

## University Medical Center Groningen & Amsterdam Business School

### Making it better

In 2007 the University Medical Centre Groningen (UMCG) knew it had problems that were beyond its control – the growing demands of an ageing population, fewer nurses, increasing costs of medical materials, and financial cuts made by the Dutch government.

In spite of these difficulties UMCG was determined to maintain and improve service delivery to patients, academia and research. To do this, it collaborated with The Institute for Business and Industrial Statistics of the University of Amsterdam (IBIS UvA) – part of the Amsterdam Business School (ABS). The idea was to train staff in the implementation of the Lean Six Sigma (LSS) process – something IBIS had been doing for more than 20 years – in industry and in healthcare.

UMCG is the second largest hospital in the Netherlands – the only centre licensed to perform all categories of transplants and the only Level I trauma centre in the northern Netherlands. In addition to patient care and medical education, UMCG undertakes scientific research focused on healthy and active ageing. However, hospitals in the Netherlands are facing financial pressures since they can no longer turn to the government or insurance companies for extra money to cover financial losses.

Laura de Jong was appointed as HR director in 2005. She already had considerable commercial experience of process improvement and for the next two years - together with CFO Henk Snapper – she compiled a business case showing how the challenges of operating more effectively and achieving cost-efficient service delivery were limiting UMCG's ability to achieve its mission.

By 2007 the UMCG Board was convinced that improving operational effectiveness could help them to build:

- competence in healthcare delivery
- continuous improvement and innovation
- superior patient satisfaction
- cost advantages

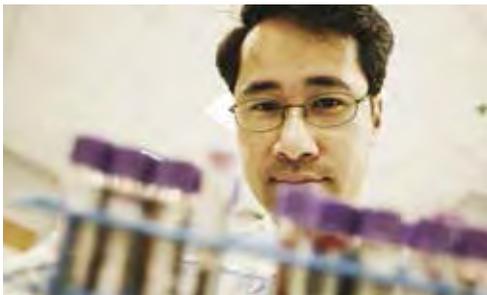


LSS is a scientific, evidence-based method for improving operational effectiveness. Though traditionally used in industry – LSS complemented UMCG's existing operational approach and also provided an opportunity for employee learning and development.

The collaboration committed IBIS UvA to training and implementing LSS for two years. The aim was for UMCG to start to take ownership of the initiative in 2008 to ensure that this approach was sustainable.

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UMCG decided to train staff in the implementation of the Lean Six Sigma (LSS) process – something IBIS had been doing for more than 20 years – in industry and in healthcare



In the Netherlands, like many developed countries, an ageing population means a growing demand for healthcare. With fewer nurses available it was essential for UMCG to optimise the use of nursing resources by looking at how processes and procedures could be improved without affecting patient care.

If you can improve the quality of care by re-evaluating procedures and cutting out unnecessary activities, this is also likely to reduce costs. For example, the trauma clinic had no procedural guidelines for three-quarters of the diagnostic tests they used – but diagnosis accounted for almost half of total patient costs.

Length of hospitalisation can be used as an indicator of quality of care. It is also a measure of financial cost and process efficiency. Achieving a target of reducing length of hospital stay by one-fifth would allow UMCG to

- increase admissions
- increase bed occupation
- reduce the number of beds

UMCG believed that LSS could be used as a patient-oriented approach to achieve significant positive change. This methodology could be applied in every department to deliver evidence-based improvement.

To do this, LSS had to become part of day-to-day operational practices and initiatives. So people with “grass-roots” knowledge of challenging areas were selected to undergo training as project leaders. Initially two kinds of LSS project leaders were trained, known as “black belts” (BBs) and “green belts” (GBs). Champions were appointed to coach and support project leaders or “Belts” throughout their projects.

It was important that these high-potential employees had enough process knowledge and enough time to lead the chosen projects. BB's spend most of their working hours on LSS. They lead large projects spanning several departments and lasting four to six months.



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Doctors, nurses and managers selected as GBs focused on more localised projects, usually lasting three to five months and concentrating on their own team's processes.

