National guidance for the recovery of elective surgery in children

November 2021

For information

The following is a copy of the advice published in November 2021 to support the recovery of elective surgery in children and young people, including the appendix and information for patients and carers. It is provided here for information.

The national advice was updated in June 2022 – and is available at https://www.rcpch.ac.uk/guidance-recovery-elective-surgery

National guidance for the recovery of elective surgery in children

Health Policy team

The COVID-19 pandemic resulted in the cessation of all but the most urgent elective children's surgical cases during the period of peak prevalence of infection in the general population. There is now a focus on addressing the huge backlog of procedures which have been delayed since the beginning of the pandemic in a safe and effective way.

These recommendations use the most up to date evidence to inform practice that will enable recovery of children's elective surgery.

Last modified: 26 November 2021

Post date: 17 July 2020

If you have any questions relating to this guidance, please contact us on **health.policy@rcpch.ac.uk**.

Updates

Updates in this version (25 November 2021):

- Standardisation of guidance for all levels of prevalence of SARS-CoV-2
- Local risk assessment for employing 1m distancing (rather than 2m distancing) in elective surgical areas.

Background, aim and scope

Background: The COVID-19 pandemic has resulted in the cessation of all but the most urgent elective children's surgical cases during the period of peak prevalence of infection in the general population. Using referral to treatment (RTT) pathway reporting measures, 63,368 children are waiting for an inpatient procedure. This includes over 5960 children waiting for dental procedures, over 6000 children waiting for specialised surgery, 7300 children waiting for trauma and orthopaedic surgery and 35000 children waiting for general surgical procedures at the beginning of November, 2021 (England data). There is an urgent requirement to re-establish and maintain elective children's surgical services as the pandemic progresses.

Aim: To provide guidance on evidence-based practice that will enable recovery of children's elective surgery.

Scope: This guidance has been developed by the following organisations: NHS England/Improvement, UK Health Security Agency, the Royal College of Surgeons of England, Royal College of Anaesthetists, Royal College of Paediatrics and Child Health, the Children's Surgical Forum, British Association of Paediatric Surgeons, Association of Paediatric Anaesthetists of Great Britain and Ireland, and The Association for Perioperative Practice.

While some recommendations focus on the systems organised in England, services in the devolved nations are encouraged to adopt them to fit local models.

Summary of recommendations

1. Prioritisation of surgical cases should be undertaken according to clinical urgency as per the Federation of Specialty Surgical Associations (FSSA) **Clinical Guide to Surgical Prioritisation During the Coronavirus Pandemic**.

2. Theatre scheduling should ensure that every list is used effectively and efficiently.

3. Local risk assessment of distancing should be undertaken. Two metre distancing continues to be recommended in clinical areas of mixed emergency and elective admissions. One metre distancing can be considered in designated elective clinical areas.

4. All children and household members should undergo pre-operative virtual/telephone screening 24-72 hours pre-operatively specifically asking about symptoms suggestive of COVID-19 infection, including temperature, new cough, coryzal symptoms, lethargy and new shortness of breath. If symptoms are present in either the child or household members, advice should be given according to Government guidelines about COVID-19 testing and self-isolation and the procedure should be delayed until a later date. If the condition for which surgery is required does not allow a delay, a discussion about the decision making around this should occur within a multidisciplinary team and the family. The patient and family members should be treated according to the local hospital COVID-19 positive patient pathway if the procedure goes ahead. If the child has mild coryzal symptoms and is otherwise well a pre-operative SARS-CoV-2 swab could be performed and if it is negative the procedure can go ahead at the discretion of the anaesthetist

5. Carers or parents accompanying the child to hospital for the procedure do not require routine swabbing.

6. Pre-operative testing for SARS-CoV-2 infection should be undertaken. Lateral flow devices (or other validated rapid antigen tests) performed in the hospital setting within 6 hours of the procedure or Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) for SARS-CoV-2 taken within 72 hours before the procedure are both acceptable testing methods.

7. Elective surgery in children should be deferred for 14 days following the onset of symptoms or diagnosis in children with mild or asymptomatic COVID-19 infection. Repeat SARS-CoV-2 testing is not recommended prior to elective surgery
   Exemption: Immunocompromised children: in these children a clinical risk assessment should be carried out in conjunction with the IPC team and virologists.

8. Questionnaire screening of the child and household members for new symptoms of COVID-19 should be performed at the time of admission. If a child develops mild coryzal symptoms after pre-operative screening and has had a negative SARS-CoV-2 swab within 72 hours, a lateral flow test or Rapid-PCR should be performed to determine whether they have COVID-19 or another mild influenza like illness. If the swab is SARS-CoV-2 negative and the anaesthetist is happy to proceed, it is acceptable for the patient to follow the “green” pathway. If a child develops severe respiratory distress requiring admission due to SARS-CoV-2, elective surgery should be delayed as per local guidance and anaesthetist opinion. If a household member is diagnosed with COVID-19 in the 14 days prior to elective surgery, a local risk assessment should be performed – testing in the few hours prior to surgery may allow management as per green pathway. If the child is confirmed to have COVID-19 but the

condition for which surgery is required does not allow a delay, a discussion about the decision making around this should occur within a multidisciplinary team and the family.

9. All families should receive or have access to guidance and advice about the infection control processes associated with elective procedures considering COVID-19. **(Download our guidance for parents/carers, young people and children below.)**

10. Pre-operative isolation is not recommended as a routine practice for children undergoing elective surgery.

11. Children and their parents/carers should have the opportunity to discuss the procedure prior to elective admission and have access to written information. During the discussion, it should be explained that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital. Whenever possible, consent will be taken prior to admission.

12. Providers should recognise that the role of parents looking after their child is very different from relatives supporting adult patients and make appropriate adjustments locally. The number of resident carers should be prioritised as far as possible with ideally one accompanying each child to the hospital for a day-case procedure. When children require an inpatient stay, local policy should be followed, with an emphasis on resident carers being able to change but ideally just with other resident carers from the same household. Ideally the resident carer does not have a co-morbidity associated with an increased risk of severe COVID-19 and be vaccinated; this should be discussed at the pre-operative assessment.

13. All resident carers should wear a face covering while in hospital if away from the bed-space.

14. 'Hot' and 'cold' operating sites are not mandatory for children undergoing elective procedures. However, any location used for paediatric anaesthesia and surgery must be compliant with the **RcoA Guidance for the provision of paediatric anaesthesia services 2020** throughout the patient pathway.

15. Cubicles should be prioritised for children and accompanying parents with co-morbidities associated with an increased risk of severe COVID-19.

16. Healthcare workers (HCWs) should wear droplet precaution PPE (personal protective equipment, ie facemask, gloves and apron) when they attend to a patient and are unable to maintain 2 metre distance, in keeping with UK Health Security Agency (UKHSA) guidance.

17. HCWs and porters who transfer a patient to theatre should wear droplet precaution PPE, in keeping with UKHSA guidance.

18. A theatre team briefing should include a review of the COVID-19 swab result and discussion about anticipated transmission risk related to the procedure (including any aspects that are aerosol generating) to guide staff choices regarding PPE.

19. **The World Health Organization (WHO) check** should be completed for every patient, with recommended droplet precaution PPE for health care workers and face coverings for resident carers.

20. The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy with the aerosol generating procedure (AGP) being delayed until they leave the anaesthetic room.

21. 'Green', 'amber' and 'red' pathways can be employed for children's surgery. Droplet protection PPE can be worn by HCWs engaged in AGPs for 'green' patients, and normal theatre cleaning procedures and air change policy can be employed for these patients too. Laryngeal masks airways (LMAs) and oropharyngeal airways can be removed from 'green' patients in theatre recovery by HCW wearing droplet protection PPE.
22. Consistent messaging regarding hand washing, social distancing and face coverings should be maintained throughout the hospital to reinforce that these infection prevention and control measures are the most effective way of reducing the transmission of COVID-19.
23. Normal post-operative observations and care pathways should be followed.
24. Rapid discharge after day case procedures should be supported and encouraged.
25. Children and resident carers do not need to self-isolate after discharge from hospital unless they have been diagnosed with COVID-19 or have come into close contact with someone with COVID-19.
26. Virtual or telephone clinics should be supported by the trust to improve access to healthcare for all patients and to reduce the number of children who need to return to the hospital for outpatient review.
27. Surveillance of nosocomial outbreaks and monitoring of outcomes of children after surgery should be undertaken by each Trust.
28. Provider / Regional / National monitoring of elective surgery activity including the rates of cancellations, the incidence of COVID-19 before and after elective surgery and the clinical course of children undergoing elective procedures with COVID-19 should be undertaken.

Background and rationale

The COVID-19 pandemic resulted in the cessation of all but the most urgent elective children's surgical cases during the period of peak prevalence of infection in the general population. Using referral to treatment (RTT) pathway reporting measures, 63,368 children are waiting for an inpatient procedure. This includes over 5960 children waiting for dental procedures, over 6000 children waiting for specialised surgery, 7300 children waiting for trauma and orthopaedic surgery and 35000 children waiting for general surgical procedures at the beginning of November, 2021 (England data). There was, and continues to be, an urgent requirement to re-establish elective children's surgical services and continue to safely provide elective surgical care to children through further periods of higher levels of prevalence.

As the pandemic has progressed, the challenges and opportunities facing clinical teams has also changed. Non-pharmacological interventions such as social distancing are no longer mandatory outside of healthcare environments. We have moved from an unvaccinated to a vaccinated workforce, and also potentially vaccinated older children. Rapid testing has been validated and understanding of infectiousness improved. These changes have led us reappraise the role that COVID-19 prevalence plays in this guidance and clarify the role of testing.

National survey data demonstrate considerable variation between hospitals in terms of the infection control measures they have for children undergoing elective surgery. Many hospitals have based their pathways on national guidance originating from the **Royal College of Surgeons of**

England and UKHSA. These pathways are adult focussed and do not reflect the differences between adults and children in terms of COVID-19 infection and in addition offer little guidance for parents or carers.

This was the rationale for reviewing the paediatric literature and drafting these consensus recommendations.

Principles

- The safety of children, their families and staff is paramount.
- Recommendations are to be equitable irrespective of socioeconomic status, ethnicity, or geographic location. No child should be left behind as a consequence of these recommendations.
- Recommendations are evidence-based and may change as evidence and experience evolves.

Summary of COVID-19 in children evidence

Testing for COVID-19

The gold standard test for acute COVID-19 infection is reverse transcriptase polymerase change reaction (RT-PCR). The diagnostic accuracy of the test is based on the ability to gain a representative sample of the person who is being tested, and for the sample to be analysed by a procedure which reliably detects the presence of SARS-CoV-2 RNA within this sample (the operational accuracy). As with any test, the results can be categorised into true positives and true negatives (where the result of the test is correct) and false positives and false negatives (where the result of the test is incorrect), which can occur for a number of reasons. False positives can occur when there is contamination of the sample, when there is a disruption of the RT-PCR procedure (e.g. a problem with the primers or the control or the amplification process) or when there is cross reaction with other genetic material. False negatives can occur when the swab does not pick up a representative sample of patient material (i.e. a small numbers of cells or cells that are not carrying SARS-CoV-2) or when there is disruption of the RT-PCR procedure. It is also dependent on the timing of swabbing in relation to the disease process. There is concern for children that performing an accurate nasopharyngeal swab (the gold standard) is more difficult as it is an uncomfortable procedure although it is recognised that the operational sensitivity of the test has improved over the previous months as healthcare workers have become more adept at swabbing children effectively. Using saliva or oral fluids does not improve the accuracy and is therefore not recommended at this time.

