

# PROACTIVE RISK MONITORING IN HEALTHCARE (PRIMO): PREREQUISITES FOR DEPLOYMENT IN DIVERSE SETTINGS AND THE IMPACT ON SAFETY CULTURE

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# EXECUTIVE SUMMARY

## BACKGROUND AND OBJECTIVES

A major weakness of current incident reporting systems is that they produce little actual change. The perceived lack of learning and absence of relevance to the local work environment may have a detrimental impact on the willingness of staff to contribute to incident reporting. As part of the Health Foundation Safer Clinical Systems (SCS) programme, a novel approach to organisational learning – **Proactive Risk Monitoring in Healthcare (PRIMO)** – was developed and implemented in a hospital dispensary during 2008 - 2010. The results of the pilot study suggested that PRIMO generated actionable learning, and that it had a positive effect on safety culture within the dispensary. The pilot study recognised that there was a need to test the approach in other settings. The study described in this report investigated the implementation of PRIMO in two diverse settings, and sought to identify factors that contribute to, or that inhibit, the successful implementation of the approach.

The findings should be of use to practitioners who are looking to complement their existing approaches to organisational learning. The findings should also be of interest to researchers and practitioners, who are trying to understand factors that affect the success of service improvement approaches more generally.

## METHODS

The study design utilised a qualitative case study approach. PRIMO was implemented at two case study sites (Radiology Department; Surgical Emergency Assessment Unit) over the duration of 12 months. During this time, the implementation lead at each site kept an implementation diary. After the implementation period, semi-structured interviews were conducted with members of the implementation teams. The implementation diaries and the interviews were analysed qualitatively through Thematic Analysis to identify common prerequisites for the successful implementation of PRIMO. Semi-structured interviews with staff prior to the implementation of PRIMO and after the implementation period were undertaken to describe their safety-related attitudes and behaviours. Changes in these attitudes and behaviours were identified and described qualitatively.

## FINDINGS

The case studies provided evidence that PRIMO generated actionable learning that fed into visible improvements in the work environment at both case study sites. Experience from implementing the

PRIMO approach over a 12-months period in the two diverse settings suggests that there are a number of common prerequisites that greatly influence the extent to which the approach can contribute to successful proactive organisational learning and improvement. The identified prerequisites are:

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**Staff engagement**

Active staff engagement can lead to more proactive learning, a sense of empowerment, and contribute towards positive staff morale. Key strategies for engaging staff include adequate communication and feedback, collaborative solution development, and harnessing of professional incentives. Obstacles in engaging staff are loss of continuity due to frequent staff changes, low staff morale and negativity, staffing levels and workload, slow pace of change, and difficult relationships across departmental boundaries.

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**Senior management support**

Senior managers can enable change. They can also engage at a managerial level with stakeholders across departmental boundaries. Key strategies for securing senior management support are early involvement of senior managers, and data-driven communication backed by systematically gathered evidence. Obstacles in obtaining senior management support include the lack of priority for proactive learning and improvement, the personality of individuals and their interests, and the high turnover of senior management staff, which makes establishing working relationships difficult.

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**Team composition**

Adequate team composition facilitates staff engagement and contributes to securing senior management support. In this way it also contributes to the successful implementation of improvements. Strategies for building an appropriate team include the assembly of a large, multi-disciplinary team with different strengths, the inclusion of ward champions to ensure a continued presence in the work environment, and the early involvement of senior managers in the team. Obstacles

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include inadequate staffing levels, frequent staff changes resulting in a lack of continuity of team membership, a limiting part-time role that reduces the presence in the work environment, and a lack of senior management involvement due to other priorities.

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**Organisational readiness** Proactive learning and service improvement should become a core function and priority of the organisation. In order to influence senior decision-makers it is crucial to present quantitative evidence, and to communicate what the benefits to the patient and to the organisation would be. Obstacles include productivity pressures, low staff morale and negativity, and a predominantly reactive approach that keeps the organisation in a continuous mode of having to manage crises.

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These prerequisites describe the context of improvement, which is dynamic, and which interacts with the implementation of the improvement intervention to produce a unique change journey. The extent to which improvements are successful depends on how staff contextualise the intervention and implementation in their organisational reality, i.e. whether and how staff are able to anticipate and adapt to changes in their organisational and social context.

## CONCLUSION

Following on from the encouraging results of the pilot study, this research attempted to provide further evidence about whether, how, and in what context organisational learning based on frontline staff perceptions about everyday hassle can lead to improvements in practice. The two case studies described in this report have demonstrated that it is possible to harness frontline staff feedback and to generate actionable learning from this. When staff are asked for their input, when they feel that their contribution is valued, and when they can see visible improvements as a result of this, people are happy and willing to engage with organisational learning activities.

From the analysis of the two case studies we derive the following practical recommendations about organisational learning for healthcare organisations:

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**1. Make time available for staff to participate in organisational learning and improvement** The research provided evidence that a key barrier to staff engagement is the lack of time to contribute to organisational learning and improvement. In the case studies staff frequently used their lunch breaks or their free time at home to contribute to PRIMO. Learning and improvement should be recognised as activities that provide value, and resources should be allocated accordingly.

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**2. Listen to staff and value their input** Staff from both case study sites frequently suggested that they were aware of problems but did not report these because they felt that it would be perceived as moaning, and they chose to get on with things instead. This is a missed opportunity. Systems, such as PRIMO, should be put in place to encourage staff to raise their concerns.

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**3. Provide feedback and visible improvements** All staff commented positively on the improvements that resulted from PRIMO. At the same time, staff had a critical attitude towards incident reporting, because they did not receive any meaningful feedback, and because they did not perceive that any change resulted from it. In order to sustain staff engagement with organisational learning and improvement, feedback systems should be established. The learning generated should result in visible improvements. This means that improvements should be developed both short-term as well as more strategic longer-term improvements.

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**4. Develop professional incentives for all staff groups to participate in organisational learning and improvement** Doctors in training can utilise participation in service audit and service improvement activities as part of their professional development. This is a very useful system. However, no comparable professional incentives exist for other staff groups, such as nurses. Professional incentives should be developed that encourage and reward participation in

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improvement activities. Some of the nursing staff suggested that even simple things such as joint posters and presentations at national meetings would provide a welcome recognition and thank-you for their participation.

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**5. Focus on everyday problems and how staff deal with these, not just on harm events**

The research suggested that staff perceive that they need to fill in an incident report when some harm event or potential harm event occurred, such as a patient fall. Often this is done in order to cover oneself, but the learning derived from these reports is minimal. On the other hand, there is real benefit to be gained from looking at small problems before these accumulate and combine with other factors to produce harm events. In addition, there is a need to capture and to understand how staff deal with these problems, because most of the time staff are able to compensate for deficiencies in the system. Organisations have a real opportunity to learn from success (i.e. no harm event), not just from failure.

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**6. Develop a culture of proactive learning and continuous improvement**

Time and effort will be allocated to learning and improvement only if these activities are perceived as integral to the organisation's functioning. A culture change is necessary from a reactive, predominantly target-driven culture, towards a culture that is proactive and that supports improvement. This culture change has to be initiated and sustained from the top of the organisation's hierarchy.

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In addition to these practical recommendations for healthcare organisations, health service researchers should focus on and investigate everyday change and improvement. Every improvement journey is unique, and it is important to describe and to understand the way in which participants interact with their organisational and social context to produce this unique journey. Further research is required that studies how people anticipate and adapt to changes in their context to produce successfully improvements.

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## LIST OF ABBREVIATIONS

A&E	Accident and Emergency
CQC	Care Quality Commission
CT	Computed Tomography
DGH	District General Hospital
EAU	Emergency Assessment Unit
ED	Emergency Department
GFT	General Failure Type
GP	General practitioner
IT	Information Technology
MRI	Magnetic Resonance Imaging
NHS	National Health Service
NPSA	National Patient Safety Agency
NRLS	National Reporting and Learning System
PDSA	Plan, Do, Study, Act
PRIMO	Proactive Risk Monitoring in Healthcare
R&D	Research and Development
SCS	Safer Clinical Systems
SEAU	Surgical Emergency Admissions Unit
UK	United Kingdom

## CHAPTER 1 INTRODUCTION

This report explores the use of a novel approach to organisational learning for improving patient safety – **Proactive Risk Monitoring in Healthcare (PRIMO)** – in two National Health Service (NHS) organisations, and it describes common prerequisites for the successful implementation of the approach to enhance organisational learning for improving patient safety in diverse settings. Such prerequisites relate to staff engagement, senior management support, implementation team composition and organisational readiness.

Findings are presented from a qualitative study that followed the implementation of PRIMO over the duration of 12 months in a Radiology department and a Surgical Emergency Admissions Unit (SEAU) in two NHS organisations in England. The study was funded by the Health Foundation. The study was led by a research team based at Warwick Medical School, University of Warwick, in collaboration with staff from the two case study organisations that implemented PRIMO.

This project was designed following the successful pilot study that was carried out during 2008 – 2010. During the pilot study, PRIMO was developed and implemented in the dispensary at Hereford County Hospital (1, 2). The results of the pilot study suggested that PRIMO generated actionable learning, and that it had a positive effect on safety culture within the dispensary. The pilot study recognised that there was a need to test the approach in other settings, as the hospital dispensary has very different characteristics from, for example, a ward environment. The study described in this report investigated the implementation of PRIMO in two diverse settings, and sought to identify factors that contribute to, or that inhibit, the successful implementation of the approach. The findings should be of use to practitioners who are looking to complement their existing approaches to organisational learning. The findings should also be of interest to researchers and practitioners, who are trying to understand factors that affect the success of service improvement approaches more generally.

### 1.1 AIMS AND OBJECTIVES

The purpose of this study was to further test the ability of PRIMO to generate actionable learning for improving patient safety in a range of settings, and to identify common prerequisites for the successful implementation of the approach in diverse settings.

The project addressed the following research questions:

- R1: What are common prerequisites for the successful implementation of PRIMO in diverse settings?
- R2: To what extent does PRIMO have an influence on the safety-related attitudes and behaviours of staff?

The detailed objectives of the project were:

- O1-1: To support the implementation of PRIMO in diverse study sites
- O2-1: To identify common prerequisites for the successful implementation of PRIMO across the study sites
- O3-1: To describe the baseline safety-related attitudes and behaviours of staff in the study sites
- O3-2: To describe any changes in safety-related attitudes and behaviours of staff after 12 months
- O4-1: To provide recommendations for enhancing organisational learning for patient safety with the help of PRIMO in diverse settings

## 1.2 STUDY DESIGN

### 1.2.1 SETTING

Organisations participating in this study were two English NHS hospitals. At one hospital (Case Study A) the Radiology department implemented PRIMO. At the second hospital (Case Study B) the Surgical Emergency Admissions Unit (SEAU) implemented PRIMO. The two departments were chosen to reflect different characteristics: on the one hand a highly structured diagnostic services environment, and on the other hand a busy and dynamic ward environment that provides emergency services also during the night time. Further details about the study environments are provided in the respective case study chapters.

### 1.2.2 METHODS

The study design utilised a qualitative case study approach (3, 4). PRIMO was implemented at each case study site over the duration of 12 months. During this time, the implementation lead at each site kept an implementation diary. After the implementation period, semi-structured interviews were conducted with members of the implementation teams. The implementation diaries and the interviews were analysed qualitatively through Thematic Analysis (5, 6) to identify common prerequisites for the successful implementation of PRIMO. Semi-structured interviews with staff prior to the implementation of PRIMO and after the implementation period were undertaken to

describe their safety-related attitudes and behaviours. Changes in these attitudes and behaviours were identified and described qualitatively. The methods used for the different objectives are described in detail in the corresponding sections. A summary is provided in Table 1.

**Table 1: Summary of research methods and data sources**

<b>Implementation</b>	
	The aim of the implementation part of the project was to further test the PRIMO approach, and to describe the type of learning that it generates. The main data sources used were:
Case Studies	Implementation in a Radiology department Implementation in a Surgical Emergency Admissions Unit
<b>Common prerequisites</b>	
	The aim of this research strand was to describe common prerequisites for the successful implementation of PRIMO across diverse settings. The main data sources used were:
Implementation Diaries	Implementation diaries kept by the implementation lead at each site describing selectively what was done, the underlying rationale, any barriers and obstacles encountered, as well as personal reflections throughout the implementation period.
Key Stakeholder Interviews	Six semi-structured interviews with key stakeholders (two for Case Study A, four for Case Study B) were conducted following the implementation of PRIMO to describe their views on the implementation.
Thematic Analysis	The implementation diaries and the interviews with key stakeholders were analysed qualitatively to identify and to describe common prerequisites.
<b>Safety-related attitudes and behaviours</b>	
Staff Interviews	40 semi-structured interviews with a purposive convenience sample of staff from the two case study sites (20 per site) were undertaken prior (10 per site) and following the implementation (10 per site).
Thematic Analysis	The semi-structured interviews with staff were analysed qualitatively to describe their safety-related attitudes and behaviours, and to identify any changes that may have occurred during the implementation period.

### 1.2.3 PROJECT TIMELINE

The study commenced in October 2011 and was completed in March 2014. A summary of the timeline for the different project activities is provided in Table 2.

Table 2: Summary of project timeline

Activity	Duration
Ethics and institutional approvals	October 2011 – May 2012
Staff interviews	May 2012 – July 2012
Implementation Case Studies	July 2012 – June 2013
Post-implementation staff interviews	July 2013 – September 2013
Key stakeholder interviews and implementation diary analysis	August 2013 – December 2013
Recommendations and draft final report	January 2014 – March 2014

Some challenges occurred in the early phases of the project. The project protocol aimed to include up to four different organisations. One organisation withdrew from the project early on due to other ongoing commitments. A second organisation withdrew from the project after institutional approval had been received and a team had been assembled, due to changing organisational priorities. As a result, the number of participating organisations was reduced to two. This weakens the evidence base. However, the remaining two study sites were very different in their characteristics. This should still enable generalisation of the qualitative findings to a certain extent.

### 1.3 RESEARCH ETHICS

The study had full NHS research ethics approval from National Research Ethics Committee North West – Preston (reference 11/NW/0847) as well as institutional approval at all participating organisations.

All study participants were staff of the participating organisations. Participants received a participant information leaflet, and provided written consent prior to their involvement. Participation was voluntary, and participants were free to withdraw at any time.

### 1.4 REPORT STRUCTURE

The report is organised as follows:

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<b>1 Introduction</b>	Section just covered. Introduction to the research.
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<b>2 Background</b>	Background to the research and the relevant literature.
<b>3 PRIMO Overview</b>	Description of the PRIMO approach to organisational learning
<b>4 Implementation Case Study A - Radiology</b>	Description of first implementation case study set in Radiology: setting, set-up, implementation, and results.
<b>5 Implementation Case Study B – Surgical Emergency Admissions Unit</b>	Description of second implementation case study set in the Surgical Emergency Admissions Unit: setting, set-up, implementation, and results.
<b>6 Prerequisites</b>	Identification and description of prerequisites for successful implementation of PRIMO.
<b>7 Impact on Safety Culture</b>	Identification and description of changes in safety-related attitudes and behaviours.
<b>8 Discussion</b>	Findings of the implementation case studies are brought together. Limitations of the study.
<b>9 Conclusion</b>	Recommendations for healthcare and recommendations for research are described.
<b>Appendices</b>	Additional data and materials.

## CHAPTER 2 BACKGROUND

### 2.1 INTRODUCTION

This chapter provides a brief overview to the background of the research and the relevant literature. A short section summarises the knowledge about the extent of preventable harm to patients (Section 2.2). The following section describes key insights about organisational learning for improving patient safety in the NHS (Section 2.3). The chapter concludes with a description of identified research gaps (Section 2.4) that informed the development of the present study.

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	Section
Introduction	2.1
The Harm to Patients	2.2
Organisational Learning in the NHS	2.3
Need for Further Research	2.4

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### 2.2 THE HARM TO PATIENTS

It is now widely acknowledged that modern healthcare systems may inflict preventable harm on patients (7, 8). A systematic review of the literature suggests that around one in ten patients admitted to hospitals around the world will suffer an adverse event, and that as many as half of these may be preventable (9).

In addition to causing needless harm and suffering to patients, poor quality healthcare provision has significant financial implications for the health systems. In the UK, a study estimated that preventable adverse events could cost the NHS £1bn annually in additional bed days, alone (10). A report published by the Health Foundation compiles further evidence illustrating some of the costs associated with poor quality in healthcare (11). For example, the costs to the NHS associated with adverse drug events are estimated to be around £0.5bn - £1.9bn annually.

### 2.3 ORGANISATIONAL LEARNING IN THE NHS

In the UK, the influential report “An Organisation With A Memory” by the Department of Health (7) recognised that within the NHS knowledge about the extent of harm that results from the treatment that patients are undergoing was scarce. The report recommended the development of a reporting system that systematically captures data about incidents in the NHS and thus provides an indication of the extent and the nature of harm that patients suffer in the NHS. As a result, the National

Patient Safety Agency (NPSA) was established and the agency developed the National Reporting and Learning System (NRLS), a national incident reporting system. The report also emphasised the need within the NHS to change its current culture of blame to an open, fair and just culture, often abbreviated as safety culture. This was reflected in subsequent reports and policy guidelines, such as the NPSA “7 Steps to Patient Safety” (12), which includes as first step the building of a safety culture. Part of the underlying reasoning within the NHS is that fear of punishment following errors acts as a fundamental barrier to reporting, which in turn is seen as an essential mechanism to enhance patient safety. For example, in the investigation into the Bristol Royal Infirmary deaths a deficient safety culture was identified as a causal factor (13). More recently, the Francis report of the Mid Staffordshire Public Inquiry provided similar findings about a culture that was contributing to poor standards of care (14).

In order to identify risks to patient safety and to trigger improvements many healthcare organisations are relying on incident reporting. This approach to organisational learning has been promoted within the NHS for the past ten years (15-17). There are different types of incident reporting systems in operation, both at the local level as well as the NRLS that operates nationally. Incident reporting is based on the assumption that useful learning can be generated from frontline staff feedback about incidents (events without harm or with less serious levels of harm) rather than waiting for an adverse event to happen (18, 19). The precursors and the contributory factors are assumed to be similar in both cases. Hence, the analysis of an incident can offer free lessons about weaknesses in the system’s defences and deficient organisational processes resulting in latent conditions. These can be addressed before something bad happens. In this sense, incident reporting opens up windows onto the underlying system dynamics in the same way as accidents or adverse events would (17).

## 2.5 THE NEED FOR FURTHER RESEARCH

While incident reporting is recognised as an important tool for organisational learning, there has been considerable research into barriers to successful learning from incident reporting, and the limitations of such an approach to organisational learning. Barriers include lack of training in the use of incident reporting, usability problems of the systems that have to be used, uncertainty about what constitutes a reportable incident, blame culture and fear of consequences, lack of feedback and the absence of learning relevant to local practices (20-24).

Further research is required that addresses the following:

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**Engage staff and generate actionable learning** A major weakness of current incident reporting systems is that they produce little actual change (25). The perceived lack of learning and absence of relevance to the local work environment may have a detrimental impact on the willingness of staff to contribute to incident reporting (25, 26). This suggests that further research is required to develop approaches to organisational learning, which can complement incident reporting, and which are able to engage staff and generate actionable learning.

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**Reflect on the mechanisms and the context of change** The second area where further research is required is in understanding the factors that enable or inhibit the successful implementation of such an approach to organisational learning. Approaches to evaluation rooted in realism emphasise the need to understand the mechanisms and the context of change (27). Stevens emphasises the importance of context in improvement reports highlighting the need for reflection of the interaction between improvement strategy and the unique context (28). Further research should, therefore, aim to identify and to describe the factors that contribute to successful organisational learning across a range of different settings.

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Subsequent chapters describe in detail how the research project contributed to each of the two research gaps identified above. First, the next chapter describes briefly the PRIMO approach that was further developed and tested in this study.

# CHAPTER 3 PRIMO APPROACH TO ORGANISATIONAL LEARNING

## 3.1 INTRODUCTION

The PRIMO approach to organisational learning represents an instance of transfer of learning from industry to healthcare taking into account the significant differences between industrial domains and healthcare settings. This chapter provides a brief description of the industrial background (Section 3.2), and then describes the PRIMO approach as it was developed for healthcare settings (Section 3.3). The chapter concludes with a brief summary of the findings from the PRIMO pilot study (Section 3.4). The chapter is based on the material published in (1).

