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Re-engineering day surgery

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Abstract

Re-engineering in day surgery to some may not seem necessary due to it relatively recent evolution. However, this is an important and rapidly changing area with a high level of patient activity, therefore, benefits can be gained by a large volume of patients. Re-engineering has been made possible at the West Middlesex University Hospital Trust through project funding gained from the European Commission. The project was entitled Technology to support Business Process Re-engineering (TBP) across Elective Surgery. We began with day surgery and the focus was to dismantle traditional thinking and establish a route for evolutionary change. This has resulted in breaking down the barriers between different hospital professions to allow the most effective and technologically advanced care.

Keywords: Day surgery; Re-engineering; IT; Change; Assessment protocol

1. The project

In 1995, the West Middlesex University Hospital NHS Trust (WMUH) combined with Irish Medical Systems and Adams Training and Advisory Business Process Re-engineering (BPR) Consultancy, successfully acquired a European Community ESPRIT project. The project, named COBRA, established funding to assist in the redesign of the Elective Surgery process, enabled and facilitated by Information Technology to support clinical practice.

The project objectives were:

- Reorganise the way the hospital conducts its business
- Treat more patients (60% more) on a day case basis over the next 3 years
- Provide a much more efficient and effective service to the patient
- Better support to the needs of health care professionals

WMUH considers its approach during the project to be unique by not separating the work of BPR from the advantages that modern and rapidly changing technology can offer. Therefore, the clinical process designs were broader in their thinking and more revolutionary in their approach.

The COBRA project is still ongoing throughout the elective surgery directorate. However, this paper concentrates on the changes initiated in day surgery and specifically the pre-operative assessment process.

2. Our unit

The day surgery unit (DSU) within the hospital is a free-standing building, comprising two general anaesthetic theatres, a local anaesthetic theatre and a 22-bedded ward. It is a busy unit that supports a local population of approximately 300000 with an annual throughput in excess of 7000 cases. The unit is relatively new, built in 1989 but designed around day surgery requirements at the time.

The opportunity to engage in a re-engineering project, supported by new computer technology integrating

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administrative and clinical work, was a daunting thought to many staff and instantly created a resistance to change. This resistance was further exacerbated as limitations in the unit's design and workflow were identified as already physically restrictive, despite an eight-bed extension built in 1992.

3. Change

From the outset of the project a core group of senior and junior staff was established as the process design team. This group was facilitated by re-engineering and technology experts who together with the hospital staff developed the overall process and principles for the new elective surgery design. As part of this design day surgery figured as a key area to start the change process and evaluate the benefits and efficiencies that had been set out as the project's goals.

The new process arising from the BPR investigations highlighted the requirement for organisational change, therefore, consideration to implementation was given paramount importance. In the DSU the need for involvement and co-operation was necessary for optimal success. The change process had to be understood and adopted by staff. A 'bottom up' approach was utilised, as it is recommended within the re-engineering profession as the only way to successful change [1].

Through this approach, a COBRA Champion from within the unit was needed to promote it's success. Heather Corlett was appointed, she explained: 'I was working as a part of the day surgery nursing team and was appointed to the COBRA project team in January 1997, I found this to be a very exciting post. The opportunity to redesign the way you work and question everything you do with why? is a great challenge. Not everybody had the same enthusiasm and it has been far from plain sailing, but, the results that are starting to emerge are more than worthwhile'.

4. Old assessment process: much repetition, little rationale

Day surgery staff began this 'bottom up' approach by analysing the nursing assessment process. The assessment consisted of 14 questions with limited available responses of yes, no and remarks. There was little uniformity within the nursing staff when exploring the response from patients. The question: Have you ever had a GA before? could simply be answered with only yes. This minimal investigation resulted in the anaesthetist having to carry out an additional assessment, repeating the ground already covered by the nurse and then going into greater depth as needed all resulting in areas of duplication. For example: Have you ever had an anaesthetic before; did you have any problems with the anaesthetic; have any of your blood relatives had a reaction to anaesthetic. Another example of our duplication was the documentation of patients vital signs. Vital signs were not only entered onto the nursing document but, also on to the separate anaesthetic chart. Any result out of normal ranges would then have to be copied onto the ward theatre list and brought to the anaesthetist's attention on arrival to the unit,

These processes were obvious accidents of history and could be improved by re-engineering. Some of the guiding principles of the COBRA project are that information is only captured at the point of contact with patient, repetition is reduced and resources are optimised.

5. New assessment: challenging tradition

With these COBRA principles in mind the assessment process was reviewed. Instead of relying on our 'accidents of history' we asked the fundamental process re-engineering question: 'if we were doing this today for the first time, would we really organise the work this way? The answer, inevitably, is no' [2].

The main function of the assessment is to gather information from the patient. The nursing staff run the day surgery unit and there appeared to be great potential for further utilising their skills, including assessment. It was recognised that the information collected by the nursing staff needed to be standardised and this was agreed by the anaesthetic staff. Through discussion with the anaesthetic department it was agreed that the nursing assessment should become more detailed with structured questions to enforce uniformity and reduce repetition by anaesthetists. A protocol was devised through joint working and has enhanced the day surgery nurses' role in assessment. Information gathered by the nursing staff can be referred to and acted upon, not approached in a circumspect manner, repeated, and at worst ignored.

An anaesthetic protocol, created by a consultant anaesthetist for GP's direct booking into day surgery (also part of the COBRA project), was used as a guideline for the day surgery assessment protocol. This was further developed by the anaesthetic and nursing staff to promote ownership of the assessment process, and reduce the growing resistance to the anticipated change. The importance of recognising barriers to change has been identified, as has the importance of negotiating with all key people affected by the change [3].

