The Introduction of Clinical Microsystems into an Emergency Department.

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The Introduction of Clinical Microsystems into an Emergency Department

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A Dissertation submitted in part fulfilment of the degree Of MSc Leadership and Management Development, Institute of Leadership, Royal College of Surgeons in Ireland

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The Introduction of Clinical Microsystems into an Emergency Department

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Abstract

The provision of high quality care is the responsibility of all healthcare staff, but in today’s climate of ever decreasing budgets and resources it is even more important. The Emergency Medicine programme (EMP) has been charged by the Health Service Executive (HSE) to revolutionise the way emergency departments (ED) provide care in an effort to reduce the patient experience times in the ED. The overarching aim of the EMP is the provision of safe quality care, and one of the methodologies for achieving this aim is the use of systems management tools, the Emergency Medicine Programme recommends the use of Clinical Microsystems (microsystems). This change project centres on the implementation and use of microsystems within an emergency department and describes the processes involved in its implementation into practice. The HSE change model based on an organisational approach was used as a framework to guide the change into practice. The Stufflebeam (CIPP) evaluation model was used to assess the success of both the implementation of microsystems into practice and evaluate the resultant improvements in patient care. A number of quality improvement projects were undertaken and these have been assessed and evaluated by the group. Both the improvement team and the wider departmental staff are in agreement that clinical microsystems has improved patient care and allowed ownership of quality improvement initiatives by staff in the department as evidenced by the literature. The evaluation of the project has provided for the continued use of clinical microsystems in the department.
I would like to acknowledge the support and help from all those involved in the implementation of this project. The staff in the department and those who were part of the improvement team. I would like to thank Sibeal Carolan programme director for year 1 for all her support and guidance throughout the entirety of the programme. The programme director from year 2, Steve Pitman, who provided a lot of valuable information and support. All the staff in the RCSI, Reservoir house, who were always welcoming and helpful. My action learning set facilitator Caroline, for her guidance and continued support throughout the process, it was much appreciated. My fellow students and members of my action learning set, thanks for all the help, support, and guidance through the panic.

I would also like to thank Eoin for agreeing to be my “study buddy”. I would also like to thank my manager Marian for her support to undertake this programme, for listening to my concerns; I could not have undertaken this without her.

I would also like to thank my husband Paul, and my children for their support and belief in me, and their patience.
## Contents

Chapter 1 Introduction ...........................................................................................................................1

1.1 Introduction ........................................................................................................................................1

1.2 Nature of the change .........................................................................................................................1

1.3 Rationale for Change .......................................................................................................................2

1.4 Aims and Objectives .......................................................................................................................3

1.4.1 Aim ..............................................................................................................................................4

1.4.2 Objectives ....................................................................................................................................4

1.5 Context of Change ...........................................................................................................................5

1.6 Conclusion .......................................................................................................................................6

Chapter 2 Literature review ....................................................................................................................8

2.1 Introduction ......................................................................................................................................8

2.1.1 Search Strategy .........................................................................................................................8

2.2 Clinical Microsystems .....................................................................................................................9

2.3 Patient safety and Quality improvement in healthcare ...............................................................11

2.4 Culture change ..............................................................................................................................14

2.5 Methodologies and Tools for Quality Improvement ................................................................16

2.5.1 Lean Process Improvement ..................................................................................................16

2.5.2 Six Sigma ..................................................................................................................................17

2.6 Leadership, engagement and quality ...........................................................................................18

2.7 Barriers to successful implementation of the change ................................................................20

2.8 Conclusion .....................................................................................................................................21

Chapter 3 ...............................................................................................................................................22

3.1 Introduction .....................................................................................................................................22

3.2 Change Models ..............................................................................................................................22

3.3 Change Process ..............................................................................................................................24

3.3.1 Change proposal using HSE Model ......................................................................................24

3.4 Conclusion .....................................................................................................................................48

Chapter 4: Evaluation ...........................................................................................................................49

4.1 Introduction .....................................................................................................................................49

4.2 Evaluation .......................................................................................................................................50

4.3 Evaluation Models ..........................................................................................................................52

4.4 The Stufflebeam/CIPP Model .......................................................................................................53

4.4.1 CIPP model as it relates to the change initiative .................................................................54
Chapter 1 Introduction

1.1 Introduction

This chapter will provide an overview of the change initiative. It will provide details of the organisation where the change took place and the context of change including the rationale for the project. Organisational change plays a significant part in the day to day operation of any healthcare organisation. If the literature on change is to be believed over two thirds of change initiatives fail (Burnes, 2011). There are a number of approaches to change and an important component of accomplishing successful change is the choice of the most appropriate approach for the type of change and situation in which the change is being undertaken (Kanter et al. 1992). Consideration of the approach to take is a very important factor for the author to manage.

1.2 Nature of the change

The change initiative is the implementation of a quality improvement methodology, namely Clinical microsystems (microsystems), into an emergency department (Nelson et al. 2002). A thorough literature review was conducted utilising a number of headings, and was used to identify positives and negatives of the improvement tool and its implementation into practice. Utilising the guidance of the Health Service Executive change model (HSE, 2008) the change initiative is described including the evaluation of microsystems in practice using the Stufflebeam model of evaluation (Stufflebeam & Shinkfield, 2007). The overarching goal of the entire project is the improvement of the quality of patient care and achievement of a total ED journey time of less than 6 hours (EMP, 2012).
1.3 Rationale for Change

At the forefront of a quality health service was the report published by the Institute of medicine (IOM) entitled “To err is human” (Kohn et al. 2000). While information contained in this report was not new to healthcare professionals, by identifying the significant morbidity and mortality outcomes from adverse events, it catapulted this knowledge to front page news and shook public confidence in healthcare providers. The IOM report and the increasing globalisation of healthcare has led to a spotlight being placed on the quality and safety of services provided to patients, and the increasing need to reduce adverse outcomes for patients (Leape et al. 2002). The report highlighted a four tier all levels approach to the design of a quality healthcare system that results in a safer, effective service for patients. Among the recommendations was the development of a ‘safety culture’ that should include the development of systems and processes which focus on the provision of safe, effective, and quality services for the patient.

From an Irish perspective the Clinical strategy and programmes directorate in the HSE was established to improve and standardise patient care throughout the service by bringing together clinicians from all disciplines and enabling them to share innovative solutions to deliver greater benefits to each user of HSE services. The directorate established a number of Clinical care Programmes nationally. The programmes are based around three main objectives:

- To improve the quality of care we deliver to all users of HSE services;
To improve access to all services;

To improve cost effectiveness;

The Emergency medicine programme (EMP) is one of the national clinical care programmes. The EMP report provides a strategic approach to improve safety, quality, patient access and value in the provision of emergency care in Ireland (EMP, 2012). This report provides for the most wide-ranging and ambitious plan for emergency care this country has ever seen. The overarching aim of the EMP is the provision of safe quality patient care, one of the methods for achieving this aim is the application of systems management tools to the ED setting, such as clinical microsystems. The microsystems approach allows real ownership of process improvement by staff and so allows providers to implement change from the bottom up, focusing improvement activity where it really matters, to the patient.

There was an imperative within this organisation to improve the quality of access to both scheduled and unscheduled care for patients who attend the ED (HIQA, 2012). The delivery of safe effective care should be the priority of all healthcare professionals and this should be the ultimate impetus for change (Berwick, 2003). It is with this in mind that the implementation of clinical microsystems was chosen as the change project.

1.4 Aims and Objectives
1.4.1 Aim

The aim of this project is to implement Clinical Microsystems into an emergency department as part of recommendations included in the Emergency Medicine Programme report 2011.

1.4.2 Objectives

1.4.2.1
By 31 June 2013, 100% of all ED staff will have attended an education session on Clinical Microsystems.

1.4.2.2
A lead quality improvement team will be identified by the 1 July 2013.

1.4.2.3
The improvement team will collate assessment data of the emergency department using data from Symphony® under the following headings purpose, patients, professionals, and patterns and identify an area for improvement by the 31 October 2013 using this data.

1.4.2.4
By the 31 January 2014 the team will have begun to achieve the overarching aim of the EMP, 95% of admitted patients should have a total emergency department time (TEDT) of $< 6$ hours.

1.4.2.5
By the 1 May 2014 Microsystems will be embedded into the department as a quality improvement method by 100% of staff.
1.5 Context of Change

The context of the change references an ED in a busy urban voluntary hospital. The department provides a multi-disciplinary approach to care for all its patients, and its attendances stand at an average of 32000 per annum. The department had already begun the process of implementing the recommendations of the EMP. This happened in two ways, firstly, through the establishment of a clinical operations group, who met weekly and worked at departmental level to implement the EMP recommendations. Secondly, through the emergency nurses’ interest group, a subsection of the EMP, this is a national group made up of nurse managers from all of the EDs in Ireland.

Both groups were tasked with implementing the recommendations of the EMP at local level by using a recognised quality improvement methodology. One of the aims of the EMP is the implementation of quality system tools into EDs across the country in an effort to streamline processes in those departments and to optimise the patient experience times. Microsystems has been identified by the EMP as a quality improvement tool that has the possibility of optimising processes within departments which will in turn improve both patient and staff experiences. It has a proven track record of quality improvement in the ED environment (Kosnik & Espinosa, 2003), it encourages service user interaction, and staff satisfaction to improve the care provided in the ED (Godfrey et al. 2003). The microsystems approach recognises the unique context of each department (or microsystem) based on its culture; processes; and traditions (Batalden et al. 2003). It promotes the involvement of the entire multi-disciplinary team. The distinctive context of each department will influence what
improvements are needed (Disch, 2006). By improvement at front-line clinical microsystem level the aims of the EMP will be realised for patients (EMP, 2012).

Clinical Microsystems were developed by The Dartmouth institute in the US in response to the Institute of medicine report (Kohn et al. 2000) and its call for a systems approach to quality improvement. The Dartmouth Institute under instruction from the EMP provided the initial training for the coaches, and would also provide support and further training over an eight month period. Appendix 1 shows an overview of the sessions and deliverables required by the teams. The coaches are both managers in the department, and members of the EMP, and the emergency nurses group. A two day face to face session was held in Dublin, followed by monthly on line/teleconference training sessions. Each coach was assigned a facilitator who was contactable via email in between training sessions. Key deliverables were required by the coaches at monthly intervals, templates and training were provided pre-submission, and submissions were made electronically with feedback provided.

1.6 Conclusion
The provision of a safe effective quality driven service should be the goal of all healthcare organisations and staff (Fund, 2011). The EMP has developed a strategy to improve the safety, quality, access and value of the service provided to patients who attend emergency departments in Ireland. The provision of this improved service is dependent on departmental teams recognising the service they currently provide and implementing improvements that advance patient care outcomes and experiences. The EMP has chosen microsystems to be the guiding principle for quality improvement in all EDs nationally; Its practical and perceptive approach has
been used internationally in EDs to good effect (EMP 2012). It is through the implementation of microsystems at local level that the overarching aims of the EMP can be realised.
Chapter 2 Literature review

2.1 Introduction

The aim of this project is to introduce the quality improvement methodology Clinical Microsystems into an ED. As this is the first instance of the use of microsystems in the organisation it is under the spotlight to establish its effectiveness for use in the wider context of the organisation. It is therefore important to determine the evidence base behind microsystems, and its use in healthcare, to identify its strengths and weaknesses, and ultimately its effectiveness as a means of a quality improvement process. The focus of this literature review was an examination of the national and international evidence on the delivery of a quality service for the patient, paying particular attention to quality improvement, quality improvement tools, and the use of microsystems as a means of delivering a quality service. Consideration needs to be given in terms of the ability of microsystems to fit within the context of the Irish health system, and if it aligns to the goals of the EMP in relation to patient outcomes and experiences.

2.1.1 Search Strategy

The literature review was carried out in an organised and comprehensive manner, Cooper’s (1988) taxonomy of literature reviews was utilised as a guide for the review: focus; goal; perspective; coverage; organisation; and audience. The literature review was undertaken using the following databases, CINAHL plus with full text, Emerald, e-journal portal on RCSI Vle, Medline, Web of Knowledge and
Google Scholar. A number of government websites were also searched. The search terms for the review included: quality; quality in healthcare; quality tools in healthcare; clinical Microsystems; IOM report; engagement; culture; and Microsystems. The total number of articles yielded from all databases was in excess of 700. The titles of the articles were read and the articles were chosen based on relevance to the topic, a number of other key articles and books were also selected by the author, with 75 articles and 2 books used as part of the literature review.

A number of key themes were identified from the literature review: clinical Microsystems; patient safety and quality; patient safety and culture, quality improvement tools and methodologies; leadership, engagement and quality; and adverse patient events; from these key themes a number of topics were highlighted and are discussed in more detail below.

2.2 Clinical Microsystems

Clinical Microsystems have been described as the essential building blocks of healthcare, they are the front line unit where healthcare is delivered, each department or unit where care is delivered is a microsystem (Nelson et al. 2008). The Microsystems approach is based on having an in depth knowledge of the departmental team, its structures and processes in order to identify areas for quality improvement. It uses assess, diagnose and treat, a process that all clinicians will be familiar with. The Microsystems approach uses systems theory, and seeks to understand the individual context of each microsystem (Disch, 2006). It uses many of
the process improvement tools and methods identified by previous authors as a
means of enacting process improvements; (i.e. PDSA cycles, process mapping,
team working, cause and effect diagrams, etc.) (Millar, 2013).

