

Providing safe day case surgery in a primary care setting through the Covid-19 pandemic

James Foster
Jeanine Smirl
Kristina Lillig
Sivanandy Nagendran

Executive Manager, Norwich and Norfolk Surgical Services
Managing Director, Norwich and Norfolk Surgical Services
Service Manager, Norwich and Norfolk Surgical Services
Consultant Ophthalmologist, Norwich and Norfolk Surgical Services

Rita Chotai

Consultant Anaesthetist, primarily Norfolk and Norwich Hospital

Michael Lewis

Consultant Surgeon, Norfolk and Norwich Hospital

Introduction

The Covid pandemic has been a challenge for the provision of day case surgery in hospitals. Most secondary care units have seen major drops in productivity over the last two years. We have maintained our productivity and provided safe and efficient surgical services by incorporating IPC measures, introducing changes in the patient pathway and agile working practices.

Methods

We reviewed the surgical service provision of a primary care surgical unit during the two years from the start of the lock-down in March 2020 to examine the effect of the pandemic on our unit's productivity.

Annual numbers of cases of cataract, hernia repair and carpal tunnel decreased by 10% in 20/21 compared to 19/20 however we have achieved a 20% rise in numbers in 21/22. This drop was entirely due to the Initial lock down in the UK which resulted in cessation of services for two months after which the unit was able to reach maximal productivity safely with the introduction of pre-operative PCR testing, staggered patient arrival times and other simple measures.

Results

Day case surgical services were provided effectively and safely in a primary care setting during the pandemic without affecting productivity. We were also able to offer additional eye surgery capacity to our acute hospital to support the system recovery.

Conclusions

This may be a model for future day case surgery in the UK, relieving pressure on secondary care units as they struggle to recover from the pandemic. There is a room for best practice from community-based day surgery to be considered by larger institutions.

Introduction

The Covid-19 pandemic resulted in sudden reactive changes in the NHS and, specifically, in a large

reduction in the provision of day case surgery across the United Kingdom as hospitals reconfigured and struggled to cater for the increase in emergency admissions. It has been estimated (1) that, worldwide, over 12 million elective operations were cancelled during the first wave of the pandemic. Waiting lists that were already lengthening prior to the pandemic have now grown substantially. This is especially so for elective day surgery (2).

The NHS delivery plan (3) announced in February 2022 recommends a system of using surgical hubs to tackle this. Whilst surgical hubs can be expected to deliver on elective surgery there is a large proportion of elective cases that can be performed under local anaesthetic with or without sedation in primary care settings. The move to day case surgery in a primary care setting has been on the Department of Health agenda for several years, (4, p31-32). Responding to the pandemic from the aspect of providing safe elective surgical services has been universally difficult and resumption of these services has been accordingly sporadic and fraught with numerous difficulties.

Aims and Methods

We audited the provision of day case surgery (cataract surgery, local anaesthetic hand surgery and local anaesthetic hernia surgery) at a community based primary care surgical unit for the time period April 2020 to April 2022 and compared it to the year 2019-2020 (prior to the start of the pandemic)

We addressed the safety issues and performed risk assessments for differing groups of patients attending for elective surgery at a primary care facility. Initial lock-down from March 23rd, 2020, meant cancellation of all surgical activity for a period of 10 weeks. After risk assessment and discussion, a number of changes were implemented at our site and in the patient pathways in order to minimise the risk of Covid-19 transmission and to restart surgery in a planned and productive way. Testing for Covid-19 infection in patients and staff was maintained throughout as with secondary care hospitals.

Our key priority was patient and staff safety. Universal precautions were applied throughout. Everyone was treated as being potentially asymptomatic positive and this meant all contacts between staff and patients were audited for infection risk.

Timeline of response

- Week 1: week commencing March 22, 2020.
- Week 10: week commencing, 2020

Review and repair

- Weeks 1 to 3: Building facilities and rooms were inspected and repaired. Policies were reviewed and updated.

Inspect and improve

- Weeks 4-5: Four-part mock-CQC inspection and review of documentation, processes, and audits.

Turning the corner

- Week 6-7: NICE and Royal College guidance to restart surgery, review of airborne infection risks especially with Cataracts.

