

# *First Come, First Served in the Intensive Care Unit*

## *Always?*

LEONARD M. FLECK and TIMOTHY F. MURPHY

**Abstract:** Because the demand for intensive care unit (ICU) beds exceeds the supply in general, and because of the formidable costs of that level of care, clinicians face ethical issues when rationing this kind of care not only at the point of admission to the ICU, but also after the fact. Under what conditions—if any—may patients be denied admission to the ICU or removed after admission? One professional medical group has defended a rule of “first come, first served” in ICU admissions, and this approach has numerous moral considerations in its favor. We show, however, that admission to the ICU is not in and of itself guaranteed; we also show that as a matter of principle, it can be morally permissible to remove certain patients from the ICU, contrary to the idea that because they were admitted first, they are entitled to stay indefinitely through the point of recovery, death, or voluntary withdrawal. What remains necessary to help guide these kinds of decisions is the articulation of clear standards for discontinuing intensive care, and the articulation of these standards in a way consistent with not only fiduciary and legal duties that attach to clinical care but also with democratic decision making processes.

**Keywords:** democracy; ethics; intensive care; rationing

### **A Historical Introduction**

In 2014, the United States spent \$3 trillion on healthcare, roughly 17.5 percent of the gross domestic product (GDP).<sup>1</sup> Intensive care units (ICUs) generate a meaningful portion of those costs. Roughly \$50 billion was spent by Medicare on patients in the last 2 months of life, and the vast majority of this expenditure involved ICU care. There is intense pressure to control healthcare costs in the United States, and ICUs are not exempt from review to achieve that end, despite the success that they offer in what they do.<sup>2</sup> The modern ICU is only a little more than 50 years old; its primary purpose is to save the lives of patients who require immediate and complex medical or surgical care. Roughly 83 percent of patients who are admitted to an ICU will emerge alive from that kind of treatment. ICU beds make up approximately 8 percent of hospital beds in the United States, but account for approximately 20 percent of total hospital costs.<sup>3</sup> In general, hospitals have overall occupancy rates of 65–85 percent; however, ICU occupancy typically approaches 100 percent on any given day. Both the costs involved and the comparative scarcity of ICU beds leaves ICU physicians facing problems of healthcare rationing on a daily basis.

One way to reduce the ethical concerns that grow out of scarcity of ICU beds is to expand the number of ICU beds to meet overall demand. From the perspective of cost-conscious health policy analysts, however, that effort would be no solution. Increasing the total number of ICU beds would increase the costs of that level of care and not necessarily only for patients needing that level of care. The availability of

more ICU beds would encourage clinicians to make those beds available to patients who were likely to benefit no more than marginally from access to intensive care (IC). The overall effect of more ICU beds would be to drive costs further skyward without demonstrable benefit for those costs. In practice, then, physicians continue to struggle with healthcare rationing in the ICU both as a matter of access and costs, and several professional groups have offered guidance in making decisions that are, in effect, rationing decisions. As a matter of ethics, the best kind of guidance in this area will avoid ad hoc decisions, which are subject to influences of prejudice and morally irrelevant factors.

In the name of offering generally defensible standards for decision making in ICU admissions, a bioethics task force of the American Thoracic Society offered a 1997 report, "Fair Allocation of Intensive Care Unit Resources."<sup>4</sup> The task force opened its report by saying that the primary goal of the ICU was to preserve "meaningful human life," by which they meant "a quality of life personally valued and appreciated by the patient."<sup>5</sup> Whatever else it means, taking this as the goal of ICU care opens the door to the exclusion of certain patients, such as—for example—patients in a persistent vegetative state or patients in the late stages of various dementias, who are unable to value or appreciate the continuance of their lives.<sup>6</sup> After an opening statement, the task force identified five principles to help guide ICU rationing: the equal value of every individual, respect for patient autonomy, enhancement of a patient's welfare as the goal of IC, and IC as an essential component of a basic benefit package available to all. The task force also acknowledged that the duty of physicians to benefit their patients "has limits when doing so unfairly compromises the availability of resources needed by others."<sup>7</sup> In what follows, we will consider what commitment to the patient's autonomy and welfare—*alongside respect for the needs of others*—means regarding decisions for admission to an ICU as well as for continued care in the ICU.

