



**Health  
Information  
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Authority**

An tÚdarás Um Fhaisnéis  
agus Cáilíocht Sláinte

# **Evidence summary for care pathways support for the resumption of scheduled hospital care in the context of COVID-19**

**18 June 2020**

The Health Information and Quality Authority (HIQA) has developed a series of evidence reviews to assist the Acute Operations sub-group of the Expert Advisory Group (EAG) in supporting the National Public Health Emergency Team (NPHE), in their response to COVID-19. This evidence summary was developed to address the following research question:

**What are examples of pathways (processes or principles) for the resumption of scheduled hospital-based care postponed or cancelled due to mitigation measures implemented in response to COVID-19?**

## **Key points**

- Resumption of scheduled care within the hospital setting must occur in a manner which optimises patient care while minimising risks to the public, to healthcare staff, and to the wider health service. A key challenge will be in maintaining adequate capacity to deal with a potential resurgence of COVID-19 cases.
- The systematic search identified 45 relevant documents for review. These documents were mostly based on expert opinion and, other than one document, did not report a systematic approach to identifying and producing guidance.
- Despite coming from a broad range of medical disciplines, some consistencies were found across the included documents. These were categorised into three measure themes; organisational management, physical space, and patient flow.
- Guidance documents issued by Ministries for Health were mainly high level in nature and consistently referred to a gradual increase in activities with a requirement for adequate capacity, infection control and personal protective equipment (PPE) supplies. Detail was provided on patient prioritisation, suggested approaches to elective surgery, minimum requirements to restore scheduled treatment and the use of pathways to separate planned versus emergency care.
- Guidance documents from professional societies covered a number of specialties including surgery, endoscopy, reproductive medicine, urology, cardiology, ophthalmology, gastroenterology, and radiology. The level of detail and breadth of the guidance varied considerably although most referred to prioritisation of care and a gradual resumption of service. Several documents described considerations for various stages of surgery and endoscopy, i.e., patient pathways.
- As more regions continue to ease restrictions related to COVID-19, it is anticipated that further guidance will be published, although, given the scope of guidance identified to date, additional novel recommendations are less likely.
- As the pandemic progresses, national organisations are likely to increasingly consider a broader population perspective, including issues such as cost-effectiveness, resource considerations and budget impact.
- Guidance documents emphasise the requirement for local data collection to assess the effectiveness of any measures introduced and to inform decisions around their escalation or de-escalation.
- There is likely to be a time lag before evidence on the effectiveness of measures specific to COVID-19 are available. Furthermore the transferability of such data is uncertain. Measures are typically multi-component, with effectiveness impacted by the scale of community transmission, local infrastructure, and staffing levels, among other factors.

## **Background**

In response to the COVID-19 pandemic, and following recommendations from the National Public Health Emergency Team, non-essential scheduled hospital care in Ireland was largely postponed from 27 March 2020, representing an unprecedented interruption to activity. On 1 May 2020 the Government of Ireland published the Roadmap for Reopening Society & Business,<sup>(1)</sup> which indicated a planned increase in the “delivery of non-COVID-19 care and services alongside COVID-19 care to meet demand”. This planned increase was scheduled across phases 1 (commencing 18 May) and 2 (commencing 8 June) of the Roadmap.

Given the continuing threat of COVID-19 (SARS-CoV-2 infection) to the Irish population, ongoing resumption of scheduled hospital services will occur within a context of continuous risk of infection to both patients and healthcare staff, and the associated risks to the overall health service. Meanwhile, public apprehension of contracting the virus within the hospital setting may affect attendance for hospital-based treatment.<sup>(2)</sup> Data communicated internally by the HSE Quality Improvement Division have shown a substantial drop in emergency department attendance in recent months. While a steady return to care has been observed since early April, figures for the period 1-17 May 2020 remained 27% lower than that observed in the same period in 2019.<sup>(3)</sup>

The NPHET Public Health Framework Approach published on 1 May 2020 in relation to reducing social distancing measures refers to the challenge of delivering services in a ‘COVID-19-safe’ way and restoring the confidence of members of the public to avail of those necessary services.<sup>(2)</sup> Resumption of scheduled care within the Irish hospital setting must continue to occur in a planned, appropriate manner which optimises patient care while minimising risks to the public, to healthcare staff, and to the wider health service.

This evidence review summarises guidance that has been issued internationally to support the resumption of scheduled hospital care following interruption in the context of COVID-19. The focus of this review is on guidance published by national-level ministries, agencies, and professional bodies.

## **Methods**

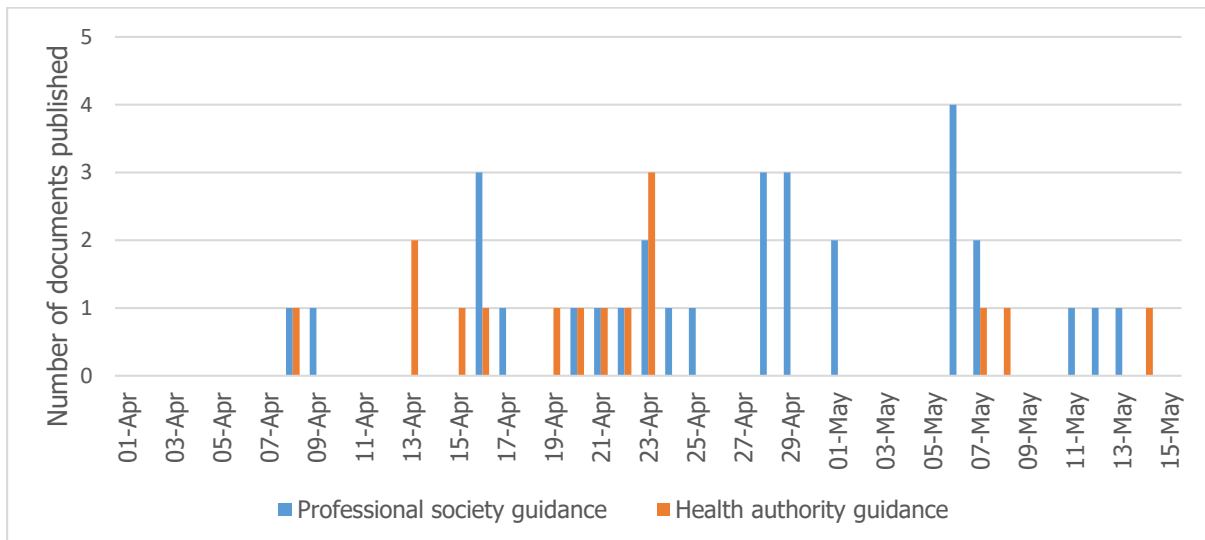
A protocol containing the methodology of this review has been developed by HIQA, which was followed throughout its conduct. A scoping review was undertaken between 24 April 2020 and 27 April 2020. Updates were subsequently made to the review with searches completed up until 15 May 2020. Quality appraisal of the

included documents, assisted by the use of the Joanna Briggs Checklist for Text and Opinion,<sup>(4)</sup> was conducted.

## Results

The systematic search identified 45 relevant documents for review. These included 14 documents from government or health authorities, 30 documents from professional bodies, and one document which was a joint release from government and professional bodies.<sup>(5)</sup> Documents were published or updated between 8 April and 15 May 2020 (Figure 1). A summary of the range of documents found by jurisdiction is provided in Table 1 and described further below. Additional details of these documents are tabulated in Appendix 1.

**Figure 1: Dates of initial publication of guidance, where available**



**Table 1: Jurisdictions where plans for hospital care resumption have been officially announced**

Region or country	Health authority guidelines / principles / processes identified	Professional body guidelines / principles / processes identified. Care type, Specialties
<b>European region overall (EU)</b>	Yes; EU roadmap <sup>(6)</sup>	Medicine, Surgery: Cardiology, Urology, Reproductive medicine <sup>(7-9)</sup>
<b>Ireland</b>	-	Surgery <sup>(10)</sup>
<b>UK</b>	Yes; planned and elective care <sup>(11)</sup>	Surgery: <sup>(12, 13)</sup> Medicine, surgery: Ophthalmology <sup>(14)</sup> Reproductive Medicine <sup>(15, 16)</sup> Radiology <sup>(17, 18)</sup> Trauma & orthopaedic surgery <sup>(19)</sup>
<b>Switzerland</b>	Yes; surgery <sup>(20)</sup>	-
<b>Estonia</b>	Yes; surgery and outpatient <sup>(21)</sup>	-
<b>Croatia</b>	No detail other than date for resumption; all healthcare services with some restrictions (unspecified) <sup>(22)</sup>	-
<b>Iceland</b>	No detail other than date for resumption; healthcare excluding surgery <sup>(23)</sup>	-
<b>Denmark</b>	No detail other than resumption of hospital care to take place with infection control measures. <sup>(24)</sup>	-
<b>Norway</b>	No detail other than hospitals returning to normal operation <sup>(25)</sup>	-
<b>Spain</b>	-	Medicine/surgery/endoscopy: Societies and guidance specific to gastroenterology. (Societies: SEPD, AEEH, GETECCU) <sup>(26)</sup>
<b>Asian region overall</b>	-	Endoscopy <sup>(27)</sup>
<b>USA</b>	Yes; general hospital care, <sup>(28)</sup> surgery <sup>(29)</sup>	Radiology <sup>(30)</sup> <b>Surgery:</b> General surgery, Plastic surgery, <sup>(31-33)</sup> Cancer surgery <sup>(34)</sup> <b>Medicine/surgery:</b> Overall medical association, <sup>(35)</sup> Additional societies specific to reproductive medicine (ASRM) <sup>(36)</sup> Ophthalmology <sup>(37)</sup> Women's healthcare <sup>(38)</sup> <b>Endoscopy:</b> Gastrointestinal <sup>(39)</sup>
<b>Canada</b>	Yes (Ontario); surgery and procedures <sup>(40)</sup>	Surgery: Cardiac <sup>(41)</sup>

<b>North America</b>	-	Cardiovascular services <sup>(42)</sup>
<b>Australia</b>	Yes; surgery <sup>(5, 43, 44)</sup>	Surgery: <sup>(5)</sup> Orthopaedic <sup>(45)</sup>
<b>New Zealand</b>	Yes; surgery and outpatient <sup>(46)</sup>	-
<b>International</b>	-	Orthopaedic surgery <sup>(47)</sup> Paediatric cancer <sup>(48)</sup>

Table 2 provides additional information, where available (17 of 45 included documents), on the methodology or source of expert opinion used in the guidance development. No documents were found to have detailed the use of a systematic search approach to identifying guidance from the literature. Four documents provided details of the approach used to identify expert opinion.<sup>(16, 30, 47, 48)</sup> The British Fertility Society explained that the working group wrote to the memberships of the Association of Reproductive and Clinical Scientists (ARCS) and the British Fertility Society (BFS) and also sought stakeholder and patient submissions, in addition to a review of national COVID-19 guidance.<sup>(16)</sup> The American College of Radiology described how writing group members were chosen.<sup>(30)</sup> Sullivan et al. detailed the dates during which their guidance on paediatric cancer surgery was developed and explained that this emerged from ten disease and specialty working groups.<sup>(48)</sup>

Two documents were described as consensus guidelines.<sup>(47, 48)</sup> The most systematic approach among the included documents was adopted by the International Consensus Group (ICM) and Research Committee of the American Association of Hip and Knee Surgeons (AAHKS) who used a Delphi method to achieve consensus on their guidance.<sup>(47)</sup> The Delphi approach is concerned with deriving a group decision from a set of 'expert' individuals.<sup>(49)</sup> It involves the individuals participating in rounds of questionnaires with responses being fed back to the individuals. Importantly, participants have the opportunity to modify their responses. In the case of the AAHKS, the authors describe how the guidance was developed by 77 members. The set of questions, recommendations and associated rationale included in the guidance were reviewed and voted on by all members and a revised document was again voted on by all members. Finally, the grade of each recommendation was determined based on the strength of the supporting literature in addition to the confidence of the participating members.

All four documents which detailed the method of identifying expert opinion were published on or after the 1 May, suggesting a likely trade-off between early release of guidance versus methodological rigour. Similarly, guidance released later appeared to include a more extensive list of citations. For example, the American Society for Reproductive Medicine has published a series of four patient and clinical management recommendations since 30 March, where updates number three and four relate to resumption of care. Update number three did not reference existing literature, but update number four included 14 citations relating to recommendations from other groups and to studies and reports of COVID-19 transmission and patient

outcomes.<sup>(36, 50)</sup> As detailed below under 'Quality appraisal of included documents', few documents overall included reference(s) to the existing literature. However, such references were more common in documents released more recently, <sup>(15, 34, 47, 48)</sup> as more literature related to COVID-19 has emerged.



**Table 2: Methodology and/or authoritative source for guidance development**

Health authority / Professional Society	Description of guidance as per document	Methodology and/or authoritative source for guidance development
<b>Australian Ministry for Health and 10 Australian professional bodies*</b> <sup>(5)</sup>	Principles for patient selection for elective surgery.	Principles for patient selection recommended by the Australian Health Protection Principal Committee (AHPPC) and endorsed by National Cabinet
<b>American Society of Plastic Surgeons (ASPS)</b> <sup>(33)</sup>	Considerations and recommendations for the resumption of elective surgery and visits.	'...based on available information, CDC guidelines and other regulations.' Approved by the ASPS Executive committee.
<b>American Society for Reproductive Medicine (ASRM)</b> <sup>(36)</sup>	Clinical recommendations / Guidance document during the pandemic.	Reflects the views of members of the Task Force. Guidance document approved by the Executive Committee of the ASRM.
<b>European Society for Human Reproduction and Embryology (ESHRE)</b> <sup>(9)</sup>	Guidance on recommending treatments.	Represents the views of ESHRE, which were achieved after careful consideration of the scientific evidence available at the time of preparation. In the absence of scientific evidence on certain aspects, a consensus between the relevant ESHRE stakeholders has been obtained.
<b>Asian Pacific Society for Digestive Endoscopy (APSDE)</b> <sup>(27)</sup>	Position statement on practice of endoscopy during the pandemic.	Developed by 16 experts from key societies of digestive endoscopy in Asia. Represents expert opinion and experts' experience in combating the outbreak.
<b>European Association of Urology (EAU)</b> <sup>(8)</sup>	Statement with recommendations for paediatric urological cases.	Based on published studies as well as expert opinion of the paediatric urology guidelines panel of the EAU.
<b>Spanish Gastroenterology Societies: SEPD, AEEH, GETECCU and AEG</b> <sup>(26)</sup>	Set of measures, recommendations and guidelines.	Developed on basis of pragmatism.
<b>Canadian Society of Cardiac Surgeons</b> <sup>(41)</sup>	Guidance Statement for the 'ramping up' of the delivery of cardiac surgery.	Based on the expert opinions of cardiac surgical and critical care leaders from across Canada.

<b>Irish National Clinical Programme in Surgery</b> <sup>(10)</sup>	Guide for prioritisation of conditions.	Developed by National Specialty advisors with input from Specialty Associations and other recognised bodies.
<b>British Fertility Society</b> <sup>(16)</sup>	Position statement on the resumption of fertility treatment in the UK	A letter was sent to the memberships of the Association of Reproductive and Clinical Scientists (ARCS) and the British Fertility Society (BFS) to seek opinions and input into the milestones that must be passed to allow specific areas of our work to recommence. Alongside this, a review of the scientific evidence was undertaken, the evolving National COVID-19 guidance reviewed, and stakeholder and patient submissions were considered.
<b>North American Cardiovascular Societies</b> <sup>(42)</sup>	Guidance on the safe reintroduction of cardiovascular services	Recommendations are based predominantly on expert opinion.
<b>Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Best practice guidelines for reintroduction of routine fertility treatments	This guidance represents the views of ARCS/BFS, which were reached after careful consideration of the scientific evidence available at the time of preparation. In the absence of scientific evidence on certain aspects, a consensus between the relevant members of the COVID-19 working group and the Executive teams was obtained.
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons (AAHKS)</b> <sup>(47)</sup>	Orthopaedic surgery	The document is the result of work by 77 expert physicians in orthopaedic surgery, infectious disease, microbiology and virology, and anaesthesia. The members were selected on the basis of their published or clinical expertise in infection prevention, and all members live in countries affected by COVID-19. The set of questions, recommendations, and rationale were developed following the Delphi method.
<b>American College of Surgeons (ACS)</b> <sup>(34)</sup>	Guidelines for Triage and Management of Elective Cancer Surgery Cases During the Acute and Recovery Phases of Coronavirus COVID-19 Pandemic	Developed by the leaders within the ACS Cancer Programs (American Joint Committee on Cancer [AJCC], Clinical Research Program [CRP], Commission on Cancer [COC], National Accreditation Program for Breast Cancer [NAPBC], National Accreditation for Rectal Cancer [NAPRC], and the Quality Integration Committee [QIC]). Collaboration with and input from specialty societies.
<b>American College of Radiology (ACR)</b> <sup>(30)</sup>	Statement on Safe Resumption of Routine Radiology Care	The Chair of the ACR Commission on Quality and Safety, was charged with assembling a representative group to author a statement on the safe re-engagement of routine radiology care during the COVID-19 pandemic. Potential writing group members were identified by specialty from Appropriateness Criteria panels and Medical Physics committees. Additional members were selected for diversity in practice setting and geographic location within the United States, with an emphasis on locations most affected by COVID-19. The recruitment effort

		targeted members involved in leadership roles (e.g., chairs, vice chairs), and those having participated in compiling statements or webinars on similar or related topics.
<b>Multiple societies for child cancer</b> <sup>(48)</sup>	A rapid global response for children with cancer	From March 27 to April 17, 2020, the senior authors consulted and coordinated with the leadership of the principal child cancer organisations and the WHO, and formed 10 disease and specialty working groups (represented in authorship) from both high income and low and middle income country settings. The services and disease-specific recommendations are based on collective expert opinion to guide the safe and effective modification of treatment. The unpublished experience of colleagues located in regions who have already experienced significant COVID-19 infections, particularly from the Lombardy region in northern Italy, was also sought.
<b>Ontario Health</b> <sup>(40)</sup>	A Measured Approach to Planning for Surgeries and Procedures	This document was developed by the COVID-19 Response: Surgical and Procedural Planning Committee. The Committee was tasked with developing a measured surgical and procedural increase plan that encompasses not only essential time-sensitive surgeries, but also scheduled surgeries, image-guided procedures, and related clinics (e.g., pre-operative).

**\*Australian Medical Association; Consumer Health Forum; Royal Australasian College of Surgeons; Australian and New Zealand College of Anaesthetists; Australian Society of Anaesthetists; Australian College of Perioperative Nurses; The Australian Society of Otolaryngology Head and Neck Surgery; Private Healthcare Australia; Australian Private Hospitals Association; Catholic Health Australia; Calvary Health Care.**

## **Health authority (Ministry of Health) guidance**

Documents from Ministries of Health were identified for ten countries: Australia (n=3, i.e. three documents in total for Australia), Croatia, Denmark, Estonia, Iceland, New Zealand, Norway, Switzerland, UK, USA (n=2), and the province of Ontario in Canada. One broad European Union roadmap document was also identified. Documents included statements and memoranda, press releases, and website updates and were published between 13 April 2020 and 15 May 2020 (see Appendix 1).

The resumption of the following services is specified in the identified documents:

- elective surgery (Australia and USA)
- hospital services (USA, Norway and New Zealand)
- all medical procedures (Switzerland)
- full scale operation of public and private health systems (Croatia)
- private hospital services (Denmark)
- scheduled health care treatment in private health institutions (Estonia)
- health care practice excluding elective surgery (Iceland)
- planned and elective care (England, UK) and scheduled surgeries and procedures (Ontario, Canada).

Documents for most countries refer to a gradual increase in activities with a requirement for adequate capacity, infection control and PPE supplies to be in place. Additionally, guidance from the USA provides high-level gating criteria on when elective surgeries can resume; certain conditions must be met with respect to reported prevalences of symptoms, documented COVID-19 cases, and hospital capacity, in order for particular reopening activities to proceed. In Croatia, full scale operation of public and private health systems (in the second phase of relaxation of restrictions which commenced 4 May 2020) was noted to be dependent on the first phase proving to be successful and where the epidemiological situation did not deteriorate. In Switzerland, the federal states (cantons) were given the authority to restrict the number of non-urgent treatments that take place.

While the documents are high level in most cases, those from Australia, Estonia, Ontario, and England provide a greater level of detail.

The documents from Australia provide patient selection principles (prioritisation) for the first tranche of elective activity re-commencement and a suggested approach for elective surgery.<sup>(5, 44)</sup> The approach includes the reopening of approximately 25% of theatre and endoscopy lists currently closed, subject to local circumstances. Physical distancing should also be applied in the lead-up and management of surgery – for

example with telehealth for perioperative assessments. Activity volumes in Australia will be reported fortnightly.

The document from Estonia (translated using google translate) provides minimum requirements for healthcare providers to restore scheduled treatment in private health institutions.<sup>(21)</sup> In addition to complying with the rules on infection control, requirements that must be met can be broadly classified into organisational management (e.g., control guidelines and appropriate staff training), physical space (e.g., remote reception when planning an outpatient reception) and patient flow (e.g., a control point where the patient's risk of infection is assessed) criteria.

The document from Ontario, Canada<sup>(40)</sup> identifies criteria for the reintroduction of scheduled surgical and procedural work, as well as the basis on which this work should be prioritised. The approach considers ethical principles, the roles of all stakeholders and also provides a framework for assessing the feasibility of, and planning for, service resumption.

The document from England provides a five-step operating framework for the second phase of the NHS's response to the COVID-19 outbreak, which includes increasing routine diagnostics and planned surgery.<sup>(11)</sup> The framework includes: careful planning, scheduling and organisation of clinical activity, a scientifically guided approach to testing staff and patients, excellence in Infection Prevention and Control, rigorous monitoring and surveillance, and focus on continuous improvement.

### **Professional society guidance**

A total of 30 documents from professional societies were identified (see Table 1 and Appendix 1), including one document published jointly with the Australian Ministry for Health.<sup>(5)</sup> Guidance was published both jointly by a number of societies and also by single societies representing specific disciplines. Ten of the documents were published by associations in the USA,<sup>(30-39)</sup> eight by associations in the UK,<sup>(12-19)</sup> three by European associations,<sup>(7-9)</sup> two by associations in Australia,<sup>(5, 45)</sup> two by international groups<sup>(47, 48)</sup> and one each by associations in Asia,<sup>(27)</sup> Spain,<sup>(26)</sup> Ireland,<sup>(10)</sup> Canada,<sup>(41)</sup> and USA and Canada (North Americas) combined.<sup>(42)</sup> All of the guidance documents were published between 8 April 2020 and 15 May 2020. Eight were published as peer-reviewed academic literature<sup>(8, 26, 27, 30, 41, 42, 47, 48)</sup> while the remainder were published on professional society websites.

One document related to the reopening of the health care system overall (USA),<sup>(35)</sup> eleven dealt with the resumption or easing of restrictions relating to elective surgery (USA, n=4;<sup>(31-34)</sup> Australia n=2,<sup>(5, 45)</sup> Ireland n=1,<sup>(10)</sup> England n=2,<sup>(12, 13)</sup> Canada n=1,<sup>(41)</sup> UK n=1,<sup>(19)</sup> International n=1,<sup>(47)</sup>) four documents related to reproductive

medicine (USA<sup>(36)</sup>, Europe<sup>(9)</sup> and UK<sup>(15, 16)</sup>), three related to radiology (UK n=2<sup>(17, 18)</sup> and USA n=1<sup>(30)</sup>), two related each to ophthalmology (USA<sup>(37)</sup> and UK<sup>(14)</sup>), and endoscopy (Asia<sup>(27)</sup> and USA<sup>(39)</sup>), and one each related to paediatric urology (Europe),<sup>(8)</sup> paediatric cancer (international),<sup>(48)</sup> general cardiovascular services (North America),<sup>(42)</sup> cardiac rehabilitation activities (Europe),<sup>(7)</sup> gastroenterology (Spain)<sup>(26)</sup> and women's healthcare.<sup>(38)</sup> Within elective surgery, three documents related specifically to orthopaedic surgery (Australia<sup>(45)</sup>, UK<sup>(19)</sup> and international<sup>(47)</sup>), and one each related specifically to oncology surgery (USA),<sup>(34)</sup> plastic surgery (USA),<sup>(33)</sup> and to cardiac surgery (Canada).<sup>(41)</sup>

Eighteen documents provided recommendations and or guidelines (paediatric urology,<sup>(8)</sup> cardiac rehabilitation services,<sup>(7)</sup> reproductive medicine,<sup>(15, 16, 36)</sup> reopening of the health care system,<sup>(35)</sup> gastroenterology,<sup>(26)</sup> endoscopy,<sup>(39)</sup> elective surgery<sup>(10, 12, 19, 34, 41, 47)</sup> ophthalmology,<sup>(14, 37)</sup> radiology,<sup>(17, 18)</sup> cardiovascular services<sup>(42)</sup>), four documents provided position statements (endoscopy,<sup>(27)</sup> elective surgery,<sup>(45)</sup> reproductive medicine<sup>(16)</sup> and women's healthcare<sup>(38)</sup>), two provided checklists (elective surgery),<sup>(31, 32)</sup> and one each provided 'pillars of good practice' (reproductive medicine<sup>(9)</sup>), considerations (elective surgery),<sup>(33)</sup> a suggested approach (elective surgery),<sup>(5)</sup> a statement (radiology),<sup>(30)</sup> a strategy (elective surgery)<sup>(13)</sup> and advice (paediatric cancer).<sup>(48)</sup>

### **Broad principles and recommendations identified within guidance documents**

Documents varied considerably with respect to both the depth (detail) and breadth (comprehensiveness) of their guidance. For example, highly detailed guidance was produced by the Royal College of Surgeons in Ireland but specifically focused on the issue of prioritisation of surgeries.<sup>(10)</sup> Other documents provided guidance across many aspects of resumption of care, but the guidance was high-level in nature and lacked specific details regarding implementation.<sup>(9, 12, 14, 33, 36, 41)</sup> Several documents provided little information specifically relating to the resumption of care<sup>(8, 27)</sup> or provided an overview of the society's position with little detail.<sup>(45)</sup> Two documents were notable with respect to both the depth and breadth of guidance included with respect to the resumption of care. These comprised recommendations compiled by four Spanish gastroenterology societies,<sup>(26)</sup> and a guidance document from the American Society for Gastrointestinal Endoscopy.<sup>(39)</sup> Both included detailed, practical recommendations with clear instructions for issues such as screening of patients, implementation of telemedicine, approaches to physical distancing, and considerations for each stage of the procedure (pre-operative, post-operative). Overall, most documents referred to the prioritisation of care and a gradual resumption of activities. Some included references to existing resources relating to

the mitigation phase, suggesting that approaches from this setting may be adaptable to the reopening phase.<sup>(36)</sup>

Many documents specifically referred to a set of 'principles' to guide the resumption of hospital care or included a list of broad recommendations which were explained further within the document text. Table 3 details these broad principles and recommendations where they were identified. In some cases these were practical in nature, referring to the importance of minimising disease spread or gradually reintroducing care with prioritisation of patients (for example, Canadian Society of Cardiac Surgeons<sup>(41)</sup>). These approaches are described in detail in the following sections ('Guidance by themes'). Other documents referred more broadly to ethical principles; equity of access to care was specifically mentioned as a key principle in several documents.<sup>(13, 40, 44)</sup> Ontario Health referred to the guiding principles of proportionality, non-maleficence, equity, and reciprocity, placing these in the context of COVID-19.<sup>(40)</sup> Similarly, the North American consensus document on cardiovascular services cited a publication discussing principles for the allocation of scarce medical interventions<sup>(51)</sup> and stated that reintroduction of services must be based on robust ethical analysis.<sup>(42)</sup> This included the following principles:

- (i) maximising benefits
- (ii) fairness
- (iii) proportionality
- (iv) consistency.