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	Section
Introduction	3.1
Background to PRIMO	3.2
PRIMO Overview	3.3
PRIMO Pilot	3.4

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## 3.2 BACKGROUND TO PRIMO

Within the Oil & Gas industry, Reason and colleagues developed a tool – Tripod-Delta – for organisational learning that does not depend on incidents or accidents (29). The aim of Tripod-Delta is the proactive identification and prioritisation of those organisational processes that frequently contribute to latent failure conditions in the work environment. These are referred to as General Failure Types (GFT), and a common set of GFTs identified in Oil & Gas is described briefly in Table 3. The current status of GFTs within an organisation is assessed through a checklist. The checklist contains specific indicators drawn from a larger database of indicators for each GFT. Indicators are simple yes/no-statements that indicate the presence or absence of a risk factor in the work environment. In this way an organisational risk profile based on scores for the individual GFTs is constructed which can be managed over time (i.e. prioritising those GFTs that score worst). Domain experts construct the database of indicators, and the intention of Tripod-Delta was to encourage ownership by the people who would be using it.

**Table 3: General Failure Types (GFT) identified in the Oil & Gas industry (19)**

<b>General Failure Types (GFT)</b>	<b>Explanation</b>
1. Hardware	Quality and availability of tools and equipment.

- 2. Design Inadequate design leading directly to errors and violations.
- 3. Maintenance management Management of maintenance activities.
- 4. Procedures Quality, accuracy, relevance, availability and workability of procedures.
- 5. Error-enforcing conditions Conditions relating either to the workplace or the individual that can lead to unsafe acts.
- 6. Housekeeping Organisational inaction in response to known problems.
- 7. Incompatible goals Goal conflicts at the individual, group or organisational level.
- 8. Communications Communication problems including absence of communication channels, message failures, reception failures.
- 9. Organisation Inadequate organisational structure, organisational responsibilities and management of contractor safety.
- 10. Training Inadequate understanding of training requirements, low priority given to training, inadequate definition of competence requirements.
- 11. Defences Failures in detection, warning, personnel protection, recovery, containment, escape and rescue.

Reason points out that the development of the indicator database is time consuming (19), and later refinements of Tripod-Delta for railway maintenance and aviation maintenance operations have employed a survey tool instead, where respondents could indicate on a Likert-scale their perception of the status of a particular GFT. As opposed to the indicator checklist that produces an objective assessment of the presence or absence of indicators, a survey relies on perceptions of staff and is therefore subjective. As a result, the findings may vary depending on how staff relate to hazards and risks in their work environment.

### 3.3 PRIMO OVERVIEW

The inspiration for the Proactive Risk Monitoring for Organisational Learning in Healthcare tool (PRIMO) comes from Tripod-Delta. The aim is to identify and to prioritise for action those organisational processes that frequently give rise to latent conditions based on staff perceptions. However, significant changes were made to the process to account for the different cultural environment that healthcare presents, see Table 4:

**Table 4: Characteristics of PRIMO to facilitate use in healthcare**

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<b>Staff narratives</b>	In order to ensure that the factors that are selected for monitoring are directly related to the local context, these are identified empirically based on the qualitative analysis of narratives describing problems in the work environment submitted by staff.
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<b>Participation and feedback</b>	As pointed out in Section 2, there are serious barriers to regular incident reporting in healthcare. In order to overcome these, staff participation through the submission of free-text narratives and the completion of questionnaire surveys and regular feedback to staff are emphasised in PRIMO.
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<b>Long-term and short-term improvements</b>	Reason points out that the focus of Tripod-Delta is on managing risk profiles, not on eliminating specific symptoms (19). However, in order to maintain staff participation and to combat participation fatigue, fast and visible improvements (“quick wins”) to the local work environment are an important part of the PRIMO strategy that complements its longer-term aim.
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<b>Staff ownership</b>	In addition to its management function, an important and explicit aim of PRIMO is to strengthen local safety culture. There is no evidence that Tripod-Delta actually created greater ownership among front line staff, or that front line workers perceived it as something other than a management
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tool.

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The resulting PRIMO process consists of a number of elements: staff narratives about hassle in their work environment, a questionnaire for monitoring problem factors, and an action plan detailing both “quick wins” and longer-term actions and improvements. The flow of the PRIMO process is represented in Figure 1. The process starts with the elicitation of staff narratives. The narratives are used to identify empirically (through qualitative analysis) the basic problem factors for subsequent monitoring to ensure that these factors are relevant to the local work environment. Monitoring takes place using a questionnaire that is filled in every other month. The questionnaire elicits perceptions from staff about the amount of hassle that these basic problem factors cause to their daily work. In this way, a risk profile is constructed over time. Once the risk profile starts to stabilise, high-ranking problem factors can be prioritised and investigated for subsequent improvement. The action plan that is produced following the analysis of the narratives and the survey results, details both short-term and longer-term actions and improvements as a result of this staff feedback. On-going submission of staff narratives and their review is used to identify problem factors that should be included in the monitoring activity as a result of a changing local context.



Figure 1: PRIMO process flow

### 3.4 PRIMO PILOT STUDY

As part of the Health Foundation’s Safer Clinical Systems programme (SCS), PRIMO was prototyped and piloted in the dispensary of Hereford County Hospital during 2008 – 2010. The evaluation of the pilot study utilised staff surveys and semi-structured interviews.

The survey was distributed to 26 staff in the dispensary. 17/26 completed surveys were returned. The results of the staff surveys suggested that 94% of respondents filled in the PRIMO questionnaire regularly, and that PRIMO had contributed to useful improvements in the work environment (70%). Only 41% of respondents submitted a narrative regularly. However, of these, 71% suggested that writing a narrative allowed them to reflect on problems and enabled them to express themselves more clearly than with a structured report format.

Semi-structured interviews with 15 members of staff were undertaken to establish whether participation in PRIMO had any effect on their safety-related attitudes and behaviours, and if so through what kind of mechanisms these changes might have been brought about. The analysis of the interviews suggested that there was evidence of changes in safety-related attitudes and behaviours. In particular, staff suggested that there was improved communication about safety issues, that they were now more willing to report safety concerns, and that there was a bigger drive towards continuous improvement. The ways in which PRIMO might have contributed to these changes in summarised in Figure 2.

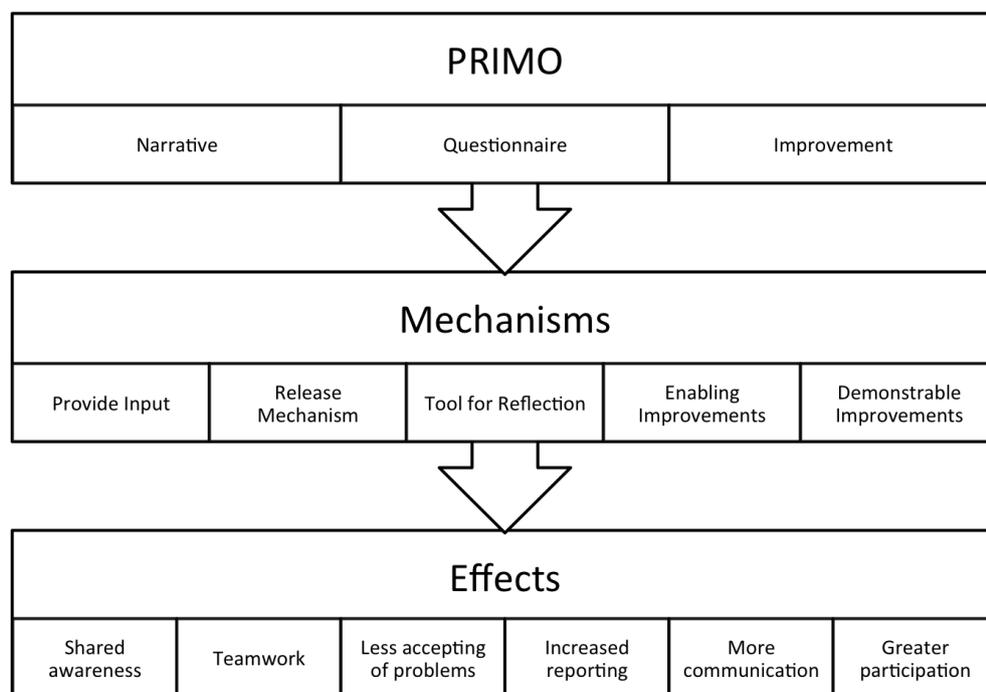


Figure 2: PRIMO mechanisms

## CHAPTER 4 IMPLEMENTATION CASE STUDY A - RADIOLOGY

### 4.1 INTRODUCTION

The PRIMO process was implemented as 12-months case studies in two NHS hospitals, in a different clinical environment for each hospital. The first case study was set in the radiology department in one of the participating hospitals. This chapter describes the case study setting (Section 4.2) and set-up (Section 4.3), provides an overview of the implementation process (Section 4.4), and summarises the results obtained over the 12-months period (Section 4.5). A summary of the main findings about everyday hazards in the radiology department is provided in the conclusion (Section 4.6).

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Set –Up	4.3
Implementation	4.4
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### 4.2 SETTING

Case study A was conducted within the radiology department of a district general hospital (DGH) with approximately 240 beds. The radiology department consists of the main x-ray department and a number of specialist modalities such as CT (computed tomography), MRI (magnetic resonance imaging) and Nuclear medicine. The whole department employs approximately 90 staff. Some of these are employed part time. The roles within the department range from clerical, radiographic assistant, assistant practitioners, radiographers, specialist radiographers, advanced practitioners and consultants.

For the purpose of the case study, the focus of the implementation was on the main x-ray department, rather than the specialist modalities. Within the main x-ray department there are four general rooms with a fast throughput of patients ranging from fully mobile to immobile, seriously ill patients. Referrals come from a wide range of areas, including A&E, GPs, outpatient clinics and hospital wards. There are also two specialist rooms where interventional procedures are performed. Throughout a typical working day approximately 350 examinations are performed.

### 4.3 SET-UP

Contact was established with the Head of Radiology in October 2011, following an expression of interest for participation in the study based on the findings of the previous pilot study. During the period October 2011 – March 2012 local R&D approvals were obtained, and a member of staff was recruited to the project on a part-time basis to lead the implementation.

The local project team consisted of the Head of Radiology (a consultant radiologist) and the implementation lead (a radiographer). The Head of Radiology had a working knowledge of improvement methods, but the implementation lead and most of the staff did not. Concurrently with the set-up phase of the project, the Head of Radiology took on an additional role in the organisation, and reduced working hours within the department. Considering the small team and hence limited resources, it was decided to limit the implementation of PRIMO as a departmental pilot to focus initially on the staff groups most closely linked to the implementation lead, i.e. radiographic assistants, assistant practitioners, radiographers and senior radiographers (around 15-20 individuals depending on staffing levels). These staff groups perform plain imaging examinations. However, dissemination of on-going findings and departmental improvement activities were not restricted to these staff groups, but included the whole department to increase awareness and to foster dialogue.

Over the period of the project, there were several organisational changes occurring. These include the new role for the head of department (see above), significant changes in staffing levels and staff experience due to staff leaving, periods of low levels of staffing, and the subsequent recruitment of new staff, and the introduction of new shift patterns that entailed considerably different working patterns and financial losses for some staff.

### 4.4 IMPLEMENTATION

The implementation of the PRIMO process ran from July 2012 – June 2013. At the start of the implementation period, staff were introduced to the project through a number of presentations by both the local project team as well as by staff from the team that had conducted the PRIMO pilot as part of their Safer Clinical Systems work. An information folder was produced for staff, outlining what PRIMO was, who was involved and some prior experiences from the pilot study. PRIMO updates were given to staff during the weekly departmental communications meeting.

The local project team defined the aims for their PRIMO project as:

- Engaging staff and encouraging them to take ownership of PRIMO as a tool for organisational learning and service improvement

- Raising awareness that providing input and feedback about seemingly small problems and issues can make very big differences in practice
- Establishing evidence to bring about changes that can improve patient safety and service quality

Following the initial period of presentations and discussions within the department, all staff were invited to provide narratives. These could be anonymous if required. The purpose of the narratives was explained to staff, and they were encouraged to report issues or problems that they had on a daily basis, which had a patient safety theme. Staff were also asked to record how they had solved or dealt with the reported problem at the time. Staff were told that the narratives could be as frequent as they wanted but at least weekly if possible. A box was made available for the narratives to be left in. This information was also provided in the PRIMO folder. Narratives that were received tended to be short (one paragraph), factual descriptions rather than emotive personal reflections. The narratives were analysed by the implementation lead to identify both the problem they were directly referring to as well as potential higher-level contributory factors.

After about 6 weeks of collecting and analysing narratives, a prototype questionnaire was developed based on themes extracted from the narratives and taking into consideration the questionnaire that had been developed during the pilot study. The prototype questionnaire was tested with three members of staff, who had volunteered. The questionnaire was modified based on the feedback received, and the subsequent questionnaire was then distributed to members of staff (radiographic assistants, assistant practitioners, radiographers and senior radiographers), who were on duty in the main department during the respective week. The questionnaire continued to provide the opportunity to include comments and suggestions for improvement of the questionnaire. Initially, the questionnaires were given out monthly, but this was later extended to 2 – 3 months periods. This decision was taken in order to prevent reporting fatigue, to reduce the effort required for analysis, and to provide more time for improvement activities that had been identified to progress before the next distribution of the questionnaire. Short narratives continued to be submitted, but increasingly these were replaced by annotations and comments on the questionnaire itself. Questionnaires were analysed by the implementation lead through simple aggregation of questionnaire scores in an Excel spreadsheet. Questionnaire results were displayed in the staff common room.

Improvement areas were identified by the implementation lead through analysis of the questionnaire results, supported by analysis of the narratives and discussions with individual members of staff. Improvement actions were then proposed based on informal consideration of a

number of dimensions: perceived significance of the problem, amount of control over the improvement action, time frame for the improvement action, and effort required and cost. In terms of time frame, it was attempted to include both longer-term and short-term improvements. The implementation lead shortlisted improvement actions, and presented these to the department for feedback during the communications meetings. During these meetings, and in personal discussions, staff had the opportunity to provide input to the proposed improvement actions. The improvement actions were carried out by the implementation lead with support from a small number of enthusiastic staff for the different improvement activities. Progress with the improvement actions was communicated to all members of staff during the communications meetings. Summaries were also displayed on the notice board in the staff common room.

## 4.5 RESULTS

This section describes the results that were obtained during the implementation period (July 2012 – June 2013). First the evidence collected from the narratives and the questionnaires is outlined. Then a summary of the improvement actions that were undertaken triggered by the results of the narratives and questionnaires is provided.

### 4.5.1 NARRATIVES

There were 70 narratives received from staff. The majority of these were received during the first 3 months of the implementation period. The narratives tended to be short, factual descriptions, and they were later replaced by annotations on the questionnaire document. Eight higher-level factors were identified. These are summarised in Table 5 below. As described in the background to PRIMO, the purpose of the analysis of the narratives is to provide a map of factors that could be considered for monitoring through the questionnaire, rather than to provide a frequency count. The narratives provide also examples for inclusion in the questionnaire to embed the higher-level factors in local practice.

**Table 5: Higher-level contributory factors identified from narratives (Case study A)**

High-Level Factor	Example from Narrative
<b>Communication &amp; Information</b>	<i>“Work closely with A&amp;E – must be some better way for organising the return of patients to the A&amp;E department. Quite often we are just looked at when we return patients on trolleys, as no one seems to know which cubicle the patient is</i>

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*going back to.”*

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**Equipment & Computers**

*“This week I have worked in the general x-ray department performing many A&E examinations. I have noticed the standard of A&E trolleys are of poor quality, and the faults make it difficult for radiographers to perform the examinations. One of the handles on one trolley is broken so there is nothing to hold onto whilst pushing the trolley. The bucky trays are quite stiff on some trolleys; you could trap your fingers.”*

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**Staffing**

*“Staff are constantly taken out of the main department to cover other modalities. General rooms can be understaffed and patients put at risk due to constant demands.”*

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**Demand Management & Workload**

*“Patient booked for a long list of examinations as a GP referral on a Saturday morning, when there are only 2 members of staff on duty for emergencies and limited GP examinations. This should have been booked for a week day.”*

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**Work Environment**

*“Rooms are left untidy, meaning the next person taking over has to tidy the room before they can begin an examination.”*

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**Procedures**

*“Better access to protocols for imaging, more up-to-date; very difficult for new staff as protocols at other departments may have been very different.”*

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**Teamwork & Attitudes**

*“Sometimes I can feel bullied by people because they are aggressive and demoralised.”*

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**Training**

*“There are times when process of booking in on reception goes wrong meaning some patients may get missed. Process may need reviewing or ensuring adequate training for staff.”*

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The narratives served as input to the questionnaire. Later in the project, they also provided input to the improvement actions by providing examples of the manifestations of particular problems.

#### *4.5.2 QUESTIONNAIRES*

A prototype questionnaire was produced based on the high-level factors identified from the narratives. The first test with three members of staff resulted in clarifications to the wording of questions. In addition, in order to reduce the amount of time required for completing the questionnaire, the high-level factor “Training” was removed from the questionnaire, as this was felt to be the least important factor of the ones included on the questionnaire. The questionnaire was then distributed to staff six times over the implementation period. The monitoring results are shown in Table 6.

Table 6: Questionnaire results (Mean / Standard Deviation) over the duration of the implementation period (scores: 1 (best) - 5 (worst)) – Case Study A

Problem Factor	Dimension	Aug-2012	Sept-2012	Nov-2012	Feb-2013	April-2013	June-2013	Mean
		(10/15 responses)	(8/10 responses)	(11/15 responses)	(8/15 responses)	(8/15 responses)	(8/10 responses)	(Aug-2012 – June-2013)
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
1. Communication & Information	Missing / inaccurate	3.7 (0.5)	3.4 (1.3)	4.1 (0.5)	3.9 (0.6)	3.5 (1.4)	3.9 (1.0)	3.7
	External	3.6 (0.7)	3.1 (1.6)	3.4 (1.0)	3.5 (0.7)	2.7 (1.4)	3.0 (1.6)	3.2
	Internal	3.6 (1.3)	2.7 (1.4)	3.2 (1.2)	3.1 (1.4)	2.3 (1.7)	2.5 (1.3)	2.9
2. Equipment & Computers	Unavailable	2.9 (1.2)	2.7 (0.9)	3.3 (1.1)	3.4 (1.2)	2.3 (1.5)	3.0 (1.9)	2.9
	Usability	3.3 (1.2)	2.3 (0.7)	3.4 (1.1)	3.5 (1.4)	2.5 (1.7)	2.6 (1.3)	2.9
	Broken	3.6 (0.8)	3.1 (1.2)	3.6 (1.2)	4.1 (1.1)	3.5 (1.7)	3.4 (1.8)	3.5
3. Staffing	Number	4.0 (0.9)	3.4 (1.4)	3.7 (0.9)	3.0 (0.8)	4.0 (1.5)	2.9 (1.7)	3.5
	Absence	2.4 (1.1)	3.0 (1.4)	3.4 (0.9)	2.7 (1.5)	2.7 (1.6)	3.0 (1.8)	2.9
	Skill mix	3.1 (1.2)	2.4 (1.6)	2.7 (1.0)	3.0 (1.2)	3.0 (1.7)	3.1 (1.7)	2.8

4. Demand Management & Workload	Out of hours	2.2 (1.5)	2.5 (1.5)	1.7 (1.0)	2.6 (1.5)	2.0 (1.5)	2.4 (1.4)	2.2
	Prioritisation of patients	3.1 (1.5)	2.1 (1.4)	2.2 (1.1)	2.5 (1.4)	2.3 (1.4)	2.4 (1.8)	2.4
	Workload	3.7 (1.2)	3.5 (1.5)	2.7 (1.2)	3.7 (1.4)	2.2 (1.5)	2.6 (1.7)	3.1
5. Work Environment	Layout	3.7 (1.0)	3.8 (1.3)	3.0 (1.5)	3.1 (1.8)	2.7 (1.6)	3.1 (1.5)	3.2
	Interruptions	2.3 (1.2)	3.1 (1.3)	2.2 (1.0)	2.7 (1.5)	2.4 (1.7)	2.6 (0.8)	2.5
	Messy	2.3 (1.2)	3.2 (1.3)	2.4 (1.4)	2.6 (1.5)	2.0 (1.3)	3.9 (1.3)	2.7
6. Procedures	Absent	2.9 (1.5)	3.0 (1.3)	3.5 (1.6)	3.1 (1.2)	2.2 (1.5)	2.7 (1.5)	2.9
	Inappropriate	3.0 (1.4)	2.5 (1.4)	3.1 (1.4)	2.1 (1.1)	2.0 (1.1)	2.2 (1.4)	2.5
	Access	2.5 (1.3)	2.9 (1.4)	2.5 (1.3)	2.0 (0.9)	2.2 (1.6)	2.6 (1.5)	2.4
7. Teamwork & Attitudes	Peer support	2.6 (1.5)	2.1 (0.8)	2.8 (1.5)	2.5 (1.2)	3.5 (1.6)	3.0 (1.9)	2.7
	Senior support	3.4 (1.4)	3.5 (1.4)	2.9 (0.9)	3.1 (1.1)	3.0 (1.7)	2.9 (1.8)	3.1
	Communication style	3.2 (1.7)	2.6 (1.1)	2.4 (1.2)	2.3 (1.5)	2.2 (1.8)	2.4 (1.4)	2.5

### 4.5.3 IMPROVEMENT ACTIONS

Table 7 provides a summary of the problems that have been targeted for improvement, the improvement actions carried out, and the outcomes obtained. These are described in more detail below. The problems and improvement actions present a mix of simple issues that could be resolved in the short-term, and more complex inter-departmental issues that require longer-term efforts. Accordingly, some actions, such as the introduction of designated areas for supporting equipment, resulted in good success; others, such as the development of an electronic booking diary for requests from theatres have shown little improvement, but have resulted in raised awareness of the problem among all the involved stakeholders, and in ongoing discussions.

