

CASE STUDY

The Safer Patients Initiative

A closer look at Luton and Dunstable Hospital

1. INTRODUCTION

In late 2004, the Health Foundation funded the Institute for Healthcare Improvement (IHI) (based in Cambridge, Massachusetts) to begin an initiative aimed at making United Kingdom (UK) hospitals safer for patients. Called the Safer Patients Initiative, this four-year project (spread over two phases) was designed to reduce harm to patients receiving healthcare within inpatient settings.

Throughout the initiative, 24 hospitals across the UK worked collaboratively with the Health Foundation and IHI to test, implement, and spread the success of 29 different interventions. These interventions had an established and accepted evidence base in the UK and were in five workstream areas:

- medication management
- general ward
- perioperative care
- critical care
- leadership.

Interventions were implemented concurrently, along with improvements in hospital infrastructure, measurement systems, and leadership support. As a result of this work, the participating hospitals began working on reducing their adverse events and mortality rates.

The work of both phases of the Safer Patients Initiative helped spread patient safety principles and improvement throughout the UK – improvement that has continued following completion of the programme. Although phase two of the Safer Patients Initiative concluded on 30 September 2008, it has helped establish patient safety as a priority for the participating hospitals and set the stage for further work in improving the safety of patients.

2. BACKGROUND

About Luton and Dunstable Hospital

Located in Luton, Bedfordshire, Luton and Dunstable Hospital is a 600-bed general hospital consisting of the following wards:

- 16 general wards: surgical, medical and care of the elderly patients
- five specialist wards: high dependency unit, intensive care unit, coronary care unit, neonatal unit, acute care unit
- two maternity wards
- one gynaecology ward
- three paediatric wards with a paediatric assessment unit
- one private ward: Cobham Clinic.

Identify Innovate Demonstrate Encourage

Luton and Dunstable Hospital offers several specialist services, including cancer, obesity, neurophysiology, and oral maxillofacial (jaw) surgery. The hospital also has the responsibility for treating the most premature babies across the whole of Bedfordshire and Hertfordshire.

The hospital serves a catchment population of approximately 350,000. Around 30% of this population are from cultural and ethnic minority backgrounds. The main ethnic minority groups are Pakistani, Bangladeshi, Indian, African-Caribbean, and Eastern European. It is located in an area of high deprivation. Consequently, the local population display diseases and conditions that are more usually associated with those of an inner-city area.

In 2004, Luton and Dunstable Hospital became the first English hospital to participate in the initial the Safer Patients Initiative programme.

Why the hospital took part in the Safer Patients Initiative

Luton and Dunstable Hospital began its quality improvement journey as part of an international programme 'Pursuing Perfection: Raising the Bar for Health Care Performance'.¹ This was under the leadership of, then chief executive officer (CEO), Stephen Ramsden. The work of Pursuing Perfection, which began in 2001, involved 13 participants in the United States and Europe who worked to dramatically improve patient outcomes by pursuing perfection in their major healthcare processes. These efforts, taken as a whole, offer some of the best evidence yet that fundamental improvement in patient care is possible across, and within, a wide range of health systems.

During this same time, Luton and Dunstable Hospital was also participating in a mortality collaborative with nine hospitals in the UK, also assisted by the IHI. In addition, improvement techniques were being used by the Modernisation Agency to help waiting time improvements and efficiency improvements in the NHS. Luton and Dunstable Hospital was involved in, and impacted by, these efforts.

Approximately a year before applying to participate in the Safer Patients Initiative, the director of improvement and the medical director at Luton and Dunstable Hospital visited the United States where

they spent some time at IHI. During these visits, they witnessed how IHI and several United States hospitals implemented specific, evidence-based interventions designed to improve safety, reduce risk, and eliminate harm for patients.

Upon returning to England, the director of improvement and medical director began applying some of the knowledge they gained during their visit. Together they launched another patient safety project involving data collection and targeted improvement work. The goal of this project was to improve the safety of patients in the hospital and reduce the risk of adverse events.

In the midst of this work came the opportunity to participate as in the first phase of the Safer Patients Initiative.

'The goals of the Safer Patients Initiative and the goals of our patient safety initiative were so similar. It was therefore a natural choice to apply for and commit to the programme. The fact that IHI would also be observing our work and challenging us was very appealing,' said the associate director for safety for Luton and Dunstable Hospital.