Relatedly, several documents referred to resource limitations in the resumption of care and the potential impact on services.<sup>(13, 38)</sup> The American College of Obstetricians and Gynecologists referred to financial incentives in the US health system which may exacerbate existing, and potentially create additional, health care inequalities.<sup>(38)</sup>

**Table 3: Broad principles identified within guidance documents**

Health authority / Professional body	Form of principles or recommendations included in document	List of principles, recommendations or broad headings in document
<b>Health authority guidance</b>		
<b>Australian Health Protection Principal Committee</b> <sup>(44)</sup>	Seven overall principles around reintroduction of hospital activity (additional points described under each principle)  Patient selection principles (regarding prioritisation of elective surgery)	<p><b>Overall principles around reintroduction of hospital activity:</b></p> <ol style="list-style-type: none"> <li>1. Equity of access for all patients determined by clinical decision making and safety.</li> <li>2. Preservation and appropriate use of PPE</li> <li>3. Clear timeframes to monitor and review the situation</li> <li>4. Restoration of elective surgery will be consistently applied in both public and private settings.</li> <li>5. Decisions on elective surgery are subject to local hospital capacity, jurisdiction capacity, transport</li> <li>6. Restrictions may be reintroduced depending on whole of system demand constraints related to COVID-19 and will be based on outcomes of review and reassessment mechanisms. Restrictions may also be introduced at a hospital or regional level in the event of an outbreak.</li> <li>7. National COVID-19 testing guidelines will be adhered to, in line with the national disease surveillance strategy.</li> </ol> <p><b>Patient Selection Principles:</b></p> <ol style="list-style-type: none"> <li>1. Procedures representing low risk, high value care as determined by specialist societies</li> <li>2. Patients who are at low risk of post-operative deterioration</li> <li>3. Children whose procedures have exceeded clinical wait times</li> <li>4. Assisted reproduction</li> <li>5. Endoscopy</li> <li>6. Cancer Screening programs</li> <li>7. Expand dental services to level 2 restrictions.</li> </ol>
<b>Australia Commission on Quality and Safety in Healthcare</b> <sup>(43)</sup>	Guidance: references AHPPC principals.	Refers to the Australian Health Protection Principal Committee principles <sup>(44)</sup> and states that health service organisations should ensure there is: <ul style="list-style-type: none"> <li>▪ Equitable access for all patients determined by clinical decision making and safety</li> <li>▪ Preservation and appropriate use of PPE</li> <li>▪ Compliance with monitoring requirements.</li> </ul>
<b>Ontario Health, Canada</b> <sup>(40)</sup>	'Guiding Ethical Principles'	Guiding ethical principles: <ul style="list-style-type: none"> <li>▪ <b>Proportionality:</b> Decisions to resume or increase surgical and procedural activities should be proportionate to the real or anticipated capacity to provide those services</li> </ul>



		<ul style="list-style-type: none"> <li>▪ <b>Non-maleficence:</b> Decisions should strive to limit harm wherever possible. Activities that have higher implications for morbidity/mortality if delayed too long should be prioritized over those with fewer implications for morbidity/mortality if delayed too long. This requires considering the differential benefits and burdens to patients and patient populations as well as available alternatives to relieve pain and suffering</li> <li>▪ <b>Equity:</b> Equity requires that all persons in the same categories (e.g., at different levels of urgency) be treated in the same way unless relevant differences exist, and that special attention is paid to actions that might further disadvantage the already disadvantaged or vulnerable. This requires considering time on wait lists and experiences with prior cancellations. Decision-makers should strive to consider the interests between the needs of COVID-19 patients and patients who need time-sensitive treatment for other diseases and conditions</li> <li>▪ <b>Reciprocity:</b> Certain patients and patient populations will be particularly burdened as a result of our health system's limited capacity related to COVID-19. Consequently, our health system has a reciprocal obligation to ensure that those burdened by these decisions continue to have their health monitored, receive appropriate care, and can be re-evaluated for emergent activities should they require them.</li> </ul>
<b>NHS England</b> <sup>(11)</sup>	'Operating framework for urgent and planned services in hospital settings during COVID-19'	<p><b>Framework:</b></p> <ul style="list-style-type: none"> <li>▪ Careful planning, scheduling and organisation of clinical activity</li> <li>▪ Scientifically guided approach to testing staff and patients</li> <li>▪ Excellence in Infection Prevention and Control (IPC)</li> <li>▪ Rigorous monitoring and surveillance</li> <li>▪ Focus on continuous improvement</li> </ul>
<b>Australian Ministry for Health and professional healthcare organisations Joint Statement</b> <sup>(5)</sup>	List of principles for prioritisation of care, recommended by the Australian Health Protection Principal Committee (AHPPC) and endorsed by National Cabinet.	<p><b>Principles for prioritisation of care:</b></p> <ul style="list-style-type: none"> <li>▪ Procedures representing low risk, high value care as determined by specialist societies</li> <li>▪ Selection of patients who are at low risk of post-operative deterioration</li> <li>▪ Children whose procedures have exceeded clinical wait times</li> <li>▪ Assisted reproduction (IVF)</li> <li>▪ Endoscopic procedures</li> <li>▪ Screening programs</li> <li>▪ Critical dental procedures.</li> </ul>
<b>Royal College of Anaesthetists, Association of Anaesthetists,</b>	Strategy document, refers to ethics.	When coordinating activity within regions and hospitals, those delivering surgical services will need to be mindful of the Fundamental principle that all patients across the UK should have equity of access to treatment.

<p><b>Intensive Care Society and Faculty of Intensive Care Medicine</b> <sup>(13)</sup></p>		
<p><b>Centers for Medicare and Medicaid Services (CMS)</b> <sup>(28)</sup></p>	<p>'Recommendations'</p>	<p><b>Document headings:</b></p> <ul style="list-style-type: none"> <li>▪ General considerations</li> <li>▪ Personal Protective Equipment</li> <li>▪ Workforce Availability</li> <li>▪ Facility considerations</li> <li>▪ Sanitation protocols</li> <li>▪ Supplies</li> <li>▪ Testing Capacity</li> </ul>
<p><b>Professional society guidance</b></p>		
<p><b>North American Cardiovascular Societies</b> <sup>(42)</sup></p>	<p>Strategies and evidence</p>	<p><b>Document headings under 'Strategies and evidence':</b></p> <ul style="list-style-type: none"> <li>▪ Ethical considerations (5 considerations listed)                             <ul style="list-style-type: none"> <li>○ Maximising benefits such that the most lives or life years are saved</li> <li>○ Fairness, taking into consideration baseline health inequalities</li> <li>○ Proportionality, such that the risk of postponement is balanced against the risk of further COVID-19 spread</li> <li>○ Consistency, such that reintroduction is managed across populations and among individuals regardless of ethnicity, perceived social worth, or ability to pay</li> <li>○ Procedural justice, with the use of an ethical framework.</li> </ul> </li> <li>▪ Collaboration between regional public health officials, health authorities and cardiovascular care providers.</li> <li>▪ Protection of patients and HCWs, including physical distancing; COVID-19 screening; PPE.</li> </ul>
<p><b>American College of Radiology</b> <sup>(30)</sup></p>	<p>'Overriding guiding principle' referred to within document.</p> <p>Document provides 'recommendations'.</p>	<p><b>Overriding guiding principle:</b></p> <ul style="list-style-type: none"> <li>▪ If the risk of illness or death to a healthcare worker or patient from healthcare-acquired COVID-19 is greater than the risk of illness or death from delaying radiology care, the care should be delayed; however, if the opposite is true, the radiology care should proceed in a timely fashion.</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>▪ Enact safety measures (list provided)</li> <li>▪ Respect local pandemic statistics (five points detailed)</li> <li>▪ Engage in risk-benefit decision-making (five points listed)</li> <li>▪ Develop a tiered plan for re-engagement of non-urgent radiology care (four tiers listed)</li> </ul>

		<ul style="list-style-type: none"> <li>▪ Manage accreditation and regulatory deferrals to avoid unintended lapses</li> <li>▪ Address the backlog of previously deferred and delayed care (six points listed)</li> <li>▪ Manage fear (six points listed).</li> </ul>
<b>Royal College of Ophthalmologists</b> <sup>(14)</sup>	Principles to consider in planning the reopening of services	<p><b>Prioritisation of outpatients according to the following key principles:</b></p> <ul style="list-style-type: none"> <li>▪ Level of clinical priority</li> <li>▪ Risk of COVID-19 spread to patients and staff</li> <li>▪ Where safe and effective, patients are 'seen' by video or phone in preference to virtual in preference to face-to-face</li> <li>▪ Where possible consider patients being assessed in community settings including optometry practices</li> <li>▪ Recovery in two phases (recovery 1 interim period and recovery 2 the 'new normal') with the potential to be fluid, going back to recovery 1 or lockdown depending on national situation.</li> </ul> <p><b>Other document headings:</b></p> <ul style="list-style-type: none"> <li>▪ General considerations</li> <li>▪ Planning capacity</li> <li>▪ Prioritising patients.</li> <li>▪ Prioritisation plans for outpatients and surgery</li> <li>▪ How possible is it to separate COVID-19 positive and negative patients and run a 'clean' pathway or site?</li> </ul>
<b>Joint Statement: American College of Surgeons, American Society of Anesthesiologists, Association of peri-Operative Registered Nurses, American Hospital Association.</b> <sup>(32)</sup>	Principles and considerations.	<p>List of principles and considerations to guide physicians, nurses and local facilities in their resumption of care for operating rooms and all procedural areas. Principles described under the following headings:</p> <ul style="list-style-type: none"> <li>▪ Timing for reopening of elective surgery</li> <li>▪ COVID-19 testing within a facility</li> <li>▪ Personal protective equipment</li> <li>▪ Case prioritisation and scheduling</li> <li>▪ Post COVID-19 issues for the five phases of surgical care.</li> </ul>
<b>American College of Surgeons (Oncological surgery)</b> <sup>(34)</sup>	Guiding principles for cancer surgery triage and management.	<p>Document headings under 'Guiding principles':</p> <ul style="list-style-type: none"> <li>▪ Pandemic phases</li> <li>▪ Resource considerations</li> <li>▪ Cancer care coordination and approaching patients.</li> </ul>

<p><b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup></p>	<p>Document overall aims to provide 'General principles for continuing multidisciplinary care.'</p>	<p>The authors recommend the principle that the standards of care for the diagnosis, treatment, and supportive care for children with cancer should not be compromised or electively modified during the pandemic, if at all possible.</p>
<p><b>Royal College of Surgeons England</b> <sup>(12)</sup></p>	<p>List of 'principles, recommendations and key considerations' in order to facilitate elective surgery</p>	<p><b>Document headings:</b></p> <ul style="list-style-type: none"> <li>▪ Key considerations before resuming elective services</li> <li>▪ Developing cohesive leadership and process of frequent communication</li> <li>▪ Assessing surgical workload and patient population</li> <li>▪ Ensuring adequate hospital capacity and facilities</li> <li>▪ Enhancing workforce capacity</li> <li>▪ Reconfiguring services.</li> </ul>
<p><b>Royal College of Surgeons in Ireland</b> <sup>(10)</sup></p>	<p>Underlying principles for prioritisation within surgical oncology, as developed by the National Cancer Control Programme</p>	<p><b>List of principles for the prioritisation of surgical oncology:</b></p> <ul style="list-style-type: none"> <li>▪ Emergency surgery will at all times be prioritised.</li> <li>▪ All decisions to provide or defer surgery will be based on clinical judgement and an individual risk assessment.</li> <li>▪ Up-to-date infection prevention and control guidance will be followed at all times, with the support of local IPC teams.</li> <li>▪ Consider the current infrastructure of the Theatres, ICU/HDU and surgical bed capacity.</li> <li>▪ Many complex cancer surgeries will require ICU/HDU support routinely. There is a small risk of postoperative complications requiring return/admission to ICU/HDU in (usually) the first week.</li> <li>▪ Separation of the location of emergency from elective operations within the same hospital group will allow cancer surgery work to continue at the cancer centre.</li> <li>▪ It is critical to maintain the MDT process for clinical decision making and consideration of all options during this crisis.</li> </ul>
<p><b>European Society for Human Reproduction and Embryology</b> <sup>(9)</sup></p>	<p>Six 'pillars of good medical practice' for the restart of activity</p>	<p><b>Pillars of good medical practice:</b></p> <ul style="list-style-type: none"> <li>▪ Discussion, agreement and consent to the start of treatment</li> <li>▪ Staff and patient triage</li> <li>▪ Access to advice and treatment</li> <li>▪ Adaptation of ART services</li> <li>▪ Treatment cycle planning</li> <li>▪ Code of Conduct for staff and patients.</li> </ul>

<b>Royal College of Radiologists (General recommendations)</b> <sup>(18)</sup>	Practical steps for (i) prioritisation of patients; (ii) planning and introducing effective, safe services.	<p><b>Document headings:</b></p> <ul style="list-style-type: none"> <li>▪ Stratification of patients</li> <li>▪ Pre-appointment</li> <li>▪ Appointments</li> <li>▪ Modifying environment</li> <li>▪ Imaging capacity</li> <li>▪ Retaining good practice.</li> </ul>
<b>SEPD (Spanish Society of Digestive Pathology), AEEH (The Spanish Association for the Study of the Liver), GETECCU (Spanish Working Group on Crohn's Disease and Ulcerative Colitis) and AEG (Spanish Association of Gastroenterology)</b> <sup>(26)</sup>	Recommendations	<p>Document headings within 'Overview' section (Remaining sections provide advice specific to inflammatory bowel disease, endoscopy units, and liver disease):</p> <ul style="list-style-type: none"> <li>▪ General action guidelines</li> <li>▪ Recommendations concerning healthcare professionals</li> <li>▪ Recommendations concerning outpatient clinics</li> <li>▪ Promoting telemedicine</li> <li>▪ Recommendations concerning hospitalization and day hospital services</li> <li>▪ Diagnosis and screening of SARS-CoV-2 infection</li> <li>▪ Recommendations concerning supplementary examinations.</li> </ul>
<b>European Society of Cardiology</b> <sup>(7)</sup>	Recommendations	<p><b>General Recommendations:</b></p> <ol style="list-style-type: none"> <li>1. Evaluate regularly the COVID-19 pandemic situation.</li> <li>2. Be prepared to handle COVID-19 patients.</li> <li>3. Consider systematically the consequences of COVID-19 pandemic on cardiac patients.</li> <li>4. Deliver as much CR as possible under the given circumstances.</li> <li>5. Be prepared to address patient requests for individual information on their specific disease setting.</li> <li>6. Educate patients to not postpone medical care, but to find adequate medical help when experiencing symptoms.</li> <li>7. Detect and fight fake news.</li> <li>8. Develop and organise telerehabilitation programmes including all core components of comprehensive CR.</li> <li>9. Provide psychosocial support to patients, both by professionals and by social communities that connect patients.</li> <li>10. Prepare resumption of activities from the centre point.</li> </ol>

<p><b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup></p>	<p>(None identified)</p>	<p>Responses to various questions under the following headings:</p> <ul style="list-style-type: none"> <li>▪ General</li> <li>▪ Preoperative</li> <li>▪ Intraoperative</li> <li>▪ Postoperative</li> </ul> <p>Four guiding headings:</p> <ul style="list-style-type: none"> <li>▪ It is important to understand what practices and protocols should be altered or implemented in order to minimise the risk of pathogen transfer during the severe acute respiratory syndrome (SARS)-CoV-2 pandemic.</li> <li>▪ Each hospital and health system should consider their unique situation in terms of SARS-CoV-2 prevalence, staffing capabilities, personal protection equipment supply, and so on when determining how and when to implement these recommendations.</li> <li>▪ All patients should be screened for SARS-CoV-2 by means of a thorough history and physical examination, as well as reverse transcription-polymerase chain reaction (RT-PCR) testing whenever possible, prior to undergoing elective surgery.</li> <li>▪ Patients who are currently infected with COVID-19 should not undergo elective surgery.</li> </ul>
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## Guidance by themes

All guidance identified was further considered under the following three overarching themes:

- organisational measures
- physical space measures
- patient flow measures.

### *Organisational management measures*

The following nine sub-themes within organisational management measures were identified and are detailed in Tables 4.1 to 4.9.

- timing of resumption of care
- COVID-19 'awareness'
- authority to restrict or permit healthcare operation
- capacity required to be in place
- staff quarantine and testing measures
- policies required to be in place
- case prioritisation and scheduling approaches
- research / data collection to take place
- audit.

These broad policy approaches, where described, largely related to the elective surgery setting. Three professional bodies specifically considered policies with respect to endoscopy,<sup>(26, 27, 39)</sup> while the California Medical Association, American Society of Plastic Surgeons, European Society of Human Reproduction and Embryology and Royal College of Ophthalmologists also referred to principles for the prioritisation of care within the outpatient setting.<sup>(9, 14, 33, 35)</sup> Organisational management measures included in the guidance tended to be broad in nature rather than detailed descriptions of how hospital activities should proceed.

Guidance on prioritisation of particular types of cases and services to resume encompassed the most commonly identified sub-theme. Some professional society guidance provided highly detailed descriptions of which level of care to provide within particular conditions,<sup>(26)</sup> while other guidance referred generally to the balance of importance of care versus risks to the patient or healthcare staff, or referred to overall categories of patients for consideration (e.g. paediatrics).<sup>(5)</sup>

Guidance on COVID-19 'awareness' related to awareness of the local burden of infections, as well as to understanding national and local regulations and procedures for COVID-19 related measures such as testing and hospital capacity, and were

specified by three societies. Organisations representing two jurisdictions (USA surgical societies and the Swiss Federal Council) specified where authority will lie to restrict or permit healthcare activity. The 'Roadmap for Resuming Elective Surgery after COVID-19 Pandemic', issued by the American College of Surgeons, American Society of Anesthesiologists, Association of Perioperative Registered Nurses and the American Hospital Association, entailed a thorough checklist of policies which are required to be in place before elective surgery may resume.

Several organisations referred to the need to perform a risk assessment to determine feasibility of reopening with respect to local COVID-19 trends and capacity within the clinic (PPE, testing, physical factors within the clinic and training).<sup>(36, 41)</sup> The American Society for Reproductive Medicine referred to an 'iterative cycle of surveillance and ongoing risk assessment'.<sup>(36)</sup>

The Royal College of Ophthalmologists raised a number of issues with respect to organisational management for surgical procedures and outpatient visits, including scheduling approaches, clear decision-making, and setting minimum standards for surgeon productivity.<sup>(14)</sup>

Five of the included guidance documents referred to audit in the context of resumption of care. The level of detail ranged from broad recommendations of compliance with monitoring<sup>(43)</sup> and quality improvement,<sup>(11)</sup> to more specific detail regarding surveillance of cases and adverse outcomes to assess the effect of resumption and the potential need to revert to restricted care.<sup>(19, 38, 44)</sup>



**Table 4.1: Detail of organisational management sub-theme 'Timing of resumption of care' from guidance documents**

Timing of resumption of care		
Country, Body	Care context	Detail of measures to be in place
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)<sup>(28)</sup></b>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>▪ 'Phase 1' reopening may occur where states or regions have passed Gating Criteria (symptoms, cases and hospital capacity are at appropriate levels) as per US Government guidelines.<sup>(29)</sup></li> </ul>
<b>US, Joint Statement: USA American College of Surgeons and other US societies<sup>(31, 32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>▪ There should be a sustained reduction in the rate of new COVID-19 cases in the relevant geographic area for at least 14 days, and the facility should have appropriate capacity (ICU, non-ICU beds, PPE, ventilators, trained staff) to treat non-elective patients without resorting to a crisis standard of care.</li> </ul>
<b>US, American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>▪ Several milestones should be considered, including a sustained reduction in cases in their area (e.g. for at least 14 days, as per White House guidance) and the ability of local hospitals to safely treat all patients without resorting to crisis standards of care.</li> <li>▪ When (i) education and training are achieved and certified, (ii) documented risk mitigation strategy is in place for the clinic as a whole and for each procedure, clinic may: <ul style="list-style-type: none"> <li>○ select tests/treatments to resume</li> <li>○ consider reinitiating a limited number of services first</li> <li>○ begin at pace which allows observation of operation of new policies and procedures</li> <li>○ monitor, reassess and modify clinical operations as conditions, knowledge and resources change.</li> </ul> </li> </ul>
<b>Asian Pacific Society for Digestive Endoscopy<sup>(27)</sup></b>	Elective endoscopy	<ul style="list-style-type: none"> <li>▪ Stepwise resumption of elective endoscopies should be guided by control of COVID-19 in the community, availability of manpower, and equipment supply.</li> </ul>
<b>California Medical Association<sup>(35)</sup></b>	General	<ul style="list-style-type: none"> <li>▪ Reopening should be in phases based on testing, treatment and data.</li> </ul>
<b>RCSI National Clinical Programme in Surgery<sup>(10)</sup></b>	Surgery	<ul style="list-style-type: none"> <li>▪ Restoration of essential non-emergency surgical activity will be guided by avoiding harm and mitigating risk of deferral of procedure or services in line with clinical guidelines, and appropriate use and supply of PPE.</li> <li>▪ Staged and controlled process. It should balance the need to maintain capacity to treat COVID-19 patients with the need to increase the availability of elective surgery in a safe and equitable way, taking into account the well-being of patients and health care workers.</li> </ul>

<b>UK (England), Royal College of Surgeons</b> <sup>(12)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>There should be a sustained reduction in the rate of new COVID-19 cases for a period of time past the peak to ensure necessary staff and associated facilities (e.g. intensive care unit) are available.</li> </ul>
<b>UK, British Fertility Society</b> <sup>(16)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Outlines 'milestones' to be met for resumption of care to proceed, e.g., once other comparable treatment services recommence and or restrictions on social contact and travel are relaxed.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> <sup>(38)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Resumption to follow a systematic, data-driven, and staged approach based on local, state and regional considerations. Guidance refers to CMS criteria.<sup>(28)</sup></li> </ul>
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Hospitals should begin planning for the gradual resumption of surgeries and procedures that have been postponed.</li> <li>It is anticipated that some regions will be better positioned to resume scheduled surgical and procedural activity than others due to differences in capacity and or rates of COVID-19 cases.</li> </ul>
<b>American College of Surgeons (cancer surgery guidance)</b> <sup>(34)</sup>	Surgical oncology	<p>Resumption timing described as two phases:</p> <ul style="list-style-type: none"> <li>Early-phase recovery: Past the peak of COVID-19, with fewer new cases recorded each day. Resources are more available, and some sort of COVID-19-free environment has been secured with adequate testing and PPE.</li> <li>Late-phase recovery: Well past the peak of new COVID-19 cases by at least 14 days. Resources are nearly back to normal levels, and a substantial and high-functioning, COVID-19-free environment has been established.</li> </ul>
<b>North American Cardiovascular Societies</b> <sup>(42)</sup>	Invasive cardiovascular procedures and diagnostic tests	<ul style="list-style-type: none"> <li>Must be based on robust ethical analysis, including: <ul style="list-style-type: none"> <li>Maximising benefits</li> <li>Fairness</li> <li>Proportionality</li> <li>Consistency</li> <li>Procedural justice.</li> </ul> </li> <li>There should be a sustained reduction in the rate of new COVID-19 admissions and deaths in the relevant geographic area for a pre-specified time interval as determined by local public health officials before changes can be implemented.</li> <li>Importantly, a transparent plan for testing and re-testing potential patients and healthcare workers for COVID-19 must be operationalised before elective procedures and tests are resumed.</li> </ul>

<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Lockdown in the region has been lifted and a mandate allowing return to elective surgery has been issued by local/state/provincial/governmental authorities.</li> <li>▪ Number of COVID-19 cases in the region has been consistently declining</li> <li>▪ Hospital/surgical facility has the capacity to admit non-COVID-19 patients to an area of the hospital separate from COVID-19-positive patients.</li> <li>▪ Facility has an adequate supply of effective PPE, has RT-PCR-testing kits for SARS-CoV-2 virus, and is able to perform surgery safely with low risk of transmission of SARS-CoV-2 virus.</li> <li>▪ Facility is able to maintain social distancing throughout the process in all phases (preoperatively, intraoperatively, and postoperatively).</li> <li>▪ Facility has an adequate stockpile of necessary equipment for a potential second wave.</li> </ul>
<b>Royal College of Radiologists</b> <sup>(18)</sup>	General radiology services	<ul style="list-style-type: none"> <li>▪ The rate at which services will restart non-urgent and elective work, paused in light of COVID-19, will depend on local conditions</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Engage in risk-benefit decision-making: <ul style="list-style-type: none"> <li>○ Consider benefits of radiology care against risks from healthcare-acquired COVID-19</li> <li>○ Consider clinical acuity, risk factors, the underlying disease and risk from COVID-19.</li> </ul> </li> <li>▪ Develop a tiered plan for re-engagement of non-urgent radiology care.</li> </ul>
<b>Australian Health Protection Principal Committee</b> <sup>(44)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Equity of access for all patients determined by clinical decision making and safety.</li> <li>▪ Clinical urgency and risk of the health to the patient due to further delays should guide restoration of elective surgeries at the local level and in all cases.</li> </ul>
<b>Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society and Faculty of Intensive Care Medicine</b> <sup>(13)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Document provides a RAG-rated (red, amber, green) framework to declare readiness to return to surgery with respect to capacity availability.</li> </ul>

**Table 4.2: Detail of organisational management sub-theme 'COVID-19 Awareness' from guidance documents**

COVID-19 'awareness'		
Country, Body	Care context	Detail of measures to be in place
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)<sup>(28)</sup></b>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>In coordination with State and local public health officials, evaluate incidence and trends for COVID-19.</li> </ul>
<b>US, Joint Statement: USA American College of Surgeons and other US societies<sup>(31, 32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Awareness of prevalence, incidence and isolation mandates</li> </ul>
<b>US, American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Awareness of prevalence, incidence, testing, regulations, local hospital/medical system capacity.</li> </ul>
<b>US, American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Individual programs, physicians and other healthcare providers need to be flexible and fully prepared to recognise and address the status of their local transmission rate, the risk of transmission by symptomatic and asymptomatic individuals, risk of medical conditions, and the impact of resuming operations on their community's risk and resources.</li> <li>Practices and providers should familiarise themselves on an ongoing basis with resources produced by authoritative health organisations/agencies and with local/institutional guidance.</li> </ul>
<b>European Society of Human Reproduction and Embryology<sup>(9)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>COVID-19 specific training and standard operating procedures (SOPs) should be in place</li> <li>Agreements between centres to guarantee continuity of care</li> </ul>
<b>Canada Canadian Society of Cardiac Surgeons<sup>(41)</sup></b>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>Regular communication with members of heart team, ICU, hospital administration, provincial department of health and/or public health officials. Consider daily meetings if feasible.</li> <li>Ideally have in place a provincial dashboard with real-time trends of resource utilisation to facilitate forecasting, communication and rapid decision-making.</li> </ul>
<b>California Medical Association<sup>(35)</sup></b>	General	<ul style="list-style-type: none"> <li>There should be widespread availability of testing and data on COVID-19.</li> </ul>
<b>UK (England), Royal College of Surgeons<sup>(12)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Hospitals should know their COVID-19 diagnostic testing availability.</li> <li>Ensure adequate COVID-19 testing and appropriate frequency of testing for staff is available.</li> </ul>

<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Feasibility assessment and key considerations include having knowledge of COVID-19 disease burden in the community and in the organisation.</li> </ul>
<b>American College of Surgeons (cancer surgery guidance)</b> <sup>(34)</sup>	Surgical oncology	<ul style="list-style-type: none"> <li>▪ Hospital leaders need to understand the prevalence of COVID-19 in their community.</li> </ul>
<b>North American Cardiovascular Societies</b> <sup>(42)</sup>	Invasive cardiovascular procedures and diagnostic tests	<ul style="list-style-type: none"> <li>▪ Hospital based cardiovascular teams must establish active partnerships with regional public health policy makers to exchange up-to-date information on both the local status of the pandemic and the growing morbidity and mortality on cardiovascular waiting lists.</li> <li>▪ If COVID-19 admissions and deaths start to increase, there must be immediate and transparent cessation of most elective invasive procedures and tests.</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Defer time-insensitive care until at least two weeks after the local peak of the pandemic.</li> <li>▪ Follow institutional and governmental regulations.</li> <li>▪ Monitor local data to predict secondary and tertiary peaks of COVID-19.</li> <li>▪ Prepare for repeat de-engagement of non-urgent care if local data predict another peak.</li> </ul>

**Table 4.3: Detail of organisational management sub-theme 'Authorisation' from guidance documents**

<b>Authorisation</b>		
<b>Country, Body</b>	<b>Care context</b>	<b>Detail of measures to be in place</b>
<b>Joint Statement: USA American College of Surgeons and other US societies<sup>(32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Resumption should be authorised by appropriate health authority</li> </ul>
<b>Switzerland, Federal Council<sup>(20)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Cantons (federal state) may restrict the number of non-urgent treatments which may take place and require capacity to be made available by both public and private hospitals</li> </ul>
<b>USA, American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>National, regional, state and municipal regulations produced by authoritative health organisations and agencies dictate what is and is not permitted based on their analysis of disease transmission and hospital capacity data.</li> </ul>
<b>UK, British Fertility Society<sup>(16)</sup></b>	Reproductive medicine	<ul style="list-style-type: none"> <li>Human Fertilisation and Embryology Authority (HFEA) holds authority to permit resumption.</li> </ul>
<b>Canada, Ontario Health<sup>(40)</sup></b>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Attain joint sign-off from both the regional or sub-regional COVID-19 Steering Committee and hospital Surgical and Procedural Oversight Committee before an increase in surgical and procedural activity can be initiated.</li> </ul>
<b>Australian Health Protection Principal Committee<sup>(44)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Restoration of elective surgery will be consistently applied in both public and private settings.</li> <li>Work in private sector should be consistent with national guidance and agreement with Commonwealth and States regarding COVID-19 NPA and viability guarantee.</li> <li>For private hospitals, restoration of elective surgeries needs to be agreed with the respective state government to ensure there is ample hospital capacity for COVID-19 health response.</li> <li>Decisions on elective surgery are subject to local hospital capacity, jurisdiction capacity, transport availability and any other relevant quarantine arrangements in place.</li> </ul>

**Table 4.4: Detail of organisational management sub-theme 'Capacity required to be in place' from guidance documents**

Capacity required to be in place		
Country, Body	Care context	Detail of measures to be in place
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)</b> <sup>(28)</sup>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>▪ Adequate facilities, workforce, testing, supplies (including PPE, equipment, medication). Supplies should not detract from community ability to respond to a potential surge.</li> <li>▪ Adequate workforce across phases of care (clinicians, nurses, anaesthesia, pharmacy, imaging, pathology support, post-acute care).</li> <li>▪ Staffing levels must remain adequate to cover potential surge in COVID-19 cases.</li> </ul>
<b>US, Joint Statement: American College of Surgeons and other US societies</b> <sup>(32)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Appropriate ICU and non-ICU beds, PPE, ventilators and trained staff to treat all elective and non-elective patients without resorting to a crisis standard of care</li> </ul>
<b>Australia, Joint Statement: Australian Ministry of Health and Health Professional bodies</b> <sup>(5)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Monitoring of supplies of PPE, ICU and bed capacity</li> </ul>
<b>Switzerland, Federal Council</b> <sup>(20)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Capacity for treatment, including stocks of essential medicines</li> </ul>
<b>US, American Society of Plastic Surgeons</b> <sup>(33)</sup>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>▪ Ensure adequate supplies of PPE</li> <li>▪ Ensure adequate supplies for facilities within operating rooms (e.g. sedatives, oxygen, scopes, anaesthetics)</li> <li>▪ Know availability of transfer options for office-based/ambulatory surgery centre</li> </ul>
<b>US, American Society for Reproductive Medicine</b> <sup>(36)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>▪ Formal risk assessment using publicly available resources or with the assistance of experts. Create or adapt existing written risk mitigation policies and procedures.</li> </ul>
<b>Asian Pacific Society for Digestive Endoscopy</b> <sup>(27)</sup>	Elective endoscopy	<ul style="list-style-type: none"> <li>▪ Regular monitoring of supply and use of PPE</li> <li>▪ Healthcare workers should receive adequate training in PPE</li> </ul>
<b>California Medical Association</b> <sup>(35)</sup>	General	<ul style="list-style-type: none"> <li>▪ Available capacity to meet current demands while maintaining capacity for future possible surges including PPE, testing, treatment, and staffing</li> </ul>
<b>RCSI National Clinical Programme in Surgery</b> <sup>(10)</sup>	Surgery	<ul style="list-style-type: none"> <li>▪ It is important that surgeons assess the capacity of their hospital to deliver operative and post-operative care to patients undergoing colorectal surgery</li> </ul>

