highly Reliable Healthcare Organisations through Reverse Exchanges**

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# Creating Highly Reliable Healthcare Organisations through Reverse Exchanges

## Abstract

### Purpose
This paper explores patient to care provider reverse exchanges to improve the care processes and service supply chain using an online feedback platform. This paper demonstrates how a better understanding of timely and unsolicited feedback ('voice of the patient as a customer') stimulates local interventions to improve service delivery and enact the essential characteristics of Highly Reliable Organisations (HRO).

### Design/methodology/approach
A realist approach involving an exploratory hospital case study using user feedback from an IT patient feedback platform. The methodology included interviews, secondary data and access to thousands of patient feedback narratives.

### Findings
The findings show that a systems approach to the supply chain, using real-time feedback to enact process improvement is beneficial and a fruitful source of innovation for professional services staff. The setting of the improvement focuses on a true 'voice of the customer' rather than attempting to improve arbitrarily internal process efficiency has major benefits for staff and their engagement with the right interventions to support higher performance.

### Practical implications
The findings show major positive benefits for the adaptation and constant reflection of staff on the service provided to patients. The approach provides a means of reflecting as to whether the current supply chain and service provision are fit for purpose as well as reliable, efficient and of value to the consumer.

### Originality/value
This study is one of a few that adopt the consumer orientation needed to fully exploit the concepts of patient-centric improvement by including dynamic feedback in the supply chain and systems approach to care.

### Keywords

Professional services, Highly Reliable Organisations, Reverse Exchanges, Social media, Healthcare

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## 1. Introduction

The conceptualisation and study of professional service supply chain reverse exchanges (such as healthcare) lag behind manufacturing quality practice (Esain et al., 2016). Much industrial product flow and improvement practices have been imported to service supply chain exchanges (the conversion cycle and patient flow) but reverse exchanges (RE) via feedback and/or rework cycles for failed healthcare service provision receives little attention. A reverse exchange occurs when a product/service consumer returns faulty product/parts or exchanges feedback information that the provider uses to make or improve the product/service provided (Kumar et al., 2016).

Most dominant high performance manufacturing operating models demand a 'closeness to the customer' throughout the product lifecycle, much less attention and sensitivity to patient feedback and experiences happens in the healthcare context. Healthcare is a distinct professional service setting where 'customers' do not often return, service failures are high, diagnostic training is needed to provide a patient-centric solution, and few presenting conditions require a standardised response from a single clinician (Lindsay et al., 2019). Without such understanding, the complex socio-technical sub-systems do not learn and adapt to result in greater organisational reliability (Weick and Sutcliffe, 2007).

A universal definition of a "professional services environment" is elusive but includes distinct episodes of activity, high levels of diagnostic requirements, and high levels of integrated collaboration within and externally to an organisation to support

the service user (Harvey, 2016). Services are also dynamic complex adaptive systems where poor information flow sub-optimises performance. Significant technical knowledge, high levels of skill variety to make informed decisions, high visibility of the service user and sometimes low volumes of service demand characterise healthcare services (Esain et al., 2016; Garvin, 1987). Healthcare is such a professional service with a variety of presenting conditions that require the determination of a patient-specific care pathway (Harvey, 2016). A care pathway represents a complex interaction of services, provided on-demand, and to deliver an effective solution (quality) with sensitivity to the 'user' experience (O'Connor et al., 2000; Lillrank et al., 2011). The effectiveness, efficiency and experience of public healthcare services are influenced by many stakeholders that must coordinate care to avoid poor patient outcomes/experience (Vries and Huijsman, 2011). The patient's active engagement ("visibility") with the care process means healthcare provision and reverse exchanges represent significant learning opportunities (Osborne, 2018).

Service supply chain 'reverse exchange' research is underdeveloped and Kumar et al. (2016) highlight such a research gap and call for greater empirical studies to inform theory and professional practice. Understanding reverse exchanges (user feedback and complaints) for professional services is under-explored. How businesses learn, improve and evolve is a significant gap that goes beyond the bi-directional exchange of goods through dyadic reverse or return logistics processes (e.g. He et al., 2016; Kumar and Kumar, 2016; Esain et al., 2016). Professional service supply chain research must focus on purposively selected complex case studies (including organisational and individual units of analysis) to understand multiple interactive and dynamic exchanges (Currie and Suhomlinova, 2006; Trochim et al., 2006; Grönroos, 2011; Kaiser and Ringlstetter, 2011) over protracted service deliveries (McColl-

Kennedy et al., 2015; Harvey, 2016; Esain et al., 2016; Osborne, 2018). He et al (2016) argued that without effective reverse exchanges, feedback/learning would not occur and lead to increased and unnecessary costs of operation and no recovery opportunity.

The gaps identified above in the public service supply chain literature are significant. This paper attempts to address the aforementioned gaps by adhering to the following purpose of this study- "*to understand how a professional service healthcare organisation can engage with an online platform for accessing 'unsolicited feedback' from service users and achieve organisational and supply chain changes to support the features of a Highly Reliable Organisation*".

Highly reliable organisations (HRO) are defined as an organisation that operates with almost error-free performance over a long period in safety-critical environments (Weick and Sutcliffe, 2007). To achieve such reliability, timely and relevant service feedback for triggering countermeasure introduction and learning is critical for the promotion of a culture of constant vigilance for the slightest signs of deterioration in systems safety (Weick and Sutcliffe, 2007; Chassin and Loeb, 2013). The HRO approach is derived from safety-critical supply chain research (Air Traffic control, nuclear power generation, military equipment, public transportation etc.) and contexts requiring significant development of staff skills ('inside-out thinking' leading to process improvement) and viewing the organisation from a service user perspective ('outside-in') (Pronovost et al., 2006; Federico, 2018).

Esain et al (2016) identify how feedback cycles from service users/patients (reverse exchanges) support safer care, continuous improvement and better user experiences. A focus on the service user is common to general supply chain improvement approaches (McColl-Kennedy et al., 2015; Snyder and Engström, 2016) and service

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improvement (Grönroos, 2011; Osborne et al., 2015)  yet safety-critical supply chain research has focused on 'resilience' rather than reliability (Weick and Sutcliffe, 2007). Few studies have accessed 'unsolicited' reverse exchanges (feedback) used in a safety-critical environment to improvement and greater organisational reliability. This study of reverse exchanges also seeks to improve the professional practice of healthcare by exploring the utility of 'user closeness' and patient-directed service improvement.

The paper commenced with an exploration of the research gap and derived a conceptual theoretical model (see table 1 and figure 1). The research design, using an exploratory supply chain case of two closely cooperating healthcare organisations, is defended. The findings and experiences of staff are then reviewed before concluding that the use of reverse exchanges offers many benefits for professional services and their improvement. The conclusions present the view that using reverse exchanges, enabled by social media, provides a vital relationship with service users.