'In addition, we felt the programme would provide solutions, if correctly implemented, to many of the problems we had identified through case note review, critical incident reporting, and complaints analysis,' said the divisional director for surgery. 'We felt that the financial investment that the Safer Patients Initiative offered would allow us to expand our current safety project and achieve higher success.'

3. WHAT WE DID

Engaging leadership in the Safer Patients Initiative

Because Luton and Dunstable Hospital already had a patient safety project underway, the hospital had in place some infrastructure needed to support the Safer Patients Initiative. For example, they had a dedicated project manager and initial leadership support for the concept of improving safety.

Even with these advantages, the first leadership event was critical in helping bring the hospital's clinical and senior administrative leadership together and

align quality and safety strategies. Although the director of improvement and the divisional director for surgery had a collaborative relationship before the first leadership meeting, this event helped bring the CEO and the director of nursing on board.

‘While it’s possible that we could have had this type of meeting at the hospital, it was beneficial to meet offsite with IHI for several days,’ said the former CEO. ‘It allowed us to thoroughly discuss the importance of the work and possible barriers to success. It also helped us to build relationships and trust with each other.’

During the first learning session, Luton and Dunstable also learned how to organise its improvement work. The hospital split the work into the five clinical workstreams of the Safer Patients Initiative: medication management, general ward, perioperative care, critical care, and leadership. A dedicated clinical leader was assigned to each of these workstreams. Clinical workstream leaders were selected by the director of improvement and the divisional director for surgery. Selection was based on the leader’s areas of expertise, and their willingness to try new things and support the concept of patient safety.

The clinical workstream leaders, in conjunction with senior leadership, established a steering committee that met each month to discuss progress, share information, and maintain accountability. These meetings also helped the project’s momentum and established a friendly competition between workstreams.

‘Leaders came to these meetings focused and ready to work through the issues at hand. This lack of distraction during the meetings was key to their success,’ said the former CEO.

To further communicate the progress of the Safer Patients Initiative programme to clinicians, Luton and Dunstable Hospital engaged clinicians during ‘champion’ days and patient safety meetings.

Setting clear goals

One of the appealing aspects of the Safer Patients Initiative for Luton and Dunstable Hospital was that it required the hospital to set very clear goals for improvement, including reducing adverse events

by 50% across the life of the programme. Luton and Dunstable Hospital also chose to work on reducing hospital standardised mortality ratio (HSMR) and improve culture of safety. Although these goals were ambitious, both the IHI and Luton and Dunstable Hospital thought they were achievable if the hospital took a holistic approach to improvement and involved all levels of the hospital from leaders to front-line staff.

Creating a measurement system

One of the more challenging elements of the project was creating and implementing a measurement system to help the hospital determine whether improvement work was yielding positive results. This system included measures for each of the five workstream areas. Combined, this totalled a set of 35 measures. Within this set, there were outcome, process, and balancing measures. Each of these measures included:

- an operational definition
- guidance for data collection, including exclusions, stratification (how data are grouped into subgroups before sampling) and sampling strategies, where appropriate
- a goal.

‘Before this project, we did not really measure safety or harm apart from MRSA, HSMR to some extent, and incidents reported. This was the case in most trusts in the UK at the time. The Safer Patients Initiative required us to create measures that, using the IHI extranet, gave us our first safety dashboard,’ said the former CEO.

Although the IHI faculty defined most of the measures and linked them to existing measures and requirements in the UK, Luton and Dunstable Hospital had to create systems for collecting, analysing, and reporting monthly data on those measures that were applicable to the services provided by the hospital.

‘All our measurement systems were manual,’ said the former CEO. ‘We didn’t even measure cardiac arrests, so a system had to be created by the resuscitation officer and the switchboard. We had to persuade matrons and heads of departments to get staff to spend time creating these manual systems and, if necessary, to drop other tasks and reprioritise, as patient safety was their most important task.’

‘It took us almost a year to get the measurement system implemented,’ said the associate director for safety. ‘We had to shift the mentality from a clinical audit approach and retrospective data collection by an outside individual, to real-time data collection that individuals on the ward participated in and everyone was aware of.’