This type of model for managing change has been used throughout the changes in day surgery promoting high levels of communication. A COBRA notice board within the unit keeps staff informed and provides an

opportunity for feedback. Regular updating memos are sent out to reception, nursing, Operating Department Practitioner, anaesthetic and surgical staff informing them of meetings giving examples of new paperwork and requesting personal opinions. This together with articles in 'Finger on the Pulse' our hospital paper, has created a cascading communication link to other departments such as district nurses, out patients and clinical coding. Communication is paramount to the success of any change and even with this careful planning we did still experience some resistance.

After much negotiation with members of the multidisciplinary team we have created a detailed assessment with uniform, structured questions creating a protocol. The information gathered by the nursing staff is therefore a thorough, credible, consistent and detailed anaesthetic assessment. It is currently 'in paper form' to allow teething problems to be ironed out prior to the system going 'live'.

6. IT supporting clinical work

After implementation of the computer system this autumn, the software will support the clinical work by reducing repetition—the nurse will enter the patient's vital signs into the system only once and the information will be transported to all the appropriate places. After weight and height have been entered the patient's body mass index (BMI) is automatically calculated by the system. The weight or BMI will also appear at appropriate points, on screen, with no extra work for the nursing staff.

The anaesthetic staff will be presented with an exception report for each of their patients from the information collected by the nurse. This report will include information routinely requested, such as last oral intake, as well as any details that are an exception to that patient such as allergies, dental considerations and anxiety levels. This provides the anaesthetist with a preview of each patient on which to base their assessment, and also highlights areas of concern. The nurse has, in effect, provided baseline clinical details with which the anaesthetist can continue. Initially this concept was not well accepted due to the removal of traditional boundaries, but the benefits that were realised (see Table 1) can not be denied, and these protests have begun to subside.

7. Reduced repetition but improved information collection

The new detailed assessment consists of 27 questions. It is more thorough as extra questions have been incorporated and responses are acted upon, prompting staff to carry out appropriate investigations. This more detailed assessment does consume extra time. However, time is actually saved overall through reduction of repetition, not only within the nursing profession, but, also for the anaesthetists.

The first steps towards nurse substitution within anaesthetists assessment have occurred. This substitution is 'a driver behind the development of cost effective care' [4], allowing nurses to develop into roles traditionally carried out by doctors. Such development must be supported by appropriate training as 'education is the key to the development of excellence in nursing practice' [5]. The Trust has recognised this and an in-house training strategy has begun to tackle these issues.

8. Patient's preference

It is not only the content of the assessment that has been re-engineered: we also questioned our method. The assessment was previously carried out at the bedside with the patient changed into a hospital gown and without their escort present. This method allowed many interruptions and privacy could be compromised as only curtains separated one bed from another. Moreover' the patient could be surrounded by a noisy and restless atmosphere while awaiting surgery.

Table 1
Benefits realisation

To the patient
Retain their identity
Promote privacy
Streamlined service
Reduction in question repetition
To DSU nursing staff
Greater autonomy
Increased clinical skills
Increased IT skills
Improved job satisfaction
Reduced task repetition
To DSU medical staff
Improved information on which to base clinical decision-making
Increased IT skills
Appropriate information at appropriate points
To the organisation
Efficient streamlined service
Improved quality
Enthusiastic and stable workforce
Financial gain through
Reduced recruitment
Substitution of tasks
Saving time

As part of the COBRA pilot half of our patients are currently being assessed in a separate room, In their own clothes and with their escort present if required. Interruptions are now to a minimum, and privacy is optimal. This method of assessment also allows the nurse to check home details and confirm aftercare needs with the escort. Preliminary results from a patient survey indicate that the patients prefer to remain in their own clothes and have their escorts present for as long as possible. The next step to this change would be staggered admission times, a horrific thought to some clinical staff but a welcome to patients and quality monitors.

9. Re-engineering and staff recruitment

Re-engineering has allowed us to review exactly what we do, why we do it and who does it. Research has been reviewed at each step to promote best practice. Traditional practice has been questioned, patient information details have been updated and patients views monitored. There are economic benefits to such innovation including staff recruitment and retention: innovative and progressive organisations attract and retain the best staff [6]. This would be of help to our unit which has experienced some local difficulties in recruiting staff.

10. The future

The re-engineering process has worked as a catalyst throughout the whole of day surgery activity. We are continuing to create a specialist day surgery nurse role and erase some of the boundaries between medical colleagues and end the view that nurses are a 'relatively unskilled subordinate group of doctors' helpers [7]. This promotes efficient use of resources, provides nurse development opportunities and compensates for the reduction in doctors' hours.

11. Conclusion

After several months of the COBRA re-engineering project affecting clinical practice, we are now beginning to see the fruits of our labour. The process is ongoing, and many areas have still to undergo change. Resistance to is still present, however, through quality communication a common ground is usually found.

Our re-engineering project has also identified numerous areas for review. These include the update of information leaflets to the unquestionable need for a pre-assessment service. Re-engineering has allowed us to promote an efficient and cost effective service, maximise our resources and enhanced the quality of patient care within known best practice.

Many people may view day surgery as a new development not needing re-engineering. The recent explosive increase in day surgery activity due to economic constraints and medical, technical and anaesthetic developments mean that while our workload and case type have changed, some of our practices have not. Re-engineering projects in health allow us to ensure that our working practice is up to date, appropriate and focused on patient care. With appropriate and well designed IT systems to support re-engineering, day surgery can confidently move into the 21st Century.

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