RESEARCH ARTICLE

Admission to intensive care: A qualitative study of triage and its determinants

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Objective: To examine physicians' decision making and its determinants about admission to intensive care.

Data Sources/Study Setting: ICU physicians (n = 12) and internists (n = 12) working in a Swiss tertiary care hospital.

Study Design: We conducted in-depth interviews.

Data Collection/Extraction Methods: Interviews were analyzed using an inductive thematic approach.

Principal Findings: Admission decisions regarding seriously ill or elderly patients with comorbidities are complex. Nonmedical factors such as ICU beds availability, health care resources on the ward, information about patient preferences, and family behavior determine the decision. Code status and the quality of interaction between physicians are key determinants. The absence of code status or poor documentation of code status discussions makes decisions more difficult and laden emotionally, as physicians feel they are making a life-death decision. Mutual respect and collaborative decision making facilitate the decision. Tensions arise due to ICU physicians' postponing the decision because of lack of beds, ICU physicians' dismissive attitudes, perceived shortcomings in the other physician's completion of expected tasks, and preconceptions about the other physician.

Conclusions: Systematic documentation of code status, and fostering collaboration between ICU physicians and internists would facilitate ICU admission decisions in complex clinical situations.

KEYWORDS

code status, decision making, end-of-life care, Intensive care, triage

1 | INTRODUCTION

Intensive care is a scarce and expensive resource.¹⁻³ Its allocation to the patients most likely to benefit is an ethical and an economic requirement¹ and institutions are encouraged to develop policies to meet patient needs while considering available health care resources.⁴ The decision to admit a patient to the intensive care unit (ICU) however is complex. Intensive care improves survival, but has

several potential drawbacks. A stay in the ICU entails a physical and emotional burden for the patient.^{5,6} A terminal phase in the ICU decreases the patient's quality of life at the end of life,^{7,8} puts families at risk of post-traumatic stress symptoms and complicated grief,^{9,10} and was associated with job strain and burnout in ICU staff.¹¹

Single patient- and physician-related factors were associated with admission decisions.¹²⁻¹⁶ However, decisions can vary independently

from patient or hospital characteristics.¹⁷⁻¹⁹ Physicians' reasons for admission or refusal are sometimes unclear, and ICU physicians often disagree in the choice of life-sustaining treatments.²⁰

The admission decision is the final result of a decision making process (Figure S1). When a patient is admitted on an internal medicine ward, the physicians define goals of care, which in turn determine treatment intensity. Treatment intensity is documented in the patient's file as a code status (eg, full code means highest intensity care). In our institution, if the patient becomes acutely ill, the ward physician determines whether intensive care seems appropriate and whether the ICU physician should be called. In the next step, usually referred to as triage,²¹ the patient's situation is assessed by the ICU physician before a decision to admit or not the patient is made.⁴ Triage is a key determinant in the bedside allocation of intensive care and a target for quality improvement strategies. What factors influence physicians' decision making during triage, and how, has been little studied. The aim of this study was to explore the triage process, focusing on decisions for medical inpatients, and determine barriers and facilitators of ICU admission decisions.

2 | METHODS

2.1 | Participants and setting

The study was conducted at a Swiss tertiary care hospital with 1209 beds, including 188 medicine beds and 34 adult ICU beds. This ratio of ICU beds to hospital beds reflects the lower intensity in intensive care found in Europe compared to the United States.²² ICU admission criteria in our institution are based on international guidelines.

In-depth interviews were conducted with internal medicine and intensive care physicians. Participants had to be routinely involved in admission decisions for medical inpatients and had to actually make decisions. We used a convenience sampling strategy, including similar numbers of internists and ICU physicians with a range of professional experience and level of seniority (ie, medicine residents and chief residents, and ICU chief residents and attending physicians).

2.2 | Recruitment and data collection

The study was presented in staff meetings of the Division of intensive care and of the Division of general internal medicine, and eligible physicians were invited to participate. They were also personally contacted via email. Flyers were posted on the general medicine wards and in the ICU. After giving written consent, participants completed a biographic questionnaire and discussed two admission situations of their choice involving a patient from internal medicine, which they thought informative. Nonmedical determinants are most likely to influence admission decisions in complex clinical situations, and we considered barriers and facilitators of the decision would be best identified by letting physicians select triage instances.