Much of the research generated on clinical microsystems has been by the Dartmouth
institute itself. Nine papers were published by the Dartmouth institute espousing the
benefits of microsystems, but these papers were based on just two studies (Williams
et al. 2009). Nelson et al (2008) suggest that in order to function successfully as
quality improvement team, the team need to be in possession of nine characteristics.
This assertion has been criticised as it is based entirely on research into just 20 units
across the entire US, which would have many thousands of departments nationwide
(Williams et al. 2009).

The benefits of team working and ownership buy-in have been well documented in
the literature but recent literature on team working has developed almost exclusively
around microsystems, suggesting a microsystems team delivers a higher quality of
patient care (Ferlie & Shortell, 2001). Team working combined with an effective
leader using the microsystems approach has demonstrated improved patient care
outcomes (Hix et al. 2009).

The benefits to the use of clinical microsystems have been well documented and
include, improved communication; ownership of improvement process; (Williams et
al. 2009), improved admission times from the ED; (Kosnik & Espinosa, 2003), and
study in the UK into the use of microsystems in the NHS and its potential to fulfil a sustainable role in quality improvement. Overall, the results were positive and microsystems demonstrated an improvement in staff morale; empowerment; and commitment to quality improvement. However quality improvements were patchy and inconsistent and not demonstrable across all sites. They suggested additional studies would be required to address the issue of sustainability. A study in the US used microsystems to change their residency programme to include modules on quality improvement with positive results in terms of staff becoming involved in and initiating quality improvements. Further study was now required to demonstrate improvements in patient care (Tess et al. 2009).

The literature demonstrates that microsystems can play a key role in an organisation wide approach to continuous quality improvement. What is clear is that additional research into patient care outcomes is required outside the remit of the Dartmouth institute.

2.3 Patient safety and Quality improvement in healthcare

The Hippocratic Oath ‘first do no harm’ was the first time a clear distinction was made between providing safe care and the requirement to do no harm to the patient (Darzi, 2008). Healthcare has continued in the interim on the continual search for a safe effective service. The need for a safe effective and high quality service should be at the heart of healthcare delivery (Curtis et al. 2011). The IOM report (1999) was a seminal report in terms of quality in healthcare with an acknowledgment that patient safety was at great risk. The report suggested that in the US as many as
98,000 people die as a result of avoidable failures in patient safety. It called on all stakeholders in healthcare to develop a systems thinking approach to patient safety, and develop a patient centred approach to health care in line with their six guiding principles.

Some authors are damning in their criticisms of the report, they suggest that some errors are unavoidable and are natural consequences of surgical intervention for example. They argue that even with improvements in techniques, training and surgical experience post operative haemorrhage is an unavoidable complication of surgery; The report classifies it as avoidable (Brennan, 2000). Vincent et al (2001) dispute this and suggest that it is the failure of medical professionals to see the complexity of causation from their lack of appropriate care. As far back the 1800’s Florence Nightingale suggested that deterioration in a patient’s condition could be attributed to variability of care and lack of due diligence on behalf of the carer (Reid & Catchpole, 2011). Critics further suggest that the report while trying to highlight safety issues, gives a false impression of avoidable errors to the public, and may have done more harm than good (Brennan et al. 2005). Woolf (2004) goes as far as to suggest that monies that should be directed toward patient safety initiatives are being re-directed into investigating accidental deaths that are very difficult to study or indeed prevent.

Conversely supporters for the report suggest that it has catapulted patient safety and quality to the forefront of healthcare, and has captured the attention of governments and the public. Emanuel et al. 2008). This, according to Wachter (2004) has resulted in necessary changes to systems and processes in healthcare which are beginning to show benefits to the patient. Wachter (2004) in response to Woolf’s (2004)
suggestion that monies are being wasted, recommends a need for increased funding for both areas and the fact that patient safety has hit the headlines be a cause for celebration not recrimination. Stelfox et al (2006) undertook a study to determine the impact of the IOM report on patient safety and demonstrated an increased amount of patient safety publications and research.

But despite the many publications on patient safety, adverse events continue, a report in Ireland in 2007 (Kirke et al. 2007), shows 510 adverse medication events in a four month period. Healthcare appears to present a danger to the public with suggestions that the iatrogenic fatality rates within healthcare internationally are four times that of road traffic accidents (Hudson, 2003). Iatrogenic injury forms a major part of the literature on patient safety; An area that appears to get less attention is injury by omission (Hayward et al. 2005). While there have been great advances in healthcare, findings from a study in the US found that the majority of medical errors resulted from patients receiving too little medical care, and this should receive the same publicity as iatrogenic injury (Hayward et al. 2005). Regardless of how the adverse event occurs and despite many publications on the need to reduce harm to the patient adverse events are still occurring.

Nationally there have been a number of inquiries in recent years which have demonstrated poor medical practices and resultant adverse outcomes for patients, (Clark, 2006, Hayes, 2010). Close to Ireland the Francis report (2010) into the Mid Staffordshire trust demonstrated how the need to achieve government targets and balance budgets over patient care had a detrimental effect on the care provide to patients, with many adverse outcomes. Reason et al (2001) state one of the reasons
that make organisations susceptible to adverse incidents is their ‘blinkered pursuit of productive and financial indicators’.

The collective evidence on quality and patient safety clearly demonstrates that despite an increased awareness of the need for quality improvement, adverse outcomes for patients continue. It demonstrates that an increased awareness can only benefit the patient by encouraging quality improvement initiatives and a drive to provide the best possible care for the patient. Despite disagreements about the content of the IOM report, there is an acknowledgement that patient safety is an issue that needs to be addressed.

### 2.4 Culture change

Culture has many definitions but the key themes are thought to be around values; beliefs, visions; norms; and the behaviour of the people who work in organisations (Rashid et al. 2003). There are two schools of thought around culture: One that culture is what an organisation *is*, that culture and the organisation are one and the same; And two, that culture is what an organisation *has*, and that it is only one part of what makes an organisation whole (Langfield-Smith, 1995). The former implies that culture cannot be changed or shaped; the latter suggests that culture is an entity that can be employed as a means of effecting organisational change.

Wilson (2001) suggests that the culture of an organisation naturally evolves and changes overtime, the question raised is whether the culture can be actively managed and changed as required. There has been considerable discussion among
authors on this issue, with support from many to suggest that culture can be changed to positively affect the organisations functioning (Schein 1992, Tichy, 1983). Conversely, there are many who suggest that culture is what an organisation has and cannot be impacted upon. There is a belief that due to the competitive nature of subcultures and countercultures within an organisation culture is unmanageable (Smircich, 1983). In a study by Martins & Terblanche (2003) they found this was not the case and that by employing systems within the organisation to develop innovation and creativity that culture could be changed. This view is supported by Senior and Swailes (2002) who following a review of the literature on culture identified strategies that can be employed when planning a culture change, to increase the chances of success (table 1):

Table 1- Culture Change

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<tr>
<td>1. Assess the current situation</td>
<td>4. Intervene when required to bring about a change in culture</td>
</tr>
<tr>
<td>2. Have some idea of what the aimed for situation will be like</td>
<td>5. Monitor outcomes/outputs and make necessary adjustments</td>
</tr>
<tr>
<td>3. Work out the ‘what’ and ‘how’ of moving from the current culture to a perceived better culture</td>
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The literature on culture suggests that while culture is difficult to manage, it is possible to change it and thereby foster a sense of innovation and change within an
organisation. There is also the suggestion that by implementing Microsystems a culture of quality improvement can be established.

2.5 Methodologies and Tools for Quality Improvement

The need to improve the speed of patients through the ED and reduce overcrowding has been well documented both nationally and internationally (HIQA, 2012, Hoot and Aronsky, 2008, Kellermann, 2006). Healthcare has adopted a variety of improvement techniques in its efforts to address poor patient outcomes and inadequate system performance (Walshe, 2007). Research studies have analysed a variety of these methods (Total quality management, Lean thinking, Clinical Microsystems, and Continuous quality improvement) and have demonstrated quality improvements (Millar, 2013). There are many different approaches, tools and methodologies all of which have shown demonstrable improvements in patient care at departmental level (Batalden et al. 2003, Brännmark and Holden, 2013). The need to employ systems and processes to improve the safety and quality of patient care has been well documented (Leape et al. 2002). Two such approaches are discussed below.

2.5.1 Lean Process Improvement

‘Lean thinking is an approach to the organization of complex processes that derives from industrial manufacturing experience’ (Walley, 2003), one of the key principles of Lean is the elimination of waste.

The Lean process improvement method has been well documented in its application to improvements in emergency departments (King et al. 2006, Smallbane, 2007). In a study in the US, 53% of hospitals reported implementing Lean, with 60% of those
hospitals describing its use in the ED (www.americansocietyforquality.org). Holden et al (2011) reviewed the implementation of Lean into 15 EDs in the US. The review found that Lean appeared to offer significant improvements to patients attending the departments. The results demonstrated improved patient care outcomes; There was also an acknowledgement that other hospitals not included in the review also demonstrated favourable effects from the use of Lean. The improvements documented include reduced length of stay and waiting times and increased compliance with national waiting time standards, improved patient care outcomes.

Conversely the undesirable effects of Lean have also been documented and can result in greater workload and role overload, mitigating the benefits of employee involvement (Brännmark & Holden, 2013). Studies have also demonstrated no improvements in patient care outcomes, and decreased compliance with national waiting time indicators, and decreased patient satisfaction (King et al. 2006). Williams et al. (2009) noted that quality improvements from lean were not universal and that to ensure sustained continuous improvement leadership and staff engagement were fundamental.

2.5.2 Six Sigma

Six Sigma is a process improvement tool first used in industry back in the 1980s. The aim of Six Sigma is to eliminate defects and reduce variations in a process in order to improve output and outcomes from that process (Powell et al. 2009). There are six levels to six sigma, level 6 meaning minimal variation and defects per million opportunities. The aim is to achieve level 6 (Van Den Heuvel et al. 2005). Significant training and support is required to use the six sigma process (Koning et al. 2006).
Six Sigma was first used in healthcare in 1998 and demonstrated significant improvements both in terms of improving throughput of patients and in cost savings. Since then a number of other healthcare institutions have adopted the process and have also demonstrated significant cost savings (Van Den Heuvel et al. 2005). Although there has been a lot of criticism levelled at this process (Antony, 2004), a number of healthcare organisations have shown significant benefits after implementing Six Sigma (Antony et al. 2007). The NHS found that six sigma alone was not sufficient as a process improvement method, and so undertook a study to integrate it with another method, Lean, and subsequently implemented noteworthy changes (www.ihi.org).

What is clear however from the literature on quality improvement methodologies, is that no one strategy or methodology is recommended above the other, all have demonstrable benefits in terms of patient care and quality improvement (Øvretveit & Gustafson, 2003). The method used will depend on the organisation and the type of improvement required (Powell et al. 2009).

2.6 Leadership, engagement and quality

Gill (2012) describes staff engagement as a ‘passion for work’, engaged staff members exhibit vigour; dedication; and absorption in their job (Schaufeli et al. 2002). The literature is full of examples of how engaged staff care more; think more creatively; and work harder because they feel valued by the organisation (MacLeod and Clarke, 2009). A study in Holland of over 2000 doctors by Prins et al (2010) demonstrated how engaged staff were less likely to make mistakes. A similar study
of over 8000 nurses linked employee engagement to safer patient care (Laschinger and Leiter, 2006). Freeney et al (2006) describes burnout, an increased level of absenteeism with increased cost for the organisation as the result of disengaged staff. Robinson and Daly (2007) describe good quality leadership as one of the tenets of staff engagement, and further suggest that transformational leadership is the major component of engagement.

The NHS Leadership Framework (2010) argues that in order to deliver high quality services and provide continuous quality improvement to those services effective leadership is essential. The effectiveness of a leader in terms of quality is measured by the ability of the organisation to provide safe effective care that is quality driven (Taylor, 2007). Govier and Nash (2009) suggest that the type of leadership required for the provision of safe quality care is collaborative participative, and engaging, the need to work in partnership with colleagues, share information, and value other people’s opinions is also essential. This view is supported by Machell et al (2010) who suggest there needs to be a move from the old heroic style leadership to one that is adaptive shared and distributed. Indeed this type of leadership has been shown to be most associated with improved patient outcomes and a reduction in complications and adverse events (Wong & Cummings, 2007).

Conversely, both nationally and internationally, many reviews have demonstrated catastrophic outcomes for patients where weak leadership; governance; and accountability have been to blame (Clark, 2006, DOHC, 2008, Hayes, 2010). Positive patient outcomes are linked to improved job satisfaction brought about by the attributes of a transformational leader (Paterson et al. 2010). A large survey carried out in the UK (Rowling, 2012) established the link between leadership,
engagement and improved quality of care. Organisations which exhibit leadership and engagement deliver a better patient experience with reduced errors; stronger financial management; lower mortality rates; improved staff morale and motivation; and a reduced level of absenteeism and stress for staff.