The sensitivity and specificity are not the only important measures of accuracy of the result. In times of low prevalence of COVID-19 the likelihood of an individual having COVID-19 is low, and when they don't have symptoms of COVID-19 it is even lower (pre-test probability). Therefore, when a swab is performed to look for SARS-CoV-2 during periods of low prevalence, a positive result is more likely to be a false positive than a true positive (giving a low positive predictive value), whereas a negative result is more likely to be a true negative (giving a high negative predictive value). As prevalence increases, the pre-test probability of having COVID-19 increases and therefore positive results are more likely to be correct.

Alternative methods of testing are available for use in community and hospital settings. Lateral flow devices (or other validated rapid antigen tests) can provide rapid results, within approximately 30

minutes. Antigen testing is a method of identifying the presence of a protein, rather than genetic material, that is present as a result of viral infection. Laboratory and clinical studies in adults have shown that many antigen tests, often in the form of a lateral flow device, are very good at picking up when someone does not have COVID-19 (i.e. they are unlikely to be positive when someone is not infected with the virus) and have a specificity of 99.6%. Their sensitivity alters according to the viral load of the person being tested. When an individual is infected with SARS-CoV-2 and has a high viral load, they are infective to others. Antigen tests are very sensitive at picking up infected individuals in this situation. They are less reliable when someone is in the very early stages of the infection and has not developed a high viral load and is at a low risk of infecting others and at the later stages of the illness when the individual has cleared the live virus but continue to shed viral particles which can be picked up on RT-PCR. The key advantage that rapid testing gives when AGPs are concerned is the indication of risk at the point just before an aerosol generating procedure (AGP), rather than more than 24 hours before the anaesthetic, when a patient in early disease can also have a negative PCR, but at the point of AGP have developed a viral load that means they are a risk to others.

Table 1 below displays the changes to true positive and negatives and false positives and negatives as the prevalence levels change. We see that as prevalence increases to high levels, the proportion of true positives compared to false positives becomes higher and therefore the positive predictive value of the test is better. Table 1 also shows the changes to true negatives and false negatives as prevalence increases. This changes very little until prevalence levels become very high (>80%) and therefore a negative test is very reliable at being able to distinguish a person not having COVID-19 at the time that they are swabbed.

Table 1 Changes to true positive and negatives and false positives and negatives as the prevalence levels change (Prevalence 0.5% and 2%).

	Prevalence 0.50%				Prevalence 2%			
Specificity	**98.00%**		**99.70%**		**98.00%**		**99.70%**	
Sensitivity	**PPV**	**NPV**	**PPV**	**NPV**	**PPV**	**NPV**	**PPV**	**NPV**
100.00%	**20.1%**	**100.0%**	**62.6%**	**100.0%**	**50.5%**	**100.0%**	**87.2%**	**100.0%**
90.00%	**18.4%**	**100.0%**	**60.1%**	**100.0%**	**47.9%**	**99.8%**	**86.0%**	**99.8%**
80.00%	**16.7%**	**99.9%**	**57.3%**	**99.9%**	**44.9%**	**99.6%**	**84.5%**	**99.6%**
70.00%	**15.0%**	**99.9%**	**54.0%**	**99.9%**	**41.7%**	**99.4%**	**82.6%**	**99.4%**
60.00%	**13.1%**	**99.8%**	**50.1%**	**99.8%**	**38.0%**	**99.2%**	**80.3%**	**99.2%**
50.00%	**11.2%**	**99.7%**	**45.6%**	**99.8%**	**33.8%**	**99.0%**	**77.3%**	**99.0%**

Table 2 below displays how long a negative test can be relied upon to say that a person without symptoms does not have COVID-19 during periods of high prevalence. For children incubating the virus at the time of testing, we can see that at 24 hours after the test is taken, 80% of these children remain non-infectious. By 72 hours after a test, if a person was incubating the virus when the test was taken, 50% of children would be shedding it (and therefore infectious) at that time.

Table 2 How long a negative test can be relied upon to say that a person without symptoms does not have COVID-19 during periods of high prevalence (% incubating the virus becoming infectious).

Hours after test	2.5 quantile	Median	97.5 quantile
1	0.726	0.766	0.804
3	2.228	2.298	2.363
6	4.493	4.586	4.68
12	9.017	9.159	9.295
24	17.961	18.135	18.319
32	23.748	23.929	24.125
48	34.587	34.814	35.037
60	41.961	42.212	42.427
72	48.647	48.895	49.123
84	54.633	54.867	55.095

Testing during periods of low prevalence is likely to result in more children being cancelled inappropriately (due to a false positive result) than because they truly have COVID-19. One can consider urgently repeating the COVID-19 test pre-operatively in asymptomatic children with no other risk factors for COVID-19 who are found to be positive on their initial test.

Epidemiology and the risk of being infected

The epidemiology of SARS-CoV-2 has changed with the introduction of vaccinations. Previously, children <18 years old accounted for a minority of detected cases of COVID-19, usually accounting for between 1 and 5% of total cases, depending on national testing strategies (those which have been more focussed on testing the most unwell have the smallest numbers of children). Where more granular detail is available, there has been a “U shaped” distribution of acute case detection, with cases more frequently detected in infants and older adolescents; approximately 1/3 of detected cases have been in adolescents aged 15 – 18 years.[1] As of November 2021, SARS-CoV-2 prevalence was are highest in the population not routinely offered the COVID-19 vaccine (children aged <12 years of age).

Clinical course

There is a strong age gradient in severity of illness and risk of death[2] as demonstrated in Figure 1 below.[3]

Figure 1. Key Findings From the Chinese Center for Disease Control and Prevention Report

	Deaths	Laboratory-confirmed cases*	Case fatality ratio			Infection fatality ratio†
			Crude	Adjusted for censoring	Adjusted for censoring, demography, and under-ascertainment‡	
Overall	1023	44 672	2·29% (2·15–2·43)	3·67% (3·56–3·80)	1·38% (1·23–1·53)	0·657% (0·389–1·33)
Age group, years						
0–9	0	416	0·000% (0·000–0·883)	0·0954% (0·0110–1·34)	0·00260% (0·000312–0·0382)	0·00161% (0·000185–0·0249)
10–19	1	549	0·182% (0·00461–1·01)	0·352% (0·0663–1·74)	0·0148% (0·00288–0·0759)	0·00695% (0·00149–0·0502)
20–29	7	3619	0·193% (0·0778–0·398)	0·296% (0·158–0·662)	0·0600% (0·0317–0·132)	0·0309% (0·0138–0·0923)
30–39	18	7600	0·237% (0·140–0·374)	0·348% (0·241–0·577)	0·146% (0·103–0·255)	0·0844% (0·0408–0·185)
40–49	38	8571	0·443% (0·314–0·608)	0·711% (0·521–0·966)	0·295% (0·221–0·422)	0·161% (0·0764–0·323)
50–59	130	10 008	1·30% (1·09–1·54)	2·06% (1·74–2·43)	1·25% (1·03–1·55)	0·595% (0·344–1·28)
60–69	309	8583	3·60% (3·22–4·02)	5·79% (5·20–6·34)	3·99% (3·41–4·55)	1·93% (1·11–3·89)
70–79	312	3918	7·96% (7·13–8·86)	12·7% (11·5–13·9)	8·61% (7·48–9·99)	4·28% (2·45–8·44)
≥80	208	1408	14·8% (13·0–16·7)	23·3% (20·3–26·7)	13·4% (11·2–15·9)	7·80% (3·80–13·3)

As a result, the clinical impact of COVID-19 disease in children has been extremely limited worldwide. There has been a handful of deaths reported, and only 70 PICU (Paediatric Intensive Care Unit) admissions in the UK during the peak of the pandemic.[4] Not all those admissions were necessarily due to COVID-19. Severity matches case detection, with more PICU admissions in infants or very young children and adolescents. The clinical presentation is like adults, with primarily upper/lower respiratory tract symptoms, although they tend to be much milder. It is believed that a significant proportion of children develop no, or subclinical symptoms, but the true number is unknown. A recent sero-survey and symptom study in London found 40% of children to be truly asymptomatic.

Newborns have had reported infection with COVID-19, including testing positive within 12 hours of birth, indicating perinatal transmission or even intra-uterine transmission. In general neonates have also had a relatively uneventful course, with a small number needing respiratory support.

Transmission

Details regarding the role of children in transmission of COVID-19 are still emerging. Children appear to have had a limited role in transmission during the pandemic to date, based on the results of numerous contact tracing studies and the evidence of lower rates of infection in sero-surveillance studies. Household contact tracing data has consistently found children are less likely to acquire COVID-19 from an infected household member than adults within the same household (roughly by half, or less) but household transmission remains the most likely source of infection in children.[5]

There have been very few examples of a child as an index cases identified, so determining how infectious a child is to others once infected is challenging. Data from some laboratory studies have shown children to have viral loads similar to that of adults, however the number of children included tend to be very small, and there are concerns they are not representative of the wider population of children with COVID-19. Some studies have shown lower viral loads in children.

Outcomes of children with COVID-19 during the peri-operative period

Although data suggest a significant mortality and morbidity in adults with peri-operative SARS-CoV-2 infection, there are minimal data on the outcomes of children who have undergone surgery when they have had COVID-19 in the peri-operative period. The COVIDSurg study[6] included 56 people under 30 years of age who were either SARS-CoV-2 positive on reverse transcriptase polymerase chain reaction (rt-PCR) or had a high clinical suspicion of COVID-19 based on clinical and/or radiological features between 7 days before surgery and 30 days after surgery. There was no mortality in this group but 30% were described as having pulmonary complications. Personal communication with the same group report that they now have 89 children recorded in their data collection tool with one paediatric death. The results are currently under further analysis and being prepared for publication.

Further detailed data are available from the **Public Health England paediatric surveillance of COVID-19** where six children were diagnosed with COVID-19 up to 14 days pre-operatively, none post-operatively. All children survived and, while two required respiratory support, this was not out-with the expected course for their condition. There is no data of any neonates with COVID-19 requiring an operation to date.

Great Ormond Street report that in the three months from March to May 2020 they performed 13 procedures on 11 children who were SARS-CoV-2 positive. These children followed the expected course for their condition. The **National Child Mortality Database** collates all child deaths in England and no deaths have been seen as a complication of COVID-19 infection following elective surgery.

As children are much more likely to have asymptomatic or mild disease as a result of SARS-CoV-2 infection, and are very unlikely to develop severe disease, many of the protective measures discussed in this guidance are present for the protection of staff rather than the children themselves.

Recommendations - Red, Amber and Green pathways

In light of revised **UKHSA guidance on infection prevention and control** and **subsequent UK Health Security Agency guidance**, it is recommended that children are stratified according to a red, amber, green system. Careful consideration should be taken about performing any elective surgery on children who fall into red or amber categories.