		<ul style="list-style-type: none"> <li>Theatre scheduling should allow adequate time and space for safe induction of anaesthesia, patient transfers, donning and doffing of PPE, cleaning of theatre</li> </ul>
<b>UK (England), Royal College of Surgeons</b> <sup>(12)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>Enhance facilities and bed capacity with following suggestions: hospitals from independent sector, nightingale hospitals, scheduling modifications, revising clinicians' job plans, additional time in theatre.</li> <li>Enhancing workforce capacity could include: temporary retention of additional staff, reassigning surgeons, junior doctors and surgical care team staff, revising existing job plans, appropriate across-trust indemnity.</li> <li>Hospitals should be satisfied they have adequate PPE and surgical supplies appropriate to the number and type of procedures performed.</li> <li>Care needs to be taken so that essential perioperative services (e.g. diagnostic imaging, anaesthesia, critical care, sterile processing) are also ready to commence operations before resuming elective surgery.</li> <li>Triage, referrals and service reconfigurations between trusts and at a regional or national level should be considered to deliver surgical care efficiently.</li> </ul>
<b>Australian Orthopaedic Association</b> <sup>(45)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>The surgical management of patients but must be viewed in the context of the use and supply of PPE, the resources likely to be consumed and the stability and security of the logistic supply chain.</li> <li>Surgery should be consultant-performed as much as practicable.</li> </ul>
<b>UK, British Fertility Society</b> <sup>(16)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Appropriate staffing and equipment (including PPE).</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Appropriate supply chain for consumables to be in place. Contingency plans should supply chain fail.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> <sup>(38)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Adequate PPE and other supplies for outpatient, inpatient and surgical care. Coordinate with other departments to identify an appropriate supply chain support.</li> <li>Coordination of scheduling of staff.</li> </ul>
<b>UK, NHS England</b> <sup>(52)</sup>	Urgent or planned services	<ul style="list-style-type: none"> <li>Ensure planned activity aligns with testing capacity, medicines supply, consumables and PPE.</li> </ul>
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Capacity should be considered for use when planning to increase surgical and procedural activity</li> </ul> <p>Assumptions:</p>



		<ul style="list-style-type: none"> <li>▪ The organisation and region have a stable supply of PPE</li> <li>▪ The organisation and region have a stable supply of medications</li> <li>▪ The organisation and region have an adequate capacity of inpatient and ICU beds</li> <li>▪ The organisation and region have adequate capacity of health human resources.</li> </ul>
<b>American College of Surgeons (cancer surgery guidance)</b> <sup>(34)</sup>	Surgical oncology	<ul style="list-style-type: none"> <li>▪ Resources need to be tightly monitored and strategically deployed.</li> </ul>
<b>British Orthopaedic Association</b> <sup>(19)</sup>	Non-urgent trauma and orthopaedic care	<p>Consider methods for keeping separate COVID and COVID free pathways, such as:</p> <ul style="list-style-type: none"> <li>▪ COVID-free hospitals</li> <li>▪ COVID-free areas in a large general hospital</li> <li>▪ Smaller and more isolated hospitals may find it difficult to provide such facilities so collaboration across sites to form networks will be necessary</li> <li>▪ The location and organisation of theatres for non-urgent orthopaedic surgery must be planned carefully. Theatres should be allocated for COVID negative work and be easily accessible from Green wards without needing to pass through Blue areas.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<p>Trusts and health boards may be able to develop COVID-19 free hospital sites in a number of ways:</p> <ul style="list-style-type: none"> <li>▪ with the centralisation of COVID-19 patients either within their own trust structure</li> <li>▪ with collaboration with neighbouring trusts as a network</li> <li>▪ using the independent sector</li> <li>▪ If this is not possible then services should separate patients using geographical or temporal methods or a combination of the two</li> </ul>
<b>Royal College of Radiologists</b> <sup>(18)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Ensure sufficient PPE for workers and patients, balancing current and future needs</li> <li>▪ Coordinate PPE use with health system efforts, emphasizing highest-risk care</li> <li>▪ Implement universal masking of healthcare workers</li> <li>▪ Ensure PPE for aerosolizing care (N95, powered air-purifying respirator)</li> <li>▪ Ensure PPE needed for low-risk care will not consume PPE needed for high-risk care</li> </ul>
<b>North American Cardiovascular Societies</b> <sup>(42)</sup>	Invasive cardiovascular procedures and diagnostic tests	<ul style="list-style-type: none"> <li>▪ Regions must have the necessary critical care capacity, PPE, and trained staff available</li> <li>▪ The need to ensure staff safety must be balanced against the need to conserve PPE supplies in the event the pandemic escalates</li> </ul>
<b>International Consensus Group and Research Committee of the</b>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ In areas of high prevalence of COVID-19, and during surgery on patients who have not been RT-PCR-tested for SARS-CoV-2, recommended that surgeons and the entire surgical team who scrub during the case wear a mask (preferably N95, filtering face</li> </ul>

<p><b>American Association of Hip and Knee Surgeons</b> <sup>(47)</sup></p>		<p>piece or P3) and a face shield with a neck cover that wraps around the face and has an extension that can be placed inside the gown. In the absence of a face shield, protective eyewear that provides a seal around the eyes should be worn.</p> <ul style="list-style-type: none"> <li>▪ In patients who have been tested for SARS-CoV-2 by RT-PCR within 3 days before surgery and quarantined for 14 days prior to elective surgery, regular protective equipment (surgical mask, etc.) may be worn. These measures should be implemented until the pandemic ends.</li> </ul>
<p><b>Australian Health Protection Principal Committee</b> <sup>(44)</sup></p>	<p>Elective surgery</p>	<ul style="list-style-type: none"> <li>▪ Any restoration of elective surgery needs to take into account PPE modelling, the proper use of PPE in clinical settings, as per national PPE clinical guidelines, intensive care unit availability and flow on health system requirements (for example rehabilitation, physiotherapy etc.).</li> <li>▪ Preservation and appropriate use of PPE including consideration of:             <ul style="list-style-type: none"> <li>○ Availability, quantity, type and quality to ensure a safe working environment for clinicians and patients</li> <li>○ Compliance with clear and consistent national guidelines on use of PPE</li> <li>○ Hospital and day surgery reporting of PPE usage on a minimum weekly basis (PPE burn rate) in both public and private settings</li> <li>○ Ensuring numbers of staff are at a safe and clinically appropriate level</li> </ul> </li> <li>▪ Weekly monitoring and review of PPE supplies in public and private settings, and the number of positive tests</li> <li>▪ An overall review/reassessment at 2 and 4 weeks based on:             <ul style="list-style-type: none"> <li>○ Number of positive cases (health care worker or patient) linked to increased activity</li> <li>○ PPE use and availability</li> </ul> </li> <li>▪ Volume of procedures and hospital/system capacity</li> </ul>
<p><b>Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society and Faculty of Intensive Care Medicine</b> <sup>(13)</sup></p>	<p>Elective surgery</p>	<ul style="list-style-type: none"> <li>▪ Refers to criteria for appropriate levels of space, staffing and 'stuff' (drugs, disposables, PPE, drugs) to permit resumption of surgical activity.</li> </ul>

**Table 4.5: Detail of organisational management sub-theme 'Staff quarantine and testing measures' from guidance documents**

<b>Staff quarantine and testing measures</b>		
<b>Country, Body</b>	<b>Care context</b>	<b>Detail of measures to be in place</b>
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)<sup>(28)</sup></b>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Staff should be routinely screened and if symptomatic, should be tested and quarantined. Staff working in non-COVID-19 care zones should not rotate into COVID-19 care zones.</li> </ul>
<b>Spain, Gastroenterology societies<sup>(26)</sup></b>	Gastroenterology depts. Endoscopy	<ul style="list-style-type: none"> <li>Regular screening should be in place for all healthcare professionals.</li> <li>Professionals with suspected or confirmed COVID-19, even with negative PCR results must not work until 14 days after symptoms onset.</li> </ul>
<b>UK, NHS England <sup>(52)</sup></b>	Urgent or planned services	<ul style="list-style-type: none"> <li>Scientifically guided approach to testing staff and patients: Detailed testing policy outlined, including, when feasible, a pre-admission test within 72 hours prior to admission.</li> <li>Serology testing to be made available to NHS staff and patients.</li> </ul>
<b>Canada, Ontario Health <sup>(40)</sup></b>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Capability and access to local COVID-19 diagnostic testing including testing health care workers.</li> </ul>
<b>British Orthopaedic Association <sup>(19)</sup></b>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>Staffing has to take account of individuals who may themselves be at increased risk and would be more suited to working in Green areas. Staff who are in the 'shielding' category because they are extremely vulnerable to COVID-19 should remain at home (working from home where possible) and should not be expected to work even at a green site.</li> <li>Staff working at Green sites will need daily screening (symptoms and temperature check)</li> <li>Those working in Green areas or Green hospitals may need regular testing for antigen status or testing for antibody status when a reliable test becomes available.</li> <li>For teams who work across Green and Blue sites, it may be appropriate to develop Green teams who work in Green areas for a week rather than moving from day to day. No staff should work on both green and blue sites on any one given day.</li> <li>As the distribution of facilities for orthopaedic surgery changes, staff may have to move to work in new hospitals requiring a 'passport' to move to other Trusts</li> </ul>

<p><b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup></p>	<p>Elective orthopaedic surgery</p>	<ul style="list-style-type: none"> <li>▪ If a patient is positive for SARS-CoV-2 on RT-PCR testing after a surgical procedure, all health-care workers who came into contact with the patient without using PPE and are not known to have antibodies against SARS-CoV-2 should be tested and quarantined until the test results become available. Decisions regarding the need to quarantine staff should be made in tandem with the hospital infection-control team and employee health department.</li> </ul>
<p><b>American College of Radiology</b> <sup>(30)</sup></p>	<p>Non-urgent Radiology care</p>	<ul style="list-style-type: none"> <li>▪ Screen all patients, workers and visitors for symptoms of COVID-19 on building entry</li> <li>▪ Develop a plan for how to manage individuals who screen positive on building entry</li> </ul>

**Table 4.6: Detail of organisational management sub-theme 'Policies required to be in place' from guidance documents**

Policies required to be in place		
Country, Body	Care context	Detail of measures to be in place
<b>Joint Statement: USA American College of Surgeons and other US societies<sup>(2)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>▪ COVID-19 testing: requirements and frequency for patient and staff testing. Policy for response to positive COVID-19 result in staff/patient.</li> <li>▪ Policy for staff training in use of PPE</li> <li>▪ Policy for conservation of PPE</li> <li>▪ Social distancing policy</li> <li>▪ Policy to address evidence-based infection prevention techniques, access control, workflow and distancing processes.</li> <li>▪ Case prioritisation policy</li> <li>▪ Policy for each phase of surgery (preoperative, immediate preoperative, intraoperative, postoperative, post discharge care planning).</li> </ul>
<b>USA, American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>▪ Written documentation of risk mitigation procedures.</li> <li>▪ Policies and procedures to protect staff who are at higher risk for severe COVID-19 illness or who live with a person who is at higher risk.</li> <li>▪ Sick leave policies. Policies for return to the workplace after known or suspected infection.</li> <li>▪ COVID-19 testing strategy for both patients and staff.</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy<sup>(39)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>▪ Prioritisation protocol.</li> </ul>
<b>UK (England), Royal College of Surgeons<sup>(12)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Hospitals should develop clear policies for addressing testing requirements and frequency for staff and patients.</li> <li>▪ Care pathways and protocols for COVID-19 positive patients should be clearly developed and specific to the needs of each hospital – this should include identification of dedicated team members to manage these patients.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)<sup>(15)</sup></b>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Working patterns: Risk assessments of clinic for alternative ways of working (avoid shift crossover, virtual work, split workforce into teams)</li> <li>▪ COVID-19 specific policies and SOPs to be in place.</li> <li>▪ Policies and procedures for staff support (mental well-being, peer support, staff safety).</li> </ul>

<b>USA, American College of Obstetricians and Gynecologists</b> (38)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Policies for physical distancing, testing, use of masks and face coverings.</li> <li>▪ Scheduling of staff.</li> <li>▪ Staff wellness and mental health.</li> </ul>
<b>UK, NHS England</b> (52)	Urgent or planned services	<ul style="list-style-type: none"> <li>▪ Maintain consistency in staff allocation where possible and reduce movement of staff and crossover of care pathways between planned versus urgent care.</li> </ul>
<b>Canada, Ontario Health</b> (40)	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Ontario Health, the regions and hospitals each have an oversight structure, clear accountabilities, a mechanism to monitor key metrics, and a plan that includes specific ongoing activities.</li> </ul>
<b>Australian Commission on Quality and Safety in Health Care</b> (43)	Elective surgery	<ul style="list-style-type: none"> <li>▪ Prepare and implement an organisational wide Risk Management Strategy to manage and reduce the risk related to the transmission of COVID-19.</li> </ul>
<b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b>	Paediatric oncology	<ul style="list-style-type: none"> <li>▪ Hospital leaders should provide written, evidence-based recommendations for infection prevention and control practices during the COVID-19 crisis, including guidelines for hand hygiene, use of PPE, staff and visitor screening, isolation of symptomatic patients, and environmental disinfection protocols</li> </ul>
<b>Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society and Faculty of Intensive Care Medicine</b> (13)	Elective surgery	<ul style="list-style-type: none"> <li>▪ Additional investment in resources, facilities and staff required.</li> <li>▪ Consider streaming members of teams to separate staff performing elective work and emergency work.</li> <li>▪ Policies for the rational prioritisation of surgical patients</li> <li>▪ Clear policies in place for how testing will protect staff, protect patients and facilitate efficient surgical services</li> </ul>

**Table 4.7: Detail of organisational management sub-theme 'Care prioritisation and scheduling' from guidance documents**

Case prioritisation and scheduling		
Country, Body	Care context	Detail of measures to be in place
<b>US Centers for Medicare &amp; Medicaid Services (CMS)</b> <sup>(28)</sup>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>▪ Necessity of care to be based on clinical needs. Prioritise surgical/procedural care and high-complexity chronic disease management. Select preventive services may also be highly necessary.</li> </ul>
<b>Joint Statement: USA American College of Surgeons and other US societies</b> <sup>(32)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Prioritisation and scheduling policy should account for: (a) List of previously cancelled and postponed cases; (b) Objective method of priority scoring (e.g. MeNTS instrument<sup>(53)</sup>); (c) specialties' prioritisation (e.g. cancer, cardiac); (d) strategy for allotting procedure time; (e) identification of essential staff per procedure; (f) phased opening of operating rooms; (g) strategy for increasing operating room/procedure time availability; (h) issues associated with increased operating room/procedural volume (e.g. capacity required).</li> </ul>
<b>Joint Statement: Australian Ministry of Health and Health Professional bodies</b> <sup>(5)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Use of specific list of principles to guide the selection of patients to undergo elective surgery. E.g. <ul style="list-style-type: none"> <li>○ Low risk, high value care</li> <li>○ Patients at low risk of post-op deterioration</li> <li>○ Children whose procedures have exceeded clinical wait times</li> <li>○ Assisted reproduction (IVF)</li> <li>○ Endoscopic procedures</li> <li>○ Screening programs</li> <li>○ Critical dental procedures.</li> </ul> </li> </ul>
<b>Asian Pacific Society for Digestive Endoscopy</b> <sup>(27)</sup>	Elective endoscopy	<ul style="list-style-type: none"> <li>▪ Recommendations for urgent, semi-urgent and elective endoscopy in relation to case prioritisation and required PPE supply.</li> </ul>
<b>European Association of Urology</b> <sup>(8)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Suggests reversing back through stages of reduction of care.</li> <li>▪ Refers to urgency of specific clinical indications (obstructive uropathy, congenital abnormalities).</li> </ul>

<b>USA American Society of Plastic Surgeons</b> <sup>(33)</sup>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Scheduling considerations must take into account the risk to the patient (urgency, comorbidities, complication risk, postoperative care, complicated case) and resource needs (beds, blood, anaesthesia).</li> </ul>
<b>California Medical Association</b> <sup>(35)</sup>	General	<ul style="list-style-type: none"> <li>Regional, phased approach, bearing in mind infection risk and capacity.</li> <li>Prioritise delayed care. Also pay attention to paediatrics and preventative care (screenings, care management for chronic conditions).</li> </ul>
<b>Spain, Gastroenterology societies</b> <sup>(26)</sup>	Gastroenterology depts. Endoscopy	<ul style="list-style-type: none"> <li>Prioritisation approaches for surgeries and endoscopies according to clinical need.</li> <li>Very detailed guidance on the resumption of endoscopy.</li> </ul>
<b>US, American Society for Reproductive Medicine</b> <sup>(36)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Consider factors including the impact of delay on patient prognosis due to medical factors (e.g. age), the number of visits required (e.g. prioritise treatments which require few visits first), the impact of delay on patient mental and emotional well-being, the impact of delay on patient ability to pursue treatment due to insurance coverage or employment status.</li> </ul>
<b>Canada Canadian Society of Cardiac Surgeons</b> <sup>(41)</sup>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>Phased implementation approach where surgical program will have a defined approach for prioritisation of elective cases.</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy</b> <sup>(39)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>Prioritise to extent of comorbidities; identify whose physiologic state might worsen if procedure delayed or if status makes them more vulnerable to COVID-19.</li> <li>Include affidavit with all notes and telephone encounters declaring that procedure meets prioritisation criteria.</li> </ul>
<b>UK Royal College of Ophthalmologists</b> <sup>(14)</sup>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>Prioritise based on clinical priority (likelihood of harm from current condition, greatest need of improvement, number of patients who could benefit, likelihood of benefit), risk of COVID-19 spread, service risks (e.g. need to clear backlog).</li> <li>List of principles provided (e.g. priority, risk, possibility of remote care).</li> <li>List of approaches to scheduling and reducing surgery waiting lists (e.g. accepting lower flow, clear protocols, and clear decision-making).</li> </ul>
<b>UK (England), Royal College of Surgeons</b> <sup>(12)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>Patient prioritisation: there should be clear prioritisation protocols that reflect local and national needs, alongside availability of local resources.</li> <li>Scheduling modifications to increase hospital capacity, including extending hours of elective surgery later into the evening and on the weekends should be considered.</li> </ul>



<b>Australian Orthopaedic Association</b> <sup>(45)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>It is expected that surgeons will work with hospitals to prioritise their patients' needs for surgery, accounting for risk factors and co-morbidities, while having regard also for the safety and availability of health care workers and hospital facilities.</li> <li>The professional judgement of orthopaedic surgeons can be relied upon to balance risk and to prioritise these patients within an 'allocation' towards high-value and low-risk procedures.</li> <li>Low risk and high value procedures should be the only ones booked at this time.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Prioritisation based on urgency of care and with respect to profile of patient population, including regarding underlying risk of COVID-19.</li> <li>Scheduling: minimise number of visits. Condense visits into a single pathway. Reduce duration of time in clinic. Aim to improve timeliness of appointments.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> <sup>(38)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Lists groups which may be considered for prioritisation (e.g. suspected malignancy). Refers to Prachand et al. scoring system as a potential aid.<sup>(53)</sup></li> <li>Collaborate across services and aim to ensure prioritisation approaches do not exacerbate existing disparities or inequities.</li> <li>Avoid unethical financial incentives.</li> </ul>
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Follow a fair process for case prioritization that is grounded by a set of ethical principles as part of the implementation plan.</li> <li>Discuss the feasibility of starting with low-resource intensity surgeries and or procedures (e.g., short stay inpatient, outpatient, day surgery).</li> </ul>
<b>American College of Surgeons (cancer surgery guidance)</b> <sup>(34)</sup>	Surgical oncology	<ul style="list-style-type: none"> <li>Criteria for prioritizing during the recovery phase are intended to balance the risk of COVID-19 related complications versus the risk of further cancer surgery delays.</li> <li>Cancer patients should be prospectively assigned prioritization for surgery according to specialty-specific recommendations to determine which patients can go to the OR during both the acute and recovery phases of the pandemic.</li> <li>As much as is feasible, the holistic needs of patients, such as the management of anxiety, should be considered when decisions around delays in treatment are under discussion.</li> </ul>
<b>British Orthopaedic Association</b> <sup>(19)</sup>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>Priority for managing a condition which may be time critical has to be weighed up alongside patient factors which increase both the risk of acquiring COVID-19 and having an adverse outcome if infection develops.</li> <li>Patients on the waiting list who suffer marked deterioration in symptoms must be able to access assessment and urgent care as necessary.</li> </ul>

		<ul style="list-style-type: none"> <li>▪ There must be a clear pathway of care for patients who have developed serious conditions who present to community or Primary Care facilities.</li> </ul>
<p><b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup></p>	<p>Paediatric oncology</p>	<ul style="list-style-type: none"> <li>▪ Recommend maintaining lists of cases where care has been adapted and to develop a prioritized approach to review care when normal service capacity resumes.</li> <li>▪ Deferring elective high-risk treatments may improve patient safety and preserve service capacity to meet pandemic demand.</li> </ul>
<p><b>Australian Health Protection Principal Committee</b> <sup>(44)</sup></p>	<p>Elective surgery</p>	<ul style="list-style-type: none"> <li>▪ Restoration of elective activity will be guided by avoiding harm and mitigating risk of deferral of procedure or services in line with clinical guidelines, and appropriate use and supply of PPE. This will be based on clinical decisions with a focus on:                         <ul style="list-style-type: none"> <li>○ Procedures representing low risk, high value care as determined by specialist societies</li> <li>○ Selection of patients who are at low risk of post-operative deterioration</li> <li>○ Children whose procedures have exceeded clinical wait times</li> <li>○ Assisted reproduction</li> <li>○ Endoscopy</li> <li>○ Cancer Screening programs</li> </ul> </li> <li>▪ Cosmetic or other procedures not addressing significant medical conditions must not be included</li> </ul>

**Table 4.8: Detail of organisational management sub-theme 'Research/ Data collection' from guidance documents**

Research / data collection		
Country, Body	Care context	Detail of measures to be in place
<b>Joint Statement: USA American College of Surgeons and other US societies<sup>(32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Facilities should collect and utilise relevant facility data, enhanced by data from local authorities and government agencies as available: (a) COVID-19 numbers (e.g. location, tracking, isolation and quarantine policy); (b) facility bed, PPE, ICU, ventilator availability; (c) quality of care metrics (mortality, complications, readmission, errors, near misses, other).</li> </ul>
<b>Joint Statement: Australian Ministry of Health and Health Professional bodies<sup>(5)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>National study into asymptomatic carriage in elective surgery patients to inform testing policy</li> </ul>
<b>UK (England), Royal College of Surgeons<sup>(12)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li><b>Record of deferred cases:</b> It is essential that hospitals keep a clear record of all surgery that is being deferred and the criteria used to do so, so that there is an accurate estimate of deferred surgery and current waiting lists. Numbers of patients should include those who are: waiting for elective surgery; on stalled care pathways; new patients.</li> <li><b>NHS England data:</b> NHS England is undertaking gap analysis on data from all trusts in England to estimate delays in referrals to secondary care compared to last year. This information will be helpful for planning a more efficient delivery of surgical services.</li> <li><b>Patient population data</b> should also be taken into account to assess population needs and potentially larger local community backlogs against available capacity. Useful tools for assessing patient population needs are provided by the Provider Public Health Network.</li> </ul>
<b>UK, NHS England<sup>(52)</sup></b>	Urgent or planned services	<ul style="list-style-type: none"> <li>Public Health England and NHS Digital are establishing routine data collection systems on COVID-19, including standard definitions of 'hospital onset' at Trust level. Nosocomial transmission to be identified and tracked weekly. Routine data to be available to Trusts by end May 2020, enabling: <ul style="list-style-type: none"> <li>Subgroup analysis/patient stratification to identify patient risk factors</li> <li>Previous hospital episode stays to be identified</li> </ul> </li> <li>Surveillance to be underpinned through system level and regional oversight.</li> </ul>

<p><b>Canada, Ontario Health</b> <sup>(40)</sup></p>	<p>Elective surgeries and procedures</p>	<ul style="list-style-type: none"> <li>▪ Regions must begin regional-level monitoring. Use available data and reports to monitor:                             <ul style="list-style-type: none"> <li>○ COVID-19 pressures at the regional and sub-regional levels</li> <li>○ Surgical and procedural demand and activity (e.g. balancing wait lists and equitable access to care)</li> <li>○ Resource availability (e.g., capacity in hospitals, primary care, home and community care, and rehabilitation; PPE and medical supplies)</li> </ul> </li> <li>▪ Hospitals must begin hospital-level monitoring. Use available data and reports to monitor:                             <ul style="list-style-type: none"> <li>○ COVID-19 pressures in your hospital (including hospital testing capacity and turn-around time)</li> <li>○ Hospital surgical and procedural demand and activity</li> </ul> </li> <li>▪ Resource availability (e.g., hospital bed capacity, PPE and medication supply).</li> </ul>
<p><b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup></p>	<p>Paediatric oncology</p>	<ul style="list-style-type: none"> <li>▪ The enrolment of newly diagnosed patients on clinical trials depends entirely on the capacity and resources to support timely informed consent processes, the sustained accrual of clinical trial data, and ongoing research ethics oversight, and institutional governance.</li> <li>▪ Where resources become limited, and the capacity for research-related investigations is compromised, paediatric oncology treatment centres should urgently review their capability, carefully document any changes instituted, and provide timely notification to the relevant regulatory and institutional governance bodies in their country, the clinical trial sponsors, and the collaborative clinical trial group</li> </ul>
<p><b>American College of Radiology</b> <sup>(30)</sup></p>	<p>Non-urgent Radiology care</p>	<ul style="list-style-type: none"> <li>▪ In general, research subjects for imaging trials should be considered the most vulnerable of patients because their personal benefit may be low or non-existent.</li> <li>▪ However, patients requiring imaging while enrolled in investigational therapeutic trials may need to be prioritized based on clinical need similar to a patient not on a research protocol.</li> </ul>

**Table 4.9: Detail of organisational management sub-theme 'Audit' from guidance documents**

<b>Audit</b>		
<b>Country, Body</b>	<b>Care context</b>	<b>Detail of measures to be in place</b>
<b>USA, American College of Obstetricians and Gynecologists</b> (38)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Surveillance of COVID-19 is important for gathering data to make decisions on how to safely ease physical distancing.</li> <li>▪ Re-opening strategies should be data-driven.</li> <li>▪ Ongoing assessment of the following: COVID-19 prevalence and threat; adequacy of supplies; staff wellness; coordination of priorities; resource utilisation; patient access; infection control.</li> <li>▪ Assessment should involve a multidisciplinary team and include transparent two-way communication between the assessment team and members of the health care system.</li> <li>▪ Incorporating representatives from the patient community will benefit ongoing assessment of resumption strategy: ensure patient needs are met, gauge public perception, and enhance community engagement.</li> <li>▪ Institutions should evaluate whether adaptations in the delivery of care implemented during the response to COVID-19 mitigated existing inequities. Consider adopting such strategies beyond the pandemic response.</li> </ul>
<b>UK, NHS England</b> (52)	Urgent or planned services	<ul style="list-style-type: none"> <li>▪ Focus on continuous improvement: <ul style="list-style-type: none"> <li>○ Capture organisational data and measure for improvement</li> <li>○ Use an established improvement methodology to identify changes and measure their impact</li> <li>○ Ensure a focus on clinically led pathway improvements / redesign to eliminate unnecessary hospital attendances and further reduce risks for patients requiring hospital care and treatment</li> <li>○ Build local learning systems to capture and share best practice and support the use of peer review.</li> </ul> </li> <li>▪ (Regarding physical distancing between planned and urgent care pathways) Solutions must be flexible and sustainable as demand and activity levels change over the next few months.</li> </ul>

<p><b>British Orthopaedic Association</b> (19)</p>	<p>Non-urgent trauma and orthopaedic care</p>	<ul style="list-style-type: none"> <li>▪ Audits of process and outcomes should be established within each unit before starting non-urgent surgery and a management team should be established that will review cases with adverse outcomes.</li> <li>▪ It will be vital to share information on good practice, problems and complications as quickly as possible without the need to await peer reviewed publication.</li> </ul>
<p><b>Australian Commission on Quality and Safety in Health Care</b> (43)</p>	<p>Elective surgery</p>	<ul style="list-style-type: none"> <li>▪ Health service organisations will ensure there is compliance with monitoring requirements.</li> </ul>
<p><b>Australian Health Protection Principal Committee</b> (44)</p>	<p>Elective surgery</p>	<ul style="list-style-type: none"> <li>▪ Restrictions may be reintroduced depending on whole of system demand constraints related to COVID-19 and will be based on outcomes of review and reassessment mechanisms. Restrictions may also be introduced at a hospital or regional level in the event of an outbreak.</li> </ul>
<p><b>Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society and Faculty of Intensive Care Medicine</b> (13)</p>	<p>Elective surgery</p>	<ul style="list-style-type: none"> <li>▪ Regular review of the ability of the four S's (space, staff, stuff, systems) to accommodate increased capacity without jeopardising the safety of patients and the health of staff.</li> </ul>

## **Physical space measures**

The following sub-themes within physical space measures were identified. These are further detailed in Tables 5.1 to 5.4.