The consensus within the literature is that leadership and engagement have a major role to play in implementing quality improvements, and in sustaining that improvement, and that there is a distinct casual link between effective leadership; staff engagement; and quality; and the delivery of safe effective care (Willcocks, 2012)

2.7 Barriers to successful implementation of the change

Effective leadership was identified as a requirement for the successful implementation of any quality initiative and was a key determinant in the successful implementation of Microsystems into the department. The coaches needed to demonstrate effective leadership and model the behaviours necessary to ensure buy-in from staff. The benefits to Microsystems needed to be adequately disseminated to the staff to ensure sufficient engagement. Culture was discussed and was considered a major barrier to the successful implementation of Microsystems. The coaches with the implementation team needed to foster a climate of innovation and creativity and place quality at the heart of the functioning of the department. The actual use of Microsystems in practice as it was a new process to all involved needed the continued support of the coaches by the Dartmouth institute, the EMP and hospital management. Acknowledgement of competing demands on
the coaches and the improvement team in terms of their day to day work, and the implementation of microsystems were required.

2.8 Conclusion

This chapter has explored the literature in relation to quality improvement and different methods used to improve the quality of patient care and reduce adverse events. Users of any health service nationally or internationally expect high quality care that is – safe; effective; efficient; timely; patient centred; and equitable (HSE 2009, Kohn et al. 2000), but the reality falls short. The literature describes adverse outcomes for patients despite expectations and publications to the contrary, and the agreement that additional work is required (Kelley et al. 2005). The literature recommends a need for the combined and constant efforts of all who work in and use healthcare services to make changes that will lead to improved patient outcomes; improved system performance; and provide for the professional development of staff (Batalden & Davidoff, 2007). There is a need for a systems approach to quality improvement that can be delivered through the use of microsystems. The systems approach needs to be led by an effective leader who engages with staff to further ensure the delivery of safe quality care to the patient. There is a need also for the provision of constant support to the coaches and the improvement team to ensure the creation of an innovative environment and an acknowledgement from hospital management of the competing demands on the staff involved.
Chapter 3

3.1 Introduction

‘It must be considered that there is nothing more difficult to carry out, nor more
doubtful of success, nor more dangerous to handle, than to initiate a new order of
things’ (Machiavelli). This chapter outlines the management of the change process
undertaken by the author. The HSE change model was the framework chosen to
support the introduction of microsystems into the department. This chapter provides
a detailed account of the change process under each of the four headings.

3.2 Change Models

Implementing change in an organisation is rarely easy; It can be chaotic; complex;
and convoluted (Stichler, 2011). There are many different approaches to change and
many ways to categorise these changes (Burnes, 2004a). Senior (2002) describes
change in terms of hard and soft systems models. Change processes that work best
using the hard systems models are usually small and often quite limited in terms of
time frame and consequences. They usually involve a small number of people and
can be resolved relatively easily. Soft systems models are generally used to deal
with problems of a larger nature and involve the organisation to a greater degree.
The soft systems models can be further categorised as organisational development
models (OD). OD concentrates on people and systems in an organisation and sees
organisations as learning organisms. Action research is a soft systems model, which
sees change as a continuous cyclical, repetitive process that is embedded as part of
the daily working of an organisation. It emphasises staff involvement and
engagement (Harstinen & Peikola, 1997), which the literature review has identified
as essential to the success of any change project.
Change can also be categorised in terms of how and when it occurs: planned or emergent. Central to the planned change approach is the notion of a cyclical repetitive process which suggests that all members of the organisation be involved in the change process (Burnes, 2004a). In today’s organisational environment the leading premise by which leaders and managers should operate are inclusiveness, empowerment and the promotion of teamwork. In contrast to this, the planned approach to change has been criticised for being autocratic, and imposing a top down approach which is not consistent with today’s view of leadership or change (Wooten & White, 1999). Emergent change is viewed as a continuous process that is normally achieved through small incremental change that ultimately leads to large scale organisational change (Shanley, 2007).

While the planned approach is criticised for suggesting all organisations are stable, the emergent approach suggests that all organisations are in a constant state of unrest and instability. The emergent approach by its own admission is not suitable for use in organisations that are not stable (Coram & Burnes, 2001). While neither planned nor emergent are without fault, both have merit and provide sufficient basis to use in an approach to change.

Regardless of the change to be undertaken a model is useful in the management of the change as it provides a framework to guide the change process (Shanley 2007). The sheer number of approaches makes it difficult to compare and contrast and determine a suitable model for the change being undertaken. Despite all the
research and reviews there is no one approach that suits all situations all of the time (Brisson-Banks, 2010, Burnes, 1996, By, 2005).

The HSE change model is based on Kotter’s eight step model (Kotter, 1990), it has at its centre the concepts of the soft systems models. However it is not a linear model like Kotter’s but rather is a cyclical process which allows for movement back and forward between stages. It allows for a greater understanding of the complexity of change which is not a linear process. It understands that change is dynamic and allows for movement along the change continuum.

3.3 Change Process

3.3.1 Change proposal using HSE Model

The HSE model of change (figure 1) was the model used in support of this change proposal. The HSE model is an Irish model developed by HSE and with specific application to the Irish health service. There is a web resource and change management tool kit available online to support the implementation of the change proposal. The model has a proven track record with evidence of the changes available on the HSE website for review. There is a user’s guide available to print in hard copy or available to view online. The model was developed using extensive evidence based practice, (McAuliffe & Van Vaerenbergh, 2006). The model espouses the use of empowerment, team working and engagement of both employees and service users of the HSE, it is completely inclusive. It is a soft systems organisational developmental model which was best suited for the implementation of this change project. The model is a four stage process but
although it is presented as a chronological process it is clear in the model that change needs to be approached as a continuous process with all elements of the model interrelated and with the opportunity to move back and forth between stages.

Figure 1- HSE Change Model

3.3.1.1 Initiation

The purpose of this first stage was to build a foundation for the change and develop a sound strategy for the change which included; the context and need for the change; identification of stakeholders involved; the need to create a sense of urgency; and the importance of engagement and participation of all staff involved. (HSE2008).
As previously mentioned in the literature review, in today’s organisational environment the leading premise by which leaders and managers operate are inclusiveness, empowerment and the promotion of teamwork. Research studies have demonstrated that one of the most effective factors in determining the success or failure of a change process is effective leadership (Burnes, 2011). An understanding of the context of the change is an important first step in the implementation of change, and fundamental to its success. The initiation phase of the HSE model captures this vital element.

Nationally the main objective of the clinical care programmes was to improve the quality of patient care. As evidenced in the literature review despite numerous publications both nationally and internationally there are still a frightening number of adverse events and patient safety failures in healthcare today. The Francis report (2010) in the UK demonstrates how cost over all else can be detrimental in the absence of effective leadership. It was within the environmental imperative to deliver improved patient care outcomes that this change was implemented.

In order to initiate the change the first step must was to determine the need and choice for the change, and the degree to how and when the change needed to be implemented. Clear identification of the future desired state post implementation of the change was required as part of the change strategy. Change for change sake will not gain the support and engagement of staff that is needed to ensure successful change.
The context of the change was described in detail in chapter 1. As part of the implementation process of the EMP recommendations into practice, local clinical operational groups were set up in each ED with medical, nursing and ancillary staff as members. The task of the group was to implement processes into practice in their own EDs that would help achieve the aims and objectives of the EMP. The EMP identified that microsystems would help achieve these aims and objectives and suggested that members of the clinical operational groups attend training on microsystems.

As part of the microsystems training a culture of quality improvement should be introduced into the departments by the establishment of a lead quality improvement team made up of multi disciplinary members of the ED. This lead improvement team was led by the team members who undertook the training, and they guided the team through the quality improvement process. The team members who undertook the training would be called ‘coaches’, and they were required to establish a team, and with training and support from the Dartmouth institute, (appendix 2) supported the team members to implement small scale changes into the department, or “microsystem”. The coaches were also charged with providing the team members with skills that would allow them to eventually function independently without coaching support, called ‘transition’(Nelson et al. 2011).

The driver for change in this situation was the EMP in conjunction with the Dartmouth institute, who provided the training over an eight month period for the coaches. Regular progress reports were required from the coaches to the Dartmouth institute trainers which created a degree of urgency for the change. Change was not
an option here; The EMP had given a mandate to the departments to deliver a quality improvement culture. A fine balance existed between the need to implement the change and the requirement to ensure staff participation and more importantly staff engagement in the project.

It was clear from the literature review on quality improvement that safe effective quality care for patients is delivered by a systems approach such as microsystems. There is a wealth of evidence in the literature on change to suggest that successful change initiatives can and do provide safe practice for patients (Higgs & Rowland, 2005). Having established that microsystems can improve patient care outcomes the next step in the process is an environmental analysis which would further identify the necessity for the change.

### 3.3.1.1.1 Environmental Analysis

**Swot analysis**

A sound strategy is required in planning any change process. Strategy, is defined as providing “directional cues to the organisation that permit it to achieve its objectives while responding to the opportunities and threats in its environment” (Schendel & Hofer, 1979). There are many strategic frameworks that can be used to identify the route required to move from planning the change to achievement of the change in practice. A SWOT analysis is one such strategic tool that can identify the strengths weakness, threats and opportunities in a change process, and strategically identifies the need and the import of the change (MacPhee, 2007).
Table 2- SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Enthusiastic Staff</td>
<td>• Additional workload for staff</td>
</tr>
<tr>
<td>• Supportive Co-Coach</td>
<td>• Not previously tested in Ireland</td>
</tr>
<tr>
<td>• Support from EMP</td>
<td>• Additional resources may be required</td>
</tr>
<tr>
<td>• Dartmouth Institute</td>
<td>• Maintain Momentum</td>
</tr>
<tr>
<td>• Multiple ED sites nationally</td>
<td>• Being imposed by EMP</td>
</tr>
<tr>
<td>• Multi disciplinary team</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threats</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lack of resources</td>
<td>• To improve staff and patient satisfaction</td>
</tr>
<tr>
<td>• Lack of staff engagement</td>
<td>• To demonstrate nationally good practices in the ED</td>
</tr>
<tr>
<td>• Time consuming and time commitment from team members</td>
<td>• The delivery of effective and efficient patient care</td>
</tr>
<tr>
<td>• Lack of support from senior management</td>
<td></td>
</tr>
</tbody>
</table>

It was clear from the SWOT analysis that there was much to be gained by the implementation of microsystems, but the important aspect of the SWOT was the management of the threats. It was clear from the analysis that the threats and the weakness were mainly from within the team. The challenge that faced the coaches was to institute a collaborative manner of working to turn the negatives around. A structured team coaching model offers the encouragement needed to support health care improvement (Godfrey et al. 2013).
As mentioned the proposed change was to a certain degree imposed on the department from the EMP. Another threat highlighted was the imposition of the change onto the department. The imposition of change needed to be managed carefully to avoid a breakdown in trust between the improvement team and the coaches. Leadership of the project needed to managed carefully to ensure a ‘pull’ rather than a ‘push’ approach to the project to ensure a breakdown of trust did not threatening the project.

The leadership skills and roles were identified at this stage along with the key influencers and any staff members or departments that would be affected by institution of this change. A leader is required to champion the change to successful implementation (Caldwell, 2003). According to Gill (2012) one of the supreme reasons for negative reactions in an organisation is change. There are a number of reasons for this reaction:

- fear of the unknown;
- fear of losing control over their job;
- lack of motivation;
- lack of belief in the change;
- poor communication;
- poor engagement;
- previous experiences;
- lack of skills;

(Bennett, 2003, Gill, 2012, NICE, 2007),
Stakeholder Analysis

According to O’Toole (1995), one of the most cited reasons for resistance to change is having change imposed without first consulting with staff. An understanding of how change affects people can assist leaders in better managing the change process. One of the guiding principles of the HSE model is one of inclusiveness, and in particular how change affects others. One of the ways that a leader might identify stakeholders is through a stakeholder analysis.

A stakeholder analysis was carried out at this stage to negate the negative effects as mentioned that occur without knowledge about the power and interest of stakeholders and how to prioritise their interests (Johnson et al., 2008). The power interest grid was found to be useful in identifying all stakeholders and the level of engagement required. An important point to consider was how the change impacted on them individually in order to highlight areas of resistance that may occur (Bryson, 2004). As mentioned there are numerous reasons why resistance might occur, leading the change required an acknowledgement of the resistance and the inclusion of strategies for managing the potential resistance (MacPhee, 2007).
One of the key stakeholders identified were departmental staff of all disciplines, as they were considered to have high interest and high power in terms of the change project. It was important to actively engage and communicate with this group of staff to ensure their continued input to and support of the project. Information sessions were held by the coaches in the department to all disciplines of staff on a daily basis until all staff had taken part in the sessions. An email was sent to all stakeholders under the “Low Importance/High Influence” section detailing the change process, and an acknowledgement that the team did not require direct input from them at the time but would keep them informed of any and all outputs from the change process. All of the stakeholders responded well to the information sessions and initial concerns that sufficient volunteers would not be found within the department for the
quality improvement group were unfounded. The ED staff responded with enthusiasm and a drive to improve the quality of care provided to the patient.

