Special FOCUS

Lifeboat Ethics: Considerations in the Discharge of Inpatients for the Creation of Hospital Surge Capacity

Chadd K. Kraus, MPH, Frederick Levy, MD, JD, and Gabor D. Kelen, MD

During a high-consequence event (eg, natural disaster, terrorist strike, infectious disease outbreak), hospitals within health systems function as a lifeboat with a limited capacity to accommodate the medical needs of everyone requiring hospital-level care. *Lifeboat ethics* was a phrase used first in the 1970s to discuss the distribution of limited food supplies to poverty-stricken nations battling chronic famines.[1,2] The growing focus on emergency preparedness and response, however, has given lifeboat ethics a new context within health care: the access to and distribution of limited or scarce lifesaving resources. During a high-consequence event hospitals and health systems balance caring for patients already in the hospital with managing an additional volume of patients with illness or injury related to the event. The Joint Commission on Accreditation of Healthcare Organizations recommends that hospitals have the ability to "surge in place," with stand-alone operating capacity for up to 3 days.[3,4] However, most hospitals and health systems operate daily under constrained capacity, leaving hospitals to face lifeboat situations without the ability to augment capacity and resources, including staff, supplies, and inpatient beds.[5,6]

Many techniques to augment medical surge capacity have been suggested. These include canceling elective surgeries and admissions, opening licensed but unstaffed beds, converting other hospital space to usable patient care areas, and creating "offsite" medical venues. Most of these techniques require increased staffing at a time when staff are not available, staffing is degraded because of the disaster itself, or staff are co-opted by the public health system for other needs. One novel approach to capacity management, reverse triage, focuses on the safe discharge of patients already in the hospital, allowing a refocus of hospital resources to those in even greater need.[7] Reverse triage allows the creation of a relative increment in surge capacity at times when an absolute increment is impractical or impossible.

The capacity challenges facing hospitals in both routine and extraordinary circumstances have highlighted the importance of creating surge capacity through the discharge of inpatients,[7,8] the redistribution of limited hospital equipment,[9,10] and the evacuation of hospitalized patients to alternate sites of care, including offsite nursing facilities during high-consequence events.[7,11,12] With 1 notable exception related to ventilators,[10] the literature related to hospital surge capacity is limited with regard to the ethical considerations of lifeboat triage decisions made to rationally use inpatient resources. Thus, an understanding of the ethical precepts underlying reverse triage and the conditions under which it may be ethically invoked, or even required, are worthy of review.

Previous discussions of triage ethics during high-consequence events have focused primarily on the field triage of acutely ill or injured patients, and not on the augmentation, redistribution, or reassignment of existing hospital resources to care for incoming victims of the event.[12,13] During overwhelming disasters, health systems must be considered lifeboats with insufficient capacity to minister to all, and thus decisions regarding who is best served by the lifeboat must be made. Under this tenet, inpatients, disaster victims, and others with acute care needs must be considered on equal terms and compete for limited resources. Accordingly, during a disaster, some inpatients may be judged in less need of hospital resources than others not yet in the lifeboat.

Traditionally, in-hospital triage has considered which patients should be admitted to specific inpatient wards (particularly for biothreats), rather than for the identification of patients most suitable for immediate discharge. The need for a discussion of lifeboat ethics is evident in the continuing investigations of alleged maltreatment and possible euthanization of patients in health care facilities overwhelmed by Hurricane Katrina.[14–16] These events have highlighted the ethical challenges faced by health systems, hospitals, and health care professionals in making lifeboat triage decisions.

This article fills a gap in the emergency preparedness and response literature by providing an overview and a framework of ethical principles that should guide in-hospital lifeboat triage decisions made for the explicit purpose of the immediate discharge of hospitalized patients for the creation of hospital surge capacity.

