The Strategy Unit.

Royal College of Surgeons of England
ADVANCING SURGICAL CARE

THE CASE FOR SURGICAL HUBS

EXECUTIVE SUMMARY

For over two years, the COVID-19 pandemic has disrupted elective (planned) hospital treatment, affecting the number of operations surgeons can perform. In the early days of the pandemic, elective surgery was cancelled en masse to create space in hospitals for COVID-19 patients. As services were reinstated, the need for enhanced infection control and high levels of COVID-19 staff absences reduced the number of operations surgeons could perform.

Although elective services are recovering, one surgeon described the task as akin to 'wading through treacle'. This is due to several factors: vaccination and improved treatment options have reduced the severity of the virus but outcomes are still poorer if patients contract COVID-19 during surgery so mask wearing and other infection prevention measures remain in place in hospital settings, slowing things down. Pressure on hospital emergency departments is extremely high and many hospitals are struggling to discharge patients promptly into social care. This 'clogs up' hospitals, and puts pressure on hospital beds and resources. Waiting lists are now at record levels.

Faced with these challenges, governments in England, Wales and Northern Ireland have all published elective recovery plans that include the strategy of greater separation of elective and emergency care. These plans reference the creation of surgical hubs, or elective centres, as part of the solution to tackling their nation's backlog in elective care.

This approach builds on strategies developed by NHS leaders and surgical teams over a number of years in response to the competition for pooled elective and emergency care resources such as beds, staff and diagnostics. Such competition is particularly intense over the winter months, when elective surgery is often scaled back to free up capacity for emergency patients.

The case for a clear separation of these resources became stronger during the pandemic as trusts collaborated and innovated to tackle the challenges presented by COVID-19. Some trusts established surgical hubs to minimise the risk of COVID-19 transmission and protect elective surgery resources. This involved reorganising teams, changing patient flow, physically separating parts of the hospital by means of separate entrances and treating patients from other parts of the country to help keep surgery going. Collaboration has been a hallmark of the pandemic, with trusts working across historical boundaries and staff adopting new ways of working.

A range of models of surgical hub have sprung up, some designed to increase the volume of low complexity operations like hip and knee operations (where waiting times have increased dramatically) while others support complex operations for which access to intensive care is crucial. This report identifies three categories of surgical hub: integrated (or 'hub within a hospital'), stand-alone and specialist. These categories are illustrated in the report by case studies of trusts that have successfully adapted the model to their needs.

In this report, The Royal College of Surgeons of England (RCS England) and the Strategy Unit jointly consider the case for separating elective and emergency care, and developing surgical hubs. However, we acknowledge that the empirical evidence in support of surgical hubs is limited. Surgeons cite challenges such as wider workforce shortages (for instance, a lack of theatre nurses and anaesthetists to support increased operating levels) and reluctance on the part of some patients to travel to a hub. More evidence is needed to confirm their effectiveness and provide assurance that any associated risks are manageable.

In order to properly assess the potential of surgical hubs, it is vital that they have truly protected, ring-fenced resource. Hubs must not be created at the expense of other services that are equally under pressure. Instead, the ambition of surgical hubs is to enable surgical teams to get on with what they do best: transform lives through timely, safe surgery.

BACKGROUND

GROWING CASE FOR SEPARATING ELECTIVE AND EMERGENCY CARE

The debate about separating elective and emergency flows is not new. The degree of separation within a health system represents a trade-off. Decisions to cancel or strictly prioritise elective activity are taken because elective and emergency flows compete for many pooled resources. These include beds, staff, diagnostics and intensive care. By reducing elective activity, resources are freed up for emergency (non-elective) patients, whose needs are generally more acute and pressing.

Long waiting times existed before the pandemic and a 'stop/start' model was used for elective surgery, where operations were cancelled or postponed in response to winter pressures on the NHS. Although this decision generally fell to local NHS leaders, the winter of 2017–2018 saw a national policy directive from NHS England to cancel all elective surgery for a month when a spike in flu cases led to an exceptional increase in demand for non-elective (non-planned) treatment. These policies contributed to a significant backlog of elective surgery and the NHS in England has not met the statutory 18-week waiting time target for elective treatment for more than 6 years.[1]

A key strategy to avoid the cancellation of elective activity such as planned operations involves creating greater separation of the resources that support elective and emergency patients, to create surgical hubs. Ring-fencing elective resources from emergency care seeks to improve the efficiency and resilience of surgical services. This approach was pioneered by some NHS areas for a number of years before the pandemic in specialist orthopaedic hospitals, independent sector treatment centres and NHS funded surgery in private hospitals. However, the case for surgical hubs became stronger with the onset of COVID-19 as the pandemic changed the context for the trade-off between elective and emergency care resources.

RESPONSE TO COVID-19

During the first wave of the pandemic in March 2020, NHS England announced that elective surgery would be temporarily halted to ensure that adequate hospital resources were available to deal with COVID-19 patients. As the pandemic progressed, this policy was adapted and access to elective surgery was strictly prioritised using clinical criteria developed by the Federation of Surgical Specialty Associations.[2]

A key measure to support the continuation of elective surgery in the face of COVID-19 was the practice of creating 'COVID-light' surgical hubs or 'green pathways' (i.e. where any risk of COVID-19 had been minimised). This helped to reduce the risk of surgical patients contracting the virus during or after surgery, and avert the associated increased risk of mortality and pulmonary complications suggested by research undertaken during the pandemic.[3] Both patients and staff could be tested for the virus before entering a surgical hub, and patients could isolate before their operation date. By contrast, in emergency departments, where patients are admitted to hospital with no notice, a COVID-19 test before admission was not possible. Even with a test on entry, patients could begin testing positive after admission.

