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Decisions on resource allocation in emergency and intensive care in the context of the COVID-19 pandemic

Clinical and ethical recommendations

German Interdisciplinary Association for Intensive Care and Emergency Medicine (DIVI)
German Society for Interdisciplinary Emergency and Acute Medicine (DGINA)
German Society for Anaesthesiology and Intensive Care Medicine (DGAI)
German Society for Internal Intensive Care Medicine and Emergency Medicine (DGIIN)
German Society for Pulmonology and Respiratory Medicine (DGP)
German Society for Palliative Medicine (DGP) and
German Academy of Ethics in Medicine (AEM)¹

Version adopted by the professional associations on 25 March 2020

We are collecting comments, ideas and suggestions for improvements at:
<https://www.surveymonkey.de/r/DIVI-9QYTGND> Thank you.

Comments on this translation:

- This translation was provided by Prof. Doris Schroeder and Dr Kate Chatfield, UCLan UK. We assume correctness and completeness, but no liability will be accepted. Thanks to Prof. Ralf Stoecker for comments.
- This document contains the recommendations available on 2 April 2020.
[Version used.](#)

¹ The board of the German Academy of Ethics in Medicine supports the above recommendations with a majority vote.

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1. Background

According to the current state of knowledge of the COVID-19 pandemic, it is probable that in Germany, despite increases in capacity, sufficient intensive care resources will no longer be available for all patients² who need them.

The expected conflicts in decisions about intensive care treatments prompted members of the participating organisations to develop the following recommendations for decisions on the distribution of emergency and intensive care resources in the context of the COVID-19 pandemic.

In view of the existing lack of recommendations in Germany from legitimate institutions, and the foreseeable urgent need for such recommendations, the authors, in coordination with the board of directors of the medical and scientific associations mentioned, decided to develop the present recommendations.

They intend to offer all relevant agents decision-making support through medically and ethically justified criteria and procedures. Representatives from emergency and intensive care medicine, medical ethics, law and other disciplines were involved in the preparation. The authors and reviewers are listed in Appendix 1.

The recommendations will be further developed on the basis of new scientific evidence and practical experience as well as other relevant developments. The most up-to-date version can be found at www.divi.de. Comments on the recommendations are expressly encouraged.

2. General Principles of Decision-Making

Decisions about medical care are always made based on the needs of the individual patient (patient-centred) (see 2.1). In addition to this patient-centred ethical approach, which is always valid, prioritisation in the event of a shortage of resources adds a supra-individual perspective (see 2.2).

2.1 *The Basis for Individual, Patient-centred Decisions*

The indications³ and the patient's wishes [patient's will⁴] form the basis for every patient-centred decision:

- Intensive therapy is not indicated, if
 - the dying process has started inexorably
 - the therapy is considered medically futile because no improvement or stabilization is expected or

² For better readability alone, this document uses male rather than gender neutral forms. Unless otherwise stated, all genders are meant.

³ German "Indikation" is a technical medical term for a valid reason to use a certain test, medication, procedure, or surgery.

⁴ The German original uses the term "will", but for better readability in English, the term 'wishes' was chosen.

- survival would be linked to permanent residence in the intensive care unit.
- Patients who refuse intensive therapy are not treated in intensive care. This can be done on the basis of currently expressed wishes, previously declared wishes (e.g. in a living will), earlier expressed verbal wishes or presumed wishes.

2.2 Additional Basis for Decisions in the Event of Resource Shortages

If the available resources are *not* sufficient, a decision must inevitably be made as to which patients requiring intensive care should be treated with acute / intensive care medicine and which should not (or no longer) be treated with acute / intensive care medicine. This means a restriction of the otherwise patient-centred treatment decisions, which presents enormous emotional and moral challenges for the treatment team.

If it is no longer possible to admit all critically ill patients to the intensive care unit, the distribution of the limited available resources must be decided analogously to triage in disaster medicine. This requires transparent, medically and ethically well-founded criteria for any prioritisation that will become necessary. Such an approach can support the teams involved and increase public confidence in crisis management in hospitals. The priorities are explicitly not intended to assess the value of people or human lives; the priorities provide a supportive framework for enabling as many patients as possible to benefit from medical care under crisis conditions with (limited) resources.

The prioritisation of patients should therefore be based on the **criterion of the clinical prospect of success**, which does not mean a decision in the sense of the “best choice”, but rather the relinquishment of treatment for those who have no, or only a very small, chance of success. Those patients who have a higher probability of survival, or a better overall prognosis (also in the further course of their illness), are then awarded priority for clinical emergency or intensive care medicine. The clinical prospect of success must be assessed as carefully as possible for each patient.

The prioritisation should always

- consider all patients who need intensive care, regardless of where they are being cared for (emergency room, general ward, intensive care unit).

