 doi:10.20944/preprints202005.0203.v1

Evidence based suggestions for the return to elective urology surgery following the COVID-19 Pandemic.

Sarkhell Radha[1,2] , Irrum Afzal[2] , Stella Vig[1]
Corresponding Author:

Mr Sarkhell S Radha MBChB, PG Cert, MSc, MBA, MRCS, FRCS (Tr & Orth)
Consultant Trauma and Orthopaedic Surgeon
COVID-19 Strategy Lead and Business Continuity Manager
COVID-19 Coordinating Consultant

Croydon University Hospital London
530 London Road
Thornton Heath
CR7 7YE
Email: Sarkhell.radha1@gmail.com
Phone: 07377687272

1. Croydon University Hospital London
530 London Rd,
Thornton Heath
CR7 7YE

2. South West London Elective Orthopaedic Centre
Dorking Road
Epsom
KT18 7EG

 doi:10.20944/preprints202005.0203.v1

Abstract:

The COVID-19 pandemic has presented the world with increased challenges. The response to this pandemic has led to a sudden disruption of routine medical and elective surgical care. Most hospitals across the globe have had to change the way outpatient clinics are carried out and postpone non-urgent elective surgical procedures. NHS England ceased all elective general surgeries to train and re-deploy their staff to support the increased pressures from COVID-19 in an intensive care setting.

However, with a decline of reported cases and deaths, the return to undertaking non-urgent elective services is imminent. In May 2020, Radha and Afzal published the first evidence-based guidelines for the resumption of elective orthopaedic services titled “Evidence based suggestions for the return to elective orthopaedic surgery following the COVID-19 Pandemic”. The pathway presented is adapted from the “Evidence based suggestions for the return to elective orthopaedic surgery following the COVID-19 Pandemic” and could potentially be used as a model for other surgical specialities. We present a three-phased return back to urological services.

Safe resumption of elective care is possible but needs to be carefully planned.

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Introduction:

To date over 3,478,748 confirmed cases of COVID-19 have been reported and over 200,000 deaths from COVID-19 have been reported worldwide [1].

The response to this pandemic has led to a sudden disruption of routine medical and elective surgical care. Most hospitals across the globe have had to change the way outpatient clinics are carried out and postpone non-urgent elective surgical procedures. NHS England ceased all elective general surgeries to train and re-deploy their staff to support the increased pressures from COVID-19 in an intensive care setting [2,3,4].

However, with a decline of reported cases and deaths, the return to undertaking non-urgent elective services is imminent. In May 2020, Radha and Afzal published the first evidence-based guidelines for the resumption of elective orthopaedic services titled “Evidence based suggestions for the return to elective orthopaedic surgery following the COVID-19 Pandemic” [5]. This document aims to present a guideline to facilitate the return of elective urological surgery service. The pathway presented is adapted from the “Evidence based suggestions for the return to elective orthopaedic surgery following the COVID-19 Pandemic” [5] and could potentially be used as a model for other surgical specialities.

Phased return of elective work:

The clinical guide to surgical prioritisation during the COVID-19 pandemic provided by NHS England has classified the patients requiring surgery into four categories. These categories ensured that patients requiring surgery during the surge were appropriately treated. These categories do not include a stratification of risk based on the COVID-19 risk profile of patients and are therefore of limited use when resuming services [6]. The guidance provided by the Royal College of Surgeons of England uses the NCEPOD and classifies patients into immediate, urgent, expected and elective without any risk secondary to COVID-19 itself [7] This extra layer of risk stratification is important when returning services to pre COVID levels.

This paper aims to present guidance for the resumption of elective urology surgery with a potential return to pre COVID levels within six months.