**Table 7: Summary of improvement actions – Case Study A**

Problem	Improvement Action	Outcome
<b>Missing supporting equipment</b>	Introduction of designated area for supporting equipment.  Purchase of additional supporting equipment.	Supporting equipment is available 100% of the time.
<b>Insufficient number of staff</b>	Raised awareness with management.  Recruitment of new staff.	Awareness has been raised, but the problem is ongoing.
<b>Inadequate external communication with theatres requesting radiographers</b>	Working group with theatres set up.  Standard operating procedure produced.  Electronic booking diary introduced.	No improvement, and needs further work to be an effective solution.
<b>Inadequate external communication with ED for patients requiring referral</b>	Working group with ED set up.  ED referral pathway introduced.	Staff feedback suggests time spent dealing with patients requiring A&E referral might have decreased.

<b>Out of date procedures</b>	Procedures updated.  Introduction of a procedure review schedule.	Procedures are up to date.
<b>Incomplete information on orthopaedic referral forms</b>	Conducted baseline audit.  Shared results with orthopaedic department.	95% of orthopaedic referrals contain adequate amount of information.

### **Missing supporting equipment**

The analysis of questionnaire results identified as an area of medium concern missing radiographic supporting equipment, such as grids and steps. The analysis of narratives and personal discussions with staff suggested that this was a frequent occurrence that leads to time being wasted looking for the equipment, thereby increasing workload, stress levels, and causing feelings of frustration. This was chosen as an area for improvement because (a) staff expressed strong feelings of frustration about this, and (b) it was felt that this could be resolved within a reasonable amount of time and with limited resources.

A Plan-Do-Study-Act (PDSA) prototyping approach was taken. Designated areas for grids and steps were introduced in the general x-ray rooms and visual reminders to replace the equipment were put up. A one-week data collection was undertaken to record the frequency with which the equipment was found in the correct spot in the three main x-ray rooms. The results showed poor compliance. The issue was raised during the communications meeting and in personal discussions with staff. A second PDSA cycle following this awareness raising intervention showed 100% compliance in two rooms, but in one room equipment was still not replaced with the target frequency of 95%. Further discussions suggested that this might be due to the fact that there was a shortage of equipment in rooms adjacent to this room, and equipment might have been taken there and not replaced. As a result of these discussions, additional equipment was purchased. The final PDSA cycle demonstrated 100% compliance in all three rooms. No further PDSA cycles were undertaken to confirm sustainability due to the amount of effort required, but review of annotations on the questionnaire did not indicate new issues relating to supporting equipment thus far.

### **Insufficient number of staff**

Insufficient number of staff was identified as one of the most pressing issues through the questionnaires. This is an ongoing issue exacerbated by the fact that a number of staff have left to seek promotion opportunities or experiences elsewhere. The issue has been raised with the management, who were aware of this, and the potentially negative impact on patient safety and patient care was highlighted. New appointments have been made, but seemingly high fluctuations in numbers of staff appear to continue.

#### **Inadequate external communication with theatres requesting radiographers**

Communication with external parties was identified as an area of significant concern. The narratives and personal discussions with staff indicated that one particularly problematic aspect were theatre requests for radiographers performing imaging using mobile equipment in theatres. Such requests often come at short notice, and may not be coordinated as they originate from different specialities. As a result, the main x-ray department may be left without sufficient cover and without appropriate supervisory arrangements for junior members of staff; in addition, there may be delays in performing the imaging in theatre due to the limited number of mobile equipment available, which may be in use elsewhere. This may lead to delays in treatment for patients, and it may strain relationships among staff.

Discussions involving the diagnostic services manager and the theatre manager were held to raise awareness of this issue. Between the departments an electronic booking diary and a standard operating procedure for booking the image intensifier were developed. This still proves to be challenging and needs more work to be an effective solution. A working group has been set up to this end.

#### **Inadequate external communication with ED for patients requiring referral**

The second external communication problem identified from the narratives and from subsequent discussions with staff relates to patients with a recent history of trauma, who had been referred by their GP, and who may require referral to the ED following the imaging results. There was no communication and decision pathway for these patients, and delays in referring patients may occur. This can contribute to poor patient experience, and it requires additional time of staff in the radiology department, which in turn can have knock-on effects on other patients.

A working group with the ED was set up, and a referral pathway and corresponding documentation were developed. The referral pathway has been implemented. No quantitative measurements have been taken. Informal staff feedback suggests that the new pathway is easy to use, and there have been no issues raised from the ED, suggesting that the pathway works for them, too.

## **Out of date procedures**

Inappropriate and out of date procedures were identified as a problematic issue early on through the questionnaires and from the narratives. This could be particularly confusing for new staff, who may be used to other ways of working. In particular in situations of high staff turnover this could lead to delays and patient safety hazards. Updating and maintaining procedures was chosen as an area for improvement because it was perceived as an intervention that could be achieved quickly with only a reasonable amount of resource requirements.

The implementation lead worked with other members of staff who had volunteered to review and update all of the relevant procedures. In addition, a schedule was developed to ensure timely maintenance of all procedures. The procedures are currently up to date, and questionnaire scores suggest that there might have been a small improvement in staff perceptions about the appropriateness of procedures due to this intervention.

## **Incomplete information on orthopaedic referral forms**

From the questionnaire results inaccurate and missing information was identified as one of the most problematic issues. The analysis of narratives and discussions with staff suggested that the information contained on orthopaedic referral forms was perceived as particularly problematic by staff. It was felt that essential relevant information at times was not provided, which means that staff have to track down the person who made the referral and gather the missing information in this way. This can also lead to delays and poor patient experience, or staff having to work under uncertainty in those cases where that person is unavailable.

The implementation lead and another member of staff assessed a small sample of 15 orthopaedic request forms to develop and test an audit template. The audit template was based on an example provided by the Royal College of Radiologists. Essential information (such as patient demographics) were coded as present / absent; the clinical detail and rationale provided were coded as good / adequate / poor from the perspective of providing a justification and enabling the imaging procedure. Discrepancies in the independent assessment were resolved in discussion in order to provide greater consistency. Subsequently a sample of 200 orthopaedic request forms was audited (each form was audited by one person).

The audit suggested that 95% of the orthopaedic referral forms contained good or adequate clinical information. This was an encouraging result, but it still left 5% of referral forms with poor or no clinical information, making them a threat to safe practice. The results were shared with the orthopaedic department to raise awareness of this issue among their staff. It was felt that an area

that should be improved was training and support for rotating doctors to ensure that they receive adequate information about the standards that are required when completing an imaging request form.

#### 4.6 CONCLUSION

Over the course of the 12-months period, PRIMO provided information about the problems that radiology staff experience in their everyday work. These are not related to specific adverse events or patient safety incidents. However, these problems and the underlying factors have the potential to contribute to adverse events, and they have a negative impact on staff morale and workload levels.

The problems that were identified include a wide range of issues: communication and information management problems with other departments in the hospital, missing or broken equipment, inadequate staffing levels, high levels of workload, inadequate and messy work environment, and a lack of senior management support.

With the information provided by PRIMO, improvement actions were developed and implemented. The implementation of a referral pathway to the ED for patients with recent trauma appears to have been very successful. This intervention reduces ambiguity, and it contributes to the provision of faster care for patients. The cooperation of ED staff was instrumental in developing a successful intervention. Similarly, the availability of supporting equipment was successfully improved through simple interventions. However, problems still remain, such as inadequate staffing levels, and communication with theatres requesting radiographers. Relationships with theatres are not developed as well as those with the ED, which is located in close proximity, and this may have been an important barrier in developing a successful intervention.

The continued use of PRIMO in the radiology department can contribute to monitoring the factors that potentially contribute to patient safety risks. In this way, a constant flow of risk intelligence can feed into continuous improvement activities.

# CHAPTER 5 IMPLEMENTATION CASE STUDY B – SURGICAL EMERGENCY ADMISSIONS UNIT

## 5.1 INTRODUCTION

The second case study was set in the Surgical Emergency Admissions Unit (SEAU) of the second participating hospital. This chapter describes the case study setting (Section 5.2) and set-up (Section 5.3), provides an overview of the implementation process (Section 5.4), and summarises the results obtained over the 12-months period (Section 5.5). A summary of the main findings about everyday hazards in the SEAU is provided in the conclusion (Section 5.6).

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## 5.2 SETTING

Case study B was conducted within the Surgical Emergency Assessment Unit (SEAU) of a large county hospital with approximately 600 beds. The SEAU is now part of the Emergency Assessment Unit (EAU), which houses also medical emergency assessment services. There are 24 beds available on EAU. EAU has a large team of medical, surgical, nursing, clerical and housekeeping staff. Referrals come from a wide range of areas, including ED, GPs, and outpatient clinics. There are between 600 – 800 admissions to SEAU per month. Doctors working in SEAU are not based on the ward, but are there on a rotational basis during their on-call period.

## 5.3 SET-UP

Contact was established with the patient safety manager of the Trust in October 2011, who had expressed an interest for the Trust to participate in the project. The patient safety manager identified the SEAU as a potential case study site as contacts to an enthusiastic surgical trainee had been established. Contact was then established with the lead consultant on SEAU, who agreed to participate and to support the case study on SEAU. During the period October 2011 – May 2012

local R&D approvals were obtained. A research nurse based in the Trust research facilities was recruited to the project on a part-time basis to lead the implementation. The research nurse had no previous experience of working with SEAU.

The local project team initially consisted of the lead consultant, the surgical trainee, the research nurse (implementation lead), the patient safety manager, and a staff nurse who would act as the PRIMO champion on the ward. Over the course of the project, the team composition changed several times. The patient safety manager withdrew from the project in the early stages due to workload and other commitments. The staff nurse acting as PRIMO champion had to be replaced halfway through the project due to other commitments. A number of junior doctors joined the project team over the course of the project in order to facilitate data collection related to improvements. The surgical trainee left the organisation in August 2012, when his rotation came to an end, but continued to be involved externally. The patient safety manager was an expert in improvement methodologies, but other members of the project team had no knowledge of service improvement methods. Initially, the focus of the project was limited to ward sisters, nurses, healthcare assistants, and ward clerks, as these professions tended to have a more stable involvement on the ward compared to surgical trainees and surgeons, who had only short periods of duty on the ward and changed frequently. The intention was to extend the pilot to other staff groups at a later stage.

Over the period of the project, there were several organisational changes occurring. In addition to the changes in team composition described above, the most significant organisational change was the move of the SEAU to a new location and the merging with another service towards autumn 2012. This created uncertainty among staff over several months, and resulted in significantly changed working conditions and staff composition during the first period in 2013. Subsequently, the two services were separated again following regulatory feedback. The SEAU is now part of the EAU. For a large part of the implementation period this resulted in highly unstable and uncertain conditions on the ward, which also led to breaks in the implementation of PRIMO.

## 5.4 IMPLEMENTATION

The implementation of the PRIMO process ran from July 2012 – June 2013. At the start of the implementation period the local project team (research nurse, surgical trainee, and PRIMO ward champion) introduced PRIMO to staff on SEAU in a meeting. Drop-in sessions were arranged where staff could discuss the project or ask questions. A PRIMO notice board was put up in the resource room where nursing staff were having their breaks.

The local project team defined the aims for their PRIMO project as:

- To engage staff proactively to improve patient safety and to achieve better outcomes
- To improve patient experience through making small changes
- To improve patient and staff morale on the ward

Following the overview meeting and the drop-in sessions, staff were invited to contribute narratives. An information sheet was put up on the PRIMO notice board, which outlined the purpose of the narratives. Staff were asked to report issues that gave them hassle or that prevented the work from running smoothly. Staff were also asked to reflect on how they felt at the time, and how they dealt with the situation. Staff were advised that the narratives should be anonymous, i.e. they should not include either their name or any other staff or patient identifiers. A “hassle box” was provided in the ward sister’s office, where staff could deposit their narratives at any time. To kick off the narrative collection period, a “PRIMO cake” was provided next to the hassle box as a thank you to staff. The narratives that were received represented a mix of short problem statements in some instances as well as a richer contextual and personal description in other instances. The narratives were analysed by the local project team and discussed in project meetings. Once the first set of questionnaires was distributed, the collection of narratives was discontinued in order to focus on the questionnaires as primary data collection instrument.

After about four weeks of collecting and analysing narratives, a prototype questionnaire was developed based on themes extracted from the narratives and taking into consideration the questionnaire that had been developed during the pilot study. The prototype questionnaire was tested with three members of staff, who had volunteered. The questionnaire was modified based on the feedback received, and the subsequent questionnaire was then taken to the ward, where staff could pick it up and complete it at any time. The first set of questionnaires was collected over a period of two weeks. Questionnaires were analysed by the research nurse through simple aggregation of questionnaire scores in an Excel spreadsheet. Results were discussed in project meetings with the local project team, and were shared with the ward management. The results were also posted on the PRIMO notice board. After this first period, the ward started the process of moving location and merged with another service. Subsequently, this merger was reversed following regulatory input. During this transitional period no questionnaires were given out. The collection of questionnaires continued towards the end of 2012 / beginning of 2013. Questionnaires were first left on the ward again, and then subsequently attached to pay slips in order to increase the return rate.

The local project team identified improvement areas through analysis of the questionnaire results, supported by analysis of the narratives that had been collected at the start of the implementation

period. The identified areas were shared and discussed with the ward management. Owing to the ongoing organisational changes the initial set of improvement actions was limited as it was felt that any changes and efforts might be wasted once the ward had moved location. Over the course of the implementation period a number of short-term and longer-term actions were identified. However, the local project team decided to work predominantly on the short-term actions. The reasons for this choice were (a) the need to provide fast demonstrable improvements in an environment with low staff morale after significant organisational changes, and (b) the perceived lack of active senior management support whose priorities were felt to be on the aforementioned organisational changes. Progress with improvement actions was communicated to staff and more widely in the organisation through presentations at meetings. Summaries were also displayed on the PRIMO notice board.

## 5.5 RESULTS

This section describes the results that were obtained during the implementation period (July 2012 – June 2013). First the evidence collected from the narratives and the questionnaires is outlined. Then a summary of the improvement actions that were undertaken triggered by the results of the narratives and questionnaires is provided.

### 5.5.1 NARRATIVES

There were 15 narratives received from staff during the first phase of the implementation period. The narratives presented a mix of short problem statements (a couple of lines in length) and longer “stories” of problems and how they affected the work (several paragraphs). Nine higher-level factors were identified. These are summarised in Table 8 below. The analysis of the narratives served as input to the development of the questionnaire by highlighting high-level factors, and by providing concrete examples of their manifestation in practice. Later in the project, the narratives also provided input to the selection of improvement actions.

**Table 8: Higher-level contributory factors identified from the narratives (Case Study B)**

High-Level Factor	Example from Narrative
<b>Communication &amp; Information</b>	<i>“Other wards often refuse to take handover. We often spend too much time trying to get patients handed over when we could be looking after them.”</i>

<b>Equipment &amp; Computers</b>	<i>“Drug rounds take much longer now we don’t have pre-pack medications. No pre-packs is encouraging bad practice, i.e. carrying strips of tablets in packets / notes trolleys.”</i>
<b>Staffing</b>	<i>“Continuing staffing problems – need to be established to 25 beds instead of relying on bank / agency who do not know the ward.”</i>
<b>Demand Management &amp; Workload</b>	<i>“More AVI pumps needed to keep unwell patients on the ward instead of transferring. We cannot manage all these admissions / transfers.”</i>
<b>Work Environment</b>	<i>“I had to spend virtually the entire 12 ½ hours of my shift on my feet as there is a lack of writing areas and a lack of suitable seats to sit and to write.”</i>
<b>Procedures</b>	<i>“Visitors at meal time, no protective meal time as per protocol, moving patients whilst eating meal. Understand about bed shortages, but food and nutrition is important.”</i>
<b>Teamwork &amp; Attitudes</b>	<i>“In general I feel the team spirit disappears after the morning ward round, possibly because that is the only time all the constants on the ward are there, e.g. nurses, consultants and senior doctors. The juniors are on a short surgical rotation and then only part of that time is on-call. So, there is no time to build up any rapport / trust.”</i>
<b>Training</b>	<i>“Doctors to take referrals from GPs (or nurse practitioners) or nurses to have more training on filtering.”</i>
<b>Safety Culture</b>	<i>“Managers exerting pressure to get people moved fast is a regular occurrence and is a frustrating and dangerous practice for nurses to undertake. No consideration is ever given to the</i>

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*patients we already have, how ill they might be and the level of input they require...It's like they don't exist as human being, just a commodity taking up a precious bed."*

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### 5.5.2 QUESTIONNAIRES

A prototype questionnaire was produced based on the high-level factors identified from the narratives. The first test with three members of staff resulted in clarifications to the wording of questions and examples. In addition, in order to reduce the amount of time required for completing the questionnaire, the high-level factors "Training" and "Safety Culture" were removed from the questionnaire. Training was felt to be the least problematic issue; safety culture was not regarded as a process that could be managed as such, but rather a long-term issue, where the overall implementation of PRIMO was actually an effort towards improving it. The questionnaire was then distributed to staff four times over the implementation period. The monitoring results are shown in Table 9.

Table 9: Questionnaire results (Mean / Standard Deviation) over the duration of the implementation period (scores: 1 (best) - 5 (worst)) - Case Study B

Problem Factor	Dimension	Aug-2012	Dec-2012	Feb-2013	May-2013	Mean
		(17/29 responses)	(7/29 responses)	(6/29 responses)	(9/29 responses)	(Aug-2012 – May-2013)
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
1. Communication & Information	Missing / inaccurate	3.7 (1.2)	4.1 (0.7)	3.2 (1.6)	3.2 (1.3)	3.5
	External hospital	4.0 (1.0)	3.5 (1.0)	3.2 (0.8)	3.3 (1.1)	3.5
	External general	3.2 (1.2)	3.6 (1.0)	3.2 (1.1)	3.3 (1.3)	3.3
2. Equipment & Computers	Unavailable	4.5 (0.6)	4.6 (1.1)	4.3 (0.5)	3.5 (1.3)	4.2
	Usability	4.1 (1.0)	4.1 (1.2)	4.2 (1.1)	3.5 (1.4)	4.0
	Broken	4.4 (0.7)	3.3 (1.0)	3.6 (0.9)	3.7 (1.4)	3.8
3. Staffing	Number	4.4 (1.3)	4.4 (1.1)	4.0 (0.7)	3.8 (1.2)	4.2
	Absence	3.6 (1.4)	4.6 (0.8)	4.2 (1.1)	3.7 (1.0)	4.0

	Skill mix	4.3 (0.9)	4.4 (0.9)	3.6 (0.9)	3.3 (1.4)	3.9
4. Demand	Out of hours	4.3 (0.8)	3.8 (1.0)	3.6 (1.7)	3.4 (1.4)	3.8
Management & Workload	Workload	4.3 (1.2)	4.1 (0.9)	3.2 (1.7)	3.5 (1.2)	3.8
	Routine demands	4.4 (0.7)	3.6 (1.1)	2.0 (0.8)	2.1 (1.2)	3.0
5. Work Environment	Layout	4.4 (0.9)	3.5 (1.4)	4.2 (1.6)	3.3 (1.4)	3.9
	Interruptions	3.6 (1.1)	3.7 (1.5)	3.5 (1.3)	3.5 (1.3)	3.6
	Messy	3.7 (1.3)	4.7 (0.7)	4.2 (1.0)	3.9 (0.9)	4.1
6. Procedures	Absent	2.9 (1.2)	2.3 (1.4)	2.6 (1.3)	2.7 (1.2)	2.6
	Inappropriate	4.0 (1.3)	3.8 (1.5)	3.2 (0.8)	3.2 (1.4)	3.6
	Misuse	3.7 (1.1)	4.0 (0.9)	3.0 (1.6)	3.5 (1.3)	3.6
7. Teamwork & Attitudes	Peer support	4.1 (1.2)	3.7 (1.5)	3.5 (1.3)	3.4 (1.1)	3.7
	Senior support	4.1 (1.1)	4.2 (0.8)	3.0 (0.8)	3.5 (1.2)	3.7
	Communication style	3.0 (1.4)	3.1 (1.5)	1.5 (0.6)	3.2 (1.3)	2.7

### 5.5.3 IMPROVEMENT ACTIONS

Table 10 provides a summary of the problems that have been targeted for improvement, the improvement actions carried out, and the outcomes obtained. These are described in more detail below. The problems and improvement actions present a mix of simple issues that could be resolved in the short-term, and more complex inter-departmental issues that require longer-term efforts. Accordingly, some actions, such as the educational presentations to junior doctors about the appropriate recording of patients' nutritional requirements, resulted in good success; others, such as the working group set up with the IT department to increase the access to computing and printing facilities have shown little improvement, but have resulted in raised awareness of the problem among all the involved stakeholders, and in ongoing discussions.

