

Ethics framework for use in acute paediatric settings during COVID-19 pandemic

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This ethical framework is a modification of guidance developed for treatment decisions relating to adults. The principles relating to decisions for children in the setting of the pandemic are the same as those for adults. The framework emphasises that decisions should be ethically consistent and apply to patients both with COVID-related and non-COVID related illness.

The focus of the ethical framework provides guidance for a situation where there is extremely high demand and limited critical care capacity. However, it is important to note that at the time of writing (14 April 2020) there is enough paediatric critical care capacity across the UK. At the present time decisions about children in need of critical care should reflect the same fundamental ethical considerations as apply in normal times. Those decisions should be focused on the best interests of the child, and actively involve parents in decision-making.

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Introduction

This document is in two parts. The first part describes the ethical framework behind triage and critical care treatment decisions. It covers the approach to decision-making, beginning in the emergency department, progressing through to critical care. The second part addresses some questions that clinicians may ask about how these difficult decisions should be made in a practical setting.

This ethical framework has been developed for a pandemic when resources outstrip demand. It supplements the fundamental ethical principle of focus on the best interests of the child, with acknowledgement of the vital importance (at a time of extraordinary pressure on the health service) of saving the most lives. It also explicitly includes a fairness principle incorporating capacity management across geography and time.

Although this document is primarily aimed at acute paediatrics it is transferable to any paediatric setting including neonatal medicine.

1. Ethical framework

- a. **The starting point for ethical decisions for both adult and paediatric medicine is the responsibility of clinicians to offer appropriate medical treatment.** Determination of the appropriateness of a therapy will be influenced by considerations of benefit to the patient (beneficence) and benefits to other patients (distributive justice).
- b. Outside the setting of a pandemic, **consideration of patients' autonomy and best interests are crucial.** For adults who have capacity, their wishes about treatment should be sought, and treatment refusal should be respected. This is also relevant for some older children and adolescents.¹ Clinicians should aim to provide medical treatment that will benefit patients (and avoid harm). Treatment should not be provided that is believed to be contrary to the patient's best interests.
- c. In the setting of the pandemic, some treatments may be limited in availability because of the large numbers of patients simultaneously requiring medical care. It is important to note that **the availability of treatment may change over the course of the pandemic**, and some treatments may be more limited than others. This is likely to apply particularly to forms of respiratory support (eg mechanical ventilation, non-invasive ventilation, continuous positive airway pressure, high flow nasal oxygen). Those coordinating medical treatment should assess and classify the current availability of treatment (see below). Where there is a shortage of treatment, decisions to provide respiratory support must take account of distributive justice and will require prioritisation.
- d. Prioritisation requires identification of clinically relevant facts about individual patients and their likelihood of benefiting from available resources. **Higher priority should be given to patients based on those who have the highest 'capacity to benefit quickly'**.² This means that treatment may be directed to patients who have a higher chance of survival, and lower predicted duration of requiring treatment.
- e. **Decisions should be individualised** – this means that decisions must take into account patient's individual characteristics, preferences, and prognosis.
- f. **Decision-making should be ethically consistent.** This means that different decision-makers should reach similar decisions about treatment for the same patient. It also

means that patients who have similar relevant characteristics (eg prognosis and patient wishes and availability of treatment) should be treated similarly.

- g. **During the pandemic treatment prioritisation may be required for patients with both COVID-related and non-COVID related illness.** The presence of COVID-associated disease in itself should not give a patient either higher or lower priority for treatment.³
- h. **Because of limited supply of treatment it will be important to consider both decisions to commence treatment and to continue treatment.** Prolonged duration of treatment for one patient may mean that other patients are unable to be treated. Withholding of treatment and withdrawing of treatment are regarded as ethically and legally equivalent.

2. Availability/scarcity of treatment

- Over the course of the pandemic, the availability of different treatments will change. Some treatments may be limited, while others will be more available. This means that it may be appropriate to offer some treatments and not others.
- Those coordinating specialised treatment in the hospital should regularly review both the demand for treatment and its availability.
- The following classification system may be helpful. It will overlap/correspond with national resource availability (Operational Pressure Escalation Levels) as indicated below.

