

Managing change with Lean Six Sigma

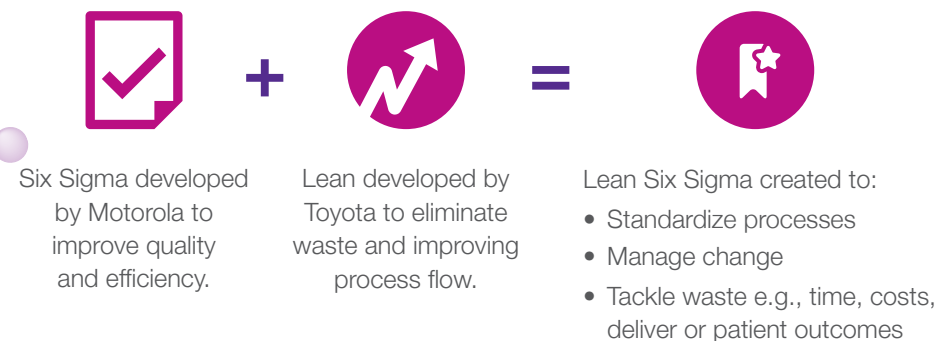
helping the NHS to meet the challenges of service improvement

The NHS is facing a complex and changing environment, as management tries to balance tightening budgets with increasing demands and the arrival of new, innovative, and sometimes costly drugs, devices and diagnostics. Project tools such as Lean Six Sigma can help to manage change and improve services while saving money through reducing errors and variations, improving process efficiencies and supporting pathway redesign.

What is Lean Six Sigma?

Six Sigma was developed in the 1980s at Motorola as a route to improve the quality and efficiency of processes by reducing variations and errors in manufacturing. Lean production, developed by Toyota in Japan, is a methodology that focuses on eliminating waste and smoothing process flow. Incorporating lean techniques and principles created Lean Six Sigma. However, Lean Six Sigma is more than a manufacturing tool – taking Lean Six Sigma approaches to standardize processes, manage change and tackle ‘waste’, whether it is in terms of time, costs, delivery or patient outcomes, has the potential to be able to support and help the NHS.

Figure 1 The evolution of Lean Six Sigma?



The role of Lean Six Sigma in supporting Quality Service, Improvement and Redesign (QSIR)

At Quintiles, we define Lean Six Sigma as change management through stakeholder engagement and data analysis that is focused on eliminating waste and improving outcomes through collaborative design, improvements and efficiencies of services and processes.





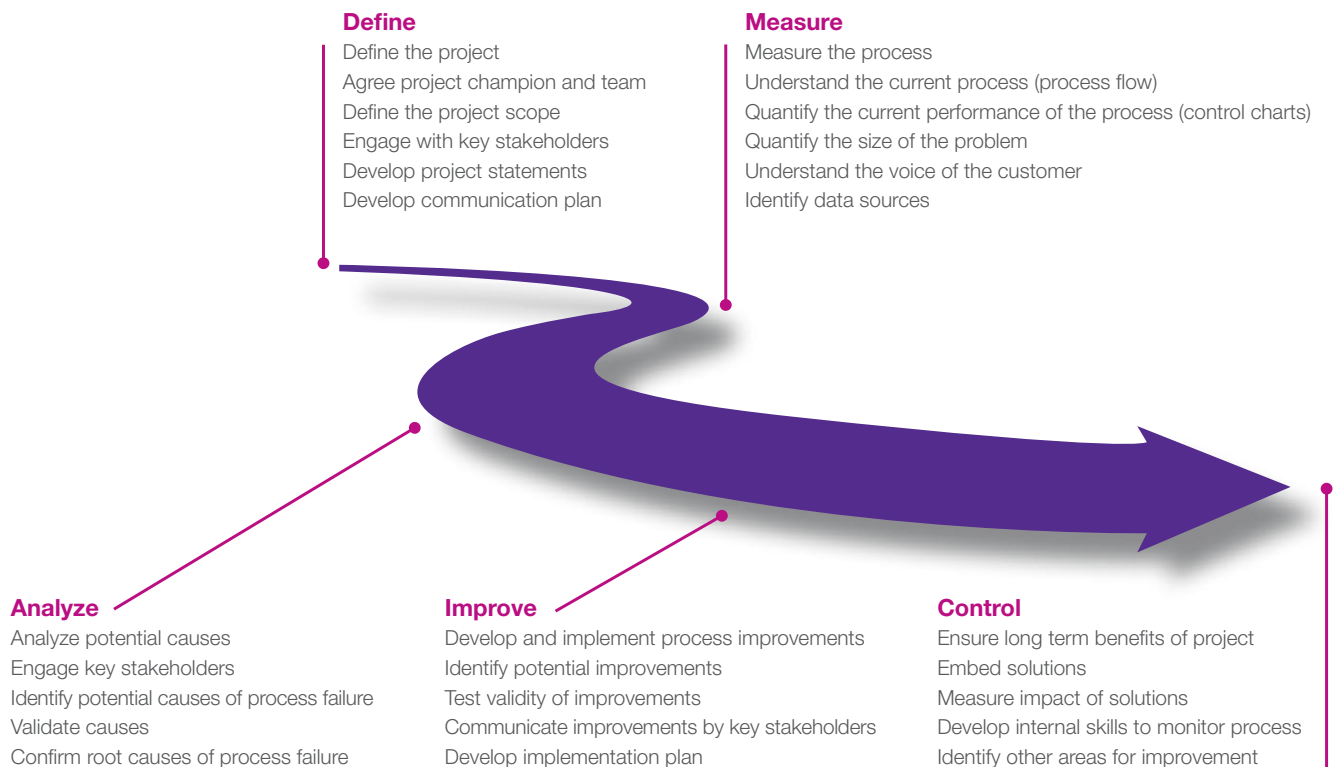
The key tools in the Lean Six Sigma process are designed to reduce variation in services and pathways with an aim to making the process more efficient