**Table 10: Summary of improvement actions - Case Study B**

Problem	Improvement Action	Outcome
<b>Broken bedside lights</b>	Development of an approved protocol and training package to enable nurses to change bedside lights independently.  Audits	100% of bedside lights are functional.
<b>Unavailable drip stands</b>	Purchase of 5 new drip stands  Colour-coded drip stands	Informal staff feedback suggests drip stands more readily available
<b>Unavailable computing and printing facilities</b>	Installation of a new computer for use by nurses  Working group with IT department set up	Informal feedback suggests that access to computing and printing facilities has not improved. Discussions with IT are ongoing.
<b>Missing patient notes</b>	Raised awareness among junior doctors through presentations.  Development of a laminated reminder	Awareness has been raised, and notes are returned in > 90% of cases.

	card.	
	Audits	
<b>Missing patient nutritional requirements information</b>	Raised awareness among junior doctors through presentations.  Included feeding instructions box on hospital-wide admissions form.  Audits	Awareness has been raised, and audit shows significant improvement.
<b>Messy work environment leaving no space for nurses to write</b>	Raised awareness among doctors through feedback in staff meetings.  Audit.	Awareness has been raised, and nurses' station is clutter-free.

### **Broken bedside lights**

The analysis of questionnaire results identified as an area of significant concern unavailable and broken equipment and computers. The analysis of narratives and personal discussions suggest that broken light bulbs at the patients' bedside were a problem that caused particular frustration among staff. The absence of working bedside lights is a patient safety threat because patients continue to be admitted during the night, and these patients require assessment, and their notes have to be written up. This issue was chosen as an area for improvement because of the strong feelings of frustration expressed by staff, and because it was felt that it was an unnecessary problem in the sense that nurses could easily change the light bulbs, but there was no agreed process with Estates and Health & Safety that allowed them to do so.

Estates were approached with a problem description, and a request for nurses to be allowed to change the light bulbs was discussed. Estates developed a protocol and a training package that would enable nurses to change the light bulbs safely. This protocol was approved by Health & Safety, and subsequently implemented. Nurses on SEAU are now able to change the light bulbs independently provided they have completed the training package. In addition, Estates are now

carrying out fortnightly inspections to ensure light bulbs are working. The audits that have been carried out suggest that 100% of light bulbs at the patients' bedside are now working (see Table 11).

### **Unavailable drip stands**

Another issue with broken and unavailable equipment that was highlighted in the narratives was the unavailability of drip stands. As a result, nurses need to search for drip stands and often go to other wards to find additional drip stands. This results in time being wasted and strained personal relationships across departments.

This information was shared with the ward management, and subsequently five additional drip stands were purchased. These were colour-coded so that it was clear that they belonged to the ward and would not disappear to other areas. Informal feedback suggests that this intervention has improved the situation and less time is spent looking for equipment.

### **Unavailable computing and printing facilities**

The third issue relating to broken and unavailable equipment pertains to the limited availability of computing and printing facilities for nurses. This causes a backlog of work, and may lead to information not being available when required.

The general situation has been discussed with the IT department, and a working group has been set up to review the situation. In the short term, the ward sister has arranged with the IT department the purchase and installation of a new computer for use by nurses.

Informal staff feedback suggests that the access to computers for nurses has not improved noticeably. Discussions with the IT department are still ongoing and have not resulted in any changes. The new computer appears to be used predominantly by doctors, whose own shortage of equipment means that nurses are still left waiting when they need to access information or input data.

### **Missing patient notes**

The analysis of the questionnaire results identified missing and inaccurate information as an area of moderate concern. Through the evidence provided in the narratives, and in discussions with staff, missing patient notes was identified as one such problem. This problem arises often when doctors consult or write in the patient's notes at the bedside or at another location, but then forget to replace the notes. Subsequently, nurses have to look for the notes or inquire of the doctor where

the notes had been left. This may cause delays in patient treatment, and it results in time being wasted.

This issue was raised with junior doctors through presentations at the weekly training session by one of the junior doctors who had joined the project team. The intention was to raise awareness of the impact on nurses' workload. A laminated reminder card was developed by the project team and attached to the notes trolley. This card was intended to act as an external reminder that notes should be returned to their place after use.

Audits that were carried out suggested that after these interventions notes were returned in over 90% of cases (see **Error! Reference source not found.**Table 11). In order to sustain this improvement as doctors rotate, further presentations have been held and are scheduled for the future.

### **Missing patient nutritional requirements information**

A further problem relating to missing and inaccurate information identified from the narratives and through discussion with staff was the absence on the admissions form of adequate information about patients' nutritional requirements. In particular, the need for fasting for surgical patients should be indicated through a "nil by mouth" (NBM) instruction. The absence of such an instruction can lead to delays in treatment or in patients' not receiving adequate nutrition.

As with the missing patient notes, this issue was raised in the junior doctors' training seminar. The aim of the presentation was to raise awareness of the need to document feeding instructions, but also to make doctors aware that the instructions they thought were clear may appear different to nurses. In addition, a change to the admissions form was proposed to include a box for the nutritional requirements. In order to test this intervention the project team included a sticker on the clerking form. This sticker was attached manually by the project research nurse, and is not a sustainable solution in the long run. However, it served to illustrate the potential impact such a solution could have.

Audits suggest that documentation of nutritional requirements has improved significantly following these interventions (see Table 11). The audit data of this prototypical intervention was communicated to senior managers, and ultimately the Medical Director approved a hospital-wide change to the admissions form that is currently being implemented.

### **Messy work environment leaving no space for nurses to write**

The questionnaire results identified as an area of significant concern the messy work environment on the ward. The analysis of the narratives and discussions with staff suggested that one particularly problematic issue related to the amount of clutter (e.g. coffee cups) left on the desk at the nurses' station. Owing to this clutter nurses are often unable to write their documentation at the station, and have to find alternative space. This may result in time being wasted, documentation being filled in with a delay or in abbreviated form, or missing documentation. It also presents a problem for infection control.

One of the junior doctors, who had joined the project team, led on an awareness-raising intervention by giving presentations during the junior doctors' teaching sessions and in staff meetings. The aim of these presentations was to remind staff of the primary purpose of the desk at the nurses' station and the potential impact on patient safety, workload and infection control.

The audits that were carried out suggest that awareness has been raised successfully and that the nurses' station is clutter free (see Table 11).

**Table 11: Baseline and post-intervention audits**

Date	Medical notes returned to trolley	Light bulbs at patients' bedside working	Nutritional requirements recorded	Clutter at Nurses Station
Baseline	85%	85%	55%	10 items
1 <sup>st</sup> audit	95%	100%	64%	0 items
2 <sup>nd</sup> audit (4 weeks later)	92%	100%	89%	0 items

## 5.6 CONCLUSION

Over the course of the 12-months period, PRIMO provided information about the problems that staff on the surgical emergency admissions unit experience in their everyday work. As in case study A, these are not related to specific adverse events or patient safety incidents, but they have the potential to contribute to adverse events, and they have a negative impact on staff morale and workload levels.

The problems that were identified include a wide range of issues: missing or broken equipment, such as missing drip stands, broken lights at the patient bed side and lack of computing facilities; staffing

levels; messy work environment, in particular around the nurses' station; and missing information, such as feeding instructions or misplaced patient notes.

Similar to case study A, PRIMO provided information that led to the development and implementation of improvement actions. The introduction of a process enabling nurses to change broken light bulbs was an interesting success. On the one hand, it is a deceptively simple problem. On the other hand, solving this problem required working down long communication chains and backtracking from dead ends in the communication. The introducing of a specific field for feeding instructions on the hospital-wide clerking form was another successful intervention where learning was spread beyond the department. The evidence provided by PRIMO and the subsequent audits carried out as part of the improvement activity were instrumental in the communication with senior decision makers.

Not all interventions were as successful, and not every problem could be addressed. Staffing levels were felt to be beyond the sphere of influence of the project team. The access to printing and computing facilities for nurses has not improved either.

The continued use of PRIMO in the surgical emergency assessment unit can contribute to monitoring the factors that potentially contribute to patient safety risks. In this way, a constant flow of risk intelligence can feed into continuous improvement activities.

## CHAPTER 6 PREREQUISITES FOR SUCCESSFUL IMPLEMENTATION

### 6.1 INTRODUCTION

In this chapter, prerequisites for the successful implementation of PRIMO as a tool for organisational learning will be explored. A qualitative approach using thematic analysis of implementation diaries and semi-structured interviews with staff from the two case study project teams was used. The next section summarises the aims and objectives of this part of the study (Section 6.2), and describes the methods used (Section 6.3). The main part of the chapter is dedicated to the presentation of the results of this research activity (Section 6.4). A discussion concludes the chapter (Section 6.5).

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	Section
Introduction	6.1
Aims & Objectives	6.2
Methods	6.3
Results	6.4
Discussion	6.5

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### 6.2 AIMS & OBJECTIVES

The aim of this research activity was to elicit and to describe staff perceptions on common prerequisites for the successful implementation of PRIMO across diverse settings.

### 6.3 METHODS

#### 6.3.1 PARTICIPANT RECRUITMENT

To elicit and to describe staff perceptions, a qualitative form of enquiry was adopted. Semi-structured interviews were conducted with members of the implementation team of each case study site (n=6 interviews in total). An overview of their roles is given in Table 12.

Table 12: Participants by role and phase

Case Study Site	Role	Participant ID
A	Head of Radiology	
A	Radiographer (Implementation Lead)	
		A-01, A-02
B	Surgical Trainee (Implementation Lead)	
B	Research Nurse	

- B Staff Nurse (PRIMO champion)
- B Junior Doctor

B-01, B-02, B-03, B-04

### 6.3.2 DATA COLLECTION

The implementation lead at each site was asked to keep an implementation diary. In the implementation diary they could record both factual events (e.g. minutes of meetings) as well as personal reflections (e.g. personal learning or frustrations) in relation to the implementation process of PRIMO at their respective site.

Additional data were collected through semi-structured interviews during September 2013 – November 2013. Interviews were held in a meeting room on site of the respective organisation. Each interview lasted between 45 and 90 minutes. Interviews were audio-recorded. The audio recordings were subsequently transcribed, and during the transcription process all identifiers were removed to ensure anonymity. The interviews followed the topic guide shown in Table 13.

**Table 13: Topic guide for interviews with local implementation team members**

<b>Introduction</b>	Background to the study and the interview
<b>Professional background</b>	Interviewee’s professional background and current role
<b>Implementation journey</b>	Description of how PRIMO was implemented; aims; data collection; data analysis; feedback to staff
<b>Organisational learning</b>	Learning derived from PRIMO; learning from the data; indirect learning; learning external to the department
<b>Actions</b>	Improvement actions triggered by PRIMO; consultation of data sources; types of improvements; other effects of PRIMO
<b>Barriers</b>	Interviewees perceptions of obstacles to the implementation of PRIMO and how these were dealt with
<b>Facilitators</b>	Interviewees perceptions of what supported the implementation of PRIMO
<b>Ending</b>	Expression of thanks for contribution

### 6.3.3 DATA ANALYSIS

An inductive qualitative analysis approach (thematic analysis) was used. In a first step, the implementation diaries and the interviews were read to allow familiarisation with the data. Subsequently, each implementation diary and each interview were coded using a mixture of descriptive, open and *in vivo* codes. An analytic memo was produced for each implementation diary and interview summarising the researcher's thoughts and issues of particular interest.

Using the codes and the analytic memos major categories were identified through clustering of codes in meetings of the project team. The interviews were then recoded.

### 6.4 RESULTS

The thematic analysis identified four themes or factors that staff perceive to contribute to the success of PRIMO as a tool for organisational learning and improvement: staff engagement, senior management support, team composition, and organisational readiness, see Table 14. These factors are interrelated: adequate team composition can contribute to ensuring senior management support and to fostering staff engagement. Senior management support also contributes to increased staff engagement by adding drive to the process and allowing time for staff to contribute. Staff engagement and senior management support are direct prerequisites for generating organisational learning and for turning this into improvements. Visible improvements, in turn, can enhance staff engagement. All of this takes place against the backdrop of an organisational culture that may be more or less ready for continuous improvement.

Participants described for each of these factors the possible benefits – or the possible negative effects when they were not adequately considered. Participants further identified strategies they adopt to improve these factors, as well as challenges and obstacles they encountered. These are described in detail below.

**Table 14: Factors influencing the success of organisational learning and improvement**

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<b>Theme 1: Staff engagement</b>	Active staff engagement can lead to more proactive learning, a sense of empowerment, and contribute towards positive staff morale. Key strategies for engaging staff include adequate communication and feedback, collaborative solution development, and harnessing of professional incentives. Obstacles in engaging staff are loss of continuity due to frequent staff changes, low staff morale and negativity,
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staffing levels and workload, slow pace of change, and difficult relationships across departmental boundaries.

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**Theme 2: Senior management support**

Senior managers can enable change. They can also engage at a managerial level with stakeholders across departmental boundaries. Key strategies for securing senior management support are early involvement of senior managers, and data-driven communication backed by systematically gathered evidence. Obstacles in obtaining senior management support include the lack of priority for proactive learning and improvement, the personality of individuals and their interests, and the high turnover of senior management staff, which makes establishing working relationships difficult.

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**Theme 3: Team composition**

Adequate team composition facilitates staff engagement and contributes to securing senior management support. In this way it also contributes to the successful implementation of improvements. Strategies for building an appropriate team include the assembly of a large, multi-disciplinary team with different strengths, the inclusion of ward champions to ensure a continued presence in the work environment, and the early involvement of senior managers in the team. Obstacles include inadequate staffing levels, frequent staff changes resulting in a lack of continuity of team membership, a limiting part-time role that reduces the presence in the work environment, and a lack of senior management involvement due to other priorities.

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**Theme 4: Organisational readiness**

Proactive learning and service improvement should become a core function and priority of the organisation. In order to influence senior decision-makers it is crucial to present quantitative evidence, and to communicate what the benefits to the patient and to the organisation would be. Obstacles

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include productivity pressures, low staff morale and negativity, and a predominantly reactive approach that keeps the organisation in a continuous mode of having to manage crises.

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## Staff engagement

The key benefits of staff engagement, the strategies to foster staff engagement and the barriers and obstacles that may be encountered are summarised in Table 15.

**Table 15: Benefits, strategies and obstacles relating to staff engagement**

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<b>Benefits: proactivity, empowerment, morale</b>	Staff can contribute to making organisational learning more proactive. They can participate in improvements, which may lead to a sense of empowerment. Staff morale may receive a positive boost.
<b>Strategies: communication, collaborative solution development, professional incentives.</b>	Communication with staff is a key strategy, and may involve identifying and speaking to the right people, getting staff to see the benefits, and providing feedback to staff. Involvement of staff in developing solutions to problems collaboratively may bestow a sense of ownership and keep them motivated and engaged. Professional incentives can contribute to making engagement in learning and improvement more attractive to staff.
<b>Obstacles: frequent staff changes, low staff morale and negativity, staffing levels and workload, pace of change, inter-departmental communication</b>	Obstacles to staff engagement are many and varied. Frequent staff changes lead to a loss of continuity and new staff will be unfamiliar with the process. Low staff morale, a lack of proactive thinking and a feeling of negativity about the prospects of change threaten staff engagement. Inadequate staffing levels and high workload levels may leave little time for participation. The perception that change is not quick enough may lead to disappointment and reaffirm negative

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attitudes. Communication across departmental boundaries may be challenging as individuals from different departments (or organisations) may have their own agenda, and it may be difficult to identify the right individual to speak to.

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The success of PRIMO as a tool for organisational learning and improvement rests on the active participation of frontline staff as it is designed to elicit information from them. In those instances where staff are engaged in the process, they can contribute through PRIMO in a proactive fashion to learning and improvement. Participants suggested that the involvement of frontline staff in the development of solutions to their problems could be very empowering. As a consequence, and also as a result of seeing improvements in their environment, there might be a positive boost to the morale of staff.

Participants described a range of strategies that they employed in order to try to engage staff. Communication is a key strategy. Participants suggested that identifying the right people was important, for example friendly colleagues, who may want to help. Frequent individual discussions with people were suggested, where they would explain the project and ask individuals for help with specific aspects. At the same time, there was the recognition that they need to introduce PRIMO to staff more widely, but also the realisation that not everyone would necessarily engage. Getting people to see the benefits of participation was suggested as another important communication aspect. Participants would point out to staff that staff had the opportunity to address problems proactively before they became bigger issues or adverse events, and they would try to point out the benefits to support and administrative roles. Regular feedback to staff was identified as a further important communication strategy. Feedback might take place through multiple modalities, such as updates in staff meetings, postings on the notice board, and discussions with individuals (“cheerleader role”). Participants suggested that it was important to explain the action plans, both short-term and longer-term actions, in order to both update staff and to manage expectations.

In the quotation below, a participant from Case Study site B summarises how their project team adopted a broad communication approach with staff using different modalities:

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*“We again tried multiple ways to communicate with staff. [...] I went onto the ward and communicated with them directly. We had the two juniors that were working in the hospital that were able to communicate with*

*staff. We had presentations both at junior doctors' meetings and at the surgical audit meeting for consultants, because it was a surgical ward. We had presentations on the ward with the ward staff. We had information given to the staff at staff meetings, which happened on a regular basis. We had a notice board put up on the ward specifically dedicated to PRIMO and we had posters attached to that notice board with information about what had been done in the previous month and what the plan was for the future. So we tried a wide variety of communication techniques." (B-01)*

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Below, a participant from Case Study site A reflects on the importance of getting people to see the benefits, using one of their successful improvements as an example. It is argued that once people see real benefits they are more willing to cooperate in the development of improvements and accept these in their practice.

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*"If we talk about the A&E pathway. You know, we have a problem here, which was more severe than we thought. If someone walks in and they have a fracture, how can we deal with that? It was very ad hoc. Now we say we have the pathway. People are happy to take [patients] from us on that. And the patient gets the immediate benefit. Those to me are tangible. They're proper, if you like. And you see that there's been a way ahead with that." [A-02]*

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The involvement of staff in the collaborative development of solutions to identified problems was suggested as another key strategy for enhancing staff engagement. Staff could be involved in the identification of solutions, for example in discussions in the staff meeting. Individual members of staff could be asked in personal discussions for their input and opinion. Finally, members of staff with a particular interest in the problem and the solution could be involved in the actual implementation and testing of the improvement. In this way staff could feel more actively involved in the decision-making, and this might lead to a sense of empowerment and contribute to positive staff morale.

A third key strategy that was identified by participants was the harnessing of professional incentives. It was recognised that certain staff groups, such as doctors and radiographers, could use the involvement in audits and service improvement as part of their portfolio. This provides an additional and very strong incentive for their participation. However, it was also recognised that not all staff groups have these professional incentives. Participants suggested, for example, that for nurses no comparable professional incentives existed. It was suggested that the development and

presentation of joint outputs (such as posters and papers) that could be presented at professional meetings, could give some recognition to the work of the nurses.

A participant from Case Study site B reflects on the difference between doctors and nurses with respect to professional incentives below. It is suggested that for nurses the situation is much more difficult as they do not receive any professional reward or recognition.

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*“One of them [junior doctors] that did a lot of the audits for us was very, very enthusiastic and I would be very surprised if he hadn’t carried it on somewhere else. He was fantastic. And another one that [Name] has just brought in seems to be pretty good. He’s doing audits as well. But apparently audits are something that doctors have to do. And this is a really good bicycle for them to get on to that. They’re doing the audits and the providing the information to other doctors at meetings, so yes, it’s good for them. And I hope those two carry it on. [...] Nurses don’t have to do it. They don’t get any thanks for it. They don’t get anything tangible at all out of it. It’s just another job, I suppose.” (B-01)*

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Participants identified a wide and varied range of obstacles that may act as barriers to successful staff engagement. Frequent staff changes may lead to a loss of continuity as both key projects members as well as participating staff may leave the department or the organisation. New staff will be unfamiliar with the environment and the processes, and they have already many things to learn about the organisation, so that they may be reluctant to participate in service improvement activities. Raising concerns may also be perceived as being critical, which new members of staff may try to avoid, at least initially. On the positive side, it was recognised that the arrival of new members of staff may also provide the opportunity for fresh input if these barriers could be overcome.