## 2. Background Research

There is limited research concerning professional healthcare service delivery, over extended episodes, and how reverse exchanges (e.g. customer complaints) can be used to improve processes and the patient experience (McColl-Kennedy et al., 2015; Harvey, 2016). These interactive and participative reverse exchanges (involving service users) include exchanges between clinicians/departments and inter-organisational exchanges between the wider supply chain including manufacturers/service providers, regulatory body, and policymakers (McColl-Kennedy et al., 2012, 2015).

The reverse exchanges in the professional services supply chain make it a very different context and sectors such as the legal profession, architecture and others have tended to engage with improvement processes that are internally facing and focusing on waste reduction rather than true customer satisfaction (Osborne, 2018; Osborne et al., 2015). Research into the 'closeness' of professional services supply chains with customers has often been limited to the use of post hoc customer satisfaction surveys, and time-lagged reflections about the service received which renders such data limited for improvement interventions (Snyder and Engström, 2016). Professional services feedback lags mean customer 'moments of truth' cannot adequately be captured and used for adapting current working practices because the patient has left the care system (Grönroos, 2011; Grönroos et al., 2015).

Healthcare service quality, safety, care delivery and delivering a positive experience are difficult outcomes to achieve individually or as a collective (Esain et al., 2016; Osborne et al., 2015). In the absence of a profit motive, which is the context of the British public NHS, such high performance is better framed as developing the capabilities of a 'highly reliable organisation' (HRO) and supply chain where error-free performance results from heightened staff attention and a culture of constant vigilance to detect the slightest signs of deterioration in care system service provision (Weick and Sutcliffe, 2007; Chassin and Loeb, 2013).

## 2.1 Highly Reliable Organisations and Improved Patient Experience

Professional healthcare service reliability, therefore, requires a much higher 'user visibility' and focus on service improvements based on the actual patient experience (Martin et al., 2015; Esain et al., 2016; Osborne, 2018). Weick and Sutcliffe (2007) highlight the importance of a 'collective mindfulness' of care staff that is used to report and improve perceived unsafe conditions and behaviours. Such sensitivity requires

useful and dynamic feedback of care system performance as the patient is experiencing it.

Improvements to speed up unsafe healthcare practices will result in catastrophe (patient harm or worse) as the efficiency of the process is prioritised over the effectiveness of the care solution (Hollnagel, 2009). In this manner, better feedback for healthcare safety and quality management is complex. The patient has many encounters with staff even within a single day, and many potentials for failure exist over the many episodes of care that form a pathway for a patient (often lasting many months of continuous or episodic treatments). To be efficient and effective, the HRO supply chain must learn from user feedback for process quality, patient experience improvements and healthcare staff must accept criticism constructively rather than using it apportion blame to staff (Pronovost et al., 2006; Fedrico, 2018).

Weick and Sutcliffe (2007) define the key features of an HRO as 'a *pre-occupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise'*. Multiple HRO case studies confirm the organisational need to understand the characteristics and behaviours that support reliable service provision (Weick and Sutcliffe, 2007; Pronovost et al., 2006). A *pre-occupation with failure and commitment to resilience* focus on learning (from failures and feedback) which in a healthcare setting would be facilitated through reverse exchanges between patients and the service provider.

A *pre-occupation with failure* can only be sustained if supply chain relationships result in meaningful reverse exchanges of timely and accurate information on the performance of the service provider. The introduction of timely feedback, in this study, an online patient social media platform was used to stimulate adjustments to professional management practice. The challenge to professional healthcare service

supply chains is how an organisation's sensitivity and situational awareness can be heightened to detect and react to even weak signals that deviation and potential unreliability has happened.

A 'reluctance *to simplify'* HRO principle prioritises contextual understanding of issues rather than the quantification of complaints. Even where timely feedback is received, the quality and meaningfulness of such information are vital if the right service adaptation is to occur. To harness feedback, in the context of an open and just culture of failure reporting without fear of retribution by the organisation is key to continuous improvement towards HRO status. A modern professional service must also enact a '*Commitment to resilience'* so that the occurrence of inevitable errors does not lead to catastrophic system failure or patient harm. Post error/catastrophe recovery protocols, pre-empting failure, using redundant equipment and multi-skilled staff to absorb such failure is promoted. A reactive learning capability, therefore, underpins much of the supply chain literature, especially the subject of service failures. The final HRO principle, '*deference to expertise',* involves decision making whereby highly trained front-line staff, supported by senior management, are empowered to make decisions needed to maintain service reliability. For healthcare organisations, expertise is held by front-line staff who are in direct patient interaction and have the highest knowledge of the care process, exact performance levels. HRO principles are therefore highly relevant to healthcare supply chains

## *2.2 Understanding the experiences of patients as service users: solicited versus unsolicited feedback*

Extant literature concerning patient involvement and micro-level service improvement of healthcare organisations is dominated by attempts to solicit feedback.

Snyder and Engström (2016) concluded such systems had reduced effectiveness despite significant investment in educating and preparing patients, staff, and support mechanisms to manage such information flow. Their study highlighted the need to research new models of patient involvement and how they support organisational performance improvement. The contemporary healthcare interest in service co-production is exclusively based on 'solicited' patient participation despite its methodological and practical biases (Grönroos et al., 2015; Osborne et al., 2015; Snyder and Engström, 2016). 'Unsolicited' patient/family service user feedback represents a new approach to supply chain reverse exchanges (Esain et al., 2016; Kumar et al., 2016). Information technology advances allow greater insight into healthcare systems performance, and third-party intermediaries have been used to 'post' such exchanges.

Patient feedback methods, globally, have mainly used solicited feedback and relied on patient surveys, focus groups, 'family and friends' tests, and patient experience trackers (Ziewitz, 2017). These methods suffer from biased accounts, face-to-face data collection biases, and 'inbuilt' methodological bias that favours the service provider and their usefulness has been questioned (Rozenblum et al., 2017). The slow speed of solicited feedback was found to reduce its relevance to staff (Lee et al., 2017) and the costs/delays of collecting data limit improvement activities (Greaves et al., 2012; Sheard et al., 2017; Rozenblum et al. 2017).

A major problem of the current UK supply chain feedback process is the unidirectional exchange of solicited information from patients to the provider and the absence of bi-directional information exchanges which ensure better learning and more effective service improvements are undertaken. Other studies have identified compounding factors including a lack of time to engage in improvement, the

unwillingness of senior management to change complex structures, inflexible governance practices, lack of specialist knowledge sharing, expensive IT system development costs and a lack of ownership, which all inhibit improvement based on a stronger patient voice. The UK healthcare provider culture has been criticised as *'comfort seeking'* rather than *'problem sensing'* and staff avoid dealing with real patient criticism (Dixon-Woods et al., 2013; Sheard et al., 2017). The inertia to improve combined with improvement methods skills gaps (staff equipped for process improvement) and knowing what to improve has meant the service user experience has rarely been harnessed as an effective reverse exchange (Lee et al., 2017; Sheard et al., 2017).

