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Improving the diagnostic stage of the suspected colorectal cancer pathway: A quality improvement project

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ABSTRACT

We aimed to improve the lead-time and the patient experience of the diagnostic stage of the suspected colorectal cancer pathway.

This project worked within the constraints of limited resources and an austere environment. The core team included a project manager trained in quality improvement methodologies. Senior and Fleming's planned change model was used as the overall framework.

Baseline data supported the case for change and highlighted targets for improvement. A stakeholder workshop employed social movement theory, lean thinking, experience-based design and patient stories to engage influential leaders and secure support and commitment.

Solutions that arose from the workshop were then researched. A "Genchi Genbutsu" ethos took the team to Northumbria to learn about another unit's pathway innovations. Subsequently, our new pathway employed solutions aimed at increasing the proportion of patients who went straight-to-test. Consensus on the design was achieved using Schein's process consultation theory.

Implementation of the new pathway resulted in a significant reduction in the median time from referral to endoscopy from 26 days to 14 days ($P < 0.001$), and a significant increase in the proportion going straight-to-test from 6% to 43%. Changes to improve patient experience were also implemented, however data to evidence this has not yet been collected. Going forward, further standardisation is required and issues around sustainability need to be tackled.

This project exemplified, amongst others, the value of working from data from the beginning and a comprehensive early stakeholder engagement.

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1. Background

Patients referred with suspected colorectal cancer account for the majority of our unit's caseload. In October 2011, we noticed that resources were being stretched due to a steady increase in referrals. Furthermore, changes in the local cancer network posed a strategic risk to the unit. Therefore to address these emerging issues of sustainability and strategic validity, a quality improvement project was initiated to improve the performance of this pathway to achieve "more with the same" – more efficiency and better patient experience with the same resources.

2. Organisational context

Our hospital is a medium sized general hospital situated in inner London, UK and serves a population of approximately 500,000 people. It is one of the most ethnically diverse populations in the country. The catchment includes some of the most deprived and most affluent areas of the country and there is a high turnover of people moving in and out. The hospital prides itself in providing high quality local services for the local population, despite the strategic threats from two neighbouring large National Health Service (NHS) Trusts.

The hospital recently merged with local community services to form an integrated care organisation. This provided potential opportunities to develop more effective pathways integrated with community care, but it also posed the challenge of needing to implement radical organisational changes and find efficiency savings to keep the new organisation viable.

The wider healthcare context was austere. NHS funding had

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been flat in real terms since the global economic crisis hit in 2010 [1]. The NHS was also one year into its Quality, Innovation, Productivity and Prevention programme – a government initiative to create £20 billion of efficiency savings to pay for the rising cost of healthcare [2].

The regional cancer services were organised into a local network covering North Central London. Our colorectal unit within the hospital at the time was led by three surgeons. It was a secondary care centre and the predominant workload was assessing and treating patients with suspected bowel cancer. Services in-house included CT and MRI scanning, interventional endoscopy and laparoscopic surgery. Oncological treatment was provided as an outreach service from a nearby tertiary care centre within the network.

The structure of cancer services was set to change in 2012 to form a much larger London integrated cancer system [3]. This posed a perceived strategic risk to our relatively small unit. It was envisaged that the smaller or poorer performing units within this larger network would be more vulnerable to rationalisation into the neighbouring services. This trend had previously occurred in upper gastrointestinal cancer services.

Waiting times for patients referred with suspected cancer are subject to national targets [4]. Patients must be seen by a specialist within 14 days of referral, treated or discharged within 62 days of referral to the specialist and treated within 31 days from the decision-to-treat. The unit was already meeting these targets, so current access to care was not of concern. However as referral rates were on an upward trajectory and resources were constrained, there was a need to improve just to maintain our performance. But to secure our future within the new integrated cancer system, it was clear that we would need to perform well within these targets.