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Figure 2. Red, amber and green pathways for elective surgery for children

High risk COVID-19 Pathway - Red	Medium Risk COVID-19 Pathway - Amber	Low Risk COVID-19 Pathway - Green
a) Confirmed SARS-CoV-2 infection b) Symptoms consistent with COVID-19 awaiting SARS-CoV-2 test results c) Symptomatic individuals who decline testing (local risk assessment for asymptomatic individual who refuses testing)	a) Asymptomatic for COVID-19 but awaiting SARS-CoV-2 test results. **Or** b) Asymptomatic for COVID-19 but with household member diagnosed with COVID-19 in the past 14 days (local risk assessment in this situation – testing in the few hours prior to surgery should allow management as per green pathway)	a) No symptoms and no known recent household contact with COVID-19 **AND** Have a negative SARS-CoV-2 PCR result within 72 hours of surgery or lateral flow test in the 6 hours prior to surgery **Or** b) Have recovered from COVID-19 (diagnosed more than 14 days ago with COVID-19) with at least 48 hours without fever or respiratory symptoms

See **Table 6** for PPE implications of red/amber/green pathways

Recommendations - how long should elective surgery in children be delayed following a mild/asymptomatic COVID-19 infection?

There is currently wide variation in practice between hospitals in how long elective surgery is delayed following a diagnosis of SARS-CoV-2 in a child. In some centres, elective surgery in children is being routinely delayed by 7 weeks following infection with SARS-CoV-2.

Although it is reasonable to delay elective surgery for several weeks after a severe case of respiratory COVID (requiring admission to hospital) and there is a rationale for delaying elective surgery in children who experience chronic symptoms (long-COVID) following SARS-CoV-2, both of these scenarios are fortunately relatively rare in children. The vast majority of children with SARS-CoV-2 have mild or asymptomatic disease and, in this situation, the rationale for delaying elective surgery should be considered in terms of the following:

- **IPC – concerns over transmission to other children and clinical staff:**
    - There is a large body of evidence showing that the risk of onward transmission is extremely low beyond 14 days from onset of symptoms / diagnosis in immunocompetent children.
    - However, hospitals require isolation of patients for the 14 days following the onset of symptoms / diagnosis. For this reason, the steering group feel that elective surgery should be delayed for at least 14 days where possible. Consideration needs to be taken for parents/carers who are required to accompany the child to hospital – if they are within the 14 day period of close contact or infection, they may be unable

to be resident at the time of the surgery. In addition, if other siblings are unwell with SARS-CoV-2, childcare arrangements may be challenging.

- The group do not feel that repeat SARS-CoV-2 testing is necessarily required prior to elective surgery. However, if repeat testing is performed, systems should be in place to measure the PCR cycle threshold (CT) value – a positive PCR test with a CT value of over 35 **suggests an extremely low likelihood of viable virus** and thus almost no ongoing transmission risk when standard infection control processes are in place. Another option would be to use a lateral flow test in this situation.
- For immunocompromised children, a clinical risk assessment needs to be performed to determine how long surgery should be delayed. This should be done in conjunction with the infection control team and clinical virologists.

- **Risk from SARS-CoV-2 as a co-morbidity to the underlying illness / intervention:**
  - Data suggest that peri-operative outcomes of children with SARS-CoV-2 infection are favourable compared with adults.**7**
  - Based on the experiences of various steering group members during the pandemic, it was agreed by the steering group that a different approach should be adopted in children compared to adults, in terms of a shorter delay in elective surgery. Data will be continued to be collected on the outcomes of children requiring emergency surgery shortly after a SARS-CoV-2 infection and this guidance will be reviewed accordingly.

Recommendations - Theatre list planning

Management of the theatre waiting list will be determined by multiple factors including the clinical urgency of the procedure, changes in the clinical condition which have occurred between listing of a case and the time of operation, pre-operative assessment and (non-COVID) investigations which are required and taking consent. This is because the clinical indications for some procedures may have changed as a result if the positive impact of lockdown on children's health, eg reduced upper respiratory infections. In addition, adjustments in the planning of the theatre list may be required to consider additional protective measures in theatre, primarily the time required for air changes after airway manipulation.

Guidance on the recovery of surgical services and on the clinical urgency of the procedure has been published by the Royal College of Surgeons of England (Table 3)**8** .

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Table 3. Prioritisation of surgical procedures, Royal College of Surgeons England

Priority level 1a	Emergency - operation needed within 24 hours
Priority level 1b	Urgent - operation needed within 72 hours
Priority level 2	Surgery that can be deferred for up to 4 weeks
Priority level 3	Surgery that can be delayed for up to 3 months
Priority level 4	Surgery that can be delayed for more than 3 months

Recommendations

- Prioritisation of surgical cases should be undertaken according to clinical urgency.
- Theatre scheduling should take into account the additional time that may be needed to perform a case if a patient is on an 'amber' or 'red' COVID-19 pathway, or the prevalence of COVID-19 is high but ensure that the list is used effectively and efficiently.

Actions

- Providers: Local hospital policy will enable effective theatre list management to ensure that children can be operated on according to clinical urgency, within the context of changes due to the regional and national levels of, and response to, COVID-19.

Recommendations - Pre-admission

1. Pre-assessment and information for parents and managing expectations

Pre-assessment of children undergoing surgery improves the efficiency of surgical lists as well as reducing the rate of on the day cancellations. The aim of pre-assessment is two-fold: to determine the need for pre-operative investigations and/or optimisation; and assessing the risk of the patient or household member having COVID-19. The former is likely to be embedded within hospital policy but use of teleconferencing or telephone screening may need to be employed, along with advice in-line with hospital policy about attending for pre-operative investigations. The latter is expected to be an additional formal process which is performed 48 hours prior to admission and at the time of admission

Pre-assessment offers an opportunity to provide the child and family with clear information about the infection control processes involved in the admission - **Download our posters for parents, children and young people below**. During this discussion, it should be explained to the family that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital. This is an opportunity to reiterate the importance of parents/carers adhering with infection prevention practices in hospital. It was agreed that a parent information resource would be developed to support this.

Pre-operative information for parents is essential and should reflect the need for hospital practices to adapt to external changes, particularly as community prevalence changes. **Download our posters for parents, children and young people below**

Recommendations

- All children and household members should undergo pre-operative virtual/telephone screening 24-72 hours pre-operatively specifically asking about symptoms suggestive of COVID-19 infection, including temperature, new cough, coryzal symptoms, lethargy and new shortness of breath. If symptoms are present in either the child or household members, advice should be given according to Government guidelines about COVID-19 testing and self- isolation and the procedure should be delayed until a later date. If the condition for which surgery is required does not allow a delay, a discussion about the decision making around this should occur within a multidisciplinary team and the family. The patient and family members should be treated according to the local hospital COVID-19 positive patient pathway if the procedure goes ahead. If the child has mild coryzal symptoms and is otherwise well a pre-operative SARS-CoV-2 swab could be performed and if negative the child can continue to admission.
- Screening of the child and household members for new symptoms of COVID-19 should be performed at the time of admission. If a child develops mild coryzal symptoms after pre-operative screening and have had a negative SARS-CoV-2 swab within 72 hours, a lateral flow test or rapid RT-PCR could be performed to determine whether they have COVID-19 or another mild influenza like illness. If negative and the anaesthetist is happy to proceed, it is acceptable for the child to follow the "green" pathway during times of low or moderate prevalence. If a child develops significant symptoms OR a household member has developed symptoms (and has had a positive SARS-CoV-2 test or is awaiting the result), the procedure should be delayed until a later date allows, and advice given according to Government guidelines about COVID-19 testing and self- isolation. If the condition for which surgery is required does not allow a delay, a discussion about the decision making around this should occur within a multidisciplinary team and the family.

Action

- **Providers**: To establish a safe and effective method of screening patients and their household members pre-operatively for symptoms and signs of COVID-19, preferably prior to physical entry into the hospital.

Recommendation

- All families should receive or have access to guidance and advice about the infection control processes associated with elective procedures considering COVID-19.**Download our posters for parents, children and young people below**

Action

- **Providers**: To signpost parents and children to accurate information about the infection control processes in place related to COVID-19 at the time they are booked for a procedure. This can be provided online and/or by post. Provider specific information may

also be produced and delivered about local hospital policy including local pre-operative processes, use of kitchen facilities and parent accommodation.

2. Pre-operative isolation

Previously, many institutions asked for adults and children is to enforce 14 days of shielding prior to a planned operation. However, the impact of complete shielding on a family is significant and includes children not being able to attend school, parents not being able to go out to work and loss of any local support network. In addition, anecdotal data suggest that adherence to even short periods (<72 hours) of recommended isolation is poor and therefore cannot be relied upon.

As children cannot effectively isolate as a parent or guardian is almost always needed, isolation is not recommended for children. For isolation to be effective for children the isolation period would need to be significantly longer to allow for both the parent and child to not cross-infect each other during the period of isolation, and isolation from other household members would also have to occur. The benefits of isolating are therefore not seen and are of minimal effectiveness as children are far less likely to be infected compared to adults.

Recommendation

- Pre-operative isolation is not recommended as a routine practice for children undergoing elective surgery.

3. Pre-operative SARS-CoV-2 testing

Reverse transcriptase polymerase chain reaction (RT-PCR) performed on a single swab of throat then nose looking for SARS-CoV-2 is the recommended test for diagnosing acute COVID-19 in symptomatic people.[9] It has a high analytical sensitivity and can detect low levels of SARS-CoV-2 with good reproducibility.

However, from a clinical perspective, SARS-CoV-2 is more commonly detected in the lower respiratory tract, meaning that combined throat and nose swabbing may not detect SARS-CoV-2 in a person who has COVID-19, with an estimated sensitivity of 80%.[10] In addition, studies show that SARS-CoV-2 can continue to be detected for a prolonged period after clearance of the active virus, demonstrated by the inability to replicate the virus in a laboratory after detection of SARS-CoV-2 with RT-PCR.[11] This gives the potential for both false negative results (the test is negative but the patient does have COVID-19) and false positive results (the test is positive but the patient does not have COVID-19).[12] When the community prevalence level is low, the false positive rate is higher than the true positive rate, meaning that some patients will not be able to undergo an elective procedure, even though they do not have COVID-19.

The optimal time to perform a test is directly before commencing a procedure. Point of care RT-PCR testing for SARS-CoV-2 is available and is seen as the 'gold standard' but is currently significantly limited. In view of the potential for false positive and false negative RT-PCR results in the context of low community level of COVID-19, a single pre-operative test in an asymptomatic child is reported to have a 40% chance of predicting whether they develop COVID-19 during their admission. The addition of a second test 72-96 hours later increases the predictive power to 80%. However, in the context of very low community levels of COVID-19, the rate of detection of asymptomatic SARS-CoV-

2 infection in a child is very low. As the prevalence of COVID-19 increases, the predictive power of the test also increases with the number of true positive results increasing and therefore a proportional reduction in the number of false positive results. The prevalence of COVID-19 must reach exceedingly high levels (>80%) before a proportional increase in the number of false negative results rises and therefore the negative predictive power of the test is maintained during current levels of infection.

A number of informal surveys of multidisciplinary healthcare workers (HCWs) in theatre clearly demonstrate that the absence of a negative pre-operative COVID-19 swab result would result in HCWs having lower threshold for donning airborne PPE including for non-AGPs. In addition, it is recognised that a single pre-operative nasopharyngeal swab is recommended for adult patients undergoing elective surgery; a different protocol for adults and children regarding swabbing could generate unnecessary concern for staff, particularly when children and adults are cared for on the same site.

In order to ensure the rapid turnaround of tests to enable children to safely undergo elective procedures it is recommended that testing is performed by hospitals rather than test and trace services where the time to return the swab results may considerably be longer.