### **ICU Rationing Guidelines: American Thoracic Society**

By themselves, the task force's principles do not offer clear answers to questions regarding all ICU decisions. For example, even if clinicians unambiguously affirm the equal value of all patients, respect patient autonomy, and otherwise observe the task force's standards, they will still face these questions: When exactly does providing access to the ICU, or to certain technologies in the ICU (such as extracorporeal membrane oxygenation [ECMO]), represent an unfair commitment of resources to which others may have a stronger claim? The task force offers 12 propositions for moral guidance. We will not critically assess them all, but we will describe several, in order to bring one proposition—number 6—into relief.

The first proposition states that only patients with "sufficient medical need" have a *prima facie* just claim to ICU resources. For example, patients with a high level of anxiety about a very routine surgery should not be admitted to the ICU as a way of relieving that anxiety. Patients must in some sense, then, *need* the level of care available in the ICU as a qualification of admission. Not only that, but according to the second proposition, ICU care "should provide the patient a certain degree of potential benefit."<sup>8</sup> Not all possible benefit qualifies here, especially marginal benefit. Patients whose diseases and disorders are certain to kill them very soon will derive very little benefit from ICU care; they are often better served by palliative care services (even if some family members aggressively demand ICU care).

In fact, IC care can confer net harm on some patients, by subjecting them to extensive and costly interventions that will not extend their lives meaningfully. The task force also indicates that patients who have advanced dementia or who are in a persistent vegetative state would *not* meet the criterion of meaningful benefit from the ICU. Such patients, according to the task force, would not have a just claim to an ICU bed, because they do not have a quality of life “personally valued and appreciated.”

The third proposition is that patients (when possible) ought to give informed consent for both the initiation and continuation of ICU care, a point that would be most ethically salient when such care opens the patient to the prospect of net harm. The fourth proposition is that patients ought to have equal access to ICU care “regardless of their personal and behavioral characteristics.”<sup>9</sup> In other words, nothing about the age of patients, their social status, their religious or political beliefs, their sexual orientation, or their general lack of compliance to social norms ought to result in their having less than equal access to the ICU, compared with other patients with comparable medical need and likelihood of benefit. The fifth proposition declares that ability to pay should be irrelevant to determining access to the ICU, given sufficient medical need and expected ability to benefit from that care.

Against this background, we will focus the bulk of our critical attention here on proposition 6. In that proposition, the task force asserts: “When demand for ICU beds exceeds supply, medically appropriate patients should be admitted on a first-come, first-served basis.”<sup>10</sup> In this formulation, the task force rejects a utilitarian approach to ICU bed rationing; that is, giving preferred admission to a patient with a better prognosis over another equally needy patient with a somewhat worse prognosis, in order to secure greater overall benefit, for example, by maximizing the total number of life-years saved. We will illustrate the effect of this “first-come, first-served” rule with the following situation: An 85-year-old who has had a severe heart attack and emergency bypass surgery has just been admitted to the last bed in the ICU, when 2 hours later a 50-year-old accident victim needs a bed after having had emergency surgery. Both are expected to be discharged alive, but the 85-year-old also has cancer that is very likely to kill him within 2 years. In view of proposition 6, the task force would presumably not endorse removing the 85-year-old from the ICU to make room for the 50-year-old, no matter that many more overall high-quality life-years would likely be saved by doing so.

This conclusion seems counterintuitive on a number of points, especially in comparing outcomes measured in terms of expected life-years saved. We will consider more closely if this kind of decision making is actually supported by the reasons and reasoning that the task force offers.

### **First Come, First Served: The Ethical Justification**

By way of justifying proposition 6, the task force reaffirms the view that every individual’s life is equally valuable, as we have mentioned; however, it also maintains that thresholds of both medical need and medical benefit must be met as a condition of admission to the ICU. Patient needs must be sufficiently urgent and complex to require IC and must show the prospect of substantial benefit from IC. For example, if patients faced a 90 percent or greater chance of death within a

week—no matter what ICU care might offer—they would not meet the threshold necessary for admission. Both the 85-year-old and the 50-year-old in the previous example would, however, satisfy this threshold criterion for admission, and by this measure, their circumstances alone cannot distinguish which patient ought to have an ICU bed if only one is available. The “first-come, first-served” rule offers a way to resolve this problem and does so in a transparent way.