To achieve this, the hospital dedicated staff time to and provided education on data collection.

‘Initially, staff members were concerned they would not have time to collect data, and that data collection wouldn’t really make a difference in the safety of their patients,’ said the associate director for safety. ‘However, as staff members started to see the changes in the data and realise that real-time data help people and wards make real-time improvements, they began to embrace the process.’

The organisation provided further education and support on how to produce and interpret Statistical Process Control charts, as well as the importance of this effort. Luton and Dunstable Hospital also established the principle that measurement was for monitoring improvement, not for judgment.

Making the programme more manageable

At first, the sheer size of the Safer Patients Initiative programme was a little daunting to Luton and Dunstable Hospital. A key factor in breaking down the project to a manageable size was the use of plan, do, study, act (PDSA) cycles. These gave each workstream a daily plan for improvement. The cycles also allowed the workstream teams to implement change on a small scale first, before implementing the defined changes in a pilot ward, and then spreading the improvements to other wards. For example, within the perioperative workstream, staff were able to implement ways of improving prophylactic antibiotic administration with one anaesthetist and patient first, then implement changes for all the patients of the anaesthetist, and so on. This segmented the work down into manageable steps that were less overwhelming.

As with measurement, the hospital also began using the PDSA approach for more than patient safety improvement but also within quality and efficiency improvement initiatives.

4. OUR LEARNING

Implementing 29 improvements concurrently

Despite Luton and Dunstable’s successes within the Safer Patients Initiative, there was some concern within the hospital about whether the hospital attempted to do too much by targeting improvement work in 29 different areas concurrently. Could the hospital have been more successful if they limited the improvements to one or two areas and really focused efforts there? The answer is somewhat unclear, because although improvements in particular areas may have been more significant, the hospital would have sacrificed the cultural shift that occurred across the organisation.

‘By working on 29 different improvement initiatives concurrently, the concepts of using real-time data to measure performance, responding to that data, and making small tests of change were infiltrated across the hospital,’ said the former CEO. ‘In addition, the belief that harm was not an inevitable part of care but something that could be avoided began to permeate throughout the hospital as well. By reducing the number of improvements, we might have achieved more local change, but the organisational-wide shift toward embracing patient safety would not have occurred.’

Fundamentally, empowering staff to make changes, and providing them with tools to make those changes, helped give Luton and Dunstable Hospital a path for improvement and laid the groundwork for future change in the organisation.

Collecting measurement data

Luton and Dunstable learned that through involving so many staff across the hospital in the new way of collecting data, an organisational cultural change occurred.

‘Because we were collecting data on 35 different measures, many different staff throughout the hospital were involved in this new way of collecting data,’ said the former CEO. ‘As more people throughout the hospital started collecting data and using it for improvement, we started to reach a critical mass where there was a perceptible shift in how we as an organisation viewed data collection. It shifted from

something we had to do, to something we wanted to do in order to see improvement.’

A critical element in shifting this perspective is how the hospital shared data with staff.

‘We are very transparent with our data. We post run charts on ward notice boards where everyone can see, including staff, patients, and visitors. We also include data on meeting agendas, in corporate newsletters, and within dashboards that help quickly communicate progress towards achieving goals,’ said the transformation and improvement lead for Luton and Dunstable Hospital.

Use of PDSA cycles

At first, staff members were sceptical of the PDSA process. However, as more people used it, the acceptance and even enthusiasm for the process grew. Now the hospital uses the PDSA concept to deal with any improvement work. ‘At the beginning of a project, we don’t have to know all the answers. We can use this approach to break a project into manageable steps and gain staff ownership for change,’ said the transformation and improvement lead.

5. IMPACT

By the last six months of the Safer Patients Initiative, Luton and Dunstable Hospital demonstrated a reduction of more than 50% in adverse events as compared to the first six months of the programme. The hospital also demonstrated a reduction of nearly 30% in cardiac arrests outside the emergency department.

The hospital saw major improvement in the HSMR, from 11% worse than national average in 2003 to 10% better than national average in 2006.

‘We attributed the reduction in HSMR down primarily to the work on the deteriorating patient within the Safer Patients Initiative,’ said the former CEO. ‘There may have been other things occurring at the time but we are not aware of anything as significant. We set out to reduce adverse events by 50% and succeeded, and we set out to reduce our HSMR to 80. We didn’t completely succeed there, but we did get it to 90.’