The extant literature gaps, coupled with 'unsolicited' patient feedback methodological limitations and greater patient IT literacy proved the need to address healthcare reverse exchanges. 'Unsolicited' feedback (e.g. social media platforms) are considered preferable forms of real-time feedback that offer context-rich insights and localised descriptions. The feedback is relevant to care staff and timely enough to prompt countermeasure for improvement (Hawkins et al., 2016; Adams, 2011; Sheard et al., 2017; Lee et al., 2017). Such studies go beyond dyads to involve multiple stakeholders (e.g. intermediaries, service users, different departments of service providers, and even government bodies), and feedback can be used for improvement purposes.

Hamm et al. (2013) argue social media platforms represent an easy and inexpensive source of unsolicited data with near real-time feedback, and patient willingness to express concerns online has increased exponentially since 2004. Web platforms for such purposes exist including kiesBeter.nl (Choose Better in the Netherlands), 'NHS choice, and Care Opinion' in the UK. Such platforms allow patients

to leave narratives (Adams, 2011; Gibbons and Greaves, 2017; Rozenblum et al., 2017; Sheard et al., 2017) and the medium offers many benefits in exploiting real-time and unsolicited feedback (Baines et al., 2018). Unsolicited online platform data allows contextualisation of feedback and directly addresses what the service provider needs to improve to enhance patient satisfaction (Ziewitz 2017; Rozenblum et al., 2017). The latter practices could support the principles of the HRO supply chain using reverse exchanges to heighten staff sensitivity to patient needs in an area of management practice that is poorly understood. Having established the supply chain gaps in academic knowledge, the next section will present the theoretical framework upon which this study is founded.

## 2.3 Theoretical Framework

A 'user-centric' healthcare service improvement methodology requires patient feedback for restorative purposes (Sheard et al., 2017; Snyder and Engström, 2016; Grönroos, 2011) and improvement (Argyris and Schon, 1974) through bi-directional reverse exchanges of feedback between the service user and the provider if the improvement is to occur (Sampson, 2000; Ellram et al., 2004; Sampson and Spring, 2012; Esain et al., 2016; Kumar et. al., 2016). A theoretical framework (Sheard et al., 2017) which includes three interrelated concepts derived from organisational sociology literatures (Scott et al., 2000) and institutional change approaches in healthcare (Macfarlane et al., 2013; Lockett et al., 2012) was designed by the research team involving the key concepts– *organisational readiness to change (OR), normative legitimacy (NL), and structural legitimacy (SL).*

The three interrelated concepts are useful for episodic healthcare service failures analysis involving multiple stakeholders (hospital, patient and their family, and online patient feedback platform). The three concepts also help to understand the roles of individuals, teams and the generation of improvement actions and responses to experiential patient feedback to be explored.

The 'organisational readiness to change' OR concept (Weiner, 2009) goes beyond dyadic relationship exchanges to capture the role of senior management and enacted changes at the 'macro' and 'meso' levels as a result of unsolicited real-time patient feedback between clinical and non-clinical staffs at different hierarchical levels to improve the patient experience. The Wiener (2009) OR concept is a multi-level and multi-faceted construct which includes the value co-creation focus advocated by Gronross (2011) and the confidence/ability building of experiencing change and improvement identified by Osborne (2018). Confidence and skills are critical precursors to a successful implementation of complex healthcare changes because it builds organisational behaviours that support continuous improvement processes (Weiner, 2009). The OR concept relates to the SL and NL concepts that are required at the Ward (meso-level) and individual levels (micro-level) to facilitate organisational change.

In this paper, we attempt to understand how individuals and teams, from different hospital wards, respond to a subscription service provided by the Care Opinion organisation and what changes are made to improve the quality of care and clinical effectiveness as a result of feedback. The concept of 'legitimacy', from institutional theory (Lockett et al., 2012), was applied *"to understand the behaviour of individuals with respect to transforming their own contexts and institutionalising new agendas which they support"* (Sheard et al., 2017, p.20) rather than the traditional

conceptualisation (Suchman, 1995). The research team adopted Lockett's et al. (2012) requirement that individuals in organisations reflect the best unit of analysis within a case study strategy.

Understanding personal motivations to use and the derived outcomes from the CO subscription supports the *normative legitimacy* (NL) concept. This concept measures the understanding of actions taken by staff members and how feedback informs adaptations to their working practices (Macfarlane et al., 2013; Lockett et al., 2012). Lockett et al (2012) defines NL as *"moral orientation being based on the ability to convince others of 'what ought to be' or 'what is the right thing to do"*. SL is defined as *"the power that emanates from professional hierarchy and jurisdiction"* and how it affects an individual when they foster change. The combination of NL (micro-level focus) or SL (meso- or macro-level focus) depends upon a staff member's position in an institution, and this adds higher dimensions of analysis to service supply chain reverse exchanges. Table 1 shows the alignment of HRO principles with the three dimensions of the theoretical framework to form a holistic understanding of complex reverse exchange effectiveness. Figure 1 shows the three elements of the theoretical framework are aligned with the purpose of this study (i.e. how the reverse exchanges between patients and a hospital lead to improvement and learning).

*<<Include Table 1 here >>*

*<<Include Figure 1 here >>*

Figure 1 shows the interaction of the formal expression of the actual patient experience (narratives), the service provided, and, enacted improvement resulting from unsolicited reverse exchange feedback. The ability to exploit learning results from detected deviations in patient experience, and this triggers a learning process to

identify causal factors to adapt the service provided (feedback loop). Detection is a two-way relationship with the patient supplied narrative because it triggers learning and heightens staff sensitivity to patient requirements. Another two-way relationship exists between the narratives and the timeliness of improvement reaction. Understanding deviations are necessary for effective solutions to be introduced promptly and introduced via inter-departmental collaboration. Timely implementation of change reinforces the feeling that 'the voice of the patient' is engrained in the culture of the organisation.

A major enabler for OR to change results from empowered staff who recognise the legitimacy to act (SL and NL) concerning unsolicited feedback and receives support from the senior management team. The model presents the concepts that underpin formalised reverse exchanges and higher process performance.

## 3. Research Methodology

A realist approach (Bhaskar, 2008) was selected for theory building using a purposively selected supply chain or one hospital and a subscription business providing unsolicited patient narrative feedback. A realist case study approach is suitable for theory building and investigating under-researched phenomena. A longitudinal case involving mixed-method data collection techniques was designed so that changes in hospital performance could be assessed using informant observations, reviews of patient stories, and secondary data (Bhaskar, 2008). The realist tradition holds that reality includes observed realities and informant perceptions (Zachariadas et al., 2013; Sayer, 1992).

A literature review (which utilised vital journal article databases, including Scopus, Google Scholar, etc.) identified the lack of understanding of reverse exchanges for professional services improvement. The case organisation was purposively selected because it had invested in online feedback and represented valuable access to the research problem (Eisenhardt 1989; Pettigrew 1990; (Barratt et al., 2011; Yin, 2014). Two organisations, connected in a supply chain with bidirectional data flows, collaborated to form this case study: Care Opinion CO (social media platform operating company) and an English NHS Hospital (a subscriber to the media platform) that was comparatively underperforming and 'in special measures' (Care Quality Commission, CQC - the independent regulatory body responsible for ensuring adherence to quality standards of over 30,000 health and social care providers in England).

