Patient journeys: the process of clinical redesign

David I Ben-Tovim, Melissa L Dougherty, Tony J O'Connell and Katherine M McGrath

ABSTRACT

- Clinical process redesign is a successful improvement method that has been used to increase access to health services in 60 public hospitals across New South Wales, and at Flinders Medical Centre (FMC) in South Australia.
- The method focuses on the patient journey as the primary improvement locus, and uses process mapping to identify the value-adding steps in that journey; it involves redesign teams identifying and eliminating non-value-adding steps to improve flow and reduce delays in access to emergency and elective care.
- The method engages clinicians, managers, patients and carers, and delivers real gains in health care delivery.
- This article outlines the clinical process redesign programs being used by NSW Health and at FMC.

MJA 2008; 188: S14–S17

Clinical process redesign is the application of process redesign and change management to health care. Importantly, clinical process redesign starts with the patient-eye view.

Modern hospitals and health services are organisationally complex entities,[1] employing several thousand staff working in professional, functional and geographic groups. Each group has an internal, usually hierarchical, structure, and orientates its work by the views held within its dominant professional or organisational membership. Groups cherish their autonomy, so that medical or surgical divisions view the world from their medical or surgical perspective.

Patients, however, move horizontally across hospitals (Box 1). Their journeys take them from unit to unit, receiving care from different groups as they go. The patient is the only person who sees the whole journey. Staff only see the component for which they are responsible, and no single staff member oversees all the steps in a patient's journey. The result is that poor coordination of the patient journey is common.

The traditional approach to solving the problems of health care is to ask each department within a health service to address the problems in their area. However, this cannot solve problems which result from poor overall design of clinical processes and disconnections between the stages of the patient journey that cross multiple departments.

Clinical process redesign is concerned with improving patient journeys by making them simpler and better coordinated. It does not have an impact on the actual clinical care provided at the different stations along the way.

Clinical process redesign — what's different?

Process mapping

In clinical process redesign, problems are analysed from the perspective of the patient's journey. This is defined as the end-to-end sequence of all the steps required to provide clinical care for a patient. Because the entire journey is considered, attention is paid to support groups and clinical groups that might otherwise be overlooked. To understand all of the processes involved, the journey must be mapped in detail.

Mapping makes all the steps that make up the journey visible to everyone involved. It engages staff in understanding the journey end-to-end, and in owning any problems that emerge. Mapping can be done in different ways — by the team together documenting the patient journey step by step, or by a series of interviews and "tag-alongs", where a staff member travels with a patient and documents his or her journey. In either case, the steps of the journey are made visible, and this visibility drives the redesign process.

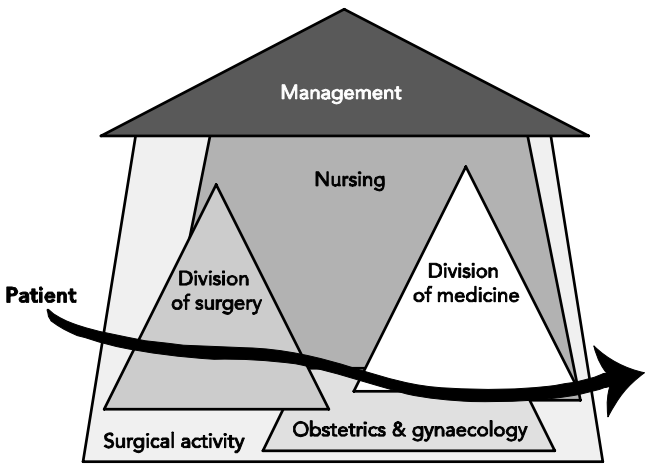
Mapping the patient journey needs careful planning and facilitation to prevent the "blame game" (ie, each group blaming other groups for the problems within the journey).[2] The first rule of a mapping session is that it must record what the process is, not what people think it should be. Subsequently, the views of individuals need to be confirmed with data in order to distinguish between rhetoric and fact.