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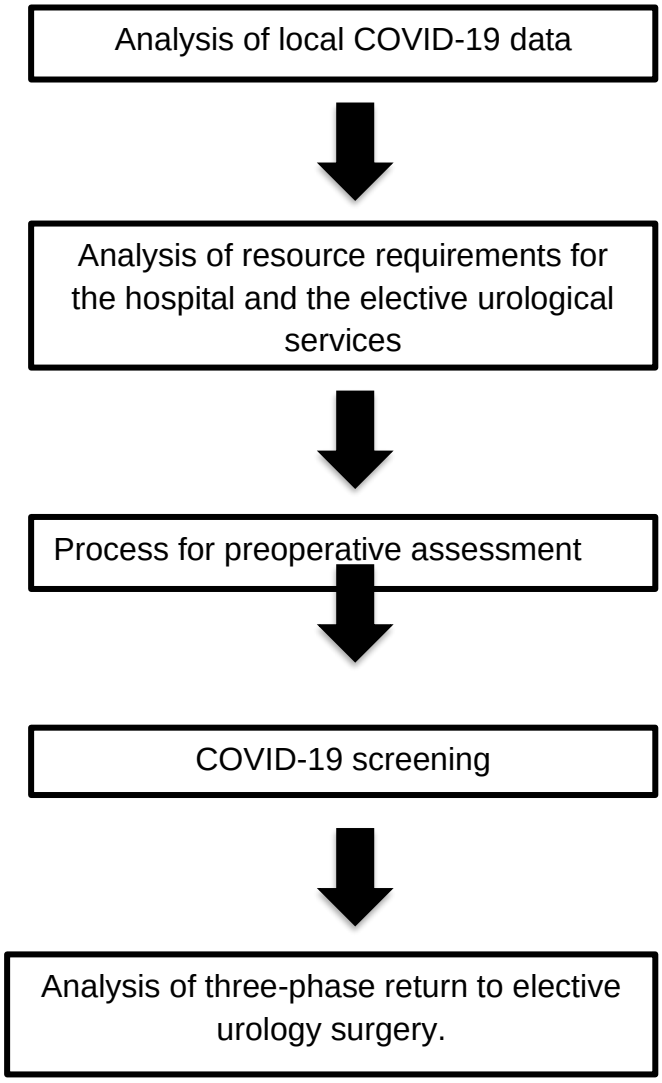
Assessment of the Urology Service

The following must be considered prior to resuming elective urology services.



Analysis of local COVID-19 data

The national analysis of COVID-19 infections and deaths associated with demographics should be viewed alongside a local analysis of COVID-19 data. This methodology is outlined in *the Evidence based suggestions for the return to elective orthopaedic surgery following the COVID-19 Pandemic [5].*

This would involve Identification and analyse of data from COVID-19 admissions into the hospital (local COVID-19 profile) to develop a COVID-19 risk classification profile with low, medium and high risk. This process is outlined in the table below:

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Analysis required:	Details:
COVID-19 profile	COVID-19 presenting symptoms Classification into low, medium and high-risk categories depending on outcomes of complications of COVID-19
Patient demographics	Age, Ethnicity, Gender, Postcode, Index of Multiple Deprivation
Patient past medical history	Including: Height, Weight, BMI, past medical history, chronic problems, current problems, current medications, immunisations and allergies.
Admissions	Requirement for admission, treatment modalities, admission to intensive care or HDU and oxygen or organ support.
Outcome following COVID-19 Infection	Discharged home, care setting or death

Analysis of resource requirements for the elective urological services and the organisation.

Service

The analysis of all urology and co-dependent services should be undertaken. Analysis should include the admitted, non-admitted and planned activity as well as diagnostic processes:

Services	Type of activity
Out-patient appointments	New
	Follow-up
Diagnostics	Non interventional
	Interventional
Deferred procedures	Cancelled by patients
	Cancelled by the organisation
On the waiting list (PTL)	Pre-assessed
	Awaiting pre-assessment
	Patient declining treatment
Planned procedures	

Each of the services should undertake a clinical validation to include the patient's demographics, social status, post-operative care requirements (ITU/HDU) and current COVID-19 status. Residence in a care or nursing

