Background

National Health Service (NHS) Lanarkshire is one of the fourteen health boards of NHS Scotland. It serves a population of over 553,000 people in North and South Lanarkshire. NHS Lanarkshire employs approximately 12,000 staff.

This engagement was focused in Wishaw General hospital which is one of the three district general hospitals in NHS Lanarkshire. Wishaw general is a PFI (Private Finance Initiative) hospital which was opened in 2001 and has 515 in-patient beds and operates 11 surgical theatres.

Initial situation

NHS Lanarkshire wanted to improve orthopedic theatre utilization and throughput to support the achievement of the national waiting times targets and to reduce reliance on outsourced surgical capacity.

Project objectives

To deliver a 10% increase in elective orthopedic capacity.

What we found

Following initial training, an extensive data gathering and review exercise was undertaken. This included patient and staff interviews, patient journey observations and IT data analysis. This analysis was used to inform a 2-day patient journey mapping event called Value Stream Mapping or VSM. The VSM involved staff from all sections of the patient journey and from all staff groups including surgeons, anaesthetists, nurses, managers and support workers.
Opportunities to improve the patient journey were distilled and prioritised from the VSM. These formed the basis of the improvements trialled and implemented during the Kaizen event itself.

Using this approach the team identified that the low theatre list utilization was driven primarily by late starts, extended changeover times and under planning of the theatre lists.

**Solutions proposed**

Substantial improvements to the patient journey were made during the Kaizen week. These improvements not only addressed the key throughput and utilization goals but also impacted key issues highlighted by the patients themselves such as the waiting times experienced between admission and their procedures starting.

The changes also provided increased clarity on staff roles and responsibilities and began to change the overall improvement culture of the organization.

### Results

<table>
<thead>
<tr>
<th>Metric</th>
<th>Pre-kaizen</th>
<th>Post-kaizen</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of cases per day</td>
<td>3.8</td>
<td>4.2</td>
<td>10.5%</td>
</tr>
<tr>
<td>Median first case in anaesthetic</td>
<td>9:10</td>
<td>8:57</td>
<td>13 minutes per day</td>
</tr>
<tr>
<td>Median change over time</td>
<td>45</td>
<td>35</td>
<td>22%</td>
</tr>
<tr>
<td>Pre-procedure waiting time</td>
<td>3hrs 39 mins</td>
<td>~ 2 hrs</td>
<td>45%</td>
</tr>
</tbody>
</table>

For additional information:  
Email: PerformanceSolutions@ge.com 
Web: www.gehealthcare.com/euen/services/performance-solutions