A major part of microsystems is the direct involvement of patients both in the inputs and the outputs, but as the process was new to the coaches and the team a decision was taken not to involve them initially, but with a plan to consult with the patient service users committee in the hospital for future involvement. To this end an email was sent to the departmental representative on the group with information on microsystems and a request to involve them in the future, this was favourably received.

**Force Field Analysis**

A force field analysis is used to analyse the range and strength of any factors or forces that impact either positively or negatively on the change. A force field analysis can be seen as a dynamic process where both sides are working against each other.
in a state of constant flux, until one side establishes influence over the other. Change occurs when one side causes unbalance in the state of equilibrium so that the drivers are greater than the resistors (Burnes, 2004b). A visual image was devised of the factors affecting the change by undertaking a force field analysis. A weighting mechanism was used to determine the relative importance of each force, 1 being considered a weak force and 5 being considered a strong force (Baulcomb, 2003). Fear of the unknown and time commitment required from staff were both assigned a score of 4, but it was felt that staff enthusiasm for the project and support from the coaches would score a 5, which swayed the balance toward driving forces. The total score for drivers was 29 and 20 for the resistors. The model suggests that the drivers need to outweigh the resistors in order for change to take place (Senior & Swailes 2010). While the change may proceed it is important to try and reduce or eliminate the restraining forces and thereby reduce the resistance toward the project (HSE, 2008).

Hospitals can provide very political environments, with numerous departments working in parallel but all vying to be the best. As the change initially would not cross departmental boundaries an understanding of the politics of the organisation was required but direct engagement was not needed at the time. A discussion took place with the Lead Assistant Director of Nursing (ADON) in charge of the directorate involved in the change, the discussion centred on what microsystems was, the impact on the organisation, resources required, and who would provide sponsorship for the project. It was agreed that the lead ADON for the department would provide sponsorship for the project.
Leverage points are described as areas where small focused action can increase the potential for success in a change project (HSE 2008). The point at which the composition of the team was decided could have been described as a leverage point. Teams that cross the boundaries of disciplines are more effective, as they have a broader knowledge base from which to work (Rosenthal, 1997). When the quality improvement team was forming, the coaches deliberately ensured that a range of disciplines were included to ensure a broader knowledge base, and increase the effectiveness of the team (Tanco et al., 2011).

At the end of the initiation phase a decision was taken following review of all of the issues highlighted to continue with implementation of the change. Particular attention was needed throughout the project to ensure good communication with all stakeholders continued to ensure their active participation and inclusion in all aspects of the change process. The involvement of stakeholders at the learning, planning and implementation phases of a change project considerably impacts commitment to the change process and lowers resistance (Waddell & Sohal, 1998).

### 3.3.1.2 Planning

The crucial intent of this phase in the change project was to further gain support and commitment for the intended change. The phases for the purpose of discussion have been grouped together, for while they suggest that each phase is happening separately, there are in fact occurring simultaneously. A GANNT chart was prepared at the beginning of the project, this changed due to the evolving nature of the change process and the final version is available as appendix 3. When implementing change it is important to identify staff that are most important to the change and engender real ownership in the proposed change (Wasson et al., 2008). It was during this
stage that the plan was fine tuned, with identification of who would be involved what the change would mean and the outcomes of the change.

In order to implement Microsystems a training programme was required, which would be run over an eight month period with key deliverables required by the local implementation teams, monthly, to the trainers (Dartmouth Institute, US). Two staff members, the coaches attended a two day seminar provided by the Dartmouth Institute trainers, which included:

- a background to Microsystems;
- expectations of the coaches were defined;
- team deliverables outlined;
- individual coach deliverables outlined;
- an overview of the art of coaching;
- support from Dartmouth outlined (web based sessions explained);
- support from the EMP;

Following attendance at the two day session the coaches were charged with setting up a lead quality improvement team in the department. Kotter (1996) discusses the need to ‘form a powerful guiding coalition’ as part of the change process, a group with enough power and commitment to effect successful change. Multi-disciplinary information sessions were held in the department, all staff were captured in this way. An information notice board was designed with more detailed information for staff to
review at their leisure. The provision of significant information to the stakeholders and an opportunity for them to offer feedback, are important steps in creating a shared vision for the change (Fernandez & Rainey, 2006). An email was sent to all disciplines in the department post the information sessions looking for volunteers to take part in the quality improvement team, a number of staff from each discipline volunteered. Securing support from staff in the department was vital to the success of the change, and so ongoing consultation with them was maintained throughout the project.

The first meeting of the local implementation group was held on the 16 July 2013. The group were given some more information on their specific requirements as part of the group, and the role of the coaches. The team discussed how they would communicate with the rest of the department, this would be important as the wider department would also play an important part in the process (Appendix 4). As the team developed they would be undertaking audits and pilot PDSA’s and would need the commitment of the whole department to ensure success. One of the reasons cited for the failure of change is the lack of engagement of staff. According to Kotter(1996) the success of the change requires all staff ‘to work together as a team united in the vision’ for change.

The literature review demonstrated that leadership plays a vital part in the success or failure of a change process. The coaches needed to demonstrate support and belief in Microsystems in order to ensure its effective implementation. The coaches
engaged fully in the process, and led by example to ensure the greatest chance of success.

The improvement team were required to implement small scale changes within the department and feed this information back to the Dartmouth institute in a monthly progress report on-line, a sample of the report is shown in appendix 4. The improvement team required support in the use of process improvement tools (PDSA, GANNT Charts, and Fishbone diagrams) in order to successfully the small scale changes, the coaches provided this support with Dartmouth supporting the coaches.

The coaches needed to be cognisant of the cultural change aspect which could contribute to the resistance to the project if not managed effectively. According to Senior and Swailes (2010) the temptation to ignore cultural issues should be avoided as this can have a detrimental effect on the organisation. The coaches needed to have a clear understanding of the departmental and organisational culture to ensure success of the change process. How to manage culture will be discussed in more detail under the Implementation phase of the project.

Concern was raised by both the improvement team members and wider departmental group that additional work from this process would result in less time spent on patient care. The literature review on improvement methods identified work overload as factor which contributed to lack of success in implementation of change. The improvement team raised concern that they would be required to take large portions of additional work home with them. The team met on a weekly basis, which
gave rise to concerns regarding busy schedules, shift patterns and availability. Clearly these could be possible resistors to the change and needed to be managed carefully in the implementation phase.

**Resistance**

Research into why change fails reveals that over two thirds of change initiatives fail, and one of the reasons cited is resistance (Waddell & Sohal, 1998). There is a fallacy about resistance in the literature that all resistance is bad, but in reality resistance can be used as a way of highlighting future barriers for the change early on in the project (Ford *et al.* 2008, Waddell & Sohal, 1998) The identification of barriers as early as possible will increase the potential for successful change (HSE, 2008). The most important aspect of overcoming resistance is communication and engagement (LeTourneau, 2004). Arguably the reaction of staff to a change process can result in the biggest impact on the success or failure of the change (Siegal *et al.*, 1996)

From the outset the coaches ensured good communication with the improvement team, and ensured that they in turn communicated with the wider department and stakeholders outside the department. The environmental analysis highlighted areas of potential resistance to the change, which allowed strategies to reduce the resistance to be developed. Resistance and strategies will be discussed further in the implementation phase.
As part of the Microsystems process data analysis using the 5 P’s, (patients, professionals, processes and patterns) was recommended to determine baseline current activity (Nelson et al., 2008). ‘Good, collaborative information gathering, analysis and diagnosis of key information will point towards the set of activities that will assist in the journey of change’ (HSE 2008). We need to know the current status before we can plan for the future. The data collected from the 5 P analyses yielded a lot of valuable information for the team, and was used to identify the first of the small scale change processes. Data collected included a small scale staff and patient questionnaire. All the data collected was collated and displayed for all staff in the department to view on a notice board. This will be discussed in further detail in chapter 4.

Having built commitment, created a vision for the change; established the readiness for change; and identified stakeholder involvement; the last step in the planning phase is an implementation plan. The design and the content of the implementation plan was discussed and agreed with the coaches and the improvement team, at an early meeting of the group. The plan is shown in table 4, with time frames established for the implementation of the project.

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>June-July</td>
<td>Information sessions for staff and formation of the improvement team</td>
</tr>
<tr>
<td>August</td>
<td>5 P assessment and data collated</td>
</tr>
<tr>
<td>September</td>
<td>Begin 1st pilot PDSA</td>
</tr>
<tr>
<td>November</td>
<td>Move from PDSA to SDSA</td>
</tr>
<tr>
<td>January</td>
<td>Evaluate impact of Microsystems</td>
</tr>
</tbody>
</table>
3.3.1.3 Implementation

This phase of the change model prepares the department for the actual implementation of microsystems into practice. The HSE model (2008) identifies this stage in the process the need for the leader of the change to remain open minded and flexible and cognisant that a course change may be required, depending on what the current findings in the project are indicating. The implementation of microsystems into the department was relatively straightforward, while resistance was anticipated this did not materialise in any real form, and this stage progressed well. The reason for minimal resistance was believed to be down to relentless communication and preparation which laid a solid foundation for a successful implementation. Resistance can be reduced by adequate communication and engendering real ownership of the change by the team (Ford et al., 2008).

The key activities of the implementation of microsystems into practice were:
Table 5- Key activities of Implementation

- Review and utilisation of the data collected on the 5P’s;
- Define a small scale change for the department which includes;
  - Identification of an improvement theme;
  - Identification of a global improvement theme;
  - Identification of a specific improvement theme;
  - Measurement of pre and post data;
  - Use of the model for improvement –PDSA;
- Weekly meetings of the improvement team;
- Use of effective meeting roles: leader, recorder, timekeeper and facilitator;
- Monthly updates to the Dartmouth Institute;

The weekly meetings began in earnest with the use of the seven step meeting process (appendix 6). Part of the role of the coaches was to support the team in the use of effective meeting skills, including the meeting roles. At the first meeting the use of the roles were discussed, and the team decided that the roles would be rotated at each meeting, with all members undertaking each role. The role of the coach was discussed, and a discussion took place around expectations of the coaches and their role in the group. As part of the meeting process ground rules,
decision making and dissemination of the information were discussed and agreed by
the group.

As mentioned in the planning phase availability for weekly meetings and concerns
regarding additional workload on an already stressed work place were expressed. In
the SWOT analysis carried out in the planning stage this issue ranked high as one of
the threats to the project and needed to be managed to ensure it did not develop into
resistance and threaten the success of the entire project. At this stage in the process
the group with the support of the coaches had an open and frank discussion around
how much additional work the team were able to provide outside clinical work and
availability to attend weekly meetings. With reassurance and support from the
coaches the following was agreed:

Table 6- Improvement group agreement

| Additional work outside working hours would be kept to a minimum |
| Agreement was reached with line mangers of the team that they would be allotted
time in their daily work to complete assigned tasks, and that they would receive
time back for attending meetings outside work time; |
| There was not a requirement to attend every weekly meeting; |
| Tasks would be shared equally among all members; |
The coaches would undertake tasks as required by the team;

The key to the success of any change process is staff engagement and communication. It was important to ensure staff supported the vision of quality improvement in the department, to ensure success for the project. The discussion and the accessions granted by the coaches reduced this potential resistance to the project.

As mentioned in the previous phase another form of potential resistance can come under the guise of organisational culture. According to Mowbray (2009) there are a number of necessary steps to undertake to ensure success in culture change, they require change in the behaviours; processes; structures; and the purpose of an organisation. The coaches played an instrumental role in the culture change, as leaders of the change they needed to actively manage the culture change as leadership can be crucial to shaping organisational culture (Gill, 2012). The microsystems quality improvement tool mirrors Mowbray’s steps in their 5 step approach to quality improvement. One of the first issues toward a culture change addressed by both is the establishment of a departmental purpose; this should involve all members of the department not just the improvement team. One of the first things the team developed in collaboration with the rest of the department was a departmental purpose (appendix 7). Table 7 below highlights other activities led by the coaches which strengthened the ability of the department to achieve a culture change to one which values quality and patient safety above all.
An effective meeting is productive, disciplined and efficient. The Dartmouth institute highlight seven processes that a team need to move through in order for a meeting to be effective:

- Make Decision;
- Manage time;
- Share leadership;
- Listen and contribute;
- Manage conflict;
- Give feedback;
- Learn new things;
- Have fun

(Nelson et al. 2007)
The coaches guided the improvement team through the meeting processes, and supported them in using the meeting roles, which allowed them to achieve all of the above and achieve an effective meeting. The roles while an initial cause of concern, especially the leader role, progressed well. The team agreed a process for how the roles would be undertaken and this was included in the ground rules for the team.