The interview guide (Box S1) was pretested with two internists and two ICU physicians who were not involved in the study. Interviews lasted on average 57 minutes (min 26, max 94). They were conducted by a social scientist with no hierarchical relationship to interviewees.

Interviews were tape recorded, transcribed verbatim, and anonymized.

2.3 | Analysis

We used an inductive, thematic approach to analyze our data. Members of the multidisciplinary group (ME, SC, PH, BR, and MN) independently read four interviews (two ICU, two internists) to identify key themes and develop an initial list of codes. The first four interviews were then independently double-coded by two researchers. Coding discrepancies were identified and resolved, and the coded interviews were then cross-checked by a third researcher.

The remaining interviews were coded by one researcher (ME or SC) and cross-checked by two researchers (ME or SC, and BR or PH or MN). Coding discrepancies were identified and resolved through discussion. As new codes were created, previous interviews were recoded to reflect these changes.

The analysis resulted in 95 open codes. Codes were grouped into themes to give a comprehensive description of triage and its determinants. The final results were discussed within the research group and presented to five interviewees (two internists and three ICU physicians), who agreed with the themes and description of triage without modification. Finally, one researcher (SC) reread six interviews in order to check the "fit" between the results of the analysis and the raw data.

Coding and analysis were conducted using ATLAS.ti (Version 7.0.71, ATLAS.ti Scientific Software Development GmbH, Berlin, Germany). The study was approved by the institutional Ethics Committee.

TABLE 1 Characteristics of study participants

Characteristics	ICU physicians (n = 12)	Internists (n = 12)
Sex (n)		
Men	8	9
Women	4	3
Age (mean; range)	42 (30-51)	33 (27-44)
Professional experience (n)		
Attending physician	5	0
Chief resident	7	8
Resident	0	4
Years since graduation (mean; range)	16.5 (6-24)	7 (3-11)
Years in the current position (mean; range)	5 (0.5-11)	2 (0-6)
Years of experience in the hospital (mean; range)	9 (0.5-23)	3.5 (0-7)

3 | RESULTS

3.1 | Participant characteristics

Twenty-four physicians (12 internists and 12 intensivists) were interviewed between January and July 2013 (Table 1). Seventeen participants were male. Mean age was 38 years (range 27–51). On average, ICU physicians were older and more experienced than

internists. Three internal medicine residents had never worked in an ICU.

3.2 | Triage

Both ICU physicians and internists noted that the decision making process usually went well. Participants preferred unambiguous ICU

FIGURE 1 Triage to intensive care and its determinants. A, The two tasks of triage: Assessment and management; B, Determinants of triage related to the clinical situation; C, Determinants of triage related to the physicians. [] : factor; → : determines; - : composed of; ? : is it concordant?; TI: treatment intensity deemed appropriate; Pg: prognosis; Dr: physician; QoL: quality of life

FIGURE 1 Continued

admission situations, because they did not require lengthy reasoning, complex appraisal, or much interaction with the other physician. Difficult situations were described as “gray zones” and involved patients with advanced diseases (eg, severe chronic obstructive pulmonary disease, late stage cancer) or elderly patients with multiple comorbidities.

It is not easy when, in our mind, the patient's clinical situation is not black or white for intensive care, it is rather a gray cloud. The doubt is in us, the doubt will also be in the senior ICU physician. (MED 03)

In these situations, the physicians made patient-centered highly individualized admission decisions. As these were felt to be life-death decisions, they were emotionally laden.

Triage involved two concurrent tasks: management issues and patient assessment (Figure 1A and Table 2). Management issues concerned resources (“Operational management”) and patient safety (“Medical management”). Bed availability was a major component of operational management and put a strain on the decision making. Admitting a patient might create supplementary organizational work to make an ICU bed available, whereas refusing admission might lead to excessive workload on the ward. Lack of beds could lead ICU physicians to postpone an admission decision. They gave the internist treatment advice, or even supervised the patient's care on the ward, hoping that ICU admission could be avoided. Although internists acknowledged that decision delays might be justified, this strategy

caused tensions. Internists felt that the patients were exposed to increased risks and they resented the extra responsibility.

