NHS
Surgical Ambulatory Emergency Care Network

Northern Health and Social Care Trust

Antrim Area Hospital

Reducing inefficiencies within the system, improving patient safety, making the experience better for both patients and staff, bringing about lasting change.

www.ambulatoryemergencycare.org.uk

Introduction

Antrim Area Hospital is one of two acute hospitals within the Northern Health and Social Care Trust in Northern Ireland. It covers a population of around 500,000, including North Belfast, and provides emergency and elective, breast, colorectal and general surgery, as well as ENT, and obstetrics and gynaecology.

Much was needed to improve emergency surgical care in Antrim. Surgeons were carrying out long safari rounds on both wards and in A&E, which were inefficient and compromising patient safety. Breast surgeons with high elective workload relative to other trusts remained on the emergency surgical rota. Staff were feeling burnt out from combining this system with multi-site working.

The system, which had been in place for around 10 years, was dogged with problems and inefficiencies which made it difficult to get patients discharged quickly. Baseline measures showed an average length of stay of over five days. Frequently patients were seen later than preferable and thus operated on late. This increased the risk of complications with resultant high length of stay.

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Joining the Surgical Ambulatory Emergency Care Network

The surgical team identified the need for change and were given the opportunity to present the problems and a considered plan to the Trust's senior management team. Directed by the then Deputy Chief Executive Jennifer Welsh, the Trust began laying the foundation work for major change through its reform and modernisation programme (RAMP) in early 2019. The Director of Service Mrs Margaret O'Hagan later gave the green light to join the Surgical Ambulatory Emergency Care (AEC) Network and Antrim became part of Cohort Five. The aim was to reduce inefficiencies within the system, to improve patient safety, make the experience better for patients and staff alike and bring about lasting change.

Consultant colorectal and general surgeon, Barry McAree became emergency surgical lead for the improvement work. He had worked as a registrar at Craigavon Hospital under Susan Yoong, who pioneered surgical AEC in Northern Ireland, and had been part of the creation of an Ambulatory Clinic back in 2016. He also trained alongside Arin Saha, national Clinical Lead for the Surgical AEC Network and was aware from the Network and time spent working in Bradford Royal Infirmary (another Surgical AEC Network member), of the potential impact that an ambulatory model of surgical care could have.

Barry said "We knew that our new system for emergency surgical care would include a bay of trolleys to be used as surgical assessment, preferably within our own surgical footprint rather than in A&E, as recommended by the Network. This hot-clinic facility was next door to enable sharing of the same staff. This ambulatory/hot-clinic facility would allow patients to be directed there versus an unnecessary in-patient admission and would also facilitate expedited discharge from the ward with review either in the hot-clinic or via the assessment bay. One of the major things we needed from the Network was help and direction on how to set up this type of ambulatory care facility and to maximise the potential for same day emergency care."

Replacing an outdated system

The old 24-hour on call system was beset with problems and inefficiencies. Barry explained that “Back in January 2019, a typical daily surgical take was 17 patients, 10 of whom were ideal for ambulatory care. We were seeing patients with gallbladder problems on a revolving door basis and had no facility to treat them, which was worrying for those with gallstone pancreatitis who were less likely to get surgery according to guidelines.

We had a single consultant who acted as surgeon of the day, often with no other consultants available due to the challenges of multi-site working across several trust facilities. The post-take handover nominally took place at midday. However, the outgoing consultant was rarely available to do this face-to-face. The incoming consultant was often required to perform or supervise emergency operations during the afternoon for patients who had been seen in the morning by a different consultant. Ward rounds were lengthy, and excessive amounts of time were spent looking for patients in A&E followed by a search for a place to examine them. There was no facility to carry out surgical assessments and no ambulatory/hot clinic system to reduce the take numbers.”

Some improvement work completed

Some improvements had been made under the hospital’s general surgical RAMP improvement project. However, there was more that needed to be done. Barry said “Under RAMP, the handover time was changed from midday to 5pm which meant that the surgeon of the day was the one who operated on patients seen during the post-take ward round. However, there was a tendency for patients who were borderline for surgery to be passed on to the next day’s surgeon, who due to the nature of daily consultant handovers would find it difficult to assess any change in their condition, deterioration or otherwise.”