Dry run and pre p are

- Week 7-9: Staff practised new pathways and Standard Operating Procedures, dedicated staff member to acquire PPE and training on appropriate infection mitigation.

Launch

- Week 10: Hands list with reduced number of patients to test the pathway. Debrief: very successful and everyone felt safe.

Acceleration

- Weeks 11 to 16: All lists expanded to pre-pandemic levels and more lists offered.

Review

Changes and management techniques

We applied the PDSA model also known as the Denning model (5). This is an evidence-based tool for constant review. All strategies were reviewed with whole staff meetings and after a dry run then the entire experience was recaptured for discussion so that there was a continuous cycle of improvement across.



Figure 1. *PDSA Model*

The PDSA method ensures all planned activity takes place within a structure and allows a control-based review method.

A useful example is the introduction of the numbered seats. This was not part of the original plan.

The plan was to bring patients from the controlled entry points (covid assessment, temperature checks, and appointment times) to the general waiting area.

During execution, we discovered that we were increasing contact times between staff and patients as a result and creating gaps in our staffing and the journey could create a wait at the entry point. There was also confusion as to where patients might sit when it was paramount to wipe chairs down and keep a two-metre distance at all times.

On studying, we realised patients responded to a specific instruction very well so we changed the colour and type of the chairs, and put large numbered stickers on the back.

Once implemented, patients were quickly and easily finding the correct location. This meant throughput was quicker, staff were more able to spend the appropriate time at the entry point, infection control was better maintained and patients felt sure they were in the correct location.

However, this principle was applied to the whole process and continuous improvement was prioritised throughout.

Implementation Strategy

It was decided that restarting was not business as usual and that it was the equivalent of a systemic change. Although the core activity was the same, the whole approach was different. We therefore used the Kotter change model throughout the process. Kotter has been evidenced to be a highly successful tool to achieve substantial change (6).

Create a sense of urgency	Staff kept active and a date set as soon as possible for a restart
Build a large powerful coalition	The entire team was involved in the planning and implementation process. Buy in was 100 per cent.
Develop a vision for change	We set the target that we wanted to achieve the same levels of activity once safe to do so
Communicate the vision	Daily team meetings and regular contact ensured the staff on site and remote consultants were involved and engaged
Remove obstacles	We were able to apply 100% focus on this task, free of distractions. Staff really did want the unit to restart and get back to patient care
Generate short term wins	The first surgical list was an easier type ie carpal tunnel surgery. Infection risk was low (surgeon not near face, short length of procedure, ability to maintain flow, shorter post-op care) but the lift and energy gained from the event powered the team through the more complicated procedures (cataracts and hernia repair)
Build on wins	New procedures were added over a six-week period.
Embed changes	After the process to restart, the unit kept up the pace and then added extra days including weekends to increase capacity

Table 1. *The typical Kotter steps and how we then applied them*

Cultural changes

Infection control was made non-hierarchical, and everyone was empowered to raise issues. Patients were kept on site for the minimum period necessary. Carers were on site only for point of care handovers (with flexibility according to individual patient needs).

The list of behavioural changes include:

Theatre structure

- Utilization of PPE for all staff
- Separate waiting area with numbered chairs
- Door keepers and patient navigators
- Staggered patient arrivals
- Dedicated single use recovery room
- Touchpoint cleaning
- Use of screens

Patient pathway

- PCR organised 5 days prior to theatre for hernia repair /Lateral flow test on day for hand surgery and
- Strict two-week isolation prior to admission
- Mandatory mask usage. Temperature checks
- Dilating drops sent to apply before arrival (cataract pathway)
- Dissolvable sutures used in hand surgery
- Wait in car on arrival at the unit until called in
- Packet biscuits and drink cartons instead of our customary tea and biscuits
- Following surgery early discharge with companion collecting patient from car
- Use of telephone instead of in person reviews where clinically safe to do so