The assessment and diagnosis of the department was the next step, this involved collection and collation of the 5 P data; The information collected during the assessment phase was used to inform the selection of a theme for improvement, which ultimately resulted in pilot improvement processes being implemented. Following collation of the data an improvement theme, global aim and specific aim were identified (Figure 3). One of the important aspects of improvement processes is measurement, which determines whether a change is merely a change or an actual improvement (Nelson et al. 2011). To this end pre and post measurements were vital to ensure real improvement. This data collection will be discussed in more detail in chapter 4.

<table>
<thead>
<tr>
<th>Improvement Theme: Timely access to an inpatient bed for all patients</th>
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</thead>
<tbody>
<tr>
<td>Global Aim: To improve the time it takes to get the patient to a bed once decision to admit is made</td>
</tr>
</tbody>
</table>
Specific Aim: To reduce length of time from decision to admit to medical notes completed to 10 minutes in 70% of cases by 31 Oct 2013

As part of the training requirements from the EMP and Dartmouth institute regular monthly updates starting in September were to be submitted by the team (Appendix 1). The updates demonstrated quality improvements in progress as well the functioning of the improvement group and discussions of the how the coaches were progressing, an example is shown in appendix 5.

### 3.3.1.4 Mainstreaming

Anchoring new processes in the organisation is the ultimate aim of any change project. This stage of the process was about embedding the change process into the organisation; It is not about just doing something new, it is about building capacity for doing things in a new way (Senge et al., 1999). It is about developing a culture of change and ‘making it the way we do business’ (HSE 2008).

Staff engagement and the positive response to the microsystem approach helped enormously in developing a culture of quality improvement in the department. The introduction of small scale changes that impacted on the delivery of patient care and improved the patient experience have contributed to establishing the critical importance of quality in the department.
Microsystems identify activities that are necessary to ensure a continued culture of quality improvement was maintained, and highlight the need for ‘follow-through’. They suggest that intentional planning is required in order to sustain the improvements made, through monitoring processes and reviewing data, to ensure old habits do not return (Nelson et al., 2011). The activities with application to the department are shown in appendix 6.

The next step in the implementation phase was evaluation and learning, the focus of this stage was to learn from the design and implementation of the change project. This stage is very important in the overall change process, as it can have a real impact on the capacity of the organisation to embrace change in the future (HSE 2008). The evaluation of the project will be discussed at length in the next chapter using the Stufflebeam model (Stufflebeam & Shinkfield, 2007).

3.4 Conclusion

The implementation of the change project into the department was successful. This chapter discussed the change process in detail from its inception to its application in practice. The use of the HSE model provided a framework to aid in the implementation of the change and was critical to the success of the change project. It provided a structure around which to base the change project. The core principles of the HSE model are based around improving the quality of care for patients, staff engagement and involvement in change, and providing a standardised consistent approach to any change process. These principles are vital to ensure the success of any Microsystems in practice and are evident in each step of the model.
In the initiation phase stakeholder involvement was highlighted which ensured this vital aspect to the success of any change project was carried through to the end of the project, thereby reducing resistance to change, and increasing the chances of success. Staff engagement which was crucial to the success of microsystems was encouraged at all stages and the promotion of an environment of inclusiveness fostered a sense of ownership of the project. This was another factor in reducing the resistance to the project. The improvement of the quality of care provided to patients is a core component of the microsystems approach and was achieved through the development of a culture of quality improvement. The HSE model promoted a quality driven service at each of the stages and so guided the culture change in the department, to one of quality. The change model was the lynch pin that kept the project on track.

Chapter 4: Evaluation

4.1 Introduction
This chapter outlines the evaluation for the implementation of microsystems into an emergency department. Evaluation has been described as the ‘systematic examination and assessment of the features of an initiative and its effects, in order to produce information that can be used by those who have an interest in its improvement or effectiveness’ (WHO1998). The Stufflebeam model also known as the CIPP model (Context, Input, Process and Product), was used to evaluate the effectiveness of the change project, and this chapter outlines the application of the CIPP model to the change process. The chapter provides a brief overview of the purpose of evaluation and its application into practice. Reference will be made to the overall aims and objectives of the change project and whether these have been achieved.

4.2 Evaluation

The ability to deliver effective quality care is central to health services in the current climate, this is coupled with the ability to deliver the care in a cost effective manner (DOHC, 2013). Quality in healthcare has risen to the forefront of health care in recent times and nationally the government is advocating quality improvement and innovation through the national clinical care programmes which are considered critical to quality improvement (DOHC 2013). Any evaluation of this change process has to measure outcomes in terms of quality improvement and ensure demonstrable evidence of improved patient care outcomes. Evaluation alone will not ensure the provision of effective quality care to the patient; it is only one of the components of quality provision it also requires action to ensure improved outcomes (Stufflebeam & Shinkfield, 2007).
Evaluation is the systematic review of an experience and determination of its worth or value and the establishment of any changes or future developments required as a result of the change (HSE, 2008). The evaluation process is the final and possibly the most important component of the change process; it allows the organisation to understand the outcomes and outputs of the change project (Hodges, 2008).

The literature suggests three main theories of evaluation; complexity theory; reductionist theory; and system theory (Frye & Hemmer, 2012). Each of these theories underpinned the development of most of the evaluation models that we use to evaluate programmes and processes today. There are a number of models discussed in the literature such as the CIPP model; Fitzpatrick’s model of evaluation; the Jacob’s model; and the Logic model (Zhang et al., 2011). Regardless of what model is used a number of key questions need to be asked to ensure the evaluation process provides worthwhile and useable outcomes (Thackwray, 1997).

**Table 8- Evaluation Questions**

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>How is evaluation defined?</td>
</tr>
<tr>
<td>What are the functions of evaluation?</td>
</tr>
<tr>
<td>What are the objects of the evaluation?</td>
</tr>
<tr>
<td>What kinds of information should be collected regarding each object?</td>
</tr>
<tr>
<td>What criteria should be used to judge the merit of the evaluation object?</td>
</tr>
<tr>
<td>Who should be served by the evaluation?</td>
</tr>
<tr>
<td>What is the process of doing an evaluation?</td>
</tr>
<tr>
<td>What methods of enquiry should be used?</td>
</tr>
<tr>
<td>Who should do the evaluation?</td>
</tr>
<tr>
<td>By what standards should the evaluation be judged?</td>
</tr>
</tbody>
</table>
How and when should the results be presented?

However, what is apparent is that the evaluation model is secondary to other factors which influence the evaluation namely the context of the evaluation; staff involvement; resources available; and expertise (McNamara et al. 2010). Experts in the field of evaluation agree that no one model suits all situations and the evaluator should select the model that best suits the requirements of the process being evaluated (Stufflebeam, 2007). In order to arrive at the best model for the project a rigorous review of models available needs to be undertaken to ensure the correct method is used.

4.3 Evaluation Models

The author conducted a review of various methods and models in the literature, all were reviewed prior to a decision to use the Stufflebeam model. The Kirkpatrick model is a robust four tiered approach but was discounted as it is very outcome centric (Bates, 2004) it does not consider the context of the change, and was developed to evaluate learning outcomes in training programmes (Kirkpatrick, 1996). The Logic model was also considered due to its apparent simplicity, but on further investigation it was found to be inherently linear which may not identify unanticipated modifications that may be identified mid change (Patton, 2010). Jacob’s model is a ten stage evaluation process it is not linear in progression which allows for unexpected alterations in the change process but due to its apparent complexity with
ten stages it was discounted. The Stufflebeam model is a four stage evaluation
process first identified in 1971 by Daniel Stufflebeam as a means of programme
improvement rather than focussing on outcomes (Frye & Hemmer, 2012). It is not a
linear process and allows for modification throughout the change process.

4.4 The Stufflebeam/CIPP Model

The Stufflebeam model was used to evaluate the introduction of microsystems into
the department. CIPP is an acronym for the four complementary components which
are considered critical to the evaluation process; context, input, process and product
(Zhang et al., 2011). The context evaluation identifies goals and priorities by allowing
a needs assessment to be performed but it also includes the identification of
opportunities and impediments which takes it a step further than a normal needs
assessment. The input evaluation looks at alternate processes and allows
comparison of same to ensure the best process is being used. The process
evaluation is an assessment of the implementation of the project, how it worked in
practice. The final stage is the product evaluation which evaluates the impact,
effectiveness and outcomes of the project (Frye & Hemmer 2012).

The rationale for using this model was it had been used in a variety of evaluation
situations which have been well documented (Stufflebeam & Shinkfield, 2007).

The individual elements align well with the change project, and with Donabedians’
methods (structure; process; and outcomes) for assessing quality assurance in
health care. The four elements address all stages of the implementation of the
change process and it allowed for both formative evaluation (carried out at the early
stage of the change) and a summative evaluation (carried out at the end of the
change initiative) (Hall et al. 2010). This was particularly important in the context of this change process and the tight timeline for completion of the written part of the change process. How each of the four elements was used to evaluate the introduction of microsystems will be discussed in detail including the link between the evaluation and the aims and objectives of the change initiative.

4.4.1 CIPP model as it relates to the change initiative

![CIPP Model](image)

Figure 4- CIPP Model

4.4.2 Aims and Objectives

The aims and objectives are discussed in chapter 1.

4.4.3 Context
The rationale and the requirement for the change are at the core of the context evaluation (Stufflebeam & Shinkfield, 2007). The context within which the change is took place was described comprehensively in chapter 3. To summarise, the change project took place in an ED following identification by the EMP of a need to improve patient care outcomes within EDs nationally. The EMP was the initial driving force behind the introduction of Microsystems into the department. There was also a need for all healthcare staff to improve the safety, quality efficiency and effectiveness of the care they provided. While the change initiative was to a certain extent imposed on the department by the EMP this was balanced by the staff who identified a need to improve the patient care experience within the department.

The difficulties within the Irish health service and particularly within emergency services have been well publicised over the past number of years, with mounting pressure from the HSE on organisations to improve patient care experiences (HIQA, 2012). The context of the change was one of the major driving forces for the change initiative, and within the force field analysis the need to deliver high quality care was identified as one of the main drivers. Within the organisation there was an imperative to improve the quality of access to both scheduled and unscheduled care for patients who attend the ED (HIQA, 2012).

4.4.4 Inputs

The Input evaluation assess the feasibility of the project including any alternate approaches and resources required (Frye & Hemmer 2012). This stage of the evaluation process focused on how best to bring about the change and allowed for the development of an implementation plan for the change project (Zhang et al. 2011), as discussed in chapter 3. An examination of the rationale for the project
implementation was required as part of the input evaluation which involved an extensive literature search to identify any and all pertinent research against which to benchmark microsystems (Frye & Hemmer 2012). The literature review identified alternate approaches to improved patient care outcomes; It also demonstrated that no one method is suitable for all situations. The literature review also identified improved patient care outcomes with the use of microsystems. As the EMP is advocating microsystems this was the method chosen. An identification of stakeholders and their interests was needed to ensure adequate knowledge of their needs and experiences and a process that was cognisant of their requirements (Stufflebeam 2007). The stakeholder analysis for this change project was discussed in more detail in chapter 3.

As part of the Input evaluation the following plan for implementation was devised and realised:

Table 9- Implementation Plan- Input Evaluation

| An extensive literature review was conducted; |
| An implementation plan devised/ GANNT chart (Appendix 3); |
| The “coaches” received training from the Dartmouth institute; |
| Lead implementation team were identified and received training from the lead coaches; |
| Stakeholder information sessions were held; |
| Stakeholder analysis and force field analysis were undertaken to identify any potential barriers to the project; |
As part of the support process from the Dartmouth institute and the EMP, monthly teleconference/on line sessions took place which allowed the coaches an opportunity to consult with experts from Dartmouth on the implementation of the change into practice. As part of the planning and implementation phases of the change project, multi-disciplinary information sessions were held in the department for all staff, with further information placed on notice boards, and sent electronically. The purpose of these sessions was to provide sufficient information to staff to generate a shared vision and ownership of quality improvement for the department and generate interest in microsystems to ensure volunteers for the improvement team. The lead improvement team had their first meeting on 16 July 2013.

A multi-disciplinary on line survey of staff was carried out in the department to elicit staff perceptions of information given. Informed consent was obtained from the staff by informing them of the nature of the survey; the right not to participate without prejudice; and that completion of the survey constituted consent. They were informed that all data was anonymised and would be securely stored. The results demonstrated that microsystems information had been delivered within the department with an extensive awareness of the process. Question 2 on information received about microsystems elicited a positive response rate of 78.5%; this low result may be due to a changeover of medical staff immediately prior to the survey being carried out, as demographics were not asked for as part of the survey this is difficult to say with certainty. It is noteworthy that an awareness of microsystems in the department of 93% was achieved. These results demonstrate a need for further information sessions in the department as a matter of priority to ensure the process
of developing improved patient care outcomes continued. It also shows a need to collect demographics as part of the follow up survey which would be completed following the new information sessions.

![Figure 5- Results of Staff Survey](image)

It was evident following the input evaluation the objective of providing information sessions to all staff has in part being achieved with a plan to improve the results defined; identification of a lead improvement team has been achieved.