Aims of the Emergency Surgical Unit project

The primary aims of the improvement work were to reduce inefficiencies and improve patient safety and experience by creating a new Emergency Surgical Unit (EmSU) in Antrim. The team were recommended by the Surgical AEC Network to have specific, measurable aims. They chose:

1. Increase the zero length of stay; and
2. Increase the number of semi-emergency gallbladder surgery procedures.

The team believed that a spin-off from improving emergency care would be better elective efficiency and waiting times. They also believed that team-working would be improved by making changes to the old, outdated system.

What they did

Antrim began its improvement work with the Surgical AEC Network in November 2019. However, the impact of COVID-19 increased the urgency for efficiency improvements, which meant that changes that were scheduled to be implemented in May 2020 were brought forward to March.

These changes were:

1 **Opening a new surgical assessment/Emergency Surgical Unit**: The hospital opened the new Emergency Surgical Unit (EmSU) in March 2020 to allow direct access for patients sent from the GP (initially planned for 2021) to reduce footfall in A&E.

The Unit is a receiving assessment bay of six trolleys (formerly a ward bay of six beds) at the main corridor end of one of two wards which run off the same side corridor. The EmSU has a small attached combined reception and waiting area - the impact of COVID-19 has reduced waiting area capacity to just a few patients so there is overspill onto the corridor. All patients are assessed in the EmSU unless they have infection control issues that require a side-room elsewhere (usually A&E) or where the patient is in the resuscitation area of A&E and too unstable to move elsewhere.

The Unit is staffed by a surgical registrar who holds the single point of access phone during day-time hours (an FY2/CT doctor holds this phone out-of-hours). There is also an FY2/CT doctor and a FY1 (the latter often has additional duties on the adjoining surgical ward). This fixed team are available 24/7 day with the EmSU registrar covering a 24 hour on-call, encouraging them to ensure all patients referred are assessed and sorted expediently. Dedicated EmSU nursing

staff are vital to the running of the unit 24/7 with admin staff present during weekdays, day-time hours while the nurses perform the admin roles out of hours including at the weekend. The EmSU is open 24/7 with a higher staffing level during weekday daylight hours as the majority of work can be concentrated during these times due to an electronic booking system for both hot-clinic patients usually as new referrals or for EmSU assessment usually for patients who have had expedited discharge e.g. for the removal of drains etc.

Early facilitated or expedited discharge means that (if it is safe to do so), patients can be sent home earlier than pre-EmSU due to the ability to bring them back for a range of reasons such as repeat clinical assessment, drain removal, or blood tests and scans, via hot-clinic appointments. Expedited discharge is also used where patients are awaiting an ERCP. With this happening usually only on two fixed days per week, the necessity for in-patient stay for most of these patients can be removed.

2 **Single point of access mobile phone:** The unit has a single point of access mobile phone which is held by the registrar during day-time hours, weekdays and by the FY2/CT doctor out of hours. It receives calls from GPs as well as in-hospital referrals. All calls are logged including caller details, patient demographics and ultimate patient destination and diagnosis. A quick summary of plan is recorded on the spreadsheet, which can be seen by the hot-clinic consultant. It is also included in in the patient's electronic record.

An alternative, directly accessible EmSU land-line telephone number is provided to elective and emergency patients upon discharge so that those with post-operative complications or any other concerns have a point of contact. After an emergency stay the limitation of use of this line is recommended to be three days and post elective surgery is 30 days but these stipulations are used flexibly. These calls are often initially fielded by admin staff and if clinical advice is necessary these calls are directed to nursing or surgical staff as appropriate.

3 **Implemented Surgeon of the Week - one team for male and one for female patients:** The pre-planned surgical staffing model for the new system had been based upon a single surgeon of the week/part-week with aligned team i.e. Cons, Reg, FY2/CT with two FY1s. Due to the pandemic related down-turn in elective activity, the team were afforded the opportunity to try multiple different systems being conscious of infection control issues and trying to reduce ward footfall. They used PDSA cycles (plan, do, study, act) to determine the best staffing structure. After many weeks of testing and refining, the team settled on a two-surgeon model being a surgeon of the week and surgical team for females and a separate surgeon of the week and surgical team for male patients. This means that all patients are seen by a consultant each day ideally starting their post-take ward round in EmSU with the newest, including un-clerked patients being seen first, followed by post-take patients and lastly longer stay patients. This desired order of morning ward rounds has been thwarted somewhat by infection control policies need to reduce patient bed movement hence post-take and longer stay patients have been more mixed than initially planned. Each consultant surgeon of the week is accompanied by a registrar, FY2/CT doctor and one or two FY1 doctors on their ward round. The male/female split allows for a more even distribution of workload and more timely ward round completion. Moreover, it

is a simple system that allows all staff to know which team are looking after a given patient. The surgeon of the week consultants drop into the EmSU as the day progresses to aid the work of this separate team helping throughput from EmSU. At weekends there has been an increasing tendency for two consultants to split the weekend versus a single consultant weekend. This allows more in-depth yet expeditious weekend ward-rounds and a more rested consultant workforce at weekends to enable safer operating. This is a growing bonus of a new system that is catching on but will only be generalizable with more consultants working on the rota.