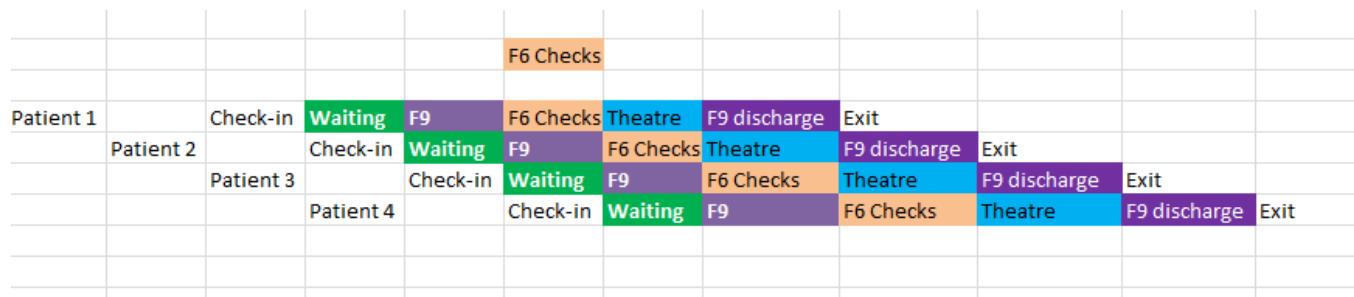


Figure 2. Cataract surgery patient flow

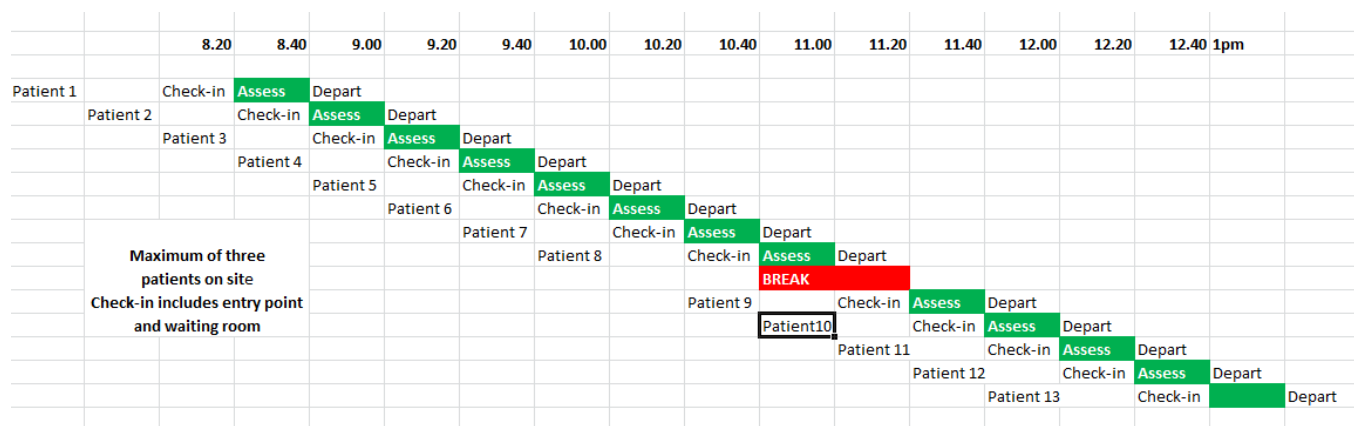


Figure 3. Patient flow for Hands surgery

Example of Cataract Protocol:

1. Ophthalmic Practitioner - there will be 2 people in this role, one per patient.
2. PPE to be worn by all staff - Visor mask, gloves and apron.
3. Practitioners collect their patients from either the car park entrance or the emergency exit. Carers not be admitted on site at this time.
4. Practitioner 1 brings patient up to F9 cataract room and checks them into local IT system, does pre op check and starts drops regime.
5. When next patient arrives Practitioner 2 collects their patient and admits patient in waiting area and starts drop regime.
6. Once patient ready to have surgical eye checks and consent with surgeon the patient is taken round to dedicated pre-op room by their practitioner.

7. Once checks are done practitioner 1 does pre op talk and checks with patient then hands patient over to theatre team
8. WHO sign in
9. WHO sign out
10. Clean equipment
11. Once the procedure has finished the patient's practitioner takes them back round to specific discharge room and calls carer to let them know patient is ready for collection.
12. When patient is ready for discharge, they are escorted down to the car park entrance and handed over to their carer.
13. PPE changed after each patient; visors wiped clean.
14. Practitioners clean areas patient has been in contact with.