In many situations we have the impression that the intensivists wait out the clock. It is a make-it or break-it situation. If it's a break, they admit the patient. If it's a make, they will have avoided an admission. (MED 06)

Medical management was not restricted to the index patient; it encompassed considerations for the other patients' safety, on the ward and in the ICU.

There are few beds available, many requests, what are the solutions? We could transfer the patients [from the ICU] during the night, but it isn't optimal for the patient. (ICU 10)

Patient assessment included indication for intensive care, assessment of short-term prognosis, longer-term survival, functional prognosis, and of patient preferences. Physicians then framed their assessment in terms of goals of care and treatment intensity. Participants described three types of situations: (a) when the patient was either too ill or too well to benefit from intensive care, and admission was refused; (b) when physicians' evaluation of appropriate treatment intensity and the code status concurred, there was an indication for intensive care, and the patient was admitted; and (c) when the benefit of intensive care for the patient was uncertain and there was no code status in the

Determinants	Themes	Representative quotes (Participant)
Operational management	Management of ICU beds Management of patient flow Workload Postponing the decision	<i>I didn't have many beds either. I think: if I admit this patient, I only have one bed left. But, if I had had a half empty unit, I would have taken this lady. (ICU 12)</i>
Medical management	Acutely ill patient safety Safety of the other patients on the ward Safety of the patients in the ICU	
Patient assessment	Indication for intensive care Long-term prognosis Assessment conclusions and comparison with patient code status	<i>So we have three organ failures. These are good reasons to be hospitalized in the ICU. On the other hand, there is his cancer. Actually this is often the limit because we are faced with a patient who has a serious chronic disease. (ICU 02)</i> <i>[Code status is] "intensive care" in case of a life-threatening event. We don't understand the situation. Why this patient, who seems to be in a palliative care situation ... Why did the day care physician say that we had to go on, while we don't want to go on? (ICU 10)</i>

TABLE 2 Triage: Management and assessment tasks

file, or when physicians' evaluation of appropriate treatment intensity and the code status did not concur. Admission decisions were more difficult in the third situation.

3.3 | Determinants of triage to intensive care

Apart from management issues, factors related to the clinical situation and to the physicians could facilitate or hinder triage in gray zones situations.

3.3.1 | Factors related to the clinical situation

Knowing patient preferences, families acting as surrogates and code status were considered helpful (Figure 1B and Table 3). Physicians however underscored how these factors could sometimes interfere with the decision making. It might be difficult to elicit the patient's wishes or to ascertain that they were genuine. Some patients were not prepared to consider treatment limitations, others had difficulty understanding complex treatment issues. Impaired communication might arise from the patient's wish to protect himself or his family from unpleasant discussions, from the patient's feeling of indebtedness toward health care professionals, or from the way physicians described intensive care.

Sometimes you feel something irrational; as a physician, when you know you can offer something beneficial, it is important to talk again [with the patient ...].
(MED 03)

Physicians sometimes found it more challenging to talk with families than with the patient, for example, when they deemed intensive care to be inappropriate. When families were particularly demanding, physicians viewed them as adversaries and feared litigation.

Some families, I would say 9 out of 10, you can reason with them, but 1 out of 10, you can't. If you don't admit our loved one, you will get into serious trouble. And families who are rolling on the floor, families who are crying, who are yelling. It is a whole mess. (ICU 05)

As code status was considered an important decision aid in "gray zone" situations, the absence of code status, or a discrepancy between code status and current assessment of appropriate treatment intensity made physicians uneasy (Figure 1B). They found it difficult to go against a full code. Moreover, as health care providers, physicians found it difficult not to do something.

The medical team have been in charge for 10 days, we have been in charge for a few hours, and we are changing the position completely. We are changing this lady's goals of care, that's what makes it so hard.
(MED 05)

Three potential negative consequences of the decision added to the physicians' uneasiness. They had to justify their decision to patient and family, nurses, and colleague physicians, which could be difficult.