The case was deemed suitable because the organisation was in special measures and required to make improvements because it was one of 23 in England deemed 'inadequate' by the regulator (CQC) as a result of underperformance across a variety of quantitative measures and patient risks scores. The hospital subscribed to CO to understand areas of improvement, and to enact service improvements (for patients and staff) in an effective and timely manner. A 2-year advanced CO subscription (permitting multiple hospital Wards to directly access posted feedback in real-time) was purchased. Supplied patient narratives name the Ward and prompt for service provider confirmation that improvements have been undertaken and such  patient concern/feedback in the form of a constructive conversation with patients and their families (2-way) was thought to offer cultural learning, collaboration and team/patient benefits.

### 3.1 Care Opinion

The not-for-profit enterprise Care Opinion ([www.careopinion.org.uk](www.careopinion.org.uk)), established in 2005, a offers an online patient story website, for *"people to be able to share their experiences of health and care in ways which are safe, simple, and lead to learning and change"* (Care Opinion, 2019). The CO platform offers patient feedback that is posted without fear of retribution and is used by 500+ user organisations (9500+ active NHS users nationally working with over 340,000 stories since establishment). 76% of these stories receive a service provider response that details the corrective actions that will be taken.

The exchange system facilitates learning by providing individual experience feedback to the department/hospitals (origination location) that delivered the care. The IT system provides detailed stories, narratives and feedback (see Box 1) but the quality of the resultant improvement remains with the specific hospital and actions taken as a result of this awareness (see Box 2) and adaptive learning (Ziewitz, 2017).

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**BOX1: "Maternity Waiting Area"**

*I recently suffered a miscarriage……… After my miscarriage was confirmed I had to re-attend for another couple of appointments. Both times, I was asked to take a seat in the waiting area……. I had to sit in the same waiting area as all the clearly still pregnant mothers to be. I was devastated and still coming to terms with it.*

*Sitting there, I was surrounded by the reminder of what I had lost and what everything they had to come…….. I expressed my thoughts to the midwife who said it was a common query that came up, with a lot of women feeling that way. If this is the case can a different waiting area be considered for patients and their families who have suffered a miscarriage?........I seriously hope I don't have to go through a miscarriage again and if so I hope there is a more appropriate waiting area for mothers who miscarry.*

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The posted narratives are context-rich (emotional states, feelings and care 'moments of truth') and have high levels of detail (see the miscarriage experience above). Many stories identify local interventions to the internal supply chain of the hospital and,

supported by senior management and facilities management teams, changes in practice can be enacted. The patient experience (Box 1) is a reverse exchange feedback which would have been undetected/unimproved previously. Such stories offer significant insights, learning ad the basis for improvements (e.g. the provision of a private room and a multi-disciplinary team approach - see BOX 2).

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**BOX2: Response from Staff Member - "Maternity Waiting Area"**

*Dear XXXX*

*Thank you for sharing your feedback on Care Opinion.*

*I am very sorry to hear about your sad loss ……. I will ensure your feedback is fed back to the team and I know they will appreciate receiving this…………….I have reviewed the waiting area with the team and we have agreed it will be possible to convert a room into an additional waiting area for women who may have suffered a loss in their pregnancy. This change will be in effect within a very short timescale……I hope that you are recovering well over time.*

*Best wishes*

*XXXXXX*

*Lead Midwife*

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The patient narratives (Box 1 and Box 2) align with the research framework (see figure 1) and demonstrate how the three key framework elements (OR, SL, NL) facilitate learning and empowerment to enact improvement.


### 3.2 Data collection and analysis

The mixed-method approach enhanced triangulation, and eight semi-structured interviews with hospital staff were conducted via telecom/skype (duration circa sixty minutes each) and triangulated with crowdsourced hospital performance data and significant documentary evidence (secondary data). Two executive interviews with CO (duration one hour+ each) were conducted. The Director of Patient Safety and

research team identified and gained access to interview informants from different hierarchical levels and roles associated with CO narratives. Informants also included senior executive, hospital middle managers including the Patient and Family Experience Director, Chairwoman, Director of Nursing, Associate Chief Nurse, Deputy Complaints Manager, Service Improvement Lead, Maternity Matron, and Ward Clerks. These informants allowed triangulation of macro, meso, and micro levels of the case study so that reverse feedback exchanges and how different stakeholder collaborations were enacted as a result (CO, patients/families, clinical and non-clinical staff from differing departments) to improve care quality. Ethical considerations were discussed with all informants and the option to withdraw (at any time) was offered, and all data was anonymised (Data Protection Act 2018).

The ten interviews were audio-recorded with informant consent and transcribed verbatim. These qualitative research transcripts formed a collection of accounts, and the researchers were satisfied that they had reached data saturation at the end of the interview schedule (Mason 2010; Chileshe et al., 2016). The sample size conforms to others used for theory-building in operations and supply chain management research (e.g. Guest et al., 2006; Bortolotti and Romano, 2012; Kumar and Kumar, 2016; Kumar and Sanchez Rodrigues, 2019). The research design allows theoretical generalisation from the exploratory case research findings rather analytical generalisation (Barratt et al., 2011; Yin, 2014).

The interview data were analysed using a systematic and iterative coding of the rich informant accounts (Khan, 2014) and pattern matched using data displays. The insights gained were presented back to the interviewees for validation and then coded/analysed using the theoretical framework (table 2 and figure 1). The codes generated were divided into common categories linked to outcomes from experiential

patient feedback (Miles et al., 2013) and mapped against the five characteristics of HRO. The first author coded the data and compared it with HRO themes and the three elements of the conceptual framework (OR, SL, NL). These codes were validated by the two co-authors of the paper.

The multi-relational concepts of the theoretical framework (Figure 1) enabled the first-order coding by the authors. The question of how senior management, through changes in policies and structure, enact improvement from patient reverse exchanges (see top right in figure1) was linked to the second-order category of the HRO principles 'pre-occupation with failure' and 'commitment to resilience' (table 1) and the aggregate order concept of 'OR to change'. The standard coding protocol was employed to map first-order themes, second-order categories and the aggregate order concept.

Interviewing multiple informants (see Appendix1 for the protocol), from different positions in the hospital organisational hierarchy, allowed cross-comparison of views with CO staff interviews and secondary hospital data were triangulated to increase the reliability and validity of the data collected (Yin, 2014; Bryman and Bell, 2011). Regular field note reviews, interviews and initial findings (with hospital informants) were undertaken before permitting the inclusion of the account into the data set to ensure consistency of informant accounts and the establishment of common patterns from data displays to be discerned.