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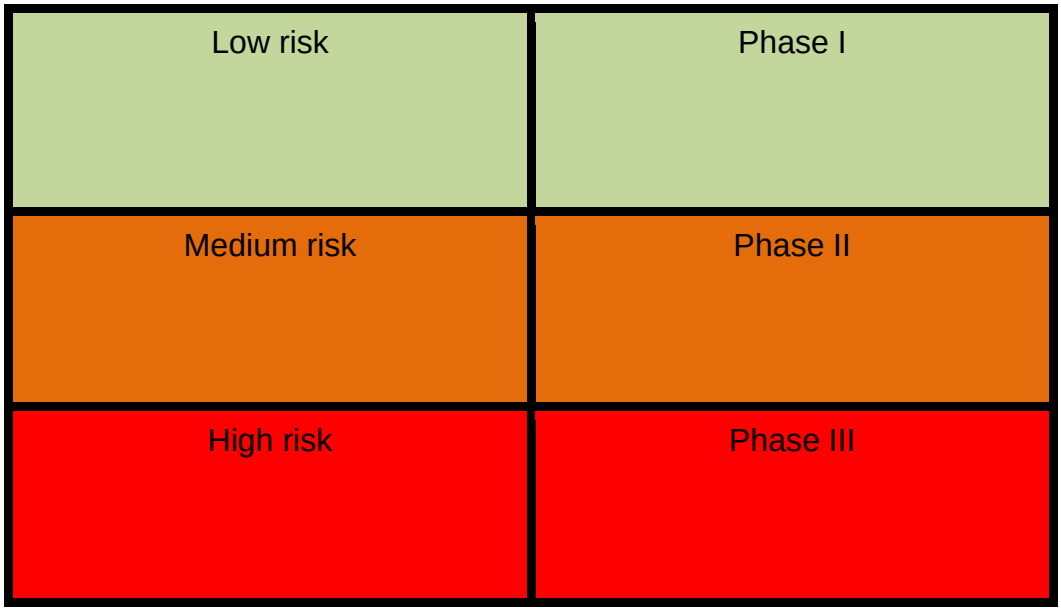
home should be considered as an extra risk factor. This risk factor may require surgeries to be delayed until the pandemic has resolved [8,9,10].

The analysis of current COVID-19 patients (based on local, regional and or national data) will enable classification into three groups, low risk, moderate risk and high risk, depending on their symptoms and outcome from contracting COVID-19 infection "COVID-19 risk profile "[11]. Application of these low, moderate and high-risk parameters to the elective patient's profile will allow stratification into a low risk, moderate, and high-risk group.

Elective urology procedures should also be further classified into day case vs inpatient and those needing post-operative HDU/ITU care.

Classification and matching should be done as below:



Organisation

The following processes should be implemented:

Clinical Review Group

Clinical review of individual cases is vital especially those waiting over 40 weeks on a referral to treatment pathway. A trust clinical review multidisciplinary group is essential in developing a robust process for booking and utilising reduced elective capacity. Implementing a daily virtual meeting with surgeons, anaesthetists, theatre and management staff to discuss case mix, theatre utilisation, theatre efficiency, post-operative care and discharge planning enables an innovative process. This discussion should also aid the

consent process and the individual discussion of risk as discussed within this group.

Resource

Reduction of COVID-19 load is vital, and organisations need to consider how the estate footprint maybe used to reduce cross contamination. This would involve clear pathways and a reduction of footfall within the estate. This also includes enhanced cleaning schedules within the elective zones.

Forward planning of PPE, anaesthetic equipment, implants and medications as well as consideration of risk of the procedure to the operator and team is key. This will follow national, college and society guidelines.

Impeccable infection control guidance must be followed, and regular updates and retraining will ensure a gold standard practice.

A dedicated surgical and medical workforce delivering elective care and divorced from the emergent activity is key to reducing cross contamination [11].

Staff Testing

All staff must be tested for COVID-19 prior to resumption of elective work. Any individual becoming symptomatic must be isolated and retested.

Following the American Academy of Orthopaedic Surgeons (AAOS) guidance, all staff should be tested using Reverse Transcriptase PCR (RT-PCR) which detects SARS CoV-2 viral RNA (ANTIGEN) in the oropharynx and nasopharynx. Although AAOS reported that current PCR test as highly sensitive, it does have its own drawbacks. The number of PCR reagent kits required is limited as production has not been able to keep up with the demand.

At present, many hospitals lack the infrastructure to undertake PCR testing and on-site point of care testing is even more limited. As a result, hospitals are unable to process samples and have to outsource the testing to other hospitals, which can be expensive and incur delays.

In addition, RT-PCR testing relies on the on the presence of detectable SARS-CoV-2 in the sample collected. If a patient has recovered for SARS-CoV-2, this will be not detected by the RT-PCR testing. CT scans have been used to detect SARS-CoV-2 in some selected cases. However, CT scans cannot specifically diagnose COVID-19 and are expensive and inappropriate for staff testing [12].

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There is work underway to develop other tests such as Nucleic Acid Testing and Protein testing. When available, staff should be offered Antibody testing if available [13]. It is suggested that repeat testing should be undertaken but national guidance is awaited as to how often.