TABLE 3 Determinants of triage related to the clinical situation

Determinant	Theme	Representative quotes (Participant)
Patient preferences	Primacy of patient preferences Difficulties in eliciting genuine preferences	<i>Not sensible for [the patient] meant "complications from intensive care involving an extremely long rehabilitation," and clearly she didn't want that. But, temporary help for her respiratory failure, including intubation, she would have wanted that. (ICU 05)</i>
Families	Families as surrogate decision makers Families' reluctance to renounce treatment Physicians' fear of litigation	<i>We had a long discussion with the children, who were spokespersons for their mum. (MED 05)</i>
Code status	Code status as a major facilitator Difficulty to go against a full code No code status in medical file or discrepancy with current assessment: anticipated consequences of the decision <i>Justification of the decision</i> <i>Coming to terms with a life-death decision</i> <i>Patient quality of life</i>	<i>Particularly when it is the week-end or in an acute situation, we immediately look for the code status. (MED 11)</i> <i>It is a little bit difficult to accept ... I am a physician, but I don't provide any care, I watch the person die. (ICU 09)</i> <i>You explain to the patient that you consider that, unfortunately, the actual treatment leads nowhere. Then you also have to explain it to the family. And it may be a bit complicated, because the family may even have been given false hopes. (ICU 02)</i> <i>[The nurses] say: "We will again resuscitate a dead."</i> <i>We have to explain to the nurses why the patient is [in the ICU]. (ICU 05)</i> <i>Afterwards, it is always a question: should we have admitted her, or not? Would it have changed something, or not? (MED 01)</i> <i>If I see a patient in August, and I am sure that he will be able to spend Christmas with his grand-children, I have no problem in admitting him to intensive care if I think I can be of use, even though he is going to die in March. But, it depends on the price to pay. If it is at the price of discomfort, pain, drains inside the body, catheters, tubes, drugs ... I think it is too high a price. This patient also has a right to die in peace. (ICU 06)</i>
Contextual factors	Time available Night/week-end Patient known Third person input	<i>You don't know the patient at all, you just see a patient who is not well. It is all the more difficult as you are the only resident on the ward for the night, and you often get many telephone calls at the same time. (MED 08)</i> <i>We were not going to call the day care physician. We had little time, if we left her, she was going to die. (ICU 09)</i>

You say: we saw a patient, severely shocked, 92 years old ... People's first reaction is: yes, but 92, it is already an advanced age, why is she coming to intensive care? (ICU 08)

A refusal implied the possibility of the patient's death, a prospect mitigated by the capacity of providing good end-of-life care. Finally, physicians feared to do more harm than good if they admitted the patient to the ICU.

Physicians described how contextual factors hindered triage. Lack of time might prevent physicians from collecting useful information. Acute events occurring at night or during the week-end were especially challenging. The on-call internist might have little insight into the patient's personality and life outlook; little knowledge about his recent clinical evolution and the possibility to obtain further information or advice were often limited.

3.3.2 | Factors related to the physicians

The whole triage process could be facilitated or hampered by the ICU and referring physicians' experience and specialty, and by the quality of their interaction (Figure 1C and Table 4).

Seniority, as well as intensive care experience, helped both internists and ICU physicians feel more comfortable when faced with uncertainty regarding the patient's likely medical evolution and the appropriateness of the admission decision. ICU physicians explained that, with more experience, they usually did not admit patients as easily and were more prone to delay the decision. Experienced internists were more confident in their judgment, developed argumentative power, and felt more justified in disagreeing with the ICU physician.

Perceived quality of interaction made triage easier or could create tensions and have deleterious consequences on the care of future patients.