## 4. Findings

The findings, based on the longitudinal study of reverse feedback exchanges between patients, CO and care delivery teams are focused on the three theoretical framework

aggregate order concepts (see table 1, figure 1) – Organisation Readiness (OR) to change, Normative Legitimacy (NL) and Structural Legitimacy (SL), and five 2nd order categories derived from the HRO principles (table 1).

### 4.1 Organisational Readiness to Change

A 'brokerage firm' such as CO has a vital role in facilitating reverse exchanges to initiate improvement interventions and nationally has benefitted from feedback response rates that vary from 96% (Scottish providers), 80% (English) and 40-50% (Welsh). The hospital's '*organisational readiness*' was assessed as it entered CQC special measures when the regulator required demonstration of patient feedback being used for performance improvement (2016). At the tie, the Director of Patient and Family Experience (PFE) summarised the hospital's deteriorating performance was the result of *"….we probably weren't learning quickly enough from ….patients…. From the solicited feedback that we got from the public, from our service users and their families, we were not good at listening and responding to them. So a really devastating report from the CQC"*.

The hospital senior management team purchased and offered the CO subscription service to all staff and had resulted in high levels of staff interest and positive engagement. Patient stories fed back were heard by all relevant staff and stimulated learning especially concerning patient safety which heightened the sensitivity to operations, deference to expertise and was supported by engaged transformational leadership. The *Director of Nursing* reported patient stories/responses and innovations were formally integrated into each monthly board meeting. Feedback from representatives of different patient interest groups (including Patient and Family Experience, Patient Voice, Health Watch, and Patient Ambassadors) also concurred

that "voice of the patient" had greater significance/resonance with board-level decision making and direction setting.

At the corporate (macro) level, each board meeting also involves supply chain representatives including senior executives and patient representatives spending the twenty minutes discussing patient stories and what has resulted (positive and negative reflections and interventions). The importance of discussion for learning was reinforced by the *Director of Nursing* to stimulate interventions, and a *Corporate Clinical Matron* role was created (investment) to coordinate bi-directional reverse exchanges of information with the patient stakeholder groups and complaints teams. All clinicians and board members were trained and registered as CO "listeners" to review patient stories.

The Associate Chief Nurse (ACN) highlighted the advantages of feedback reaching the right level of organisational decision-making in real-time and found 90% of feedback was positive with 10% mixed in viewpoint despite the failing hospital promoting patients complaints. All interviewees confirmed the positive unsolicited feedback motivated staff to find new ways to improve. Positive stories of improvement were shared via the intranet and Twitter, and staff received certificates of recognition for each improvement project completed (cultural reinforcement).


Organisational structural investments to enhance reverse exchanges and observed behaviour confirmed efforts to *defer to expertise,* and board-level monitoring of posted stories and immediate team responses (countermeasure) supports an engaged senior management team involvement and local team pre-*occupation with failure.* The process of learning was formalised, and a CO generated email (macro-level central hospital team) sent to the relevant team (meso-level intervention) requesting a

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response and a conformation of enacted countermeasure completion. The narrative originator (patient author) is informed, by email, of any changes made. The Deputy Complaints Manager (DCM) argued "*We had a very <u>clunky system</u>, it <u>didn't feedback to clinical teams</u>; it was there just for inputting data and reporting performance…<u>we struggled to really get any information back down to our frontline clinical teams</u>".* The pattern matching of patient stories revealed very few complaints (which mainly concerned with poor estate and facility maintenance). DCM interviews confirmed superior project completion rates and more effective control embedded within each intervention to prevent reoccurrence.

A *commitment to resilience* was observed when senior managers modified the structural arrangements for complaint handling (macro-level change), which resulted in more effective online feedback (relative to traditional systems). The effectiveness (accuracy and timeliness) of reverse-exchanges improved and direct unfiltered reverse feedback to the care delivery team did not result in fears of blame. The PFE Director enacted structural changes to improve the patient experience and deployed authority to the PFE team to respond to patient postings. Within two years, four team members had risen to eleven full-time facilitators of CO generated improvements. This coordinating role resulted in reduced response times, multi-disciplinary team engagement and released staff time to train others in CO improvement processes which empowered 'sharp-end' staff.

The hospital Service Improvement Leader (SIL) reinforced the positivity of the new unsolicited feedback suggesting that *"happy patients means happy staff",* and proposed CO improvements had enabled effective root cause analysis and prevention of major mistakes and this resulted in a greater *pre-occupation with failures and staff were better able to detect weak signals of failure.* The head of Audiology cited

evidence of greater '*pre-occupation with failure*' and '*commitment to resilience*', proposing senior departmental management (meso-level interaction) were using monthly review meetings of solicited and unsolicited feedback to identify patterns and systemic care issues to be improved. Emerging patterns were communicated hospital-wide and multi-functional teams were formed to address root causes and communicate the resultant learning. Such inter-departmental collaboration changes ('meso-level') improved system responsiveness, improved working relationships and generate positive value creation. An example from the Maternity Matron showed *"… we did make a policy change for fathers staying overnight in the ward. You know on a regular basis there isn't many facilities to stay at all but that's what patients want and that's what we have managed to put in place"*. CO feedback, therefore, allowed the customary practice to be challenged and shared with other wards so that standardisation of practice occurred. Such meso-level promotion means *"once it …. shows that in one ward it works or couple of wards it worked then it gets spread out ... Which is …. good really"* (Ward Clerk interview).

The patient and family experience team collate information for all improvement projects and host *shared learning sessions* (macro-level intervention) to promote standardisation. The Service Improvement Lead reinforced the utility of knowledge exchange asserting "*have done some shared learning… we have done lectures … we have rolled out a video, it can lead to new projects, so it is important and sort of a big deal". 'You Said - We Did'* projects (responses to CO feedback) were communicated to patient groups using multiple media (from whiteboards in Wards to Tweets, newsletters, and the hospital/team Facebook page) to extend the communication process.

To avoid over-reaction to erroneous feedback, the hospital introduced quality and validity checks to investigate contradictions where *"…two stories didn't match from what we read and what we knew had taken place …[often].. the patient was …. exaggerating and factually incorrect, and that was quite difficult to manage"* (*Service Improvement Lead*).

In general, CO reverse exchanges were considered "*….as TripAdvisor of the healthcare World"* (*Patient and Family Experience Director),* and such transparency provides pressure to enhance reliability. The *Deputy Complaint Manager* emphasised *"going forward patient stories will be used more and more and will become an integral part of what we do …. Everything we do every day whether it be admin staff, clinicians and whoever, I really do think that it is the right way to go"*. A summary of findings linked to OR to manage change as a result of reverse exchange of feedback from patients through CO platform and improvement derived is presented in table 2.

*<< Include table 2 here >>*

### 4.2. Normative Legitimacy and Structural Legitimacy

The establishment of a multi-disciplinary coordinating forum of senior managers (head of nursing, service managers, and consultants), a meso and ward-level change provided structural legitimacy for the CO process. It reinforced the importance of a 'patient experience focus'. The significance of this organisational mechanism is summarised by the Director of Nursing who proposed *"The Head of nursing works with ward matrons and sisters …..service managers of the ward deal with clinical and operation issues…. [the] multi-professional team…. are getting our consultants onboard… they absolutely want to get involved which I think is absolutely brilliant"*.