Even so, a decision against admitting the 50-year-old is troubling, because so many expected life-years would be put at risk, compared with the expected 2 years available to the 85-year-old patient. Decisions such as these are troubling not only as a matter of initial admission to the ICU; they are also troubling even in relation to the timing of admission. Even a delay in admission to the ICU has morally significant consequences. In a study reviewing a year’s worth of delayed admissions to an ICU, researchers report that each *hour* of delayed admission represented a 1.5 percent increased risk of ICU mortality.<sup>11</sup> In light of these considerations, a “first-come, first-served” rule does not always seem rational or just.

To investigate whether limits of the “first-come, first served” rule are perhaps only apparent, we will flesh out a few more details of the example. Imagine that the ICU in question has 15 beds. If it would be too troubling as a matter of morality to discharge the 85-year-old patient to make way for the 50-year-old patient, might there be another patient to discharge instead? The task force entertains exactly such an option. It expresses the view that no one has a right to an ICU bed indefinitely, especially if patients no longer meet the threshold requirements that justified their admission in the first place. For one thing, they might have gotten “better enough” that additional days in the ICU would make no more than a marginal difference in their treatment. They might exhibit a small risk of a sudden medical reversal that could prove fatal if they are removed from the ICU, but if they are reasonably expected to survive by receiving standard hospital care, they might be justly removed from the ICU. Alternatively, if patients have failed to benefit from IC—for example, if their prognosis now predicts death within a few days—then they too might be justly removed from the ICU. In these cases, notice, the “first-come, first-served” rule remains intact as a guide to decision making, but it only succeeds in finding a place for the 50-year-old patient in this example because certain IC patients are reevaluated as ineligible for continuing care.

Imagine, however, that in the face of demand for an empty bed, all current IC patients continue to meet the threshold criteria that justified their admission. Evaluations about the continued benefit of IC for all those patients will involve degrees of uncertainty. Even if physicians rely on clinical tools to generate a prognosis, these tools are informative but not consistently reliable.<sup>12</sup> In view of this uncertainty, the task force concludes that it would be ethically problematic to make what will be life-and-death decisions entirely on the basis of these tools. Certainly, it would be even more problematic to rely entirely on unaided “clinician judgment” of prognosis in comparing patients, because such judgment is open to bias, ambiguity, and subjectivity. In view of the uncertainty that enters into survival prognostications, the task force concludes that we as clinicians should stick with the “first-come, first-served” rule. This would avoid any prognostic errors that would result in a “premature” death of an ICU patient. The unstated implication here is that we should stick with this rule, even if it will end the lives of other patients or—at the very least—put them at serious risk of death.

In general, the task force believes the “first-come, first-served” rule best protects egalitarian commitments in decision making: All lives are of equal value; therefore, let chance rather than human decision making determine access to the ICU. This approach has the moral virtues of a lottery; it is impartial and impersonal. It might not be ethically perfect, because at times “smart patients” and “rich patients” might be able to secure ICU care ahead of others; however, the task force views utilitarian alternatives—basing decisions on calculations of expected value—as being more ethically flawed, because they are open to manipulation and the vagaries of assumptions about the value of individual lives. This defense is only partially ethically defensible, as we will show next.

### First Come, First Served: A Critical Analysis

To show the limitations of the “first-come, first-served” approach, we will evaluate circumstances in which the rule produces outcomes of a morally dubious nature. The rule does produce “just enough” rationing decisions with regard to ICU access; however, it does so only by modifying the rule in certain clinical situations. Some limitations of the rule become apparent by considering the following situation.

A lifeguard is in a boat and there are no other lifeguards nearby, when he notices Man A and Man B drowning far from the seashore. Both are equidistant from the boat but in opposite directions. Because of the distance involved and the weather conditions, the lifeguard judges that he will only be able to save one. He arbitrarily picks Man A and directs his boat toward him in order to throw a lifeline. These actions increase the likelihood that Man B will drown. The initial decision was made without bias. The lifeguard did not estimate that the value of Man A’s life was greater than that of Man B’s. However, after the boat approaches Man A and the lifeguard tosses a rope in his direction, he recognizes Man A as the real estate agent who cheated him out of \$25,000 several years ago. The lifeguard jerks the lifeline out of Man A’s reach, turns the boat in the opposite direction, and races toward Man B. As the boat slips out of sight, Man A drowns; but the lifeguard, to his own surprise, is able to save Man B at the very last second.