Mapping reveals poor coordination between the steps in patient journeys, and where additional steps have been added over years in an effort to make a dysfunctional system work.

Mapping demonstrates problems in patient journeys in a way that cannot be disputed, and focuses the group on solving the root causes. It enables groups who work side by side to appreciate the contribution each makes to the whole journey rather than blaming each other when difficulties occur. Finally, when it becomes clear how complex and cumbersome many journeys have become, mapping generates "permission to change" from all involved — this is a vital ingredient in clinical process redesign.

The mapping process and redesign process should be short. The NSW Health method (the Clinical Services Redesign Program)

1 Hospital organisation and the patient journey*



* Patients move horizontally through a sectional and hierarchical organisation. ◆

2 Mapping a process in the emergency department (ED)

In one mapping session in an ED it became clear that an equipment officer had been appointed to distribute patient equipment, including crutches. That officer had to be paged by the nurses before crutches could be dispensed. However, the officer was rarely available immediately. Thus, there was usually a delay, after which the crutches were given out by the ED nurses. It was a simple and effective change to allow ED nurses to dispense crutches directly. ◆

allows, on average, 12–16 weeks for the whole process of mapping, solution development and implementation planning.

Involving staff

A crucial feature of the mapping process is to bring together all the key groups and individuals who are critical to improving the clinical processes. Frontline clerical staff, porter and cleaning staff, junior nursing and medical staff are as important in this as senior consultants and nurse managers. Mapping sessions must occur at times and places that make it easy for clinicians to attend. Personal approaches by senior management and presentations to state-level leadership groups such as clinical networks or councils are important to achieve full and active participation of influential clinical leaders. It may be necessary to fund "back-fill" replacements for staff or to pay visiting medical officers, general practitioners or patients to ensure their attendance.

When necessary, senior management must send the message that change is inevitable: "The process will proceed with or without you. This is your chance to make it work for yourself, your colleagues and patients." It is important to highlight the importance of clinician input while demonstrating that the redesign work will not be held hostage to individual preferences or resistance. Managers need to preset the parameters for solutions and participate in the process to ensure that solutions are practical and affordable. When clinicians and other staff do engage, the redesign solutions must be implemented to reinforce the benefits of participation and overcome latent cynicism about the possibility of effective change.

Involving patients

Patients who make the journeys are the only ones who can identify the problems from their perspective. The experiences of patients and carers need to be captured in the mapping stage, and patients and carers must also participate in solution design. This can be through combined staff–patient working parties, or by having separate consumer working parties. In more recent projects in New South Wales, each redesign team has been asked to interview 10 patients and carers about their experiences and analyse their stories for themes reflecting the eight dimensions identified by the Picker Institute.[3] The redesign teams then use this information to design their solutions, and remeasure the patient and carer experiences at a later date to ensure there have been sustained improvements.

Questioning the status quo

Redesigning the cumbersome and frustrating processes underpinning clinical care that are revealed by mapping requires a robust debate about a number of issues, including:

- why a particular step occurs;
- what can be changed;
- what steps really add value and have an impact on patient outcomes; and
- what steps do not add value and can be eliminated.

We need to question in whose interest the current system is organised. Processes are often organised around traditional staff roles or to compensate for equipment inadequacy, rather than to serve patients' needs. In the example in Box 2, the step of paging the equipment officer did not add value and was easily changed. While allowing nurses to order an x-ray in a case of suspected fracture will reduce patient delays, it will provoke debate, and will only be supported if the patient perspective takes priority over entrenched practices. These kinds of debates are an essential part of the education of staff as to why the changes should be made. The best criterion to diffuse disagreement is "if this was your mother, what would you want to happen?".