Anyone in the organisation can see narrative posts, and the onus is on the relevant team to respond which reinforces a *'deference to expertise'* to staff members solving issues they were part of. Actual improvements have included multi-disciplinary working to promote better patient hydration and *'colour coded trays'* introduced to denote patients 'at risk' of dehydration which improves staff sensitivity and situational awareness of vulnerable patients (nurse-led innovation). The value co-creation, through patient-initiated reverse exchanges and delivered by empowered ward teams, reinforce a dynamic, evolving, experiential, relational, collaborative, and collective learning organisation model.

The *normative legitimacy* to report deviations in expected care standards combines a staff *'deference to expertise'* and *'sensitivity to operations'* which means front-line staff take ownership of their process and enjoy empowered responsibility to enact change for higher reliability. Micro-level interventions (by 'sharp-end' front-line staff) allows learning to improve rather than correcting failures ('doing things right').

The paediatric unit senior team wanted to capture all signals for care improvement from the background noise of narrative CO accounts (*reluctance to simplify HRO principle)*, to adopt a holistic approach to patient experience improvement. The patient-team reverse exchanges identified issues, including the catering menu. In response, the Head of Nursing organised a "patient and family" open day where thoughts on the menu and other services improvements were identified by the paediatric unit team and discussed openly. Menu changes resulted without structural changes or policy changes and improvements was enacted within days by local level departmental staff (demonstrating NL) and working across the organisation to manage change across wards (demonstrating SL).

The hospital *Ward Clerk* and Deputy Complaint Manager welcomed the senior management team's use of recognition processes to identify and train ward staff to facilitate quality improvement and to acknowledge team efforts when positive responses were received. The ward staff were encouraged to follow-up negative feedback, understand root causes and enact improvement (close the loop), which ensured patient concerns were addressed, and learning was extracted from each improvement. Each learning cycle enabled employees to identify weak signals of care deviations in narratives adhering to the *reluctance to simplify* HRO principle.

The research also found many such changes resulting from weak signal detection. The *Deputy Complaint Manager* presented a Maternity Ward example, where the Matron and Ward Sisters organised a *'Breastfeeding Awareness Day'* and asked patients to post their experiences on CO. Whilst the majority of feedback was positive there were concerns regarding ward privacy and dignity while breastfeeding. As said by Deputy Complaint Manager, an 'infant feeding' team was established to make improvements (train new mothers and enhance physical ward privacy) - *"As the direct result of some of their feedback – we are putting together and infant feeding team!! So there's gonna be a separate set of midwives only to support the new mums so that they won't get conflicting information."*

The findings from this study demonstrate a positive attitude towards patient narratives, positive learning and staff empowerment to make the change. The reverse exchanges positively reinforce the mutual benefits of process improvements and generate staff confidence/competence to enact reliable processes and enhanced standards of hospital care. The transformational impact of feedback-driven improvement was also highlighted by the Service Improvement Lead, who proposed patient feedback has *"just opened up this whole world of communication that perhaps*

*the NHS didn't have before"*. Individual-level normative legitimacy and structural legitimacy through collaboration, team working, trust, listening to feedback has been found to be significant enablers for improved healthcare professional service delivery.

Not all feedback is positive and negative feedback can demoralise staff. When the central quality team (PFE team) receives solicited or unsolicited feedback about a specific staff member, they ensure sufficient support is provided to the staff member by their line manager and specialist staff (counsellors from the occupational health therapy team). This reinforces the positivity of improvement processes for the individual as well as the organisation. The examples of senior leadership staff protection to avoid targeted victimisation while simultaneously encouraging staff to learn from feedback/improve is another example of creating a 'just culture' that enables higher levels of innovation and improvement to result.

The OR change concept was enabled by open and honest communication which promoted a learning culture (ward and individual levels). The NL and SL concepts were the outcome of this supportive strategy, policies, and structural amendments for improvement enacted by the hospital senior management team (after entering special measures). However, staff interviews revealed concerns and anxieties about receiving negative feedback and also personally responding to it publicly on an open platform which was reduced by the senior management team's supportive and anti-blame approach. These adaptations reveal a level of staff humility and support for staff self-reflection, which is juxtaposed with the traditional defensive stance typically adopted by professional staff when criticised.

Table 2 summarises the key findings linked to NL and SL required to enact improvements at the meso and micro levels.

## 5. Discussion

Professional services supply chain reverse exchanges are varied, complex and negative experiences are often masked/delayed by solicited feedback. This paper demonstrates such exchanges enable service providers to enhance single-loop learning (corrective actions) and then second loop learning (service improvement) from process failures and a prized modern organisational capability especially for healthcare providers (Osborne, 2018; Grönross, 2011).

The changes in the selected case hospital, through greater integration with the service user, demonstrate a higher affinity with organisational design changes to embrace the principles of HRO and an inclusive approach to managing quality and safety throughout the organisation. The research supports Harvey's (2016) assertion that professional services supply chains must understand systemic and protracted episodes of service/care failure and must involve multiple interactive exchanges between stakeholders to do so. Such an approach also supports the work of Grönroos (2011), McColl-Kennedy et al. (2015) and Osborne (2018).

The research findings offer a better understanding of the process and structural changes needed to exploit unsolicited feedback to care staff (Snyder and Ingström, 2016; Osborne, 2018) and how a distributed approach to all care failures raises staff situational awareness. Such heightened sensitivity leads to high detection of deviations in care performance and less time to direct improvement resources/efforts. The case demonstrates the power of integrating experiential patient feedback data for the purpose of organisational learning - to learn how to get the patient experience right and then to engage in secondary learning of how to improve and rethink the care process (Rozenblum et al., 2017).

From a systems perspective, the use of unsolicited real-time experiential feedback allows care processes to be adjusted and the effects of changes to be witnessed with greater immediacy. The change process does present challenges for professionals including exposing issues such as staff education, improving organisational communication, changing organisational roles and responsibilities (structure) and facilitating collaborative learning across the supply chain (Snyder and Ingström, 2016; Sheard et al., 2017). The ability to converse with the patient also exposes the need to address patient feedback with clarity and encouraging patients to get involved with care processes and value co-creation is a new skill needed by all clinicians at the case (Snyder and Ingström, 2016).

The research also addresses a key academic literature gap in positively integrating unsolicited patient stories to trigger improvements (Lee et al., 2017; Ziewitz, 2017; Sheard et al., 2017). This study shows, even without private sector motivation, the concept of 'customer focus' can be used to harness the essential informational feedback through reverse supply chain exchanges. The research satisfies Lee et al. (2017) demand for a greater exploration of applied methods for effective use of patient feedback for enacting improvement across the healthcare supply chain. This research has harnessed such technology and shows how effectively these methods can support a case study in crisis. The work advocates a contemporary theme in complex service improvement (Rozenblum et al., 2017; Gibbons and Greaves, 2017; Ziewitz, 2017; Baines et al., 2018). The study findings also show, even in a professional service organisation, hospital staff engagement with improvement has enhanced as a result of greater visibility of the patient and transparency of the care they received. This is unusual for the healthcare setting where, traditionally, senior medical staff were disinterested in such engagement (Hamm et al., 2013; Rozenblum et al., 2017).