Determinant	Theme	Representative quotes (Participant)
Physician experience and specialty		<i>At the beginning, you are very anxious, because you say: ah, I am not sure, and then, with a few years experience, you realize that actually you are never sure. (MED 05)</i>
Quality of interactions	Tensions between internists and ICU physicians	<i>You have a poor trainee ending up facing an experienced intensivist, an attending ICU physician. He must, hum, because it is also a little bit of business making, he must sell his patient. If he simply uses not very appropriate words, not very convincing [words], as we are managing the lack of beds, we say : Wait, he doesn't have the indication. (ICU 05)</i>
	Social behavior	<i>When the interaction goes awry, it is rather due to the fact that we explain things badly. When a resident calls and says: Yes, it might be a case for you, but I don't know, ... This is usually a bad start (laughter) (MED 03)</i>
	Perceived fulfillment of expected roles and tasks	
	Consideration for the other physician's expertise <i>To know each other</i> <i>Preconception</i>	<i>We have a huge network of prejudices. We can think: Who is this ICU physician? He is a zero, someone who doesn't think, he is a robot. (MED 04)</i>
	Collaborative decision making Empathy	

TABLE 4 Determinants of triage related to the physicians

As [the intensivists] are always aggressive, you are a little afraid of calling them. A dire consequence is you don't dare ask for the consultation. (MED 06)

Four factors influenced the quality of interaction: social behavior, perceived completion of expected tasks, consideration for the other physician's expertise, and collaborative decision making.

Internists reported offensive attitudes on the ICU physicians' part, felt to relate to differences in expertise in intensive care and in hierarchy.

It is strange, but I always had the feeling that, if I called to have a patient admitted to intensive care, the reason was I had not done my job. It is the feeling [the intensivists] gave me back. No, they were not very nice. (MED 08)

While acknowledging arrogant behavior, ICU physicians reported they were sometimes pushed into admitting a patient by a senior internist. Concerning completion of clinical tasks, ICU physicians suspected that internists did not anticipate and discuss end-of-life care with the patients often enough, while internists wished for more dialogue with the intensivists, and for clear explanations about their reasons for admission refusal.

[The internists] call us : Well now, what should we do? Don't you want to take this lady? I went upstairs fairly angry. When I arrived, I thought: here we go again, I have to do [the job]. (ICU 04)

Consideration for the other physician's expertise depended on physicians' preconceptions about their counterparts, and on how previous encounters went. Because triage in "gray zone" situations involved bargaining about patient admission, participants were sometimes distrustful when they did not know each other.

Collaborative decision making contributed to a good quality of interaction. Internists valued the process more than the decision itself. ICU physicians however tended to impart their point of view and rally the internists to it when they considered intensive care not to be appropriate. ICU physicians and internists felt that collaborative decision making helped justify the decision and avoid later regrets.

When you decide to limit care, whatever the circumstances, you bear it upon you and you must be convinced of what you are doing. (ICU 03)

Despite criticisms, the overarching feeling in both ICU physicians' and internists' narratives was empathy, which appears central in facilitating interactions. Internists appreciated the intensivists' help

and expertise, and their capacity to make life-death decisions. They acknowledged that ICU physicians sometimes relieved them from a difficult task and that their role of gatekeeper was necessary and challenging. ICU physicians recognized that the internists' tasks could be overwhelming, and that the internists did their best.

If they admit patients who don't have a clear indication and who don't quickly develop the indications when they are in the ICU, they get 'rapped on the knuckles', because the number of beds is limited.
(MED 01)

Often, especially at night, unfortunately the on-call physician - poor thing - on the ward, doesn't know all the patients.
(ICU 02)

4 | DISCUSSION

We explored the process guiding the physicians' decision to admit or not an acutely ill patient to intensive care. Physicians assessed the patient and identified his preferences and life circumstances in order to decide if intensive care would be beneficial. Physicians had to concurrently decide how best to allocate sparse resources without endangering the patient's safety, and other patients' safety in the ICU and on the ward. Admission decisions for seriously ill or elderly patients with comorbidities were particularly challenging and were often referred to as "gray zones." In these situations, physicians were deeply aware of making a life-death decision. Nonmedical factors significantly influenced triage in "gray zone," including the number of available ICU beds, availability of health care resources on the ward, knowledge of the patient's preferences and code status, and the quality of interactions with family members and among physicians. It is acknowledged that admission decisions may be difficult and involve the use of clinical judgment. The components of the triage process, that is management issues and patient safety issues, and the influence of human factors and code status on the decision shown in our study are likely to be found in other care settings.