What can we say about the ethics of the lifeguard’s actions? From several perspectives his actions are morally dubious. As the sole lifeguard on duty facing an either-or choice, he had no obligation to save one man over the other, so that his initial choice to rescue man A seems free of blame, but he then conditioned his rescue efforts on his perception of the value of Man A’s life, which—because of Man A’s past behavior—was judged of less value than that of *any other* stranger, which is exactly what Man B would be. The lifeguard might try to defend his actions by saying that it was ultimately his decision whom to save when he could not save both, but this amounts to self-serving rationalization. The lifeguard’s initial actions created the expectation of rescue in Man A, and in that sense Man A had a right to be rescued, no matter his past behavior.

We can modify the scenario a bit, to the same effect. Imagine again that both Man A and Man B are equidistant from the lifeguard. The lifeguard arbitrarily speeds in one direction but as he nears Man A, he realizes that Man A is “really old.” He estimates that Man B would likely be younger than Man A and, therefore, more worthy of rescue. The lifeguard again abandons his first choice and reverses course in the hopes of rescuing Man B. In this case again, a presumptive rule of “first come, first served” seems violated by the lifeguard’s behavior.



One can imagine a third variant of this scenario. In this case, the lifeguard reaches the “really old” Man A, and the man succeeds in grabbing hold of the rope. At this point, however, the lifeguard is struck by doubt that he has made the right choice. At that very moment, a wave dislodges the old man’s grip on the lifeline, which gives the lifeguard the chance to rethink his decision: “Now I can make a different choice; it would have been wrong for me to jerk the lifeline from his hands, but he lost hold.” The lifeguard then speeds to Man B and is successful in saving him from drowning.

There is an analogy between the ICU physician charged with responsibility for determining who has the strongest just claim to the last bed in the ICU and the scenario sketched here. In the circumstances described, the lifeguard would be open to the same kind of moral criticism as in the first two ICU scenarios. If our 85-year-old patient experienced some life-threatening emergency event within an hour of being admitted to the ICU, an event that the ICU was well-prepared to reverse, we would judge as unjust an ICU physician who ordered the ICU staff to allow the patient to die so that a bed would be available for the 50-year-old emergency room patient. Again, this seems to strengthen the *prima facie* rightness of the “first-come, first-served” rule. Having said that, consider an alternate scenario that might require that some exceptions be made to the “first-come, first-served” rule.

Some British commentators refer to certain ICU patients as “bed-blockers,” for their long ICU stays, measurable in weeks or months.<sup>13</sup> Patients who occupy ICUs this way raise significant concerns in the United Kingdom, because on a population-adjusted basis that country has fewer than half the ICU beds available in the United States.<sup>14</sup> Most of the time, no prediction can be made with certainty whether any one patient will become a bed-blocker. However, if prognostic tools offered greater certainty than they do at the moment, should that calculation be used to override the “first-come, first-served” rule? We will consider some illustrative examples.

### *Scenario A*

Imagine that an ICU director knows prior to admission that a patient will need a bed for at least 2 months to have a 40–60% chance of survival. One might also imagine that this patient has some disorder, separate from the disorder necessitating IC, which gives him an expected maximum life expectancy of 4 years, under ideal conditions. At the moment, this patient would occupy the last available bed in a 15 bed ICU. One can suppose that turnover in this ICU typically averages two patients per day. However, three other patients currently in the ICU have been there almost a month. Although their prognosis is a bit uncertain, no one would be surprised if they were to die in the ICU. At this point prior to admission, the patient in question would satisfy the threshold criteria endorsed by the task force and would do so no matter whether his chances of survival were at that moment 40, 60, or 80 percent. In short, the patient has a clear and justified need for ICU care and is fully expected to derive benefit from the IC.

One needs to recall at this point, however, that the task force also endorsed a principle that the duty to provide care “has limits when doing so unfairly compromises the availability of resources needed by others.” Might this principle require excluding the patient in question from the ICU? Seen one way, it is not clear that this principle should be invoked in order to exclude this particular patient from IC.