By 2014, UMCG was also recruiting large numbers of non-professionals – such as administrative carers or nutrition assistants – to improve their own work processes. They became known as Yellow or Orange belts.

Whatever the size of the project, every project leader applied a specific, five-phase LSS approach to the problem they were considering:

- Define measurements for the problem
- Measure the things that are critical to quality (CTQs)
- Analyse influences on the current process
- Improve – establish the effect of the influence factors and design improvements
- Control – improve process control before closing the project

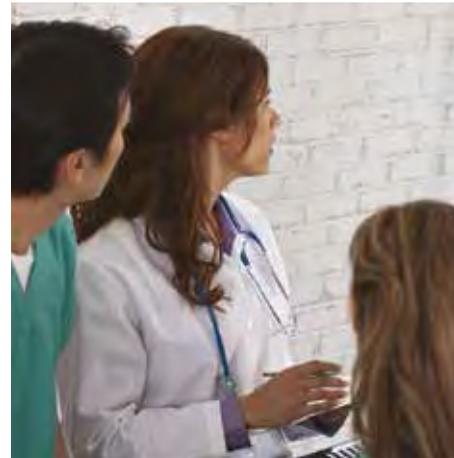
This Define, Measure, Analyse, Improve and Control (DMAIC) framework establishes appropriate metrics and measures progress at every stage, in order to make evidence-based improvements.

In 2008 an IBIS consultant held the role of Master Black Belt (MBB), responsible for training, support and guidance throughout the development process. The consultant undertook coaching of BB and GB teams as well as day-to-day administration. As more and more UMCG employees completed their training, ownership of LSS gradually moved in-house and in 2010 and 2013 two UMCG employees were promoted to MBB status.

Undertaking such a large programme is inevitably disruptive. Asking people to change what they do and how they do it can be very unsettling, making some individuals nervous and defensive. UMCG recognised this risk and worked hard to make sure everyone understood why LSS was being introduced and the results it was achieving.



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To do this they put a strong emphasis on communication:

- discussing projects in the monthly employee magazine Polsslag
- reviewing LSS programmes in e-newsletters for managers
- posting an overview of projects and general information on programmes on an LSS intranet
- having the "Belts" presenting an end review of their projects to the Board once or twice a year

The results were impressive. Since starting to use LSS, UMCG has made considerable gains – and significantly improved the patient experience. After implementing more than 200 projects and training over 600 employees, patient care has been enhanced through:

- faster diagnosis
- shorter hospitalisation
- significant improvements in medical administration

Not only this, but UMCG has achieved a financial saving of over €30 million in seven years.

The LSS initiative has been a positive experience for UMCG's employees, too. By 2014, 6% of employees had participated in this learning and development intervention. With large numbers of projects reporting visible operational improvements, employee satisfaction, empowerment and motivation have improved – all of which can be expected to boost staff retention.

Progress has not always been smooth over the last seven years – there was a pause when the original MBB left and numbers trained became static. After his return there was a renewed commitment to LSS, with two more MBBs created and a management decision to train a large number of non-professional staff as orange and yellow belts.

The steady accumulation of smaller projects is a key element in maintaining momentum, enhancing day-to-day operations and achieving further cost savings. Lasting success also depends on continuing to train enough "Belts" at each level to sustain the initiative when employees leave.

In implementing LSS, UMCG has benefited from the experience of its partner, IBIS UvA, and its standing as a Centre of Expertise and an integral part of the Department of Operations Management of Amsterdam Business School (ABS).

At the outset, ABS promised the Board that the organisation would, within three years, be using this method independently to pursue their aim of operational excellence. Not only has the joint learning and development project achieved this aim but UMCG has goals in place as far ahead as 2016, when it expects to have LSS fully embedded as an integral part of the hospital's culture, structure and procedures.

UMCG's mission statement is ambitious: in building the future of health, this organisation aspires to excel as well as innovate. And crucially, it points out that "every day offers an opportunity to show that we could be even better".

**gf**

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