4 **Introduced consultant led ambulatory hot-clinics:** Hot-clinics operate in an adapted office including an examination couch directly beside the EmSU five days a week between 9.30am and 12.30pm. Clinic slots are only bookable via a computer system which is available Trust-wide thus preventing double booking and enabling co-ordination with fixed time radiology slots which must likewise be arranged via the same electronic booking system with all bookings visible to the radiology staff. There are a minimum of eight clinic slots, as well as early morning slots for diagnostic scans with expedited reporting. Scans available at fixed times beginning at 08:30 are US abdo/pelvis, CT chest/abdo/pelvis and MRCP. MR pelvis or fistula and US testes/groin can be organised with prior radiologist input. Physical positioning of hot-clinics directly beside the EmSU and across a side corridor from the hand-over/junior doctors admin area has huge advantages. Despite the apparent disadvantage of the relatively small area, this geography allows easy access from staff in one area to those in another especially as each are inter-dependent. Proximity makes it is easy to access help and advice or necessary staff to enable the next phase of a patient's journey. An additional benefit found at these clinics is born of the fact that consultants running these clinics are responsible for electronic triage that week and this allows patients referred electively to be brought to the next versus normal outpatients when the referral raises enough clinical concern to demand expeditious review.

5 **Dedicated Emergency Surgical Unit theatre lists:** Initially the unit had three dedicated operating theatre lists on Monday, Wednesday and Friday afternoons. This was designed to improve the throughput of semi-emergency patients including those requiring laparoscopic cholecystectomy after gallstone pancreatitis. These lists allow cases previously non-optimally added to emergency/NCEPOD theatre lists to be added to more appropriate expedited day-case lists thereby making timing and optimisation of semi-elective/emergency cases more predictable and more likely to get consultant and wider team input. Early in the pandemic these lists were used to benefit some peri-obstructing bowel cancer cases while later they were temporarily reduced then later abandoned due to staffing needs elsewhere caused by COVID. The hope is that they will be re-instated as early as possible to aid through-put and better patient care.

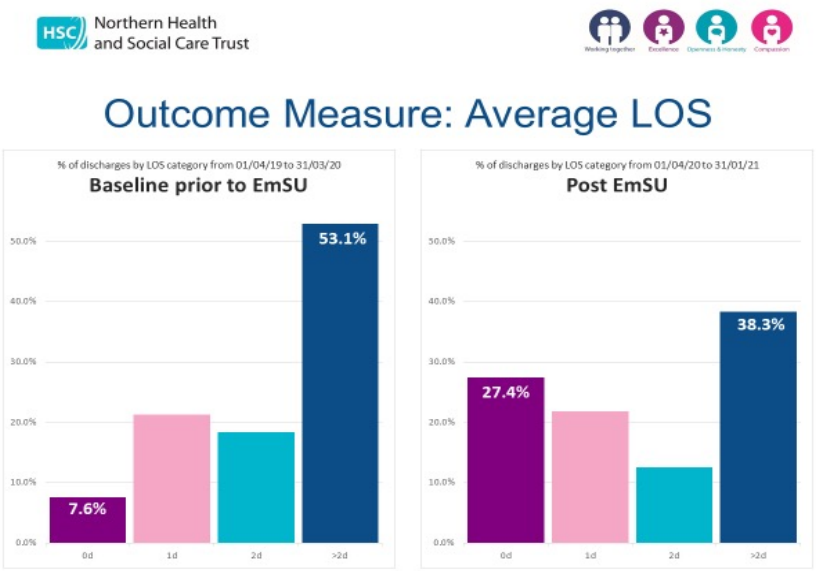
6 **Patient and staff experience feedback:** The unit uses before and after questionnaires for patients and staff about their experience in the service. Although the data has yet to be formally scored, early indications are that there has been significant improvement in patient and staff experience. AAH EmSU have plans to join Care Opinion to help direct ongoing improvements.