Participants suggested that a lack of proactive thinking, a negative attitude towards learning and improvement, and generally low staff morale might prevent staff from engaging with the process. Staff may feel that nothing will change anyway, so they do not have to waste their time on such activities. Low morale could lead to a situation where everybody “just keeps their head down” and people do not engage actively in thinking about possible improvements to the work environment. Staff may also feel that they are not being listened to.

Participants suggested that inadequate staffing levels and high levels of workload contribute to low staff morale and a lack of active engagement. Staff may feel that they simply do not have the time to participate in learning and improvement activities, as there is no time set aside for this, and they

are constantly busy. They may perceive service improvement as an additional activity for which they simply do not have the time available.

Adding to the general level of negativity, another obstacle that participants identified was the pace of change, which may be too slow for staff. Bringing about organisational change, even for seemingly simple issues (such as defective light bulbs), requires a lot of negotiation and time. Staff may feel reaffirmed in their negative attitudes in the absence of fast, visible improvement.

In the quotation below, a participant from Case Study site B describes this feeling of negativity, low morale and workload pressures, and compares this to a “disease” that one cannot shake off.

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*“Right at the beginning, I was told that they’ve done this before and never got anywhere, so why should PRIMO be any different. They’ve had Productive Ward initiatives that started to get going and then disappeared. So, I think I started with them being very negative about it. Nothing else has worked, so why should this work, and the two things in particular were the light bulb issue, which I was told I’d never get sorted out, and the issue of the feeding regime, which I thought was going to be easy to sort out but just hasn’t been easy at all. [...] I think it’s the culture. I think nurses are so demoralised. There’s so much negativity. Yes, it’s like a disease that you just can’t shake off.” [B-01]*

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Communication with and engaging other departments and other organisation was identified as particularly challenging. Many of the problems require interventions across departmental boundaries, but finding the right person to speak to may prove very difficult and time consuming. In addition, different departments have their own agendas and priorities and may prioritise problems differently. Participants also suggested that geographic proximity and the resulting personal acquaintance among staff were key factors in overcoming these issues; relationships with wards that are “next door” are perceived less problematic than those with wards that are further away.

### **Senior Management Support**

The key benefits of having appropriate senior management support, the strategies to bring senior managers on board and the barriers and obstacles that may be encountered are summarised in Table 16.

Table 16: Benefits, strategies and obstacles relating to senior management support

<b>Benefits: enable change, engage across departmental boundaries</b>	Senior managers can enable change by adding drive to improvements and by freeing up time for staff. They can also engage at a managerial level with stakeholders across departmental boundaries.
<b>Strategies: early involvement, data-driven communication</b>	Early involvement of senior managers can contribute to their taking ownership and responsibility of the process. Communication backed by systematically gathered evidence might prevent concerns raised by staff from being regarded as moaning, and can provide a focus for improvements.
<b>Obstacles: proactive learning and improvement not seen as an organisational priority, personality, high turnover of senior management staff</b>	Senior managers might not regard proactive learning and improvement as an organisational priority, and they might end up paying lip service to these activities. This is also dependent on where their personal interests within the organisation lie. High turnover of senior management staff can impact on the team composition, and it can make it difficult to establish working relationships with senior managers in the organisation's hierarchy.

Active support from senior management was perceived as a key prerequisite for both staff engagement and implementation of improvements. Senior managers can enable change by adding drive to the improvements and making them a priority. Senior managers, who want to bring about change, may find ways to free up time for staff to participate in the learning and improvement activities. Participants suggested that frontline staff might become engaged if their senior managers deemed it an important and essential part of their working world. Senior managers may also identify better the best people to seek out and speak to at the different levels of the organisational hierarchy, and they can initiate a meaningful dialogue on management level across departments.

A participant from Case Study site B succinctly sums up the importance of senior management support as a personal learning experience:

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*“I think the greatest thing I learned from PRIMO was that no matter how well designed or well intentioned a project is, without the senior support of senior decision makers, nothing will change. And that I think is my greatest lesson.” [B-02]*

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Participants from both case study sites indicated that they struggled with securing adequate levels of senior management support, even though there were also some instances related to particular improvements where they felt supported. One of the lessons participants described was the need for early involvement of senior managers, not just on paper by signing off on a project application form, but also more directly in the actual development of the project. In this way, they could regard the project “as their own”, rather than something that others were doing on their ward.

Staff identified as a second strategy for increasing support from senior managers the adoption of a data-driven approach to communication. With appropriate data in hand to demonstrate the problem and argue the case, senior managers might be more inclined to provide support and might not disregard the concerns of staff as simply “moaning”.

A participant from Case Study site A describes how PRIMO provided such evidence and how this supported discussions with management to focus on particular improvements.

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*“And it’s something then that we can take to our manager and say, ‘I’ve done these questionnaires, and then out of twelve people have commented that something’s broken in Room 1, we need to look at that. I don’t know if we’ve got the right people servicing or do we need to work on the service contract?’. And I think it will focus a little bit, and maybe not necessarily for me to action in the future, but we can go and say ‘This is the evidence. This needs to be done. Maybe we need to work on this project’. [...] I think with a lot of the issues raised in our questionnaires had been spoken about previously, but it was deemed moaning, and perception of management is very often with minor things that people are just moaning about things, and they should just get on with it. I think it did help us to focus those moans really on specific areas, and help us bring about some change.” [A-01]*

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Participants identified as one particular obstacle to the involvement of senior managers that proactive organisational learning and service improvement might not be regarded as an organisational priority. In such instances, senior managers may regard the process as outside of

their remit (“wasn’t particularly bothered”), and they may fail to participate in project meetings (“paying lip service”), thereby promoting the impression among staff that proactive learning was of low priority. Participants further suggested that whether or not a senior manager was supportive of the process was dependent on their personality and where their interests lay within the organisation.

A further obstacle that participants described was the high turnover of senior management staff and their changing roles. This could affect the team directly, for example when a senior manager, who had been part of the project team, takes on a new role and leaves the team. In addition, changes in senior management staff would affect the team also indirectly when they were seeking to establish working relationships with senior managers to pursue trust-wide changes and improvements.

In the quotation below, a participant from Case Study site B describes the frustrations that arose from being unable to establish supportive relationships with senior managers due to frequent absences and role changes.

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*“When we went up the management hierarchy to try and get senior management and nursing staff involved, on each occasion we were stymied by the fact that the senior management nurse went off sick for a considerable amount of time, so we were constantly re-explaining the problem to a new senior management member, and then they would disappear and nothing would change.” [B-02]*

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### Team Composition

The key benefits of having an adequate team composition, the strategies to bring the right team members on board, and the barriers and obstacles that may be encountered are summarised in Table 17.

**Table 17: Benefits, strategies and obstacles relating to team composition**

<b>Benefits: facilitate staff engagement, enable improvements</b>	Adequate team composition facilitates staff engagement and contributes to securing senior management support. In this way it also contributes to the successful implementation of improvements. Absolute dedication by the team is required.
<b>Strategies: build a large,</b>	A larger and multi-disciplinary team can reach out to more

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<b>multi-disciplinary team with different strengths, ward champions, early involvement of senior management</b>	staff and increase staff engagement. Team members will possess different and complementary strengths. Ward champions can ensure continuous presence on the ward. This contributes towards maintaining the momentum of improvement work, and it can speed up the pace of change. Early involvement of senior managers can contribute towards securing their active support.
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<b>Obstacles: staffing levels, frequent staff changes, part-time role limiting, lack of senior management involvement</b>	Inadequate staffing levels result in a lack of time available for staff to participate in project team activities. Frequent changes of staff can lead to a lack of continuity in team membership and in improvement activities. The part-time roles of many team members may result in a lack of physical presence on the ward. Senior managers may not regard proactive learning and participation in such projects as a priority.
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Participants stressed the importance of having the right team available, and suggested that absolute dedication by the team members was required. An adequate team composition might have a positive effect both on the level of staff engagement and on the level of senior management support. In this way, team composition supports the elicitation of learning from staff, and the implementation of improvements both locally and across departmental boundaries.

Participants from both case study sites suggested that they struggled to build and to maintain an appropriate project team. A key lessons participants pointed out was the need for establishing a larger, multi-disciplinary team. A larger team can reach out to more staff and to different staff groups, thereby increasing staff engagement. Different team members will have different strengths, with some members being better at engaging staff, and other members having more improvement skills.

Below, a participant from Case Study site A reflects on the team composition that would be required, while acknowledging that their project team had been considerably smaller.

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*“We have a sort of safety team here, if you like, but I think you need to, in a way, formalise it. And I would say you need a cross-section across every department. So, for us, it would be ideally, and it didn’t happen, you would need another member of the medical group. At least another radiographer. We have some people we call assistant practitioners, who are not radiographic staff, but have radiographic training. [...] I would definitely have them, and I think they’re a fantastic intermediate group, and they’re very close to the ground, if you like, but haven’t got completely steeped in the professional side of things, and I think that’s good. And then the admin. So, if we’re really taking it seriously, patient safety generally, this particular project itself, I think that’s what I’d do.” [A-02]*

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When there are more team members, it also means that a continuous presence by a member of the team on the ward or in the work environment is ensured. This might have a positive impact on maintaining the momentum of improvement work, and it may speed up the pace of change. A particular strategy for ensuring this would be to recruit additional ward champions.

Participants also suggested again the early involvement of senior managers as active team members as a useful strategy, as in this way senior managers might take greater ownership and provide more support to the proactive identification of problems and the development and implementation of solutions.

In the quotation below, a participant from Case Study site B comments on the need for the involvement of senior staff. The participant also reflects on organisational hierarchies and communication processes, suggesting that nursing staff find it hard to be listened to.

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*“Someone with a bit of clout. Someone higher than a nurse. Because if you’re going to see directors and heads of departments, and they see a nurse...because that’s the culture, isn’t it. A lot of doctors don’t want to talk to nurses anyway. So, I think something higher than a nurse needs to be really taking it. [...] And they need to be the one who’s prepared to go and talk to people to get things moving. It’s very easy to ignore a nurse. Very easy. They also know people that are higher up and out of the ward, where as nurses know people in the ward area, but not necessarily outside. And definitely you never get to see any directors, let alone talk to them.” [B-01]*

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Staffing levels and the resulting lack of available time were identified as a key obstacle to building an appropriate team. Closely related is the lack of continuity that results from team members leaving, as they either move on to other roles or leave the organisation altogether. This was perceived a frequent occurrence with all levels of team members: junior staff rotate through different positions, ward staff change roles to leave the ward environment, and senior managers take on additional or other roles that leave less time for ward-based improvement work.

In the quotation below, a participant from Case Study site B describes how the departure of a key member of the team disrupted the project.

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*“My first obstacle was that the PI [Principle Investigator], [Name], left and went to [Organisation], because that was the nature of his job. They move on. And as soon as we lost [Name], we lost a lot of the push towards the project. If he’d stayed, I think it would have been a lot better. He was based on the ward. He knew the ward sister. He’d worked with the sisters, he’d worked with [Name], the consultant. So, that was a big trigger, and it’s very hard for him to do it at a long distance as well. We also had junior doctors involved, but again, they stayed for a few months and moved on. Some of them were brilliant.” [B-01]*

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Participants also commented on the fact that a part-time role, which is common for a large number of staff, is limiting as it reduces the presence in the work environment. This makes staff engagement more difficult as there are fewer opportunities for discussions with individual members of staff. It also results in a much slower pace of the improvement activities.

Obstacles that relate to the participation of senior managers in improvement projects have already been discussed above.

### **Organisational Readiness**

The theme around organisational readiness is slightly different from the previous three themes, as organisational readiness forms the cultural background within which organisational learning and improvement activities take place. It permeates, enables or hinders such activities, and it has a direct influence on staff engagement, senior management support, and team composition. The summary in Table 18 provides an overview of the vision of what interview participants perceived was required in terms of organisational readiness, the strategies they felt they could use to influence organisational readiness, and the obstacles and problems they encountered.

Table 18: Vision, strategies and obstacles relating to organisational readiness

<b>Vision: proactive learning and service improvement as a core function and priority of the organisation</b>	Time and effort will be allocated to learning and improvement only if these activities are perceived as integral to the organisation's functioning. A culture change is necessary from a reactive, predominantly target-driven culture, towards a culture that is proactive and that supports improvement. This culture change has to be initiated and sustained from the top of the organisation's hierarchy.
<b>Strategies: data-driven communication, getting people to see the benefits</b>	Evidence is crucial in bringing about change. Quantitative data may not be superior to qualitative data, but it is essential in order to influence senior leaders. External funding can be a useful way of obtaining this initial data.
<b>Obstacles: productivity pressures, staff morale and negativity, reactivity</b>	Productivity pressures and resource constraints can lead to neglect of improvement activities in favour of short-term productivity gains. Staff may not have sufficient time to participate in improvement. Low morale and a negative attitude prevent staff from engaging in improvement activities. The predominantly reactive approach in the NHS means that organisations are continuously managing crises rather than focusing on improvement.

Participants described a vision of proactive learning and service improvement forming a core function and priority of their organisation. Time and effort will be allocated to learning and improvement only if these activities are perceived as integral to the organisation's functioning. If they are perceived as something that would be useful, but not necessarily essential, then there is the risk that learning and improvement will be neglected in favour of other priorities, such as meeting externally set targets. In an environment that is subject to many pressures and that has available only a finite amount of resources, time and effort will be allocated only to those activities that are perceived a priority.

Below, a participant from Case Study site A comments on the need to consider safety in terms of monetary values, as this is the terminology that decision-makers ultimately refer to. Money will be spent only on something that is perceived as integral to the business.

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*“I guess it’s all about priorities, isn’t it. If you see this as important, well as an essential part of what you do, it becomes integral to your thinking and the way you award time and effort to it. I think if you see this as an add-on, which would be nice to do, it often gets pushed behind when other priorities come against it, and we’ve certainly been pushed very hard about targets. It’s a culture we have. [...] It’s very much how we’re perceived and measured, and I guess when time’s short, you don’t invest in those things, which we’ve just been talking about [proactive organisational learning and improvement]. [...] Because when it has to be hard nosed and you say that will mean, whatever it means: a session a week for somebody, and you have to translate that into cash. And I think that’s what it boils down to. People have to make choices as to whether that’s important or not. [...] And I think that’s about the priorities in the Trust, isn’t it. And about saying are you genuinely sure about safety as a priority. Because we love to talk about it, but actually when you have to then stack it up against the financial equation.” [A-02]*

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The organisational priorities and the culture within which staff work influence to a significant extent how individuals prioritise their activities in their work environment and in their daily work. Participants suggest that a culture change was necessary from a reactive, predominantly target-driven culture, towards a culture that is proactive and that supports improvement. However, such a culture change has to be initiated and sustained from the top of the organisation’s hierarchy.

In the quotation below, a participant from Case Study site B describes this need for a culture change, and refers to the example of staff shortages, which is a problem for many organisations in the NHS.

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*“And that must be put down to the culture of how people perceive their roles within hospitals. And you need that to pervade from the very top levels all the way down. You can’t just have isolated pockets of relatively junior members trying to be proactive and trying to understand how to make improvements in healthcare. It has to come from the top. [...] You need to have a pervading culture from the top, which basically states ‘We are here to improve as individuals, and we need to create an environment, where people have time to improve.’ If I give you an example, and it’s just*

*my opinion, if you don't have enough staff on the ward, they're never going to have the time to stop and think about how they can improve the situation for patients. You need to incentivise, reward them and give positive feedback to help increase the feeling that what they're doing is valuable."* [B-04]

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Participants recognised the need for achieving a culture change, and that this required a commitment from the top of the organisational hierarchy. In order to contribute to influencing senior decision-makers, participants suggested similar strategies to those aimed at harnessing senior management support. This relates in particular to communication backed by evidence, and communicating what the benefits to the patient and to the organisation would be. Participants suggested that a useful way of establishing evidence that can be used to influence senior leaders was to apply for and to use external funding in order to initiate projects. Once the evidence has been established, and senior leaders can see the benefits, there might be the opportunity to sustain the improvement activities.

This view is expressed in the quotation below, where a participant from Case Study site B reflects on the role of evidence in bringing about change. The participant suggests that evidence was vital in order to bring about and sustain the change.

*"Yes, the data that we had collected, that we presented on a national stage in poster format, was presented to the powers that be, and [we] said 'We have evidence of this change. We found a problem. We've made an intervention. We have evidence that we have improved the problem. [...] We have a solution for you. This is all the evidence.' Without the evidence, we would not have the change, I'm certain of that."* [B-02]

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In the quotation below, a participant from Case Study site A expresses the belief that measurement was essential to influence decision-makers, while recognising at the same time that qualitative evidence might be equally as useful for improvement, but most likely not for influencing senior leaders.

*"I guess that a trap we often all into, but I think that if you're trying to start a project and keep influencing people and transfer it, you're going to have to something, I think. So, for me, you do have to measure. Whether that means that it's a better project than one you can't measure, I wouldn't like*

*to say that. But I think you do have to show that, so I think that's what I would go with from a sort of pragmatic point of view."* [A-02]

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Participants identified a range of obstacles or lack of maturity in relation to organisational readiness that may threaten the success and the sustainability of proactive organisational learning and improvement. Productivity pressures and resource constraints are a key obstacle, and they have implications on different levels. At a strategic level, the organisation may focus less on longer-term improvement objects, in favour of short-term cost savings. At a middle management level, ward managers might prioritise productivity over service improvement and patient safety work. At ward level, individual members of staff will feel the pressures of the work environment, and might refuse to engage with improvement activities, or they might simply be unable to find the time to participate.

In the quotation below, a participant from Case Study site A comments on the negative implications that arose from the neglect of and lack of resources to service improvement, which had been disregarded due to financial constraints.

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*"And they virtually dismantled the Lean team that we had, and service improvement work really fell by the wayside. [...] And I think that was to our detriment. But I think when Trusts are facing financial problems, this is often a default position they go into. They have to try and push productivity as hard as you can, and anything that looks an easy target tends to get chopped. And I think that's the reality of the whole thing. I think the interesting point is, though, that after whatever it is now, a few months, or years, after this, you start to see the cycle repeating itself, because now we've become less efficient and our services aren't improving, so it's costing us more, and so on."* [A-02]

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Productivity pressures at ward level might lead to low staff morale and the high level of negativity that was described earlier. In the quotation below, a participant from Case Study site B expresses the belief that this represents a threat to learning and improvement, and illustrates this with a reflection on the situation of nurses on the ward.

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*"I think also, and this is my own opinion, is that the ward situation is so difficult for the ward-based staff, the nurses and the healthcare assistants. Especially the nurses. I think they have to do a minimum period of say two*

*years or something in a ward environment. If they then get enough competencies, they are senior enough to apply for other roles, and I get the feeling they cannot wait to leave the ward environment and become a nurse specialist in something, or do something that takes them out of that stressful environment. And again, this comes down to culture. You need to keep these people involved, and you need to have experienced people. If you are continually just regenerating inexperienced staff, they're not going to be able to deliver on these kinds of projects and keep the culture going of learning and improvement and what's best for patients."* [B-04]

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Participants suggested that in the NHS there is a predominantly reactive approach to organisational learning. This is related to, and partially a consequence of, the productivity pressures described above. The constant shortage of resources, and the focus on externally set targets, means that organisations are continuously trying to put out fires. This leaves little opportunity for a proactive mindset, which would be required to improve services and patient outcomes. A participant from Case Study site A expresses this point in the quotation below.

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*"I think to me it's [proactive learning] a building block, as I understand it. If you ignore it or pretend it's not a problem, you're going to miss out hugely. So, if we talk about PRIMO, which is about anticipatory stuff or patient safety in a general sense, I think our track record in the NHS is you wait for it to become a problem and then react to it. It's the same with complaints or anything else, if you wait for them to be a problem, then they certainly will be. [...] And as I say, I think as a whole, as an organisation, possible as an NHS, we are not at all anticipatory or proactive. I think we do wait for problems, and have got used to responding to that. I think probably as a Trust we are probably very good at crisis management because we've been in that sort of situation for so long."* [A-02]

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## 6.5 DISCUSSION

Experience from implementing the PRIMO approach over a 12-months period in two diverse settings suggests that there are a number of common prerequisites that greatly influence the extent to which the approach can contribute to successful proactive organisational learning and improvement, see Figure 3. The identified prerequisites are staff engagement with the approach, the active support of senior management, an adequate team composition that is broad enough to engage with a wide range of staff and that includes senior managers, and an organisational culture that is mature and ready for proactive learning and improvement.