- social distancing measures: organisation of space
- hygiene/disinfection measures for patients/staff and facility space
- cleaning approaches
- operating room/procedure room considerations.

Guidance identified on physical space measures was largely provided by professional societies rather than health authorities, and spanned the elective surgery, endoscopy and outpatient visit settings. Guidance referred largely to enhanced cleaning and disinfection of the hospital environment and equipment. Crespo et al. provide very detailed guidance for safety in the endoscopy setting,<sup>(26)</sup> including guidance on cleaning approaches, while the American Society of Plastic Surgeons guidance refers specifically to detailed hygiene and physical space infection control measures in the outpatient setting.<sup>(33)</sup> Guidance on physical social distancing measures in some cases included detailed practical advice, for example, recommendations regarding desk arrangements and spacing of patients within waiting areas.

The American Society for Reproductive Medicine referred to physical distancing, sanitisation of surfaces and frequent hand-washing.<sup>(36)</sup> The Society stated that, where COVID-19 testing is not readily available or routinely used, practices should implement evidence-based infection prevention techniques including access control, workflow and distancing processes, and distribution of PPE appropriate for the clinical tasks to the clinical team. The Society also recommended implementation of transmission-based standard precautions for contact with bodily fluids.<sup>(54)</sup>

The British Orthopaedic Association provided detailed consideration of 'COVID-free', or 'green', versus 'COVID-managed', or 'blue', areas, stating that plans must be put in place on the basis of COVID-19 being widespread.<sup>(19)</sup> Facilities would further be categorised as 'gold', 'silver', or 'bronze' depending on the capability of buildings, diagnostics, staff and other co-dependencies (e.g. renal replacement services) to enable infection control via physical configurations and policies (e.g. physical separation of areas, use of checkpoints).

**Table 5.1: Detail of physical space sub-theme 'Social distancing: organisation of space' from guidance documents**

<b>Social distancing measures: organisation of space</b>		
<b>Country, Body</b>	<b>Care context</b>	<b>Detail of measures to be in place</b>
<b>US Centers for Medicare &amp; Medicaid Services (CMS)<sup>(28)</sup></b>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Facility should create areas of non-COVID-19 care which have steps in place to reduce risk of COVID-19 exposure and transmission; these areas should be separate from other facilities where possible (i.e. separate building, or designated rooms or floor and minimal crossover).</li> <li>Administrative and engineering controls should be established to facilitate social distancing, such as minimising time in waiting areas, spacing chairs at least 6 feet apart, and maintaining low patient volumes.</li> </ul>
<b>USA, American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Waiting room spacing/staggered scheduling</li> <li>Consider total number of people in space at any one time</li> </ul>
<b>Spain, Gastroenterology societies<sup>(26)</sup></b>	Gastroenterology depts.	<ul style="list-style-type: none"> <li>Separate chairs from desks</li> <li>Keep desks as tidy as possible</li> </ul>
<b>European Society of Human Reproduction and Embryology<sup>(9)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Limit numbers of persons present in the centre</li> <li>Restrict access for companions</li> <li>Redesign waiting rooms and working spaces to guarantee appropriate distancing</li> <li>Provision of protective screens for administrative staff</li> <li>Subdivision of staff into mini-teams</li> </ul>
<b>USA, American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Maintain physical distancing in accordance with CDC guidance.</li> </ul>
<b>Canada Canadian Society of Cardiac Surgeons<sup>(41)</sup></b>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>Guidance refers to creation of COVID-free units</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy<sup>(39)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>Lobby/waiting room chair redistribution</li> <li>Separate entrance and exit, preferably. Physical barriers (e.g. plexiglass partitions).</li> <li>Rework check-in process to limit direct contact with staff.</li> </ul>
<b>UK (England),</b>	Elective surgery	<ul style="list-style-type: none"> <li>Where possible, there should be a physical separation of COVID-19 positive and COVID-19 negative patients. COVID-19 free sites might be created at independent hospitals, within</li> </ul>



<b>Royal College of Surgeons</b> (12)		designated areas in NHS hospitals or for an entire hospital functioning as an NHS network hub.
<b>Australian Orthopaedic Association</b> (45)	Elective surgery	<ul style="list-style-type: none"> <li>Double theatres should be avoided.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> (15)	Reproductive medicine	<ul style="list-style-type: none"> <li>Lists measures for consideration regarding clinic layout: Physical barriers between staff and patients, and or appropriate PPE; Spacing of furniture to ensure physical distancing; Signage and information describing measures.</li> <li>Delivery of specimens from home.</li> <li>Consider equipment which allows for greater physical distancing.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> (38)	Reproductive medicine	<ul style="list-style-type: none"> <li>Spacing of appointments, configuration of waiting areas, access and spacing for services such as laboratory or radiology.</li> </ul>
<b>UK, NHS England</b> (52)	Urgent or planned services	<ul style="list-style-type: none"> <li>Maximise opportunities for creating physical and or visible separation between clinical and non-clinical areas used by patients on a Planned &amp; Elective care pathways and those on an Urgent &amp; Emergency care pathway.</li> </ul>
<b>Canada, Ontario Health</b> (40)	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Assumption that conventional in-patient space is available for care, and this space is evaluated in the context of physical distancing for both inpatient flow and outpatient activity. This space cannot include care in hallways.</li> </ul>
<b>Australian Commission on Quality and Safety in Health Care</b> (43)	Elective surgery	<ul style="list-style-type: none"> <li>Health services should ensure that they meet physical distancing requirements at all times during planning, preparation and post treatment. This applies to all staff patients and relatives.</li> </ul>
<b>British Orthopaedic Association</b> (19)	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>Within COVID free hospitals or areas within hospitals it is still vital to ensure ring-fenced beds for orthopaedic surgery to ensure safety against other nosocomial infection.</li> <li>The patient should not be taking public transport to arrive at the healthcare setting. <ul style="list-style-type: none"> <li>If they don't have a means of private transport to arrive at hospital, then appropriate hospital transport may need to be arranged.</li> </ul> </li> <li>The arrival times of patients should be staggered as much as possible so that the reception and waiting areas are not crowded. Ideally they should be taken directly from a reception area and avoid using a waiting room.</li> <li>For hospitals that have green and blue zones, patients should be given instructions about the correct route into the hospital and where to go, to avoid inadvertently entering parts of the hospital that are not green zones.</li> <li>Hospitals should carefully consider their own buildings, layouts and facilities as to how to ensure social distancing for patients arriving at and being treated in the green zones.</li> </ul>

		<ul style="list-style-type: none"> <li>▪ Toilets in particular need consideration, and ideally patients should all be treated in en-suite rooms but this may not always be possible</li> </ul>
<b>North American Cardiovascular Societies</b> <sup>(42)</sup>	Invasive cardiovascular procedures and diagnostic tests	<ul style="list-style-type: none"> <li>▪ Restrictions should be implemented on the number of people that can accompany a patient or visit a patient after a procedure or test</li> <li>▪ Whenever possible, multiple tests or procedures should be consolidated into a single comprehensive visit.</li> </ul>
<b>Royal College of Radiologists</b> <sup>(18)</sup>	General radiology services	<ul style="list-style-type: none"> <li>▪ Appointments should be timed to allow for social distancing in waiting areas, minimising the risk of crowding</li> <li>▪ Cluster imaging and other appointments to minimise time in hospital and the number of visits to hospital.</li> <li>▪ Patients should be encouraged to attend alone, or refrain from bringing those accompanying them into the hospital where feasible. Exceptions should be made of children and those attending with a carer</li> <li>▪ Waiting areas should not be overcrowded and have a minimum of 2 metres between seats. There should be a line on the floor 2 metres from the reception desk.</li> <li>▪ Consider designated parking spaces in close proximity to the department or scanner.</li> <li>▪ Patients could wait in their cars and be notified by text message that the department is ready to see them.</li> <li>▪ Consider providing a pre-waiting area for patients arriving by public or hospital transport</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ The risk of infection and transmission should be minimized by utilizing general social distancing principles.</li> <li>▪ The use of waiting rooms should be minimized. Social distancing in the waiting room and other communal areas should be exercised. Frequent cleaning is also recommended.</li> <li>▪ Family members and visitors should limit the time that they spend within the hospital. Some institutions may ban the entry of family members and visitors to the hospital.</li> <li>▪ The surgeon and the surgical team should avoid direct contact with family members and should update the families via telephone or video conferencing.</li> <li>▪ Patients should be housed in single rooms, if possible. When patients are housed in the same room, the beds should be distanced at least 2 metres from each other, and all patients should wear a surgical mask.</li> <li>▪ In the early weeks following the return to elective surgery, each patient should be placed in a single room or cubicle where check-in, registration, and other administrative tasks can be performed.</li> <li>▪ Large surgical bays with multiple patients sharing 1 room should be avoided.</li> </ul>

<b>American Academy of Ophthalmology</b> <sup>(37)</sup>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ Keep the waiting room as empty as possible, advise seated patients to remain at least 6 feet from one another.</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Enable social distancing within waiting rooms, hallways and work areas</li> <li>▪ Streamline patient flow to minimize unneeded contacts (e.g., one-way corridors)</li> <li>▪ Implement methods to minimize time in waiting rooms (e.g., waiting in cars)</li> <li>▪ Optimize the efficiency of every patient encounter</li> <li>▪ Restrict the number of visitors accompanying the patient</li> <li>▪ Prevent symptomatic visitors from accompanying patients</li> <li>▪ Consider extending hours of operation to improve access and preserve social distancing</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ The risk of infection and transmission should be minimized by utilizing general social distancing principles.</li> <li>▪ The use of waiting rooms should be minimized. Social distancing in the waiting room and other communal areas should be exercised. Frequent cleaning is also recommended.</li> <li>▪ Family members and visitors should limit the time that they spend within the hospital. Some institutions may ban the entry of family members and visitors to the hospital.</li> <li>▪ The surgeon and the surgical team should avoid direct contact with family members and should update the families via telephone or video conferencing.</li> <li>▪ Patients should be housed in single rooms, if possible. When patients are housed in the same room, the beds should be distanced at least 2 metres from each other, and all patients should wear a surgical mask.</li> <li>▪ In the early weeks following the return to elective surgery, each patient should be placed in a single room or cubicle where check-in, registration, and other administrative tasks can be performed.</li> <li>▪ Large surgical bays with multiple patients sharing 1 room should be avoided.</li> </ul>
<b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup>	Paediatric oncology	<ul style="list-style-type: none"> <li>▪ Parent and visitor access to clinics and wards should be strictly controlled and limited to one carer, but with compassionate exceptions during end-of-life care so long as measures to protect staff and other patients from infection are observed.</li> </ul>
<b>Australian Health Protection Principal Committee</b> <sup>(44)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Physical distancing should be applied in the lead up and management of surgery – for example with telehealth for perioperative assessments.</li> </ul>

**Table 5.2: Detail of physical space sub-theme 'Hygiene/ disinfection measures' from guidance documents**

<b>Hygiene/ disinfection measures for patients/staff and facility space</b>		
<b>Country, Body</b>	<b>Care context</b>	<b>Detail of measures to be in place</b>
<b>US, American Society for Gastrointestinal Endoscopy</b> <sup>(39)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>Detailed guidance on PPE donning and doffing, jewellery and cosmetic use by staff. Hand hygiene training.</li> </ul>
<b>USA, American Society of Plastic Surgeons</b> <sup>(33)</sup>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Consider availability of wipes/other hygiene products</li> <li>Discontinue self-service hospitality stations (coffee, water etc.)</li> <li>Multiple hand sanitising dispensers in offices</li> </ul>
<b>Spain, Gastroenterology societies</b> <sup>(26)</sup>	Gastroenterology depts.	<ul style="list-style-type: none"> <li>Work areas should be kept well ventilated</li> </ul>
<b>European Society of Human Reproduction and Embryology</b> <sup>(9)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Provision of sanitation devices for patients and staff.</li> </ul>
<b>USA, American Society for Reproductive Medicine</b> <sup>(36)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Consider public notices or signs recommending against touching face/ mouth/eyes.</li> <li>'How-to' signs to aid staff in donning/ removing PPE.</li> <li>Establish procedure for cleaning/decontaminating all surfaces touched by patients and staff.</li> </ul>
<b>UK Royal College of Ophthalmologists</b> <sup>(14)</sup>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>Good ventilation in clinical rooms and waiting areas where possible</li> </ul>
<b>UK (England), Royal College of Surgeons</b> <sup>(12)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>Continued adherence to universal precautions such as hand washing.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Minimise sharing of equipment. Ensure appropriate maintenance of equipment.</li> </ul>
<b>UK, NHS England</b> <sup>(52)</sup>	Urgent or planned services	<ul style="list-style-type: none"> <li>Follow national IPC guidance and use IPIC Board Assurance Framework.</li> <li>Minimise health care worker transmission through (i) good hand and respiratory hygiene; (ii) declaring all COVID-like symptoms; (iii) reducing movement between areas; (iv) social distancing, including during work breaks.</li> </ul>

<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"><li>▪ Consider infection prevention and control protocols on the management of COVID-19 in operating room and procedural spaces that factor in recommended PPE use and pre-operative testing.</li></ul>
<b>Australian Commission on Quality and Safety in Health Care</b> <sup>(43)</sup>	Elective surgery	<ul style="list-style-type: none"><li>▪ Special precautions (listed as a number of steps) to be taken before entering and moving between COVID-19 designated zones described.</li><li>▪ Recommended PPE for health workers in different clinical units described.</li></ul>

**Table 5.3: Detail of physical space sub-theme 'Cleaning' from guidance documents**

Cleaning		
Country, Body	Care context	Detail of measures to be in place
<b>US Centers for Medicare &amp; Medicaid Services (CMS)</b> <sup>(28)</sup>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Ensure an established plan for thorough cleaning and disinfection prior to using spaces or facilities for patients with non-COVID-19 care needs.</li> <li>Ensure equipment used for COVID-19 patients is thoroughly decontaminated as per CDC guidelines.</li> </ul>
<b>Joint Statement: USA American College of Surgeons and other US societies</b> <sup>(32)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>Preoperative environmental cleaning</li> <li>Prior to implementing the start-up of any invasive procedure, all areas should be terminally cleaned according to evidence-based information.</li> <li>In all areas (e.g. clinic, preoperative and operating room/procedural areas, workrooms, pathology-frozen, recovery room, patient areas ICU, ventilators, scopes, sterile processing, etc.): Re-engineering, testing, and cleaning should take place as needed of anaesthesia machines returned from COVID-19 and non-COVID-19 use.</li> </ul>
<b>USA American Society of Plastic Surgeons</b> <sup>(33)</sup>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Have a plan for terminal cleaning of perioperative/OR areas and enhanced maintenance cleaning of clinics, especially high-touch areas</li> <li>Ensure adequate cleaning supplies in place</li> </ul>
<b>Spain, Gastroenterology societies</b> <sup>(26)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>Detailed guidance for cleaning in the endoscopy setting.</li> </ul>
<b>European Society of Human Reproduction and Embryology</b> <sup>(9)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Enhanced routine sanitation.</li> </ul>
<b>Asian Pacific Society for Digestive Endoscopy</b> <sup>(27)</sup>	Elective endoscopy	<ul style="list-style-type: none"> <li>Disinfection policy for endoscopy rooms and reprocessing of equipment should be extended</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy</b> <sup>(39)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>Detailed advice for disinfection agents and approaches for procedure rooms, bedside, endoscopes, accessories and office/ toilet/kitchen spaces.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Detailed advice on cleaning and minimising exposure within laboratory.</li> </ul>

<b>UK, NHS England</b> <sup>(52)</sup>	Urgent or planned services	<ul style="list-style-type: none"> <li>▪ Frequent cleaning of any shared equipment (e.g. phones)</li> </ul>
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Consider if you have appropriate facility cleaning policies in place for all areas along the continuum of care (<i>e.g., clinic, pre-operative spaces, operating room, workrooms, recovery room, ICUs, ventilators, scopes, etc.</i>)</li> </ul>
<b>Royal College of Radiologists</b> <sup>(18)</sup>	General radiology services	<ul style="list-style-type: none"> <li>▪ Appointments should be timed to allow for cleaning of equipment between patients, recognising the risk of cross contamination if a COVID-19 positive patient is inadvertently scanned on a 'clean' scanner.</li> <li>▪ Equipment and surfaces should be wiped between each patient to minimise the risk of infection.</li> <li>▪ Deep cleaning, as per local infection control guidance, should be undertaken if an unsuspected COVID-19 case is found to have been imaged on a facility deemed clean.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Commonly touched surfaces should be wiped down and cleaned with an effective disinfectant solution (e.g., 70% alcohol) at least twice a day</li> <li>▪ Consideration should be given to the use of portable high-efficiency particulate air filtration systems in relatively crowded areas/rooms.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ The standard recommendations for cleaning and sterilizing of instruments are still adequate and need to be followed vigilantly</li> <li>▪ Consideration should be given to performing a thorough cleaning of the room at the end of each case. The surfaces of all equipment in the operating room (including computers, lead gowns, robots, case carts, and so on) should be wiped down after each case. Manufacturer's instructions on the surface contact time requirements of the disinfectant must be followed.</li> </ul>
<b>American Academy of Ophthalmology</b> <sup>(37)</sup>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ Rooms and instruments should be thoroughly disinfected after each patient encounter. Wear disposable gloves when cleaning and disinfecting surfaces, and discard the gloves after use.</li> </ul>

**Table 5.4: Detail of physical space sub-theme 'Operating room/ procedure room considerations' from guidance documents**

Operating room / procedure room considerations		
Country, Body	Care context	Detail of measures to be in place
<b>Joint Statement: USA American College of Surgeons and other US societies<sup>(32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Operating/procedural rooms must meet engineering and Facility Guideline Institute standards for air exchanges.</li> </ul>
<b>USA American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Minimise exposure during intubation/ extubation, e.g. minimise team members in room during this time</li> <li>Minimise unnecessary equipment and supplies in room</li> </ul>
<b>Spain, Gastroenterology societies<sup>(26)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>Detailed guidance on cleaning in the endoscopy setting.</li> </ul>
<b>Asian Pacific Society for Digestive Endoscopy<sup>(27)</sup></b>	Elective endoscopy	<ul style="list-style-type: none"> <li>Endoscopies should be performed in negative pressure rooms where available</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy<sup>(39)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>Detailed guidance with respect to PPE and practical measures for exposure minimisation within endoscopy room.</li> <li>Procedure room vacancy should be built into the schedule to allow for extended patient recovery and room cleaning times between procedures.</li> <li>Rooms lacking negative pressure benefit from additional aeration time for clearance of droplets.</li> </ul>
<b>UK Royal College of Ophthalmologists<sup>(14)</sup></b>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>List of considerations for ophthalmologic surgeries, e.g. allocation of theatre lists by demand, use of adhesive drapes on microscope.</li> </ul>
<b>UK (England), Royal College of Surgeons<sup>(12)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Where COVID-19 negative facilities cannot be created, dedicated COVID-19 operating theatres should exist to help contain the spread of the disease. These should be out of high traffic areas and emptied of non-essential materials or personal items. A clearly demarcated area should be available for donning and doffing of PPE and exchange of equipment, medications and materials. Where feasible, the patient should be recovered by dedicated staff. For COVID-19 positive patients who require acute surgery, consideration should be</li> </ul>



		given to surgical approaches that decrease operating staff exposure and shorten the duration of surgery. Staff in the operating theatre should be limited to essential members.
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Consider operating room production capacity.</li> <li>▪ Consider extending operating room hours and schedule including evening and weekend services.</li> <li>▪ Build operating schedule combining capacity/resources with list of patients from all specialists, determine which room will be open and which patients will be operated on.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ Liaise closely with colleagues in the anaesthetics department for all interventions requiring general anaesthetic to ensure that their availability is factored into scheduling. In all cases requiring intubation and extubation services should minimise the number of staff in the room, and equip those in the room with PPE in accordance with national guidelines for aerosol generating procedures, and local risk based assessment.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Have a ventilation system in the operating room with a minimum of 20 air changes per hour.</li> <li>▪ Reduce the amount of equipment in the operating room and limit it to what is essential for the surgical procedure.</li> <li>▪ Install filters that are able to remove aerosol and droplets</li> <li>▪ Have normal positive-pressure rooms for elective procedures. There is no need to convert to negative-pressure rooms, but modalities to decrease efflux of contaminated air into the hallways, such as in-room air filters and negative-pressure antechambers, can be considered.</li> <li>▪ Minimize the number of people in the operating room at all times, particularly during intubation or extubation of a patient</li> <li>▪ The use of regional anaesthesia, whenever possible, should be strongly considered for patients undergoing elective surgery during the pandemic.</li> <li>▪ The surgeon and the surgical team should change scrubs frequently during a surgical day. If respirators (N95, FFP2, and P3) are being worn, they can be used for 6 to 8 hours and need not be discarded after each use unless soiled. A new respirator is required each day.</li> </ul>
<b>American Academy of Ophthalmology</b> <sup>(37)</sup>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ For cases that require general anaesthesia, personnel not in N95 masks should remain out of the OR during intubation/extubation. For non-aerosolizing procedures performed under monitored anaesthesia/conscious sedation, the patient should be placed in a surgical mask.</li> </ul>
<b>International Society for Pediatric Oncology,</b>	Paediatric oncology	<ul style="list-style-type: none"> <li>▪ Staffing should be minimised to essential personnel. Exposed team members are required to adhere to consensus guidelines, use airborne precaution PPE</li> </ul>

<b>Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup>		
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## **Patient flow measures**

The following nine sub-themes within patient flow measures were identified. These are further detailed in 6.1 to 6.9. Measures are also discussed below under the headings 'Elective Surgery/Endoscopy' and 'Outpatient clinics'.

- remote alternatives
- social distancing measures
- masking/hygiene
- pre-screening for symptoms
- screening for COVID-19 infection or immunity by testing
- patient flow during elective surgery, endoscopy or other procedures
- general communication with patients
- patient confidence
- vulnerable populations.

## **Elective Surgery / Endoscopy**

Several associations refer to the importance of patient communication,<sup>(33, 36)</sup> including consent for procedures, and the importance of reassuring patients regarding their safety, although detailed approaches were not necessarily provided.<sup>(32)</sup>

The Canadian Society of Cardiac Surgeons provided seven guiding statements for the 'ramping up' of cardiac surgery programmes, and refer to comprehensive screening programmes to identify patients at risk of COVID-19 (telephone questionnaire screening, initial admission to an isolation room, daily clinical screening of patients at ward level), as well as COVID-19 testing approaches.<sup>(41)</sup> Patient management approaches for all patients on the cardiac surgery waiting list included (i) tele-assessment of clinical status every 2 to 4 weeks, (ii) a mechanism for formal assessment and non-invasive test ordering for patients with deteriorating symptoms, unstable clinical characteristics or high-risk anatomy, and (iii) peer review for complex patients.

The British Orthopaedic Association,<sup>(19)</sup> Royal College of Radiologists and British Society of Interventional Radiology,<sup>(17)</sup> American Society of Plastic Surgeons (ASPS)<sup>(33)</sup> and the American Society for Gastrointestinal Endoscopy<sup>(39)</sup> provide detailed recommendations that most closely resembled 'patient care pathways' among the documents identified, though not necessarily described by the Societies as such.

The ASPS, in addition to consideration of capacity, planning and physical space issues, recommended communication approaches; these included communicating

and reassuring patients regarding safety concerns and communicating regarding potential cancellation of surgery. The ASPS also provided advice with respect to the following stages of patient flow within elective surgery: pre-operation, within operation room, post-operation.

### **Pre-operative advice:**

- Testing considerations; the ASPS recommend preoperative RT-PCR testing for acute COVID-19 infection in elective surgical patients. This should be performed as close to the surgery date as feasible, but in time to get results, subject to availability of testing. The ASPS notes that the role of serological testing is currently questionable and is expected to evolve in the coming months.
- Pre-operative patients should be encouraged to self-quarantine for 5-7 days prior to the operation to minimise the likelihood of patients being in the pre-symptomatic phase of infection at the time of surgery.
- Consider calling patients for symptom screening two weeks prior to the anticipated procedure.
- Consider additional informed consent language to address potential for exposure to COVID-19.

### **Advice during operation:**

- Advice pertained to capacity and physical space infection control measures within the operating room, as discussed above.

### **Post-operative advice:**

- Consider telehealth where appropriate and available for pre-operative or post-operative discussions, and for post-operative wound checks.
- Consider 7-day post-operative social isolation period to reduce incidence of a new exposure and infection as feasible, excluding needed post-operative visits.

The American Society for Gastrointestinal Endoscopy provide a detailed patient care pathway description for the endoscopy setting, covering patient check-in, pre- and post-operative care, and procedure room protocols.<sup>(39)</sup> Check-in care advice primarily related to pre-screening and minimising patient time within the centre, including the remote handling of paperwork. Recommended pre-operative and post-operative processes include detailed advice regarding masking of patients except during upper endoscopy and when oxygen masks are in use, and procedures for communication with patients and their caregivers. Procedural room protocols include practical steps such as transporting patients to the recovery area as soon as safe and ready for

transfer, and the suggestion that patients requiring nebulizers or metered dose inhalers should bring their own devices with them.

The Royal College of Ophthalmologists refers to the concept of 'clean' COVID-free sites as per previous NHS England advice, and potential options to create a 'clean ophthalmology stream'.<sup>(14)</sup> Within the guidance an extensive list of options to create such a 'clean' stream, or pathway, was presented, and included segregation of areas within the site, strict isolation policies for at-risk staff, pre-screening of patients and staff, swab testing patients 48-72 hours before surgery, asking patients to self-isolate after a negative viral swab for 1-2 weeks, or screening with chest x-ray or CT scans. This appeared to be a list of individual potential approaches rather than a suite of measures to consider introducing as a whole. The College acknowledged that none of the options could guarantee a 100% COVID-free pathway, though the emergence of reliable swab or serology tests may change matters. The College also provided a list of approaches that can be introduced to improve safety and efficiency in the surgery setting. These include practical steps such as the use of adhesive drape and/or face masks for patients and instructions for patients not to get on or off operating trolleys within the theatre.

The British Orthopaedic Association provided thorough guidance on approaches to patient contact, consent, supporting self-management, interfaces with primary and community care included referrals and discharge, and highly detailed guidance on quarantine (otherwise referred to as 'shielding' or 'cocooning') for patients due to attend for surgery.<sup>(19)</sup> Patients are advised to stay at home and reduce exposure to COVID-19 for 14 days prior to the procedure and also for 14 days after discharge. Detailed advice is provided for each of two options: (i) Self-isolating of patients along with their entire household; (ii) Shielding of patient within a household.

Quarantine or shielding was also referred to in guidance from NHS England,<sup>(11)</sup> the American Society of Plastic Surgeons,<sup>(33)</sup> the International Consensus Group (ICM) and Research Committee of the American Association of Hip and Knee Surgeons (AAHKS),<sup>(47)</sup> and the Faculty of Intensive Care Medicine, Intensive Care Society, Association of Anaesthetists and Royal College of Anaesthetists.<sup>(13)</sup>

Several documents referred to pathways for separating patients to minimise infection spread. The Faculty of Intensive Care Medicine, Intensive Care Society, Association of Anaesthetists and Royal College of Anaesthetists stated that maximising surgical activity will require using patient flow pathways involving shielding before admission, and testing, such that COVID-19 positive and COVID-19 negative pathways are created and used appropriately.<sup>(13)</sup> This group and NHS England also referred to adopting pathways for members of surgical, anaesthetic

and theatre teams such that teams carrying out elective work are separate to those involved in emergency work.<sup>(11)</sup>

## **Outpatient clinics**

Crespo et al., provide recommendations on behalf of a group of gastroenterology societies (SEPD, AEEH, GETECCU and AEG) with respect to the stepwise resumption of hospital care, including outpatient care. The authors provide recommendations on practical considerations for outpatient clinics as well as day case visits.<sup>(26)</sup> It is unclear which recommendations are specific to resumption of care versus care during the mitigation phase.

The European Society of Cardiology published a list of recommendations with respect to the provision of cardiac rehabilitation service activities during the COVID-19 pandemic, including the resumption of care.<sup>(7)</sup> It is unclear which recommendations in particular are specific to resumption of care versus care during the mitigation phase. The recommendations refer to disinfection of material before and during activities and a range of patient-oriented recommendations. These include practical infection control concerns, such as the avoidance of sputum-inducing exercises, the use of surgical masks by patients, and recommendations for patients considered to be most immunocompromised, e.g. early discharge and stricter self-isolation, though little detail is provided. The recommendations also pertain to the implementation of social distancing, for example, approaches such as separating machines (treadmills), using one to one sessions as opposed to groups and applying tele-rehabilitation approaches. They also recommend patient education regarding the importance of continuing care and avoiding postponing urgent treatment.