POLICY DEVELOPMENTS

During the pandemic, elective waiting times increased substantially and NHS England does not expect waiting lists to start reducing until March 2024.[4] The latest figures (April 2022) show the largest ever recorded NHS waiting list in England of 6.48 million people, including almost 13,000 people waiting over two years. The longest waits for treatment of more than two years were for trauma and orthopaedic treatment, such as hip and knee replacements (3,154), followed by general surgery, such as gallbladder removals and hernia operations (1,746), and ear, nose and throat (ENT) treatment (1,730).[1]

In response to record waiting lists and calls for action following the pandemic, the UK government announced an extra £1 billion to tackle the elective backlog in September 2021, citing innovation such as surgical hubs.[5] In the Chancellor's Budget in October 2021, £1.5 billion was allocated specifically to the creation of surgical hubs, increased bed capacity and equipment.[6] NHS England's Delivery Plan for Tackling the COVID-19 Backlog of Elective Care, published in February 2022, places surgical hubs at the centre of transforming the delivery of elective services.[4] We are keen to see the £1.5 billion funding allocated in the autumn channelled to create additional surgical hub capacity, including capital investment, via NHS England's targeted investment fund.

The approach of separating elective and emergency care has also gained traction in the devolved nations. Northern Ireland suffers from the longest waiting times in the UK, with over 120,000 people waiting for surgery or treatment.[7] Two-thirds of the surgical waiting list are day case patients and the remainder are inpatients. In response to the lengthy waiting list, the Northern Ireland Department of Health published the Elective Care Framework in June 2021.[8] This five-year plan requires £700 million for full implementation and includes a role for future surgical hubs, or elective care centre hubs, to be rolled out across Northern Ireland. It also prompted the health minister to say that he wanted long waits to be fully banished by March 2026.

With over 700,000 people now waiting to start treatment in Wales,[9] the Welsh Government published its planned care recovery plan in April 2022.[10] The plan outlines the importance of separating emergency care away from planned care, and of securing dedicated ring-fenced capacity for planned care to allow services to be managed 52 weeks a year, 7 days a week and 15 hours a day. The plan contains a number of targets, including no one waiting more than a year for an operation in most specialties by the spring of 2025. The plan was supported by an extra £15 million a year over the next four years for health boards in Wales.

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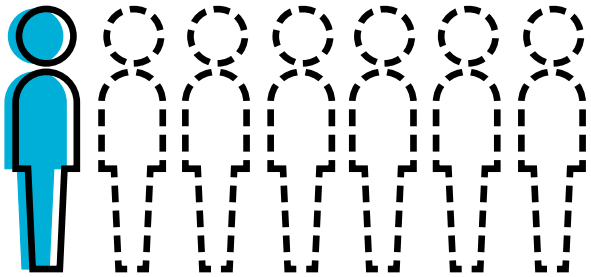

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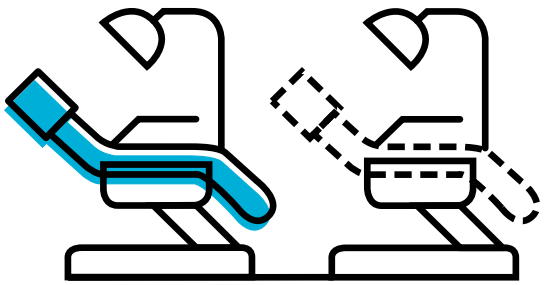

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DISRUPTION OF ELECTIVE SURGICAL ACTIVITY

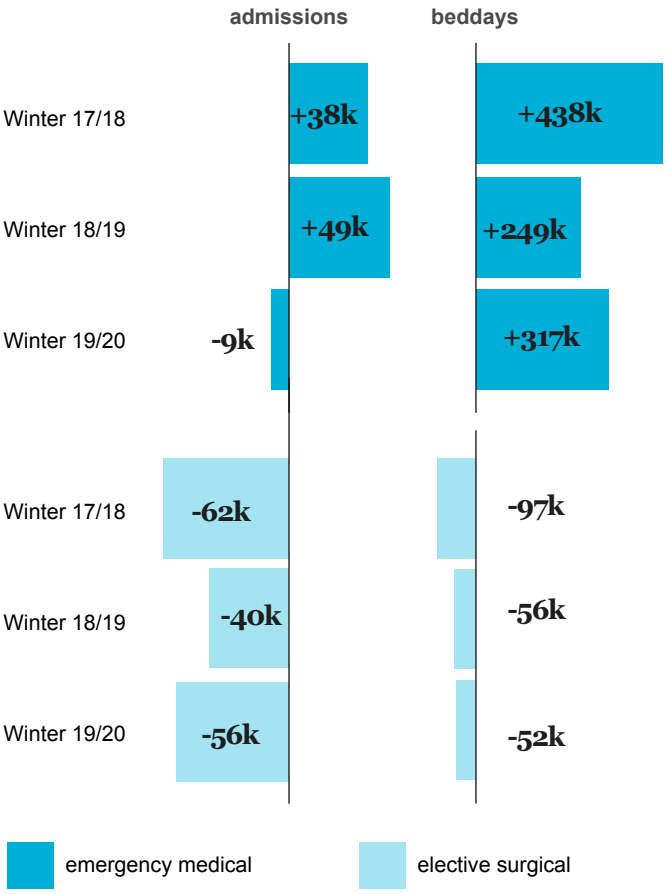
In developing this report, the Strategy Unit analysed NHS data on admitted patient care to assess the key periods of disruption to elective surgical activity. The data in chart 1 show's that each winter, emergency medical hospital admissions rise in response to a set of environmental and epidemiological factors. Given that hospitals tend to operate at high levels of bed occupancy, when hospitals face high demands from medical emergencies, a common response has been to scale back other forms of planned activity. One of these is elective surgery.