4.4.5 Process

The process evaluation assesses the actual implementation of the change initiative into practice (Frye & Hemmer 2012). This stage also allows for periodically checking the progress of the change to ensure the project remains on track and that outcomes are as intended. It also identifies any unintended outcomes (Zhang et al 2011). An important aspect of any change process is the continual evaluation to ensure the
process is embedded effectively into daily practice (Hodges, 2008) the process evaluation stage supports this. The overall aim of the project was to implement microsystems in practice as identified by the achievement or not of the specific objectives that were delineated at the outset of the project. Each objective is discussed and evaluated.

4.4.5.1 Objective (1.3.2.1): Assessment data to be collated using the headings as identified by clinical microsystems: Purpose, Patients, Patterns and Professionals and identify an area for improvement

Before the implementation of any change initiative an understanding of the current status of the department was required, information gathering and an analysis of that information will point toward improvement activities for the future (Jackson, 2001). The microsystems approach advocates the collection and collation of information to allow assessment of the department to ensure a deeper understanding of the ‘microsystem’ and use of that information to select improvement activities (Godfrey et al., 2013). Due to limitations of word count in this assignment a synopsis of the 5 P assessments is provided. The purpose of the data collection was for the improvement team to develop a better understanding of their “microsystem” in order that they could “diagnose” and then “treat” it to aid improvement for both patients and staff (Nelson et al., 2002). The departmental purpose was one of the first items tackled by the improvement team with the support of all members of the department to ensure ownership and engagement of the improvement process.
**Purpose**

According to Nelson *et al* (2011) a highly functioning microsystem should have a ‘clearly stated purpose and mission’; the aim of developing a purpose statement allows the team to examine why the department exists. Deming (2000) talks about having a constancy of purpose, why do we exist, what are we here to do, have we a long term goal or aim.

**Assessment of Purpose**

The improvement team collaborated with the rest of the departmental team around the development of a purpose statement for the department, information was gathered from the other staff by various methods, email, focus group, and comments on a sheet, these were then used to develop a one pager which described the *raison d’être* of the department (Appendix 7). Clarification of the purpose or aim of the department provides a guide for the establishment of departmental priorities (Nelson *et al*. 2011).

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**Patients**

The basic function of a microsystem is the provision of care by a small team to a defined population (Mohr & Batalden, 2002). An analysis therefore of the population served by the microsystem is necessary to ensure that all decisions made by the improvement team are based on a deeper understanding of the service users’ needs and requirements and they will be able to plan quality improvements to suit those
Assessment of Patients

During a special two hour meeting the improvement team reviewed the patient data and demographics and developed an improved understanding of the population they serve to use in identifying areas of improvement in the departmental microsystem. Appendix 8 shows the form used for collecting the data on patient profile.

A patient survey was also undertaken to get a sense of what the patients’ thought of the department and what they would like in the department, appendix 9 shows a copy of the survey used which was adapted from the Dartmouth institute and figure 6 demonstrates the results. Informed consent was obtained from the patient by informing them of the nature of the survey, the right not to participate, without prejudice, and that completion of the survey constituted consent. They were informed that all data was anonymised and would be securely stored. The survey was conducted during a very busy period in the department and despite this the patients appeared happy with the service provided. Following identification and implementation of improvements based on the survey results, an additional survey will be completed to again assess the patients input.
An important step in developing a shared vision of quality improvement for the department is to have all staff understand the processes of care. By assessing departmental processes, better value and quality of care can be delivered by identifying areas of inefficiency within the processes and thereby release staff up for direct patient care (Evaluation & World Health, 1998). These processes should be reviewed regularly with a view to ensuring an efficient effective service to the patient.

Assessment of Processes

There are a number of ways of measuring and reviewing these processes, one of the methods used as part of the improvement process was process mapping. Process mapping and other quality improvement tools and methodologies play a vital role in the development of a culture of quality improvement, and encourage team working, problem solving and the practical application of quality improvement to clinical practice (McQuater et al. 1995).

The improvement team undertook a number of process reviews but due to the word...
constraints of the assignment one will be discussed. A large A0 sized poster was hung on the wall in the department which outlined the core and supporting processes that occur in the department (appendix 10). All staff were given information on how to complete the sheet and this information was used to determine which areas in the department were the most “broken” and identify areas for quality improvement. This was then discussed at an improvement meeting and improvement aims were identified to try and fix these areas. One of these quality improvements will be discussed in more detail under objective number 1.3.2.4. A process map of this quality improvement was developed to identify delays and blockages in order to streamline the process.

**Patterns**
Patterns exist in every microsystem, and this department was no exception. The department has an active clinical operations group which measure and review key performance indicators and actively work to improve these indicators as a normal part of the functioning of the department.

**Table 13- Professionals**

**Professionals**
Every member of the microsystem who provides or contributes to the care of patients should be thought of as a professional. Learning more about the staff, what they do, when they work and what they think and how they rate the workplace is an important part of understanding any microsystem.

**Assessment of Professionals**
A Staff survey was completed to ascertain levels of satisfaction and areas for improvement. The survey was again adapted from Dartmouth Institute. The results (appendix 11) were somewhat disappointing, and showed some staff dissatisfaction. Disciplines were not separated in the survey responses so it was difficult to ascertain where to focus in relation to increasing staff satisfaction. The results of the survey were displayed for all staff to see on the microsystems notice board in the department, with an acknowledgement that there were areas for improvement and the department as a whole would work on these.

A regular review of staff working patterns is currently undertaken in the department which has resulted in changes to shift patterns for a number of disciplines over the past year. As identified in the data collection of attendance patterns for the patient population attendances peak mid afternoon up to late evening, and shift patterns have been reviewed and changed to maximise staff numbers at these busy periods.

It is evident that the first part of objective 1.3.2.3 to assess the department using the 5 P process has been achieved.

4.4.5.2 Objective (1.3.2.3): Having assessed and diagnosed the department using the 5 P process the improvement team will identify an area for improvement.

Following the assessment of the department using the 5 P processes the next step was the identification of an area for quality improvement and using the plan-do-study-act (PDSA) cycle, as recommended by Dartmouth institute, implement a quality improvement. Due to the word constraints of the assignment the first quality improvement process identified by the team will be discussed. The first step was
selection of a theme for improvement, out of which a Global Aim Statement was, identified which will helped to keep the group focussed (Figure 3) (Nelson et al., 2011).

A process map was devised using the global aim and is shown in figure 6. A process map uses graphic symbols to illustrate a process or a flow. An understanding of any process is required before you should attempt to improve it (Evaluation and World Health, 1998) The process map devised as part of this process improvement was very complex and identified many variations in the process depending on the blockages that presented.

![Figure 7- Process Map](image-url)
The improvement team reviewed the process map, the global aim statement and analysed the overall process to identify the specific aim, which provided for a more detailed focus for improvement. The specific aim should be measurable with specific outcomes identified (Nelson et al., 2011). Figure 8 shows the first PDSA from which global and specific aims were identified; This was submitted to Dartmouth Institute in October 2013. Monthly updated PDSA’s were submitted as part of the programme detailing the quality improvement process.

Figure 8- PDSA
The team developed a rough template for data collection by the shift leader to capture the time it currently took for medical notes to be completed after the decision to admit (DTA) was made. The data was to be collected over a 5 day period, taking into account busier periods where more admissions happen. The first week’s data did not capture accurately what the team were looking for, while it showed a delay in notes being completed it did not show a time frame, a decision was taken by the team to adjust the template and an improvement team member was nominated to check the data collection after 48 hours to ensure it was appropriate data. A simple run chart (figure 9) was created using the data collected, the data showed a 37% completion rate for notes within 10 minutes of DTA; the aim was to achieve a rate of 70%. The run chart demonstrated a wide variance with notes being completed anything up to 46 minutes post DTA.

![Figure 9- Run Chart](image)

The team discussed how they would incentivise staff to improve the rate, following a long discussion a decision to institute a star chart (appendix 12) with a weekly prize
for the doctor who achieved the highest rate was agreed. Reward systems can and do motivate staff to increase productivity in a positive way (Trent, 2003). A simple template was devised and the shift leader collected the data over a period of 5 weeks, the department was going through a very busy period but with the use of the star chart an overall rate of notes completed to DTA rose to 67%, the team were very pleased with this. The overall aim of the process was to improve the patient journey time (TEDT) through the department. The graph below shows an improvement of registration to DTA from 87% to 89% from the same period last year. The objective of a TEDT of < 6 hours for 95% of admitted patients while not achieved was improving, and with additional improvements the hope is further improvement next year.

![Figure 10- Total journey time (registration to DTA)](image)
The last step in any change process is integrating the change into normal daily practice, the improvement team discussed this and the following recommendations were made:

- A spot check to be done on a monthly basis and the results displayed on the Microsystems notice board;
- All new medical staff as part of their induction would be made aware that this was a requirement of the admission process;
- Nursing staff would remind medical staff when a DTA was made to complete their notes within the timeframe;

A month after the star charts finished a spot check was undertaken, the results were very promising. Over the course of 12 hours, the DTA time was recorded, and whether notes were completed within the 10 minute time frame. A total of 15 patients were captured, the average number of admissions on most days, 12 of the admissions had the notes completed within the time frame, with an 80% achievement. The objective to identify an area for improvement was achieved.

![Figure 11- Spot check results](image)
4.4.6 Product

Product evaluation identifies and assesses the outcomes of a program, did it achieve what it set out to achieve (Zhang et al. 2011). According to Frye & Hemmer (2012) there are number of ways of assessing the impact of a quality improvement one of which is achievement of the objectives, and another is the comparison of outcomes of similar studies.

In terms of comparison of similar programmes, a number of ED’s nationally undertook to introduce microsystems the same time. The results from five of the other sites (table 14) show significant quality improvement for patients in terms of improved quality, effectiveness, effectiveness and patient comfort. Significant improvements in terms of patient outcomes are demonstrated. In terms of measurement against national standards this ED shows similar improved patient care outcomes, which suggests the EMP has achieved its objective of the provision of safe quality patient care through the use of quality improvement methodology clinical microsystems.

| Hospital 1 | Aim: To improve inter hospital communication | Over a 3 month period reduced the length of stay of admitted patients in the department by 47% |
| Hospital 2 | Aim: To improve the system of reporting faulty equipment in the department | Improved the time to repair within 48 hours of reporting from 37% to 80% |
| Hospital 3 | Aim: To reduce unnecessary escorts by nursing staff to the x-ray department | Reduced the number of nursing escorts by 50% with more room for improvement |
| Hospital 4 | Aim: Reduce the number of patients not triaged in the department to 10% from 30% within 3 months | Reduced patients not triage to 10% within time frame |
| Hospital 5 | Aim: Increase the use of the “Trauma Chart” from 30% to 100% within 3 months | Increased use of the chart to 100% within time frame |

**Table 14- Improvements from other ED’s nationally**

Internationally research has demonstrated significant improvement in patient care outcomes with the use of microsystems (Kosnik & Espinosa, 2003), this has been explored in more detail in chapter 2. Together the national and international evidence of the use of microsystems and experience of this project successfully meets the product evaluation component of the CIPP model. The objectives of this quality improvement have been satisfactorily met as discussed earlier in the chapter.

The final objective of embedding microsystems as a quality improvement process into the department was measured by the online staff survey mentioned previously, 60% of staff agree that real improvements have occurred since the implementation
of microsystems. This is consistent with the findings in the literature as identified in chapter 2. The objective has been partly met with room for improvement.

![Have you seen improvements?](image)

**Figure 12- Embedding Microsystems into the Department**

### 4.5 Conclusion

This chapter outlined the evaluation of the change process utilising the CIPP model of evaluation. The aims and objectives as described under the four headings of the CIPP model and as set out at the beginning of the change process have been achieved in part. Training was provided for the coaches and ongoing support and training from the coaches was provided to the improvement team. The department was assessed and diagnosed using the 5 P process and a treatment plan was implemented using the improvement tools as recommended by Dartmouth (i.e. process mapping, PDSA cycles, etc.) Through these tools the department has begun the quality improvement journey with the main aim of improving patient care.
outcomes. While the journey has just begun the evidence collected demonstrated improved patient outcomes which are consistent with international research.
Chapter 5: Discussion and Conclusion

5.1 Introduction

This chapter will consolidate the process of implementation of microsystems into the department. It will consider whether the change was successful or not, are there recommendations for changing the approach in the future. Implications for the department and wider organisational management are discussed. Recommendations for future development of the process to ensure it continues to meet the requirements of the department are also discussed. Finally the chapter will conclude with a discussion on the key points raised during the process. A discussion on the strengths and limitations of the process and the project is also included.

5.2 Organisational Impact

The national clinical care programmes were established with the objective of improving the quality of patient care, the delivery of this objective to unscheduled attendances to the health service is delivered through the aims and objectives of the EMP. The implementation of microsystems into the department was important in terms of the realisation of the overall aims and objectives of the EMP. The EMP has been tasked with the aim of improving patient safety and quality and the reduction of waiting times within EDs nationally while establishing a culture of continuous quality improvement. They had suggested the use of microsystems as a quality improvement methodology and had invested both time and money into the process. They recognised the value of microsystems in improvement of patient care outcomes as demonstrated in the literature review and were keen to replicate this nationally. By
undertaking this project the coaches were cognisant of the alignment of the strategic goals of both the EMP and the national clinical programmes to the use of microsystems and were keen to support this.