It is not clear by any means that he is positioned to become a bed-blocker, and his potential for benefit is significant. The ordinary turnover of patients might also keep enough beds available to accommodate other patients needing IC. However, certain changes to the scenario could meaningfully disturb the equilibrium between a *specific* duty to care for this patient and a *general* duty to make resources available to others. For example, that equilibrium might be disturbed if half the beds in the ICU were occupied by patients who had been there already for a month or longer. The equilibrium might also be disturbed if turnover amounted to only one patient per day. The equilibrium would also be disturbed if multiple candidates for admission—patients with generally more positive prognoses—came forward. By itself, the “first-come, first-served” rule seems ill-equipped to resolve these kinds of finer-grained questions involving duty to others. We will now vary the circumstances a bit to make this point even clearer.

### *Scenario B*

Imagine that a patient is about to be admitted to the ICU as in scenario A. Imagine also that the patient has a 40–60 percent chance of surviving this ICU stay, although it is anticipated that by day 5, it will be very clear whether the patient will or will not survive. On day 5, however, the patient suffers a series of medical misfortunes, making it clear that she will need IC for at least 2 months, still having a 40–60 percent chance of survival. In what way does it matter, as a matter of ethics, that this patient was already in the ICU at the point it became clear that the patient was going to become a bed-blocker for 2 months? Does the fact that the patient was admitted to the ICU under certain expectations mean that that decision cannot be reconsidered, that that initial decision always entails a continuing moral obligation to sustain the patient in the ICU for as much time as that patient continues to meet the threshold standards?<sup>15</sup>

Regarding the question of continuing responsibility toward a patient such as this one, we will consider an analogous situation that occurs in transplantation decisions. Imagine that after a year-long wait for a liver transplant, a suitable liver becomes available for a patient: however, the liver begins to fail only 6 months after the transplant. Should this patient be understood to have a moral claim to receive another liver transplant immediately, on the theory that she is owed the same level of care to which she was entitled by the protocols that made the first liver transplant available? Is she entitled to this second liver transplant even though a decision in her favor may eventuate in the death of a patient who would otherwise have received the next available liver? Is she entitled to this second liver transplant even though a decision in her favor will lead to the death of someone farther down the list of people waiting for livers? Each year, more than 1000 people die waiting for a liver transplant, and to apportion an available liver one way is to tolerate the death of others.<sup>16</sup>

In view of the effect of individual transplant decisions on other parties waiting for organs, it is not clear that candidates for re-transplantation should always precede others waiting for organs. As a practical matter, moreover, second transplants generally do not do as well in terms of ensuring survival as the first, which means that second transplants or third transplants are much less likely to succeed, and this poorer outcome bolsters the case for limiting the total number of organs given to any individual person. From a moral point of view, it is relevant to the calculation

that re-transplantation will effectively deny someone else on waiting list any chance for additional survival while giving one patient two chances for survival. Why should one person have multiple choices to survive while others have none at all?

With these practical and moral considerations in mind, one can now begin to see the foundations of a rationale in favor of limiting admission to certain IC candidates and also withdrawing certain patients from IC. If an ICU is closed to new admissions by bed-blockers, such as people initially foreseen as having long stays and by people who after admission to the ICU develop conditions requiring long stays, then one can see how the “first-come, first served” rule works against meeting duties to patients who—simply as a matter of chance—did not need the ICU first or who—again by chance—did not become known sooner to people making decisions about IC admission. The limitations of this rule also come into view if one considers that some patients in the ICU will have poorer prospects for survival (30–40 percent range) than patients whose admission they block (40–60 percent range). In circumstances such as these, it seems hard to sustain the idea that initial decisions to admit patients require—in a moral sense—indefinite IC. We now test this conclusion with certain further considerations that help make the case in favor of deciding to withdraw certain patients from the ICU.

### *Scenario C*

A patient is admitted to the ICU with a 40–60 percent chance of survival at the outset, with an anticipated stay of 2 months. However, after 2 months, the patient’s health deteriorates in significant ways. At this point, it appears that the patient will likely need an *additional* 2 months in the ICU although there is even greater uncertainty about the prospects for his survival, with estimates ranging from 20 to 80 percent. Even under these changed circumstances, the patient remains within the threshold requirements that the task force has in mind for continuation in the ICU. The decision to continue the patient in the ICU will make one less bed available to others and do so, again, *no matter* whether their need and their prospects for benefit are greater.