Many specialist centres have a wide catchment area so close engagement with local hospitals to provide swabbing for children who require an elective procedure with effective communication of the test results is strongly recommended.

The routine pre-operative swabbing of parents/carers is not recommended as transmission is minimal when infection prevention and control measures are followed (wearing masks, handwashing, social distancing) and the significant risk of false positive results may results in unnecessary cancellations. The need for fastidious infection prevention and control measures, hand washing, wearing face coverings and socially distancing, should be re-enforced prior to and during the admission as this is the key to preventing spread of COVID-19 in the hospital. The routine swabbing of carers or parents who accompany children attending for elective procedures is therefore not recommended.

Use of point of care SARS-CoV-2 tests

There are now a range of point of care tests for detecting acute SARS-CoV-2 infection, many of which are based on antigen detection, often in the format of a lateral flow device (LFD). There is some variation in different tests' sensitivity, and the sensitivity is markedly higher in healthcare settings compared to community settings. The specificity of all LFDs approved for use are excellent (>99.7%). In absolute terms, if 100,000 children without COVID-19 presenting for elective surgery were tested with a PCR or a LFD, approximately 300 would be false positives. Figure 3 demonstrates the positive and negative predictive values for infectivity (based on a cycle threshold of viral load) of lateral flow devices at increasing levels of prevalence. Figure 4 and table 4 display the impact of performing a test with a sensitivity of 90% (e.g. RT-PCR), of 80% (e.g. a lateral flow device performed in hospital) and of 60% (e.g. a lateral flow device used at home) according to both the prevalence of SARS-CoV-2 and the time in relation to a procedure. It demonstrates that fewer children with an unidentified infection will undergo a procedure when a test with lower sensitivity (e.g. lateral flow device) is taken within 6 hours of the procedure compared to a test with higher sensitivity (e.g. PCR) taken 36 hours before a procedure. Therefore, we recommend that rapid SARS-CoV-2 tests performed within 6 hours of the AGP are a safe alternative to PCR and will not result in an unacceptable rate of false positive or negative results. It is not anticipated that on-the-day testing using lateral flow devices (or

equivalent) will result in a significant rate of late cancellations as the pre-admission screening will detect symptomatic patients and those with household contact. RT-PCR can remain positive for a prolonged duration after the patient is no longer infective whereas lateral flow devices detect only patients who are infectious (with high viral load) at the time of the procedure. RT-PCR as a testing strategy is therefore more likely to result in higher rates of cancellations.

Further discussion of the comparison of LFD and PCR for protective effect prior to elective surgery is available in Appendix 1 (see **downloads** below).

Figure 3. A graph of the positive and negative predictive values (y axis) of the Innova lateral flow device at increasing levels of prevalence of SARS-CoV-2 (x axis).

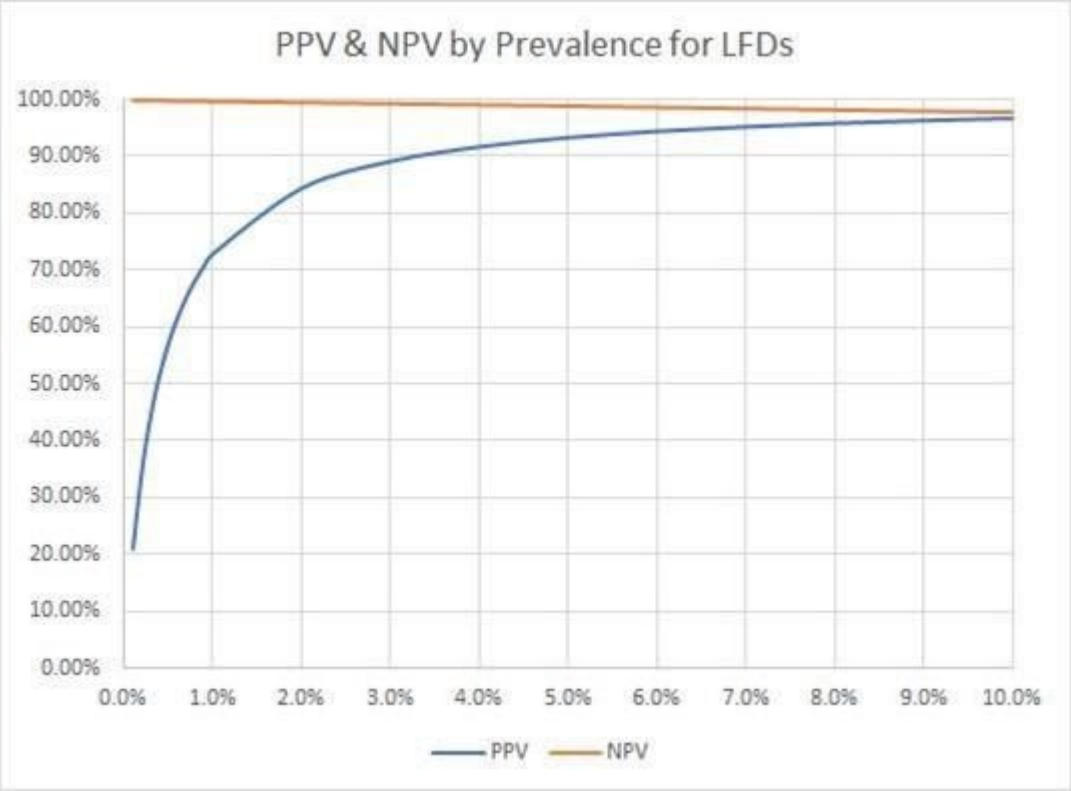

Figure 4: The rate of unidentified infections at the time of surgery despite pre-operative testing (lateral flow testing in the few hours prior to surgery compared to PCR testing in the 24-72 hours prior to surgery).

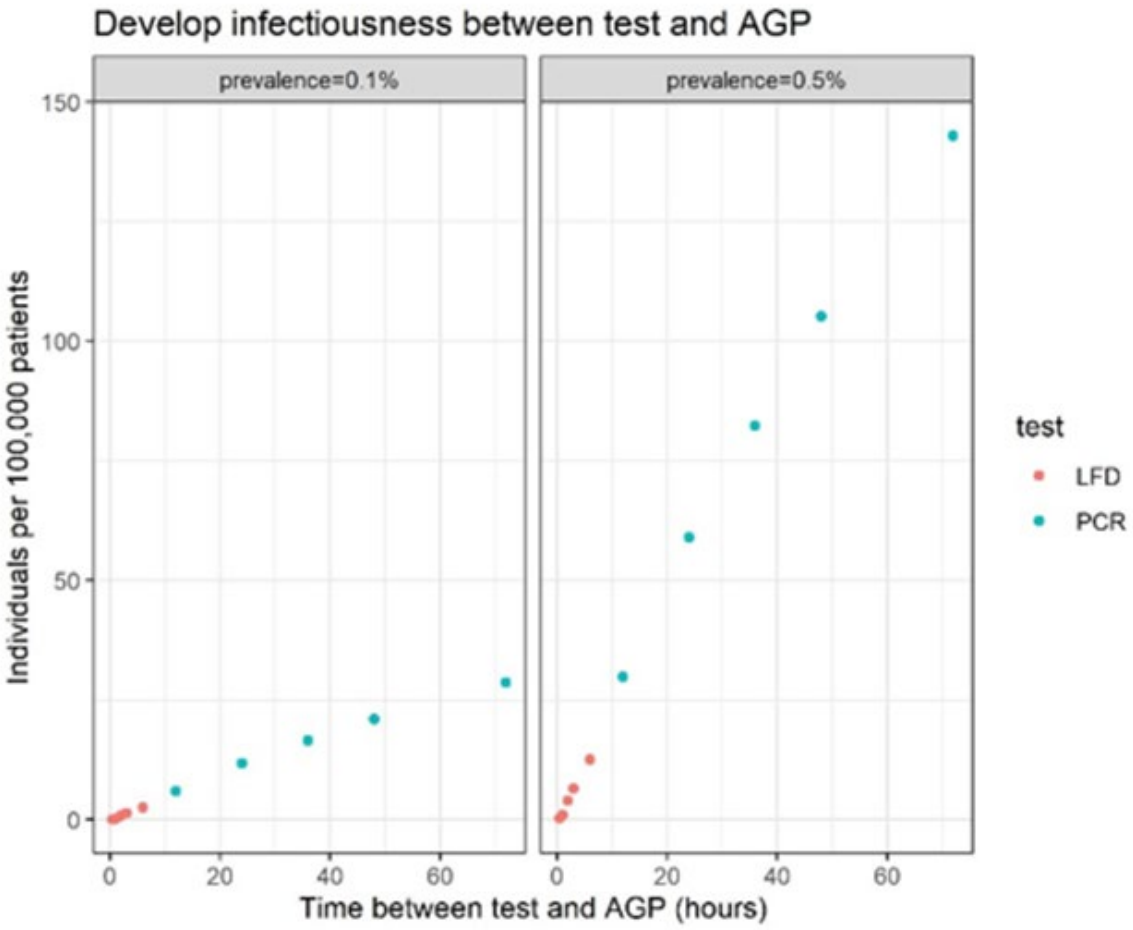

Table 4 - Number of patients, per 100,000, that would pose a risk during the procedure. This value captures those who would return a false positive test, and the number of asymptomatic infections that would develop between test and the start of procedure. Those who develop symptoms have been excluded to mirror IPC practice. Estimated sensitivity values for LFD of 0.6 for unsupervised testing and 0.8 if test undertaken by a professional in a care setting.

Prevalence (%)	Test	Sensitivity	Time between test and procedure (hours)	Unidentified infections at time of procedure (per 100,000 patients)
0.1	LFD	0.6	0.5	12
			1	12
			2	13
			3	13
			6	14
		0.8	0.5	5
			1	5
			2	5
			3	6
			6	7
	PCR	0.9	12	8
			24	12
			36	15
			48	17
			72	22
0.5	LFD	0.6	0.5	57
			1	58
			2	61
			3	63
			6	69
		0.8	0.5	29
			1	30
			2	32
			3	35
			6	41
	PCR	0.9	12	39
			24	59
			36	73
			48	88
			72	112

Recommendations

- **Pre-operative testing:**
  A single pre-operative swab should be taken within 72 hours before admission and preferably as close to the time of surgery as possible.
  Or
  Rapid antigen testing (Lateral flow device or equivalent) performed on the day of the procedure.
- Units with large catchment areas should identify systems to facilitate local testing or develop an on-the-day testing procedure using lateral flow devices (or equivalent) to enable more equitable access to secondary and tertiary healthcare, particularly for families who are geographically distant to the hospital or who are reliant on public transport for the journey to the hospital
- Whichever testing facilities are used, HCWs have a responsibility to check the result. This may include seeing a text message of the result or reviewing the hospital results system.

Action

- Providers -
  - To develop local processes facilitating the use of lateral flow device (or equivalent validated rapid antigen test) for pre-operative testing on the day of procedure
  - To accept valid tests performed through local systems including community testing stations and peripheral hospitals
  - To have a robust method for local test results to be communicated with the appropriate team, who are responsible for seeing the communication of the test results.