Prioritisation is based on the principle of equality

- and is *not* justifiable only *within* the group of COVID-19 sufferers
- and *not* permitted *solely* on the basis of calendar age or on the basis of social criteria.

Note: For constitutional reasons, human lives must not be weighed against human lives. At the same time, treatment resources must be used responsibly. These recommendations are based on what the authors consider to be the most justifiable ethical principles in a tragic decision-making situation. A definitive legal classification is not the object of these recommendations.

3. Procedures and Criteria for Prioritising Decisions when Resources are Scarce

The procedures described below apply to prioritisation decisions if the intensive care capacity is **not** sufficient for all patients.

A distinction can be made in clinical practice between:

1. decisions about patients for whom intensive care measures are to be started and
2. decisions about patients for whom intensive care measures, which have already been initiated, are to be stopped.

Both decisions are related, and the following criteria and procedures apply to both decisions.

The decisions are to be regularly re-evaluated - if necessary at intervals appropriate for COVID-19 - and adjusted, where applicable; in particular:

1. in the case of clinically relevant changes in the patient's condition and / or
2. when the ratio of needs to available resources has changed.

It must be ensured that appropriate (further) treatment is available for those patients who cannot or can no longer be treated in intensive care. For recommendations on the palliative care approach in the context of COVID-19 see: <https://www.dgpalliativmedizin.de/neuigkeiten/empfehlungen-der-dgp.html>.

3.1 Decision-Making Process

A pre-defined decision-making process with clearly defined responsibilities is a prerequisite for consistent, fair, medically and ethically well-founded prioritisation decisions. Therefore, the decisions should be made as far as possible according to the **multiple-eyes principle** with participation of:

- two physicians experienced in intensive medicine, if possible
- one representative of the caring staff, if possible and
- if necessary, other specialist representatives.

Representatives from clinical emergency medicine and intensive care medicine should be involved. If possible, decisions should be made by consensus; clinics

themselves should determine appropriate procedures for dealing with dissent. Decisions should be made transparently in the interdisciplinary teams, communicated transparently to patients, relatives (as far as possible) and, if necessary, to legal representative(s). Decisions should be appropriately documented.

Offers of support for all members of staff [*not translated*].

- Klinische-ethische Unterstützungsangebote: Zur Rolle von Ethikkomitees und vergleichbaren Gremien im Kontext von Priorisierungsentscheidungen verweisen wir auf <https://www.aem-online.de/>.
- Kommunikationsstrategie: Krankenhäuser und weitere betroffene Einrichtungen sollen in Vorbereitung auf den Krisenfall eine zentrale Kommunikationsstrategie für Patienten und Angehörige entwickeln. Für Formulierungshilfen zur Kommunikation mit Patienten und Angehörigen: https://www.dgpalliativmedizin.de/images/COVID_ready_communication_German-DEUTSCH_V01.pdf (aus dem Englischen übersetzt).
- Psychosoziale Unterstützung: Zur Unterstützung eines psychosozialen Notfallkonzepts hat die DIVI Handlungsempfehlungen veröffentlicht: <https://www.divi.de/images/Dokumente/PeerReview/200321-COVID19-psychosoziale-notfallversorgung.pdf?idU=1>

3.2 Criteria for Prioritisation Decisions

Prioritisation decisions must be made on the basis of the best available information. This includes:

1. Information on the patient's current clinical condition
2. Information about the patient's wishes (current / pre-declared / previously verbally expressed or presumed)
3. Medical history / clinical recording of comorbidities
4. Medical history and clinical assessment of the general health status (including frailty, e.g. according to the Clinical Frailty Scale)
5. Laboratory parameters on points 1 and 3, if available
6. Forecast-relevant scores (e.g. SOFA score)

The criteria mentioned below should be taken into account when making priority decisions (see figure for decision-making).

3.2.1 Decisions on ICU admission

Step 1: Clarification of the need for intensive care treatment

- Respiratory or haemodynamic failure

Results:

- a) *Mandatory intensive care yes => Step 2*

b) *Mandatory intensive care no => relocation, for instance, to general ward*

Step 2: Assessment of the **prospect of success** in terms of survival of intensive therapy measures or the achievement of a realistic therapy goal; this is also the basis for any potentially necessary prioritisation.

