Implementing and sustaining transformational change in health care: lessons learnt about clinical process redesign

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ABSTRACT

- Clinical process redesign has enabled significant improvements in the delivery of health care services in emergency departments and elective surgery programs in New South Wales and at Flinders Medical Centre in South Australia, with tangible benefits for patients and staff.
- The principles used in clinical process redesign are not new; they have been applied in other industries with significant gains for many years, but have only recently been introduced into health care systems.
- Through experience with clinical process redesign, we have learnt much about the factors critical to the success of implementing and sustaining this process in the health care setting.
- The key elements for success are leadership by senior executives, clinical leadership, team-based problem solving, a focus on the patient journey, access to data, ambitious targets, strong performance management, and a process for maintaining improvement.

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The preceding papers in this supplement have described the stress in public hospital health care, the methods and application of clinical process redesign, and the substantial improvements achieved through redesign for both patients and staff. Here, we outline the key criteria for successful use of this clinical process redesign in both implementing and sustaining improvement.

NSW Health and Flinders Medical Centre (FMC) in South Australia have been undertaking clinical process redesign projects since August 2004 and November 2003, respectively. In response to local needs and conditions, there have been variations in the way these redesign projects have been carried out. The common principles for successful implementation and sustainability that have emerged from our experience are listed below. They are supported by evidence from overseas programs undertaking similar reforms, particularly the National Health Service in the United Kingdom[1] and the Institute for Healthcare Improvement in the United States.[2]

Leadership by the chief executive and senior management

Visible involvement of the chief executive and senior management is essential.[3] Senior management needs to set the standards for service delivery and drive the change process. This requires management to engage and challenge staff with "stretch goals" (ambitious goals that stimulate staff beyond their current achievements), set the parameters for acceptable solutions, ensure strategies are implemented within set timeframes and budgets, monitor performance, and reward success. Staff members need to see that the program is a priority for their chief executive officer. To succeed in the face of obstacles and setbacks, resistance, or failure of certain elements of the project, senior managers need to be resilient and keep the momentum going.

The experience at FMC (*page S27*)[4] has highlighted the significant benefits of having the executive team at hospital level directly involved in the redesign. FMC found it valuable to have senior clinicians and executives involved in tracking patient journeys and in clinical work. This has helped take redesign from being a project to being part of what staff do every day.

In New South Wales, regular visits to clinical redesign sites by the NSW Director-General of Health and the NSW Minister for Health have been found to be a powerful motivator for staff, as these visits indicate that clinical process redesign is a high priority.

Engaging clinical leaders

Clinical process redesign is not about changing clinical practice, but it does change the system of care delivery. Thus, clinical leadership is critical to success. A very important factor in engaging clinicians is for management to commit in advance to implementing the solutions designed by staff. Trust is gained when staff see their solutions being implemented; not implementing the solutions identified by staff, we feel, can lead to further cynicism. To commit to implementation, management must set the criteria for solution development in advance, and state what resources are available. If an expensive solution is proposed, staff need to understand that they will be required to justify the expense and ensure there are not less costly ways of achieving the desired result. Solutions that lie within current resources should be implemented immediately, and changed if they are not effective.

Ensuring that increased safety is an outcome of redesign is attractive to clinicians, as is making the essential steps in a patient journey work more efficiently for staff. Clinicians have a vested interest in simplifying frustrating clinical processes and in eliminating waste.

Involving clinicians in analysing the problems and developing the solutions should be done in a manner that meets their needs as busy professionals with limited free time — for example, short meetings at times when most are available.

Multidisciplinary team solution design

Redesign is best owned and managed by a workgroup comprising people who actually do the work, supported by those with redesign expertise. The workgroup must be given the time and the resources to gather and analyse the data, develop interventions, then plan the implementation and monitor its impact.

Implementation

Implementation of the solutions is the hardest part of the process, and managers need to be given the necessary change management skills. There are professional courses available for managers on

how to introduce change, and external consultants can give advice and coaching on this subject.

Focus on the patient journey

A core focus of the clinical redesign process is the patient journey for groups of patients with similar service delivery needs. These groupings are broader than disease-based classifications. They are defined by grouping together patients with similar journeys, such as patients who visit the emergency department and then return home, frail older patients with multiple comorbid conditions, or relatively fit patients in hospital for day-only procedures. Understanding patient demand and standardising patient journeys will assist in simplifying the redesign process, so that the steps in a journey are readily known and understood by staff and able to be easily communicated to patients. Standard processes (a "lean thinking" concept[5]) are robust in design, less prone to error and are easy to teach to new staff. They should become second nature to staff and be easily integrated into information technology systems.

Patients and carers as part of the team

Patients and carers must be involved in both defining and solving problems. In our projects, many innovative solutions have come from patients with no health care expertise. The patient journey should be designed to meet patient and carer needs, and the quality of the journey must be an outcome measure. We need better measures of the patient experience to include in the evaluation of redesign projects.