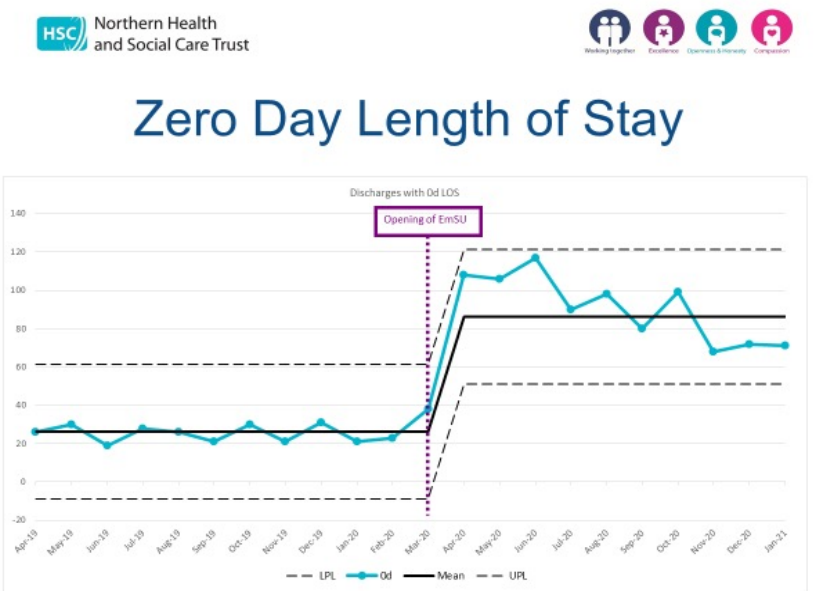
Impact and outcomes

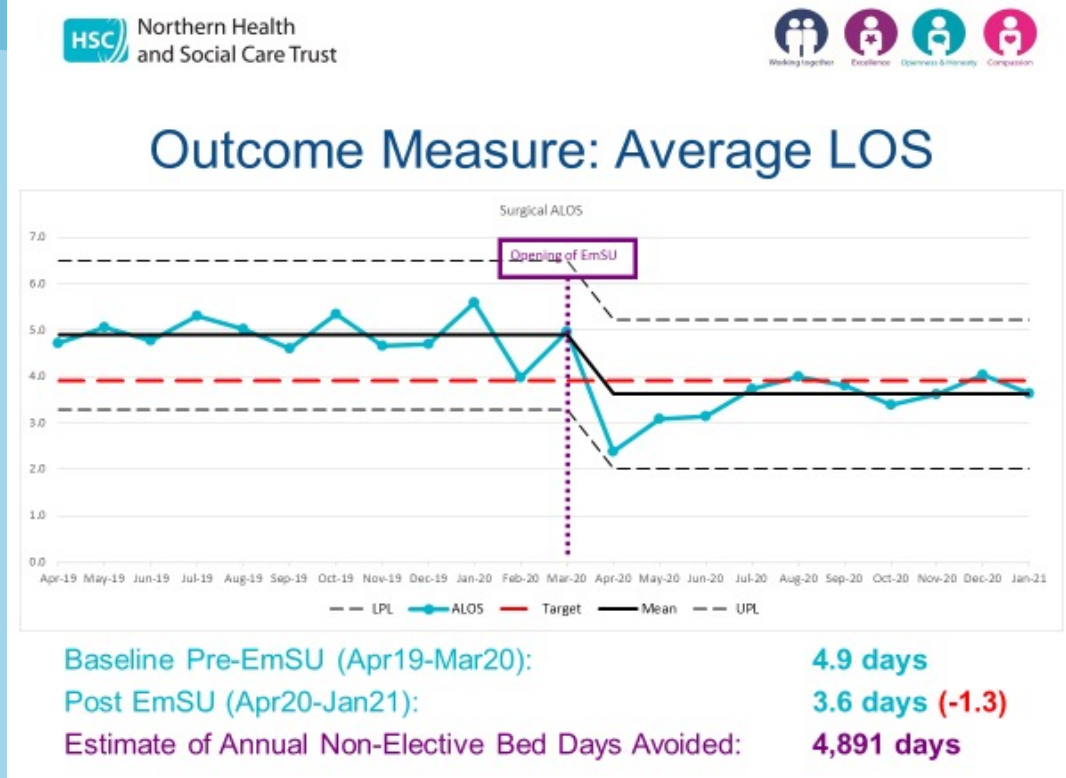
Six months on, Antrim's Emergency Surgical Unit project has achieved its primary aims.