‘At the start of the Safer Patients Initiative we regarded patient safety improvement as an important whole hospital project or programme of activity,’ said the former CEO. ‘Towards the end of the Safer Patients Initiative it had become one of six strategic priorities for our organisation. In the last three years, it has become unequivocally the trust’s number one priority, with a mission ‘Leading the NHS in patient safety’.

Critical care workstream

There was clear improvement within the critical care workstream at Luton and Dunstable Hospital.

‘Critical care takes place in a very small and well-defined area in our hospital. Staff members who work in this area are used to collecting data and more readily embraced the concepts of data collection and PDSA,’ said the associate director for safety.

The critical care area was successful in reducing its rate of central line infections, virtually eliminating them by the end of the Safer Patients Initiative programme.

‘The IHI’s bundle² gave the critical care workstream a clear path for improvement. This bundle included several specific actions we could take - maximal barrier precautions, chlorhexidine skin antiseptics, and optimal catheter site selection, for example,’ said the associate director for safety. ‘The bundle also helped shift the mindset of the ICU staff from central line infections as an inevitable part of care to central line infections as an unnecessary and preventable event.’

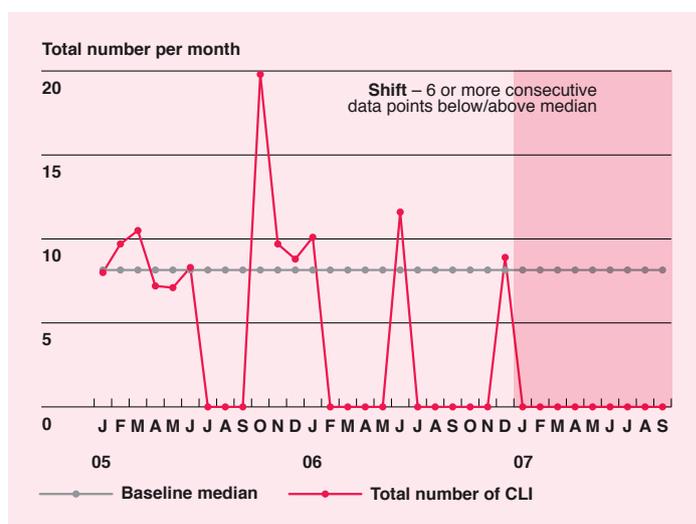


Figure 3.1: CLI bloodstream infection rate, Luton and Dunstable NHS Hospital Trust

General ward workstream

Within the general ward workstream, improvements were made in recognising the deteriorating patient with the number of calls to the medical emergency team tripling over the course of the program. This work was key to decreasing the crash call rate and reducing the hospital's standardised mortality rate (see figure 3.3)

Improvement efforts in this area involved:

- establishing an early warning scoring system, which was colour-coded to show staff members when to escalate to an outreach team
- training staff members on the early warning system and specific escalation strategies to ensure clear guidance when identifying patients causing concern
- implementing a standardised communication tool (SBAR) throughout the ward that staff could use to alert a medical emergency team about concerns regarding deteriorating patients.

This medical emergency team consisted of personable staff who had expertise in recognising and treating deteriorating patients. Once called, they would come to the ward and partner with the nurse to address the patient's needs.

In addition to the previously mentioned interventions, Luton and Dunstable Hospital spent 12 months re-educating nurses and other staff about the importance of vital sign observations.

'They had stopped taking respiratory rates and so an early warning system couldn't be used until reliable observations were happening,' said the former CEO.

Perioperative workstream

There were many improvements within the perioperative workstream. However, the one that had the greatest impact on the culture of the hospital was the creation and implementation of the preprocedure briefing.

'Before we started work on this project, everyone assumed that some type of communication was already occurring before a procedure. Once we began collecting data, we realised that communication was not as thorough and regular as we thought,' said the transformation and improvement lead.