The patient journey perspective

The mapping process also facilitates moving the focus from the part of the patient's body that is affected, or the professions involved in the patient's care to that of the horizontal journey, and allows new groupings related to the process or journey to emerge. "Patient-care families" are groups of patients whose journeys share many of the same process steps, even though the specifics of their clinical care may differ. The article in this supplement from Flinders Medical Centre (FMC) (*page S27*) describes an approach to clinical process redesign that is centred on patient-care families and the development of streams of care (or value streams) for designated patient-care families.[4]

Redesign may challenge conventional wisdom. For some years, Australian emergency departments (EDs) have used the Australasian Triage Scale[5] to prioritise the order in which patients are seen so that patients are attended to in triage order, rather than the order of presentation. Clearly, this makes sense in relation to critically ill patients. However, it leads to patients in lower triage categories having extended waits. At the FMC ED, staff allocate a triage category to all patients, identifying the relatively small number of patients with time-critical threats to life and limb who take priority. All other patients are seen in order of arrival, no matter what their allocated triage category. They are divided into those who are likely to go home directly from the ED, and those likely to be admitted, with each group being seen by a different team of doctors and nurses.

This approach has improved access to care and reduced overall waiting times in the ED without compromising the care of the critically ill.[6] The move away from the strict use of the triage scale is quite confronting to many staff, and sustaining such changes requires committed leadership and ongoing monitoring.

Applying the clinical process redesign method

NSW Health — the Clinical Services Redesign Program

NSW Health piloted clinical process redesign in one hospital (John Hunter in Newcastle) in 2002, and implemented it in 10 Sydney hospitals (Westmead, Nepean, Prince of Wales, Liverpool, St George, Canterbury, Royal North Shore, Gosford, Campbelltown and Wollongong in the financial year 2004–05). After significant success at most sites, the NSW Government funded a 3-year, statewide program. At its peak, the Clinical Services Redesign

Program (CSRP) included 75 separate redesign projects in 60 hospitals (Box 3).

More details of redesign projects in 23 hospitals and their outcomes are to be found in the appendix to this supplement (*page S36*).

A program office was established in NSW Health to manage the CSRP. In addition, four senior managers were appointed within NSW Health to liaise regularly with Area Health Services (AHSs), in which program offices were also established to coordinate programs at the local level and liaise centrally.

The CSRP relied on the involvement of frontline staff to participate in projects, and funding was available to release staff to the redesign program full-time.

AHSs were set ambitious targets for performance and a regular monitoring system was established for reporting all results across the state, including monthly meetings between chief executives and the health department to discuss performance. Impact was maximised by linking AHS performance to additional funding for beds and elective surgery.

A panel of national consulting firms (Accenture, KPMG, PricewaterhouseCoopers and PA Consulting) was retained to provide expert advice to AHSs on undertaking process re-engineering and to facilitate redesign working parties. The firms also assisted in coaching local hospital managers to give them the skills necessary to implement the solutions. They brought a range of business process redesign and re-engineering methods to the CSRP, including "lean thinking", "six sigma" and the "theory of constraints".[7-9] Staff appreciated the neutrality of external facilitators who were often able to overcome territorial behaviours.

Knowledge management was a key part of the program. It was facilitated by regular meetings of senior executives and clinicians, and by workshops on tackling common problems. The program office presented redesigned models of care in easy-to-grasp formats and regularly broadcast and celebrated successes in redesign. The new models of care were accompanied by implementation toolkits available on the Australian Resource Centre for Healthcare Innovations website.[10] In addition, the Human Services Network, developed by the NSW Government,[11] was used for establishing communities of common interest.

The NSW Minister for Health and the Director-General of Health regularly visited sites to review progress and maintain senior executive focus on the outcomes of redesign. Clinician leadership was highly visible through various state-level priority taskforces.

Flinders Medical Centre — the Redesigning Care program

The FMC Redesigning Care program is described in more detail in a subsequent article in this supplement (*page S27*).[4] It was initiated after an aggregated root-cause analysis of a series of disturbing patient events indicated a major breakdown in the capacity to provide safe care in the ED and elsewhere in the hospital. This prompted the search for an effective improvement strategy. Lean thinking, with its emphasis on methods for looking at end-to-end processes, the creation of flow, the value of patient time and staff expertise, and the recognition that activities which did not add value to patient outcomes were potentially wasteful,[7] approved a good fit with the underlying values of the organisation.

A small team of clinicians and senior managers learned about lean thinking by linking with local and international experts through Lean Enterprise Australia[12] and the global Lean Enterprise network, and by contact with staff from the School of Management at the University of South Australia. A program governance group involving senior clinicians and managers, which reported to the FMC hospital management executive, ensured that the Redesigning Care program worked across the whole hospital and was viewed as a major program.

3 Scope of the Clinical Services Redesign Program in New South Wales

Location: All NSW Area Health Services (metropolitan, regional, rural) plus statewide projects, including the NSW Ambulance Service

Funding: Total over 3 years: $70 million

Focus issues: Emergency departments, surgery, patient flow, mental health, cardiology, discharge planning, diagnostics, aged care, chronic care, management support

Number of projects: 75

Number of hospitals: 60

Time investment: Over 1200 weeks of full-time project activity, including external expertise ◆

Implementation

Box 4 outlines the stages involved in redesign programs. It reflects the generic approach arrived at independently by NSW Health's CSRP and the FMC Redesigning Care program, although specifics vary between settings.

Initially, the set-up phase involves deciding issues such as the overall scope of the project, the make-up of the redesign team, and the choice of performance indicators. In the diagnostic phase, the mapping of the patient journey identifies the disconnections and facilitates a diagnosis of the problem being tackled, with impressions being confirmed by direct observation and data when relevant. That phase will usually point to a variety of solutions which have the potential to improve flow, increase safety and improve the quality of the processes.

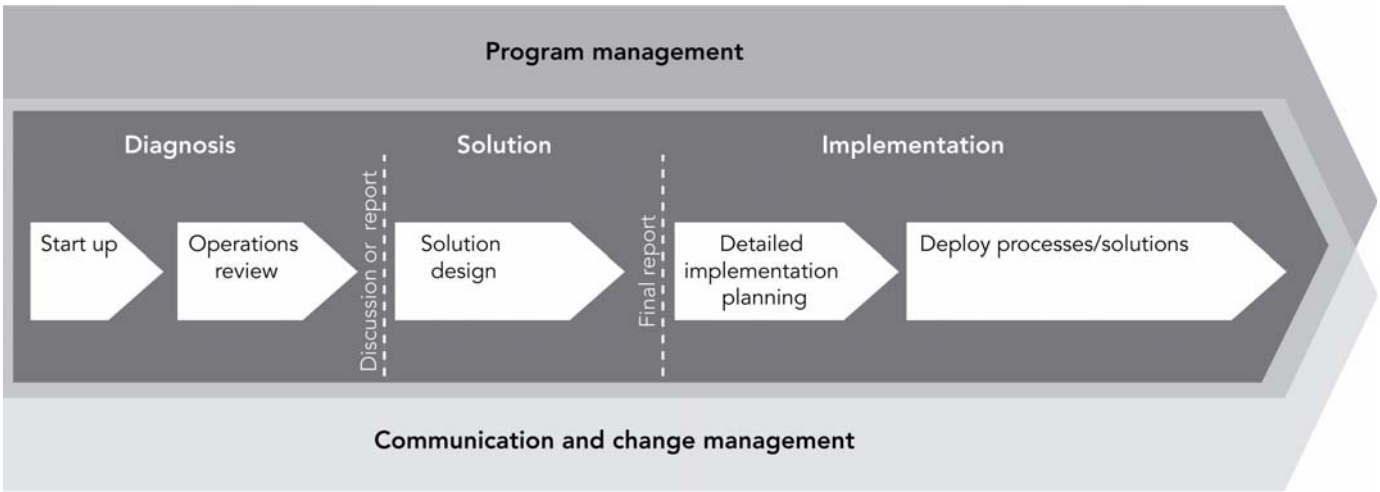
Once the redesign solutions are agreed (and this can involve decisions about "hard" territorial issues, such as reallocation of beds between units), they need to be implemented. It is this step of the process that is, by general agreement, the most difficult. If the solutions are novel, they will require considerable skill in implementation, combining project management skills with managing the human dimension of change in a complex hospital structure (see Box 4). This demands a new skillset for health managers who have previously operated in a "command and control" atmosphere.

Redesign programs rely on energetic management. The implementers may need coaching in change management and project management techniques, and added support for their increased workload. Managers and staff involved in process redesign also require high-quality, real-time information. Data identifying the nature and extent of problems and evidence of improvements provide the strongest tool with which to engage clinicians in the change process.

Conclusion

Providing high quality, efficient health care cannot be accomplished without the time and effort required to bring staff together to examine the process of care delivery. The staff need to see the patient journey as a whole. Training and communication with staff about how to undertake clinical process redesign are investments

4 The phases of clinical process redesign



Program management and communication and change management are an essential and ongoing part of clinical redesign. ◆

that will ensure the continuing development of improved processes that work for patients and staff alike.

Acknowledgements

Thanks to Professor John Marley for editorial advice in the preparation of this article and Dr Deborah Lloyd for her work in editing this article and preparing this supplement.

Competing interests

None identified.

Author details

David I Ben-Tovim, PhD, MRCPsych, FANZCP, Director, Clinical Epidemiology and Redesigning Care Units,[1] and Professor, Faculty of Health Sciences[2]
Melissa L Dougherty, BA(Psych)(Hons), Clinical Facilitator, Redesigning Care Unit[1]
Tony J O'Connell, MB BS, FRANZCA, FJFICM, Director, Health Services Performance Improvement[3]
Katherine M McGrath, FRCPA, RCPA, MRACMA, Deputy Director-General[3]
1 Flinders Medical Centre, Adelaide, SA.
2 Flinders University, Adelaide, SA.
3 NSW Health, Sydney, NSW.
Correspondence: David.Ben-Tovim@fmc.sa.gov.au

References

1 Ham C, Kipping R, McLeod H. Redesigning work processes in health care: lessons from the National Health Service. *Milbank Q* 2003; 81: 415-439.
2 Keyte B, Locher D. The Complete Lean Enterprise. Value stream mapping for administrative and office processes. New York: Productivity Press, 2005.
3 Picker Institute Europe [website]. http://www.pickereurope.org (accessed Sep 2007).
4 Ben-Tovim DI, Bassham JE, Bennett DM, et al. Redesigning care at the Flinders Medical Centre: clinical process redesign using "lean thinking". *Med J Aust* 2008; 188 (5 Suppl): S27-S31.
5 Considine J, Ung L, Thomas S. Triage nurses' decisions using the National Triage Scale for Australian emergency departments. *Accid Emerg Nurs* 2000; 8: 201-209.
6 King DL, Ben-Tovim DI, Bassham J. Redesigning emergency department patient flows: application of lean thinking to health care. *Emerg Med Australas* 2006; 18: 391-397.
7 Womack J, Jones D. Lean thinking. Banish waste and create wealth in your corporation. London: Simon and Schuster, 1998.
8 Mikel H. Mikel Harry on Six Sigma in healthcare. Interview by Carole S. Guinane. *J Healthc Qual* 2006; 28: 29-36.
9 Goldratt EM. Theory of constraints. New York: North River, 1999. http://www.coba.usf.edu/departments/accounting/faculty/jozsi/presentations%20fall06/TOC.pdf (accessed Sep 2007).
10 Australian Resource Centre for Healthcare Innovations [website]. http://www.archi.net.au (accessed Sep 2007).
11 Human Services Network [website]. http://bsdp.hsnet.nsw.gov.au/ (accessed Sep 2007).
12 Lean Enterprise Australia [website]. http://www.lean.org.au (accessed Aug 2007).

(Received 10 Sep 2007, accepted 3 Jan 2008) ❑