4. Pre-admission consent

It is good practice for the risks and benefits of any procedure to be discussed in detail before the day of admission for a procedure. Many clinicians use this opportunity to take consent, allowing time for questions and providing written information for the child and parent/carer. The Royal College of Surgeons of England has published dedicated guidance on consent to treatment while COVID-19 is still prevalent in society.[13] Virtual consultations may impact on the ability to take written consent for procedures prior to admission.

While some hospitals now have the facility to take 'eConsent', this is not available for many. Nevertheless, families should have the opportunity to discuss the details, risks and benefits of a procedure prior to admission including receiving online, electronic or paper information about the procedure whenever possible. During the consent process, it should be explained that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital.

Recommendation

- Children and their parents/carers should have the opportunity to discuss the procedure prior to elective admission and have access to written information. During the discussion,

it should be explained that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital. Whenever possible, consent will be taken prior to admission.

Recommendations - Pre-operative

Table 5 Pre-operative recommendations and actions for providers

Recommendation	Actions for providers
Telephone / virtual screening for child and household symptoms of COVID-19 should be undertaken 24-72 hours pre-operatively.	To establish a safe and effective method of screening patients and their household members pre-operatively for symptoms and signs of COVID-19
Parents / carers should be informed about stringent infection control measures (social distancing, wearing a mask, regular hand washing) and parental visiting	To inform parents / carers of hospital infection control measures prior to attendance in hospital. This can include over the telephone, by email and/or directing to the hospital webpage
To screen children for SARS-CoV-2 using either on-the-day lateral flow devices (or validated equivalent) or RT-PCR for SARS-CoV-2 within 72 hours of the procedure. Consideration of the impact of the swabbing policy on the children and families and on the overall resource implications should guide the development of these processes	To have awareness of this guidance and create local processes and procedures to enable the information given by ODNs to be applied for children undergoing elective surgery.
Units with large catchment areas should utilise local testing centres and local hospitals to perform pre-operative testing.	To accept valid tests performed through local systems including community testing stations and peripheral hospitals. To have a method for local test results to be communicated with the appropriate team.
The risks of the procedure should be discussed pre-operatively including specific advice about COVID-19 and the risk of a child or parent contracting it during their hospital visit.	To communicate the risks associated with COVID-19 with parents and children before attending hospital. This could be provided during the pre-

Recommendation	Actions for providers
	assessment, unless procedure-specific risks need to be discussed.
Admission screening questions about symptoms of COVID-19 in the child or accompanying carer/parent.	To establish a safe and effective method of screening patients and their household members pre-operatively for symptoms and signs of COVID-19.
	To consider rapid SARS-CoV-2 testing of children with mild coryzal symptoms who are well enough to undergo anaesthetic at the time of admission.

Recommendations - Peri-operative

1. Number of parents/carers per child

Each child who attends for an elective procedure is expected to be accompanied by a parent/carer, called a "resident carer" here on in. One resident carer is expected to attend for a child undergoing a day case procedure. For children who require an inpatient stay the local visiting policy should be followed by resident carers. The epidemiological risk of having COVID-19 is approximately the same for all members of the same household. Therefore, changing resident carers who live in the same house does not increase the risk of exposing HCWs or other resident carers to COVID-19.

Keeping the number of resident carers at the bed space and within the hospital to a minimum enables effective social distancing to protect the child, parent/carer and HCWs. Ideally the accompanying resident carer will not have any co-morbidities likely to increase the chance of more severe COVID-19 disease, and this should be discussed during the pre-operative assessment. If the accompanying resident carer has a co-morbidity for whom shielding is recommended, every effort should be made to accommodate the child and adult in a cubicle.

Resident carers will be expected to wear a face covering when they are not at the bed space.

If the two parents/carers live in different households, then only one parent/carer should remain during the admission. If the inpatient admission is prolonged, local guidance should be followed in terms of swapping between parents/carers from two different households.

Recommendation
• Resident carers should be minimised as far as possible with ideally one accompanying each child to the hospital for a day case procedure. When children require an inpatient stay, local policy should be followed, with an emphasis on resident carers being able to change but ideally just with other resident carers from the same household. Ideally the resident-

carer does not have a co-morbidity which requires shielding; this should be discussed at the pre-operative assessment.

2. Face coverings for children and adults attending hospital for elective procedures

Face coverings, along with physical distancing and eye protection are effective methods of reducing the transmission of viruses[14] and hospitals now require adult visitors to wear face coverings during their visit.[15] It is recognised that children under the age of 10 may find it difficult to wear a face covering but many younger children may tolerate this and encouragement of the use of face coverings for children aged 5 and over is reasonable. Some older children, for example those with learning and behavioural difficulties, may struggle to tolerate a face covering.

Resident carers are expected to wear a face covering throughout their child's stay in hospital whenever they are away from the bed space.

Recommendation

- All resident carers should wear a face covering while in hospital if away from their bed space.

3. Place of admission

Many adult hospital trusts have embraced a surgical pathway which includes using 'hot' and 'cold' sites. The number of children with COVID-19 has been very low[16] and, as described above, the peri-operative risk that COVID-19 poses in children is significantly lower than in adults.[6] The utility of hot and cold sites is therefore minimal for children and was felt by the group not to be necessary. However, it is recognised that some trusts may opt to utilise the same model of hot and cold sites for children and adults. Any location used for paediatric anaesthesia and surgery must be compliant with the **RCoA Guidance for the provision of paediatric anaesthesia services 2020** throughout the patient pathway. In addition, at times when 'green' pathways are being employed in children undergoing elective surgery, considerations should be given to physical separation of those children from other children in the hospital, particularly in pre- and post-operative care areas, and in recovery

Children undergoing elective surgery may be admitted to a day case or inpatient bed. Although it is preferable that each child and carer is situated within a cubicle at each stage of their inpatient stay, it is recognised that this is not feasible in many settings. When the number of cubicles is limited, children and parents with co-morbidities likely to increase the chance of more severe COVID-19 disease should be prioritised, along with children in the 'red' pathway.

Within a day case and inpatient unit, a minimum distance of 1 metre between beds is mandatory.[17] 2 metre separation continues to be recommended in clinical areas where there are elective and emergency admissions, and if possible is recommended to continue in all clinical areas. Local providers need to make their own risk assessment to balance lack of physical separation versus potential detriment of failure to provide adequate levels of elective children's surgery. Consideration of parents who are accompanying and staying over with their children should also be taken to enable them to physically distance from other people.

Recommendations

- 'Hot' and 'cold' operating sites are not mandatory for children undergoing elective procedures. However, any location used for paediatric anaesthesia and surgery must be compliant with the **RCoA Guidance for the provision of paediatric anaesthesia services 2020** throughout the patient pathway.
- Children on 'green' elective pathways should be physically separated from other children in the hospital. Cubicles should be prioritised for children and accompanying parents with co-morbidities likely to increase the chance of more severe COVID-19 disease.
- A minimum of one metre distancing is recommended in elective 'green' areas. Ideally, two metre distancing rules should be observed and local risk assessments undertaken if this is not possible.

4. Pre-operative and post-operative reviews by all healthcare workers

Healthcare workers have the highest prevalence of COVID-19 and therefore need to take adequate precautions to reduce the risk of transmission to children and their parents/carers. Droplet precaution personal protective equipment (PPE) is recommended for all interactions between families and healthcare workers in the pre- operative and post-operative period. The normal pre-operative checks by anaesthetists, surgeons and admitting nurse should be undertaken, in addition to the COVID-19 specific recommendations above.

Recommendation

- Healthcare workers can wear droplet precaution PPE when they attend to a green patient.

5. Transfer to theatre

Ideally children will be transferred directly from their inpatient or day-case ward to the anaesthetic room for the theatre that will be used for their procedure. It is recognised that in some hospitals a waiting area outside theatre may be used to improve patient flow. Hospital porters and accompanying health care workers will be expected to wear droplet precaution PPE during patient transfers.

Recommendation

- Healthcare workers and porters who transfer a patient to theatre should wear droplet precaution PPE.

Recommendations - Intra-operative: Green 'low-risk' patients

1. Theatre briefing and World Health Organisation check

Each theatre list should commence with a full-team briefing about each patient on the list. This should include checking the COVID-19 result and a discussion about whether a patient is on a green, amber or red pathway for COVID-19, any aerosol generating procedures (AGPs) and when airborne precaution PPE is recommended and for whom. HCWs should wear the minimum recommended level of PPE but that if HCWs feel more comfortable escalating their PPE (eg to wearing an FFP3 mask) this should be an individual choice. The WHO check should be completed for every patient in line with hospital policy. Resident carers should wear a face covering when appropriate.

Recommendations

- A theatre team briefing should include a discussion about anticipated transmission risk related to the procedure (including any aspects that are aerosol generating) to guide staff choices regarding PPE. Ensuring that theatre staff who need to wear aerosol PPE receive adequate rest periods should be included in the team briefing.
- The WHO check should be completed for every patient with recommended droplet precaution PPE for health care workers and face coverings for resident carers.

2. Induction of anaesthesia

The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy . Healthcare workers involved in induction of anaesthesia of patients on the green pathway should wear droplet protection PPE i.e. surgical face mask Type II, disposable gloves, apron and eye protection. Normal IPC policy around cleaning of anaesthetic room should be followed and there are no additional requirements with respect to air changes.

Induction and maintenance of anaesthetic and pre-operative procedures including nerve blocks, epidurals, line insertion and urinary catheter insertion should be performed without alteration to the anaesthetist's normal practice.

3. PPE requirements for theatre staff

Public Health England updated the PPE guidance for AGPs on 20 August 2020 **18**

Staff should use standard IPC measures with respect to PPE, theatre cleaning and air changes. Staff can wear droplet precaution PPE including a Type 2 surgical face mask, eye protection, apron and disposable gloves.

Recommendations

- Theatre staff working in theatres for green, low-risk patients can wear droplet precaution PPE.

4. Extubation, removal of laryngeal mask airways (LMAs or equivalent) and oropharyngeal airways

Laryngeal masks and oropharyngeal airways can be removed safely in recovery with HCWs wearing droplet precaution PPE.

5. Theatre cleaning cases

Standard cleaning protocols can be used for patients on a 'green' pathway and there is no requirement for additional theatre air changes between cases.

Recommendations - Intra-operative: 'Amber' and 'Red'

1. Theatre briefing and World Health Organisation check

Each theatre list should commence with a full-team briefing about each patient on the list including checking the COVID-19 swab result. This should include a discussion about any aerosol generating procedures (AGPs) and when airborne precaution PPE is recommended. The WHO check should be completed for every patient in line with hospital policy. Resident carers should wear a face covering when appropriate.

Recommendation

- A theatre team briefing should include a discussion about anticipated transmission risk related to the procedure (including any aspects that are aerosol generating) to guide staff choices regarding PPE. Ensuring that theatre staff who need to wear aerosol PPE receive adequate rest periods should be included in the team briefing.
- The WHO check should be completed for every patient with recommended droplet precaution PPE for health care workers and face coverings for resident carers.

2. Induction of anaesthesia

Healthcare workers who are in the anaesthetic room at the time of any AGP should be limited to essential members of the team only, preferably just anaesthetist, operating department practitioner +/- member of theatre team. All healthcare workers in the anaesthetic room at the time of AGP should wear airborne precaution PPE to reduce their risk of exposure to COVID-19. It was agreed by the group that the minimum requirement for airborne PPE is an FFP3 mask (or equivalent), eye protection and gloves.

The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy with the AGP being delayed until they leave the anaesthetic room.