The Royal College of Ophthalmologists guidance includes a list of considerations for the outpatient setting. These include aspects of remote care, robust refinement of referrals to the clinic, robust discharge and follow-up timing guidelines and considerations for social distancing and hygiene.<sup>(14)</sup>

**Table 6.1: Detail of patient flow sub-theme 'Remote alternatives/ other care alternatives' from guidance documents**

<b>Remote alternatives / other care alternatives</b>		
<b>Country, Body</b>	<b>Care Context</b>	<b>Details of measures to be in place</b>
<b>US Centers for Medicare &amp; Medicaid Services (CMS)<sup>(28)</sup></b>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Maximum use of telehealth strongly encouraged</li> </ul>
<b>US American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Consider telehealth encounters in preparation or in substitute for in person encounters</li> <li>Pre-operative: symptom screening</li> <li>Post-operative: Consider telehealth</li> </ul>
<b>US California Medical Association<sup>(35)</sup></b>	General	<ul style="list-style-type: none"> <li>Use virtual care for all no-touch services</li> </ul>
<b>Spain Gastroenterology societies<sup>(26)</sup></b>	Outpatient gastroenterology Endoscopy	<ul style="list-style-type: none"> <li>Adopt telemedicine. Intersperse telemedicine between in-person appointments to prolong intervals between the latter (reduce waiting room activity). Coordinate telemedicine with primary care.</li> <li>Consider imaging tests as alternative to endoscopy. Prioritise use of biomarkers versus endoscopy.</li> </ul>
<b>European Society of Human Reproduction and Embryology</b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Telemedicine where possible</li> </ul>
<b>US American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Continue to use telehealth to the greatest extent possible.</li> <li>Counsel and consent patients electronically.</li> <li>Spread out necessary appointments to limit the number of patients in the office at one time.</li> </ul>
<b>Canada Canadian Society of Cardiac Surgeons<sup>(41)</sup></b>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>All waitlist patients to be contacted via telephone, teleconference or videoconference at least every 2 to 4 weeks to assess clinical status.</li> <li>Clear mechanism to formally assess deteriorating, high-risk anatomy or clinically unstable patients and to order non-invasive tests as needed.</li> <li>Peer review highly encouraged for complex cases.</li> </ul>
<b>US</b>	Endoscopy	<ul style="list-style-type: none"> <li>Work remotely over a virtual private network.</li> <li>Endoscopy centre check-in to involve remote handling of paperwork.</li> </ul>

<b>American Society for Gastrointestinal Endoscopy</b> (39)		
<b>UK Royal College of Ophthalmologists</b> (14)	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>▪ Telephone and video/virtual advice.</li> <li>▪ Remote prescribing</li> <li>▪ Networked EPRs and imaging platforms made accessible to community and offsite clinicians.</li> <li>▪ Digital and remote pre-assessment.</li> </ul>
<b>UK (England), Royal College of Surgeons</b> (12)	Elective surgery	<ul style="list-style-type: none"> <li>▪ A wider use of virtual clinics as well as virtual patient reviews and consultations is encouraged where appropriate.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> (15)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Telemedicine where possible. Ensure software meets data protection needs.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> (38)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Can consider a phased approach with virtual visits early on and gradually increasing in-person visits.</li> <li>▪ Consider maintaining telemedicine on a more permanent basis if services are safe, effective and well-received by the patient community.</li> </ul>
<b>UK, NHS England</b> (52)	Urgent or planned services	<ul style="list-style-type: none"> <li>▪ Maximise all opportunities for remote, multi-professional virtual consultations.</li> </ul>
<b>Canada, Ontario Health</b> (40)	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Where appropriate use virtual care for preoperative and postoperative follow-up visits.</li> </ul>
<b>British Orthopaedic Association</b> (19)	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>▪ When planning surgery, consider whether there are options that would not require general anaesthetic and could use regional anaesthesia, to reduce the potential for aerosol generating procedures.</li> <li>▪ Follow-up should be by remote consultation if at all possible, and patients could be encouraged to take video or photos to show that they wish to discuss.</li> </ul>
<b>North American Cardiovascular Societies</b> (42)	Invasive cardiovascular procedures and diagnostic tests	<ul style="list-style-type: none"> <li>▪ Virtual pre-procedural clinics, virtual consenting for procedures and diagnostic tests, and minimizing the number of healthcare workers in physical contact with any given patient.</li> <li>▪ In general, a minimally invasive procedure with a shorter length of stay is preferable if both strategies have similar efficacy and safety.</li> <li>▪ A less invasive test or alternative imaging modality should be considered if both tests have similar efficacy.</li> </ul>



<b>Royal College of Radiologists</b> <sup>(18)</sup>	General radiology services	<ul style="list-style-type: none"> <li>▪ For each patient, services should validate with the referrer and/or patient the continued need for imaging deferred because of COVID19, to ensure it is still appropriate. Notwithstanding this, services should review the indication and consider alternative imaging modalities as appropriate.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ Services should use of telephone or video conference facilities for virtual consultations, pre-assessments and follow-up, where this is feasible, to reduce the number of patient attendances.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Postoperative rounds by the surgeon may be done with use of telemedicine, whenever possible.</li> <li>▪ Post-discharge visits to the office should be minimized, with the majority of the follow-up being done by telemedicine.</li> <li>▪ Office visits should be limited to those who are having issues/complications such as wound-healing problems, suspected fracture, stiffness, and so on</li> <li>▪ Social distancing should be resumed and at-home visits avoided, unless absolutely essential</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Enable telehealth where feasible (e.g., pre- and post-procedure visits)</li> </ul>
<b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup>	Paediatric oncology	<ul style="list-style-type: none"> <li>▪ Implementation of measures to reduce hospital visits such as remote consultation (by telephone or videoconference) and provision of oral medicines through courier service or drive through pharmacy counters are welcomed.</li> <li>▪ Radiotherapy- delaying or deferring treatment, use of alternative modalities and condensed regimens, may be possible</li> </ul>

**Table 6.2: Detail of patient flow sub-theme 'Social distancing measures' from guidance documents**

Social distancing measures		
Country, Body	Care Context	Details of measures to be in place
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)</b> <sup>(28)</sup>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Visitors prohibited, or pre-screened for symptoms (including temperature checks) in the same way as for patients.</li> </ul>
<b>US, American Society of Plastic Surgeons</b> <sup>(33)</sup>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Consider having patients/family wait in cars or off site.</li> </ul>
<b>Spain, Gastroenterology societies</b> <sup>(26)</sup>	Outpatient gastroenterology	<ul style="list-style-type: none"> <li>Patients must attend appointments alone unless they have a disability.</li> </ul>
<b>European Society of Human Reproduction and Embryology</b> <sup>(9)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Restrict access for companions</li> <li>Provide advice on social distancing</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy</b> <sup>(39)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>Only essential caregivers should accompany patients. Other companions should return later or stay in vehicles.</li> </ul>
<b>UK, Royal College of Ophthalmologists</b> <sup>(14)</sup>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>Staggered arrivals, multiple waiting areas, spaced out chairs</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Minimise the number of accompanying persons.</li> </ul>
<b>UK, NHS England</b> <sup>(52)</sup>	Urgent or planned services	<ul style="list-style-type: none"> <li>Ensure social distancing requirements are met.</li> </ul>
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>Conventional in-patient space must be available for care, and this space must be evaluated in the context of physical distancing for both inpatient flow and outpatient activity.</li> </ul>
<b>Australian Commission on Quality and Safety in Health Care</b> <sup>(43)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>Health services should ensure that they meet physical distancing requirements at all times during planning, preparation and post treatment. This applies to all staff patients and relatives.</li> </ul>

**Table 6.3: Detail of patient flow sub-theme 'Masking/ hygiene' from guidance documents**

<b>Masking/hygiene</b>		
<b>Country, Body</b>	<b>Care Context</b>	<b>Details of measures to be in place</b>
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)<sup>(28)</sup></b>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Patients should wear a cloth face covering that can be bought/made at home if they do not possess surgical masks.</li> <li>Healthcare providers and staff to wear surgical facemasks at all times, or N95 masks and face shields where there is a higher risk of aerosol 4.</li> </ul>
<b>US, California Medical Association<sup>(35)</sup></b>	General	<ul style="list-style-type: none"> <li>Universal (patients and staff) face covering in practice. Communicate regarding type of covering and requirement for same at time of office visit scheduling. Consider needs of very young children and patients with respiratory diseases (reduce airflow risks).</li> </ul>
<b>Spain, Gastroenterology societies<sup>(26)</sup></b>	Gastroenterology depts.	<ul style="list-style-type: none"> <li>Masking mandatory in all hospital premises for patients and companions. Patients must disinfect hands.</li> </ul>
<b>US, American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Patients should wear cloth or surgical masks at all times when in the clinic, except when under anaesthesia.</li> <li>Require frequent hand washing.</li> </ul>
<b>US, Joint Statement: USA American College of Surgeons and other US societies<sup>(31, 32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>Patients should wear cloth face covering</li> </ul>
<b>US, American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Patients may wear cloth or surgical face masks</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy<sup>(39)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>Patients and staff should wear washable cloth or surgical face masks at all times.</li> </ul>
<b>UK, Royal College of Ophthalmologists<sup>(14)</sup></b>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>Patients to wear masks</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and</b>	Reproductive medicine	<ul style="list-style-type: none"> <li>All visitors asked to use a face covering. Masks to be provided for those who need them. Provision to be made for safe disposal of PPE used by visitors.</li> </ul>

<b>British Fertility Society (BFS)</b> <sup>(15)</sup>		
<b>Australian Commission on Quality and Safety in Health Care</b> <sup>(43)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ For the care of patients who are not suspected of, or who do not have, confirmed COVID-19 PPE in operating suites and procedure rooms should be consistent with Australian Guidelines for the Prevention and Control of Infection in Healthcare 2019.</li> </ul>
<b>British Orthopaedic Association</b> <sup>(19)</sup>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>▪ If the patient is driven in a car with another member of the household, they may wish to wear a face mask for the journey and/or when getting from the car to their destination in the hospital</li> </ul>
<b>Royal College of Radiologists</b> <sup>(18)</sup>	General radiology services	<ul style="list-style-type: none"> <li>▪ In the case of patients who are shielding, such as cancer patients and those on immunotherapy, to wear a mask on attending their appointment.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ All services may wish to consider asking all patients to wear surgical masks as an additional safeguard. This should be decided based on: <ul style="list-style-type: none"> <li>○ local COVID-19 prevalence</li> <li>○ the availability of testing</li> <li>○ the requirement for pre-procedure self-isolation and</li> </ul> </li> <li>▪ the individual risk to each patient.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ All patients and providers should use a surgical mask during encounters. Providers should use protective eyewear as well</li> <li>▪ All patients entering a hospital to undergo elective surgery should wear a mask</li> <li>▪ All patients should wear a surgical mask postoperatively</li> </ul>
<b>American Academy of Ophthalmology</b> <sup>(37)</sup>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ The use of commercially available slit-lamp barriers or breath shields is encouraged, as they may provide a measure of added protection against the virus. Homemade barriers may be more difficult to sterilize and could be a source of contamination</li> <li>▪ When examining patients, a surgical mask or cloth face covering for the patient, and a surgical mask and eye protection for the ophthalmologist are recommended</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Implement universal masking of patients and visitors</li> </ul>
<b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup>	Paediatric oncology	<ul style="list-style-type: none"> <li>▪ It is prudent to advise the use of masks for patients and their parents when attending clinic, on admission, and when in transit, especially on public transport</li> </ul>

**Table 6.4: Detail of patient flow sub-theme 'Pre-screening for symptoms' from guidance documents**

Pre-screening for symptoms		
Country, Body	Care Context	Details of measures to be in place
<b>US, Centers for Medicare &amp; Medicaid Services (CMS)</b> <sup>(28)</sup>	Elective surgery, inpatient, outpatient	<ul style="list-style-type: none"> <li>Consider establishing non-COVID Care zones to screen all patients for symptoms of COVID-19, including temperature checks. Routinely screen staff also.</li> </ul>
<b>US, California Medical Association</b> <sup>(35)</sup>	General	<ul style="list-style-type: none"> <li>Ask regarding common symptoms at time of scheduling. For all patients, check patient temperature on arrival.</li> </ul>
<b>US, American Society of Plastic Surgeons</b> <sup>(33)</sup>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Consider temperature checks and symptom questionnaire on site for employees and patients. Consider contacting patients prior to visit to assess for symptoms and risk minimisation opportunities.</li> </ul>
<b>European Society of Human Reproduction and Embryology</b> <sup>(9)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Principle of triage detailed. Triage questionnaire to identify COVID-19 symptoms. Questionnaire should be adapted by each centre to their specific population.</li> </ul>
<b>US, American Society for Reproductive Medicine</b> <sup>(36)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>Patients or staff who are considered to be infectious should not enter the clinic until they meet criteria for ending isolation after known/suspected infection.</li> <li>Screen patients and staff daily. This may include questioning regarding risk of exposure and/or signs and symptoms, and checking body temperature.</li> </ul>
<b>Canada, Canadian Society of Cardiac Surgeons</b> <sup>(41)</sup>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>Standardized clinical screening questionnaire prior to admission, ideally by phone, focusing on clinical history of patient and co-habitants re COVID-19-related symptoms.</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy</b> <sup>(39)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>Screen patients with pre-procedure COVID-19 questionnaire within 72 hours of visit. Supplement screening with telehealth. Screen staff prior to starting each workday. Consider forehead temperature screening.</li> </ul>
<b>UK, Royal College of Ophthalmologists</b> <sup>(14)</sup>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>Questionnaire pre arrival and again on arrival. Temperature checks on arrival.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>Screening questionnaire (example provided in document) prior to treatment.</li> </ul>

<b>USA, American College of Obstetricians and Gynecologists</b> <sup>(38)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Screening strategies pre-presentation (remote exposure and symptom screening)</li> </ul>
<b>UK, NHS England</b> <sup>(52)</sup>	Urgent or planned services	<ul style="list-style-type: none"> <li>▪ Admit only patients who remain asymptomatic having isolated for 14 days prior to admission and, where feasible, tested negative prior to admission.</li> </ul>
<b>Australian Commission on Quality and Safety in Health Care</b> <sup>(43)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ A peri-operative screening checklist (to be asked the day before or day of surgery) will assist health service organisations to determine that patients do not meet the current Australian definition of a suspect or confirmed COVID-19 case and therefore are eligible to be considered for elective surgery.</li> <li>▪ Patients who, on screening, require further investigation of COVID-19 risk should only be considered for emergency surgery, procedures or investigations.</li> </ul>
<b>British Orthopaedic Association</b> <sup>(19)</sup>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>▪ Significant precautions will be needed to ensure that patients receiving care in the green zone are free of COVID <ul style="list-style-type: none"> <li>○ If someone is incubating the infection at the time of surgery and then becomes symptomatic in the period soon after the operation, there are significantly increased risks for that patient, and therefore it is important to avoid elective surgery on patients who could have the virus</li> </ul> </li> <li>▪ The patient should be advised to contact the service if they experience any symptoms of COVID-19 during the 14 day self-isolation/shielding period.</li> <li>▪ The patient should be asked about any symptoms at 48 hours prior to surgery and at admission.</li> <li>▪ They should be asked whether anyone they live with has symptoms during the 14 day period.</li> </ul>
<b>Royal College of Radiologists</b> <sup>(18)</sup>	General radiology services	<ul style="list-style-type: none"> <li>▪ Screening all patients before they enter the department, or at reception to ask about COVID symptoms and check their temperature</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ Services should contact patients routinely prior to their interventional procedure for a telephone or video pre-assessment. This assessment should include questions regarding support at home post procedure, health (recent temperature, cough – COVID-19 risk etc.), anti-coagulation and other risk factors.</li> <li>▪ Family members of paediatric patients should be screened for SARS-CoV-2 before paediatric surgery.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Screening for symptoms of COVID-19 should be performed and documented</li> <li>▪ All patients undergoing surgery during the pandemic should have their temperature and pulse oximetry measured and be screened with a series of questions that will stratify them into various risk groups. The questions should aim to ask the patients about COVID-19 symptoms (fever, shortness of breathing, cough, loss of smell and taste, diarrhoea, headache, sore throat) as well as TOCC information (travel to regions with a high prevalence of COVID-19, occupation with a high risk of COVID-19 infection, contact with people known to be infected with COVID-19, or close proximity with a COVID-19-positive case). Those with a high risk of being infected</li> </ul>

		<p>should have surgery deferred, and should be quarantined as per local guidelines, unless adequate testing can be performed to rule out COVID-19.</p>
<b>American Academy of Ophthalmology</b> <sup>(37)</sup>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ If the office setup permits, patients who come to an appointment should be asked prior to entering the waiting room about fever and respiratory illness and whether they or a family member have had contact with another person with confirmed COVID-19 in the past 2 to 14 days. If they answer yes to either question, they should be sent home and told to speak to their primary care physician about testing.</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Screen all patients for symptoms of COVID-19 during scheduling.</li> </ul>
<b>Australian Health Protection Principal Committee</b> <sup>(44)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Every patient undergoes pre-operative risk assessment as per national guidelines.</li> </ul>

**Table 6.5: Detail of patient flow sub-theme 'Screening for COVID-19 infection or immunity by testing' from guidance documents**

Screening for COVID-19 infection or immunity by testing		
Country, Body	Care Context	Details of measures to be in place
<b>Canada Canadian Society of Cardiac Surgeons</b> <sup>(41)</sup>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>▪ If negative molecular test but COVID-19 suspicion remains high, patient should stay in isolation per infection control guidance. Consider repeat nasopharyngeal specimen collection, endotracheal aspirate collection and/or CT scan imaging.</li> <li>▪ Antibody screening, if possible, to assess for immunity.</li> </ul>
<b>Spain, Gastroenterology societies</b> <sup>(26)</sup>	Gastroenterology depts. Endoscopy	<ul style="list-style-type: none"> <li>▪ In all patients admitted to hospital infection with SARS-COV-2 must be ruled out regardless of symptoms</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy</b> <sup>(39)</sup>	Endoscopy	<ul style="list-style-type: none"> <li>▪ Screening should evolve to include COVID-19 testing according to best available technology.</li> </ul>
<b>RCSI National Clinical Programme in Surgery</b> <sup>(10)</sup>	Surgery	<ul style="list-style-type: none"> <li>▪ Risk stratify for active COVID-19 infection in all patients.</li> <li>▪ Testing for COVID-19 within 48hrs of the procedure would be ideal</li> </ul>
<b>European Society of Human Reproduction and Embryology</b> <sup>(9)</sup>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>▪ Where triage questionnaire is positive, testing process should follow the same pathway as any other viral screening routinely performed in the centre. Testing tools and advice must be adjusted according to emerging COVID-19 data.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> <sup>(15)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Antigen testing as part of pre-screening before treatment, or where symptoms develop during treatment.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> <sup>(38)</sup>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Testing to be relevant to particular patient populations and available resources. May apply at various stages of reproductive medicine, e.g. patients presenting to the labour ward versus preoperative and postoperative testing.</li> </ul>
<b>Canada, Ontario Health</b> <sup>(40)</sup>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Consider if your organization has a plan for addressing pre-operative COVID-19 diagnostic testing</li> <li>▪ If local access to COVID-19 testing is not available, do you have a protocol established for pre-operative self-isolation?</li> </ul>



<b>Australian Commission on Quality and Safety in Health Care</b> <sup>(43)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Patients for elective surgery, an investigation or procedure do not require prior testing for COVID-19 or quarantine.</li> </ul>
<b>American College of Surgeons (cancer surgery guidance)</b> <sup>(34)</sup>	Surgical oncology	<ul style="list-style-type: none"> <li>▪ Patient testing plays an important role in taking every precaution possible to separate COVID-19-infected patients from individuals who are negative, vulnerable, and need the facility for lifesaving care. Resources allowing, patients going to surgery should undergo some kind of evaluation and/or testing to ensure they are not in the incubation phase of COVID-19 to reduce the risk of perioperative COVID-19-related complications and mortality.</li> </ul>
<b>British Orthopaedic Association</b> <sup>(19)</sup>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>▪ The patient should be tested (RT-PCR) for COVID-19 at 72-48 hours prior to surgery</li> <li>▪ This testing should occur at a 'drive-thru' testing facility.</li> </ul>
<b>North American Cardiovascular Societies</b> <sup>(42)</sup>	Invasive cardiovascular procedures and diagnostic tests	<ul style="list-style-type: none"> <li>▪ Encourage routine screening of all patients prior to any cardiovascular procedure or test. This testing may include nasopharyngeal swabs and saliva or rapid antibody tests and should be guided by local institutional infectious disease experts and closely coordinated with regional public health officials.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ Services should consider the routine screening of COVID-19 status of all patients prior to attendance for the procedure. Patient testing as an outpatient prior to their procedure allows the IR team to assure itself those patients who: <ul style="list-style-type: none"> <li>○ Present a negative RT-PCR within 48 hours</li> <li>○ Have experienced no symptoms for seven days</li> </ul> </li> <li>▪ Have self-isolated for 14 days (where time allows).</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Testing of patients should be mandatory in high-prevalence areas given the risk of disease transmission by asymptomatic patients. Routine testing is not feasible in all locations because of limitations in testing capacity, and therefore local guidelines should be followed in these areas.</li> <li>▪ If the patient is given a RT-PCR test for SARS-CoV-2, the test should be performed within 3 to 7 days before elective surgery and the result should be documented in the clinical charts of the patient. Appropriate clinical and/or microbiological screening procedures for each patient should be undertake.</li> </ul>
<b>American Academy of Ophthalmology</b> <sup>(37)</sup>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ For surgical procedures that may generate aerosolised virus, preoperative testing (RT-PCR) for asymptomatic patients, and the use of N95 masks (and eye protection) by operating room personnel is recommended.</li> </ul>

**Table 6.6: Detail of patient flow sub-theme 'Patient flow for elective surgery / endoscopy / other procedures' from guidance documents**

<b>Patient flow for elective surgery / endoscopy / other procedures</b>		
<b>Country, Body</b>	<b>Care Context</b>	<b>Details of measures to be in place</b>
<b>US, American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>▪ Pre-op: Consider onsite screening of asymptomatic staff and patients.</li> <li>▪ Preoperative RT-PCR testing for acute infection of elective surgical patients is recommended</li> <li>▪ Pre-op: Quarantine for 5-7 days pre procedure</li> <li>▪ Post-op: Consider 7-day post-op social isolation period to reduce incidence of exposure and infection, (necessary visits excluded).</li> </ul>
<b>US, Joint Statement: USA American College of Surgeons and other US societies<sup>(31, 32)</sup></b>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Consider testing before planned surgeries with or without mandatory preoperative quarantine</li> <li>▪ Phone screening in preoperative setting to check for symptoms</li> </ul>
<b>Canada, Canadian Society of Cardiac Surgeons<sup>(41)</sup></b>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>▪ Following pre-screening, initial admission to an isolation room for additional screening and/or testing if needed.</li> <li>▪ Once admitted to the ward, daily clinical screening of patients to elicit signs and symptoms of viral illness and identify patients who may have been pre-symptomatic.</li> </ul>
<b>US, American Society for Gastrointestinal Endoscopy<sup>(39)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>▪ Detailed guidance for patient flow. All patients to be surveyed 1-2 weeks post procedure.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)<sup>(15)</sup></b>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Consider asking patients and donors to self-isolate, if possible, from the start of ovarian stimulation treatment until egg collection.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists<sup>(38)</sup></b>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Quarantine of donors may be considered at the discretion of the recipient and physician.</li> </ul>
<b>British Orthopaedic Association<sup>(19)</sup></b>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>▪ Many patients, and particularly those with poor mobility, could be significantly deconditioned due to the lockdown and/or shielding requirements which may have a negative impact on surgical outcomes.</li> </ul>

		<ul style="list-style-type: none"> <li>▪ For 14 days prior to the procedure, the patient should stay at home and reduce exposure to COVID that could be circulating in the community, this can be through one of two options: <ul style="list-style-type: none"> <li>○ Self-isolating along with their entire household</li> <li>○ Shielding within their household</li> </ul> </li> <li>▪ Patients will need to be discharged from hospital back into the community as soon as it is safely possible to do so.</li> <li>▪ It is advised that patients return to self-isolating or shielding for 14 days following surgery.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ Services should ensure that patients are discharged as soon as is practicable after their procedure to reduce unnecessary ward stays.</li> <li>▪ Services may wish to consider use of nurse-led discharge to avoid unnecessary delays</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Even low-prevalence areas, the patients are required to have a green digital health code and 1 negative RT-PCR test prior to undergoing their planned procedure. This code signifies that the patient has not been infected with COVID-19 and can undergo procedures and partake in daily activities with general precautions. In the absence of the green code, patients are quarantined for 2 weeks.</li> <li>▪ The length of hospital stay for patients should be minimized.</li> <li>▪ Patients should be discharged home, and transfer to inpatient rehabilitation should be minimized.</li> <li>▪ The patient should be instructed how to perform self-directed physical therapy at home.</li> </ul>
<b>Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society and Faculty of Intensive Care Medicine</b> <sup>(13)</sup>	Elective surgery	<ul style="list-style-type: none"> <li>▪ Steam patient flows, using patient shielding before admission and testing, such that COVID-19-positive and COVID-19-negative pathways are created and used appropriately.</li> </ul>

**Table 6.7: Detail of patient flow sub-theme 'General communication with patients' from guidance documents**

<b>General communication with patients</b>		
<b>Country, Body</b>	<b>Care Context</b>	<b>Details of measures to be in place</b>
<b>US American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>▪ Explain that surgery may be cancelled due to factors such as symptom development, exposure suspicion, screening test results, community resource need</li> <li>▪ Communicate that second surge is expected and that safety of activity will be evaluated on ongoing basis</li> <li>▪ More frequent communication with patients generally</li> </ul>
<b>Spain Gastroenterology societies<sup>(26)</sup></b>	Outpatient gastroenterology	<ul style="list-style-type: none"> <li>▪ Communication to manage the patient wait list.</li> <li>▪ Communicate re possibility of delay / postponement.</li> </ul>
<b>US American Society for Reproductive Medicine<sup>(36)</sup></b>	Outpatient (assisted reproductive technology)	<ul style="list-style-type: none"> <li>▪ Educational information regarding potential risks of pursuing care during the pandemic (e.g. disclosure regarding unknowns in COVID-19 testing, potential for cancellation of treatments etc.)</li> <li>▪ Document COVID-19 patient counselling and assent in the medical record.</li> <li>▪ Recognise that patients may interpret a physician's willingness to treat as an indication that their risk is minimal. Risk/benefit should be highlighted.</li> <li>▪ Provide each patient with a list of resources for support and counselling.</li> </ul>
<b>US American Society for Gastrointestinal Endoscopy<sup>(39)</sup></b>	Endoscopy	<ul style="list-style-type: none"> <li>▪ Instructions for patients to call immediately if COVID-19 related symptoms (list provided) develop within 14 days of a procedure.</li> </ul>
<b>UK Royal College of Ophthalmologists<sup>(14)</sup></b>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>▪ Devise communication plan to keep patients up to date on changes in services.</li> <li>▪ Clear recordkeeping on decisions made, including with patients.</li> <li>▪ Patient initiated follow ups for some conditions.</li> <li>▪ Ensure documentation of outcome following remote consultation.</li> <li>▪ Consider prospective patient feedback on new ways of working.</li> </ul>
<b>RCSI National Clinical Programme in Surgery<sup>(10)</sup></b>	Surgery	<ul style="list-style-type: none"> <li>▪ The risks and consequences of post-operative complications; the risk of COVID acquisition in hospital; and the possible restorative and non-restorative surgical options should all be considered and discussed with patients as part of the consent process.</li> </ul>

<b>UK (England), Royal College of Surgeons</b> (12)	Elective surgery	<p>There should be local system-level coordination of key messages and instructions to patients, in alignment with broad national patient communications. This can include:</p> <ul style="list-style-type: none"> <li>▪ sharing plans to accelerate elective treatment with the public and reassure the public that their conditions will be treated;</li> <li>▪ sharing procedure prioritisation criteria;</li> <li>▪ having a standardised information sheet with a clear explanation of safety risks for patients receiving care in hospitals during COVID-19;</li> <li>▪ visitor guidelines;</li> <li>▪ post-discharge care/follow up pre-discharge testing in patients with vulnerable family/cohabittees</li> <li>▪ advance directives</li> <li>▪ carrying out virtual consultations</li> <li>▪ guidelines for when to visit the hospital, when to go to the A&amp;E, when they can consult remotely, and when they should access online/local pharmacy support (e.g. for minor injuries) and help themselves out without needing further input.</li> </ul>
<b>UK, The Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)</b> (15)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Patients considering treatment should be fully informed about the effect of the ongoing pandemic on their treatment and give informed consent to having fertility treatment at this time. Patient's decision should be documented in the medical record.</li> <li>▪ Online counselling options should be available.</li> <li>▪ Communicate regarding clinic policies (e.g. triage, prioritisation, screening, testing, attendance of partners, physical distancing, minimising time in clinic, confirmed infection policy) and symptoms of COVID-19 and what to do if concerned. Ensure appropriate self-help and counselling provision regarding heightened anxiety due to pandemic and associated clinic measures.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists</b> (38)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Clearly communicate the need for a paced roll-out of resumption and prioritisation. Partnering with community representatives may assist in communicating effectively with patients and facilitating transparency.</li> </ul>
<b>USA, The American Society for Reproductive Medicine</b> (50)	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Consider additional counselling and documentation regarding: viral screening; risks of COVID-19; potential delay/postponement of care.</li> <li>▪ Ensure every patient is provided with a list of resources for support and counselling.</li> </ul>
<b>Canada, Ontario Health</b> (40)	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Key implementation considerations include ensuring transparent communication and ongoing follow-up with patients.</li> </ul>

<b>British Orthopaedic Association</b> <sup>(19)</sup>	Non-urgent trauma and orthopaedic care	<ul style="list-style-type: none"> <li>▪ While the patient is self-isolating or shielding they should be encouraged to look after their physical and mental well-being.</li> <li>▪ Patients already on the waiting list should be reviewed to assess their present condition. The outcomes may be: <ul style="list-style-type: none"> <li>○ Wishes to continue with the planned care.</li> <li>○ No longer wishes to be considered for surgery</li> <li>○ Wishes to undergo planned surgery but requests delay.</li> </ul> </li> <li>▪ Patients on the waiting list need to be kept informed of what is happening and be encouraged to continue to keep as active as possible.</li> <li>▪ If the care pathway offered or proposed differs to what it would have been pre-COVID-19, which should be explained to the patient. This may include consideration of non-operative treatment, or the fact that post-operative rehab may be more limited than previously.</li> <li>▪ If the patient is due to have planned surgery or is considering having planned surgery, the risk associated with COVID infection in the post-operative period should be discussed as well as the risks of delaying the treatment until a time when COVID-19 risks are lower.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology</b> <sup>(17)</sup>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ Discussions should include an explanation regarding the trust steps being undertaken to reduce their COVID-19 risk for their day case procedure and provide reassurance. The importance of social distancing, minimising crowding and separate entrances should be reinforced.</li> <li>▪ Services should encourage staff to use available resources to explain COVID to children if required (child-friendly resources).</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Patients undergoing elective surgery should be educated on the protocols that are in place to minimise SARS-CoV-2 transmission to themselves, family members, other patients, and hospital personnel. An overview of the protocols implemented by the hospital to reduce the risk of transmission of the infection should be included.</li> </ul>
<b>American College of Radiology</b> <sup>(30)</sup>	Non-urgent Radiology care	<ul style="list-style-type: none"> <li>▪ Manage fear: <ul style="list-style-type: none"> <li>○ Provide frequent, calm, fact-based information to patients and staff to alleviate fear</li> <li>○ Message that for most radiology care, COVID-19 risk is low with appropriate safeguards</li> <li>○ Message that COVID-19 risk is highest for aerosolizing procedures or prolonged contact</li> <li>○ Advertise institutional infection control processes</li> <li>○ Acknowledge that stress and anxiety are normal during a pandemic</li> </ul> </li> <li>▪ Disseminate local and national wellness information.</li> </ul>