Available⁴ (OPEL 1/2)	Treatment currently available. Supply > Demand. Decisions about treatment will be based on patients' wishes and best interests.
Limited (OPEL 3)	Treatment currently available but in limited supply. Capacity may soon be exceeded if high demand. Decisions about treatment will be influenced by the need to prioritise.
Severely limited/capacity (OPEL 4)	Treatment at capacity. Demand exceeds supply of treatment. Prioritisation is essential. Treatment available only to those patients with highest capacity to benefit quickly.

- Where treatments are limited or severely limited, prioritisation is ethically required. However, this should also trigger hospital administrators to take all appropriate steps to increase capacity and availability of treatment.
- Where treatment is limited locally, but nationally the health system has not reached the corresponding OPEL level, that should usually trigger patient transfer rather than limitation of treatment.

3. Decision-making in the Emergency department/Admission to hospital

a. **Provide immediate resuscitation/stabilisation where required.**

If patients arrive critically ill and require resuscitation or stabilisation this should proceed immediately (as is standard practice). Treatment should not be delayed in order to attempt to prioritise. However, where possible, there should be a simultaneous attempt to gather information. If it becomes apparent during or following resuscitation that there is a low chance of a successful outcome, or that admission to intensive care would be inappropriate (because of limited resources), treatment should then change focus to providing palliative care.

b. **Assess medically for cause of presentation and most appropriate clinical treatment.**

This should occur (as is standard practice) for patients, whether they are presenting with a respiratory illness and possible COVID-19, or with other illness. In addition, assess severity of acute illness and possible need for organ support/intensive care.⁵

c. **Assess for presence of prognostic factors.**

Explicitly consider factors that may affect the capacity of the patient to benefit quickly from hospital treatment. Assess for the presence and severity of co-morbidities that may influence chance of survival or duration of therapy required.⁶

d. **Determine parents or patient's understanding about illness and values relating to treatment.**

Where possible sensitively explore the parent's views and priorities – particularly around the use of more intensive therapies. It may be important to enquire about the views of the young person or older children/adolescents with chronic severe illness. For children with life-limiting illness it is helpful to know whether there have been previous advance care planning discussions.

e. **Review current availability of relevant treatment.**

Assess latest information about the availability of treatments that could be beneficial. (See section 2).

f. **For all children admitted with serious illness consider and document the appropriateness of escalation of treatment given both (see Annex 1).**

1. Current clinical needs, and
2. Future clinical needs in the event of deterioration

g. **Any treatment that is limited in availability should be commenced as a *time-limited* trial.**

At the time of commencing treatment, communicate this to the parents and (if appropriate) the young person. Explain that treatment is being provided for a limited period, and that if there is insufficient response to treatment that it will stop. Document planned time for review of treatment.

4. Triage – intensive care/respiratory support

It will be essential for decisions about provision of limited resources to be made centrally. This will particularly apply to respiratory support, but other treatments during the pandemic may also require prioritisation. Triage decisions should be applied consistently. They apply to patients with COVID-associated and non-COVID associated illness.

Triage decision-maker(s)

- These decisions should ideally be made by senior clinicians who are coordinating the provision of the clinical service, and who are aware of both current availability of treatment and demand for treatment. Ideally they should be separate from those providing frontline clinical care.
- They should have access to colleagues for advice/support in difficult cases, and, ideally, access to urgent clinical ethics support if required.

Assessment of triage factors

- Triage decision-makers should consider and document the following key elements, and aim to classify referred patients based on the following **triage factors**:
 - **1. Urgency**
 - High – high risk (eg >80%) of dying or of suffering serious harm if patient does not receive treatment in the near future
 - Moderate – moderate risk (eg 30-70%) of dying or of suffering serious harm if patient does not receive treatment in the near future
 - Low – low risk (eg <20%) of dying or of suffering serious harm if patient does not receive treatment in the near future
 - **2. Survival**
 - High – patient has a high chance (eg. >80%) of survival if provided with treatment
 - Moderate – patient has a moderate chance (eg 30-70%) of survival if provided with treatment
 - Low – patient has a low chance (eg <20%) of survival if provided with treatment
 - **3. Likelihood of rapid benefit⁷**
 - High – patient has a high probability (eg >80%) of requiring only a short duration of support (ie intensive care admission) if provided with treatment
 - Moderate – patient has a moderate probability (eg 30-70%) of requiring only short duration support if provided with treatment
 - Low – patient has a low probability (eg <20%) of requiring short duration of support if provided with treatment (ie prolonged duration is likely)