There should be a delay of five air changes between the end of the AGP occurring and the entry of other staff into the anaesthetic room who are not wearing airborne precaution PPE.18 A transfer of the patient from the anaesthetic room to theatre should not be delayed for air changes as air should not be passing from the anaesthetic room to theatre and therefore not a risk to people in theatre, who will already be wearing droplet precaution PPE.

Induction and maintenance of anaesthetic and pre-operative procedures including nerve blocks, epidurals, line insertion and urinary catheter insertion should be performed without alteration to the anaesthetist's normal practice.

Recommendation

- The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy with the AGP being delayed until they leave the anaesthetic room.
- Healthcare workers within the anaesthetic room during the aerosol generating procedure and the 5 subsequent air changes are recommended to wear airborne PPE. The minimum PPE requirement during intubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection, fluid-repellant gown and gloves.
- A transfer of the patient from the anaesthetic room to theatre should not be delayed for air changes

3. PPE requirements for theatre staff

Public Health England updated the PPE guidance for AGPs on 20 August 2020.[18]

Recommendation

- Hospital policy should follow UK-HSA guidance regarding classification of AGPs and use of PPE in the recommended settings.

4. Extubation, removal of laryngeal mask airways (LMAs or equivalent) and oropharyngeal airways

For 'amber' and 'red' patients extubation should continue to be performed in theatre with the safe minimum number of healthcare workers present. All healthcare workers present in theatre at the time of extubation are expected to wear airborne precaution PPE. The group agreed that the minimal PPE requirement during extubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection, fluid repellent gown and gloves. Movement of a patient from theatre to recovery should not be delayed for air changes within theatre, as the air leaving the theatre will be significantly diluted and will not be a risk to other members of staff outside theatre who should be wearing droplet precaution PPE as standard.

Waiting for five air changes prior to cleaning commencing is the second major factor that affects list efficiency. It is noted that five air changes should occur after the last AGP, which for some children may be a significant proportion of time before they actually leave theatre, enabling cleaning to occur as soon as a patient leaves. At times of high prevalence it was agreed that HCWs wearing airborne precaution PPE could enter and commence cleaning after 3 air changes to allow time for droplets to settle. Organisations must establish the time taken for air changes in their operating theatres and anaesthetic rooms.

Laryngeal mask airways (LMA) and oropharyngeal airways (such as Guedel airways) often remain in situ when a patient enters recovery. LMA removal is an AGP and HCWs should wear airborne PPE to remove it. Removal of oropharyngeal airways can be performed in droplet PPE.

Recommendations

- Healthcare workers in theatre at the time of extubation should be kept to a safe minimum and should wear airborne precaution PPE. The minimum PPE requirement during extubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection and gloves.
- Environmental cleaning of theatre can be commenced by HCWs wearing airborne precaution PPE after 3 air changes following the last AGP performed or by HCWs wearing droplet precaution PPE after five air changes following the last AGP.
- Removal of Laryngeal Mask Airways and oropharyngeal airways can be performed in recovery. Removal of an LMA necessitates wearing airborne PPE. Removal or oropharyngeal airways can be performed by a HCW wearing droplet precaution PPE.

Recommendations - Intra-operative: Minimum PPE requirements

Table 6. Minimum PPE requirements. Note, if a risk of splash or spraying of bodily fluids, an apron should be substituted for a fluid-repellent gown and eye protection should be considered.

	Green	Amber	Red
AGPs	***FRSM IIR Apron Gloves**	**Eye protection FFP3 / Hood Fluid-repellent gown Gloves**	**Eye protection FFP3 / Hood Fluid-repellent gown Gloves**
Non-AGPs*	***FRSM IIR Apron Gloves**	***FRSM IIR Apron Gloves**	***FRSM IIR Apron Gloves**
Cleaning	**Standard cleaning**	**Enhanced Cleaning**	**Enhanced Cleaning**
Extubation in theatre	***FRSM IIR Apron Gloves**	**Eye protection FFP3 / Hood Fluid-repellent gown Gloves**	**Eye protection FFP3 / Hood Fluid-repellent gown Glove**
LMA removal In theatre or recovery	***FRSM IIR Apron Gloves**	**Eye protection FFP3 / Hood Fluid-repellent gown Glove**	**Eye protection FFP3 / Hood Fluid-repellent gown Gloves**
Oropharyngeal removal In theatre or recovery	***FRSM IIR Apron Gloves**	***FRSM IIR Apron Gloves**	***FRSM IIR Apron Gloves**

*Risk assessment if contact with blood and/or body fluids is anticipated :

Eye / face protection - use if blood and/or body fluid contamination to the eyes or face is anticipated or likely or when performing AGPs on patients with a confirmed or suspected respiratory infection (even if SARS-CoV-2 excluded)

Apron - gown if risk of extensive splashing of blood and/or other body fluids

Mask - FFP3 or hood if performing an AGP on a patient with a known or suspected infection spread wholly or partly by the droplet or airborne route

Recommendations - Post-operative and discharge (all prevalence levels)

1. Post-operative monitoring and ongoing care

Normal post-operative care should be undertaken according to local policy. The recommendations regarding hand washing, social distancing and wearing face coverings, as described above, should be followed and signs to reinforce the messaging around social distancing and wearing of masks are recommended. The need for these measures between healthcare workers and resident carers, healthcare workers and healthcare workers and resident carers with other resident carers should be made clear.

If requiring admission, children with a household COVID-19 contact need to remain isolated until 10-14 days after the first household case was diagnosed (as per local infection control guidance).

Recommendations

- Consistent messaging regarding hand washing, social distancing and face coverings should be maintained throughout the hospital to reinforce that these infection prevention and control measures are the most effective way of reducing the transmission of COVID-19.
- Normal post-operative observations and care pathways should be followed.

2. Discharge from day surgery and inpatient beds

Discharge after day case surgery should focus on safe recovery with effective discharge processes in place including early preparation of take-home medications, discharge letters and follow-up arrangements to avoid delays in discharge. Resident carers should be given clear safety netting advice about return with contact numbers of the ward to feel secure in early discharge. A focus on safe, rapid discharge will enable fewer patients and resident carers to remain in a day surgery ward at any one time, will allow more effective social distancing and will enable smooth patient flow for effective use of theatre lists.

Isolation after discharge from hospital could have two utilities. The first is to reduce the risk of a child who has just undergone surgery contracting COVID-19. The second is to reduce the community transmission of COVID-19 after children and resident carers have stayed in hospital where the prevalence of COVID-19 is higher than in the community. When community levels of COVID-19 are low, the risk of contracting the infection is low and the risk of transmission can be effectively reduced by following the guidance around hand washing, distancing and face coverings. When community levels are higher it is likely that local restrictions will be enforced to keep people at

home, effectively isolating children who have undergone surgery. For this reason, the group did not feel it necessary for children and resident-carer to self-isolate after discharge from hospital; instead they should be advised to follow current government rules about socialising, social distancing and wearing face coverings in public places. Written or online information which can be given to families at discharge would support these messages.

Families should be asked to monitor for symptoms of COVID-19 after discharge from hospital. If they develop symptoms they should access local testing and follow national guidance about household isolation.

Recommendations

- Rapid discharge after day case procedures should be supported and encouraged.
- Children and resident-carer do not need to self-isolate after discharge from hospital unless they have been diagnosed with COVID-19.

3. Follow-up

Whenever possible children should be followed-up by teleconference or telephone consultation to avoid the need to keep returning to hospital and the time away from work and school that travel requires, to avoid the costs of travel and to reduce the risk of exposure to COVID-19. Virtual consultations should occur in areas which ensure privacy and confidentiality for the children and families. In the experience of clinicians in the meeting virtual consultations should also not be expected to give high-quality images which enable wound review.

Children and families who do need to attend outpatient clinic, for example for wound review or examination, or Accident and Emergency for a complication, should be advised to wear face coverings and to socially distance, as described above.

Recommendation

- Virtual or telephone clinics should be supported by the trust to improve access to healthcare for all patients and to reduce the number of children who need to return to the hospital for outpatient review.

4. Monitoring

Having active surveillance systems in place will allow the safety of these recommendations to be evaluated and amendments made in a timely fashion. Staff may also feel more confidence in adopting these recommendations in the knowledge that outcomes are being actively monitored.

Recommendations

- Surveillance of nosocomial outbreaks and monitoring of outcomes of children after surgery should be undertaken by each trust.

- National monitoring of elective surgery activity including the rates of cancellations, the incidence of COVID-19 before and after elective surgery and the clinical course of children undergoing elective procedures with COVID-19 should be undertaken

Methodology for developing recommendations

Key stakeholders representing national groups (NHS England, Public Health England, Royal College of Paediatrics and Child Health, Royal College of Anaesthetists, Association of Paediatric Anaesthetists of Great Britain and Ireland, British Association of Paediatric Surgeons, Association of Perioperative Practice), professional groups (paediatric infectious diseases, infection control, paediatric surgery, paediatric anaesthesia, theatre staff, virology and epidemiology) and parents was identified to support the development of these recommendations. The devolved nations were represented.

The group met virtually on 25 June 2020 and again on 2 July. The current evidence about COVID-19 in children regarding incidence, prevalence, co-morbidities and surgical outcomes was initially reviewed. The current prevalence data were discussed and the modelling tools used to determine the risk of contracting COVID-19 in the community and hospital were described. Each step in the elective surgical pathway (Table 9) were discussed systematically by the group prior to developing consensus recommendations and actions.

Following updated PHE guidance on the 20th August, 2020 the guidance was updated to reflect these changes but continues to use regional prevalence to stratify the pre- and peri-operative procedures to reduce COVID-19 transmission to HCWs and to protect patients.

The steering group met again on 11 January 2021 to review whether the current guidance required amending in light of the increasing prevalence due to the newly circulating strain of SARS-CoV-2. Following a marked reduction in SARS-CoV-2 prevalence, the steering group met again on 2 March 2021 to review the guidance and consider options around pre-operative testing.

The group met in September 2021 and considered updates around the timing of elective surgery in children following mild/asymptomatic infection. In October 2021 further updates were discussed to respond to updates to NHSEI respiratory infection guidance.

Table 7. Children's elective surgical pathway

Pre-admission	**Pre-op**	**Peri-op**	**Post-op**

• Pre-assessment
  ○ Information for parents / expectations
	• Number of parents/carers
	• Place of admission
	  ○ Role of hot and cold sites (if no
		• Transfer to theatre
		  ○ Who accompanying and PPE required
		  ○ Use of reception area outside theatre
			• Post-op considerations (inc post-op obs, PPE (day surgery and admissions)

Pre-admission	Pre-op	Peri-op	Post-op

• Isolation pre-op
  ○ How long
  ○ Who needs to isolate
• COVID screening pre-op
  ○ Virological including who gets screened and how (home testing /pre-admission clinic, local testing, how many tests? nature of test)
  ○ Clinical screening
• Role of pre-assessment to facilitate testing
	cold sites, is there any rationale for pre-op screening?)
	  ○ Day area versus inpatient area
	  ○ Cubicle versus bay
	• PPE required
	  ○ For parent /carer
	  ○ For child (and lower age limit)
	  ○ When should PPE be worn
	  ○ 1 metre versus 2 metres
		whilst 'waiting'
		• Anaesthetic room
		  ○ PPE requirements
		  ○ Ventilation / air change aspects
		  ○ Parent/carer aspects
		  ○ Induction of anaesthesia
		  ○ Transfer from anaesthetic room to operating room
		• Theatre
		  ○ PPE requirements for non-airway staff
		  ○ What constitutes an AGP
		  ○ Extubation
		  ○ Cleaning
		  ○ Timing between cases / air changes
		• Recovery
		  ○ PPE requirements
			• Further considerations for prolonged inpatient admissions inc PPE for parents and repeated testing
			• Discharge from day surgery and from ward - any safety netting re COVID?
			• Isolation following discharge
			• Any other post discharge considerations?