IMPACT OF WINTER AND COVID-19 PRESSURES

Chart 1 shows the increase in emergency medical admissions and beddays during the three winters from 2017–2018 to 2019–2020, and the associated decrease in elective surgery.

Chart 1: Estimates excess/lost activity during winter

England/December to February, 2017/18, 2018/19 and 2019/20

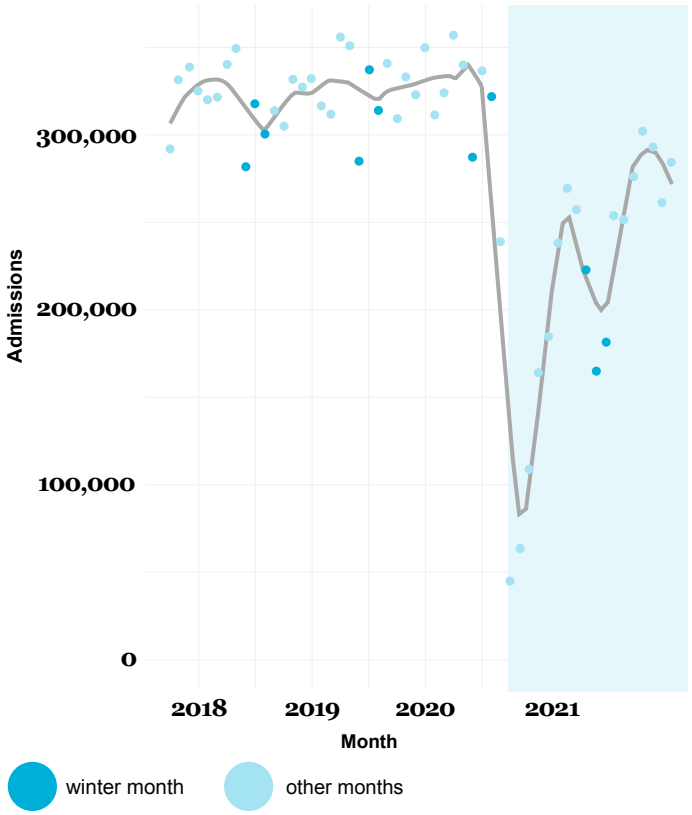


Source: Derived from the admitted patient care tables held in the National Commissioning Data Repository

The data in chart 2 illustrates how the onset of the COVID-19 pandemic and temporary suspension of elective surgery led to a dramatic reduction in the rate of elective surgical activity, falling from more than 320,000 admissions in February 2020 to fewer than 50,000 in April. Rates rose steadily during the rest of 2020 before falling again with the second wave of COVID-19 in the winter of 2020–2021. Rates rose again in the spring of 2021 but by September, elective surgical activity remained below pre-pandemic levels.