The following **criteria** are usually associated with **poor prospects for the success** of intensive care measures:

- Current illness
 - Severity of the leading disease (e.g. ARDS, severe polytrauma, severe burns, severe cerebral haemorrhage, continuous ventricular fibrillation)
 - Accompanying acute organ failure (e.g. determined using the SOFA score)
 - Prognostic markers for COVID-19 patients (as soon as they are available and validated)

- Comorbidities

The presence of individual severe comorbidities with a clear limitation of the prognosis (see Ontario protocol)

 - Chronic organ failure (e.g. kidney failure requiring dialysis)
 - Severe organ dysfunction with prognostically limited life expectancy, e.g.
 - Advanced heart failure
 - Advanced lung diseases, e.g. seriously advanced COPD or chronic respiratory insufficiency requiring ventilation
 - Advanced liver failure
 - Very advanced generalised neurological or neuromuscular diseases
 - Very advanced cancer
 - Severe and irreversible immune deficiency
 - Multimorbidity

- General Health Status
 - Frailty (e.g. according to the Clinical Frailty Scale)

Results:

- a) *Futility => no intensive therapy, adequate care including palliative measures*
- b) *There is a prospect of success => step 3*

Step 3: Check **consent** to intensive therapy (current, pre-declared, previously verbally expressed or presumed patient wishes) after the patient or legal representative has been informed about the prospect of success.

Results:

- c) *No consent => no intensive therapy, adequate care including palliative measures*

a) *Consent => Step 4*

Step 4: Prioritisation (only in case of insufficient resources)

- after assessing the prospects of success of possible intensive therapy
- with regard to a realistic patient-centred therapy goal
- compared to the prospect of success of intensive care for other patients
- taking into account available capacities

Results:

- a) *Priority treatment => intensive therapy*
- b) *Non-priority treatment => No intensive therapy, adequate care including palliative measures*

3.2.2 Decisions on changing therapy goals during ongoing intensive care treatment (re-evaluation)

For reasons of justice, all patients should be considered equally when prioritising. In Germany, this position may reach legal limits when intensive care measures are terminated in the context of prioritisation. Such decisions are the responsibility of local actors. However, medical indications for the continuation of intensive care therapy must always be critically reviewed, especially in situations of insufficient resources.

Step 1: Patient-centred evaluation of intensive care therapy

Result 1: *Requirement for relocation / discharge fulfilled*

- Breathing and circulation are stabilised, relocation or discharge from the intensive care unit is possible

=> Transfer of the patient away from the intensive care unit

Result 2: *Prerequisites for continued intensive care therapy fulfilled*

- For the stabilisation or improvement of respiratory function and / or haemodynamics, further intensive care treatment required
- Therapy goal still seems broadly realistic

=> continue to step 2: patient participates in prioritisation

Result 3: *Prerequisites for ending intensive care therapy, e.g.*

- Continuation of intensive therapy contradicts the (current, pre-declared, previously verbally expressed, presumed) patient's wishes
- Therapy goal is no longer realistically achievable
- Treatment attempt is unsuccessful after an observation period with previously defined criteria

- Progressive multi-organ failure (e.g. significant increase in SOFA score [> 2 pts] within 24 hours)

=> Change of therapy goal: transfer of the patient from the intensive care unit, further treatment outside the intensive care unit and palliative care

Step 2: Prioritising of intensive care

- On the basis of the prospects of success of ongoing intensive therapy, taking into account, amongst other considerations:
 - Organ function under intensive therapy
 - Course of the underlying disease
 - Response to therapy to-date
- Compared to other patients with intensive care needs
- Taking into account the available resources

Results:

- a) Priority treatment => continue intensive therapy*
- b) Non-priority treatment => Termination of intensive therapy, adequate care including palliative measures*

3.3 Further Situations that are Relevant to Prioritisation

3.3.1 Preclinical decisions (e.g. nursing homes, emergency services)

Exclusion criteria for admission to the intensive care unit should be identified early and, if possible, before admission to the clinic. To judge the prognosis of individuals, as many of the criteria mentioned under 3.2 as possible should be checked before moving a patient to a clinic. If possible, it should be determined in advance with the involvement of the GP, and reliably documented, whether hospital admission and, if necessary, transfer to an intensive care unit is medically indicated or desired by the person concerned in the event of a deterioration in the status of health.

3.3.2 Decisions in the Emergency Room

The emergency room continues to be the primary point of contact for all emergency patients, including those not affected by Covid-19. When prioritising access to intensive care, the same criteria should be applied for Covid-19 and non-Covid-19 patients. Emergency room staff therefore have the important task of collecting relevant criteria for decision-making early and comprehensively (patient wishes, advance directive, advance care planning). The following situations can arise in the emergency room:

- Sufficient intensive care resources are available
- No intensive care resources are available, but resources are available in the emergency room (respiratory therapy)
- No intensive care resources and no resources in the emergency room

If there are sufficient intensive care resources, the emergency room should act according to the criteria mentioned above (2.1.)

If intensive care resources are no longer available, the question will inevitably arise: which patients will be assigned the resources available in the emergency room (invasive ventilation, non-invasive ventilation, monitoring, etc.)? Here the criteria described under 3.2. are applied.