Process for preoperative assessment:

Innovation with virtual preassessment is key to reduction of face to face appointments and increased risk of COVID-19 transmission.

This paper suggests the following process:

1. Implement a screening preoperative questionnaire using telemedicine.

2. All scheduled patients should complete a questionnaire 14 days prior to surgery with appropriate healthcare professionals using telemedicine. This will allow optimisation of patient selection. In addition, this 14-day window will allow for additional testing or imaging required for preoperative planning.

3. Any urine or laboratory testing and further radiological imaging procedures should be determined over the phone and planned. Testing and repeat testing without indication is discouraged.

4. Methicillin-resistant Staphylococcus aureus (MRSA) and Methicillin-sensitive Staphylococcus aureus (MSSA) swabbing will be done five days prior to surgery. All patients regardless of test results will be given Octenisan body wash at their five-day visit. They are advised to use this either four days prior to surgery and one day after surgery, or three days prior to surgery and 2 days after surgery to reduce the risk of post-operative sepsis or wound infection [14,15,16].

5. Assessment for the need for post-operative care should be undertaken in the preoperative questionnaire.

6. Where possible local and regional anaesthetic should be considered rather than a general anaesthetic.

6. Patients who are asymptomatic and COVID-19 positive will be deferred until they test negative.

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COVID-19 patient testing

This is key to ensuring safe elective care and the following steps should be followed:

1. In addition to the regular pre-operative screening questionnaires, patients will be invited for COVID-19 swabbing five days prior to surgery.

2. Any face to face pre operative assessment and COVID-19 test and or swabbing required will be undertaken in one sitting at the hospital five days prior to the planned surgery.

3. The COVID-19 screening questionnaire will then be repeated again 48 hours before surgery. The incubation period for COVID-19, which is the time between exposure to the virus (becoming infected) and symptom onset, is on average 5-6 days, however can be up to 14 days. These estimates of the incubation period of COVID-19 are also in line with those of other known human coronaviruses, including SARS (mean, 5 days; range, 2 to 14 days. MERS (mean, 5 to 7 days; range, 2 to 14 days and non-SARS human coronavirus mean, 3 days; range, 2 to 5 days [17,18,19,20].

The Journal of Bone and Joint Surgery listed the clinical symptoms in 3470 patients with COVID-19, the list of symptoms presented are fever (83%), cough (61%), fatigue (27%), sputum production (21%), muscle aches (14%), gastrointestinal symptoms, dyspnoea (12%) sore throat (8%) headache (9%) and upper airway symptoms (5%) [11]. Patients may also be asymptomatic.

Do you have any of the below symptoms?	**Answer (Yes/NO)**	**If yes, when was the on-set of symptoms**
Fever		
Cough		
Fatigue		
Sputum production		
Muscle aches		
Gastrointestinal symptoms		

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Dyspnea		
Sore throat		
Headache		
Upper airway symptoms		

Table 1: COVID-19 screening questionnaire

Proposal of a three-phase return to elective urology surgery:

We propose a three-phase strategy for resuming elective urology surgery.

Prior to returning to elective work, the main priorities must be:

Patient safety and healthcare work safety [11,21].
In contrast to the literature, we stress the equal importance of both healthcare workers and patient's safety during the pandemic. It is important all staff feel safe and well protected when coming into work to undertake elective urology surgery [21, 23, 24, 25,26]. Healthcare work professional's safety is pivotal for effective and efficient patient care. This must also encompass the mental and well being of all staff involved in frontline care.

Testing
Of all staff involved in reinstating elective service.

Resource
Adequate multidisciplinary staffing for all elective urology cases. Strong coordination of key staff members, including surgeons, radiologists, radiographers, anaesthetists, nurses, and housekeeping staff. This requires a contingency factor for staff who will test COVID-19 positive. The wider surgical workforce should be considered as first assistants and independent practitioners.

Infection Control Guidance
Strict protocols and retraining must be considered for the estate and workforce.