**Figure 3: Prerequisites for proactive learning and improvement**

Both case study sites identified a wide range of potential and actual barriers that they encountered in each of the above dimensions. It appears that the organisations, and likely the NHS as a whole, still have lessons to learn in order to fully reap the benefits that proactive approaches, such as PRIMO, may offer. In the current culture, which is predominantly reactive and driven by short-term considerations and crisis management, the priorities of senior managers do not necessarily feed into learning and improvement. As a result, there is inadequate support for these activities from senior managers, and this has negative effects on staff morale and staff engagement at departmental level. The case studies have demonstrated that learning and improvement are still possible in such a culture. However, they are driven to a large extent by the motivation of individuals, and the improvements that are achieved tend to be slower and of smaller scale. This notwithstanding,

participation in structured, systematic and data-driven learning and improvement activities can generate evidence that can be used to influence senior decision makers and to bring about change.

## CHAPTER 7 IMPACT ON SAFETY-RELATED ATTITUDES & BEHAVIOURS

### 7.1 INTRODUCTION

In this chapter, the impact of PRIMO on safety-related attitudes and behaviours in the two case study sites will be explored. A qualitative approach using descriptive and thematic analysis of semi-structured interviews with staff was used. The next section summarises the aims and objectives of this part of the study (Section 7.2), and describes the methods used (Section 7.3). The main part of the chapter is dedicated to the presentation of the results of this research activity (Section 7.4). A discussion concludes the chapter (Section 7.5).

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	Section
Introduction	7.1
Aims & Objectives	7.2
Methods	7.3
Results	7.4
Discussion	7.5

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### 7.2 AIMS & OBJECTIVES

The aim of this research activity was to explore the impact of PRIMO on safety-related attitudes and behaviours, and to describe possible mechanisms through which changes in attitudes and behaviours might have been brought about.

### 7.3 METHODS

#### 7.3.1 PARTICIPANT RECRUITMENT

To elicit and to describe safety-related attitudes and behaviours, a qualitative form of enquiry was adopted. Interview participants were a purposive convenience sample of front line and operational management staff from each study site. Table 19 and Table 20 provide an overview of interview participants by role and study phase for each study site. Individuals participating in the post-intervention interviews had not necessarily participated in the pre-intervention interviews due to changes in their place of work, absences or unavailability for interview.

**Table 19: Interview participants by phase and role (study site A)**

**Pre-Intervention**

**Post-Intervention**

ID	Role	ID	Role
A01	Radiology Assistant	A10	Radiographer
A02	Radiographer	A11	Senior Radiographer
A03	Assistant Practitioner	A12	Assistant Practitioner
A04	Radiographer	A13	Radiographer
A05	Assistant Practitioner	A14	Radiographer
A06	Radiographer	A15	Radiographer
A07	Radiology Assistant	A16	Assistant Practitioner
A08	Medical Secretary	A17	Radiographer
A09	Radiographer		

Table 20: Interview participants by phase and role (study site B)

Pre-Intervention		Post-Intervention	
ID	Role	ID	Role
B01	Ward Sister	B11	Healthcare Assistant
B02	Matron	B12	Staff Nurse
B03	Acute Care Practitioner	B13	Healthcare Assistant
B04	Clinical Educator	B14	Staff Nurse
B05	Foundation Year 1 Doctor	B15	Foundation Year 1 Doctor
B06	Foundation Year 2 Doctor	B16	Foundation Year 2 Doctor
B07	Foundation Year 2 Doctor	B17	Ward Sister
B08	Foundation Year 1 Doctor	B18	Staff Nurse
B09	Staff Nurse		
B10	Healthcare Assistant		

### 7.3.2 DATA COLLECTION

Data were collected through semi-structured interviews during May 2012 – July 2012 (baseline) and during July 2013 – September 2013 (post-intervention). Interviews were held in a meeting room on site of the respective organisation. Each interview lasted between 20 and 30 minutes. Interviews were audio-recorded. The audio recordings were subsequently transcribed, and during the transcription process all identifiers were removed to ensure anonymity. The interviews followed the topic guide shown in Table 21. In the post-intervention interviews, participants were also asked to reflect on whether they had experienced any changes in the different dimensions. The topic guide

was taken from the pilot study (1). For the purpose of the pilot study, this interview guide had been developed through a review of common safety culture assessment tools: Safety Attitudes Questionnaire (30), Hospital Survey on Patient Safety Culture (31), and Manchester Patient Safety Framework (32). Dimensions that elicit perceptions at the unit level were included in the topic guide, while those concerned with higher-level management behaviours and management processes were excluded, as these would most likely not be affected by PRIMO.

**Table 21: Topic guide for interviews with local implementation team members**

<b>Introduction</b>	Background to the study and the interview
<b>Professional background</b>	Interviewee’s professional background and current role
<b>Teamwork</b>	Description of teamwork; helping others and asking for help; asking questions; resolving conflicts
<b>Reporting &amp; learning</b>	Description of current processes for reporting and learning; usefulness; actionable learning; feedback; ownership
<b>Communication about safety</b>	Description of how safety issues are being talked about; handling of adverse events; opportunities for discussing safety concerns
<b>Priority given to safety</b>	Description of how safety relates to other organisational priorities; time available for considering safety issues; attempts to identify risks proactively
<b>Continuous improvement</b>	Description of improvement efforts; active participation; organisational support for improvement
<b>Ending</b>	Expression of thanks for contribution

### 7.3.3 DATA ANALYSIS

A descriptive qualitative analysis approach was used to describe safety related-attitudes before and after the implementation of PRIMO. Interview transcripts were coded based on the classification of safety culture dimensions described above for the description of the current safety-related attitudes and behaviours, and any changes that had taken place since the start of the project. Mechanisms that might have contributed to changes were identified through Thematic Analysis.

## 7.4 RESULTS

#### *7.4.1 BASELINE SAFETY-RELATED ATTITUDES AND BEHAVIOURS*

Description of safety-related attitudes and behaviours were produced before and after the implementation of PRIMO. Key findings of the baseline assessment are summarised in Table 22 below, and the full descriptions are provided in Appendix A and Appendix B.

Table 22: Summary of baseline safety-related attitudes and behaviours

Dimension	Case Study A - Radiology	Case Study B – Surgical Emergency Assessment Unit
<b>Teamwork</b>	Staff work together and support each other. It's easy to ask for help. Workload and inadequate staffing levels are threats to teamwork. Relationships with other wards are frustrating at times.	Nursing staff think in terms of the multi-disciplinary team, but doctors tend to regard nursing teams as distinct from surgical teams. Staff feel that it is easy to ask for help, and that senior members are approachable. Workload and inadequate staffing levels are threats to teamwork.
<b>Reporting &amp; learning</b>	Incident reporting and weekly communication meetings are the main instruments for organisational learning. Incident reporting is perceived critically, because staff do not receive feedback, and incident reporting is not regarded as a learning opportunity.	Incident reporting, different types of staff meetings and personal communication are the key instruments for organisational learning. Incident reporting is perceived critically due to the lack of feedback and the absence of visible improvements.
<b>Communication about safety</b>	Significant incidents and adverse events are motivators for discussing patient safety. Staff do not feel that they are blamed for incidents, but errors and mistakes are perceived as individual responsibilities rather than organisational deficiencies.	Patient safety concerns are best raised with the manager, but not all senior staff are interested in change. Following incidents, staff feel supported. However, the organisational response is directed towards the individual.
<b>Priority given to safety</b>	Staff feel they can approach their line managers with concerns about safety. However, often these issues do not	Patient safety is a concern and priority to frontline staff, but the organisational arrangements and priorities are

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<b>Continuous improvement</b>	<p>get dealt with. Staff feel that hospital management was prioritising finances over patient safety.</p> <p>Staff do not perceive an improvement culture within the department.</p>	<p>not always supportive. Management focus is on financial aspects. This may result in situations where patients are put at risk.</p> <p>Staff do not participate in improvement activities. Workload and lack of time are key obstacles to a culture of improvement.</p>
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#### 7.4.2 CHANGES

In both case study sites, changes in safety-related attitudes and behaviours were triggered by contextual factors outside of the project, as summarised below in Table 23 and Table 24.

Table 23: Changes in safety-related attitudes and behaviours - Case Study Site A

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<b>Improved staffing levels have improved teamwork</b>	<p>An important contextual factor appears to have been the recruitment of new staff. Staff had previously expressed the views that high levels of workload and inadequate staffing levels were major threats to effective teamwork. In the quotation below, a participant reflects on the positive impact on teamwork that the arrival of new staff has had:</p> <p><i>“I have noticed quite a change. We’ve got new staff. Very good. I’d say we’ve got more staff now. Not so much short staff which I think is better. There’s not so much stress with people covering theatre. There’s a good variety. You’re not always being sent to theatre. Because I’m a band 5, lower than a band 6, so I’m not always being sent to theatre and I think it’s good because when you get difficult patients now, there’s always someone there to help you. Like to help you with a patient who’s not mobile. You can get help when a radiographer’s free to help you. Sometimes we are short but that’s going to happen because people are sick or on annual leave.”</i> (Radiographer A15)</p>
<b>Other dimensions remained unaffected</b>	<p>Safety-related attitudes and behaviours of staff along the other dimensions remained largely unchanged over the course of the project lifetime. Participants continued to express critical views about reporting and learning as far as incident reporting was concerned.</p>

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Table 24: Changes in safety-related attitudes and behaviours - Case Study Site B

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<b>Ward move negatively affected teamwork</b>	<p>A key contextual factor was the ward move and the merger with another team, which had a major negative impact on the work environment and the work processes.</p> <p>Staff expressed the view that during the move teamwork degraded and became more difficult. This only started to improve again after the change was reversed:</p> <p><i>“We had a very difficult point where we moved, amalgamated, and that was very difficult, and the teamwork went out of the window then. It was very much an us-and-them situation”.</i> (Staff Nurse B14)</p>
<b>Foreseeable problems with ward move made staff feel their concerns were not taken seriously</b>	<p>Staff had not been involved in continuous improvement previously. This has not changed, and in addition participants now also expressed negative views about not being listened to in relation to the risks associated with the merger.</p> <p><i>“I think because we’ve had a merge of two wards, it has been quite difficult, because obviously apart from the skill mix and also the other ward were quite upset about having to be split up, there was quite a lot of issues going on really, and I don’t think that was very well planned at all. I mean the first merger it was that we just had 14 beds and they had 11 for urology. We actually audited it, and we told them before we merged that we have an average of 25 admissions a day, but nobody listened to us. So we wasn’t listened to in that instance, and it turned out to be quite stressful, very, very. You know, you had like two specialties. It wasn’t thought through, because urology you’ve got people coming back from life threatening operations for cancer and waking up in an emergency assessment unit. We’ve had a gentleman crying once at three in the morning ‘I want to go home’, things like that. Emotionally for the staff it’s very upsetting. So in that</i></p>

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*respect that was not well thought out at all. But the staff felt like, you know, nobody ever came and apologised and said 'We're sorry, we never thought about that.' But if they'd listened to the staff in the first place I think, well, they could have avoided that, really." (Staff Nurse B12)*

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**Pressure from the regulator resulted in better staffing levels, but has not changed organisational priorities**

Staff commented on the fact that new and more staff were now available. This might suggest that greater priority was given to safety. However, one participant explained that this was largely due to pressure from the regulator rather than from a change in organisational priorities.

*"To be honest with you this is triggered by the CQC [Care Quality Commission] because it's so long we have this problem and I think the whole system know about it [...] Now they're giving us more staff [...] But this is triggered by the CQC, that is truly, because it's unsafe for a long, long time since I work there." (Healthcare Assistant B13)*

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### 7.4.3 MECHANISMS

When asked directly about their perception of PRIMO, staff provided insights into possible mechanisms through which PRIMO may contribute to influence safety-related attitudes and behaviours. These were largely similar for both case study sites, and they are summarised with examples from both case study sites in Table 25.

**Table 25: PRIMO change mechanisms identified in the two case studies**

**Visible improvements encourage staff to contribute to organisational learning**

When asked directly about the PRIMO project, all participants commented on at least one of the improvements, suggesting that these were visible to staff. Such visible improvements in the work environment might act as motivators for staff to engage with reporting and learning processes, for example through writing stories and filling in questionnaires.

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Case Study A *"I can see improvements in the areas that I thought I mentioned. So I said about new equipment and sponges to support patients and leg rests for fractured neck of femurs, and there seems to be steps and lots of sponges, and there's equipment in the rooms, so I never have to go in and out of rooms saying 'Have you got this particular sponge.' Every single room has got pretty much the equipment that you need, which I think is really good, and they've got their own plastic perspex that you put over to do feet. And I've seen that improvement definitely. I remember writing one of them [narratives] because I used to get quite frustrated when you were looking for the perspex and it could be anywhere. So I've definitely seen that improvement. It's come back."*  
(Radiographer A15)

Case Study B

*"And I think we did see some, although it was slow off the ground, we didn't seem to see much happening to start off with. But then we got the stickers in the folders. We got new drip stands. We got a new computer. Things like that. So when you see things happening that spurs you on as well. You thought 'Oh maybe this is actually working so I need to fill it [questionnaire] in.' (Staff Nurse B18)*

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**Being asked and being listened to provides a positive climate and might contribute to staff engagement**

Staff expressed views that they felt it was rewarding to know that somebody was actually listening to their concerns. This suggests a more positive attitude towards reporting problems through PRIMO, which contrasts with the predominantly negative attitude towards reporting incidents.

Case Study A *"Well, I thought I'd write it on my questionnaire because we were being asked 'What do you need?' So instead of someone not asking you 'What do you need?' we were being asked 'What can we give you? What do you need?' Which is a big difference. So I'm not afraid to tell someone if they ask me*

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*‘What do you need? [...] I think what made it worthwhile was we were being asked ‘What can we do to make it better for you?’ Whereas before the project, we just came to work and you didn’t get asked and you’d get on with your day-to-day. So it has helped a lot because you’ve been able to give your opinion and I’ve seen changes, which has helped. I can see changes with the staff. I can see changes, I always go on about equipment, but it’s so important for the job. There’s a huge difference.’* (Radiographer A17)

Case Study B

*“I’ve already told [PRIMO Implementation Lead] and [PRIMO Ward Champion] what I’ve written, and I said we need this and we need that, and I think it has [improved]. Yeah, yeah. And it’s nice to know that somebody from the outside is actually interested in what we feel. Do you know what I mean?”* (Healthcare Assistant B11)

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**Feedback and discussion provide motivation and a sense of awareness**

The feedback that was provided to staff through personal discussions and through the PRIMO notice board might act as motivation to staff to contribute to the approach. This contrasts with the marked absence of feedback with incident reporting.

Case Study A

*“I did have feedback. I had feedback from [PRIMO Implementation Lead] because she read them, and I think she gave me verbal feedback and emailed me as well possibly. So I got feedback. And on progress things as well. And there were graphs put up in the staff room. [...] Like I say, the incident forms, you don’t hear back anything, so you wonder is there any point to doing this or not. There was a point to filling out the forms [PRIMO questionnaires], and the graphs were a useful way of representing what was happening as well.”*  
(Radiographer A14)

Case Study B

*“Because, I suppose, because we’re not just sitting filling a*

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*form in and it's going off to somewhere. I mean, we know Sister gets it, but then really that's it. But this way, we're actually discussing it with several people and we get feedback straight away." (Healthcare Assistant B13)*

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## 7.5 DISCUSSION

The findings of this chapter suggest that safety-related attitudes and behaviours at Case Study Site A improved only in the teamwork dimension, and at Case Study Site B deteriorated along several dimensions. The findings further suggest that contextual factors external to the project had a significant impact on safety-related attitudes and behaviours that might have prevented or negated any positive influence arising from the project. This became apparent particularly strongly in case study B. The study site had undergone significant organisational change, and this had a strong negative and overriding impact on the attitudes and behaviours of staff.

Improvement activities, such as PRIMO, are never undertaken in experimental settings, but are introduced into a living organisation. As a result, context becomes an important factor that might determine the extent to which an intervention is successful. The analysis of the post-intervention interviews described some of the possible mechanisms through which PRIMO might contribute towards changing safety-related attitudes and behaviours, given appropriate contextual conditions. The findings suggest that PRIMO contributed to actionable learning and visible improvements, which staff valued. Together with feedback and discussions, and an appreciation of the contribution that each member of staff can make, this might create a positive climate and motivate staff to participate in organisational reporting and learning activities.

Parts of the context are developments external to the project as described above. However, another aspect of context is the extent to which the pre-requisites described in the previous chapter are met. This will be discussed in the next chapter, where the overarching findings of the different research activities are brought together.

## CHAPTER 8 DISCUSSION

### 8.1 INTRODUCTION

In this chapter the findings of the different research activities are brought together and interpreted with a view to the existing evidence base. This introductory section provides a summary of the key research findings across the research activities (Section 8.1). The following two sections discuss these findings in turn, and explore how they relate to and build on the knowledge available from the literature (Sections 8.2 and 8.3). The chapter finishes with a short conclusion (Section 8.4).

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	Section
Introduction	8.1
PRIMO generates actionable learning	8.2
Understanding context of improvement	8.3
Conclusion	8.4

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We identified four key lessons for organisational learning. These are summarised in Table 26, and are discussed in more detail in the next two sections.

**Table 26: Lessons about organisational learning**

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<b>1. It is possible to elicit information from frontline staff that leads to actionable learning and visible improvements</b>	The case studies provided several examples of improvements that were derived from staff input about hassle in their daily work, for example purchase of support equipment, updating of protocols and procedures, introduction of a pathway for patients with suspected fracture, and the introduction of a feeding instruction box on the admissions form.
<b>2. Staff are motivated to contribute to organisational learning when this results in visible improvements, and they</b>	Staff commented positively on the improvements. The improvements provide motivation to contribute to organisational learning, because staff can see how their input leads to change. Staff value being listened to and having the opportunity to provide input to change.

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**value the opportunity to  
provide input**

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**3. Improvement requires sustained effort due to the multitude of stakeholders and priorities involved** Even seemingly simple interventions, such as fixing broken light bulbs, require dedication and sustained effort in order to overcome barriers and obstacles that result from the organisational structure and the different agendas and priorities of the various stakeholders that are involved.

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**4. Improvement journeys are unique and depend on how staff anticipate and adapt to changes in context** Context is dynamic, and it interacts with the implementation of the improvement intervention to produce a unique change journey. The extent to which improvements are successful depends on how staff contextualise the intervention and implementation in their organisational reality, i.e. whether and how staff are able to anticipate and adapt to changes in their organisational and social context.

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## 8.2 PRIMO GENERATES ACTIONABLE LEARNING

The case studies described in Chapter 4 and Chapter 5 provided several examples of improvements that were triggered by learning generated from PRIMO. The analysis of the post-intervention interviews found that all interview participants were aware of at least some of the improvements that had been implemented at their site, and that they commented positively on these. This suggests that PRIMO generated actionable learning relevant to the local work environment.

The literature review in the background section (Chapter 2) identified the need for new approaches that are able to deliver such actionable learning. Incident reporting is one of the key mechanisms for organisational learning in the NHS, but the literature suggests that incident reporting might not be delivering improvements in patient safety (25). Cook (33) even states that incident reporting systems have become a barrier to progress on patient safety because these systems simply classify and reduce incident reports to convenient numbers that provide no real insights, and because they consume most of an organisation's resources dedicated to patient safety. The analysis of the baseline and post-intervention interviews provide evidence of the critical attitude of frontline staff towards incident reporting systems. The analysis suggests that incident reporting does not lead to

visible improvements in the work environment, and that staff do not receive meaningful feedback. The analysis further provides evidence that incident reporting is perceived as time consuming, and that it is often done to cover oneself, rather than to trigger or contribute to improvements. The analysis of interviews conducted with doctors at Case Study Site B furthermore suggests that incident reporting is perceived by doctors predominantly as a nursing tool, and that nurses have a set process to follow to report known and common issues, such as patient falls. This is in line with Pasquini et al's observation (34) that incident reporting in healthcare focuses on directly observable and well-defined types of incidents that might not reveal new understanding about the underlying system dynamics and contributory factors.

The learning generated by PRIMO led to improvements of different types at the two case study sites, ranging from simple interventions, such as the purchase of additional equipment, to more complex interventions, such as the development of an inter-departmental pathway. What types of problems are addressed, and what kinds of solutions are developed depends on a range of factors that are independent of PRIMO. These include, for example, the time available, the resources required, and the amount of control the improvement team feel they have over the potential solutions. The improvements that were developed at the case study sites provide three important lessons about organisational learning in the NHS, as described in Table 26. The fourth lesson relates to the importance of context in improvement. This will be discussed further in the next section.