<b>International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</b> <sup>(48)</sup>	Paediatric oncology	<ul style="list-style-type: none"><li>▪ Efforts should be made to improve communication and give parents enough time to ask all the questions they would raise in a face-to-face visit.</li><li>▪ When hospital visits or admissions are unavoidable, it is very important for parents to be reassured that all health professionals strictly follow all the required safety measures to protect children from infection.</li></ul>
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**Table 6.8: Detail of patient flow sub-theme 'Patient confidence' from guidance documents**

Patient confidence		
Country, Body	Care Context	Details of measures to be in place
<b>US, American Society of Plastic Surgeons<sup>(33)</sup></b>	Elective surgery, outpatient rooms	<ul style="list-style-type: none"> <li>Communicate with patients the efforts employed for their safety (cleaning, social distancing measures, testing, PPE, telehealth options)</li> <li>Show patients enhanced cleaning being performed.</li> </ul>
<b>European Society of Cardiology<sup>(7)</sup></b>	Outpatient (cardiac rehab)	<ul style="list-style-type: none"> <li>Educate patients to not postpone medical care</li> </ul>
<b>US, California Medical Association<sup>(35)</sup></b>	General	<ul style="list-style-type: none"> <li>Provide additional reassurance. Provide advice to seek help for urgent needs.</li> <li>Provide assurance to parents that it is safe for children to receive care. Explain safety steps taken.</li> </ul>
<b>Canada, Canadian Society of Cardiac Surgeons<sup>(41)</sup></b>	Elective surgery (cardiac)	<ul style="list-style-type: none"> <li>Care must be taken to instil confidence in patients and health care providers that safety remains priority.</li> </ul>
<b>UK, Royal College of Ophthalmologists<sup>(14)</sup></b>	Elective surgery and outpatient care: Ophthalmology	<ul style="list-style-type: none"> <li>Patients need reassurance.</li> </ul>
<b>Canada, Ontario Health<sup>(40)</sup></b>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>The approach recognises the need to have a patient-centred approach that ensures patients and families are supported across the full continuum of care.</li> </ul>
<b>American College of Surgeons (cancer surgery guidance)<sup>(34)</sup></b>	Surgical oncology	<ul style="list-style-type: none"> <li>As possible, patients should be informed that decisions regarding elective cancer surgery are consensus-based, based on emerging data, and are founded on both wanting to give them the best chances of good outcomes from their cancer and wanting to minimize their risk of harm from COVID-19. Multidisciplinary teams may wish to develop some manner of reassuring language for informed consent during the pandemic.</li> </ul>
<b>Royal College of Radiologists<sup>(18)</sup></b>	General radiology services	<ul style="list-style-type: none"> <li>Patients are understandably concerned about attending hospital appointments in light of COVID-19. Consider introducing a text message to the patient from the imaging department prior to their appointment urging them to attend and reassuring them that measures have been taken to reduce the risk to them and be prepared to explain those measures for those seeking further assurance.</li> </ul>
<b>Royal College of Radiologists and British</b>	Interventional radiology services	<ul style="list-style-type: none"> <li>It is essential to gain the trust of patients attending acute hospitals that have in-patient COVID-19 presumed or positive patients. IR services should clearly:</li> </ul>



<b>Society for Interventional Radiology</b> <sup>(17)</sup>		<ul style="list-style-type: none"><li>○ Define in-patient and out-patient flows with separation of these patients and staff to ensure minimal risk of secondary COVID-19 transmission</li><li>▪ Communicate to patients the steps taken to minimise the risk of COVID-19 transmission for the duration of their hospital attendance.</li></ul>
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**Table 6.9: Detail of patient flow sub-theme 'Vulnerable populations' from guidance documents**

<b>Vulnerable populations</b>		
<b>Country, Body</b>	<b>Care Context</b>	<b>Details of measures to be in place</b>
<b>US California Medical Association<sup>(35)</sup></b>	General	<ul style="list-style-type: none"> <li>▪ Note that elderly, immunocompromised, paediatrics, or other sensitive populations may be less likely/able to avail of telehealth.</li> <li>▪ Consider setting aside office hours to only see elderly/infirm patients.</li> <li>▪ Consider separate entrances/exam rooms for vulnerable groups</li> <li>▪ Paediatrics: consider that child vaccinations may have been missed.</li> </ul>
<b>USA, American College of Obstetricians and Gynecologists<sup>(38)</sup></b>	Reproductive medicine	<ul style="list-style-type: none"> <li>▪ Awareness of disproportionate rates of COVID-19 infection, morbidity and mortality in communities of colour, especially Black, Latino and Native American people.</li> <li>▪ Recognise that many patients may have experienced new or exacerbated challenges during the pandemic (e.g. loss of employment and insurance coverage, food insecurity, inability to adopt social distancing guidance, difficulties with supplies or housing).</li> <li>▪ Policies and processes must not further contribute to disparate outcomes or create additional inequities.</li> </ul>
<b>Canada, Ontario Health<sup>(40)</sup></b>	Elective surgeries and procedures	<ul style="list-style-type: none"> <li>▪ Certain patients and patient populations will be particularly burdened as a result of our health system's limited capacity related to COVID-19. Consequently, our health system has a reciprocal obligation to ensure that those burdened by these decisions continue to have their health monitored, receive appropriate care, and can be re-evaluated for emergent activities should they require them.</li> <li>▪ Activities that have higher implications for morbidity/mortality if delayed too long should be prioritized over those with fewer implications for morbidity/mortality if delayed too long. This requires considering the differential benefits and burdens to patients and patient populations as well as available alternatives to relieve pain and suffering.</li> </ul>
<b>Royal College of Radiologists and British Society for Interventional Radiology<sup>(17)</sup></b>	Interventional radiology services	<ul style="list-style-type: none"> <li>▪ There are a number of factors / co-morbidities that are likely to have a poorer prognosis with COVID-19: <ul style="list-style-type: none"> <li>○ Age over 70 years</li> <li>○ Pre-existing cardiovascular disease</li> <li>○ Pre-existing respiratory disease</li> <li>○ Immunosuppressed/immunocompromised patients.</li> </ul> </li> <li>▪ Services should assess people in these groups in particular based on clinical need, co-morbidities and fitness, as well as their home circumstances.</li> </ul>

		<ul style="list-style-type: none"> <li>▪ For paediatric populations specifically:             <ul style="list-style-type: none"> <li>○ Non face-to-face contact: services should consider use of video calls over telephone calls. This often allows the child to engage better with the conversation.</li> <li>○ Accompanying carers: most paediatric centres are limiting inpatient presence of carers to one carer per family to reduce secondary transmission</li> </ul> </li> <li>▪ PPE: teams should recognise that the wearing of full PPE can be frightening for a child. Where possible, services should try to source child-friendly masks/visors and ensure that members of the team write their names clearly on gowns or hats for the child to see.</li> </ul>
<b>International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons</b> <sup>(47)</sup>	Elective orthopaedic surgery	<ul style="list-style-type: none"> <li>▪ Elective surgery should be risk-stratified and possibly deferred on the basis of patient age (<math>\geq 75</math> years), morbid obesity, diabetes, uncontrolled hypertension, chronic pulmonary disease, obstructive sleep apnoea, chronic heart disease, and immunocompromised state (e.g., because of organ or bone marrow transplantation, active cancer, or current or recent chemotherapy or radiation therapy) in the early days when elective surgery is resumed.</li> </ul>
<b>American Academy of Ophthalmology</b> { <b>American Academy of Ophthalmology</b>	Ophthalmology	<ul style="list-style-type: none"> <li>▪ As much as prudent, reduce the visits of the most vulnerable patients.</li> </ul>

## **Quality appraisal of included documents**

Appendix 1.2 presents a summary of the results of the assessment of included documents using the Joanna Briggs Checklist for Text and Opinion.

For both health authority guidance and guidance from professional societies, the source of the opinion was clear in all included documents; the inclusion criteria for this report required documents to represent guidance at ministerial, health authority or professional society level. The individuals contributing to the guidance were less often identified; within guidance published by professional societies, the individual authors were seldom listed. All of the guidance was considered to represent the interests of the general public or the specific patient group under consideration by the guidance.

Documents from both health authorities and professional societies differed with respect to the level of analysis involved in producing the guidance and the extent to which literature sources were cited.

While the majority of the documents were judged to have arrived at the stated position as a result of an analytic process, little detail overall, or the logic underpinning the guidance, was provided in most cases. Particularly with respect to health authority guidance, several jurisdictions stated the intention to resume scheduled care gradually, subject to falling infection rates, but little guidance was outlined to explain how this would be assessed.<sup>(22-25)</sup> Documents representing US professional societies largely referred to existing US authority guidance, or other US-derived guidance as part of the basis for the recommendations.<sup>(28, 32, 33)</sup> In particular, the American College of Surgeons and the American College of Obstetricians and Gynecologists cite a recently published scoring system designed to manage resource scarcity and provider risk in the context of COVID-19.<sup>(53)</sup> The Australian Ministry of Health joint guidance, stated that principles for prioritisation of patients were recommended by the Australian Health Protection Principal Committee and endorsed by National Cabinet.<sup>(5)</sup> Guidance detailed within the documents generally reflected pragmatic approaches to aspects such as prioritisation of care, infection prevention and control, social distancing approaches and communication with patients. In addition to the lack of supporting literature in most documents, claims were largely not made as to the effectiveness of particular approaches or the relative suitability of certain measures; rather, measures were stated as recommendations with little supporting reasoning.

## **Discussion**

A number of countries have declared their intention to resume scheduled hospital care services following the interruption (postponement or cancellation) of services in the context of the COVID-19 pandemic. Furthermore, several health professional societies have published guidance relating to the resumption of hospital services, including elective surgery, outpatient or day case activities.

Documents identified within this review from ministries of health and national-level authorities have largely centred on broad principles or policies required to be satisfied in order for care to resume; recommendations were for the most part high-level in nature. Guidance from both health authorities and professional societies differed in the level of detail included in the recommendations and in the breadth of the recommendations with respect to different issues in providing care. Some guidance presented recommendations within a framework of broad principles, including principles of ethics. However, despite a broad range of jurisdictions and medical disciplines represented, there were consistencies within the included documents which were categorised into three overarching measure themes; organisational management, physical space, and patient flow.

In terms of organisational management measures, guidance pointed to the necessity for an awareness of the state of the COVID-19 pandemic, including elements such as prevalence, incidence and testing. A formal authorisation of the resumption of care was cited as being important at both local and regional levels. Organisational measures relating to capacity and policy were frequently highlighted, and primarily regarded the availability of PPE, bed space, and equipment or supplies. Furthermore, continued consideration towards prioritisation of care and the introduction of phased resumption were cited by a large number of documents. It is noteworthy that several pieces of guidance within this review emphasise the need for ongoing monitoring to assess the appropriateness of escalation of activities, the need for de-escalation, or the appropriateness of the measures introduced. These monitoring approaches represent a practical and valuable step in the resumption of scheduled hospital care.

Physical space measures included both patient and staff considerations with physical distancing encouraged in waiting rooms and the availability of sanitisation products. The cleaning and disinfection of treatment areas and the time spent during treatment, was cited with consideration towards operating theatres specifically and general clinical spaces.

Commonalities existed in terms of patient flow measures with ongoing consideration of distant treatment where possible, and screening of both staff and patients.

Testing (RT-PCR) for acute infection with SARS-CoV-2 and mandatory quarantine periods were discussed when considering elective surgeries. An emphasis was also highlighted for the need for adequate patient communication, education and reassurance during the pathway of care. One guidance document specified that vulnerable populations, older adults, immunocompromised, and paediatric populations may require additional considerations such as the availability or appropriateness of telehealth, separate clinic hours or clinic spaces. A minority of documents considered a 'pathway' for patients during scheduled procedures such as surgery or endoscopy, that is, consideration of measures to take place prior to admission, during the procedure, and post-procedure through to discharge.

As many health systems that paused services as part of COVID-19 mitigation measures have now begun or are considering resuming healthcare, review documents are also emerging in the literature to consider how resumption may proceed.

Gilat et al. aimed to identify recommendations and precautions to mitigate the spread of COVID-19 when resuming elective surgical care.<sup>(55)</sup> This review included information from the 2002-2004 SARS outbreak in addition to current recommendations and precautions. The authors note that the optimal solution of how to effectively balance resumption of standard surgical care against minimising risk of COVID-19 is undetermined. However, they suggest that an appropriate approach could include social distancing, screening forms and tests (including temperature screening), segregation of inpatient and outpatient teams, proper use of protective equipment, and the use of ambulatory surgery centres to provide elective, yet ultimately essential, surgical care. The authors further provided five tables of recommended precautions and actions to be taken at each of the following levels:

- patient (e.g. test patients for COVID-19 within 72 hours prior to surgery, limiting companions, use of wrist band to verify screening completion)
- healthcare staff (e.g. minimising staff, support measures to address staff fatigue/distress)
- facility and region (e.g. entry/exit and elevator management, case prioritisation)
- surgery (e.g. same day preoperative admissions, limit operating room traffic, expedited postoperative recovery and discharge)
- postoperative management (e.g. wearable sensors, technology-assisted rehabilitation).

Overall, the measures identified by Gilat et al. are similar to those identified within this review.

Søreide et al., in a manuscript published 30 April 2020, noted that, currently, no universal framework for planning of surgical services and maintenance of capacity exists 'in the governing organizations'.<sup>(56)</sup> The authors propose a framework for surgical planning throughout the pandemic phase. With respect to the 'post-pandemic phase and recovery', the authors suggest a recovery plan for services to include:

- identification of the backlog of elective surgery
- prioritisation of conditions with risk of deterioration
- capacity building to normal levels
- capacity for dealing with service backlog.

The authors also suggest maintenance of diagnostic capacity and suspicion for asymptomatic patients, elective high-risk patients and admitted emergencies.

It is important to note that the guidance included in this report mostly did not cite an evidence basis to support the recommendations and primarily presented expert opinion from within the body producing the work. One document in particular outlined a robust process for identifying opinion and achieving consensus. A minority of documents were observed to have cited supporting documentation for their recommendations; these largely related to prioritisation measures or referenced other official or expert opinion guidance. More recent guidance cited emerging reports of outcomes of patients receiving routine care (obstetrics) in the context of COVID-19.

Gilat et al., in a review of literature relating to recommendations for the resumption of elective surgical care, noted that the recent relevant literature related to the COVID-19 pandemic comprises level V evidence, that is, expert opinion.<sup>(55)</sup> Søreide et al., in a scoping review of the available literature relating to COVID-19 and surgical services, noted that the current situation is unparalleled in modern history, limiting the availability of usable information.<sup>(56)</sup> A representative of the British Orthopaedic Association, commenting on a submitted article from 1 May 2020 on suggestions for restarting of orthopaedic surgery, stated 'The environment in which we are restarting elective practice in the endemic phase of COVID-19 is currently "An Official Guidance Void" that needs to be filled.'<sup>(57)</sup>

While many jurisdictions are currently in the process of resuming scheduled hospital care, a rapid evidence profile was recently published by the McMaster University Health Forum to answer the question 'What are the international lessons learned from re-opening non-COVID-19 activities in hospitals?'<sup>(58)</sup> This review presented lessons learned from evidence documents, which in many cases represent guidance developed by professional bodies. The review searched both the grey literature (i.e.

published material not included in main journal databases, including documents produced by official agencies and organisations) and academically published literature. However, in contrast to the present review, experiences from the COVID-19 early mitigation setting were included.

The McMaster Forum review identified similar COVID-19 prevention strategies as those reported within the present review, but additionally included findings related to economic and social responses that can support the re-opening of non-COVID-19 activities in hospitals. These included provision of staff supports such as mental healthcare and childcare. The review also included evidence from primary studies, and noted an article which claimed the effectiveness of refined management strategies for the prevention and control of COVID-19 in non-isolated areas of a general hospital.<sup>(59)</sup> This study has previously been included, amongst others, in the HIQA Scoping Evidence Summary for the Effectiveness of Pathways for the Resumption of Hospital-based Care in the context of COVID-19 (completed 13 May 2020). Experiences of resuming care were also described for Australia, China, New Zealand, Sweden and the UK. 'Lessons learned' from the UK included the piloting of models for resuming major surgery, for example, using COVID-19 screening criteria to permit patients to undergo bypass surgery. Other noted models used by the UK included performing stroke clinics using telemedicine, the use of telephone triage for cancer referrals, and the use of 'cancer hubs' for non-urgent procedures. Lessons learned from New Zealand included the country's approach to resuming cancer screening; bowel screening has been exempt from restarting and no screening will be provided to those over the age of 70 or with existing medical conditions.

Similar to the review published by the McMaster Health Forum, the Canadian Agency for Drugs and Technologies in Health (CADTH) recently published a briefing note on the resuming of elective health services amid COVID-19, including recent guidance on restarting services and potential implications and long-term considerations for these choices.<sup>(60)</sup> The document's 'key messages' were similar to those included in this review and highlighted the importance of monitoring trends and potentially de-escalating service provision. The document also noted that the main challenge for healthcare services will be in maintaining adequate slack capacity to deal with a potential resurgence of COVID-19 cases requiring intensive care.

Notwithstanding the value of expert opinion and consensus opinion, it is important to note that there is a lack of effectiveness data for the measures outlined in the guidance included within the present review, and reviews noted above. A recent commentary noted the lack of evidence-based policy with respect to COVID-19 infection control strategies within U.S. hospitals, and affirmed the need for better data on aspects such as virus transmission dynamics and the relative effectiveness



of respirator masks versus standard medical masks.<sup>(61)</sup> This commentary further criticised the manner in which local guidance is being developed. The authors claimed that hospitals experience intense pressure to follow practices introduced elsewhere that are perceived as more protective, and that 'Professional societies accelerate this cycle by making unilateral proclamations about expected standards for their members.'

The guidance included within the present report does not refer explicitly to cost-effectiveness or budget impact with respect to the proposed recommendations. However, some reference to resource constraints is made. For example, some guidance referred to the need to consider how additional measures will increase the time required in certain procedures.<sup>(10, 32)</sup> Rhee et al. refer in their commentary to non-monetary costs of a maximal infection control and testing approach, providing examples of how infection control measures can lead to delays in care or other adverse consequences. Several documents considered the impact of resource limitations and delays in service provision on the ethical delivery of healthcare. It was noted that in some cases, care must be taken to avoid exacerbating existing healthcare disparities during the resumption of care. As the pandemic progresses, national organisations are likely to increasingly consider the broader population perspective, including issues such as cost-effectiveness, resource considerations and budget impact, in addition to the effectiveness and safety of measures implemented to resume scheduled hospital care activity.

The information contained within this review should be considered in light of its limitations. The scope of this review was restricted to the resumption of hospital services in the context of COVID-19. During searches for the review, guidance from additional jurisdictions and disciplines was identified, but was considered to apply specifically to the mitigation phase and not to the resumption of services, and was therefore excluded; it is possible that guidance relevant to the research question may have been inadvertently missed during this process.

As the information relevant to this evidence summary is typically released by national-level bodies, a truly systematic search is not possible. However, a concerted effort was made to include guidance from ministerial, national and professional bodies relevant to the Irish healthcare setting. It is important to consider that differences in health system structure and funding models may influence the nature of the guidance emerging from different jurisdictions. The guidance included in the present review did not specifically refer to financial incentives relating to the resumption of care. However, it is clear that this is an important factor in jurisdictions where healthcare is largely operated on a private basis.<sup>(62)</sup>

This review has attempted to capture the key measures outlined in the identified documents. However, it is noted that documents may include additional details and tools that could be of use in implementing measures at a local and national level. Reviews by the McMaster Forum and CADTH have identified similar guidance sources and described similar themes/messages emerging from the guidance. Given the rapidly evolving nature of the COVID-19 pandemic, relevant guidance is being produced on a daily basis. Therefore, the content of this report needs to be considered in the context of when the review was conducted. Nonetheless, the 20 May 2020 update to this report identified guidance similar in content to that identified in the initial preliminary review and its subsequent update. Guidance documents across professional societies, in particular, appear similar in their recommendations, though more recent guidance appeared more likely to cite data influencing the approaches advised. It is likely that the present review may be approaching a saturation point with respect to the diversity of guidance identified.

As identified, the guidance is for the most part not underpinned by evidence specific to COVID-19, rather it is pragmatic in nature and based on accepted infection prevention and control measures. When effectiveness data become available, a concern will remain regarding their transferability across jurisdictions and institutions. Measures described within the guidance are typically multi-component, and effectiveness will be impacted by the scale of community transmission, local infrastructure, and staffing levels, among other factors. Collection of local level monitoring data will likely be required to assess the effectiveness of introduced measures and to inform decisions around their escalation or de-escalation.

## **Conclusion**

Overall, this review identified 45 guidance documents from official health authorities and professional associations providing recommendations relating to the resumption of scheduled hospital care following the mitigation phase of COVID-19. The guidance came from a broad range of medical disciplines, although there was some consistency in terms of measures for organisational management, physical space and patient flow.

As countries continue to remove restrictions, more guidance is expected to be published. However, given the unprecedented nature of COVID-19 and how it has disrupted health service delivery, it is expected that these additional documents will likely contain pragmatic expert opinions as opposed to being based on clear evidence of effectiveness of measures.

As measures are put in place to resume care, monitoring, auditing and amending pathways as required will likely remain an important approach.

Note: The findings from this draft evidence summary were accurate as of 20 May 2020 6pm GMT; however, it is important to note that the guidance identified above may change as the situation and response to COVID-19 evolves.

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## Appendix 1:

**Table App 1.1 Characteristics of documents included in this review**

Health authority guidance					
Population and source of guidance	Guidance details	Care Type/ Setting (Elective surgery/ OPD/Day case)	Organisational Management Measures	Physical Space Measures	Patient Flow Measures
<p><b>Country/region:</b> European Union</p> <p><b>Body:</b> European Commission and European Council</p> <p><b>Website:</b> <a href="https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/european-roadmap-lifting-coronavirus-containment-measures_en">https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/european-roadmap-lifting-coronavirus-containment-measures_en</a></p>	<p><b>Publication date:</b> 15 April 2020</p> <p><b>Guidance title:</b> Joint European Roadmap towards lifting COVID-19 containment measures<sup>(6)</sup></p> <p><b>Comment on guidance:</b> No specific guidance on measures. Refers broadly to criteria to assess timing for the lifting of restrictions and to expected increases in demand in hospitals due to postponed activities.</p> <p><b>Evidence basis:</b> NR with respect to hospital care resumption</p>		(No detail)	(No detail)	(No detail)
<p><b>Country/region:</b> Australia</p> <p><b>Body:</b> Ministry for Health in conjunction with several Australian professional and institutional healthcare organisations</p>	<p><b>Publication date:</b> 21 Apr 2020</p> <p><b>Guidance title:</b> Joint Media Statement: Elective Surgery Restrictions Eased<sup>(5)</sup></p> <p><b>Comment on guidance:</b></p>	Elective Surgery	<p>Prioritisation: document includes list of principles for selection of patients to undergo elective surgery. Includes low risk, high value care (as determined by specialist societies),</p>	(No detail)	(No detail)

<p><b>Website:</b>  <a href="https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/elective-surgery-restrictions-eased">https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/elective-surgery-restrictions-eased</a>  <b>and</b>  <a href="https://www.generalsurgeons.com.au/media/files/News/20-04-21%20Hunt%20-%20Joint%20Media%20Statement%20-%20Elective%20surgery%20restrictions%20eased.pdf">https://www.generalsurgeons.com.au/media/files/News/20-04-21%20Hunt%20-%20Joint%20Media%20Statement%20-%20Elective%20surgery%20restrictions%20eased.pdf</a></p>	<p>Statement refers to the principles for selection of patients to undergo elective surgery</p> <p><b>Evidence basis:</b>  Principles for selection of patients were recommended by the Australian Health Protection Principal Committee (AHPPC) and endorsed by National Cabinet.</p>		<p>low-risk of post-op deterioration, children whose procedures have exceeded clinical wait times, IVF, endoscopy, screening programmes, critical dental procedures.</p> <p>Capacity: Requires monitoring supplies of PPE, ICU and beds.  Risk assessment to be required.</p> <p>Research: National study into asymptomatic carriage of COVID-19 in elective surgery.  Review at 2 weeks and 4 weeks based on number of positive cases linked to increased activity, PPE use, and availability, volume of procedures, and hospital/system capacity.</p>		
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<p><b>Country/region:</b> Australia</p> <p><b>Body:</b> Australian Health Protection Principal Committee</p> <p><b>Website:</b> <a href="https://www.health.gov.au/news/australian-health-protection-principal-committee-ahppc-statement-on-restoration-of-elective-surgery">https://www.health.gov.au/news/australian-health-protection-principal-committee-ahppc-statement-on-restoration-of-elective-surgery</a></p>	<p><b>Publication date:</b> 23 April 2020</p> <p><b>Guidance title:</b> Australian Health Protection Principal Committee statement on restoration of elective surgery. <sup>(44)</sup></p> <p><b>Comment on guidance:</b> Guidance on restoration of elective surgery</p> <p><b>Evidence basis:</b> NR</p>	Elective surgery	Guidance provided on care prioritisation and scheduling, capacity required to be in place, timing of resumption of care, authorisation and audit.	Necessity of physical distancing highlighted.	Guidance provided on pre-screening for risk assessment.
<p><b>Country/region:</b> Australia</p> <p><b>Body:</b> Australian Commission on Safety and Quality in Health Care</p> <p><b>Website:</b> <a href="https://www.safetyandquality.gov.au/sites/default/files/2020-04/covid19_elective_surgery_and_infection_prevention_and_control_precautions_april_2020.pdf">https://www.safetyandquality.gov.au/sites/default/files/2020-04/covid19_elective_surgery_and_infection_prevention_and_control_precautions_april_2020.pdf</a></p>	<p><b>Publication date:</b> 8 May 2020</p> <p><b>Guidance title:</b> COVID-19: Elective surgery and infection prevention and control precautions.<sup>(43)</sup></p> <p><b>Comment on guidance:</b> Suggests preparation of a risk management strategy. Describes infection control precautions, screening for COVID-19, and approaches to informed consent.</p> <p><b>Evidence basis:</b> Refers to Australian Health Protection Principal Committee guidance on principles for reintroduction of hospital activity and on infection control.</p>	Elective Surgery	<p>Prepare and implement an organisational wide Risk Management Strategy to manage and reduce the risk related to the transmission of COVID-19.</p> <p>A peri-operative checklist will assist health service organisations to: determine that (i) patients do not meet the current Australian definition of a suspect or confirmed COVID-</p>	<p>Public and private health services will aim to open approximately 25% of theatre and endoscopy lists currently closed, subject to local circumstances.</p> <p>Health services should ensure that they meet physical distancing requirements at all times during planning, preparation and post treatment. This applies to all</p>	Patients for elective surgery, an investigation or procedure do not require prior testing for COVID-19 or quarantine.