The three phases of engaging in activity to pre COVID levels must be reassessed to ensure that the phasing is in keeping with national guidance and the viral load within the community (R and r levels). These phases are outlined below:

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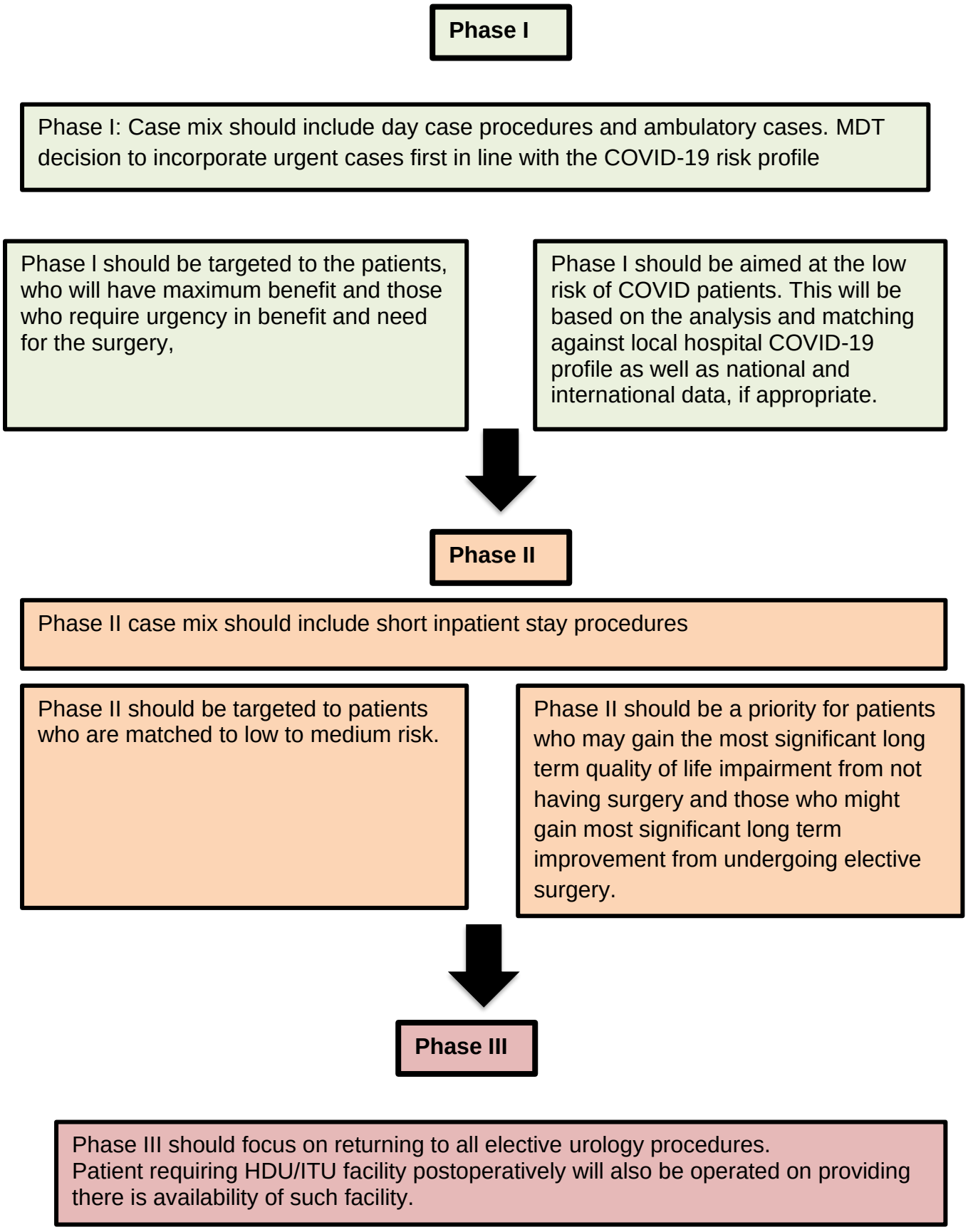
Phases of return to elective urology services:



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Post-operative guidelines

Patients should be managed so that they have a reduced length of stay within a healthcare environment. To ensure this, patients should be optimised preoperatively to facilitate an early discharge.

Patients must receive patient information and a post-operative careline number. This will set patient's expectations and reduce post-operative attendances unless required. Follow up appointments should be arranged virtually if possible.

Summary

Safe resumption of elective care is possible but needs to be carefully planned. This will result in a reduction of risk to patients but also to health care staff. This must be planned nationally but a local implementation understanding local risk and resource factors are essential.

 doi:10.20944/preprints202005.0203.v1

Conflicts of Interest:
The authors of this publication have no conflicts of interests to declare with regards to this work.

Funding Statement:
This publication received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Data availability statement:
Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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