Triage priority

Highest priority

- Patients who have a high urgency for treatment, high chance of survival and low likelihood of requiring prolonged support should receive first priority for treatment
- Patients who fall into a moderate priority category in one triage factor (eg survival chance), but are in a 'high priority' category for others (eg urgency/requirement for prolonged treatment) may also be high priority

Moderate priority

- Patients who fall in a moderate risk for two or more triage factors would have a moderate priority for treatment
- Patients with one 'low risk' triage factor may also be classified as a moderate priority for treatment

Lower priority

- Patients who have a low urgency for treatment, low chance of survival and/or low probability of needing short durations of treatment would fall into a lower priority for treatment

Decision

- The decision about provision of treatment for an individual patient will depend on the current availability of treatment, as well as the level of demand and the priority of other patients currently presenting for treatment.
- Any decision to provide treatment will be specific to the current circumstances.
- As a general principle, if treatment is limited, treatment is likely to be prioritised to patients with moderate and highest priority (ie lower priority patients will not receive treatment).
- If treatment is severely limited, treatment is likely to be available only to those patients with highest priority.

Note: If all "highest priority" patients cannot receive treatment, triage decision-makers may need to consider additional factors relevant to the benefit of intensive care. In such circumstances, all possible efforts should be made to increase availability of treatment, including temporary provision of intensive care in areas where this is not usually provided (eg operating theatre/recovery). It would also include active review of the appropriateness of continuing treatment for previously admitted patients.

Documentation

- Triage decision-makers should document clearly the following:

- Time of referral
- Current availability of treatment
- Triage factors – and the basis for classification
- Priority for treatment
- Decision about provision of treatment
- Consultation or advice obtained in reaching a treatment decision (eg discussion with colleagues/clinical ethics, and the presence of agreement/disagreement).
- For cases of uncertainty/disagreement or difficult decisions see section below.

5. Decision making about ongoing treatment

- As noted above, all treatment that is limited in availability should be commenced as a time-limited trial. For example, this would potentially apply to high-flow oxygen, non-invasive ventilation, mechanical ventilation.
- Review at regular time-points after admission.
- Consider:
 - Physiological evidence of response to therapy
 - Evidence of deterioration – eg additional organ failure
 - Side effects/tolerability of treatment
 - Patient wishes
 - Any additional evidence about the patient's prior wishes or underlying illness.
- If the patient has deteriorated or not improved, consider the appropriateness of escalation of therapy (eg intubation or additional organ support).
- Where escalation is not appropriate, or the patient's prognosis now indicates a low chance of survival or a high chance of very long-duration of mechanical ventilation consider withdrawal of treatment. Depending on the context (and the parent's wishes) it may be appropriate to:
 - Provide palliative/end of life care (eg palliative extubation)
 - Commence progressive timely weaning of support with clear plan not to escalate treatment and to shift to palliative care if patient unable to tolerate
 - Move the patient to a non-intensive care environment.
- If patient has improved with treatment, discuss this with patient/parents and identify a further time point to review continued treatment.

6. Difficult/contested decisions

A. Uncertainty

- Where there is uncertainty about the appropriateness of escalating/continuing treatment discuss with responsible consultant and/or the intensive care unit.
- In situations of rapid deterioration, without a clear prior decision or time to consult, provide urgently required treatment to stabilise while seeking further advice/information.

Disagreement

- Where there is disagreement between clinicians and the patient or family seek further advice. A sequential approach might escalate through the following stages:
 - Responsible consultant (emergency department or ward)

- Consultant responsible for specialist care (eg NIV/intensive care)
- Intensive care triage – senior consultant(s) available to discuss and support decision-making
- Urgent clinical ethics advice.
- Where there is a unanimous clinical decision that escalation or continuation of treatment would not be appropriate in the circumstances, this should be sensitively but clearly explained to the patient/family.
- Where there remains disagreement between clinicians about the appropriateness of treatment consider commencing treatment/stabilisation to allow further discussion.

Note: Decisions about provision of treatment in the context of limited/severely limited resources are **not** best interests' decisions.⁸ There is no necessary ethical requirement for patients or parents to agree to decisions to withhold or withdraw treatment. However, families may challenge or appeal decisions. Should they do so, it is important that there is a clear process for rapidly escalating decisions to senior clinicians within the hospital/intensive care unit, ideally with clinical ethics support. The process, justification for decisions, and the names of those consulted about the decision should be clearly documented.

Annex 1 - Is intensive care admission appropriate?