Data

Solutions need to be evidence-based. The process of redesign involves seeking stakeholder views on the problems and their causes, and then testing their opinions against available data. This helps resolve the problem of having multiple individual opinions or conflicting opinions as to the cause of a problem and its possible solution. The use of evidence also ensures that the selected solutions have a higher probability of being successful. This process builds trust with staff and confidence in management, and ensures time is not wasted trying inappropriate solutions.

Rigorous monitoring of redesigned processes against set targets is essential to confirm that the intervention is achieving its goals. The data need to be simple, clearly visible to all stakeholders and available in real time so that problems can be analysed and corrected. Monthly data available 2–3 weeks after the end of the month are simply of no use. Clinical process redesign requires real-time information on a daily, weekly and monthly basis. Sometimes it is even required on an hourly or continuous basis.

While some of the necessary data can be collected on paper or in simple databases, the redesign process has highlighted the need for much better data management systems. Ultimately, we have learnt that information technology systems that deliver relevant information to frontline managers are essential for achieving high-quality, efficient patient journeys (Box 1).

Targets and timeframes

The desired outcomes for the patient journey need to be "stretch targets" — that is, ones that seem difficult to achieve. We have found this is essential to stimulate real innovation, as it challenges participants to think "outside the square". Fear of failure is a major obstacle in this process, but we have found the excitement and pride staff feel when they realise what can be achieved with current resources is a powerful motivator in sustaining the program. Achievement inspires even further innovation and truly amazing results can be seen. It is very rewarding to observe a real sense of pride among health care staff who have improved the quality of their service.

1 Immediate access to performance information

Web-based technology has been shown to be highly effective in providing real-time information (including process control charts for triage times and access block) to key managers in Sydney West Area Health Service in New South Wales. Managers have found that the additional cost of providing the data required is a small price to pay for the resulting major improvements in the quality of services. ◆

Managing the process — internal versus external management

As outlined in other articles in this supplement, both NSW Health (*page S14*)[6] and FMC (*page S27*)[4] created a central group to manage their overall redesign programs. In NSW, this involved many hospitals across the state, whereas FMC is a single medical centre. In both places, there was recognition that the redesign process was a method that had been widely and successfully applied in other industries[5] and there was a need to learn from or directly involve experts in redesign. FMC staff attended an external course to learn the redesign principles, whereas NSW Health engaged external consultants. The NSW statewide project delivered a significant return on this investment for NSW Health by reducing length of stay for patients.

In both cases, strong program management, both centrally and at the level of individual projects, was essential. In NSW, the use of external facilitators (*page S14*)[6] was a powerful tool in breaking down the "silo" mentality and facilitating multidisciplinary teamwork. Their expertise in change management and in establishing data charts was exceptionally helpful in driving change. It was also essential to get the process up and running in multiple sites, where management and clinicians were often uncertain as to the benefits of the program.

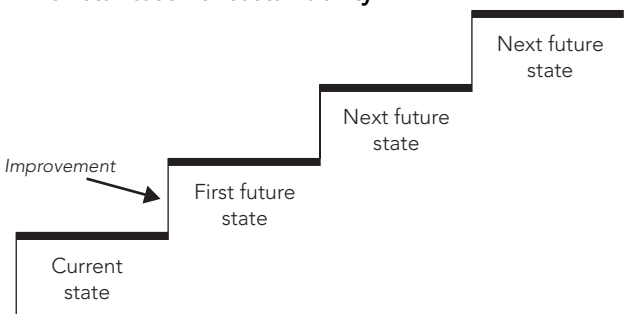
Organisational readiness

When is an organisation ready for redesign? In our view, if there are acknowledged problems with access, flow, safety, waste or patient outcomes, it is time to act. It is easier to act and change mindsets through demonstrating that things can be improved than through waiting until there is general agreement that redesign could work. Health professionals have many opinions, all deeply and passionately held, and the impossibility of reconciling these views without evidence to the contrary is one of the biggest barriers to reform in health care. We have found that the key to organisational readiness is leaders who believe that things have to change.

Selection of projects

In our experience, it is best to start the redesign process with a problem that obviously needs to be fixed (eg, access block or

2 The "staircase" of sustainability



ambulance diversion). Quick wins on high-profile problems engage staff and breed success. Improvements of the patient journey for high-volume patient groups, such as emergency medical cases, will also reap benefits, because improving efficiency in this group releases more capacity back into the system than improvements for lower-volume patient groups.

Complete patient journeys are often complex, and can rarely be redesigned in one stroke. It will normally take a number of projects over time to comprehensively remodel a major patient journey. However, substantial improvements can be achieved with a well executed initial project, and this will build support for further improvements.

Some projects are simple and straightforward (eg, standardising the layout of ward storage areas to remove the need for staff to learn the locations of essential equipment in each ward). Other projects are more complex and may involve more than one hospital. Each will require a different approach to engaging staff and implementing changes, and will need different timeframes.