Specifically, length of stay has been cut by 48 hours for emergency surgical patients, down from five days to two. According to Barry this is having a "massive impact" on the delivery of surgery across the hospital.

The primary aims of the project were to increase the zero-day length of stay and perform laparoscopic cholecystectomy on more patients with gallstone pancreatitis within guidelines. To date the zero-day length of stay has gone up seven-fold – from 5% to 35% and there has been a significant increase in laparoscopic cholecystectomy for all pathology, especially for patients initially presenting with gallstone pancreatitis. Formal data on this remains outstanding however COVID effects on EmSU theatre list will have hampered some of these benefits at least in the short term.







Staff are happier as they can provide better patient care and have more control over this. The new system has led to improved feedback from junior medical staff mostly evidenced by the disappearance of complaints about their working conditions. Nursing staff are requesting to be stationed in the EmSU versus other areas due to the appeal of the work involved. Surgical doctors used to working the old system were largely sceptical but now come forth with ideas to further improve upon the EmSU. Some of these are ideas around logistical improvements centred on the new found ability to perform local anaesthetic procedures in EmSU/hot-clinic area. New teaching and training opportunities have arisen with medical students now more able to learn directly from consultants seeing new patients in hot clinic. Clerking and presentation skills are increasingly being practiced and developed in the EmSU by junior medical as well as non-medical staff e.g physician associates and specialist surgical nurses. The changes have without doubt improved morale in the surgery department despite the pandemic. There is a renewed pride in staff's daily work and new-found efficiencies encourage everyone to continue this improvement journey. A big driver for this is the team seeing the obvious more sensible patient centred journeys as well as the realisation that this results in inpatients now being those who really need to be in hospital.

The team hope to further build upon improvements made to date with recruitment and retention of clinical and non-clinical staff. Due to the realisation that a larger team would allow further improvements and that changes made to date have enabled expansion, a merger with their sister hospital surgical team has become a hopeful probability. This will provide equal access to optimised emergency care for the whole trust population while enabling similar efficiencies gained to be realised across the wider team's elective work.

The new approach to emergency surgical care has won praise from the Board.Chief Executive, Jennifer Welsh, who said "I am delighted that the surgical team, facing into the challenges created by the COVID-19 pandemic, were able to bring forward arrangements to open the EmSU and Ambulatory system, thereby creating a single point of access for referrals of suspected general surgical patients from the Emergency Department and from General Practice. The results to date are impressive, showing a 48-hour reduction in mean length of stay as well as a seven-fold increase in zero-day length of stay. From an operational perspective, this has been hugely important to a hospital acknowledged as having insufficient inpatient beds. However, in addition to improved access and performance metrics, the feedback from hospital and GP colleagues, as well as patients themselves, has been particularly gratifying. I am incredibly proud of the entire team, and particularly so, given the challenging circumstances of 2020."

Antrim has also attracted attention at the highest level. Barry was recently invited to meet with the Health Minister Mr Robin Swann MLA, to discuss how general surgery can be transformed across the five hospital trusts in Northern Ireland. Barry said "Northern Ireland has some of the worst elective wait times in the developed world. We don't need to, nor can we, build our way of this problem. By changing the way we use our best resource (our staff) and working as larger teams, we can work better and more efficiently to the benefit of patients and staff alike."

Challenges of COVID-19

The project was carried out against the backdrop of COVID-19 and the impacts are more remarkable for that. The opening of the EmSU was brought forward from May 2020 to March 2020 to help the hospital cope with an upsurge in patient numbers due to the virus. During the worst of the first wave, the number of surgical wards operating in Antrim was cut in half – from three to one and a half – and Barry is in no doubt that the hospital would have struggled to cope without the new system in place.

At one point, the EmSU's existence was under threat as doctors and nurses were being redeployed across the hospital and Intensive Care (ICU) needed to move to cope with the increase in patient numbers. It was proposed that ICU would relocate onto one of the EmSU's two wards which would have vastly reduced its efficiency. In response, the entire surgical team met with the Chief Executive in June 2020 and was able to argue convincingly how well the new system was working, producing data to back this up. Not only did they succeed in retaining the EmSU, but they were given additional space for the service.