We will add one twist to this scenario, which is not unknown in ICUs. Specifically, how should the right of a patient to continued IC be understood if the patient fails to meet one—but not both—of the thresholds for the ICU in the first place? For example, suppose that a patient takes a turn for the worse such that a skillful clinician would judge *at that point in time* that this patient had less than a 10 percent chance of surviving this ICU stay. For how many days should a patient be allowed to remain in the ICU having violated this threshold for remaining there, given that this particular patient *might* improve a bit and once again be within the threshold? Suppose, once again too, that with the patient now at an estimated 10 percent chance of survival, there is a patient waiting for admission whose prospects for survival reach upward to 70 and 80 percent. It is not obvious that a “first-come, first-served” rule is sufficient to decide these more complex circumstances, all things considered.

### **Conclusions**

What is ethically compelling about the “first-come, first-served” rule is that it offers patients some security in access to and continuing care in the ICU. Without a



prima facie commitment of that kind, their prospects for IC would be uncertain relative to all patients who might come after them: patients who might have “more need” and exhibit “more expected benefit.” On its face, the “first-come, first-served” rule does exclude treatment decisions made on the basis of the perceived value of the patients, and it is transparent in its application in that regard as well. However, the “first-come, first-served” rule does lead to certain problematic outcomes, especially in cases in which expected benefits from IC can be highly variable for different patients, and especially when admission to the ICU is treated as a right to continuing care *regardless* of length of stay or costs.

In view of these considerations, it appears fair to say that patients do not have an unlimited right to an ICU bed simply because they first met the threshold requirements for admission and continue to meet those requirements. As a social resource—and a frequently scarce social resource at that—the ICU is subject to constraints of justice. If one party’s IC undercuts the equal claim of others to that level of care, as happens with certain so-called bed-blockers, it seems, in principle, just to remove certain people from the ICU. It is worth noting again that some patients can be justifiably removed from the ICU if they fall below the thresholds that justify IC in the first place. It is precisely because so many patients do not fall below these thresholds, however, that scarcity of ICU beds continues. In a sense, then, the first-come, first-served rule can sit uneasily alongside the task force’s principle that physicians’ duties toward their patients have limits when the observance of those duties “unfairly compromises the availability of resources needed by others.”

What remains to be done in thinking through the effects of this critique is to articulate—with as much precision as possible—the conditions that would justify declining to admit certain patients to IC and withdrawing IC from certain patients, as a matter of making resources available to some when they cannot be available to all. Decisions such as these will carry their own implications for who lives and who dies: however, it is unclear in advance that decisions that are “just enough,” could not be achieved, which is to say decisions that—although imperfect—would meet ordinary tests of justice.

What also remains to be done here is to identify appropriate ways for identifying the methods to be used in IC decisions. In general, democratic processes offer the best prospect for reaching “sufficiently just” approaches. These processes should engage the following questions: What policy would most people (in all their various states of health) want to see in place regarding decisions about continuing IC care, after imagining that they might be patients urgently needing IC or patients in the ICU facing a long stay? In a sense, this kind of deliberation would move toward standards properly called “just” because they involve people making decisions for all possible selves whom they might be, and sharing the risks and benefits of those decisions across all possible circumstances. This kind of approach would not, then, amount to imposed policies so much as policies chosen for oneself in all possible health circumstances that one might find oneself in.<sup>17</sup> Relying on deliberative democratic processes would strengthen the morality of removing certain patients from the ICU under defined circumstances, and also help replace any informal practices of IC rationing. That process would presumably also help protect against the arrogation of privilege to IC by certain patients by reason of their wealth and social standing.

## Notes

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5. See note 4, American Thoracic Society Bioethics Task Force 1997, at 1283.
6. Some may find this position ethically troubling or at least worth further analysis, but for purposes of this article, we will not discuss this particular issue here.
7. See note 4, American Thoracic Society Bioethics Task Force 1997, at 1283.
8. See note 4, American Thoracic Society Bioethics Task Force 1997, at 1284.
9. See note 4, American Thoracic Society Bioethics Task Force 1997, at 1284.
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