Together, the evidence from the literature review, the results of the small scale change projects and the results nationally from other EDs, demonstrated evidence of improved processes through the use of microsystems. Feedback from the department in the online survey demonstrates that the implementation of microsystems was a success and staff expressed satisfaction with the process. One of the impacts of the change process for the organisation was experienced staff with knowledge of microsystems use in practice. This is a valuable resource in terms of dissemination of the process throughout the organisation. It also demonstrates to hospital management the value of microsystems in improving patient care outcomes and reducing patient waiting times.

The time line for completion of the project was short so it is not possible to say with certainty that the process was embedded within the department. However, despite this the impact of the process within the department is evident from the evaluation results discussed in chapter 4. One of the main impacts was in fuelling a desire to improve patient care. It demonstrated the involvement of staff within the hospital in successful change management projects which demonstrated improved patient care and a commitment by staff to engage in the change process.
The manner in which microsystems was delivered demonstrated a requirement of the need for resources. There is a significant investment from staff in terms of time which will need to be continued to ensure its sustained success. Training for other departments within the organisation will be required which may have financial and resource implications, but are required to ensure the process completes its goal of continued improvement of the patient journey. The failure to provide continued resources will result in clinical microsystems inability to embed itself into the wider hospital environment.

The leadership style employed was one of inclusiveness and ownership. The stakeholders including the improvement team, wider departmental staff, and hospital management were consulted with frequently, to reduce resistance to the project that can come with poor communication (Ford et al., 2008). A communication strategy was developed within the department known as “huddles” as part of the process to ensure good communication and allow regular updates on the progress of microsystems. This strategy was employed successfully within nursing in the organisation and was extended to the ward and bed management areas in an effort to improve communication about bed management issues.

Part of the process of microsystems is the development of a culture of quality improvement within the department. This has been achieved to a degree; Whilst acknowledging that culture change can take many years to occur, the process has begun. The engagement of staff in the process has continued despite the completion of the training from the Dartmouth institute. The 4th change project is currently
underway with measurable improvements in patient care outcomes along the way. While a full culture change has not occurred a quality improvement ethos has been established within the department as evidenced by the online staff questionnaire.

5.3 Strengths and Limitations

5.3.1 Strengths

Managing the change process is never easy, and is anything but a straightforward process (Abrahamson, 2000). Change needs to be managed to ensure it success and one of the important factors in managing change is the identification of strengths and limitations (HSE 2008). One of the major strengths of the project was its close alignment with the strategic goals of the EMP and the national clinical programmes. Being linked to a national programme heightened the status of microsystems within the organisation as a whole, and ensured buy-in from hospital management. The constant support and input of the EMP served to ensure that the project was always afforded top priority. The training and ongoing tutorials and support from the Dartmouth institute was also considered to be a major strength of the project. As the project continued there was a requirement on the team to submit regular updates to the Dartmouth institute which were shared with the EMP. As there were deadlines for submission it kept the whole process moving forward. In order to obtain a certificate of completion of the programme all submissions and online tutorials had to be undertaken which provided further impetus to implement the process.
Effective leadership and commitment of the coaches which contributed to the successful implementation of the project was also considered a major strength. The coaches provided ongoing support and guidance to the improvement team, without which the process would have stalled. They provided support in terms of the skills required of the team but also in helping the team realise their potentiality and the realisation that they have untapped abilities they could use to improve patient care outcomes. The leadership style employed was one of inclusiveness; ownership; and engagement. In order to ensure engagement and ownership of the change projects and ultimately the entire process the improvement team, following consultation with the wider department, were responsible for determining what change projects would be worked on (Kotter, 1996). This was an important strength of the process as it ensured all staff had a part in the process and encouraged team working within the department. The literature review highlighted the link between leadership, staff engagement and improved patient care.

Constant communication to all stakeholders in a variety of ways was undertaken and should also be considered a major strength of the project. As mentioned the development of the communication strategy helped improve communication organisation wide. The use of the HSE model for change (2008) strengthened the process further by providing a framework from which to work and guided the process and ensured no steps were missed. The CIPP model (2007) was used for evaluation purposes and with multiple processes used provided for a rounded view of the change project.
A thorough analysis of the department was undertaken as part of the microsystems process and provided evidence to determine where quality improvements were required. This groundwork has now been done and can be used again and again to help steer quality improvement where it is required. It also ensures that staff are now familiar with the process and know how and where to obtain the information and how to analyse it, and will ensure the process can be completed frequently to ensure the accuracy of the data collected. Significantly the process has demonstrated that real quality improvement can be achieved with the use of this process, as evidenced by the literature review.

5.3.2 Limitations

The limitations are not as many in number but just as significant, the short time frame for the project’s completion may have limited its full implementation into the department. The training provided by the Dartmouth institute was provided over an eight month period which was very short to allow full familiarity with its processes and allow it to fully embed within the department. The fact that the project had to be completed over an academic year in part fulfilment of the MSC may have limited what could be achieved in that time frame. The success of the project was heavily weighted on the ability of the coaches to support the improvement team members, and ensure that no conflict between their managerial role and the coaching role. Staff may have felt they could not be open and honest in front of line managers and may have limited the outputs from staff to a degree. Coaching is an acquired skill and takes time to develop and while learning these skills the coaches may have limited the potential of the group through a lack of knowledge.
The whole process began in earnest in the winter period which is a particularly busy period for ED’s and may have reduced the potential for further improvements by limiting the time staff had to focus on the Microsystems. Equally it may have taken time from direct patient care as staff needed to attend meetings on duty. Due to the time constraints of the project very little service user engagement was undertaken, it should be acknowledged that this is a large part of any quality improvement initiative, and a major limitation of the project.

Table 15- Strengths and Limitations

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Limitations</th>
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<tbody>
<tr>
<td>Microsystems has heightened the awareness within the department of quality improvement processes, and the need to improve patient care outcomes</td>
<td>There is potential for bias toward Microsystems as all of the participants of the improvement group were volunteers which may suggest they have an interest in this area</td>
</tr>
<tr>
<td>It has established the capacity of staff within the department for change</td>
<td>As this project was in part fulfillment of an MSC, there was a shortened timeframe which may not have allowed Microsystems to be embedded into the department</td>
</tr>
<tr>
<td>Use of the HSE model guided the process and ensured no steps were missed</td>
<td>The lead coach was also a departmental manager which may be construed as bias by undue influence on the improvement group</td>
</tr>
<tr>
<td>Improvements towards realisation of the EMP aims and objectives</td>
<td>The process was introduced during a very busy period for the department and may have reduced the potential for further improvement due to strain on staff resources</td>
</tr>
<tr>
<td>A sense of ownership of change projects within the department</td>
<td>Little service user engagement</td>
</tr>
<tr>
<td>Evidence of both staff and patient satisfaction or not within the department</td>
<td></td>
</tr>
<tr>
<td>An analysis of what works and does not work within the department and a plan to work toward resolving these issues</td>
<td></td>
</tr>
<tr>
<td>A departmental “Purpose” statement</td>
<td></td>
</tr>
<tr>
<td>Evidence nationally that Microsystems works in practice</td>
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</tbody>
</table>
5.4 Recommendations for the Future

The EMP nominated the coaches to attend the training on microsystems and specified that they needed to be members of the clinical operations group, as these members are all senior managers in the department it can make it difficult for staff as members of the improvement team to be open and honest in front of senior managers. This was a gap in the process. One of the recommendations to the EMP would be the use of non managers as coaches to ensure full freedom of expression from the improvement team. As the process of microsystems was new to all staff in the organisation, a recommendation is that the executive management team should have been given an information session on the process at the beginning so as to have a better understanding of improvement methodology, resources required, and be able to support the team from an improved vantage point.

The success of microsystems was heavily dependent on the considerable training and support required for the coaches provided by the Dartmouth institute, who in turn supported and trained the improvement team in the skills necessary to run a meeting, analyse data using a number of different tools, and in utilising their own knowledge to improve outcomes. In order to ensure the success of microsystems in other clinical areas the same resources will be required. Real quality improvement has been demonstrated through its use and so a recommendation to senior executive management team would be to employ the resources already in the department and use them to spread the programme to other departments. Once another department is trained they in turn can train another and so on.
With the support of the EMP another group of staff in the hospital are currently being trained, within six months a significant number of staff within the organisation will have been trained which is a valuable resource the management team cannot afford to overlook. A recommendation would be to have an information session for clinical staff from multiple clinical areas which will showcase the improvement work undertaken within the two departments. This will build enthusiasm and interest and propel the process forward within the organisation.

One of the limitations mentioned was the introduction of the process during a very busy period for the department, were the process to be repeated this would be something to change. It placed additional strain on the staff and the coaches and indeed the department; a quieter period would have yielded as good if not better results. An additional recommendation could be the formal acknowledgment from the executive management team in recognition of the additional time and effort required from staff for the success of the process, and the improvements to patient care. The results of which could be to engender interest in the process within the hospital and a healthy dose of competition between departments.

Service user engagement is central to the Microsystems process and the national clinical programmes; further work needs to be undertaken with this in mind. A repeat of the patient survey and real engagement with the service user group in the hospital should commence, and the next project should involve patients directly. The staff survey should also be repeated with more direct questioning on how Microsystems
can improve the quality of staff experience. A question on staff demographics should be included in the follow up survey, to obtain a more specific result.

One of the major strengths of the entire process was the training and support from the Dartmouth institute; it is recommended that this extend beyond the term of the training. A data base or website similar to HSELanD should be developed in collaboration with the EMP where staff can access training vignettes, and provide a vehicle to display the quality improvements that occur as result of using microsystems. One of the changes identified was the implementation and extension of a communication process called “huddles” to the bed management process, which anecdotally appears to have reduced the number of overnight patients in the department. This data should be audited and analysed to demonstrate its effectiveness with a plan to extend it further within the organisation. As identified in the literature review much of the research on microsystems originates from the Dartmouth institute, the EMP should look to publish the work completed to date nationally, to support the use of microsystems in practice.

5.5 Reflections and learning from the change process

Key to the successful implementation of microsystems into the department was engagement and communication with stakeholders, without which the change would not have been successful. Buy-in and ownership of the project were very important, from day one to the success of the project, an inclusive and participative approach were central to engendering the enthusiasm and drive of the improvement team. This was an area of concern for the coaches as they were both senior staff in the
organisation which could potentially have placed barriers between them and the improvement team. A key learning was ensuring the most appropriate leadership approach was used to guarantee success.

The use of the HSE model was extremely beneficial in guiding the change in practice, and as a guide for writing up chapter 3. It provided a framework that was easy to follow and ensured all aspects of the change were given full consideration. The choice of the most appropriate evaluation tool was a difficult one, with an almost snap decision to use Kirkpatrick’s averted at the last moment following extensive research. The use of the CIPP model was the correct choice; it was not as complex as some of the evaluation models available and was a good fit for this particular project. One of the learning’s was to ensure adequate research prior to deciding on an appropriate model.

One of the key limitations of the project was the lack of service user engagement, and despite time constraints for the project and a need to improve knowledge of Microsystems, was a major gap in the process. They are a major stakeholder in the Microsystems process and should have been included in a more meaningful way.

5.6 Conclusion

The aims and objectives of the implementation of Microsystems in the department were achieved. The project was implemented using the HSE model, and evaluated using the CIPP model. The evaluation demonstrated that recognisable benefits to
patient care outcomes can be attributed to microsystems use in practice, and with
the support of the organisational management it could be rolled out to the wider
organisation. Consideration of the use of microsystems and its fit to the Irish context
and alignment with the goals of the EMP has been established. The online staff
survey demonstrates invaluable insight into the perceptions of whole department,
and reveals a willingness to engage further. The improvement team are currently
tackling a fourth change which is focused on the results of the patient satisfaction
survey, which demonstrates a commitment by the department to continued quality
improvement. Change does not happen overnight and can be an endeavour fraught
with difficulties, this change while showing some success will take time to embed
completely into the organisation. The timeframe of the project did not allow for
measurement of this. What it does show is evidence of improved patient outcomes
and recognition by staff of the need for quality improvement initiatives.
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O'Toole, J. 1995. Leading change: Overcoming the ideology of comfort and the tyranny of culture. San Francisco.


Appendices

Appendix 1 - Overview of Microsystems Training and Support

<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Description</th>
</tr>
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<tr>
<td>S1</td>
<td>June 11-12, 2013</td>
<td>Orientation, Overview, On site learning with ED microsystem team</td>
</tr>
<tr>
<td>S2</td>
<td>July 10, 2013</td>
<td>Web Session - New knowledge</td>
</tr>
<tr>
<td>S3</td>
<td>September 4, 2013</td>
<td>Web Session - Progress Reports and New Knowledge</td>
</tr>
<tr>
<td>S4</td>
<td>October 2, 2013</td>
<td>Web Session - Progress Reports and New Knowledge</td>
</tr>
<tr>
<td>S5</td>
<td>November 6, 2013</td>
<td>Web Session - Progress Reports and New Knowledge</td>
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<tr>
<td>S6</td>
<td>December 4, 2013</td>
<td>Final Web Session Progress Reports and New Knowledge</td>
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</table>
Appendix 2 Microsystems coaching programme

Coach-The-Coach

Overall Aim
Improve value and quality of healthcare outcomes through development of coaching knowledge, skills and abilities to coach front line interdisciplinary clinical and supporting microsystems with knowledge, processes, and tools including the Dartmouth Microsystem Improvement Curriculum.