Results

Elective day surgery was restarted on May 30 2020 for hand surgery. Over the next two weeks this was extended to include all services covering ophthalmology, general surgery and orthopaedics. After initial positive trials we were able to implement full productive surgical lists such that numbers of cases across the specialties dropped by only 10% for the year 20/21 compared to the numbers for the year 19/20. By managing productivity we were able to increase these numbers such that the backlog was swiftly addressed and numbers of cases performed increased by 20% for the year 21/22 (Figure 4)

By early 2021, the unit was so successful that it was subcontracted by local University Hospital to take on a series of complex cataracts to reduce the impact on patients waiting over 60 weeks.

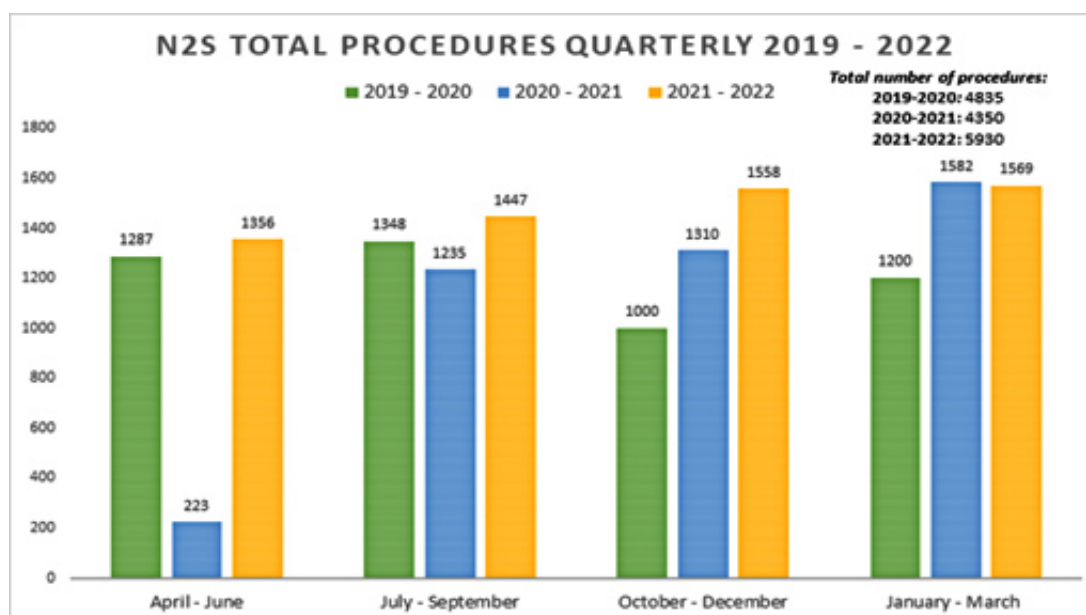


Figure 4. Total activity across the pandemic years

Discussion

The Covid-19 pandemic had a profound effect on the provision of elective day case surgery within the UK. By utilising a practical team-based approach we were able to provide effective and safe day surgery through most of 2020 and throughout 2021. Despite most secondary care units ceasing almost all elective surgery for long periods during the peaks of the Covid-19 pandemic we were able to continue a community based surgical service without serious incident with any reported cases of patient-staff Covid-19 infections associated with a procedure performed at N2S.

The benefits of a primary care based surgical service during the pandemic became obvious as the pandemic continued. By having a responsive local and easily accessible site for patients we were able to customise the service to allow rapid and safe transit through the surgical facility. Using a dedicated specialised team for the services enabled us to work together and assess the patient pathways and enable changes to them in order to provide a service that did not compromise on patient safety. Additionally, we were able to respond early to any changes in the regional infection rates.

Shifting care of many elective surgical services to primary care facilities significantly improves access for patients and can positively impact on waiting times. Additionally, feedback from patients has been universally positive - having local dedicated specialised teams can improve the outcomes and costs associated with such procedures and should be a model of the future direction of the provision of such services as described by the DoH(7).

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