Even staff who had initially been cynical about the new approach to emergency surgery became advocates. An initially sceptical peri-retirement consultant has stated "We can never go back". A senior nurse so concerned by the loss of beds to become trolleys in the EmSU assessment bay had thought to make a formal complaint. Within weeks of opening, she said "We cannot do without the EmSU"

Other challenges

Although many people in the hospital recognised the need for major change, there were people in the clinical and management team who took some persuading and some who wanted to use part of A&E as the assessment area, despite evidence showing that this is not effective. In the early days, there was pressure from some staff to use the EmSU trolleys as beds to cope with peaks in demand. The team held face to face and virtual meetings to explain to colleagues that these were for assessment only and were essential for the management of emergency surgical patients.

Key success factors

The team identifies several factors that have contributed to the success of its improvement work, including:

- **A strong project team**: led by clinical leads Mr Barry McAree and Ms Eunice Minford, with management leadership from Assistant Director Lorraine McDonnell c/o Director Margaret 0'Hagan and nursing leads: Helen Davis (Emergency Surgery Nurse Specialist) and Mary Donaghy (Lead Nurse in Surgery) and Blaithnid Hughes (General manager). The improvement leads were Maria Garland, Sean McQuade and latterly Matthew Robinson. Barry said "Doing it as a team of clinicians and managers is the only way to make it work." He added "Our Chief Exec's mantra is 'clinician led, management enabled" very much in keeping with quality improvement methodology of improvement comes about using the knowledge of those at the coalface.
- **Methodical approach to project planning:** The team used a methodical approach to project planning based on its RAMP processes. Barry admits to finding it "unbelievably frustrating" at first because it was "a very mechanical way of ensuring all the bases were covered". Nevertheless, it provided a useful structure to begin developing its improvement work.
- **Trust executive level support:** The appointment of a new Assistant Director, Lorraine McDonnell helped to kickstart the project by magnifying the clinical voice while ensuring management could enable necessary actions. Barry explained "At first there was an obsession with the impact that a new EmSU would have on elective surgery and concern that we would reduce elective productivity. We argued that, in the long term there will be major elective gains because the new system would prevent patients from being placed on the elective list at all. The team took this argument to the Trust and this helped to change the mind-set, including opening up the possibility of getting more surgeons on the rota ideally via a merger our sister hospital's rota or if necessary employing more surgeons thereby only increasing elective activity with such expansion."

- **Staff recruitment:** It was important to recruit a new Lead Nurse and Ward Sister for the Emergency Surgical Unit plus admin staff whose role is described as "unbelievably important" by Barry. Lorraine was also able to provide significant assistance with employing the right people.
- **Radiology support:** Support from the radiology team, which provides diagnostic imaging and rapid results for EmSU and hot clinics, has been crucial to the success of the unit. Barry said "We engaged with the radiology team early on as they are key to this. They had been waiting for surgery to come forward with a plan like this because they have done it with other specialties. Our success is very much dependent on radiology engagement and assistance."
- **Theatre support:** Support from theatre was essential, too. Theatre initially provided three dedicated emergency surgical lists per week, later reduced to two due to the pandemic.
- **Support from the SAEC Network:** Barry said "Support from the Surgical AEC Network gave us confidence that we were doing the right thing in the right way. It was also very helpful to have their clarity and input during the initial site visit and advice on obtaining the right data in the right way to support what we wanted to do. If anything was going wrong or we needed direction, we could pick up the phone to them. Seeing presentations from other trusts gave us a great experienced based feel for what we should do at the outset. We owe a massive debt of gratitude to Arin, Russell, Mike and Deborah among many others in SAEC. Their input has been invaluable."

Next steps

The new system of emergency surgical care has led to a decrease in elective capacity across the trust. The team believes that the solution to this is to merge rotas and look after emergency patients from sister hospital Causeway thereby offering the same excellent emergency service to the whole Trust population while simultaneously expanding elective access again for the whole trust population. In this the aim is to improve both emergency and elective efficiency across the Trust and the hope is that this can happen soon.

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Important learning

Barry said “This project has brought about new ways of thinking about surgical care among our team. Surgery is not just a dichotomy of emergency and elective as there is a significant grey area in between. Looking after these patients better is the route to success. Making emergency surgical provision more predictable using ambulatory care is the best solution for this group or patients. If you are a Trust thinking of doing something like this, I’d say do it as you won’t regret it. If you’re not getting anywhere with middle management, go above their heads as it’s the patients and staff on the ground who need these services especially with projected expansion of our populations. Aim for blue sky thinking and devise your master plan but be flexible where possible. Do not underestimate your colleagues’ ability to change. We used to work as individuals, now we work as a team.”

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