Chart 2: Elective surgical admissions

England, April 2017 - September 2021



Note: COVID-19 period highlighted

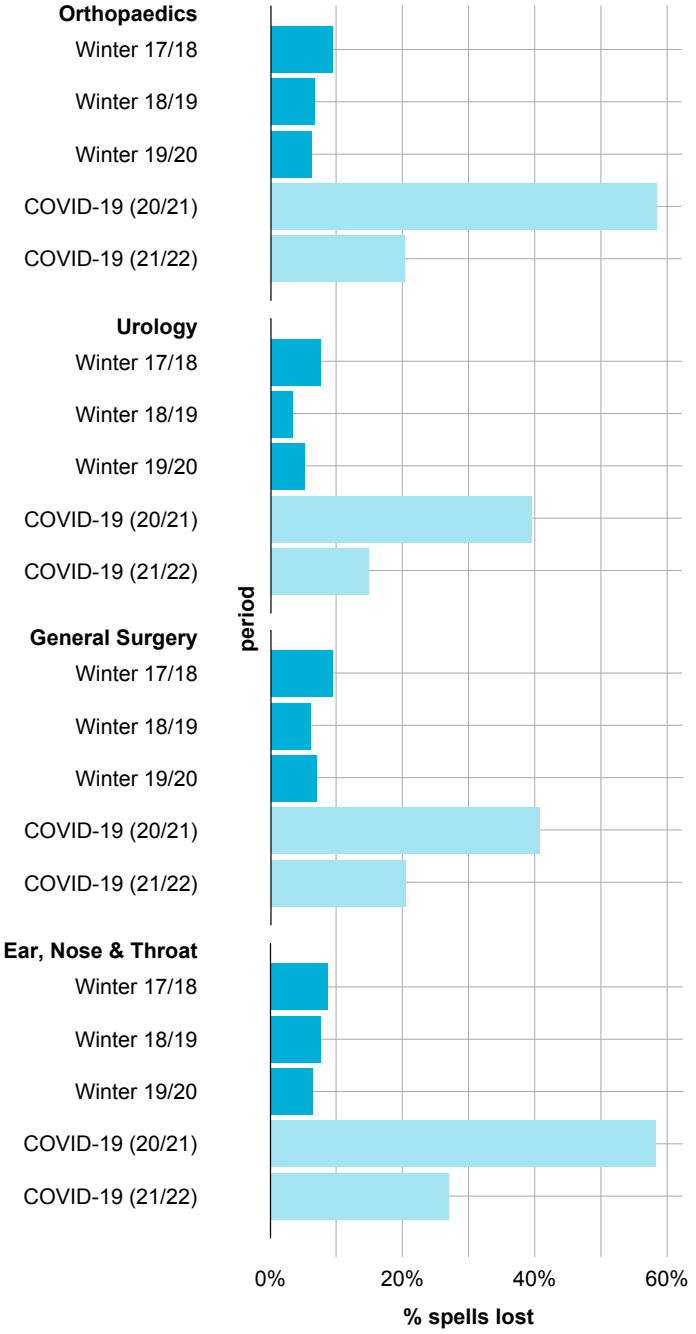
Source: Derived from the admitted patient care tables held in the National Commissioning Data Repository

IMPACT ON DIFFERENT SPECIALTIES

The COVID-19 pandemic and regular winter pressures affect all surgical specialties. The Strategy Unit has explored activity trends in the four highest volume surgical specialties: general surgery, trauma and orthopaedic surgery, urology and ENT surgery. This analysis demonstrates that orthopaedics and ENT appear to have experienced more substantial disruption than the other two specialties during the first year of the pandemic.

Chart 3: Percentage of elective surgical activity lost by selected period

England



WHAT IS A SURGICAL HUB?

As shown by the data above, the disruption to elective surgical activity caused by winter pressures has been evident for several years. Nevertheless, the case for mitigating this by separating elective and emergency care became stronger during the pandemic.

RCS England has gathered anecdotal evidence from its members to understand what constitutes a surgical hub and the different models in existence. Surgical hubs are sites where only elective procedures take place. Staff and resources (such as beds and operating theatres) are kept separate from emergency care. However, the surgical hub model is not a 'one size fits all' solution and a range of different models have been developed across the UK as local areas have adapted the principles to their needs. Some hubs have been set up as separate areas within the main hospital while others have been established on different sites. Although most hubs carry out high volume, low complexity procedures (e.g. hip/knee replacements, gallbladder removals and hernia repairs), there are also specialist hubs that focus on more complex procedures (e.g. cancer surgery or complex spinal surgery).

The three key models are:

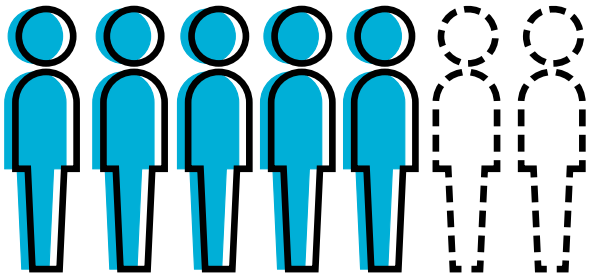
1. **'Hub within a hospital' or integrated hub** (i.e. a ring-fenced area within a hospital)
2. **Stand-alone hub** (i.e. a site away from the hospital, undertaking less complex surgery)
3. **Specialist surgical hub/hospital** (i.e. a stand-alone hospital providing specialist surgery)

Changing the location of an operation results in changes either for surgical staff/teams or for patients. For surgical staff, this can mean not working at the hospital at which they previously worked but instead following the surgical patients to the hub as part of a system of 'mutual aid for surgery'. For patients, this can mean that they do not get their operation in their nearest hospital but in a nearby surgical hub.

In a Savanta ComRes survey undertaken in May 2021 for RCS England, 73% of UK adults said that if they needed an operation, they would be willing to travel to a surgical hub if it was not their nearest local hospital.[11] NHS England promoted this concept with the launch of the My Planned Care initiative in March 2022, which allows patients the 'right to choose' an alternative provider for their elective treatment if they have been waiting a long time, with transport and accommodation costs covered by the NHS.[12]

Given the reluctance of patients to travel long distances, RCS England has advocated for the creation of surgical hubs in every integrated care system area to reduce the number of very long journeys patients may have to make. There should also be good pathway planning to ensure that patients have all pre/post-surgery appointments close to home so they only need to travel for their operation. For highly complex surgery requiring a specialist team, it was the case even before the pandemic that patients might choose to make long journeys to benefit from the skills of a particularly specialist surgical team. However, for less complex operations, provision within the region should be available to patients, through identifying a stand-alone surgical hub, with dedicated staffing and ring-fenced resource.

The NHS Getting It Right First Time (GIRFT) programme's survey of surgical hub sites across England reported that 94% of respondents had seen a positive impact on activity levels, with fewer cancellations, better theatre utilisation and reduced lengths of hospital stay.[13] In addition, 91% of respondents reported a positive impact of hubs on patient waiting times. Staff experience reportedly improved also, with very high levels of job satisfaction, morale and staffing resilience.



73% of UK adults would be **willing to travel to a surgical hub for an operation.**

The GIRFT report found that most hubs (65%) are currently established within existing hospital sites, with the remainder operating from stand-alone facilities. It states: 'The hub in a hospital model may be more common as it involves reworking of existing locations. Stand-alone facilities may require more significant and complex change as well as investment, whether through developing new sites or redeploying staff to new locations.'[13] Nevertheless, a challenge of the model has been its ability to maintain ring-fencing of resources during peaks in the pandemic and times of winter pressures. Activity in these hubs can also be limited in terms of volume because of staff shortages.

RCS England believes that the three different hub models are needed to tackle the huge backlog in elective care. An additional advantage is that by increasing surgical activity, hubs will potentially provide surgical trainees with much needed opportunities to continue their training, after two years of disruption. In order to enable this, surgical hubs must include trainees and every opportunity must be taken to ensure that every elective NHS operation includes a surgical trainee, including those that take place in the independent sector.

RECOMMENDATIONS

1. In order to properly assess the potential of surgical hubs, **it is vital that they have truly protected, ring-fenced resource**. Hubs must not be created at the expense of other services that are equally under pressure. Instead, the ambition of surgical hubs is to enable surgical teams to get on with what they do best: transform lives through timely, safe surgery.

2. **Surgical hubs will only operate efficiently if adequately staffed.** Workforce plans must be granular, reflect the operating models for surgical hubs and take account of current staff shortages (for example, among anaesthetists and theatre nurses), and include surgical trainees. We recommend that **trusts' plans should be assembled at a national and regional level to inform Health Education England's training plans**, and that they reflect GIRFT's guidance on workforce requirements for surgical hubs[14].

3. When developing plans for surgical hubs, we recommend that **integrated care systems should consider patients' concerns over travelling long distances for their operation**. They should ensure that surgical hubs are located appropriately to minimise travel times and address staffing needs.

4. We recommend that the **UK government's new hospitals programme considers where surgical hubs feature in its plans, and that it works with integrated care systems to identify under-served parts of the country** and develop plans that address gaps in provision.

5. In addition to capital investment, there should be **sufficient investment in support programmes to ensure that existing and new surgical hubs can effectively learn from each other**. This will help to expedite their set-up and effective operation.

6. Surgical hubs should be **formally designated by NHS England to provide clarity, and to facilitate robust governance and evaluation**. Trusts operating designated surgical hubs should collaborate, sharing best practice and reducing variation in operating procedures.

7. Surgical hubs should be **independently evaluated to assess whether the anticipated benefits accrue and to ensure the early detection of any potential unintended consequences** (for example, on health inequalities or training capacity).

CONCLUSION

Politicians and health system leaders face an unenviable decision each winter. Should they scale back or cancel elective surgery as medical emergencies inevitably rise? Or should they maintain levels of elective provision, hoping that the urgent and emergency care system will cope? In the past, elective surgery has taken a back seat, disrupting planned pathways and reducing the health system's ability to deliver surgery within the NHS Constitution's waiting times standards. But the scale of the elective backlog has forced policy makers to rethink.

The policy response has been the development of surgical hubs, offering greater separation and protection for elective surgical capacity. We welcome this decision. The underpinning theory is sound and the circumstances are such that balanced risks are warranted. We must acknowledge, however, that the empirical evidence in support of surgical hubs is limited. We need more evidence to confirm whether surgical hubs do indeed lead to increased productivity and resilience of elective surgery, whether the risks associated with limiting emergency patients' access to surgical hub capacity are manageable, and which of the various surgical hub models offers the best balance between these benefits and risks.

We are delighted that the National Institute for Health and Care Research has recently called for proposals to evaluate high volume, low complexity surgical hubs. In a system as complex as the NHS, this will need to consider a range of outcomes, including the impact on health inequalities and long-term health outcomes for patients. A particular challenge will be identifying where workforce shortages hinder the success of the model.

Establishing surgical hubs is clearly not enough in itself. The policy is already being tested as medical emergencies rise and hospitals struggle to discharge patients owing to a lack of social care capacity. Will health system leaders and politicians hold firm, protecting elective surgical hubs and supporting them to clear the elective backlog? Or will they capitulate and use surgical hub capacity to relieve pressure on the urgent care system?

Medical ethics rightly stresses that those patients in greatest need should be the first to receive help but the principle of fairness extends also to those waiting the longest. As the NHS strives to meet the needs both of emergencies and patients who have waited months or even years for an operation and are deteriorating on the waiting list, we hope that policy makers hold firm. Having embarked on this ambitious policy journey, it is essential that surgical hubs are given a genuine chance to prove their worth.