Local versus system-wide reform

The type of clinical process redesign methods we have described in this supplement work best at local hospital or unit level. A different approach is required to simultaneously run redesign projects across a number of hospitals. Nevertheless, our experience has shown that it is possible to do this with careful planning and well coordinated central program management. This has been demonstrated by the experience in NSW Health, by the Department of Health in the UK[1] and in the "100 000 Lives" campaign of the US Institute for Healthcare Improvement.[2]

Knowledge sharing between teams was essential. It was achieved through workshops, online communities of interest and through the database of the Australian Resource Centre for Healthcare Innovations.[7]

Persistence and flexibility

It does not matter which improvement method or model (lean thinking,[5] six sigma,[8] or theory of constraints[9]) is used in the redesign process, as long as it is applied with rigour and persistence. We have found that there needs to be constancy of purpose by all those involved in clinical process redesign.

It is important to recognise that the redesign projects are not controlled trials, but are more akin to action research[10] in that they are not designed to be perfect or dictated by strict protocols, but rather to be iterative and flexible as the need arises. In fact, it is crucial to their success that they are modifiable in response to data, as well as to staff and patient feedback. The plan-do-study-act[11] method (testing a change by planning it, trying it, observing the results, and acting on what is discovered) is ideal for a flexible improvement model and allows reflective learning from one intervention to feed into the next.

Sustainability

Sustainability involves an ongoing improvement process. It should be a process of continuous review and improvement of health service delivery to meet a set of agreed standards. It needs to be embedded to become part of normal business for a health care organisation, not a series of one-off projects or crisis-driven reform programs.

Sustainability, in our experience, is the most challenging phase of clinical process redesign. It is best depicted as a staircase, which demonstrates the notion that redesign is, by nature, continuous (Box 2).

With this in mind, how should we approach sustainability? Our view is that it should be thought about as a dynamic process containing three main elements — standard work, maintenance and continuous improvement (Box 3).

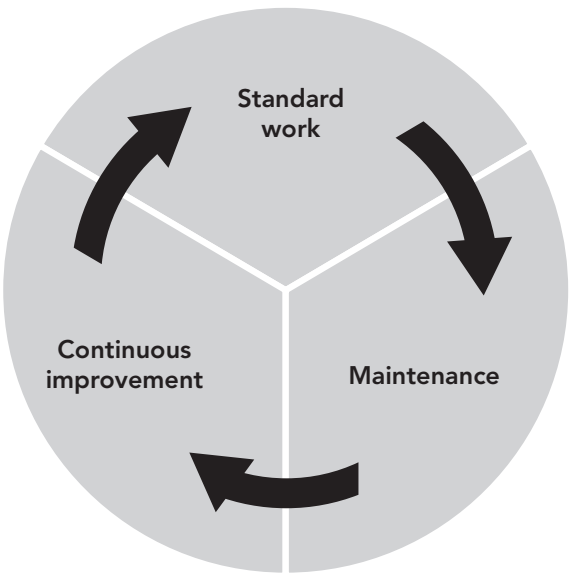
Standard work

Standard work occurs at the end of successful implementation. The new processes (standard work) must be documented, and various roles defined and made explicit, especially with new or temporary staff. An important part of standard work is removing variation in the way a process is done. The performance of individuals and the team must then be monitored to ensure procedures are being performed as expected (Box 4).

Maintenance

Maintenance of the improved standard work is an important element of sustainability. A process owner needs to be assigned to each redesigned patient journey. This person is required to "care"

3 The cycle of sustainability



4 Example of the standard work element of sustainability in process redesign at Flinders Medical Centre

At Flinders Medical Centre, a standard process has been developed for writing discharge summaries, and this is used as a basis for intern orientation. It is displayed visually at each computer in the doctors' offices and is included in the clinical handbook for each clinical division. ◆

about and review the redesign work on a regular basis. Performance on relevant targets and key performance indicators must be regularly measured and tracked. The process owner will need to spend time in the workplace to observe how things are being done and identify opportunities for further improvements.

Maintenance is essential within health care because of the dynamic nature of the workforce. The turnover of trainee staff is extremely high, and this can result in a breakdown in standard work. Maintenance of redesign work ensures that the improved practices become embedded, despite the changing nature of the clinical teams.

Continuous improvement

Growing demand and technological change requires us to constantly improve to maintain standards. A regular forum where performance and process issues are discussed with stakeholders from across the patient journey is an ideal mechanism to promote ongoing improvement. The output of these forums should provide the next opportunity to redesign and improve the journey (Box 5).

5 Example of the continuous improvement element of sustainability in process redesign at Flinders Medical Centre

Within general medicine at Flinders Medical Centre, the junior doctors, consultants, department head and the redesign team meet every 2 weeks over lunch to review performance in regard to the redesign work, and to identify problems and improvement opportunities. This meeting is also an ideal mechanism for identifying, on a regular basis, the internal system problems that this group of clinicians face every day. ◆

Conclusion

Clinical process redesign holds much potential. It has already demonstrated that it is a powerful tool for improving the systems that underpin health care service delivery. It has provided benefits for patients and staff by enhancing access and patient flow, and increasing safety, as well as improving the experience and health outcomes for patients.

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Competing interests

None identified.

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