By using Lean Six Sigma and its tools and pathway modeling in service improvement projects in the NHS, we can support effectiveness strategies that are driven by the Quality, Innovation, Productivity and Prevention (QIPP) program. We can also help to minimize error and waste, leading to better outcomes for patients and improved working conditions and job satisfaction for healthcare professionals and other staff.

Meeting service redesign challenges with Lean Six Sigma tools

The key tools in the Lean Six Sigma process are designed to reduce variation in services and pathways with an aim to making the process more efficient, as well as making sure that patient and staff satisfaction is maintained or improved. These improvements could be throughout the patient journey of admission, diagnosis, treatment and discharge with an acute illness, or the care pathway through a single clinic visit with a chronic disease.

Figure 2 The DMAIC Framework



DMAIC

The DMAIC (define – measure – analyze – improve – control) framework, one of the Lean Six Sigma tools, makes sure that the steps towards project delivery and outcomes are structured, effective and efficient, and involve all the relevant stakeholders, including patients, doctors, nurses, other healthcare professionals, and other NHS staff.

Table 1 The use of the DMAIC's stepwise approach to project management

Application	Opportunity
Where there is a low tolerance for variation	Understanding tolerance to variation and reducing it is at the center of Lean Six Sigma thinking
Where variation in services affects patient safety or care pathway efficiency	Applying Lean Six Sigma tools can support safe and efficient services
Where cost pressures are high	Applying Lean Six Sigma tools can help with cost-effectiveness, and may even lead to cost savings
Where change is being resisted	All relevant stakeholders, including any with opposing viewpoints, can become involved in exploring issues and developing solutions
Following unsuccessful implementation of previous solutions	Previous issues are fully explored before developing a new and more successful solution
Where there are multiple potential errors (defects) in a process	Decisions are based on fact rather than supposition
Where change will require significant investment	Solutions can be tested and validated before implementation
When change is complex	Stepwise approach supports effective change management



System dynamics modeling

System dynamics modeling (SDM), another Lean Six Sigma tool, can be used to support DMAIC project delivery and implementation of solutions. SDM models treatment pathways, processes and patient flow to highlight errors and variation, and provide realistic and robust predictions of the impact of any changes. This allows pathway changes to be tested virtually before money, time and resources are invested into any changes.

Working collaboratively: The practical steps

Lean Six Sigma is a collaborative process, and Quintiles uses Kaizen events to bring all the stakeholders together. This allows the people who are most involved in the pathways and services to map out processes, obstacles, challenges and potential improvement points. The Quintiles team can then create a practical solution tailored to the stakeholders and the environment, which can be tested and validated before implementation. This ensures input from the people who have the best grasp of the existing process, and improves the levels of buy-in from all stakeholders. Presentation of data collected before and after the modeling and pathway redesign helps to support a change program.

Tools and capabilities

We believe in using the right tools for service improvement projects and pathway modeling, and these include Lean Six Sigma, PRINCE 2™, 5S and Kaizen experience and expertise, led by trained and accredited staff with both NHS and biopharma backgrounds.



About Quintiles

Quintiles (NYSE: Q) helps biopharma and other healthcare companies improve their probability of success by connecting insights from our deep scientific, therapeutic and analytics expertise with superior delivery for better outcomes. From advisory through operations, Quintiles is the world's largest provider of product development and integrated healthcare services, including commercial and observational solutions. Conducting operations in approximately 100 countries, Quintiles is a member of the FORTUNE 500 and has been named to FORTUNE's list of the "World's Most Admired Companies." To learn more, visit www.quintiles.com.

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