APPENDIX 1: CASE STUDIES OF SURGICAL HUBS

1. 'HUB WITHIN A HOSPITAL' OR INTEGRATED HUB

The 'hub within a hospital' or integrated hub model is essentially a ring-fenced area within an existing hospital. Despite being on the same site, it has a separate entrance with strictly controlled access and surgical staff only work in the protected hub area. Given the availability of critical care facilities in the main hospital, the hub can undertake complex elective surgery and manage high risk patients with comorbidities as well as high volume, low complexity procedures.

CROYDON HEALTH SERVICES NHS TRUST

Croydon Health Services NHS Trust created an elective centre within Croydon University Hospital in July 2020 to restart elective surgery after the pandemic. The 'hub within a hospital', known as Croydon Elective Centre, contains 10 operating theatres, a ring-fenced 28-bedded elective ward, 12 rapid recovery beds, 4 level 1.5 surgical enhanced care beds and a 12-bedded children's surgery unit. There is also a separate staff room and eating area with space to ensure health workers are kept separate from the main hospital.

The hub is multispecialty and covers admissions including general surgery (e.g. hernias and

gallbladder surgery), orthopaedics (e.g. spine, shoulder and hand surgery), urology (e.g. cancer treatments for bladder tumours), ENT surgery, oral surgery, plastic surgery, gynaecology, pain services, breast and vascular surgery. Through this model, the trust reports that elective productivity rapidly returned to over 100% of pre-lockdown levels for routine procedures and is now delivering up to 126% of elective activity in 2022.

Owing to the success of the surgical hub, the trust has since created the Purley Elective Centre within the Purley War Memorial Community Hospital. This hub is focused on high volume, low acuity elective procedures, which may be done in enhanced procedure rooms under local or regional anaesthesia. These are procedures such as varicose vein surgery, joint injections, general and hand surgery.

In addition, the trust has provided mutual aid across the integrated care system to over 2,600 patients by offering treatments to those waiting a long time for elective care from Epsom and St Helier University Hospitals NHS Trust and from St George's University Hospitals NHS Foundation Trust.

An additional benefit is the continued and accelerated training of surgical, theatre and anaesthetic teams, supporting our current and future workforce. The effect on staff recruitment is also stark, with vacancy rates in Croydon reportedly reducing from 30% to 13% despite the pandemic.

BARKING, HAVERING AND REDBRIDGE UNIVERSITY HOSPITALS NHS TRUST

During the pandemic, Barking, Havering and Redbridge University Hospitals NHS Trust established a 'hub within a hospital' at King George Hospital. The trust also worked with an independent sector provider to provide a surgical hub for orthopaedic patients. NHS England's elective recovery fund was key to supporting this approach.

The hub focuses on the six specialties that make up 50% of the trust's waiting lists: general surgery; ENT surgery; trauma and orthopaedic surgery; ophthalmology; urology; and gynaecology.

In establishing the hub, the trust deployed a three-pronged approach of:

1. increasing the number of surgical procedures through extended weekend operating, additional staff to pre-assess patients and dedicated intensive care unit beds to avoid last minute cancellations;
2. enhancing outpatient services with additional weekend clinics and targeted drives to reduce waits for first appointments;
3. workforce innovation through an extended surgical team including advanced nurse practitioners. This was bolstered through the development of a two-year training programme for surgical advanced nurse practitioners in the trust.

For orthopaedics, the trust designed the 'BONES Project' to tackle the backlog of patients waiting for surgery. The system took a fully multidisciplinary approach to planning and delivering a 'perfect week', aiming to perform a high volume of cases, test the system's resilience, find the bottlenecks in the system and address any hurdles for the future. The project team included all the clinical and non-clinical members of the team responsible for delivering the service, mapping all stages of the patient pathway and optimising this. For example, all the staff in the operating theatres doing joint replacements were briefed together so that they were all aware of each patient and the theatres could provide mutual aid. The trust reports that this approach resulted in sustained improvement in the services; their current activity is 130–160% of their 'business as usual' activity.

In a 'perfect week' in October 2020, the trust reportedly exceeded expectations by carrying out 135 hip and knee replacements, against the plan of 100, with 70% of these patients having been on the waiting list for more than 8 months. The trust also reported reducing the number of patients waiting more than a year for treatment from 2,430 in March 2021 to 959 in December 2021. In addition, the trust has reportedly reduced the cancellation of operations by approximately 30% in six months.

The learning has been shared with other clinical teams, including spinal, ophthalmology, gastroenterology and paediatrics, who have delivered similar initiatives for the benefits of their patients.

RCS England President, Professor Neil Mortensen, visit to the surgical hub at Barking, Havering and Redbridge University Hospitals NHS Trust, December 2021. Credit: Barking, Havering and Redbridge University Hospitals NHS Trust'

2. STAND-ALONE HUB

In the stand-alone model, the hub is on a site away from the main hospital and can be run by the NHS or the independent sector. As it is not near the critical care facilities of the main hospital, the hub is suited to lower risk, lower complexity patients. Since it is separate from acute care, there is no competition for operating theatres or staff to be used for urgent and emergency cases. There is a focus on high volume, low complex procedures that require day surgery rather than an overnight stay. Typical procedures that take place are hip/knee replacements, gallbladder removals and hernia repairs.