See BMA guidance⁹.

You can also [view this chart online](#).

Frequently asked questions

This is a supplement to the ethics guidance and follows the FAQs developed by the British Medical Association Ethics Committee March 2020.⁹

Children mostly have mild illness from COVID-19. How will children's medical care be affected by this pandemic?

- Available information suggests that most children who have the COVID-19 infection have a mild illness.¹⁰ It appears that the greatest burden of this pandemic will fall on adults, particularly older adults and those with underlying illness.
- However, there may be some children who become seriously unwell with this infection, and it appears that a small proportion of affected children may die. It is unclear whether there are particular risk factors for serious illness in children, though children with severe chronic underlying illness or disability are likely to be most vulnerable.
- Children are also likely to be affected indirectly by this pandemic. That will be because of the substantial impact of the pandemic on the health care system affecting the availability of medical care.
- Children will also be negatively affected by the considerable changes to their daily lives brought about by the pandemic, including effects on education, negative effects on children in vulnerable home environments, and widespread anxiety triggered by social disruption and fear of illness or death in family members.

BMA guidance indicates that in the setting of the pandemic it may be ethical and lawful to prioritise some patients over others. Does this also apply to children?

- The extraordinary surge in the numbers of critically ill patients will place considerable strain on the health care system. If the numbers of patients needing medical treatment, exceed the resources available that will require clinicians to make difficult decisions about which patients to treat.
- Available guidance¹¹ indicates that the need for prioritisation will potentially apply to all patients requiring scarce treatment. That should include both patients with illness relating to COVID-19 and patients with other illnesses. It will include both adults and children. It is likely that during the pandemic paediatric critical care beds will be relocated centrally and possibly total numbers reduced creating serious pressures on access. While clinicians should always seek to act in children's best interests, if paediatric critical care beds are critically limited, clinicians will inevitably need to prioritise treatment.
- As noted in BMA guidance, it would be both lawful and ethical to withhold potentially life-saving treatment from a patient (including a child) where another current or anticipated patient has a higher priority for the available treatment.¹²

Are the ethical principles relating to prioritisation any different for children?

- BMA guidance indicates that it would be appropriate to prioritise treatment to those patients who have the highest 'capacity to benefit quickly'.¹³ This will mean giving priority to those patients who are unlikely to survive without treatment, but have a high chance of survival if treated, and are less likely to require a prolonged period of support. Such an approach would maximise the numbers of lives saved at a time of extreme pressure on the health system.
- The same ethical principles would apply to children. It is worth noting that **in many cases these criteria would yield a higher priority for paediatric patients requiring critical care** (for example because of high survival rate and short duration of stay). However, some individual paediatric patients with predicted high mortality and/or long duration of stay in intensive care may have a lower priority for treatment.

Is it appropriate for adults to be treated in paediatric intensive care during the pandemic?

- There is currently considerable effort being expended to expand adult critical care capacity in the anticipation of a large surge of critically ill adults with COVID-10 associated illness, exceeding by some way the normal capacity of the health system. Once all adult critical care beds have been used there will be pressure to expand to other areas in the hospital capable of providing critical care for example operating theatres, and paediatric intensive care.
- There may be some reduction in the occupancy of paediatric intensive care relating to wider changes in social behaviour during the pandemic (for example reduced viral illness (from other viruses) and reduced trauma) and to seasonal reductions in PICU admissions.
- Where there is available spare capacity in paediatric intensive care units it would be ethical and appropriate to consider using that resource for critically ill adults. Additionally, PIC beds may be centralised which itself may reduce access for some patients

- However, where there is reduced access for paediatric patients there needs to be careful attention to the potential harms from reducing available paediatric intensive care beds. The mortality rate for children admitted to paediatric intensive care is considerably lower than that for patients admitted to adult intensive care. This means that there is a risk that use of paediatric intensive care beds to facilitate treatment of adults (for example with COVID-19 pneumonitis) could mean that a child with a higher chance of survival is unable to be admitted to intensive care.

Is it ethical for children's medical care or wellbeing to be compromised during a pandemic?