3. Personal context

The initial impetus for this quality improvement project came from the colorectal department's lead consultant surgeon. His seniority and clinical background gave validity to the project, and his subsequent role was as the main champion. Project management came from a trainee surgeon whose clinical credentials also facilitated his leadership role. Around these two key individuals coalesced further staff members to form a small but effective team: the other two consultant surgeons, the colorectal nurse specialist, a final year medical student, and later on, two trainee surgeons. This core team co-ordinated the week-to-week decisions for the project. Regular input was provided by the wider team members in key areas of the pathway, including the department manager, the cancer pathway manager, the endoscopy lead clinician and manager, the radiology lead clinician and manager and the senior informatics analyst.

Senior and Fleming's planned change model was the overall framework used for the project [5]. It appeared to be the common framework used throughout the organisation for change and its stages were familiar to the team members. The model includes eight stages: (1) situation summary, (2) identify objectives and constraints, (3) identify performance and measures, (4) generate options, (5) edit options and detail selected options, (6) evaluate options and measures, (7) develop implementation strategies, and (8) carry out the planned changes. Although presented in a list, it is accepted that change usually occurs in a non-linear fashion.

Several improvement methodologies were employed during this project. The motivation for their choice came from the trainee surgeon, who had been seconded to the hospital to engage full-time in quality improvement work as part of an NHS-funded initiative, the Darzi Fellowship in Clinical Leadership. This

programme sought to foster the next generation of clinical leaders through an intensive year of vocational executive-level training coupled with four week-long experiential training modules and formative assessment. Many of the techniques used were first introduced in these training modules.

Reasons for why each methodology was chosen are discussed, however an overarching consideration was that whatever methodology was chosen, the project manager and the rest of the core team had to be comfortable with it. In other words, sometimes the best way to do things was the way that felt "right" to us all, and to the organisation.

4. Problems

Researching the problems took three months. The project commenced with a scrutiny of the current pathway by the core team members. There was a shared perception that the initial assessment, diagnosis and treatment planning stage of the pathway contained the greatest inefficiencies and patient experience problems. Data from the hospital systems showed that out of 484 annual suspected colorectal cancer referrals, only 34(7%) ended up with a diagnosis of cancer, the implication being that only a small minority of patients progressed to the treatment planning stage of the pathway. Inefficiencies in the diagnostic stage of the pathway impacted upon the time left to plan and commence cancer treatment. The team members had anecdotes of cases that had taken 60 days to reach a decision to treat, and therefore, in order to remain within the national waiting times targets, had only 2 days to start oncological or surgical treatment.

4.1. Aim

Considering the above, the core team quickly reached a decision on the overall aim of the project: to improve the lead time and patient experience of the diagnostic stage of the suspected colorectal cancer pathway.

4.2. Baseline data

The hospital systems were interrogated by the informatics team to provide basic data on the pathway. The median time from referral to decision-to-treat was 29 days (interquartile range, IQR 16–44). The majority of patients (87%) were first seen in the out-patient clinic. The remainder proceeded straight-to-test for either colonoscopy (11%) or flexible sigmoidoscopy (2%).

4.3. Value stream mapping

The pathway processes (current state) were then value stream mapped. This established lean methodology is a powerful tool used by Toyota to accurately depict current and future, or "ideal" states. It was chosen for its ability to assist in optimising flow, eliminating waste and increasing value. To help in its execution, we used Rother and Shook's excellent how-to manual, Learning to See [6]. This revealed that the majority of referrals were triaged into an urgent clinic appointment (if the patient was judged to be fit to proceed straight-to-test, the nurse specialist screened the patient by telephone). From the clinic, the patient proceeded to endoscopy, before returning to another clinic appointment to discuss the results. As most of the patients received a benign diagnosis, they were then treated and discharged. For those with a cancer diagnosis, secondary imaging was then arranged before the case was discussed in a weekly multidisciplinary team (MDT) meeting. Following this, the patient was seen again in clinic to discuss the results and the treatment options.

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