			19 case and therefore are eligible to be considered for elective surgery; (ii) support appropriate PPE use; (iii) support assessment of risks to health system capacity associated with the planned surgery, procedure or investigation.	staff, patients and relatives.	
<p><b>Country/region:</b> USA</p> <p><b>Body:</b> White House and Centers for Disease Control and Prevention (CDC)</p> <p><b>Website:</b> <a href="https://www.whitehouse.gov/openingamerica/">https://www.whitehouse.gov/openingamerica/</a></p>	<p><b>Publication date:</b> 16 April 2020</p> <p><b>Guidance title:</b> Guidelines: Opening Up America Again<sup>(29)</sup></p> <p><b>Comment on guidance:</b> Provides high-level gating criteria on when elective surgeries can resume</p> <p><b>Evidence basis:</b> NR</p>	Elective surgeries	<p><b>Timing of resumption of care:</b> Elective surgeries can resume, as clinically appropriate, on an outpatient basis at facilities that adhere to CMS guidelines.<sup>(28)</sup></p>	(No detail)	(No detail)

<p><b>Country/region:</b> USA</p> <p><b>Body:</b> Centers for Medicare and Medicaid Services (CMS)</p> <p><b>Website:</b> <a href="https://www.cms.gov/files/document/covid-flexibility-reopen-essential-non-covid-services.pdf">https://www.cms.gov/files/document/covid-flexibility-reopen-essential-non-covid-services.pdf</a></p>	<p><b>Publication date:</b> 19 April 2020</p> <p><b>Guidance title:</b> Opening up America Again: Centers for Medicare and Medicaid Services (CMS) Recommendations: Re-opening facilities to provide non-emergent non-COVID-19 healthcare: Phase 1.<sup>(28)</sup></p> <p><b>Comment on guidance:</b> Set of recommendations to follow should states or regions pass the Gating Criteria announced in the US Government Guidelines for Opening up America Again<sup>16</sup></p> <p><b>Evidence basis:</b> NR</p>	<p>Elective surgeries Inpatient and outpatient</p>	<p>Timing of resumption of care</p> <p>Staff and equipment capacity</p>		<p>Maximum use of all telehealth modalities encouraged</p>
<p><b>Country/region:</b> Switzerland</p> <p><b>Body:</b> Federal Council</p> <p><b>Website:</b> <a href="https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/massnahmen-des-bundes.html#2102031390">https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/massnahmen-des-bundes.html#2102031390</a></p>	<p><b>Publication date:</b> 22 April 2020. Resumption from 27 April. <i>Update: 11 May 2020</i></p> <p><b>Guidance title:</b> New coronavirus: Measures, ordinance and explanations; Healthcare provision.<sup>(20)</sup></p> <p><b>Comment on guidance:</b> Brief mention of need for capacity to be in place and authority of federal states (cantons) to restrict the number of non-urgent treatments to take place.</p> <p><b>Evidence basis:</b> NR</p>	<p>Elective surgery All medical procedures</p>	<p>Capacity</p> <p>Authority to restrict surgery numbers</p> <p><i>Update: 11 May 2020</i></p> <p>The cantons can require public and private hospitals to make capacity available to treat patients suffering from COVID-19.</p> <p>Federal Council wants to safeguard the supply of medical goods. To</p>	<p>(No detail)</p>	<p>(No detail)</p>

			<p>that end, it has issued a series of rules including a duty to report for important therapeutic products and medical goods in order to identify supply shortages in good time and resolve them in a targeted manner.</p> <p>The federal government wants to coordinate healthcare and needs up-to-date information from hospitals. The cantons are therefore required to notify the Coordinated Medical Services of how many hospital beds or intensive care spaces are occupied.</p>		
<p><b>Country/region:</b> Denmark</p> <p><b>Body:</b> Danish Health Authority (Sundhedsstyrelsen)</p>	<p><b>Publication date:</b> 13 April 2020</p> <p><b>Guidance title:</b> Memorandum on increased activity in the general healthcare sector and among other private healthcare</p>	Private hospitals	<p>Gradual increase in activities.</p> <p>Conditional on taking measures to reduce risk of</p>	(No detail)	(No detail)

<p><b>Website:</b>  <a href="https://politi.dk/en/coronavirus-in-denmark/controlled-reopening-of-denmark">https://politi.dk/en/coronavirus-in-denmark/controlled-reopening-of-denmark</a></p>	<p>providers following the announcement concerning the national health service on 13 April 2020<sup>(24)</sup></p> <p><b>Comment on guidance:</b>  The general healthcare sector including private hospitals, but excluding GP clinics and medical specialist clinics, can gradually increase activities towards the usual level as from Monday, 20 April 2020.</p> <p><b>Evidence basis:</b>  NR</p>		infection and avoid spread.		
<p><b>Country/region:</b>  Norway</p> <p><b>Body:</b>  Government</p> <p><b>Website:</b>  <a href="https://www.regjeringen.no/en/aktuelt/norway-to-lift-covid-19-restrictions-gradually-and-cautiously/id2697060/">https://www.regjeringen.no/en/aktuelt/norway-to-lift-covid-19-restrictions-gradually-and-cautiously/id2697060/</a></p>	<p><b>Publication date:</b>  8 April 2020</p> <p><b>Guidance title:</b>  Norway to lift COVID-19 restrictions gradually and cautiously<sup>(25)</sup></p> <p><b>Comment on guidance:</b>  The hospitals will be required to prepare for normal operations after Easter (27 April 2020).</p> <p><b>Evidence basis:</b>  NR</p>	Hospitals	(No detail)	(No detail)	(No detail)
<p><b>Country/region:</b>  Croatia</p> <p><b>Body:</b>  Government</p> <p><b>Website:</b>  <a href="https://vlada.gov.hr/news/covid-19-restrictions-to-be">https://vlada.gov.hr/news/covid-19-restrictions-to-be-</a></p>	<p><b>Publication date:</b>  23 April 2020</p> <p><b>Guidance title:</b>  COVID-19 restrictions to be relaxed in three turns as of 27 April<sup>(22)</sup></p> <p><b>Comment on guidance:</b>  The first phase will start on 27 April. Phase 2 would follow on 4 May if the first phase proves to be successful and</p>	Full-scale operation of Public & Private Health Systems	(No detail)	(No detail)	(No detail)



<a href="#">relaxed-in-three-turns-as-of-april-27/29302</a>	<p>the epidemiological situation does not deteriorate. Relaxation of restrictions in Phase 2 would refer to the public health system, with certain exceptions, and to private clinics.</p> <p><b>Evidence basis:</b> NR</p>				
<p><b>Country/region:</b> Iceland</p> <p><b>Body:</b> Prime Minister's Office, Ministry of Justice, Ministry of Health</p> <p><b>Website:</b> <a href="https://www.government.is/news/article/2020/04/14/Restrictions-to-be-gradually-lifted-starting-4-May/">https://www.government.is/news/article/2020/04/14/Restrictions-to-be-gradually-lifted-starting-4-May-/</a></p>	<p><b>Publication date:</b> 13 April 2020</p> <p><b>Guidance title:</b> Restrictions to be gradually lifted starting 4 May<sup>(23)</sup></p> <p><b>Comment on guidance:</b> From 4 May, healthcare and dental practices (elective surgery excluded) will resume. The Directorate of Health's instructions regarding the postponement of elective surgeries will remain in effect.</p> <p><b>Evidence basis:</b> NR</p>	<p>Healthcare practices excluding elective surgery</p>	<p>(No detail)</p>	<p>(No detail)</p>	<p>(No detail)</p>
<p><b>Country/region:</b> Estonia</p> <p><b>Body:</b> Estonian Health Board</p> <p><b>Website:</b> <a href="https://www.kriis.ee/en/work-hospitals-clinics-and-pharmacies">https://www.kriis.ee/en/work-hospitals-clinics-and-pharmacies</a> <b>and</b> <a href="https://www.terviseamet.ee/sites/default/files/Nakkushaigused/Juhen">https://www.terviseamet.ee/sites/default/files/Nakkushaigused/Juhen</a></p>	<p><b>Publication date:</b> 20 April 2020</p> <p><b>Guidance title:</b> Minimum requirements for healthcare providers to restore planned work in COVID-19 epidemic conditions<sup>(21)</sup></p> <p><b>Comment on guidance:</b> The gradual restoration of scheduled health care treatments in private health institutions has been authorised. Guidance lists a set of requirements</p>	<p>Scheduled health care treatments in private health institutions. Planned outpatient and stationary work.</p>	<p>Coordination with health board where COVID-19 has been identified in the facility.</p> <p>Plan work to include time involved in reducing contact with patients and disinfection of surfaces.</p>	<p>Cleansing and disinfection of surfaces</p> <p>Masking of staff. Hand hygiene.</p> <p>Use of PPE.</p> <p>Rooms for scheduled treatment must be separated from COVID-19 areas or</p>	<p>Remote reception for outpatients where possible.</p> <p>Control point at entrance where risk of infection is assessed: patient hand disinfection, patient temperature measurement, evaluation of</p>

<p><a href="#">did/COVID-19/miinimumnouded_tervishoiuteenuste_osutajatele_plaanilise_too_tastamiseks_covid-19_epideemia_tingimustes.pdf</a></p>	<p>which must be met for organisation of activities.</p> <p><b>Evidence basis:</b> NR</p>			<p>during separate times</p> <p>Maintain distance between patients of at least 2m throughout health service.</p>	<p>respiratory symptoms, masking of patient.</p> <p>Symptomatic patient to be directed to area for COVID-19 assessment.</p> <p>Signing of COVID-19 health declaration by patient, digitally where possible</p> <p>Testing of patient prior to aerosol generating procedures.</p>
<p><b>Country/region:</b> New Zealand</p> <p><b>Body:</b> Ministry of Health</p> <p><b>Website:</b> <a href="https://www.health.govt.nz/system/files/documents/pages/health-and-disability-services-at-alert-level-3-info-sheet-24420.pdf">https://www.health.govt.nz/system/files/documents/pages/health-and-disability-services-at-alert-level-3-info-sheet-24420.pdf</a> <b>and</b> <a href="https://www.health.govt.nz/system/files/documents/pages/covid-19-health-and-disability-">https://www.health.govt.nz/system/files/documents/pages/covid-19-health-and-disability-</a></p>	<p><b>Publication date:</b> 23 April 2020 Update: 13 May 2020</p> <p><b>Guidance title:</b> Health and disability services at Alert Level 3<sup>(46)</sup> <i>13 May Update:</i> Health and disability services at Alert Level 2<sup>(63)</sup></p> <p><b>Comment on guidance:</b> Hospitals will remain open for the acute and emergency health needs of the population at all levels.</p> <p><b>Evidence basis:</b> NR <i>13 May Update:</i> District Health Boards operate services aligned with the</p>	<p>Hospital services Elective surgery, Radiology</p>	<p>Care to be provided in order of clinical priority.</p> <p>Some non-urgent services or treatment may be deferred in order to manage demand pressures.</p> <p><i>13 May Update:</i> Outpatient appointments will continue dependant on demand but should be managed</p>	<p>(No detail)</p>	<p>(No detail)</p>

<p>services-at-alert-level2-12may2020.pdf</p>	<p>National Hospital Response Framework, which enables them to safely deliver as much clinical care and surgery as possible and respond swiftly and appropriately to COVID-19.</p>		<p>wherever possible via online/ telephone/contactless methods.</p> <p>Visitors with no suspicion of COVID-19 will be allowed to visit one-at-a-time, once a day. The number of visitors allowed per patient per day depends on where they are, and discretion may be applied on a case-by-case basis. District Health Boards should be contacted in the first instance.</p>		
<p><b>Country/region:</b> Canada/Ontario</p> <p><b>Body:</b> Ontario Health</p> <p><b>Website:</b> <a href="https://www.ontariohealth.ca/sites/ontariohealth/files/2020-05/A%20Measured%20Approach%20to%20Planning%20for%20Surgeries%20and%20Procedures%20During%20the">https://www.ontariohealth.ca/sites/ontariohealth/files/2020-05/A%20Measured%20Approach%20to%20Planning%20for%20Surgeries%20and%20Procedures%20During%20the</a></p>	<p><b>Publication date:</b> 07 May 2020</p> <p><b>Guidance title:</b> A Measured Approach to Planning for Surgeries and Procedures During the COVID-19 Pandemic.<sup>(40)</sup></p> <p><b>Comment on guidance:</b> The document identifies criteria for reintroducing scheduled surgical and procedural work, as well as the basis on which this work should be prioritized. The approach considers ethical principles, the roles of stakeholders, and provides a framework for assessing</p>	<p>Surgical and procedural work encompassing not only essential time-sensitive surgeries but also scheduled surgeries, image-guided procedures and related clinics (e.g. pre-operative)</p>	<p>Recommendations to ensure an equitable, measured, and responsive approach to planning decisions for expanding and contracting surgical and procedural care.</p> <p><b>Feasibility assessment</b> initially (and then</p>	<p>Consider designating hospitals/units for surgical and procedural care (COVID-protected sites).</p> <p>Conventional in-patient space should be available for care, and this space is evaluated in the context of physical distancing</p>	<p>Where appropriate, use virtual care for preoperative and postoperative follow-up visits.</p>

<p>%20COVID-19%20Pandemic.pdf</p>	<p>the feasibility of, and planning for, service resumption.</p> <p><b>Evidence basis:</b> NR</p>		<p>weekly) required to assess 9 criteria: COVID disease in community and organization, PPE supply, medication supply, inpatient &amp; critical care capacity, health human resources, COVID-19 testing, care outside of the hospital and waitlist management.</p> <p>Key categories should then be considered: regional status, COVID-19 cases, capacity, health human resources, supply chain, and ramp-down planning.</p> <p>Key implementation considerations include ensuring transparent communication and ongoing follow-up with patients, establishing a fair process for surgical and procedural</p>	<p>for both inpatient flow and outpatient activity. This space cannot include care in hallways.</p> <p>Consider extending operating room schedules.</p>	
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			case prioritization, and leveraging opportunities to improve care delivery.		
<p><b>Country/region:</b> UK, England</p> <p><b>Body:</b> NHS</p> <p><b>Website:</b> <a href="https://www.england.nhs.uk/coronavirus/publication/operating-framework-for-urgent-and-planned-services-within-hospitals/">https://www.england.nhs.uk/coronavirus/publication/operating-framework-for-urgent-and-planned-services-within-hospitals/</a></p>	<p><b>Publication date:</b> 14 May 2020</p> <p><b>Guidance title:</b> Operating framework for urgent and planned services within hospitals.<sup>(11)</sup></p> <p><b>Comment on guidance:</b> Lists and explains a five-point framework:</p> <ul style="list-style-type: none"> <li>- Careful planning, scheduling and organisation of clinical activity</li> <li>- Scientifically guided approach to testing staff and patients</li> <li>- Excellence in Infection Prevention and Control</li> <li>- Rigorous monitoring and surveillance</li> <li>- Focus on continuous improvement</li> </ul> <p><b>Evidence basis:</b> NR</p>	Urgent and planned services in hospital settings	Planning, scheduling and organisation of activity: e.g. maintain consistency in staff allocation	<p>Create physical and/or visible separation</p> <p>Hygiene</p> <p>Cleaning of shared equipment</p>	<p>Ensure social distancing</p> <p>Maximise remote consultations</p> <p>Admission only of asymptomatic patients who have isolated for 14 days prior</p> <p>Enhanced planning and protection for patients who are extremely medically vulnerable to COVID-19</p> <p>Scientifically guided approach to testing staff and patients</p>

NR: Not reported

Professional societies/associations guidance					
Population and source of guidance	Guidance details	Care Type/Setting (Elective surgery/ OPD/Day case)	Organisational Management Measures	Physical Space Measures	Patient Flow Measures
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> California Medical Association</p> <p><b>Website:</b> <a href="https://www.cmadocs.org/Portals/CMA/files/public/CMA%20COVID-19%20Guidelines%20for%20Reopening.pdf">https://www.cmadocs.org/Portals/CMA/files/public/CMA%20COVID-19%20Guidelines%20for%20Reopening.pdf</a></p>	<p><b>Publication date:</b> 22 April 2020</p> <p><b>Guidance title:</b> Guidelines and Recommendations for Reopening the Health Care System<sup>(35)</sup></p> <p><b>Comment on guidance:</b> The California Medical Association offers Guidelines &amp; Recommendations for Reopening the Health Care System.</p> <p><b>Evidence basis:</b> NR</p>	<p><b>Health Care System</b></p>	<p>Recommendations:</p> <ol style="list-style-type: none"> <li>1. Universal safety protocols at the practice and facility levels</li> <li>2. Use a phased approach based on local circumstances</li> <li>3. Special care should be given to vulnerable populations</li> <li>4. Prioritizing delayed care</li> </ol>	(No detail)	(No detail)
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> American College of Surgeons; American Society of Anesthesiologists; Association of peri-Operative Registered Nurses; American Hospital Association.</p>	<p><b>Publication date:</b> 16 April 2020</p> <p><b>Guidance title:</b> Joint Statement: Roadmap for Resuming Elective Surgery after COVID-19 Pandemic<sup>(32)</sup></p> <p><b>Comment on guidance:</b> Roadmap/checklist comprising 8 overall principles and considerations to guide physicians, nurses and local facilities in their resumption of care</p>	<p><b>Elective surgery</b> Operating rooms and all procedural areas</p> <p>Refers to face-to-face consultation, laboratory testing and radiologic imaging</p>	<p>Policies</p> <p>Prioritisation approach</p> <p>Capacity</p>	<p>Some detail re: Environmental and equipment cleaning policies</p>	<p>Policies to be required re: Patient histories, physical exams requirements. Telemedicine Patient messaging, education. Discharge arrangements</p> <p>Considerations with respect to pre-op,</p>

<p><b>Website:</b>  <a href="https://www.facs.org/COVID-19/clinical-guidance/roadmap-elective-surgery">https://www.facs.org/COVID-19/clinical-guidance/roadmap-elective-surgery</a></p>	<p><b>Evidence basis:</b>                  Based on other guidance:                  - ACS Guidelines                  - Published prioritisation approach (MeNTS, Prachand et al 2020)</p>				<p>time within operating room, post-op, safety in clinic.</p>
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> American College of Surgeons</p> <p><b>Website:</b>  <a href="https://www.facs.org/COVID-19/clinical-guidance/resuming-elective-surgery">https://www.facs.org/COVID-19/clinical-guidance/resuming-elective-surgery</a></p>	<p><b>Publication date:</b> 17 April 2020</p> <p><b>Guidance title:</b> Local Resumption of Elective Surgery Guidance<sup>(31)</sup></p> <p><b>Comment on guidance:</b> Checklist of 4 categories (awareness, preparedness, patient Issues, delivery of safe high-quality care) with 10 distinct issues to be addressed.</p> <p><b>Evidence basis:</b> NR</p>	<p><b>Elective surgery</b></p>	<p>Policies</p> <p>Prioritisation approach</p> <p>Capacity</p>	<p>(No detail)</p>	<p>Patient communication</p>
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> American Society of Plastic Surgeons</p> <p><b>Website:</b>  <a href="https://www.plasticsurgery.org/for-medical-professionals/covid19-member-resources/resumption-of-elective-surgery">https://www.plasticsurgery.org/for-medical-professionals/covid19-member-resources/resumption-of-elective-surgery</a></p>	<p><b>Publication date:</b> 16 April 2020</p> <p><b>Guidance title:</b> Considerations for the Resumption of Elective Surgery and Visits<sup>(33)</sup></p> <p><b>Comment on guidance:</b> Presents issues to consider when determining timing of reopening and implementation of reopening of operating rooms and offices.</p> <p><b>Evidence basis:</b> Recommendations stated to be based on CDC guidelines and other regulations.</p>	<p><b>Elective surgery</b></p>	<p>Surge situation and statistics</p> <p>Capacity: Staff (Adequacy &amp; Safety) Space Supplies</p> <p>Scheduling considerations</p>	<p>Safety in the office/clinic:</p> <ul style="list-style-type: none"> <li>- Infection control measures (disinfection)</li> <li>- Cleaning</li> <li>- Operating room approaches</li> </ul>	<p>Communication approaches</p> <p>Recommendations for following settings:</p> <ul style="list-style-type: none"> <li>- Pre-op (screening)</li> <li>- Mid operation (minimise exposure, equipment)</li> <li>- Post-op (telehealth, e.g. for post-op wound checks, 7-</li> </ul>

					day post-op social isolation)
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> American Society for Reproductive Medicine (ASRM)</p> <p><b>Website:</b> <a href="https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/covid-19/covidtaskforceupdate3.pdf">https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/covid-19/covidtaskforceupdate3.pdf</a></p>	<p><b>Publication date:</b> 24 April 2020</p> <p><b>Guidance title:</b> Patient Management and Clinical Recommendations during the Coronavirus COVID-19 Pandemic (Update #3 – April 24, 2020 through May 11, 2020) <sup>(36)</sup></p> <p><b>Comment on guidance:</b> This update to the Task Force recommendations identifies the elements required or recommended to allow for a carefully considered and gradual resumption of patient care.</p> <p><b>Evidence basis:</b> NR</p>	Reproductive care practices	<p>Formal documented risk assessment</p> <p>Risk mitigation measures: - policies &amp; procedures (for healthcare staff &amp; patient care) - physical distancing, sanitising surfaces &amp; frequent handwashing - testing and documenting immunity - using standard or universal vs. enhance or expanded precautions in reproductive medicine - availability of PPE &amp; other resources - practice pattern considerations.</p>	Physical distancing approaches	<p>Physical distancing</p> <p>Telehealth</p> <p>Masking</p> <p>Patient communication</p>
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b></p>	<p><b>Publication date:</b> 11 May 2020</p> <p><b>Guidance title:</b> Patient Management and Clinical Recommendations during the</p>	Reproductive care practices		(No detail)	<p>Clinics should weigh benefit and risks of proceeding for the involved individuals.</p>



<p>American Society for Reproductive Medicine (ASRM)</p> <p><b>Website:</b>  <a href="https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/covid-19/covidtaskforceupdate4.pdf">https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/covid-19/covidtaskforceupdate4.pdf</a></p>	<p>Coronavirus COVID-19 Pandemic (Update #4 – May 11, 2020 through June 8, 2020) <sup>(36, 50)</sup></p> <p><b>Comment on guidance:</b>                  Update: Provides additional clarification and information with regards to testing, pregnancy, and third-party reproduction, and specifics around recommendations for the use of PPE.</p> <p><b>Evidence basis:</b>                  NR</p>				<p>Ensure every patient is provided with a list of resources for support and counselling.</p> <p>Consider providing additional counselling and documentation regarding viral screening, risks of COVID-19, potential delay or postponement of care.</p> <p>Quarantine of donors may be considered at the discretion of the recipient and physician.</p>
<p><b>Country/region:</b>                  Europe</p> <p><b>Body/Association(s):</b>                  European Society for Human Reproduction and Embryology (ESHRE)</p> <p><b>Website:</b>  <a href="https://www.eshre.eu/Home/COVID19WG">https://www.eshre.eu/Home/COVID19WG</a></p> <p><b>Guidance document:</b></p>	<p><b>Publication date:</b>                  23 April 2020, updated 5 May 2020</p> <p><b>Guidance title:</b>                  ESHRE guidance on recommencing ART treatments<sup>(9)</sup></p> <p><b>Comment on guidance:</b>                  Six pillars of good medical practice proposed for restart of activity in the ART clinic and laboratory. Details within each pillar.</p> <p><b>Evidence basis:</b>                  NR</p>	<p>Outpatient:                  Reproductive care practices</p>	<p>Six pillars identified:                  1. Discussion, agreement and consent to the start of treatment                  2. Staff and patient triage                  3. Access to advice and treatment                  4. Adaptation of ART services</p>	<p>Sanitisation</p> <p>Procedures for access to space by staff and patients (including social distancing approaches).</p>	<p>Advice re social distancing</p> <p>Telemedicine</p> <p>Pre-screening</p> <p>Access procedures</p>

<a href="https://www.eshre.eu/-/media/sitecore-files/Guidelines/COVID19/ESHRE-Guidance-on-Recommendations-ART-treatments_update-04052020.pdf?la=en&amp;hash=A584F8A306C570BE7648C167CB190F994E21F05A">https://www.eshre.eu/-/media/sitecore-files/Guidelines/COVID19/ESHRE-Guidance-on-Recommendations-ART-treatments_update-04052020.pdf?la=en&amp;hash=A584F8A306C570BE7648C167CB190F994E21F05A</a>			<p>5. Treatment cycle planning</p> <p>6. Code of Conduct for staff and patients</p>		
<p><b>Country/region:</b> Asia</p> <p><b>Body:</b> Asian Pacific Society for Digestive Endoscopy</p> <p><b>Website:</b> <a href="https://gut.bmj.com/content/gutjnl/early/2020/04/02/gutjnl-2020-321185.full.pdf">https://gut.bmj.com/content/gutjnl/early/2020/04/02/gutjnl-2020-321185.full.pdf</a></p>	<p><b>Publication date:</b> 25 April 2020</p> <p><b>Guidance title:</b> Practice of endoscopy during COVID-19 pandemic: position statements of the Asian Pacific Society for Digestive Endoscopy (APSDE-COVID statements)<sup>(27)</sup></p> <p><b>Comment on guidance:</b> Position statement including a strategy for stepwise resumption of endoscopy services after outbreak control.</p> <p><b>Evidence basis:</b> Refers to Imperial College modelling, which suggested that suppression strategies will need adaptive triggering once rebound occurs.</p>	<p><b>Day case:</b> Elective endoscopy</p>	<p>Case prioritisation and required PPE supply with respect to COVID-19 case incidence: Recommendations for urgent, semi-urgent and elective endoscopy.</p>		
<p><b>Country/region:</b> Europe</p> <p><b>Body:</b> European Association of Urology</p> <p><b>Website:</b></p>	<p><b>Publication date:</b> 9 April 2020</p> <p><b>Guidance title:</b> Clinical and surgical consequences of the COVID-19 pandemic for patients with paediatric urological problems<sup>(8)</sup></p>	<p><b>Elective surgery:</b> Paediatric urology</p>	<p>Prioritisation of care: Suggests reversing back through stages of reduction of care. Refers to urgency of specific clinical</p>		

<a href="https://www.sciencedirect.com/science/article/pii/S1477513120301054">https://www.sciencedirect.com/science/article/pii/S1477513120301054</a>	<p><b>Comment on guidance:</b> Recommendations. Includes recommendations for prioritisation in the context of resumption of care.</p> <p><b>Evidence basis:</b> NR</p>		<p>indications (obstructive uropathy, congenital abnormalities).</p>		
<p><b>Country/region:</b> Europe</p> <p><b>Body:</b> European Society of Cardiology</p> <p><b>Website:</b> <a href="https://www.escardio.org/Education/Practice-Tools/CVD-prevention-toolbox/recommendations-on-how-to-provide-cardiac-rehabilitation-activities-during-the-c">https://www.escardio.org/Education/Practice-Tools/CVD-prevention-toolbox/recommendations-on-how-to-provide-cardiac-rehabilitation-activities-during-the-c</a></p>	<p><b>Publication date:</b> Update on 8 April 2020</p> <p><b>Guidance title:</b> Recommendations on how to provide cardiac rehabilitation activities during the COVID-19 pandemic<sup>(7)</sup></p> <p><b>Comment on guidance:</b> Unclear which guidance is specific to resumption. Set of recommendations for cardiac rehabilitation services, in part to promote activity resumption.</p> <p><b>Evidence basis:</b> NR</p>	<p>Outpatient, primarily. Cardiac rehabilitation.</p>		<p>Disinfection of material before and after each activity.</p>	<p>Avoid sputum-inducing exercises</p> <p>Surgical mask use</p> <p>Social distancing during machine (treadmill) use 1:1 instead of group sessions</p> <p>Education of patients to not postpone medical care</p> <p>Telerehabilitation programmes</p> <p>Psychosocial support from professionals and social communities</p> <p>Provide special actions for the most immunocompromised (e.g. early discharge, stricter self-isolation etc.)</p>

					<p>Stop community activities interfering with social distancing, self-quarantine and isolation rules.</p> <p>Provide information on the importance of restarting interrupted or postponed cardiac rehab programmes.</p>
<p><b>Country/region:</b> Spain</p> <p><b>Body/Association(s):</b> SEPD (Spanish Society of Digestive Pathology), AEEH (The Spanish Association for the Study of the Liver), GETECCU (Spanish Working Group on Crohn's Disease and Ulcerative Colitis) and AEG (Spanish Association of Gastroenterology)</p> <p><b>Website:</b> <a href="https://online.reed.es/D/OI/PDF/ArticuloDOI_7141.pdf">https://online.reed.es/D/OI/PDF/ArticuloDOI_7141.pdf</a></p>	<p><b>Publication date:</b> 16 April 2020</p> <p><b>Guidance title:</b> Resumption of activity in gastroenterology departments. Recommendations by SEPD, AEEH, GETECCU and AEG. <sup>(26)</sup></p> <p><b>Comment on guidance:</b> The set of measures are aimed to help departments in their resumption of usual activity. These are pragmatic, practical recommendations regarding patient management and the stepwise resumption of healthcare activity. They are based on the sparse, changing evidence available, and will require updating.</p> <p><b>Evidence basis:</b> NR</p>	<p><b>Gastroenterology activities</b></p>	<p>General action guidelines</p> <p>Recommendations provided under the following headings:</p> <ul style="list-style-type: none"> <li>- healthcare professionals</li> <li>- outpatient clinics</li> <li>- promoting telemedicine</li> <li>- hospitalisation and day hospital services</li> <li>- diagnosis and screening of SARS-CoV-2 infection</li> <li>- supplementary examinations</li> </ul> <p>Recommendations for Inflammatory Bowel Disease</p>		

			<p>Recommendations for Endoscopy Units – 3 phased approach.</p> <p>Recommendations for Hepatology – 3 phased approach.</p>		
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> American Society for Gastrointestinal Endoscopy</p> <p><b>Website:</b> <a href="https://www.asge.org/docs/default-source/default-document-library/asge-guidance-for-reopening_4-28-2020.pdf">https://www.asge.org/docs/default-source/default-document-library/asge-guidance-for-reopening_4-28-2020.pdf</a></p>	<p><b>Publication date:</b> 28 April 2020</p> <p><b>Guidance title:</b> Guidance for resuming GI Endoscopy and practice operations after the COVID-19 pandemic. <sup>(39)</sup></p> <p><b>Comment on guidance:</b> The document presents recommendations to employ for mitigation of infection risks during the gradual reopening of endoscopy centers and GI clinics.</p> <p><b>Evidence basis:</b> NR</p>	Gastrointestinal endoscopy	<p>Scheduling of patients should be prioritized as urgent (tier 1), semi-urgent (tier 2), or elective (tier 3), reflecting the potential of serious outcomes with delay of procedures.</p> <p>PPE.</p> <p>Screening of staff pre work.</p> <p>Defined workflow for identification of infection.</p> <p>Reporting of potential exposure.</p>	<p>Room preparation &amp; cleaning.</p> <p>The check-in process should be limited to direct contact with staff, &amp; patients be roomed immediately after the initial screening.</p> <p>Physical barriers (e.g. plexiglass partitions) should be considered if sufficient physical distancing cannot be accomplished.</p> <p>Lobby/waiting room chairs should be redistributed for social distancing (which may reduce capacity by 50%-75%).</p> <p>Scheduling and check-out</p>	<p>Pre procedure screening incl. telehealth services to assess patient fitness.</p> <p>Patients should wait off premises or in a vehicle until they are called for the visit.</p>

				processes should be redesigned to ensure that distancing is maintained, preferably with separate entrance and exit.	
<p><b>Country/region:</b> Australia</p> <p><b>Body/Association(s):</b> Australian Orthopaedic Association (AOA)</p> <p><b>Website:</b> <a href="https://umbraco.surgeons.org/media/5256/aoa-elective-surgery-covid-position-statement_23april2020.pdf">https://umbraco.surgeons.org/media/5256/aoa-elective-surgery-covid-position-statement_23april2020.pdf</a></p>	<p><b>Publication date:</b> 23 April 2020</p> <p><b>Guidance title:</b> Australian Orthopaedic Association's (AOA) position statement on the return of elective surgery. <sup>(45)</sup></p> <p><b>Comment on guidance:</b> 2 page position statement from the President of AOA welcoming a staged and safe approach to the return of orthopaedic surgery.</p> <p><b>Evidence basis:</b> NR</p>	Elective surgery	Surgery should be consultant performed as much as practicable and all efficiencies should be made to use the theatre resource wisely and in a time efficient manner.	Double theatres should be avoided.	
<p><b>Country/region:</b> Ireland</p> <p><b>Body/Association(s):</b> Royal College of Surgeons (RCSI)</p> <p><b>Website:</b> <a href="https://www.rcsi.com/dublin/-/media/feature/media/download-document/dublin/covid-19-section/surgical-">https://www.rcsi.com/dublin/-/media/feature/media/download-document/dublin/covid-19-section/surgical-</a></p>	<p><b>Publication date:</b> 29 April 2020</p> <p><b>Guidance title:</b> NCPS (National Clinical Programme in Surgery) Guide for Prioritisation of Urgent Scheduled Surgical Conditions (conditions that require surgical intervention within a two-month timeframe). <sup>(10)</sup></p> <p><b>Comment on guidance:</b> This guidance describes levels of surgical priority for urgent non-</p>	Urgent Scheduled Surgery – cardiothoracic, colorectal, general, neurological, oral and maxillofacial, surgical oncology, otolaryngology / head and neck, paediatric, urology, vascular	Prioritisation of patients.		