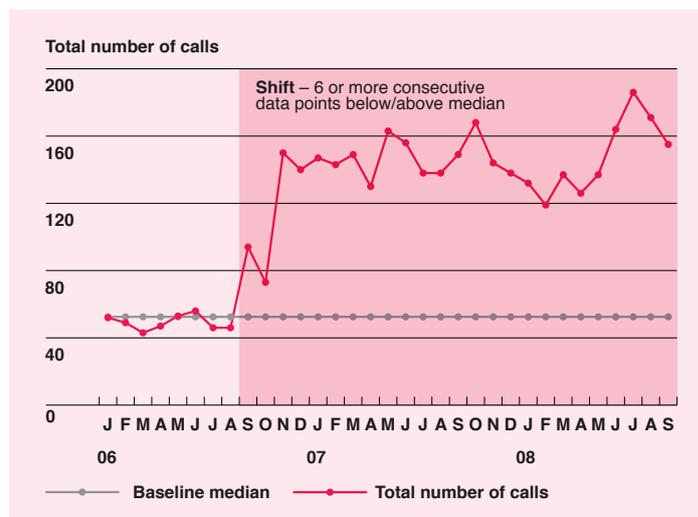


Figure 3.2: Utilisation of rapid response team, Luton and Dunstable NHS Hospital Trust

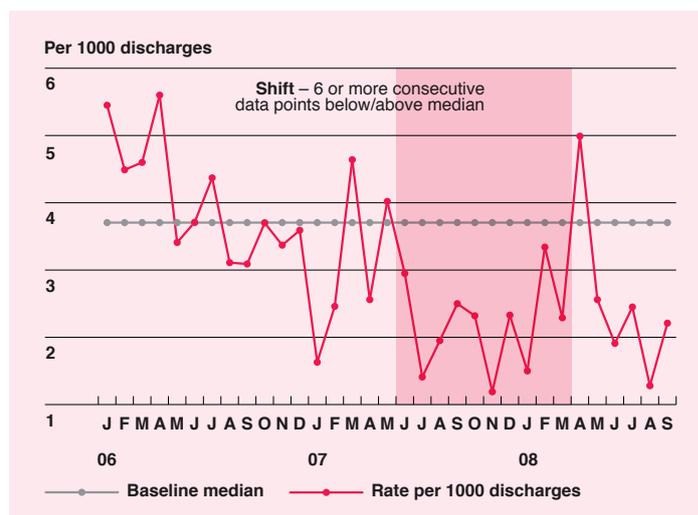


Figure 3.3: Crash call rate per 1,000 discharges, Luton and Dunstable NHS Hospital Trust

This is an area where the hospital really used the PDSA approach.

'This work began with the divisional director for surgery implementing a very visible briefing in the perioperative area first thing one morning,' said the transformation and improvement lead. 'Other surgical teams saw what he was doing and began asking questions. The divisional director for surgery's team talked enthusiastically about the briefing and the idea began to build momentum.'

At the same time, if a nurse or surgeon complained about not having something available during surgery, workstream leaders asked whether the nurse or surgeon had done a preprocedure briefing and

suggested they try one. These two elements built awareness and enthusiasm for the project.

‘Although we still have work to do in this area, the Safer Patients Initiative programme helped lay the groundwork for further success,’ said the associate director for safety. ‘For example, it helped put us in quite a good position to implement the World Health Organisation’s Surgical Safety Checklist³ and take the work to the next level.’

Medication management workstream

Within the medication management workstream, the hospital found success in medication reconciliation. This was primarily due to the early and significant engagement of a consultant who treated elderly patients within the hospital. The consultant used the PDSA cycle to try medication reconciliation with patients and slowly spread the concept across the ward. Although medication reconciliation did improve, the hospital did not meet its ultimate goal and still has more work to do in this area. However, what they have achieved has helped lay the foundation for further work in the future.

¹ Pursuing Perfection: Raising the Bar for Health Care Performance: Kabcenell A, Nolan TW, Martin LA, Gill Y. The Pursuing Perfection initiative: Lessons on transforming health care. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement; 2010. Available from: www.ihl.org

² 5 Million Lives Campaign. Getting started kit: Prevent central line infections how-to guide. Cambridge, MA: Institute for Healthcare Improvement; 2008. Available from: www.ihl.org

³ World Health Organization Surgical Safety Checklist: World Health Organization surgical safety checklist. Available from: <http://www.who.int/patientsafety/safesurgery/en/>