### 8.3 UNDERSTANDING CONTEXT OF IMPROVEMENT

The description of the case studies, and the subsequent analysis of the implementation diaries and key stakeholder interviews provide evidence about four themes or prerequisites for successful implementation of PRIMO, or indeed other quality improvement approaches, across diverse settings: staff engagement, senior management support, team composition and organisational readiness. These prerequisites have been described not simply as a static list of factors that contribute to or inhibit improvement, but from the perspective of individuals in terms of expected benefits, strategies that they have adopted in order to achieve these benefits, and obstacles they encountered.

As pointed out in the background section (Chapter 2), there is a growing realisation that the understanding of the mechanisms and the context of change may provide valuable insights into why improvement takes place in some organisations and situations but not in others to the same extent (27). Pettigrew and Whipp suggest that variation in pace and degree of change across situations could be explained by the interaction between the intervention, the implementation, and the context of the implementation (35). Recognising the importance of context in quality improvement,

the Health Foundation recently published a report with four essays on the topic (36). In one of the essays, Bate (37) reviews the literature on context and identifies a number of themes, which are also of relevance to the present study: the notion of subjective context, receptive and non-receptive contexts, and inner and outer context.

Constructivist thinking suggests that there is no objective, unique world that pre-exists, but that “what we call world is the product of some mind whose symbolic procedures construct the world.” (38). Correspondingly, the notion of subjective context suggests that the importance of context is how people make sense of context by interpreting and interacting with it. Receptive and non-receptive context refers to factors that facilitate or inhibit change in an organisation. The distinction between inner and outer context is used to describe factors that are deemed to be within the control of an organisation as opposed to those, usually political and regulatory, factors that are beyond the immediate control of an organisation. The important point to note is that context is neither static, nor “simply out there” as something within which change takes place. Context is dynamic, and it interacts with the improvement activity to produce a unique change journey.

The case studies described in Chapter 4 and Chapter 5, and the analysis of the implementation diaries and key stakeholder interviews (Chapter 6) represent descriptions of such change journeys. While the intervention (PRIMO) was the same in both organisations, the implementation and the way in which people interacted with context differed, and produced different forms of change. The dynamics of context became apparent in both case studies in several instances: at Case Study Site A the senior management sponsor of the project took on a new role and new priorities; new staff were arriving that required training and induction into the local processes and ways of working; and new shift patterns were introduced that caused anxiety among a number of staff. At Case Study Site B team composition changed several times throughout the project; the ward moved location and merged with another ward; subsequently the two teams were separated out again; and communication partners throughout the organisation moved or changed. The importance of external context became particularly evident at Case Study Site B, where the pressure from the regulator resulted in organisational changes and pressures that caused uncertainty, anxiety and frustration among frontline staff. In both case studies, the teams tried to come to terms with context in sometimes different and sometimes similar ways. The analysis of this interaction gave rise to the four prerequisites identified in Chapter 6.

In safety science, a new way of thinking about safety is emerging that views safety not as the absence of accidents, i.e. something that can be counted, but rather as the ability to achieve success under varying conditions (39). In this view, success occurs when organisations, teams and

individuals are able to anticipate and to adapt to changes, disturbances and disruptions. What is interesting about this perspective is that it regards performance variability not as something harmful, but rather as an important and inevitable factor in safe (and successful) performance within a dynamic and unpredictable context (40). This type of thinking might translate well to quality improvement in general. Quality improvement initiatives in healthcare often focus on the intervention and the measurement of the result. However, it might be useful to give more attention to everyday change, and how staff create successful improvement by anticipating and adapting to changes in their context. This might produce new insights into how quality improvement can be supported in practice.

The fourth lessons for organisational learning in the NHS, which derives from these considerations, is that the extent to which improvements are successful depends on how staff contextualise the intervention and implementation in their organisational reality, i.e. whether and how staff are able to anticipate and adapt to changes in their organisational and social context.

#### **8.4 CONCLUSION**

The research findings provided four lessons for organisational learning: 1. It is possible to elicit from frontline staff information that actually leads to visible improvements in the work environment, and 2. Staff are willing to contribute to organisational learning when they perceive that this leads to change and that their input is valued. 3. Improvements, however simple they may appear, usually require dedication and sustained effort due to the multitude of stakeholders, agendas and priorities involved. 4. Each improvement initiative will create its own improvement journey that is dependent on the context. The extent to which improvements are successful is influenced by the way in which staff anticipate and adapt to changes in their organisational and social context. Further research is required on everyday change and how staff produce successful improvements through anticipation and adaptation.

## CHAPTER 9 CONCLUSION

Following on from the encouraging results of the pilot study, this research attempted to provide further evidence about whether, how, and in what context organisational learning based on frontline staff perceptions about everyday hassle can lead to improvements in practice. The two case studies described in this report have demonstrated that it is possible to harness frontline staff feedback and to generate actionable learning from this. When staff are asked for their input, when they feel that their contribution is valued, and when they can see visible improvements as a result of this, people are happy and willing to engage with organisational learning activities.

The research identified four prerequisites for successful implementation of the approach tested in this report, but these are not limited to the PRIMO approach. It is likely that they apply to improvement initiatives more widely. These prerequisites are staff engagement, senior management support, implementation team composition and organisational readiness. It is important to regard these factors not as a list of things that need to be present in some form or other. The research provided some indication of the dynamic nature of these contextual factors, and how staff interacted with these to produce a unique change journey in each case.

From the analysis of the two change journeys we derive the following practical recommendations about organisational learning for healthcare organisations:

**Table 27: Recommendations for practice**

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<b>1. Make time available for staff to participate in organisational learning and improvement</b>	The research provided evidence that a key barrier to staff engagement is the lack of time to contribute to organisational learning and improvement. In the case studies staff frequently used their lunch breaks or their free time at home to contribute to PRIMO. Learning and improvement should be recognised as activities that provide value, and resources should be allocated accordingly.
<b>2. Listen to staff and value their input</b>	Staff from both case study sites frequently suggested that they were aware of problems but did not report these because they felt that it would be perceived as moaning, and they chose to get on with things instead. This is a missed opportunity. Systems, such as PRIMO, should be put in place

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to encourage staff to raise their concerns.

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**3. Provide feedback and visible improvements**

All staff commented positively on the improvements that resulted from PRIMO. At the same time, staff had a critical attitude towards incident reporting, because they did not receive any meaningful feedback, and because they did not perceive that any change resulted from it. In order to sustain staff engagement with organisational learning and improvement, feedback systems should be established. The learning generated should result in visible improvements. This means that improvements should be developed both short-term as well as more strategic longer-term improvements.

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**4. Develop professional incentives for all staff groups to participate in organisational learning and improvement**

Doctors in training can utilise participation in service audit and service improvement activities as part of their professional development. This is a very useful system. However, no comparable professional incentives exist for other staff groups, such as nurses. Professional incentives should be developed that encourage and reward participation in improvement activities. Some of the nursing staff suggested that even simple things such as joint posters and presentations at national meetings would provide a welcome recognition and thank-you for their participation.

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**5. Focus on everyday problems and how staff deal with these, not just on harm events**

The research suggested that staff perceive that they need to fill in an incident report when some harm event or potential harm event occurred, such as a patient fall. Often this is done in order to cover oneself, but the learning derived from these reports is minimal. On the other hand, there is real benefit to be gained from looking at small problems before these accumulate and combine with other factors to produce harm events. In addition, there is a need to capture and to

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understand how staff deal with these problems, because most of the time staff are able to compensate for deficiencies in the system. Organisations have a real opportunity to learn from success (i.e. no harm event), not just from failure.

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**6. Develop a culture of proactive learning and continuous improvement**

Time and effort will be allocated to learning and improvement only if these activities are perceived as integral to the organisation's functioning. A culture change is necessary from a reactive, predominantly target-driven culture, towards a culture that is proactive and that supports improvement. This culture change has to be initiated and sustained from the top of the organisation's hierarchy.

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In addition to these practical recommendations for healthcare organisations, health service researchers should focus on and investigate everyday change and improvement. Every improvement journey is unique, and it is important to describe and to understand the way in which participants interact with their organisational and social context to produce this unique journey. Further research is required that studies how people anticipate and adapt to changes in their context to produce successfully improvements.

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# APPENDIX A – BASELINE SAFETY-RELATED ATTITUDES AND BEHAVIOURS: CASE STUDY SITE A

## Interview participants

Nine interviews were conducted with the following staff roles:

Code	Role
A01	Radiology Assistant
A02	Radiographer
A03	Assistant Practitioner
A04	Radiographer
A05	Assistant Practitioner
A06	Radiographer
A07	Radiology Assistant
A08	Medical Secretary
A09	Radiographer

## Teamwork

In the department staff frequently work alone, yet there is a shared perception that one is part of one big team, and that people have to work together and support each other in order to keep the work flowing and get the jobs done. Teamwork is defined as knowing what is expected and what is needed, as supporting each other, and generally as pulling together.

*“I mean I feel we’re a department. We’re all a team. We should all be working together. You know, this is what we’re here for and it’s the same with every department. You know, we should all be pulling together.”* (Radiology Assistant A07)

Interaction with peers and across staff hierarchy is perceived to be easy, open and honest. Staff feel confident about asking for help. They may approach friends first, but generally feel that also senior colleagues are approachable and prepared to help. Senior staff try to stay within the department as much as possible (rather than go out to the theatre, for example), in order to be available to offer advice when needed. While staff perceive that it’s easy to ask for advice and help, high levels of workload lead to situations where actually receiving help may be difficult. This applies more to

situations of patient movement, rather than to technical questions and advice. There are personal differences, and getting help also depends on how open oneself is when asking for it.

*“The rest of the people are Band 6 or Band 7 and I found that they’re more than willing to help us and they make it very easy for us to talk to them. They don’t make you feel like we’re below them at all really. It’s very, you know, honest and sort of mutual really and they’re not afraid to offer us help, or I’m not afraid to ask them for help at all.”* (Radiographer A06)

Staff perceive that there is a good level of teamwork. While there is a perception that not everyone may be contributing equally at all times, or that some members simply “plod along”, staff feel that working together in preparing rooms and patients usually works really well. These situations involve several roles and teams, e.g. radiology assistants, students and radiographers.

*“Sort of share the work out and make it easier really to get accurate X-Rays. We’ve also got helpers as well, which will help. They’ll help to get patients changed for us while we’re X-Raying the patients, so it keeps their flow going and sort of the workload taking over basically, so the department runs quite efficiently.”* (Radiographer A06)

While teamwork within the department is perceived to be working reasonably well, the relationships with other wards are perceived to be difficult and frustrating at times. The relationship with A&E may be good in principle, but staff perceive that many patients are sent from A&E without proper preparations, or that A&E try to put the blame for target breaches on the delay with getting X-Rays. There is also a perception that there is not much communication with other wards about problems, possibly from past experience where nothing changed, and staff tend to “simply moan” about any difficulties experienced in the interaction with other wards.

*“Well, I find A & E quite frustrating sometimes, because they’ll bring a patient round who’s quite big and they’ll just leave them in the waiting room on a trolley and you have to bring them through and you’re there on your own trying to X-Ray them and if they need help up the bed there’s no nurse to help you.”* (Radiographer A04)

Staff perceive staff shortages and high levels of workload as a major threat to teamwork and to patient safety. During times of high workload, staff feel that helping students can be distracting as this requires extra time, and it may be difficult to concentrate in a small room that is crowded by people who are at that time not actually doing anything productive. When there are shortages of senior staff, this may lead to delays as there are multiple concurrent demands placed on them. Teamwork may also break down in these instances, due to ineffective communication as people may forget to pass on messages when they are focusing on other issues.

*“I find if we’re very short-staffed, there are not many seniors in the department, which can be – I don’t find that very effective either, because sometimes you might get something on a request card you might not understand, or you might not have ever heard of before and you haven’t got that experience. Well, I haven’t got that experience to really know what it is and when there’s a senior not around, you’re trying to find a senior and then that just wastes time and I don’t find that very good either.” (Radiographer A04)*

## **Reporting & learning**

Staff listed the following reporting and learning mechanisms: communications meeting (9 participants), incident reporting (sometimes referred to as incident book or incident forms; 9 participants), discussions with the line manager (5), refresher training on patient movement (2), mini lectures (1), staff notice board (1), patient questionnaire (1), pieces of paper in X-Ray rooms (1), discussions in the staff common room (1).

Interestingly, the two main instruments – incident reporting and the communications meeting – were perceived very differently. The communications meeting is a weekly meeting of about 15 – 20 minutes, where staff receive updates about developments and where they have an opportunity to raise concerns, ideas and suggestions. Staff perceive this meeting generally as useful. Not everyone can attend the meeting, either due to workload or because they are not on duty on that day. There is a communications book where a summary of the meeting is recorded.

*“We have communication meetings every week, so that’s one way I suppose. Every Wednesday morning we have a communication meeting. [Department Manager] comes and we discuss any concerns we’ve got, so not just in the department, but any concerns that have affected us out of the department and it all gets written in a book, so if anyone is not around they can catch up with things. It can be anything to be honest from wearing the correct uniform to any problems in the department that we think could be improved or anything, so that’s quite a good thing actually.” (Radiology Assistant A01)*

Incident reporting, on the other hand, is perceived critically. Staff feel that they do not understand properly where incident reports go to and how they are dealt with. Staff suggested that they had filled in few, if any, incident reports in the past. One reason for filling in incident reporting forms is “to cover oneself” in case the patient files a complaint.

*“But I know we give them to [Department Manager] and I assume from there they get filed and somebody will read them and obviously, if for example, if that patient wrote back a letter saying something had happened and her story is different, I’ve got my story to give about what actually*

*happened; that she jumped off her bed and fell and landed and she said she was fine.” (Radiographer A04)*

Staff suggested they did not receive feedback on incident reports they had submitted, and there is no evidence that incident reporting is perceived as a learning opportunity.

*“But that’s...we’ve written a few comments on and it gets forgotten about and then you’re too busy to write anything down. I’ve never heard any feedback or comeback from these forms, so we don’t really know why we’re doing them.” (Assistant Practitioner A05)*

### **Communication about safety**

Opportunities to discuss patient safety issues are perceived to be the communication meeting, informal chats during lunch time in the staff common room, and personal communication with senior colleagues. The communication meeting is perceived to be very useful as it provides feedback to staff and leads to a certain amount of shared awareness, but staff feel that general departmental issues are discussed rather than patient safety issues *per se*. Major incidents are a motivator to bring up patient safety issues. Communication with other departments is perceived to be lacking.

*“Well the communication meetings we have are once a week if we have the staff. It’s not necessarily...I’d say that it’s discussing usually anything to do with patient safety. It’s usually I think pros and cons of what’s happening in the department with other related topics. The occasional thing may be brought up but as I said, unless an incident has happened and somebody does tend to bring it up in a meeting then it might be discussed for that reason, but there’s not a lot of communication for patient safety.” (Radiology Assistant A07)*

In cases where an incident does occur, staff don’t necessarily feel that organisational blame is laid on them. On the other hand, errors and mistakes are perceived as individual responsibility rather than as systemic deficiencies. Incident reports may be filled in to protect oneself during any subsequent complaint or investigation.

*“We usually then I suppose, we fill in the incident form and it would be whoever was performing the examination and whoever set the exposures. They’re responsible. It comes down to if they’re performing the examination it is their...like it’s our responsibility – we have a responsibility to the patient to make sure that their safety is maintained and selecting the right dose for the examination and the size of the patient and whatever and if there was something like that happened, it would come down to... We’d have to own up and say they’d made a mistake and we’d have to document*

*that on the form. You know, we'd have to report it because of our regulations; our radiation safety rules."* (Radiographer A06)

Staff also suggest that not everything gets communicated to the line manager or gets discussed during the communication meeting. Issues that did not lead to an adverse event, but that may have an impact on patient safety at some point in the future, may not be communicated formally, but are rather "moaned about" with peers, and staff try to simply "get on with it".

*"I think it would probably be that we would feel it would be the ward's fault for not sending somebody with them that knows about them. Yes, I don't think it would be addressed with the ward directly. I think it would be something that would be just moaned about."* (Assistant Practitioner A05)

### **Priority given to safety**

Staff feel that on the one hand they are able to approach their senior colleagues, line managers and clinical director with any issues either through personal communication or to raise these issues in the communications meeting. Staff feel that they are being listened to. On the other hand, there is a perception that issues that are raised, frequently do not get dealt with, and that similar issues are raised again and again without any noticeable change.

*"And you just feel like you seem to be raising them every week. You know, it's one of those...we're not doing anything about it and there's no change."* (Assistant Practitioner A05)

Staff suggested that there are no encouragements by the hospital management that patient safety is a priority. Staff expressed an awareness of the difficult financial climate, and they feel that hospital management is prioritising money saving over patient safety.

*"I don't think we have anybody go round and tell us how to improve our standards of care. I know we've had people come round to maybe look at, is there too many staff in the department and just trying to look at ways to save money, but I don't think they'll really look to see how we work and if it's to patient care. I think they're just trying to look at ways to save money and if there are radiographers who aren't busy X-Raying, or if there are too many to a room. I don't think they're necessarily looking at how we X-Ray the patient or how well we're doing it, or how well they're moving them. I think they're just looking at ways to save money and saying, "Right OK, there are too many people in that room and it's not necessary." You know?"* (Radiographer A04)

At a departmental level, staff were not aware of any patient safety agenda or a dedicated patient safety champion. Staff feel that patient safety is not being talked about unless there is an incident

that triggers discussions. While staff do not perceive their practices to be unsafe, they express a significant concern about the shortage of staff, that may have an impact on patient safety. Staff feel that this does not get addressed due to the financial situation.

*“I mean there could be room for improvement, but I think that’s all down to sort of staffing levels as well sometimes and as I say, that would drop down again I think with patient safety and what we can do. It lacks if we haven’t got the staff around and obviously, if you’ve got a lack of staff and a huge build up of patients outside, there are things that you don’t put first. I suppose you don’t really think about it. You’re thinking about time and workflow, so I would say patient safety sadly probably gets pushed to one side on occasions due to a lack of staff.”* (Radiology Assistant A07)

### **Continuous improvement**

Staff did not perceive an “improvement culture” *per se* within the department, even though there is a memory of a LEAN improvement that had taken some time ago. Staff feel the main instrument and mechanism for achieving improvements are to discuss ideas informally with colleagues in the staff common room during lunch time, and then to raise the idea during the communications meeting with the wider department. Staff suggested that this has led to improvements in the work environment in the past.

*“A group consensus or it’s again something like; you’d bring it up at the communication meeting... So, ‘I’ve had this idea. What do you think?’ But before you did that you might have been speaking to some of your colleagues that you’re working with that week and saying ‘Well what do you reckon? Do you think this would work?’”* (Radiographer A09)

# APPENDIX B – BASELINE SAFETY RELATED ATTITUDES AND BEHAVIOURS: CASE STUDY SITE B

## Interview participants

Ten interviews were conducted with the following staff roles:

Code	Role
B01	Ward Sister
B02	Matron
B03	Acute Care Practitioner
B04	Clinical Educator
B05	Foundation Year 1 Doctor
B06	Foundation Year 2 Doctor
B07	Foundation Year 2 Doctor
B08	Foundation Year 1 Doctor
B09	Staff Nurse
B10	Healthcare Assistant

## Teamwork

In the department there are many different roles that have to work together. There are different perceptions about the extent to which these different roles form a team. A member of the nursing staff defines teamwork as working together and supporting each other in a multi-disciplinary team.

*“Teamwork to me is about people working together, especially with regards to patient journey and supporting each other as well, which...you can get some people I suppose that just do their own thing and don’t want to help. You know, so it is about working together, and that’s with nurses with each other, the healthcare support workers, with occupational therapists, consultants, everybody – everybody in the multidisciplinary team.”* (Acute Care Practitioner B03)

This contrasts with a view expressed by a junior doctor, who recognises that different staff roles have to work together, but who regards nursing teams as being different from surgical teams.

*“I would think it’s separate because they’re [nurses] ward based rather than team based and yes, they aren’t exactly separate. We do work along side by side together, so I wouldn’t like, class that as*

*a separate entity or anything, but I don't feel they're like, as in a team – a surgical team.”* (Foundation Year 2 Doctor B06).

Staff feel confident about asking for help, and perceive other team members at different levels within the hierarchy as approachable and willing to help.

*“So far I've been quite lucky, touch wood. I've not really had any barriers that I've come across, but I do find that with the consultants, they seem to have welcomed our role as well, and I do feel that they're approachable, and to be honest, I found all of them, from F1s [Foundation Year 1 doctors] upwards approachable. If I'm not sure of something, I will ask, and they do support you in that sense and what have you, so yes and that's all the way up the ladder.”* (Acute Care Practitioner B03)

However, this nursing view is contrasted again with the perspective of a junior doctor, who suggests that while they are happy to help, priorities of the different staff groups may not be the same.