3.3.3 Decisions on the General Ward

If COVID-19 patients are admitted first to a general ward, it should be recorded and documented at an early stage whether intensive care therapy in case of deterioration is (a) medically indicated and / or (b) covered by the patient's wishes. Here, too, the 6-eyes principle⁵ and the support of the treating staff by experienced specialists are required in order to prospectively relieve the intensive care treatment teams (cf. Dokumentationsbogen Therapiebegrenzung der Sektion Ethik).

Appendix

- **Illustration** - Decision-making in the case of insufficient intensive care resources
- **Documentation support** for prioritisation in case of resource shortage

Literature [not translated]

Cheung WK, Myburgh J, Seppelt IM, Parr MJ, Blackwell N, Demonte S, Kalpesh G, Hoyling L, Nair P, Passer M, Reynolds C, Saunders NM, Saxena MK, Thanakrishnan G (2012) A multicentre evaluation of two intensive care unit triage protocols for use in an influenza pandemic. *Med J Aust* 197:178-181

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Nates JL, Nunally M, Kleinpell R, Blosser S, Goldner J, Birriel B, Fowler CS, Byrum D, Miles WS, Bailey H, Sprung CL (2016) ICU admission, discharge, and triage guidelines: a framework to enhance clinical operations, development of institutional policies, and further research. *Crit Care Med* 44:1553- 1602

⁵ Note from translators: It is unclear to us what the 6-eye-principle means. Who are the six? Earlier references to multiple-eye teams do not refer to six decision-makers.

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Notes on the Work undertaken for these Recommendations

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Decision-making in the case of insufficient intensive care resources

Interprofessional Multiple-Eyes-Team-Principle

If possible, 2 physicians experienced in intensive care, incl. those in primary and secondary care + if possible, representatives from the caring profession and, if appropriate, further disciplines (e.g. clinical ethics)

Step 1:
Is **intensive care treatment** needed?

YES

NO

Step 2:
Is there a realistic **clinical chance of success** from intensive therapy at the current time?

YES

NO

Step 3:
Is the patient's **consent** available (current, pre-declared, previously verbally expressed or presumed)?

YES

NO

Step 4: Prioritisation based on the Multiple-Eyes-Principle after **Evaluation of indicators* of previous therapeutic success and of resources**

* Indicators of low chances of success during initial or re-evaluation

Current illness	Comorbidities
<p>Higher severity (e.g. acute lung failure [ARDS, Acute Respiratory Distress Syndrome])</p> <p>Accompanying acute organ failure (e.g. SOFA-Score >11)</p> <p>If appropriate, prognostic markers for COVID-19 patients</p>	<p>Severe comorbidity with a clear limitation of the long-term prognosis:</p> <ul style="list-style-type: none"> • Chronic organ failure • End-stage organ-dysfunction • Very advanced neurological disease • Very advanced oncological disease • Severe immune deficiency
<p>General Health Status</p>	
<p>Increased Frailty (e.g. Clinical Frailty Scale CFS)</p>	<p>Multimorbidity</p>

Intensive Therapy
(Intensive Care Unit or Intermediate Care Unit)

Non-intensive Therapy (e.g. General Ward)

Palliative care must always be guaranteed.

Re-Evaluation of Intensive Therapy at reasonable intervals and **definitely** in case of:

- clinically relevant changes in the clinical prospect of success, as well as
- changes in the relationship between demand and available resources

Prerequisites for the termination of intensive therapy at re-evaluation stage

- Continuation of intensive therapy contradicts (stated, presumed) patient wishes
- Therapy goal can no longer be realistically achieved
- Treatment attempt is unsuccessful after an observation period with previously defined criteria
- Progressive multi-organ failure (e.g. significant increase in SOFA score [> 2] within 24 hours)

Documentation support for prioritisation in case of resource shortage

Patient label

Team members (Name/Function)

Date/Time

Clinical ethics involved? yes /no

Need for intensive care therapy

Evaluation of clinical chances of success of intensive care therapy

Current illness

General Health Status

Prognosis score¹⁾

General Health Score²⁾

SCORE

PTs.

SCORE

PTs.

according to relevant clinic standard; 1) e.g. SOFA, APACHE II or CRB-65; 2) e.g. Clinical Frailty Scale CFS or ECOG

Comorbidity

Patient wishes

Individual severe comorbidities with a clear limitation of the long-term prognosis

- Chronic organ failure
- End-stage organ dysfunction
- Generalised neurological disease
- Haemato-oncological disease
- Severe immune deficiency

Multimorbidity

Comment:

Living will available? yes /no
Power of attorney available? yes /no
If yes, name of representative:

Dialogue with Patient /Relatives
If so, name of relative

Date/Time

TRIAGE-Result at Admission

Intensive Care Therapy

No Intensive Care Therapy

ICU Intermediate Care

General ward Palliative care

RE-EVALUATION on Date/Time:

Assessment of clinical progress:

Continuation or change of therapy, because: