

# Clinical Service Redesign for JMOs

May 15, 2015 | 0  | [innovation,ontheblogs](#), [Working & training in healthcare](#)

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## Clinical service redesign - Part 1

As junior doctors become more involved in the provision of health care at a systems-level an understanding of clinical service redesign (CSR) is becoming increasingly important.

Amy Fitzgerald, a PGY3 Resident Medical Officer from Perth, takes us through the basics of clinical service redesign, its benefits and pitfalls in this two-part series.

## What is clinical service redesign and why is it relevant to JMOs?

Ever been frustrated by a process in the hospital system that is dysfunctional, wasteful or inefficient? Have an idea on how to improve this process? But no clear idea on how to bring about meaningful sustainable change?

Then it's time to think about Clinical Service Redesign (CSR).

## CSR projects in a nutshell

The clinical service redesign process examines the patient journey from the patient's perspective, identifying delays or elements in the process which do not add value or are error-prone, with the aim to produce a system which is more efficient, safer and provides an improved patient journey. A variety of methodologies are used to examine and improve systems in order to simplify processes, reduce waste and remove inefficiencies. It is a systematic and methodical approach used to bring about lasting change in healthcare systems.

## CSR: its relevance to JMO's

The healthcare system is incredibly vast and complex. It can be difficult for JMOs to find ways to improve a patient's journey when faced with such a system. CSR provides the tools and strategy, like a road map if you will, of how to set about achieving these improvements.

Additionally JMOs have a unique perspective of many inefficient processes as they are key players in these processes. JMOs are at the coal face of these processes, dealing with them every day and as such are often the best generators of solutions and highly motivated to bring about change.

**Discharges**, flow of admissions from ED and delays in theatre are common examples where JMOs play a pivotal role in processes that can be streamlined and improved through CSR projects. JMO-lead CSR projects provide an opportunity to improve these processes and develop solutions, which address the true **root causes** for inefficiencies and delays. By being involved and managing CSR projects JMOs can help shape the new and improved process of which they play a role in every day.

## Methods used in CSR projects

A variety of methodologies are used in CSR projects, many healthcare providers or state healthcare networks will utilise their own specific process. All methodologies are built on common principles and many overlap. The Western Australian Department of Health largely employs the DMAIC framework for CSR projects, which is the most widely used CSR methodology. It is based on the principles of six sigma and lean thinking, which originated in production industries.

Six sigma ( $6\sigma$ ) was originally developed for manufacturing sectors and was originally used by Motorola in the 1980s before being popularised by Jack Welch, the CEO of General Electric, in the 1990s. Six sigma examines the causes of process defects and produces solutions which address them. It aims to reduce variation in processes in order to minimise errors and waste.

LEAN thinking was originally developed by Toyota but is now commonly utilised in healthcare settings. It relies on 5 basic principles: identifying what the patient values, identifying the process (termed value stream in lean thinking), making the process flow by eliminating waste, letting the user pull (pull the services they require) and a commitment to the pursuit of perfection. Overarching these principles is the development of an organisational lean thinking culture lead by executives.

Although these methodologies were originally designed for production they can and are being applied to healthcare organisations around the world. When their principles are applied and adapted to healthcare they help us to provide patient-centred, resource-efficient, safer processes.

Let's now examine the DMAIC process.

### D - Define

The first step is to define your problem. This forms the basis for your project scope and sets out the key issues you want to address and the goals of your project. Project scope should clearly define the start and endpoint of the processes you are aiming to improve and any important inclusions and exclusions. It is important to be precise with your project scope to avoid 'scope creep', where a project grows and takes on extra side projects in a snowballing fashion. However, scope creep can add value to the overall project. For instance, I audited rates of UTI's after urodynamic studies. While this was not part of my original scope this small side project was an important strategy in maintaining stakeholder engagement. However, scope creep is usually considered detrimental as it can lead to resource overrun and negatively impact project deadlines and completion.

# Plan

Once you have defined your scope you can then plan your project. The age-old adage failing to plan is planning to fail rings true for CSR. Many people will set this plan out as a project charter. Develop a timeline for the coming phases of your project. This gives you a good overview of what's ahead and how you're going to move forward. It can also help you identify potential issues and developed risk management and stakeholder management strategies. It's a good idea to plan and advertise group sessions early so that people can arrange their schedules so they are free to attend and you can book the necessary rooms and organise catering or baking.

## Process mapping

An essential part of 'Define' is undertaking your process mapping sessions. It is important to involve all key stakeholders otherwise you risk mapping the process from a specific stakeholder point of view rather than as it actually happens. During process mapping, key issues, which cause delays or are sources of error are identified and recorded with the aim that they will be addressed and corrected in latter stages of the project.

This is also the time to collect your voice of the patient (VOP), voice of the organisation (VOO), and voice of the staff (VOS). This information helps you develop a solution that is patient-centred, address staff concerns and is aligned with the healthcare organisations values. VOP can be collected from patient interviews, tag-alongs and complaints data or suggestions boxes. Keep in mind that you may need ethics approval to interview patients but these statements can be very powerful in illustrating the extent of the problem and developing patient-centered solutions. VOS can be collected in a similar manner and at process mapping sessions. VOO can be collected from value or mission statements, organisational policies or talking to executives directly.

## M - Measure

Next we measure the size of the problem. How this is done will depend on your project and its aims. The healthcare system in Australia is incredibly complex and much usable data is collected electronically. ED systems, theatre management systems and patient databases are often easy to access sources of usable data. For instance, my project aimed to address waiting times for urodynamic studies, I was able to obtain accurate waitlist time information from receipt of referral to booking an appointment through our central booking service. Utilising data already available is an efficient use of your time and can save many hours of manual data collection.

If critical data is not available then the data will need to be collected manually. Manual data collection is laborious and time-consuming so be sure that you are collecting the correct data, in a usable format. You should be very specific about the purpose of the data and collect only what you need. It is important to apply the 'goldilocks' principal to manual data collection, ensuring you have not too much and not too little but just the right amount.

Interpreting data and presenting it in a usable format to help 'tell the story' has its own challenges. There are many online tutorials on manipulating data to illustrate key points and produce easily interpretable graphs. Also think about utilising friends and contacts in other industries that do this every day, it's amazing what you can learn over a coffee with Excel-savvy friends. Never be afraid to ask for help and think outside the box to keep your project flowing.

## A - Analyse

Now that you have mapped your process, identified issues and measured the size of the problem it is time to analyse the cause. The aim of 'Analyse' is to determine if the perceived cause of the problem is the actual cause. This is done through a variety of methods using [root cause analysis](#) such as affinity mapping, the 5 whys and interrelationship diagrams. It is very tempting at this stage to jump to solutions. Often interest is wavering (project managers included!) and many stakeholders are suffering project fatigue. Clinicians are notorious solution jumpers (I am definitely guilty of this myself) and one of the biggest challenges in CSR is to keep time-pressured clinicians engaged through all steps of the process. However, it is critical to maintain momentum and undertake a rigorous root cause analysis so that your solutions directly address your validated root causes.

You may find that the perceived cause is not the actual root cause. It may be necessary to obtain additional data to validate the new determined root cause. For example, in my project it was widely believed that high DNA (did not attend) rates for outpatient urodynamic studies occurred because we treated a large number of spinal cord injury patients (SCI). SCI patients can have issues with travel, access and finance that other patients may not. However, on revisiting data after 'Analyse' we were able to show that DNA rates were equal in SCI and non-SCI patients. This points to a systems issue rather than a patient demographic issue and was important for generating solutions in this project.

## Identifying root causes

Identifying root causes is essential to allow you to develop solutions, which address the identified causes. Failing to identify and validate root causes puts you at risk of developing solutions, which do not address underlying causes of problems in your process. Instead of producing meaningful sustainable change that adds value to your process, you may develop a solution that fails to address the root cause of your issues, and thus these same issues can continue to recur. This unfortunately wastes time and resources not to mention the opportunity for improvement.

One of the recurring themes at feedback sessions with my colleagues undertaking CSR projects was the importance of trusting in the DMAIC process and following the steps. While it is tempting to skip steps, particularly around the time you reach 'Analyse', it is essential that you continue on following the methodology as you move forward. At the completion of 'Analyse', take the time to reflect on what you have achieved and how far you have come.

# I - Improve

Improve is an exciting part of CSR, you finally get to develop ideas and solutions in consultation with stakeholders that address root causes for delays and inefficiencies and then develop strategies to implement them. It is important to utilise your 'change champions' at this point. These are the people who will be looking after your project when you hand over the reins and are essential in its ability to succeed. The 'change champions' are stakeholders who are heavily involved and invested in the process. New processes and recommendations will often affect these people the most. They are an invaluable source of support and ideas because they are at the coalface and deal with the issues you have identified every day.

In my project these included urodynamics nurses who performed and booked studies. In other projects it may be co-ordinators, educators, clinicians or allied health. Try and identify these people and engage them early on in your project. Listen to their concerns and issues, try and win them over early in your project. Many baked goods have been offered at various meetings throughout CSR to engage stakeholders and encourage people to attend.

# C - Control

Control is where solutions are trailed and rolled out, it further aims to measure the effect of the new process and ensure it is maintained and sustainable. It can take on many forms but is commonly an audit or meeting of stakeholders at specified time periods to discuss how the new process is working and address any new issues or delays. Examples are emailed bulletins of waitlist times or collecting patient satisfaction surveys to determine impact. It is important to delegate who the responsibility of ongoing audits will reside with. Commonly it will be with your key stakeholders and change champions. Being involved in ongoing audits is very rewarding, it gives you the opportunity to experience and measure the impact of change on a process.

The DMAIC process is a fluid cycle of continuous change. 'Control' forms the basis for addressing new areas that could be improved and thus the cycle starts again. While subsequent projects may not be of the same scope or magnitude as previous projects it is important to have succession planning in place at the completion of your project to ensure its longevity.

Now that you have been familiarised with the CSR process and DMAIC methodology, stay tuned for next week's blog on the [benefits and common pitfalls of JMO-lead CSR projects](#).

Any questions you would like answered can be added to the comments sections, so I can address them on the next blog.

# Resources

## Web-based resources

- *The Virginia Mason Production System. What It is and Why It's Better For Your Patients.* Contact, Issue 1, Vol 2, Winter 2008

- *Going Lean in Health Care*, Institute for Healthcare Improvement, 20 University Road, 7<sup>th</sup> Floor, Cambridge, MA 02138
- *The Five Principles of Lean Thinking*

## Printed resources

- Department of Health, Western Australia. (2013). *WA Health Clinical Services Redesign Handbook: A Training Guide*. Perth: Health System Improvement Unit, Department of Health, Western Australia.
- Loay Sehwal, Camille DeYong, (2003) "*Six Sigma in health care*", *Leadership in Health Services*, Vol. 16 Iss: 4, pp.1 - 5

## Related Blogs

- [Clinical Service Redesign for JMOs - Part 2](#)
- [Getting JMOs involved in Quality Improvement](#)

**Tags:** #clinical service redesign,#CSR,#CSR project,#DMAIC,#efficiency,#initiative,#JMO,#junior doctors,#lean thinking,#patient cent,#patient safety,#quality and safety,#quality improvement,#quality patient care ,#reduce waste,#research,#resources,#six sigma