The CO platform of patient and family *'truth based personal experiences'* sharing is, therefore, a source of innovation and has meaning to staff who traditionally work in functional 'silos' with rigid deference to hierarchical organisational positions (Borkman, 1976). Interviewees responses from both CO and the case confirm the practicality and utility of such mechanisms (Greaves et al., 2012), and how quicker reverse exchange feedback prompts timely adaptations to services without recourse to highly bureaucratic forms of change management (or incident review) which supports the findings of Hawkins et al., (2015) and Rozenblum et al., (2017).

The theoretical framework to understand the relationship between experiential feedback and HRO design principles was influenced by Sheard et al (2017) who identified the problems of bureaucratic 'solicited' patient feedback systems. Their study identified the need for staff to exhibit normative legitimacy (micro-level focus) and giving autonomy, ownership and resources for promoting structural legitimacy to enable intra-department (meso-level changes) and inter-department collaboration for learning (macro-level changes). The development of such organisational features enables multi-level organisational improvements based on patient feedback, i.e. NL--> SL--> OR. In our paper, we argue that NL and SL can be influenced if organisational readiness for change is supported by the senior management team (OR --> NL & SL). Senior management development of supportive staff conditions to enact NL has been identified by previous studies (Pronovost et al., 2006; Weiner, 2009) and autonomy/ownership of processes at the individual and ward level supports intra- and inter-departmental collaboration. Such collaboration results in learning and the exploitation of SL (Lockett et al., 2012; Macfarlane et al., 2013; Sheard et al., 2017; Federico, 2018).

The mapping of HRO principles with the theoretical framework (OR, SL, and NL) is a novel contribution in the field of professional service supply chain research. The theoretical framework (see table 2 and figure 1) was a useful structure to analyse the dynamic changes in professional service delivery and confirmed a trajectory of change towards HRO as a result of a new form of online experiential patient feedback. The widespread sharing of issues and innovations (facilitated macro- and meso-level changes across process departments) meant process changes would result because staff recognised their co-dependencies in delivering care across departmental boundaries. A *reluctance to simplify* suggested learning was generative rather than reductionalist (Pronovost et al., 2006; Weick and Sutcliffe, 2007).

Adams (2011) found reverse exchange transparency created staff concern of exaggerated claims and criticisms of staff, but no such evidence existed with this longitudinal case. Despite the anxiety and discomfort, interviewees revealed that patient's stories helped them to identify common failure patterns and resulted in greater cross-functional teamwork. The findings show the open and transparent reverse exchange process reinforced the HRO principles of '*reluctance to simplify'*, *'sensitivity to operations'* and *'commitment to resilience'* within the context of a true learning organisation.

The key informant interview data, drawn from individuals of different hierarchical levels and from two organisations meant the study was suitable for theory building using this as an exploratory pilot study. Future research is being conducted with multiple hospitals to assess the impact of transparent unsolicited reverse exchanges on other teams and cultures. Larger sample size will enhance the generalizability of the research and patient feedback.

This study of maternity and paediatric departments was amongst the first users of CO, and most of the effective changes have come from these departments. The researchers will extend the research to understand the contextual factors that impact on different departments subscribing and effectively utilising narratives for improvement. This will lead to an understanding of contextual factors that facilitate or inhibit specific staff from embedding HRO characteristics.

## 6. Conclusion

The purpose of this study was to show the benefit of 'unsolicited' reverse exchanges between patients and professional service healthcare organisation in stimulating local interventions to improve service delivery and enact the essential characteristics of Highly Reliable Organisations. The ability for complex organisations to engage in a quality-focused approach to patient care and the safety of vulnerable citizens is a key priority and capability. Highly reliable organisations demand this form of learning. The learning cycles of 'doing things right' as well as 'doing things better' involves many different supply chain stakeholders who are dependent upon each other's quality and delivery of care (this combined effort determines the patient experience). The adapted theoretical framework provided an excellent structure to analyse how professional services exhibit or transition towards HRO by listening to online experiential patient feedback. The theoretical framework facilitated in understanding how micro-, meso-, and macro- levels in the organisational hierarchy need to align and integrate for initiating quick improvement as a result of real-time 'unsolicited' feedback from patients or their families. The findings identify many examples of how patient feedback has informed changes at all levels and resulted in fewer errors and higher reliability. The

case study highlighted the benefit of using online platform to seek experiential patient feedback data for improving or redesigning existing care provisions and processes.

Senior management commitment is key for organisational readiness to change and to influence normative and structural legitimacy. The process of implementing a healthcare organisational change is undoubtedly difficult, but senior leaders should promote the use of such methods so staff can genuinely see their process as it is and not as it imagined to be. Leaders must also understand how to use reflection as a legitimate aspect of the new staff role, and also they must set the direction and focus for quality improvement for staff, including facilitating the interventions to improve. The result of the study implies that empowerment and ownership of individuals (i.e. promote normative legitimacy) at ward level facilitates intra-department collaboration and learning (i.e. provides structural legitimacy). The case exhibited many features that support staff empowerment and engagement with reverse exchanges (understanding or implementing change).

The findings identify many management implications, including how patient/user feedback informs improvement at all organisational levels to reduce errors and enhance reliability. Healthcare change processes involve multiple professions, staff, and generally result in failure (Ham et al, 2016). The frantic and complex nature of patient care means untimely feedback has almost no value, yet the cultivation of staff engagement through, unsolicited and timely feedback has increased staff attitudes and the rate of quality improvement. The immediacy of feedback, in the form of a narrative, for positive or negative communication direct to the staff, is facilitated via the care opinion patient narrative database and the ability of staff to learn is supporting organisational factors cultivated by senior management. These factors emphasise teamwork and collaboration with a focus on learning features (enabled by increased

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transparency, accountability of staff and empowerment to act). Such learning processes identify areas of practice that need modification to allow a more effective selection of countermeasures.

The ability for complex organisations to engage with quality-focused improvement, especially care organisations is a key priority and an HRO capability. Highly reliable organisations demand this form of learning, ideally while the patient is still receiving care. The implications for management, therefore, concern the need to enact policies (and exhibit behaviours) that support empowerment and ownership of the service delivery and improvement processes. Managers must allow unfiltered positive and negative feedback to return to the staff involved. Such reverse exchanges reinforce effective learning and sustainable change for highly skilled professional service staff. Such features are under-explored by previous studies of improvement in services that are more complicated than routine 'back-office' operations. This research has shown how a transparent 'customer focus' has high utility in improving the performance of healthcare organisations.