<a href="https://www.ncps.nhs.uk/practice/ncps/ncps-guide-for-prioritisation-of-urgent-schedule-surgical-conditions.pdf">practice/ncps/ncps-guide-for-prioritisation-of-urgent-schedule-surgical-conditions.pdf</a>	<p>Emergency surgical cases during the current COVID-19 outbreak, covering all surgical specialties with the exception of plastic and reconstructive surgery and ophthalmic surgery. Prioritisation for these Specialty disciplines will follow.</p> <p><b>Evidence basis:</b> NR</p>				
<p><b>Country/region:</b> England</p> <p><b>Body/Association(s):</b> Royal College of Surgeons of England</p> <p><b>Website:</b> <a href="https://www.rcseng.ac.uk/coronavirus/recovery-of-surgical-services">https://www.rcseng.ac.uk/coronavirus/recovery-of-surgical-services</a>.</p>	<p><b>Publication date:</b> 29 April 2020</p> <p><b>Guidance title:</b> Recovery of surgical services during and after COVID-19. <sup>(12)</sup></p> <p><b>Comment on guidance:</b> This document provides a list of principles, recommendations and key considerations in order to facilitate elective surgery. These can be used in combination with national, specialty and local trust recovery plans.</p> <p><b>Evidence basis:</b> NR</p>	<p>Elective surgery</p>	<p>Key considerations at organisational level before resuming include timing, testing, PPE, availability of core independent services, local coordination and a local recovery management team.</p> <p>Assessment of surgical workload and patient population.</p> <p>Ensuring adequate hospital capacity and facilities.</p> <p>Enhancing workforce capacity.</p> <p>Triage, referrals &amp; service reconfigurations between trusts &amp; at a regional/</p>	<p>Wider use of virtual meetings and virtual clinics.</p> <p>Physical separation of COVID-19 and non COVID-19 patients.</p>	<p>Wider use of virtual patient reviews/ consultations.</p>

			national level should be considered to deliver surgical care efficiently.		
<p><b>Country/region:</b> UK</p> <p><b>Body/Association(s):</b> Royal College of Ophthalmologists (UK)</p> <p><b>Website:</b> <a href="https://www.rcophth.ac.uk/wp-content/uploads/2020/04/Reopening-and-redeveloping-ophthalmology-services-during-Covid-recovery-Interim-guidance.pdf">https://www.rcophth.ac.uk/wp-content/uploads/2020/04/Reopening-and-redeveloping-ophthalmology-services-during-Covid-recovery-Interim-guidance.pdf</a></p>	<p><b>Publication date:</b> 20 April 2020</p> <p><b>Guidance title:</b> Reopening and redeveloping ophthalmology services during Covid recovery – Interim guidance. <sup>(14)</sup></p> <p><b>Comment on guidance:</b> This document aims to support decision making and, where possible, provide guidance on how to reopen ophthalmology services after the Covid pandemic lockdown.</p> <p><b>Evidence basis:</b> NR</p>	Ophthalmology services	<p>Planning capacity</p> <p>Prioritising patients</p> <ul style="list-style-type: none"> <li>• Clinical priority</li> <li>• Risk of COVID-19 spread</li> <li>• Service risks (tables provided for planning prioritisation (outpatients and surgery))</li> </ul> <p>Significant and sustained consultant led input.</p>	<p>Considerations for separate Covid positive and negative patients and a 'clean' or 'cold' ophthalmology pathway or site.</p> <p>Consider surgeons using multiple theatre rooms each with a scrub team with fewer patients on each but overall still good numbers on a list.</p> <p>Use staggered arrivals, multiple waiting areas or spaced out waiting chairs.</p>	<p>Phone / video consultations, virtual telemedicine</p> <p>Use of digital and remote pre-assessment methods.</p> <p>Consider accepting lower flow (fewer patients) on lists and do more lists.</p>
<p><b>Country/region:</b> Canada</p> <p><b>Body/Association(s):</b> Canadian Society of Cardiac Surgeons</p> <p><b>Website:</b></p>	<p><b>Publication date:</b> 29 April 2020</p> <p><b>Guidance title:</b> Ramping Up the Delivery of Cardiac Surgery During the COVID-19 Pandemic: A Guidance Statement from the Canadian Society of Cardiac Surgeons. <sup>(41)</sup></p>	Elective surgery: cardiac	Respect and enforce precautions and guidelines that have been put in place by institutions and public health authorities (hand		<p>Instil confidence among patients and health care providers that safety is priority.</p> <p>Pre-screening, isolation upon</p>



<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7189846/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7189846/</a>	<p><b>Comment on guidance:</b> Guidance document described as a 'template' for cardiac surgical programs to 'ramp up' the delivery of cardiac surgery according to three principles.</p> <p><b>Evidence basis:</b> Evidence cited with respect to (i) testing accuracy and (ii) general first-line therapy in coronary artery disease. No evidence cited for specific COVID-19-related measures.</p>		<p>hygiene, PPE, COVID-free units, social distancing, self-isolation, travel restrictions)</p> <p>Phased reintroduction of care</p>		<p>entry, screening on wards.</p> <p>Guidance on tele-assessment and need for policy measures for patients at risk of deterioration.</p>
<p><b>Country/region:</b> UK</p> <p><b>Body/Association(s):</b> Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society and Faculty of Intensive Care Medicine</p> <p><b>Website:</b> <a href="https://icmanaesthesiac.org/restarting-planned-surgery-in-the-context-of-the-covid-19-pandemic">https://icmanaesthesiac.org/restarting-planned-surgery-in-the-context-of-the-covid-19-pandemic</a></p>	<p><b>Publication date:</b> 01 May 2020</p> <p><b>Guidance title:</b> Restarting planned surgery in the context of the COVID-19 pandemic <sup>(13)</sup></p> <p><b>Comment on guidance:</b> Document provides a RAG-rated (red, amber, green) framework for readiness to return to surgery under the headings of Space, Staff, Stuff and Systems.</p> <p><b>Evidence basis:</b> NR</p>	Surgery	<p>Capacity required ('space', 'staff', 'stuff')</p> <p>Policies required ('systems')</p>		'Shielding' of patients pre admission.
<p><b>Country/region:</b> UK</p> <p><b>Body/Association(s):</b> British Fertility Society (BFS)</p>	<p><b>Publication date:</b> 01 May 2020</p> <p><b>Guidance title:</b> Position statement on the resumption of fertility treatment in the UK during</p>	Reproductive Medicine	Timing of resumption: Milestones to be met before reopening.		

<p><b>Website:</b>  <a href="https://www.britishfertilitysociety.org.uk/2020/05/01/position-statement-on-the-resumption-of-fertility-treatment-in-the-uk-during-covid-19-pandemic/">https://www.britishfertilitysociety.org.uk/2020/05/01/position-statement-on-the-resumption-of-fertility-treatment-in-the-uk-during-covid-19-pandemic/</a></p>	<p>COVID-19 pandemic.<sup>(16)</sup></p> <p><b>Comment on guidance:</b>          Position statement issued ahead of publication of practice guideline. Refers to preparedness for resumption.</p> <p><b>Evidence basis:</b>          Expert opinion</p>		<p>Refers to appropriate staffing and equipment (including PPE) capacity as milestones to be met ahead of reopening.</p> <p>Comprehensive risk assessment of all treatment services. Refers to ESHRE, ASRM guidance.</p>		
<p><b>Country/region:</b>          UK</p> <p><b>Body/Association(s):</b>          Association of Reproductive and Clinical Scientists (ARCS) and British Fertility Society (BFS)<sup>(15)</sup></p> <p><b>Website:</b>  <a href="https://www.britishfertilitysociety.org.uk/wp-content/uploads/2020/05/ARCS-BFS-COVID-19-guideline-v1.1-1-1.pdf">https://www.britishfertilitysociety.org.uk/wp-content/uploads/2020/05/ARCS-BFS-COVID-19-guideline-v1.1-1-1.pdf</a>  <b>and</b>  <a href="https://www.arcscientists.org/arcs-and-bfs-u-k-best-practice-guidelines-for-reintroduction-of-routine-fertility-">https://www.arcscientists.org/arcs-and-bfs-u-k-best-practice-guidelines-for-reintroduction-of-routine-fertility-</a></p>	<p><b>Publication date:</b>          06 May 2020</p> <p><b>Guidance title:</b>          The Association of Reproductive and Clinical Scientists and British Fertility Society UK best practice guidelines for reintroduction of routine fertility treatments during the COVID-19 pandemic. <sup>(15)</sup></p> <p><b>Comment on guidance:</b>          Guideline organised under 5 main headings:          1. 5 key principles underpinning guidance          2. Approaches to ensuring patient safety          3. Practical preparation for service resumption          4. Operational preparation for service resumption</p>	<p>Reproductive Medicine</p>	<p>Prioritisation</p> <p>PPE and consumables supply chain intact</p> <p>Working patterns require flexibility</p> <p>Maintain safe working practices</p> <p>Training approaches</p> <p>Reciprocal agreements</p> <p>Develop COVID-19 specific documentation and SOPs.</p>	<p>Minimising risk in the laboratory</p> <p>Clinic layout and physical distancing measure suggestions</p> <p>Equipment</p>	<p>Counselling of patients: providing information and gaining consent</p> <p>Triage: screening questionnaire</p> <p>Approach to patient management before and during treatment: e.g. multi-disciplinary individual risk assessment</p> <p>Reducing face-to-face interactions</p> <p>Face covering of patients</p> <p>Scheduling: e.g. condense visits into</p>

treatments-during-the-covid-19-pandemic/	<p>5. Information, conduct consent and support</p> <p><b>Evidence basis:</b> Precursor document <sup>(16)</sup> refers to information gathering process including a review of the scientific evidence. Evidence is not cited other than information on COVID-19 risk in pregnancy.</p>				a single pathway (combine scan and blood tests).
<p><b>Country/region:</b> USA</p> <p><b>Body/Association(s):</b> American College of Obstetricians and Gynecologists</p> <p><b>Website:</b> <a href="https://www.acog.org/en/Clinical-Information/Policy-and-Position-Statements/Position-Statements/2020/Resumption-of-Comprehensive-Womens-Health-Care-Policies-and-Processes">https://www.acog.org/en/Clinical-Information/Policy-and-Position-Statements/Position-Statements/2020/Resumption-of-Comprehensive-Womens-Health-Care-Policies-and-Processes</a></p>	<p><b>Publication date:</b> 06 May 2020</p> <p><b>Guidance title:</b> Resumption of Comprehensive Women’s Health Care Policies and Processes.<sup>(38)</sup></p> <p><b>Comment on guidance:</b> Twelve ‘general considerations’ explained in paragraphs.</p> <p><b>Evidence basis:</b> NR</p>	Reproductive Medicine	<p>Planning and coordination</p> <p>Timing of resumption</p> <p>Testing strategies</p>		
<p><b>Country/region:</b> USA</p> <p><b>Body:</b> American College of Surgeons (ACS)</p> <p><b>Website:</b> <a href="https://www.facs.org/-/media/files/covid19/acs">https://www.facs.org/-/media/files/covid19/acs</a></p>	<p><b>Publication date:</b> 06 May 2020</p> <p><b>Guidance title:</b> ACS Guidelines for Triage and Management of Elective Cancer Surgery Cases During the Acute and Recovery Phases</p>	Surgical oncology (breast, colorectal, kidney, melanoma, pancreas and perianillary, prostate, soft tissue sarcoma, testicular, thoracic malignancy,	Hospital leaders have to understand the availability of local resources and the prevalence of COVID-19 in their community. Continuous inventory and		Patient testing plays an important role in taking every precaution possible to separate COVID-19-infected patients from individuals who are negative,

<p><a href="#">triage and management elective cancer surgery during acute and recovery phases.ashx</a></p>	<p>of Coronavirus Disease 2019 (COVID-19) Pandemic.<sup>(34)</sup></p> <p><b>Comment on guidance:</b> These are clinical guidelines for triage, management and prioritisation of patients through acute and <b>early and late recovery phases</b> of COVID-19 pandemic.</p> <p><b>Evidence basis:</b> Reference made to clinical guidelines issued by other professional societies/bodies.</p>	<p>urothelial bladder and upper-tract).</p>	<p>management of key resources, including diagnostic kits, PPE, ICU beds, ventilators, blood components, and healthy staff, is crucial for successful outcomes for COVID-19 and non-COVID-19 patients.</p> <p>EARLY-PHASE RECOVERY: Past the peak of COVID-19, with fewer new cases recorded each day. Resources are more available, and some sort of COVID-19-free environment has been secured with adequate testing and PPE.</p> <p>LATE-PHASE RECOVERY: Well past the peak of new COVID-19 cases by at least 14 days. Resources are nearly back to normal levels, and</p>		<p>vulnerable, and need the facility for lifesaving care. Based on current evidence, and resources allowing, patients going to surgery should undergo some kind of evaluation and/or testing to ensure they are not in the incubation phase of COVID-19 to reduce the risk of perioperative COVID-19-related complications and mortality.</p>
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			a substantial and high-functioning, COVID-19-free environment has been established.		
<p><b>Country/region:</b> United Kingdom</p> <p><b>Body/Association(s):</b> British Orthopaedic Association</p> <p><b>Website:</b> <a href="https://www.boa.ac.uk/resources/boa-guidance-for-restart---full-doc---final2-pdf.html">https://www.boa.ac.uk/resources/boa-guidance-for-restart---full-doc---final2-pdf.html</a></p>	<p><b>Publication date:</b> 12 May 2020 <i>Updated 15 May 2020 to note recent NHS England guidance.</i></p> <p><b>Guidance title:</b> Re-starting non-urgent trauma and orthopaedic care: Full guidance.<sup>(19)</sup></p> <p><b>Comment on guidance:</b> British Orthopaedic Association provides guidance on re-starting of non-urgent Trauma and Orthopaedic care as there is a transition to phase 2 of COVID-19 pandemic with a gradual easing of restrictions</p> <p><b>Evidence basis:</b> Some evidence presented for rationale of certain pieces of guidance but not all. Furthermore refers to other guidance documents of similar nature</p>	Non-urgent trauma and orthopaedic care.	Guidance provided regarding care prioritisation and scheduling, capacity to be in place, staff quarantine and testing, and audit.	Guidance regarding social distancing and the physical space through the hospital functions.	Guidance regarding remote care and care alternatives, pre-screening, testing, patient flow, masking and communication with the patient.
<p><b>Country/region:</b> North Americas</p> <p><b>Body/Association(s):</b> Collaboration of North American Cardiovascular Societies: American College of Cardiology, American</p>	<p><b>Publication date:</b> 28 April 2020</p> <p><b>Guidance title:</b> Safe Reintroduction of Cardiovascular Services during the COVID-19 Pandemic: Guidance from North American Societies.<sup>(42)</sup></p> <p><b>Comment on guidance:</b> Recommendations</p>	Non-urgent trauma and orthopaedic care	Guidance provided regarding timing of resumption, capacity to be in place, and COVID19 awareness.	Guidance regarding social distancing.	Guidance regarding remote care and care alternatives, and screening.

<p>Heart Association, Canadian Cardiovascular Society, Canadian Association of Interventional Cardiology, Society for Cardiovascular Angiography and Interventions, Heart Valve Society, American Society of Echocardiography, Society of Thoracic Surgeons, Heart Rhythm Society, Society of Cardiovascular Computed Tomography, American Society of Nuclear Cardiology, Society of Nuclear Medicine and Molecular Imaging, Society for Cardiovascular Magnetic Resonance, Society of Nuclear Medicine, Canadian Heart Failure Society, and the Canadian Society of Cardiac Surgeons.</p> <p><b>Website:</b>  <a href="https://www.onlinecjc.ca/action/showPdf?pii=S0828-282X%2820%2930428-1">https://www.onlinecjc.ca/action/showPdf?pii=S0828-282X%2820%2930428-1</a></p>	<p>and guidance on the safe reintroduction of invasive cardiovascular procedures and diagnostic tests after the initial peak of the COVID-19 pandemic</p> <p><b>Evidence basis:</b> NR</p>				
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<p><b>Country/region:</b> United Kingdom</p> <p><b>Body/Association(s):</b> Royal College of Radiologists</p> <p><b>Website:</b> <a href="https://www.rcr.ac.uk/sites/default/files/covid-19-interim-recovery-guidance.pdf">https://www.rcr.ac.uk/sites/default/files/covid-19-interim-recovery-guidance.pdf</a></p>	<p><b>Publication date:</b> 28 April 2020</p> <p><b>Guidance title:</b> COVID-19 interim guidance on restarting elective work.<sup>(18)</sup></p> <p><b>Comment on guidance:</b> Interim guidance on restarting elective radiology work</p> <p><b>Evidence basis:</b> NR. States the guidance should be read in conjunction with NHS clinical guide for the management of radiology patients during the coronavirus pandemic.</p>	General radiology services	Guidance provided regarding timing of resumption	Guidance regarding social distancing and the physical space, and cleaning.	Guidance regarding remote care and care alternatives, pre-screening, testing, masking and patient confidence.
<p><b>Country/region:</b> United Kingdom</p> <p><b>Body/Association(s):</b> Royal College of Radiologists and British Society for Interventional Radiology</p> <p><b>Website:</b> <a href="https://www.rcr.ac.uk/sites/default/files/covid-19-interim-ir-guidance-restarting-elective-work.pdf">https://www.rcr.ac.uk/sites/default/files/covid-19-interim-ir-guidance-restarting-elective-work.pdf</a> <b>and</b> <a href="https://www.bsir.org/static/uploads/resources/covid-19-interim-ir-guidance-restarting-elective-work.pdf">https://www.bsir.org/static/uploads/resources/covid-19-interim-ir-guidance-restarting-elective-work.pdf</a></p>	<p><b>Publication date:</b> 07 May 2020</p> <p><b>Guidance title:</b> COVID-19 interim guidance on restarting elective work: Interventional radiology (image guided surgery) services.<sup>(17)</sup></p> <p><b>Evidence basis:</b> NR. Refers to similar guidance documents.</p>	Interventional radiology (image guided surgery) services.	Guidance provided regarding capacity	Guidance regarding social distancing, cleaning, and operating rooms.	Guidance regarding remote care and care alternatives, pre-screening, testing, patient flow, masking, vulnerable populations, and patient confidence.

<p><b>Country/region:</b> International</p> <p><b>Body/Association(s):</b> Members of an International Consensus Group (ICM) and Research Committee of the American Association of Hip and Knee Surgeons (AAHKS)</p> <p><b>Website:</b> <a href="https://journals.lww.com/jbjsjournal/Documents/P-FINAL-Parvizi.pdf">https://journals.lww.com/jbjsjournal/Documents/P-FINAL-Parvizi.pdf</a></p>	<p><b>Publication date:</b> 07 May 2020</p> <p><b>Guidance title:</b> Resuming Elective Orthopaedic Surgery During the COVID-19 Pandemic.<sup>(47)</sup></p> <p><b>Evidence basis:</b> Some evidence presented although acknowledged as 'scant'. Expert consensus methodology used.</p>	Elective orthopaedic surgery.	Guidance provided for staff quarantine and testing measures, timing of resumption, and capacity required to be in place.	Guidance outlined for social distancing, cleaning, operating room, and disinfection.	Guidance provided regarding remote alternatives, screening, testing, patient flow, communication with patient, masking, and vulnerable groups.
<p><b>Country/region:</b> United States</p> <p><b>Body/Association(s):</b> American Academy of Ophthalmology</p> <p><b>Website:</b> <a href="https://www.aao.org/headline/alert-important-coronavirus-context">https://www.aao.org/headline/alert-important-coronavirus-context</a></p>	<p><b>Publication date:</b> 11 May 2020</p> <p><b>Guidance title:</b> Updated Interim guidelines on resuming elective ophthalmic care.<sup>(37)</sup></p> <p><b>Comment on guidance:</b> Society also provides a checklist for re-opening ophthalmic care <a href="https://www.aao.org/practice-management/article/ophthalmic-asc-checklist-reopening">https://www.aao.org/practice-management/article/ophthalmic-asc-checklist-reopening</a></p> <p><b>Evidence basis:</b> NR. References to other similar documents</p>	Ophthalmology	No detail	Guidance outlined for social distancing, operating room, and disinfection	Guidance provided regarding screening, testing, masking, and vulnerable groups
<p><b>Country/region:</b> United States</p> <p><b>Body/Association(s):</b></p>	<p><b>Publication date:</b> 06 May 2020</p> <p><b>Guidance title:</b> ACR Statement on Safe Resumption of Routine Radiology</p>	Non-urgent Radiology care	Guidance regarding capacity to be in place, staff testing measures,	Guidance on social distancing	Guidance on remote alternatives, Screening, communication



<p>American College of Radiology</p> <p><b>Website:</b>  <a href="https://www.jacr.org/article/S1546-1440(20)30510-X/pdf">https://www.jacr.org/article/S1546-1440(20)30510-X/pdf</a></p>	<p>Care During the COVID-19 Pandemic.<sup>(30)</sup></p> <p><b>Evidence basis:</b>                  NR. Process of guidance development provided.</p>		<p>timing of resumption, COVID19 awareness, capacity required to be in place, and research/ data collection</p>		<p>with patient, and masking</p>
<p><b>Country/region:</b>                  International</p> <p><b>Body/Association(s):</b>                  International Society for Paediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International</p> <p><b>Website:</b>  <a href="https://www.ncbi.nlm.nih.gov/pubmed/32400924">https://www.ncbi.nlm.nih.gov/pubmed/32400924</a></p>	<p><b>Publication date:</b>                  13 May 2020</p> <p><b>Guidance title:</b> The COVID-19 pandemic: A rapid global response for children with cancer from SIOP, COG, SIOP-E, SIOP-PODC, IPSO, PROS, CCI, and St Jude Global <sup>(48)</sup></p> <p><b>Evidence basis:</b>                  Literature cited but primarily in respect to background as opposed to guidance</p>	<p>Paediatric oncology</p>	<p>Guidance regarding capacity to be in place, staff testing measures, timing of resumption, COVID19 awareness, capacity required to be in place, and research/ data collection</p>	<p>Guidance on social distancing</p>	<p>Guidance on remote alternatives, Screening, communication with patient, and masking</p>

**Table App1.3: Joanna Briggs Institute (JBI) Checklist for text and opinion; critical appraisal results**

	Q1.	Q2.	Q3.	Q4.	Q5.	Q6.
	Is the source of the opinion clearly identified?	Does the source of opinion have standing in the field of expertise?	Are the interests of the relevant population the central focus of the opinion?	Is the stated position the result of an analytical process, and is there logic in the opinion expressed?	Is there reference to the extant literature?	Is any incongruence with the literature/sources logically defended?
<b>Health authority guidance</b>						
Joint European Roadmap, European Commission and European Council <sup>(6)</sup>	Yes	N/A	N/A	N/A	N/A	N/A
White House and Centers for Disease Control and Prevention (CDC) <sup>(29)</sup>	Yes	N/A	Yes	Yes	No	N/A
Centers for Medicare and Medicaid Services (CMS) <sup>(28)</sup>	Yes	N/A	Yes	Yes	No	N/A
Switzerland, Federal Council <sup>(20)</sup>	Yes	N/A	Yes	Yes	No	N/A
Denmark <sup>(24)</sup>	Yes	N/A	Yes	Yes	No	N/A
Norway <sup>(25)</sup>	Yes	N/A	Yes	Yes	Unclear	N/A
Croatia <sup>(22)</sup>	Yes	N/A	Yes	Yes	No	N/A
Iceland <sup>(23)</sup>	Yes	N/A	Yes	Yes	No	N/A
Estonia <sup>(21)</sup>	Yes	N/A	Yes	Yes	Unclear	N/A
New Zealand <sup>(46)</sup>	Yes	N/A	Yes	Yes	Unclear	N/A
Australia Commission on Quality and Safety in Healthcare <sup>(43)</sup>	Yes	Yes	Yes	Yes	Unclear	N/A
Australian Health Protection Principal Committee <sup>(44)</sup>	Yes	Yes	Yes	Yes	No	N/A
Ontario Health, Canada <sup>(40)</sup>	Yes	Yes	Yes	Yes	Unclear	N/A
NHS England <sup>(11)</sup>	Yes	Yes	Yes	Yes	Unclear	N/A

<b>Professional societies/associations guidance</b>						
California Medical Association <sup>(35)</sup>	Yes	Unclear	Yes	Yes	Unclear	No
Joint Statement: American College of Surgeons, American Society of Anesthesiologists, Association of peri-Operative Registered Nurses, American Hospital Association. <sup>(32)</sup>	Yes	Unclear	Yes	Yes	Unclear	No
American College of Surgeons <sup>(31)</sup>	Yes	Unclear	Yes	Yes	No	N/A
American Society of Plastic Surgeons <sup>(33)</sup>	Yes	Unclear	Yes	Yes	Unclear	No
American Society for Reproductive Medicine (Guidance update #3) <sup>(36)</sup>	Yes	Yes	Yes	Yes	Unclear	No
American Society for Reproductive Medicine (Guidance update #4) <sup>(50)</sup>	Yes	Yes	Yes	Yes	Yes	No
European Society for Human Reproduction and Embryology <sup>(9)</sup>	Yes	Yes	Yes	Yes	No	N/A
Asian Pacific Society for Digestive Endoscopy <sup>(27)</sup>	Yes	Yes	Yes	Yes	Yes	No
European Association of Urology <sup>(8)</sup>	Yes	Yes	Yes	Unclear	Unclear	No
European Society of Cardiology <sup>(7)</sup>	Yes	Unclear	Yes	Unclear	No	N/A
SEPD (Spanish Society of Digestive Pathology), AEEH (The Spanish Association for the Study of the Liver), GETECCU (Spanish Working Group on Crohn's Disease and Ulcerative Colitis) and AEG (Spanish Association of Gastroenterology) <sup>(26)</sup>	Yes	Yes	Yes	Yes	Yes	No
American Society for Gastrointestinal Endoscopy <sup>(39)</sup>	Yes	Unclear	Yes	Yes	Unclear	No
Australian Orthopaedic Association <sup>(45)</sup>	Yes	Unclear	Yes	Yes	No	N/A
Royal College of Surgeons in Ireland <sup>(10)</sup>	Yes	Unclear	Yes	Yes	No	N/A
Royal College of Surgeons England <sup>(12)</sup>	Yes	Unclear	Yes	Yes	No	N/A
Royal College of Ophthalmologists <sup>(14)</sup>	Yes	Unclear	Yes	Yes	Yes	No
Canadian Society of Cardiac Surgeons <sup>(41)</sup>	Yes	Yes	Yes	Yes	Yes	No
North American Cardiovascular Societies <sup>(42)</sup>	Yes	Yes	Yes	Yes	Yes	No

American College of Obstetricians and Gynaecologists <sup>(38)</sup>	Yes	Unclear	Yes	Yes	Yes	No
American Academy of Ophthalmology <sup>(37)</sup>	Yes	Yes	Yes	Yes	No	N/A
American College of Surgeons (Oncological surgery) <sup>(34)</sup>	Yes	Unclear	Yes	Yes	Yes	No
American College of Radiology <sup>(30)</sup>	Yes	Yes	Yes	Yes	No	N/A
Royal College of Radiologists (General recommendations) <sup>(18)</sup>	Yes	Unclear	Yes	Yes	No	N/A
Royal College of Radiologists and British Society for Interventional Radiology <sup>(17)</sup>	Yes	Unclear	Yes	Yes	No	N/A
Association of Reproductive and Clinical Scientists and British Fertility Society <sup>(15)</sup>	Yes	Yes	Yes	Yes	Yes	No
British Fertility Society <sup>(16)</sup>	Yes	Unclear	Yes	Unclear	Yes	No
British Orthopaedic Association <sup>(19)</sup>	Yes	Unclear	Yes	Yes	No	N/A
International Consensus Group and Research Committee of the American Association of Hip and Knee Surgeons <sup>(47)</sup>	Yes	Yes	Yes	Yes	Yes	Yes
International Society for Pediatric Oncology, Children's Oncology Group, St Jude Global program, and Childhood Cancer International <sup>(48)</sup>	Yes	Yes	Yes	Yes	Yes	No
Royal College of Anaesthetists, Association of Anaesthetists, Intensive Care Society, and Faculty of Intensive Care Medicine <sup>(13)</sup>	Yes	Unclear	Yes	Yes	No	N/A
<b>Joint health authority and professional societies guidance</b>						
Australian Ministry for Health and professional healthcare organisations Joint Statement <sup>(5)</sup>	Yes	Yes	Yes	Yes	No	N/A

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