*“In terms of from the medical team, I think it works quite well. There's nothing particularly bad I would say about SAU from a teamwork point of view. Everyone always wants their patient to be clerked first. Everyone always sees it as a priority when you're saying from the nursing staff point of view, so I wouldn't say there's anything lacking in teamwork, but everyone always has their own agenda because everyone is judged by different standards aren't they? [...]So it's difficult to say there's a lack of teamwork, but you'll for example get pestered for jobs that you don't see as their priority, but to somebody else maybe their own priority, but in general it's not too bad.”* (Foundation Year 1 Doctor B05)

Staff from all staff grades perceive high levels of workload and staff shortages as a key threat to efficient teamwork. In such situations, people tend to get on with their own work, and it may be more difficult to find the support that is needed. This is also true when, for example, registrars are busy in theatre and junior doctors are left without adequate senior supervision.

*“Time unfortunately, when you're absolutely snowed under. If you've got a lot of really sick patients and not enough staff to cope with them, because if you've got somebody that's really sick that could take you an hour or two hours maybe to sort out with the surgeons or the doctors, whoever is concerned, and unfortunately, sometimes the rest of your patients get overlooked – not by design, but by default and if the other nurses are very busy in their own bays, they are not always going to be able to support you. They will as much as they can, but it doesn't always work out.”* (Clinical Educator B04)

## **Reporting & learning**

Staff described the following mechanisms for reporting and learning: incident reporting (10), different types of staff meetings (6), personal communication (5), root cause analysis (3), junior doctors' teaching sessions (2), and Safety Express (1).

Incident reporting is perceived critically. There is a lack of feedback, and a lack of visible improvements as a result of incident reports submitted.

*"Officially you should do the IR1 form through the computer if there are incidents. I don't know why. I don't normally do them due to the fact that maybe I think that nothing usually gets done. There are a few people who've done it and nothing gets done and I think going back to the senior to tell them what's going on actually gets fixed easier."* (Foundation Year 2 Doctor B06)

Incident reporting is perceived by junior doctors as an instrument that belongs predominantly to the nursing staff. They expressed the view that while for nurses there are specific and clear scenarios that should be reported, for doctors situations may be more difficult and open to interpretation. In addition, many of the incidents reported did not lead to any improvement.

*"It seems to be that nurses are more prone to do them [incident reports] because they've been told they should do them in this scenario, whereas if you look at it from some of the junior doctors' point of view, they could understand why something has happened that way. If it was a serious incident and someone had obviously – there's obviously some harm come into it or something was attributable, there was something that needed further investigation, and I think it would be more likely to be reported, but sometimes for example, I know that they have to do one every time there's a fall, even if it's somebody who's having a vasovagal, and there's nothing to be gained by that, apart from the fact that they're going to be started on medication anyway, but filling a form in doesn't affect that. It's just a process that they've been told to go through, so they do, that takes up half an hour of their time and doesn't solve anything."* (Foundation Year 1 Doctor B05)

### **Communication about safety**

Staff expressed views that patient safety concerns were best raised directly with their managers, who are usually very approachable.

*"I think the best person we would be able to talk to is our matron. She is open, you can talk to her. She does listen. She does make notes, and if you raise something she will say, 'I will try but I don't know whether I'll get anywhere.'" (Clinical Educator B04)*

However, there were also views that suggested that senior staff are not always interested in engaging in change.

*“Yes, I guess organisations, I guess [Site B] is a fairly small hospital, and any change would be quite big to the organisation, to the hospital itself. I don’t feel there are keen individuals that like changes. If they do, there are always people who are in the senior manager role who are not actually on the wards and actually see the perspective of things and people who are actually on the ward, you’d need actually people who are interested. Most of the people, I feel, especially like because juniors can’t do much. All we can do is raise our concern. With seniors I feel they’re not interested, or they just like things how they are and so if anything is changed they don’t like it. I understand that we have expressed to them what we feel would be beneficial for patient safety and how like, we should run the ward, but they really don’t care.”* (Foundation Year 2 Doctor B06)

Following incidents, staff feel they are supported. However, at the same time, staff perceive that the organisational response is directed towards the individual, in terms of re-training and going through formal processes.

*“You just had people telling you essentially for example, ‘just fill out VT [venous thrombosis] risk assessments,’ which people do anyway, and it’s always done by people who are never on the ward, and the sensible suggestions are never made. It’s always a pure, ‘you must get 90%, no matter what,’ and it’s frustrating because the same junior doctors that meet the targets in [other hospital] are the ones working here, so it’s got to be a problem with the system, but they perceive it, they come and shout and say, ‘You aren’t filling these out correctly’. They just perceive it as people skip it for whatever reason and it’s just a bit frustrating having to, yes, just go over the same points and not really improve things”.* (Foundation Year 1 Doctor B05).

### **Priority given to safety**

Staff expressed views that suggest that patient safety is a concern and priority for front line staff, but that the organisational arrangements and priorities might not always be supportive. On the one hand, staff are encouraged to speak up and raise any concerns they may have:

*“All the newly qualified people that I’ve mentored that we’ve now got on the ward, I’ve now made a point of saying to them, ‘If you get under pressure, for goodness sake say something. Don’t drown. Speak to the coordinator and say ‘I need some help because I’m not managing what I’ve got’ and if you’re asked to do something where you don’t know what you’re doing, for goodness sake say something.”* (Clinical Educator B04)

On the other hand the management focus is perceived to be on financial aspects that might lead to situations of excessive workload and inappropriate levels of staff, thus putting patients at risk:

*“Management often looks at how to save money, which is their job, which is what they’ve told us they have to do and it doesn’t always go hand in hand with what’s the best clinical practice [...] And I think the fact that there are less doctors than needed and there are less nurses than needed is a prime example [...] Because they have to pay more salaries and they’re not willing to do that.”*  
(Foundation Year 2 Doctor B07)

### **Continuous improvement**

None of the staff had participated in departmental improvement activities, and they did not perceive a culture of improvement within the department. Participants expressed views that continuous improvement would be very desirable.

*“I think in the last year we’ve been a little bit reactionary, rather than proactive. I mean ideally, I think in the beginning we should have had meetings as a multidisciplinary team with myself, the Matron, the PSM [Patient Safety Manager], the clinical leads, perhaps one of the junior doctors [...] and I did suggest that but it didn’t materialise, but to me, that would have been a critical way of identifying problems because I could have spoken to my staff about their experiences, their issues and everybody could have brought things to the table and perhaps then come up with some simple solutions.”* (Ward Sister B01)

Workload and a lack of time to lead and to participate in improvement activities are key threats to a culture of continuous improvement. As a result, also externally funded improvement activities, such as the Productive Ward series, might not be sustainable.

*“It [Productive Ward] worked really well initially, but it’s all stopped now because there was more to do and it’s now all stopped. Because there was not time for the nurses to do it, because everybody became short of staff and we’re still short of staff.”* (Clinical Educator B04)

## APPENDIX C – SETS OF QUESTIONS: CASE STUDY A

1. Risk Factor: Communication & Information						
Assess the extent to which communication and information flows caused you problems during last week.	Not at all		To a large extent			
<b>1.1 To what extent did missing or inaccurate information and documentation negatively affect your work?</b> <i>Example: Incorrectly filled in forms, incorrect anatomy, inconsistent projections required, films completed by nursing staff, patients already x-rayed by GP prior to clinics.</i>	1	2	3	4	5	Your comments:
<b>1.2 To what extent did communication problems with other departments or external organisations negatively affect your work?</b> <i>Example: Return of patients to A&amp;E; unawareness of limited physical ability of patient coming from community hospital.</i>	1	2	3	4	5	Your comments:
<b>1.3 To what extent did communication problems within the department negatively affect your work?</b> <i>Example: Three members of staff went to theatre, but we were still booking GP lists.</i>	1	2	3	4	5	Your comments:
<b>Issues not covered:</b> Did any other communication and information issues not covered above cause you particular problems during last week? If so, please provide a short example.						

2. Risk Factor: Equipment & Computers						
Assess the extent to which the availability, the usability and the maintenance of equipment and computers caused you problems during last week.	Not at all		To a large extent			
<b>2.1 To what extent did unavailable equipment or computers negatively affect your work?</b> <i>Example: Time wasted looking for sponges and aids for radiographic positioning.</i>	1	2	3	4	5	Your comments:
<b>2.2 To what extent did the suitability and usability of equipment or computers negatively affect your work?</b> <i>Example: Trolley bucky does not have much room for manoeuvre if cassette angled.</i>	1	2	3	4	5	Your comments:
<b>2.3 To what extent did broken or malfunctioning equipment or computers negatively affect your work?</b>	1	2	3	4	5	Your comments:

<b>Example:</b> <i>A&amp;E trolleys are of poor quality, and the faults make it difficult for radiographers to do the examinations.</i>						
<b>Issues not covered:</b> <i>Did any other equipment and computer issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

3. Risk Factor: Staffing						
Assess the extent to which staffing issues caused you problems during last week.	Not at all		To a large extent			
<b>3.1 To what extent did the number of staff on the ward negatively affect your work? (enough people?)</b> <b>Example:</b> <i>General rooms can be understaffed and patients put at risk due to constant demands.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>3.2 To what extent did sickness and absence of staff negatively affect your work?</b> <b>Example:</b> <i>Staff were off sick therefore had to look after more patients.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>3.3 To what extent did an inappropriate skill mix of staff or the allocation of staff on the ward negatively affect your work? (right people?)</b> <b>Example:</b> <i>It would be useful if people's skills were distributed more evenly particularly during lunchtimes</i>	1	2	3	4	5	<b>Your comments:</b>
<b>Issues not covered:</b> <i>Did any other staffing issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

4. Risk Factor: Demand Management & Workload						
Assess the extent to which the anticipation and management of demands and workload caused you problems during last week.	Not at all		To a large extent			
<b>4.1 To what extent did out-of-hours arrangements negatively affect your work?</b> <b>Example:</b> <i>patients with a long list of examinations booked as GP referral on Saturday morning.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>4.2 To what extent did inadequate or unclear prioritisation of patients negatively affect your work?</b> <b>Example:</b> <i>Oncology patients should have</i>	1	2	3	4	5	<b>Your comments:</b>

<i>priority over routine outpatients, these patients are often very unwell and very anxious.</i>						
<b>4.3 To what extent did excessive workload levels negatively affect your work?</b>  <b>Example:</b> <i>Due to an influx of A&amp;E medical and trauma patients the GP (routine) patients had to wait.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>Issues not covered:</b> <i>Did any other demand management and workload issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

5. Risk Factor: Work Environment							
Assess the extent to which the work environment caused you problems during last week.	Not at all		To a large extent				
<b>5.1 To what extent did the work environment (space, layout) negatively affect your work?</b>  <b>Example:</b> <i>no designated areas for pieces of equipment such as the leg support and the Perspex DR cover and grids.</i>	1	2	3	4	5	<b>Your comments:</b>	
<b>5.2 To what extent did interruptions / distractions negatively affect your work?</b>  <b>Example:</b> <i>Constant interruptions for IEP (Image exchange portal) requests.</i>	1	2	3	4	5	<b>Your comments:</b>	
<b>5.3 To what extent did a messy work environment negatively affect your work?</b>  <b>Example:</b> <i>Rooms are left untidy, meaning the next person taking over has to tidy the room before they can begin an examination.</i>	1	2	3	4	5	<b>Your comments:</b>	
<b>Issues not covered:</b> <i>Did any other work environment issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>							

6. Risk Factor: Procedures							
Assess the extent to which the availability and appropriateness of procedures, or compliance to procedures caused you problems during last week.	Not at all		To a large extent				
<b>6.1 To what extent did the absence or poor clarity of procedures negatively affect your work?</b>  <b>Example:</b> <i>No procedures for patients with</i>	1	2	3	4	5	<b>Your comments:</b>	

<i>suspected fracture sent by their GP</i>						
<b>6.2 To what extent did inappropriate or unworkable procedures negatively affect your work?</b> <b>Example:</b> <i>Imaging procedures not reflecting current recommended practice</i>	1	2	3	4	5	<b>Your comments:</b>
<b>6.3 To what extent did poor access to procedures negatively affect your work?</b> <b>Example:</b> <i>Poor access to protocols for imaging, very difficult for new staff as protocols at other departments may have been very different.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>Issues not covered:</b> <i>Did any other procedure-related issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

## 7. Risk Factor: Teamwork & Attitudes

Assess the extent to which individual attitudes and lack of support from others caused you problems during last week.	<p style="text-align: center;">Not at all <span style="margin-left: 100px;">To a large extent</span></p>					
<b>7.1 To what extent did the absence of peer support negatively affect your work?</b> <b>Example:</b> <i>needed help with patient, but everybody kept their heads down</i>	1	2	3	4	5	<b>Your comments:</b>
<b>7.2 To what extent did the absence of senior support / lack of supervision negatively affect your work?</b> <b>Example:</b> <i>It can be difficult finding a radiologist to check forms and check which protocol to use for the IVU.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>7.3 To what extent did you feel the way your peers / senior communicated negatively affected your work?</b> <b>Example:</b> <i>being talked down to, disrespectful / demoralising comments.</i>	1	2	3	4	5	<b>Your comments:</b>
<b>Issues not covered:</b> <i>Did any other support and respect issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

## Other Risk Factors

**Risk factors not covered:** *Did any other risk factors not covered above cause you particular problems during last week? If so, please provide a short example from your own experience.*

For example:

**Training** – not having appropriate training, no access to training etc.

**Safety culture** – known problems get ignored rather than addressed.

**Allocation of responsibility** – unclear who is responsible for particular tasks, unreasonable allocation of responsibility.

**Management of change** – changes not communicated clearly, staff not being involved in changes, risks not understood.

## APPENDIX D – SETS OF QUESTIONS: CASE STUDY B

1. Risk Factor: Equipment & Computers						
Assess the extent to which the availability, the usability and the maintenance of equipment and computers caused you problems during last week.	Not at all /To a large extent					
<b>1.1 To what extent did unavailable equipment and computers negatively affect your work?</b> <i>Example: spent a lot of time waiting for a computer to use; always searching for drip stands; finding no linen on late shift.</i>	1	2	3	4	5	Your comments:
<b>1.2 To what extent did the suitability and usability of equipment and computers negatively affect your work?</b> <i>Example: computer constantly locks us out; drug rounds take much longer without pre-pack meds.</i>	1	2	3	4	5	Your comments:
<b>1.3 To what extent did broken or malfunctioning equipment and computers negatively affect your work?</b> <i>Example: bedside lights broken; equipment for taking vital obs always going for repair; drip stands not wheeling properly.</i>	1	2	3	4	5	Your comments:
<b>Issues not covered:</b> Did any other equipment and computer issues not covered above cause you particular problems during last week? If so, please provide a short example.						

2. Risk Factor: Communication & Information						
Assess the extent to which communication and information flows caused you problems during last week.	Not at all /To a large extent					
<b>2.1 To what extent did missing or inaccurate information and documentation negatively affect your work?</b> <i>Example: not clear whether patient can eat or not; not been told about patients who have been referred, then they turn up and I don't know anything about them.</i>	1	2	3	4	5	Your comments:
<b>2.2 To what extent did communication problems with other departments negatively affect your work?</b> <i>Example: A&amp;E making inappropriate referrals; I spent too much time trying to get patients handed over; MEAU Drs not doing EDDs and holding up discharges.</i>	1	2	3	4	5	Your comments:

<b>2.3 To what extent did external communication problems negatively affect your work?</b> <b>Example:</b> <i>GPs not informing patients they are likely to stay overnight if admitted; inappropriate GP admissions</i>	1	2	3	4	5	<b>Your comments:</b>  
	<b>Issues not covered:</b> <i>Did any other communication and information issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>					

3. Risk Factor: Staffing						
Assess the extent to which staffing issues caused you problems during last week.	Not at all /To a large extent					
<b>3.1 To what extent did the number of staff on the ward negatively affect your work? (enough people?)</b> <b>Example:</b> <i>expected to take medical patients, but not staff to care for them; too much reliance on agency staff who do not know the ward.</i>	1	2	3	4	5	<b>Your comments:</b>  
	<b>3.2 To what extent did sickness and absence of staff negatively affect your work?</b> <b>Example:</b> <i>staff were off sick therefore had to look after more patients most of the day.</i>					
<b>3.3 To what extent did an inappropriate skill mix of staff or the allocation of staff on the ward negatively affect your work? (right people?)</b> <b>Example:</b> <i>if a patient requires escorting to CT, we are left a staff member down, because there is no porter; not all staff can do bloods, cannulas and male catheters; ward clerk needed more of the time.</i>	1	2	3	4	5	<b>Your comments:</b>  
	<b>Issues not covered:</b> <i>Did any other staffing issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>					

4. Risk Factor: Teamwork & Attitudes	
Assess the extent to which individual attitudes and lack of support from others caused you problems during last week.	Not at all /To a large extent

<b>4.1 To what extent did the absence of peer support negatively affect your work?</b>  <b>Example:</b> <i>expectation that nurses will do bloods and cannulation whatever their workload; team spirit disappears after morning ward round.</i>	1	2	3	4	5	Your comments:
<b>4.2 To what extent did the absence of senior support and/or lack of supervision negatively affect your work?</b>  <b>Example:</b> <i>throughout the day juniors are left on their own; no junior support when seniors are in theatre.</i>	1	2	3	4	5	Your comments:
<b>4.3 To what extent did you feel the way your peers and seniors communicated negatively affected your work?</b>  <b>Example:</b> <i>being talked down to, disrespectful / demoralising comments.</i>	1	2	3	4	5	Your comments:
<b>Issues not covered:</b> <i>Did any other support and respect issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

## 5. Risk Factor: Work Environment

Assess the extent to which the work environment caused you problems during last week.	Not at all /To a large extent					
<b>5.1 To what extent did the work environment (space, layout) negatively affect your work?</b>  <b>Example:</b> <i>lack of space for patients who are waiting to be admitted; lack of writing areas and suitable seats; no night light at the nurses' station.</i>	1	2	3	4	5	Your comments:
<b>5.2 To what extent did interruptions / distractions negatively affect your work?</b>  <b>Example:</b> <i>frequent interruptions when writing notes.</i>	1	2	3	4	5	Your comments:
<b>5.3 To what extent did a messy work environment negatively affect your work?</b>  <b>Example:</b> <i>people not clearing up after themselves; notes not put back in trollies after use</i>	1	2	3	4	5	Your comments:
<b>Issues not covered:</b> <i>Did any other work environment issues not covered above cause you particular problems during last week? If so, please provide a short example</i>						

## 6. Risk Factor: Procedures

Assess the extent to which the availability and appropriateness of procedures, or compliance to procedures caused you problems during last week.	Not at all /To a large extent					
<b>6.1 To what extent did the absence or poor clarity of procedures negatively affect your work?</b> <b>Example:</b> <i>unclear who is taking referrals from GPs.</i>	1	2	3	4	5	Your comments:
<b>6.2 To what extent did inappropriate or unworkable procedures negatively affect your work?</b> <b>Example:</b> <i>hospital breach policies inappropriate for ward.</i>	1	2	3	4	5	Your comments:
<b>6.3 To what extent did the fact that others do not follow procedures negatively affect your work?</b> <b>Example:</b> <i>patients who are NBM not always routinely prescribed IVT; no protective meal time as per protocol; prescriptions not reviewed to make use of pharmacy comments.</i>	1	2	3	4	5	Your comments:
<b>Issues not covered:</b> <i>Did any other procedure-related issues not covered above cause you particular problems during last week? If so, please provide a short example.</i>						

7. Risk Factor: Demand Management & Workload						
Assess the extent to which the anticipation and management of demands and workload caused you problems during last week.	Not at all /To a large extent					
<b>7.1 To what extent did out-of-hours arrangements negatively affect your work?</b> <b>Example:</b> <i>no out-of-hours scans of USS; pharmacy closed during weekends; no 24h ward clerk cover.</i>	1	2	3	4	5	Your comments:
<b>7.2 To what extent did excessive workload levels negatively affect your work?</b> <b>Example:</b> <i>I needed to fill in multiple roles, take on additional duties; cannot manage all admissions / transfers.</i>	1	2	3	4	5	Your comments:
<b>7.3 To what extent did routine additional demands negatively affect your work?</b> <b>Example:</b> <i>USS done during normal working hours; unable to accept surgical patients as full of medical patients.</i>	1	2	3	4	5	Your comments:

**Issues not covered:** *Did any other demand management and workload issues not covered above cause you particular problems during last week? If so, please provide a short example.*

### Other Risk Factors

**Risk factors not covered:** *Did any other risk factors not covered above cause you particular problems during last week? If so, please provide a short example.*