Triage in "gray zone" situations will become more frequent as the general population ages.^{23,24} Decisions must be individualized and physicians in our study emphasized that guidelines were of little help, a shortcoming which has been recognized.²⁵ Lack of ICU beds puts a strain on triage and can create tensions between the internist and the ICU physician. ICU physicians in our study used delayed decision making as a resource management strategy even though they felt it may jeopardize patient safety. Caring for a critically ill inpatient actually seems to increase the risk of ICU transfer for other patients on the same ward.²⁶ Previous studies also suggest that admission criteria may be more or less stringent according to bed availability.^{12,16,20,27,28} The consequences for patient outcomes

are unclear,^{16,29} but such variability raises concerns about the quality of the decision process.

Although physicians in our study considered code status an important facilitator of triage, they felt it was important to confirm that it truly reflected a patient's goals of care. In "gray zones," the absence of code status or a discrepancy between code status and physician assessment increased the emotional burden of the decision and hindered the decision process. Identified shortcomings in the establishment of code status include physicians' failure to discuss code status with patients, including seriously ill patients, and incomplete or inconsistent documentation of code status.³⁰⁻³³ Physicians often do not feel prepared to engage in goals of care discussions.³⁴ Patient- and family-related barriers have been identified,³⁵ and physicians in our study underscored the difficulty to elicit treatment preferences from patients and the limited capacity of families to act as surrogates. Still, advance care planning involving patients and families is considered key for limiting inappropriate use of intensive care³⁶ and was associated with a decreased risk of ICU admission in seriously ill patients.³⁷ Hence hospitals should provide training to physicians in goals of care and code status discussions, emphasizing the usefulness of a well-documented code status. The implementation of a structured guide to the discussion could help physicians address sensitive issues. The creation of a dedicated structured section in the medical file would contribute to the quality and adequacy of documentation so that the reasons determining a patient's code status are clear and easy to retrieve.

We found that good quality interactions between physicians were key for satisfactory decisions. Participants identified several factors that create tensions and hinder triage. Differences in expertise and in hierarchical position interfered with an open exchange of views. Other factors included the perceived arrogance of ICU physicians, a feeling reported in other studies,^{38,39} the need to bargain to have a patient admitted to intensive care, and perceived shortcomings in completing tasks, including goals of care discussions on the ward. Perceived failure to engage in such discussions has been reported^{39,40} and may make the transition to a palliative care approach in acute hospitals more difficult.⁴¹ Collaborative decision making facilitates triage in "gray zones" and helps physicians take responsibility for life-death decisions. It may also prevent unwanted behaviors, such as decision avoidance.³⁸ Our findings suggest that early involvement of the ICU physician could be beneficial in "gray zone" situations, as has been suggested by others.⁴² Collaborative work outside the time-pressured admission decision situation would foster patient-centered teamwork.⁴³ It represents a change in the hospital organizational culture which has the potential to facilitate the triage process.⁴⁴

Our study has limitations. It was conducted in an academic tertiary hospital and the results may not be applicable to other settings. Triage structures differ across institutions and do not necessarily involve interactions between referring physicians and ICU physicians. We focused on triage for medical inpatients and may not have captured determinants specific to other work environments. Nonetheless, our results allow us to propose a comprehensive

description of triage and of its determinants which can be tested in different settings for further refinement. Focusing on medical inpatients allowed to explore complex admission decisions and to identify means of improving triage through hospital policy. To decrease the risk of socially desirable responses, a nonhealth care professional conducted the interviews. Potential biases in the analysis were addressed by including multidisciplinary and multiprofessional members in the research group, and by having the findings validated by participants.

5 | CONCLUSION

Triage in “gray zones” is influenced by nonmedical, practical, and human factors. Promoting advance care planning, improving documentation of code status, and fostering collaboration between physicians could contribute to improve the decision making process.

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CONFLICT OF INTEREST

None.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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