ST GEORGE'S UNIVERSITY HOSPITALS NHS FOUNDATION TRUST

In direct response to the pandemic, St George's University Hospitals NHS Foundation Trust built a stand-alone surgical hub in the car park of Queen Mary's Hospital in Roehampton. With investment from NHS England's elective recovery fund, the modular unit was constructed in under four months and started treating patients in June 2021.

The hub has 4 dedicated operating theatres along with a recovery area and it can facilitate approximately 120 procedures a week.[15] The first operation starts at 8am and the hub is open until 7.30pm. The plan is to eventually run 7 days a week with the aim to deliver 10,000 surgical procedures a year. The hub covers specialties including plastic surgery (e.g. skin cancer procedures), urology (e.g. cystoscopies and prostate operations), gynaecology, maxillofacial, vascular, general surgery, renal, breast, and trauma and orthopaedics. Although the hub is being run by St George's University Hospitals NHS Foundation Trust, it is also used by surgical teams from Kingston Hospital NHS Foundation Trust. Over time, it will be available for use by patients from across southwest London requiring day surgery procedures.

For urology procedures, the surgical hub has reported a significant reduction in the number of patients on the waiting list for 52 weeks, with this reducing by 81% across southwest London over the last 12 months. The increase in access to day case surgery at the hub has also improved the day case rates for urological surgery in southwest London to 76.1%, which is within the top quartile for integrated care systems nationally.

In addition, surgical training at the hub is embedded and recognised as important. A urology trainee has reportedly managed 297 operations at the hub over a 5-month period. Patient experience has also been generally very good with high levels of satisfaction shown via a dedicated questionnaire.

Surgical hub at Queen Mary's Hospital, St George's University Hospitals NHS Foundation Trust. Credit: Vanguard Healthcare Solutions Ltd

LAGAN VALLEY HOSPITAL, NORTHERN IRELAND

At Lagan Valley Hospital, a clinically led day procedure network has been established as a dedicated surgical hub for high priority day case procedures. Before the pandemic, Lagan Valley had been identified as a potential site for a stand-alone surgical hub for patients who had been waiting a long time for day procedures. However, the impact of COVID-19 meant that throughout Northern Ireland, many urgent and suspected cancer procedures were being cancelled owing to staffing issues and the need to increase intensive care unit capacity across the region. This prompted the trust to reconsider the activity being undertaken in the Lagan Valley hub, and it was agreed that all urgent and suspected cancer cases across Northern Ireland that were appropriate for the facility would be treated at the hub, alongside other high volume, low complexity surgical procedures.

The hub contains three operating theatres and 23 admission/recovery spaces. Between January and May 2022, the hub treated over 3,000 patients across a range of specialties, including general surgery, urology and breast surgery. In addition, the hub completed a pilot for hernia surgery whereby the number of operations was increased from six hernia patients per operating list to eight. There was also a different surgeon operating every week with surgical trainee support.

The governance and management of the hub was placed under the responsibility of the South Eastern Health and Social Care Trust. While there have been some persistent difficulties around the transfer of patients across trust boundaries, the work at the site has been driven and managed by a small team of committed individuals who have engaged openly and equitably with other health and social care trust organisations. The success of the model is dependent on the host trust protecting the available staff and beds for regional patients.

Plans are in place to develop the hub at Lagan Valley in the longer term with a view to tackling the lengthy waiting lists for day procedures.

RCS England Presidential visit to the surgical hub at Lagan Valley Hospital, Northern Ireland, February 2022. Credit: Lagan Valley Hospital

WRIGHTINGTON, WIGAN AND LEIGH TEACHING HOSPITALS NHS FOUNDATION TRUST

Wrightington Hospital is the stand-alone surgical hub for Wrightington, Wigan and Leigh Teaching Hospitals NHS Foundation Trust. During the pandemic, the hospital operated as a COVID-light/ green site and was identified as the dedicated Greater Manchester elective recovery hub in the summer of 2021. It serves to support patients from Greater Manchester, Lancashire and Cumbria, helping to ensure equity of access and reduce waiting times across the region.

The hub has twelve operating theatres, of which all but one specialise in orthopaedics. It undertakes more hip, elbow, shoulder and ankle replacements than any other UK hospital. The hub provides mutual aid to surgical teams across Greater Manchester to enable them to treat patients waiting a long time for surgery, including those waiting over two years In some cases, the hub provides theatre capacity to the neighbouring trust, where the visiting surgeon uses the theatre space and team to treat patients who could not be supported at their hospital. The hub has received the transfer of 146 patients from a trust in Greater Manchester through the mutual aid scheme. In total, the hub has undertaken over 6,900 surgical procedures since being recognised as a hub in August 2021.

It is widely acknowledged that the COVID-19 pandemic disproportionately affected the North West compared with the rest of England; this has an impact on the speed of recovery. At the beginning of 2022, there were approximately 455,000 patients on the Greater Manchester waiting list, equating to 1 in 6 people in the region waiting for elective care. As of 30 May, 1,332 people had been waiting over 104 weeks, which was ahead of the recovery plan for Greater Manchester. In terms of Wrightington, Wigan and Leigh Teaching Hospitals NHS Foundation Trust's waiting list for orthopaedics, as of 30 May, there were 4,978 people on the overall list, with 407 patients waiting more than 52 weeks and 17 waiting more than 104 weeks. Greater Manchester remains ahead of its 104-week (2-year) trajectory and is now turning its attention to the next key milestone of eradicating 78-week (18-month) waits by March 2023.