Through a blended electronic and face-to-face Coach-The-Coach series, we will provide an experiential developmental program with education and action learning. Our commitment is to develop coaching skills for those who wish to coach interdisciplinary clinical and supporting microsystem groups to provide exceptional care and continuously improve health care.

Each participant will develop:

- Knowledge, skills and abilities in clinical microsystem fundamentals.
- Structured organized process for coaching healthcare improvement.
- Experience in coaching front line interdisciplinary groups in healthcare.
- A personalized coaching plan for your personal and professional development as a coach.

Format
5 month intensive, dynamic and highly interactive experiential learning series blending electronic and face-to-face formats to develop coaching knowledge, skills and abilities.

This not your typical seminar/lecture e-learning program. eCTC is based in action learning. Each participant should have an identified interdisciplinary front ling group to coach through the eCTC series. Examples include lead improvement groups from a Patient Centered Medical Home, Operating Room, Same Day Surgery Unit, Plastic Surgery Department, Inpatient medical/surgical group, Pharmacy, Environmental Services and an Emergency Department. Ensuring leadership support of your role coaching and convening this group regularly ensures the likelihood of an optimal coaching development experience.

Participation in this rigorous 5 month coaching interdisciplinary healthcare professional eCTC series is a commitment to formal coaching development and usually requires 10-12 hours of program work a month. This time includes pre-reading and writing, participation in monthly 4 hour Adobe Connect learning sessions, and meeting with your interdisciplinary group one hour a week.
### Appendix 3 – GANNT chart

<table>
<thead>
<tr>
<th>Project Steps / Phases</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
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<td>Identification of 1st Change project</td>
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<td>Pilot implementation using PDSA</td>
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<td>Evaluate use of meeting skills by LIG</td>
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<td>Submit Thesis</td>
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</table>

The 14th May column is shaded to indicate the completion of the task.
## Appendix 4- Communication Strategy

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<tr>
<th>Who</th>
<th>What</th>
<th>How</th>
<th>When</th>
<th>Outcomes</th>
</tr>
</thead>
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<tr>
<td>The rest of the staff in the ED</td>
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<tr>
<td>1. expectations from them as part of the process</td>
<td>Notice Board Electronically via email Huddles</td>
<td>Daily As Required</td>
<td>Staff will be involved in change process, and will act and embed the changes into practice</td>
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<tr>
<td>2. Results of Audits</td>
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<tr>
<td>3. Pilot Projects</td>
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<tr>
<td>Staff in other wards</td>
<td>What we are doing to improve patient care. How they can participate. Attendance at our meetings to discuss areas common to both departments</td>
<td>Verbally Electronically</td>
<td>As required</td>
<td>An awareness of what CMS is and how they can participate</td>
</tr>
<tr>
<td>Management team</td>
<td>What we are doing to improve patient care. Results of our pilot projects and improvements. Results of audits</td>
<td>Verbally Electronically</td>
<td>As required</td>
<td>How well we are doing and impacts on patient care</td>
</tr>
<tr>
<td>Patient service user group</td>
<td>What CMS is and what input we require of them</td>
<td>Verbally Electronically</td>
<td>As required</td>
<td>Inputs from them</td>
</tr>
</tbody>
</table>
Appendix 5-Sample Improvement Ramp

The Dartmouth Microsystem Improvement Ramp

* 5P Assessment/Effective Meeting Skills
Appendix 6- Activities required to ensure follow through

- **Leadership: Ensure that Microsystems have an effective leadership team.**
  The coaches are continuing to attend weekly meetings, and provide on-going support to the improvement team. Microsystems continued to have a high profile in the department with its inclusion as a standing item on the agendas of other departmental meetings. The coaches remain fully engaged in the process and continue to lead by example.

- **Discipline: Consistently use the improvement tools and methods when small scale changes are required.** The improvement team with support from the coaches continue to identify changes and use the Dartmouth Institute Improvement Curriculum (DMIC) to measure, plan and implement the required changes to practice.

- **Rhythm: Maintain the weekly team meetings and use effective meeting skills.**
  The weekly meetings are continuing using the seven point meeting skills (appendix 5) as recommended by Dartmouth, and the team are continuing to use and rotate on a meeting by meeting basis the roles. The daily huddles are continuing with communication to all staff on any further improvement progress. This reminds all staff of the need to continue with ongoing improvement. The display of successes to date and updates continues on the departmental notice board.

- **Pace: Continuing to maintain appropriate rhythm.** Healthcare work can be seasonal with busier periods during autumn and winter, the improvement team needed to remain cognisant of this and avoid additional workload on
staff at busier times. This would avoid the concerns that were highlighted
during the planning phase where staff worried that Microsystems work may
have to compete with the demands of clinical workload.
Appendix 6- Meeting process

Seven step meeting process

1. Clarify the aims of the meeting and what the team will get done during the meeting

2. Review or assign the meeting roles: leader, recorder, timekeeper and facilitator

3. Review the agenda, and determine how much time to spend on each item

4. Work through the agenda item by discussing and reviewing data and information

5. Review the meeting actions by reading through the record, making changes or additions, and deciding what to keep for the formal meeting record

6. Plan the next actions, and determine who will do what in the post meeting phase

7. Evaluate the meeting: determine what went well and what could be improved in the future
Welcome to Our Emergency Department.

Our Team of Nurses, Doctors and Reception staff are here to provide Emergency care and to look after patients and their families.

We will provide this care whenever a patient comes to see us, whether that is day time or night time.

We will work hard to deliver timely and expert care in partnership with your GP /PHN and other healthcare professionals.

We are a department that promotes and encourages research and education.
## Appendix 8- Sample Patient profile data collection

| ED Profile Data: |  |  |
|-----------------|-----------------|
| **Item**        | **Descriptor**  | **Data** |
| 2.2.1           | What is the gender profile of your ED patients? | Male: female = : |
| 2.2.2           | What is the daily attendance profile of your ED patients - how many patients attended and when? | Average morning/afternoon attendance: | ________ patients on average per day |
|                 |                  | Average evening attendance: | 08:00 to 16:00: ________ patients per day |
|                 |                  | Average night-time attendance: | 16:01 to 00:00: ________ patients per day |
|                 |                  | 00:01 to 07:59: ________ patients per day |
| 2.2.3           | Total number of new patient ED attendances – per year | ________ new patients |
| 2.2.4           | Number of scheduled return ED attendances | ________ scheduled return patients |
| 2.2.5           | Number of unscheduled return ED attendances at 7 days and at 28 days | ________ unscheduled returns at 7 days |
|                 |                  | ________ unscheduled returns at 28 days |
| 2.2.6           | Does patient attendance vary by season? | Y/N |
| 2.2.7           | Number of Patient Attendances by Hour | ________ Patients |
| 2.2.8           | Number of patients by day of week | ________ Monday |
|                 |                  | ________ Tuesday |
|                 |                  | ________ Wednesday |
|                 |                  | ________ Thursday |
|                 |                  | ________ Friday |
|                 |                  | ________ Saturday |
|                 |                  | ________ Sunday |
| 2.2.9           | Number of patient attendances by week |  |


| 2.2.10 | Number of patient attendances by month |
| 2.2.11 | Number of patient attendances by year |
| 2.2.12 | ED overcrowding – how many patients were documented as waiting for inpatient admission in the ED per month in past year? |
| 2.2.13 | Mortality Rate |
| 2.2.14 | Patient Attendances by Triage Category |
| 2.2.15 | Living arrangements: What % of your patients ..... |
| 2.2.16 | Discharge Disposition % |

| 1 | Live alone |
| 2 | Live with others/in residential/nursing care |
| 3 | Are homeless or live in hostels |
| 4 | Home |
| 5 | Medical Assessment Unit |
| 6 | Medical Admission, other. |
| 7 | Paediatric Admission |
| 8 | Critical Care Admission |
| 9 | Surgical Admission |
| 10 | Other hospital |
| 11 | Died in ED |
## Appendix 9- Sample patient survey form

### Patient Experience Survey

1. Did someone speak to you and provide help as soon as you arrived in the Emergency Department?

   Initial contact was:  
   - [ ] Excellent  
   - [ ] Very Good  
   - [ ] Good  
   - [ ] Fair  
   - [ ] Poor

2. How would you rate your experience with the length of time you waited today?

   - [ ] Excellent  
   - [ ] Very Good  
   - [ ] Good  
   - [ ] Fair  
   - [ ] Poor

3. Was your privacy respected at all times during this visit?

   Respect for privacy was:  
   - [ ] Excellent  
   - [ ] Very Good  
   - [ ] Good  
   - [ ] Fair  
   - [ ] Poor

4. Were your comfort needs met? (e.g. were you given a suitable place to lie down, sit, access to toilets, drinks, food etc.) The ED team’s management of patient comfort needs was:

   - [ ] Excellent  
   - [ ] Very Good  
   - [ ] Good  
   - [ ] Fair  
   - [ ] Poor

5. Did all the people you met here treat you with courtesy and have a friendly, helpful attitude?

   How would you rate their attitude to you:

   - [ ] Excellent  
   - [ ] Very Good  
   - [ ] Good  
   - [ ] Fair  
   - [ ] Poor

6. How would you rate your overall experience today?

   - [ ] Excellent  
   - [ ] Very Good  
   - [ ] Good  
   - [ ] Fair  
   - [ ] Poor
7. What would make this Emergency Department better in your opinion?
........................................................................................................................................................................
........................................................................................................................................................................

8. Time arrived at Department _____________ Time Left Department ______________

Thank-you for completing this survey. Please feel free to provide additional comments overleaf or to talk to a member of staff about any issues you may wish to discuss.
Appendix 10 – Core and supporting processes

Know Your Core and Supporting Processes

The Clinical Microsystems approach recommends that all staff are asked to review and rate ED processes. Adapt this template for your ED, adding other processes. Explore improvements for each process based on the outcomes of this assessment tool. One way to analyse problematic processes is to flowchart them in their current state. Small tests of change can be used to improve the processes that need it (e.g. using PDSA cycles).

<table>
<thead>
<tr>
<th>Process</th>
<th>Works well</th>
<th>Small problem</th>
<th>Significant problem</th>
<th>Totally Broken</th>
<th>Cannot rate</th>
<th>We’re working on it</th>
<th>Source of patient complaint</th>
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<td>Patient registration – ambulatory/walk-ins</td>
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<td>Answering phones reception*</td>
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<td>Rapid first ECG when indicated</td>
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</table>
Appendix 11-Staff Questionnaire results

Q1 - Everyone who works in this ED treats me with respect at all times:

Q2 – I am given everything I need (tools, equipment, encouragement) to make my work meaningful to my life

Q3- When I do good work, someone notices it.

Q4- How stressful is it to work here?

Q5- How easy is it to ask another staff member about the way we care for patients?
Q6- How would you rate other people’s morale and attitude about working here?

Q7- Is this department a better place to work than 12 months ago?

Q8- Would you recommend this ED as a great place to work?
Appendix 13 - Poster

The introduction of Clinical Microsystems into an emergency department
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Introduction & Background
The IOM report and the increasing globalisation of healthcare has led to a spotlight being placed on the quality and safety of services provided to patients. The increasing need to reduce adverse outcomes for patients. One quality improvement methodology capable of delivering improved patient care outcomes is Clinical Microsystems (CMS)². Nationally, the Emergency Medicine Programme (EMP) recommends the use of CMS as a means of achieving their overarching aim of a total patient journey time through the Emergency Department (ED) of less than 6 hours³.

Aims & Objectives
Aim: To implement Clinical Microsystems into an emergency department as part of recommendations included in the EMP report 2011.

Objectives:
- Develop a quality improvement group within the department
- Implement a quality improvement initiative to reduce the patient journey time to less than 6 hours
- Embed CMS within the department

Methodology
The HSE change model⁴ was used to guide the change (figure 1).

Initiation: A number of organisational development diagnostics were undertaken as part of the process, but the force field analysis was found to be the most useful. The force field analysis identified risk factors in an effort to reduce or eliminate the restraining forces and reduce resistance to the change (figure 2).

Change Process
Support from the EMP and staff enthusiasm to improve patient outcomes were considered defining drivers for the change, and swayed the balance toward driving forces.

Evaluation
A on-line staff survey was undertaken to elicit commitment to CMS in the department. Satisfaction with CMS was rated at 60%, with a agreement that real improvement has occurred in the department following implementation of a quality improvement methodology.

Organisational Impact
Through the use of CMS in the department, the aim of reducing the patient journey time for admitted patients to under 6 hours has been realised in 89% of cases. CMS is now an integral part of the functioning of the department.

Conclusion
The change project demonstrated that recognisable benefits to patient care outcomes can be attributed to clinical Microsystems use in practice.

References