Pre-admission	Pre-op	Peri-op	Post-op

	• Screening on admission
	  ○ Review by anaesthetist
		○ Removing supraglottic airways or Guedel airway
		  ▪ Repatriation to ward	

The draft recommendations and **information resources (parents/carers and young people)** were then reviewed by the Royal College of Paediatrics and Child Health, Royal College of Anaesthetists, Association of Paediatric Anaesthetists of Great Britain and Ireland, Royal College of Surgeons of England, British Association of Paediatric Surgeons and the Association of Perioperative Practice and endorsed by each of these organisation on 14 July 2020.

Steering group

- Chair: Sanjay Patel, Paediatric ID, Southampton
- Alasdair Munro, Paediatric Registrar, Southampton
- Chris Gildersleve, Paediatric Anaesthetist, President APAGBI
- Clare Johns, Parent Advisor
- Conor Doherty, Paediatric ID, Glasgow
- Daniel Eve, NHSE National Programme of Care Manager, CYP
- Declan Bays, Senior Mathematical Modeller, Public Health England
- Emma Andrews, Network Manager, Yorkshire & Humber Paediatric Critical Care Network
- Emma Bennet, Yorkshire and Humber ODN Children's Surgery Manager
- Gaynor Evans, IPC Cell, NHSE
- Hannah Williams, Senior Mathematical Modeller, Public Health England
- Helen Dunn, Lead Nurse for Infection Prevention Control, GOSH
- Hermione Lyall, Paediatric ID, Imperial College, London
- Melissa Ashe, Head of Policy, RCPCH
- Neil Herbert, Theatre Manager, Alder Hey Children's Hospital
- Nick Gent, Senior Medical Officer, Public Health England
- Nigel Hall, Paediatric Surgeon, Southampton

- Oliver Gee, Paediatric Surgeon, Birmingham Children's Hospital and Chair, Specialised surgery in children CRG, NHSE
- Paul Randell, Virologist, Imperial College, London
- Rachel Harwood, Paediatric Surgery Registrar, Alder Hey Children's Hospital
- Richard Stewart, Paediatric Surgeon, President of BAPS
- Russell Perkins, Paediatric Anaesthetist and Paediatric Lead for RCOA
- Sean O'Riordan, Paediatric ID, Leeds
- Sharon Christie, Paediatric ID, Belfast
- Simon Clark, Neonatologist; Vice President for Policy, RCPCH
- Simon Courtman. Paediatric Anaesthetist, SW Clinical Lead for Paediatric Surgery ODN and Secretary, APAGBI
- Simon Kenny, Paediatric Surgeon and National Clinical Director CYP, NHS England
- Tina Barnes, Parent Advisor
- Tracey Williams, President, Association for Perioperative Practice

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National guidance for the recovery of elective surgery in children

Appendix 1: Comparison of LFD and PCR for protective effect prior to elective surgery

May 2021

Background

Under current guidelines, tests for SARS-CoV-2 are administered prior to elective paediatric surgery. PCR tests are perceived to be the preferred option due to higher confidence in test performance, but they often require the swab to be taken 24-72 hours prior to the procedure. LFD tests offer the benefit of a quick return, and could be administered up to 30 minutes before.

This piece compares the PCR and LFD pathways, incorporating the different test sensitivities and the processing time required for the test result.

Assumptions

- Prevalence is deemed to be individuals who are infected; either incubating (and not yet test detectable) or infectious (and test detectable).
- Individuals who are not infectious but may still be test detectable are not considered.
- There is no consideration for new infections after the time of test (equivalent to assuming isolation occurs between test and procedure).
- A false negative occurs when a negative test result is returned when a perfect test would return a positive result. In this piece, a positive result is only possible during the infectious period.
- False positives (test specificity) are not included. Based on a test specificity of 99.7%, for prevalence of 1% and 0.5%, we would expect in the region of 300 false positive results per 100,000 tests.

Method

- Simulate 10000 infected populations using the parameters:
    - time of infection: uniform distribution over 60 days
    - symptom onset: lognormal, sigma=0.650, mean=1.570 (Bi et al)
    - pre-symptomatic infectious period: uniform distribution up to 1 day before symptom onset
    - infectious period: gamma, shape=2, scale=4.3/2 (Cambridge RTM estimates 21/01/2021)

    - symptomatic proportion: 40%

- For each population, at day 60 remove all recovered individuals so only infected (incubating or infectious) individuals are remaining, and calculate the number of non-infected individuals required to generate the required population prevalence.
- Apply test at day 60 and calculate:
    - false negative/failed test (individuals within infectious period who would return a positive with a perfect test, but return a negative result)
    - remaining individuals who will develop infectiousness after point of test (having removed false negatives)
    - number of individuals who will become symptomatic between test and procedure (removed false negatives)
    - average time to onset of infectiousness of the infected population (removing false negatives and individuals who develop symptoms between test and procedure)

Results will slightly vary from the previous report due to the stochastic implementation. Figures presented here were produced on 09/05/2021. Values presented have been averaged over 10000 simulations and rounded which may result in slight deviations from expected values.

Results

Prevalence (%)	Expected infections	Symptomatic at admission	Test	Sensitivity	False negative test	Positive test	Develop infectiousness
0.1	100	15	LFD	0.6	12	17	56
		15		0.8	5	24	56
		15	PCR	0.9	2	26	56
0.5	500	75	LFD	0.6	57	86	282
		75		0.8	29	115	282
		75	PCR	0.9	13	130	282

Table 1: Number of patients, per 100,000, that would return a false negative test, a true positive test, and develop infectiousness after the test. False negatives are patients who would return a positive result with a perfect test (infectious at time of test). False negatives are not included in the number who go on to develop infectiousness. Estimated sensitivity values for LFD of 0.6 for unsupervised testing and 0.8 if test undertaken by a professional in a care setting.

The false negative results are not dependent on the time between test and procedure.

Prevalence (%)	Test	Time between test and procedure (hours)	Develop infectiousness between test and procedure	Develop symptoms between test and procedure
0.1	LFD	0.5	0	0
		1	0	0
		2	1	0
		3	1	0
		6	3	0
	PCR	12	6	1
		24	12	3
		36	16	4
		48	21	6
		72	29	9
0.5	LFD	0.5	0	0
		1	1	0
		2	4	0
		3	6	0
		6	13	1
	PCR	12	30	4
		24	59	13
		36	82	22
		48	105	30
		72	143	44

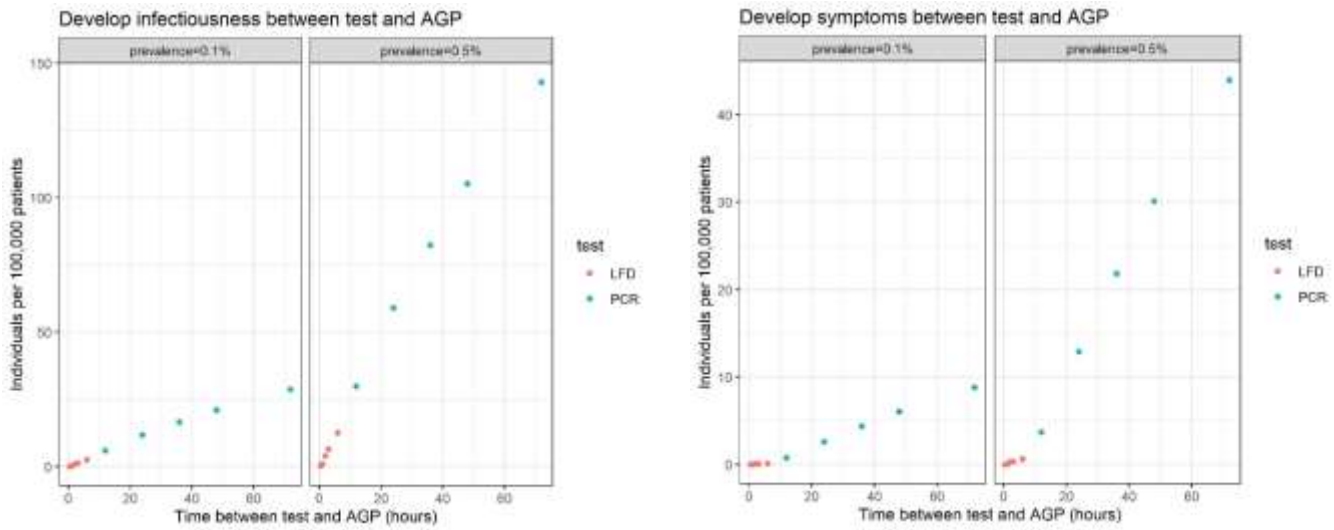

Table 2: Number of patients, per 100,000, that would develop symptoms between the test and procedure, and therefore be excluded from the procedure (excludes false negatives).

As the time between the test and procedure increases, the number of patients that are filtered out of the surgery pathway increases because there is a longer window of opportunity for the individuals who will have a symptomatic infection to develop their symptoms. This model does not account for the increase in risk of new infections within the time between the test and procedure. This is independent of test sensitivity because false negative test patients have been removed.

These results are not dependent on test sensitivity because false negative test patients have been removed, or population prevalence because only infected individuals are considered.

Prevalence (%)	Test	Sensitivity	Time between test and procedure (hours)	Unidentified infections at time of procedure (per 100,000 patients)
0.1	LFD	0.6	0.5	12
			1	12
			2	13
			3	13
			6	14
		0.8	0.5	5
			1	5
			2	5
			3	6
			6	7
	PCR	0.9	12	8
			24	12
			36	15
			48	17
			72	22
0.5	LFD	0.6	0.5	57
			1	58
			2	61
			3	63
			6	69
		0.8	0.5	29
			1	30
			2	32
			3	35
			6	41
	PCR	0.9	12	39
			24	59
			36	73
			48	88
			72	112

Table 3: Number of patients, per 100,000, that would pose a risk during the procedure. This value captures those who would return a false positive test, and the number of asymptomatic infections that would develop between test and the start of procedure. Those who develop symptoms have been excluded to mirror IPC practice. Estimated sensitivity values for LFD of 0.6 for unsupervised testing and 0.8 if test undertaken by a professional in a care setting.

The infectiousness of the individuals who return a false negative is not considered since they would have been excluded at point of test if they had returned a positive test.

Appendix authors: HW/NG/RH/SP (from Steering Group)

Information for young people about your planned admission to hospital

Lots of planned operations and investigations have not been able to go ahead recently because of COVID-19. This may have meant that you have been waiting for your operation or investigation much longer than you usually would have been. You may need your operation to help you feel better or to prevent your condition getting worse.

It is important that you have your operation or investigation. Now that the numbers of people with COVID-19 is much lower, we feel that is **safe enough** to go ahead with your operation. However, it is equally **important that you and your parent/carer feel it is safe to come to hospital**. For this reason, a number of measures have been put in place to minimise the risk of transmission of COVID-19 in hospital.