Although the primary purpose of the hub is to focus on high volume, low complexity procedures, the plan over time is to provide more complex work to expand its offer to patients in the North West and beyond. The hub has received investment for the development of a discharge lounge, which will support patient flow and optimise bed capacity. In addition, there are plans to add a modular theatre to the site in 2023–2024 while a laminar flow modular theatre is planned on another trust site, which will allow the movement of general surgery and build further orthopaedic capacity.

EXAMPLE OF REGIONAL PLANNING TO CREATE BOTH A STAND-ALONE AND INTEGRATED HUB

CARDIFF AND VALE UNIVERSITY HEALTH BOARD

Early in the COVID-19 pandemic, clinicians at the Cardiff and Vale University Health Board decided to reconfigure services at the University Hospital of Wales and University Hospital Llandough to prevent the widespread cancellation of elective surgery. This resulted in three surgical hubs in three different sites.

A stand-alone hub was established at the local Spire Healthcare hospital through an agreement to take over its staff and operating theatres. Within three weeks, the health board had transferred the majority of its ophthalmology operations, low risk orthopaedic operations, breast surgery and other cancer operations to the hub on the Spire site.

In addition, a 'hub within a hospital' was set up 12 weeks later at University Hospital Llandough for higher risk orthopaedic surgery, breast surgery and cardiovascular services, including an intensive care unit. All other specialties remained at another 'hub within a hospital' at the University Hospital of Wales.

The clinical team made substantial changes to how services plan and deliver elective operations. Patients are all fully pre-assessed and arrive prepared with minimal risk of cancellation prior to their surgery. They return to the same bed, which carries minimum risk of postoperative complication and postoperative nosocomial infection, and are discharged promptly. There are also dedicated and self-contained clinical teams to deliver surgery pathways, rather than sharing staff with other services.

The health board is now in discussion with the Wales Health Specialised Services Committee and other health boards (Swansea Bay in particular) on the support they can offer through these surgical hubs to ensure that time critical services (e.g. thoracic, upper gastrointestinal and hepatobiliary surgery) can continue across South Wales.

As of May 2022, staff at Cardiff and Vale have reportedly been able to treat more than 18,000 patients in these surgical hubs.

3. SPECIALIST SURGICAL HUB

The specialist surgical hub model is generally a stand-alone hospital focused on one specialty, such as complex orthopaedics. The hub undertakes complex surgery, including for cancer or ENT conditions. These may be lower in volume but are often of a high clinical priority. The hub has an intensive care unit on site and treats patients across its region.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL NHS TRUST

The Royal National Orthopaedic Hospital (RNOH) NHS Trust in Stanmore, northwest London, is a specialist orthopaedic hospital for children and adults with a wide spectrum of complex bone and muscle problems. It has a proud history of orthopaedic elective surgeries, including: treatment for sarcoma (cancer of the bone and soft tissue); congenital and other conditions affecting the spine, bone and muscle; peripheral nerve injury surgery; complex ankle, shoulder, knee and hip surgery; and limb surgery. The hospital is also London's spinal cord injury centre, providing complex rehabilitation for patients with spinal cord injuries, as well as a specialist centre for patients needing prosthetic limbs.

After the first wave of the pandemic, RNOH started to provide mutual aid support to neighbouring hospitals, and acted as the hub to treat adults and children with complex spinal and orthopaedic conditions across north central London. Its focus has been paediatric and spinal patients, helping to safely clear the backlog of these complex procedures, and freeing up space and resources in other hospitals. Occasionally, surgeons from those hospitals travel to Stanmore to perform operations on their patients while RNOH provides the rest of the theatre team and aftercare. At times, Stanmore delivers all aspects of care through the patient journey.

Cooperative and supportive working between hospitals has enabled care for more patients. Over the past two financial years (2020–2021 and 2021–2022), RNOH had 217 admissions for elective surgical aid. Approximately 20% of these admissions have been children's orthopaedics. RNOH has also run a high intensity outpatient service to clear a backlog of approximately 350 paediatric patients for a neighbouring provider.

APPENDIX 2: METHODOLOGY OF THIS PAPER

RCS England commissioned the Strategy Unit in October 2021 to explore the impact of separating elective and emergency flows on the elective care throughput. The primary data source was the pseudonymised, record level (Secondary Uses Service) admitted patient care tables for the NHS in England held in the National Commissioning Data Repository.

This was interrogated to consider:

- the balance between elective and emergency activity (admissions and bed days) by specialty;
- the extent to which this varies over time, exhibits seasonal variation and is subject to specific shocks (e.g. winter pressures, COVID);
- the extent to which this varies geographically (by region and ICS) and by specialty.

The Strategy Unit's work was complemented by RCS England's assessment of surgical hubs, including anecdotal evidence from its members across England, Wales and Northern Ireland. The RCS England team also spoke to individual hospital trusts to develop the case studies of surgical hubs.

The Strategy Unit's analysis was undertaken by Steven Wyatt and Alexander Lawless. It was complemented by further research and policy development by the RCS England public policy team, Tamora Langley and Catherine Wrigley. We are also grateful for the evidence received rom hospital trusts which enabled us to develop the case studies of surgical hubs.

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