- The overwhelming nature of this pandemic will affect children's medical care and wellbeing.
- Some compromises are simply unavoidable because of the enormous pressure placed on the health system at every level. All members of society, young and old, are having to make sacrifices in order to mitigate the harms of this virus and protect those vulnerable to it.
- Reductions in services (for example postponement of surgery, cancellation of clinics) will require changes in care that are not optimal and would not normally be considered. Children with complex neurodisabilities particularly rely on a coherent health service which is likely to be compromised during a pandemic. Paediatric health professionals should provide the best available care and treatment that they can to children in these difficult circumstances. They should be aware of possible risks or harms from changes in the delivery of medical care and seek to minimise or avoid these where-ever possible. They should advocate for children's health needs, and ensure that children are not forgotten, at a time when the health system will be focussing most attention on adults.

Is it ethical for neonatal care to be compromised during a pandemic?

- All healthcare systems are interlinked, and limited resources must be shared equitably. It is conceivable that as resources become critically limited, neonatal care will similarly need to utilise its resources based on a "capacity to benefit".
- Neonatal networks and new modes of therapy have led to an overall improvement and expectancy in a neurological free survival in premature infants. As in all circumstances, the appropriateness of providing treatment for individual newborn infants who are extremely unwell and have very low chance of survival would need to be considered seriously, and discussed with patients.
- Neonatal health professionals should continue to provide the best available care and treatment that they can to newborns and their parents in the difficult circumstances of a severe pandemic. They should be aware of possible risks or harms from changes in the delivery of medical care and seek to minimise or avoid these wherever possible. They should advocate for infants' health needs, and ensure these are met.

Will decisions to triage or prioritise treatment discriminate against children with disability or chronic health care needs?

- As in normal times, treatment decisions during the pandemic should focus on the best interests of the individual child, and their specific circumstances and needs. Health professionals should aim to provide for all children the best available medical treatment that is appropriate in the circumstances. (This may not be the same as treatment that

would be provided in other times.)

- If there is a need to make decisions to prioritise treatment in a setting where there is overwhelming demand, those decisions should be made taking into account an individual child's needs and their capacity to benefit from treatment. A child's clinical condition and background medical problems may be relevant to the benefit of treatment. No decisions to prioritise should be based on blanket rules that deny treatment to groups, or discriminate unjustly against children with pre-existing disability.
- 1. See 1. Larcher, V., F. Craig, K. Bhogal, D. Wilkinson, and J. Brierley. 2015. Making decisions to limit treatment in life-limiting and life-threatening conditions in children: a framework for practice. Arch Dis Child 100 (Suppl 2):s1-s23. doi:10.1136/archdischild-2014-306666
- 2. BMA - beta.bma.org.uk/media/2218/bma-covid-19-ethics-guidance-april-2020.pdf
- 3. RCP guidance - www.rcplondon.ac.uk/news/ethical-guidance-published-frontline-staff-dealing-pandemic
- 4. This classification system relates to specific treatments. For example, at a given point in time some therapies (e.g. non-invasive ventilation) may be available while others are more limited (e.g. mechanical ventilation)
- 5. In adults with COVID-19 this might include severity of ARDS (P/F ratio), presence/severity of organ failure using Sequential Organ Failure Assessment (www.mdcalc.com/covid-19#calcs)
- 6. In adults, NICE guidance recommends assessment of Frailty – using a Clinical Frailty Scale (static1.squarespace.com/static/5b5f1d4e9d5abb9699cb8a75/t/5dad90bb11ecf3bce47f27e/1571). It is unclear how this could be applied to paediatrics, or whether it would be predictive of outcome of critical care
- 7. Duration of support relates to the duration of acute support (eg mechanical ventilation in intensive care) since this may be in critically limited supply. It does not apply to maintenance support that patients are already receiving in the community (eg non-invasive ventilation at home). It is difficult to define prolonged treatment. For example, it appears that the average period of respiratory support in patients with COVID-19 is approximately two weeks. Since patients with COVID-19 may be the largest group of patients presenting for urgent treatment at this time, it may be appropriate to use this as a reference. Prolonged duration of treatment could therefore be defined as >2 weeks of respiratory support. This figure will change as more information comes available and resources change.
- 8. BMA - beta.bma.org.uk/media/2218/bma-covid-19-ethics-guidance-april-2020.pdf
- 9. a. b. beta.bma.org.uk/media/2218/bma-covid-19-ethics-guidance-april-2020.pdf
- 10. Dong Y, Mo X, Hu Y, et al. Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China. Pediatrics. 2020; doi: 10.1542/peds.2020-0702
- 11. BMA - beta.bma.org.uk/advice-and-support/covid-19/ethics/covid-19-faqs-about-ethics