During your hospital stay, all staff will follow special measures including wearing masks. Sometimes they may wear visors, gloves, hoods or surgical gowns. These are to help to protect all visitors and staff.

We recommend preparing yourself for the doctors, nurses and other people working in the hospital wearing masks so that you are not surprised when you come to hospital.

Before your hospital visit

You will be screened for COVID-19 in two ways:

1. **Pre-assessment** – a few days before admission **and** on the day of admission: you and your parent or carer will be asked questions about whether any of you have symptoms of COVID-19, or any other illness. If you or a member of your family have symptoms of COVID-19, or any other illness, in the days leading up to your operation, your operation may be postponed.

2. **COVID-19 swab** - all children and young people undergoing planned surgery will have a nose and throat swab to look for COVID-19 at least once in the few days leading up to their operation. If you are found to be positive, your operation may be postponed, unless it is urgently and you are not unwell. If your swab is negative in some situations a second swab may be needed closer to the time of the procedure.

Pre-operative isolation – you and your family will not routinely be asked to isolate before your operation, unless told otherwise by the hospital.

The adults you know are more likely than you to be infected with COVID-19. For this reason, strict measures have been put in place to reduce the spread of infection between adults in hospitals. When you are in hospital, your parent/carer will be expected to:

- Wear a face covering when away from your bedside
- Observing social distancing
- Undertake regular hand washing, including when entering and leaving wards.

You will not be expected to wear a face covering but you are welcome to do so if you want to.

Who can stay with you during your operation?

- **When you are in and out of hospital in one day (day case):**

  One parent or carer will be able to stay in hospital with you the whole time. They can be there until you go to sleep and will be there very soon after you wake up from your operation.

- **When you need to stay in hospital after your operation:**

  Only one parent/carer can stay with you at any one time but the person that is staying can change (for example your mum during the day and your dad at night). If your parents/carers live in two different households, then only one will be allowed to stay with you unless your admission is prolonged. Only in exceptional circumstances will two people (for example your mum AND dad) be allowed to stay with you at the same time.

  If you develop symptoms of COVID-19 at any point (high temperature, new continuous cough or loss or change to your sense of smell or taste), you will be moved to a single room, if you're not in one already and have a nose/throat swab taken for COVID-19.

  You and your family will not be expected to isolate at home after your operation, although complying with social distancing recommendations will be expected.

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RCoA Royal College of Anaesthetists

RCPCH Royal College of Paediatrics and Child Health *Leading the way in Children's Health*

RCPCH Published July 2020. The Royal College of Paediatrics and Child Health is a registered charity in England and Wales (1057744)and in Scotland (SCO38299).

Information for parents and carers about children's planned admissions for surgery and investigation under general anaesthesia

The past few months have proven extremely challenging for the NHS and many changes have been required to allow care to be safely delivered, meaning that almost no planned surgery or investigation under general anaesthesia have been carried out over this period. This has resulted in many children waiting for surgery, or tests, which they may need to help them feel better or to prevent their condition getting worse.

Fortunately, lock-down has significantly reduced the number of new cases of COVID. We now feel that it is **safe enough** to increase the number of children who can have planned surgery.

It is important that your child has their operation. However, it is equally **important that you feel it is safe to bring your child to hospital**. For this reason, a number of measures have been put in place to minimise the risk of transmission of COVID-19 in hospital.

During your child's hospital stay, all staff will follow infection control measures, including wearing masks. Sometimes they may wear visors, gloves, hoods or surgical gowns. These are to help to protect all visitors and staff.

We recommend preparing your child for the doctors, nurses and other people working in the hospital wearing masks so that they are not surprised when they attend.

Before your child's hospital visit

All children undergoing planned surgery will be screened for COVID-19 in two ways:

1. **Pre-assessment** – a few days before admission **and** on the day of admission: you will be asked questions about symptoms of COVID-19, or any other significant illness, in your child and all household members. If a child or a member of their house hold has symptoms of COVID-19, or other significant illnesses, in the days leading up to their operation, their operation may be postponed.

2. **COVID-19 swab** - all children undergoing planned surgery will have a nose and throat swab to look for COVID-19 at least once in the few days leading up to their operation. If they are found to be positive, their operation may be postponed, depending on how urgently it is needed. In some circumstances if the first swab is negative, a second swab may be taken closer to the time of the procedure.

Pre-operative isolation – children and families will not routinely be asked to isolate before their operation, unless told otherwise by the hospital.

Parents/carers are more likely than their child to be infected with COVID-19. For this reason, strict measures have been put in place to reduce the spread of infection between adults. When your child is in hospital, parents/carers will be expected to:

- Wear a face covering when away from your child's bedside
- Observing social distancing
- Undertake regular hand washing, including when entering and leaving wards.

Your child will not be expected to wear a face covering but they are welcome to do so if they wish.

Information for resident carers (parents or carers staying with children during their stay in hospital):

Day-case procedures (when your child is in and out of hospital in one day):

One resident carer will be able to accompany their child into hospital for their operation.

Inpatient procedures (when your child needs to stay in hospital after your operation):

Local hospital policy should be followed. Only one resident carer will be able to accompany their child into hospital for their operation. Some hospitals will allow you to alternate with another carer from the same household. If parents/carers are from two different households, then only one will be allowed to stay with the child unless the admission is prolonged. Only in exceptional circumstances will two resident carers be allowed at the same time..

You will be able to accompany your child to the operating theatre and will be able to stay with them until they have gone to sleep for their operation.

Strict measures have been put in place to minimise the number of people using shared ward facilities at the same time (such as kitchens).

If you develop symptoms of COVID-19 at any point (high temperature, new continuous cough or loss or change to your sense of smell or taste), you must immediately let a member of staff know and leave the hospital as soon as possible.

You and your family will not be expected to isolate after your child's operation, although complying with social distancing recommendations will be expected.

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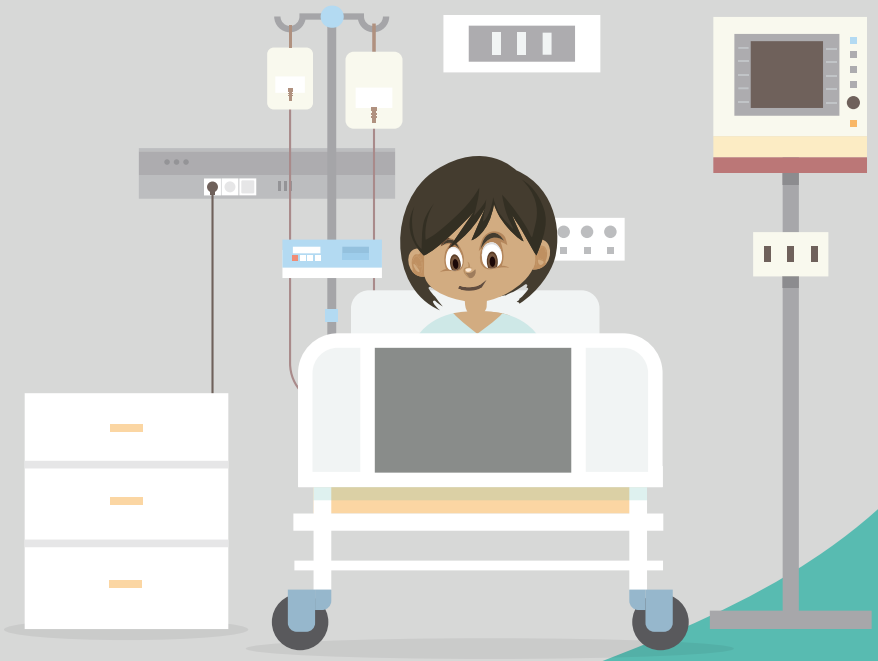
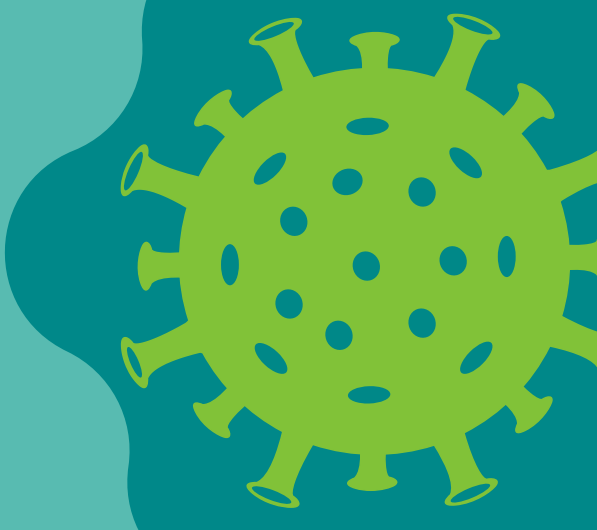
Centre for Perioperative Care

My operation and coronavirus

Sometimes, if you are poorly, you might need to come to hospital for an operation to make you better.

You might have been to hospitals for operations before or this might be your first time.

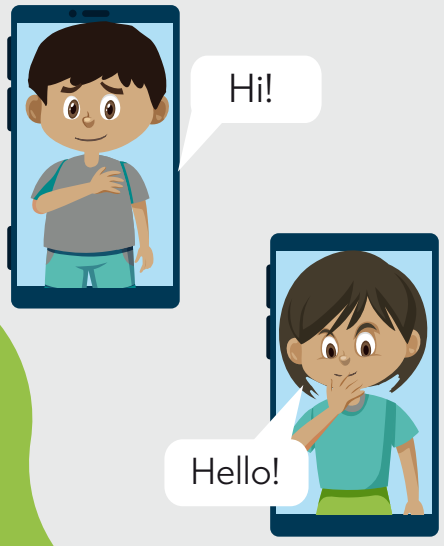




Things are a bit different in hospitals at the moment while the doctors and nurses try to keep everyone safe from a virus. Viruses (sometimes called germs or bugs) are things that can make people poorly. There is one particular virus they are worried about at the moment – it is called coronavirus, you've probably heard of it.

These are some of the things you can expect when you go to hospital:

One adult can come to hospital with you.
If you have a brother or sister they will have to stay at home, but you can speak to them on the phone.



Before you come to hospital you will need to have a swab. This is where a soft stick goes into your nose and mouth (throat) to check for the virus. It might feel a bit ticklish.

When you come to hospital the nurses, doctors and other people who work there might look a bit different. They might be wearing a mask over their face and gloves and an apron. Some of them might even be wearing goggles or a visor (face shield). This can look a bit strange, but it is just to try and stop the virus from making people poorly. You can talk to the doctors and nurses just like you would normally.

Your mum, dad or carer will also need to wear a mask when they're in the hospital (except when they're with you by your bed).

A very important thing for you to remember is to wash your hands with soap and water lots of times during the day. It is extra important to wash your hands after you use the toilet, if you sneeze or cough or before eating. This will help stop all germs, especially coronavirus.

Please ask your mum, dad or carer or the nurses and doctors if you want to know anything else.

You can find out more information about having an operation with an anaesthetic on the RCoA website at: bit.ly/RCoAPICPC.

CPOC is a partnership between:

RCoA Royal College of Anaesthetists
Royal College of Surgeons
Royal College of Physicians
Royal College of Nursing
RCGP Royal College of General Practitioners
Association of Anaesthetists
RCPCH Royal College of Paediatrics and Child Health

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