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# Appendix 1

## Interview Guide

The questions listed below was asked to range of clinical and non-clinical staff involved in the delivery of care. Only a set of questions were linked to a particular profession such as consultant, nurse, improvement specialist.

- In your opinion, what would be the most valuable outcome to be derived from using patient feedback platform?
- What is the approximate percentage of positive, negative or mixed feedbacks a hospital receives?
- How do you manage and prioritise the feedback process?
- How is the feedback passed to the relevant department?
- How do you follow-up on the complaints after it has been passed to right person/department?
- How do you liaise with the respective department of the hospital to close the complaints?
- How you implement the change from the feedbacks you receive?
- What are the control measures implemented to ensure mistakes will not be repeated in the future?
- Is there any reward/ appreciation to the staff following a positive feedback?
- How do you manage to engage the departments with the desired change?
- Do you face any challenges in ensuring that everyone throughout the hierarchy buy into this process?
- What are the benefit reported by respective department and overall benefits realised by hospital such as reduction in errors, improved care, better communication, etc. as a result of those patient stories?
- Do you provide feedback on changes made to the author/ patient/ their family following the feedback?
- On a critical feedback, where the patient safety is concerned, how does the staff adopt the safe practise for future?
- Please explain the process you follow within your ward/department to investigate the complaints or feedback.
- Do you get support from your line manager to close the feedback loop?
- Do you receive relevant training linked to patient safety and continuous improvement?
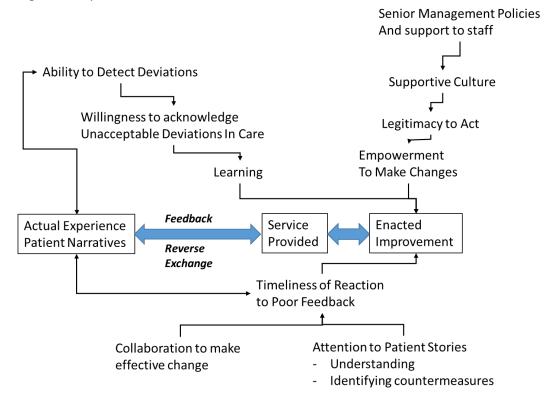
*Table 1 Mapping HRO principles with the three concepts of the theoretical framework (Adapted from: Sheard et al., 2017)*

| Theoretical Framework concepts and definition | HRO Principles | Alignment |
|---|---|---|
| **Organisational Readiness to change** (macro and meso level): There is a collective, or shared *"resolve to pursue the course of action involved in change implementation"* (Weiner, 2009) | ▪ Pre-occupation with failure: *Organisations need to identify early warning signs or signals, analyse them and act on them* <br><br> ▪ Commitment to resilience: *HRO is not error free and errors create catastrophic events. Staff must be committed to learn from failures* | The two HRO principles are very systems level and requires leadership team intervention to make changes to structure, processes, and practices. The OR concept will be investigated at macro and meso (intra- department working and collaboration) levels |
| **Structural Legitimacy** : *"moral orientation being based on the ability to convince others of 'what ought to be' or 'what is the right thing to do'"* (Lockett et al., 2012) <br><br> **Normative Legitimacy**: *"the power that emanates from professional hierarchy and jurisdiction"* (Lockett et al., 2012) | ▪ Reluctance to simplify: *Organisations need to avoid simplification to take better decisions; simplification may sometime lead to ignorance or loss of data.* <br><br> ▪ Sensitivity to operations: *Front-line operators are most aware of the current state of operations; Mangers must encourage staff to report variations and deviations in processes.* <br><br> ▪ Deference to expertise: *In difficult situations, bottom-up decision making is required for timely and informed decision making by those who do the job (experts in practice).* | The three HRO principles overlap with SL and NL concepts. Adhering to three HRO principles requires individuals and teams motivation and collaboration to facilitate change |

*Table 2 Exhibition of HRO principles and benefits realised at macro, meso and micro levels*

| Theoretical Framework Concept | Summary of findings | Benefits/Improvement |
|---|---|---|
| **Organisational Readiness to change** | | |
| Commitment to resilience | CO subscription taken for all departments and staff to improve reverse exchange process; benefit of access to real-time patient feedback by the right department mentioned in the story | - Patient stories reaching right level of organisation resulting in improved decision-making, enacting change, and countermeasures are communicated back to patients |
| Pre-occupation with failure & Commitment to resilience | Patient story discussed at monthly meeting by senior management; also involves different supply chain stakeholders including patient and staff representatives | - Improved organisation learning as all success stories from CO reverse exchange process shared via intranet and staff recognised for their effort in closing the loop |
| Pre-occupation with failure | Listening to different Patient/Family groups to encapsulate issues and enact improvement | - Lessons from hospital-wide improvement projects shared across the hospital for organisational learning |
| Commitment to resilience | Corporate Clinical Matron role created (investment) to coordinate bi-directional reverse exchanges with patient/family representatives | - Real-time feedback leading to more effective root-cause analysis by cross functional team as memory of staff are fresh to address the concern and close the loop quickly. |
| Commitment to resilience | Patient and Family Experience team numbers increased from four to eleven in two years | - Improved inter-departmental collaboration lead to enhanced system responsiveness, improve working relationships and positive value creation

- Reduced erroneous "noise" and inaccuracy in the reverse exchange process |
| ***Structural and Normative Legitimacy*** | | |
| Reluctance to simplify | Establishment of a multi-disciplinary coordinating forum at ward level for addressing patient concerns/feedback | - Establishment of a 'just culture', enabled by senior leaders supporting, protecting, and encouraging staff that enables higher levels of innovation and improvement |
| Reluctance to simplify | Staff trained to capture all signals for care improvement from background noise of narrative CO accounts | |

| | | |
|---|---|---|
| Sensitivity to operations | Open and honest culture to promote organisational learning | - Positive staff experiences of change reinforce the - dynamic, evolving, experiential, relational, collaborative, and collective approach to learning |
| Sensitivity to operations | Shift in culture across wards where mistakes and errors acknowledge, reported, and resolved. | |
| Deference to expertise | Required training provided to staff who is directly involved in the patient story reporting positive or negative outcomes | - Staff members have taken ownership of problem solving, providing solution and closing the loop |
| Deference to expertise | Front line staff empowered to enact change | - Creating new capability where staff emphasize on learning to improve rather than to just 'do things right'<br><br>-Several mini projects led to service improvement including improvement in catering menu, reduction in dehydration of elderly patients, improvement in maternity ward privacy |

*Figure 1 Operationalisation of the theoretical framework*

Senior Management Policies
And support to staff

Ability to Detect Deviations

Supportive Culture

Willingness to acknowledge
Unacceptable Deviations In Care

Legitimacy to Act

Empowerment
To Make Changes

Learning

| Actual Experience Patient Narratives | Service Provided | Enacted Improvement |
|---|---|---|

**Feedback**

**Reverse Exchange**

Timeliness of Reaction
to Poor Feedback

Collaboration to make
effective change

Attention to Patient Stories
- Understanding
- Identifying countermeasures