ETHICAL CONSIDERATIONS IN TRIAGE

Principles of Medical Ethics

Western medical ethics have been traditionally guided by 4 broad principles: autonomy (respecting the decision-making capacity of individual patients through informed consent), beneficence (balancing risks and benefits of a given action),

https://doi.org/10.1097/DMP.0b013e31806c4ca Published online by Cambridge University Press

nonmaleficence (avoiding the causation of harm), and justice (distributing risks and benefits fairly).[17] Within the context of these ethical norms, triage is the "well-established process of finding the most appropriate disposition for a patient based on an assessment of the patient's illness and its urgency."[18] As commonly used in clinical and public health settings, triage aims to guarantee that limited resources are justly allocated to some patients, while attempting to avoid direct, intentional harm to other patients in need of treatment or therapeutic interventions. Triage assumes that not all persons requiring care can be readily accommodated.[19]

Ethical triage decisions consider and appropriately balance the 4 tenets of Western medical ethics. In making triage decisions the clinician is not expressly violating patient autonomy, but the patient is not engaged in an active process of informed consent. Instead, consent to "be triaged" is implicit in consent to receive medical care. This implicit consent is founded on societal norms that have come to accept clinical triage as a reasonable and ethical means to distribute scarce medical resources. Although triage has been challenged as an acceptable model for rationing medical care because of its presuppositions based on utilitarian and salvage ability principles,[20] to date no serious alternative has been proposed.[21] Triage remains widely accepted as the preferred model for the ethical distribution of scarce medical resources in everyday clinical settings.

Expected Clinical Benefit

The foremost clinical criterion underpinning ethical triage decisions is expected outcome in survival and function.[18] For triage decisions to be considered fair, just, and ethical, the medical resource must be allocated with prudence.[22] Patients with injuries that are so severe that treating them would be medically futile are not considered appropriate candidates for receiving scarce resuscitative resources.

Triage is applied in various contexts of medical resource scarcity: routine clinical care, military operations, and public health or population-level emergencies. Therefore, the goals of triage in different environments and contexts can lead to divergent perspectives of what constitutes ethically sound triage decision making. Military battlefield medicine explicitly allocates scarce resources by giving priority to soldiers based not only on greatest clinical need but also on an evaluation of which soldiers should be treated first to accomplish specific strategic or tactical operational goals (ie, winning the war), often without attention to the principles of justice that buttress ethical civilian triage.[22] This often implies giving priority to soldiers who are most likely to rapidly return to duty. In the civilian sector, intensive care units (ICUs) are the most familiar sites of inpatient triage. In ICUs, where utilization of highly specialized, advanced acute care has increased and bed space has decreased, rationing by triage is a fundamental reality of daily operations.[23] However, neither the military nor the ICU models of triage provide entirely appropriate prototypes of lifeboat triage for the creation of inpatient hospital surge capacity in the context of a high-consequence event. Triage decisions in these extreme cases do have life-and-death consequences.[24]

Utilitarian Perspective

Triage decisions in routine clinical care and during a high-consequence event are made from a utilitarian, population perspective, that is, "the greatest good for the greatest number."[24,25] The well-being of the affected population is the highest priority. This approach maximizes the number of saved lives, while minimizing the number of deaths in those who will "probably live only if treated."[22] This utilitarian perspective diverges from the egalitarian principle guiding daily life, which states that "the rights of people to have their needs met are essentially equal."[22] Potential inequalities in the distribution of resources could occur but should be bound within the parameters of providing the greatest benefit to society as determined by the specific, immediate needs of the affected population during a high-consequence event.

> "During overwhelming disasters, health systems must be considered lifeboats with insufficient capacity to minister to all..."

Proportionality

Discharging patients prematurely is a cornerstone of the lifeboat principles outlined here and requires a discussion of the ethical principle of proportionality. In the case of inpatient discharge triage decisions in a disaster, proportionality requires a balancing of risks and benefits for all patients under an entity's jurisdiction affected by triage decisions. A minimal threshold of benefit that exceeds risk must be reasonably expected. In other words, the potential medical benefits to incoming patients should be at least equal to, but ideally greater than, the potential risks of not receiving care for discharged patients. Proportionality best represents the lifeboat in crises. The needs of all, those "in the boat," and those still "in the water" are considered on equal terms. More specifically, the medical needs and thus access to limited resources of individual victims of the disaster are considered equal to the needs of those already using the resource. Because some patients will inevitably be discharged or have a medical resource reassigned to another, this principle assumes that the risk of adverse events to patients who have care suspended does not exceed the risks to victims of the disaster if care is denied or delayed.

Providers acknowledge the valid expectation on the part of patients and families that care, once commenced, will continue. There is an expectation that inpatients are receiving some benefit from their hospital admission. Cessation or withdrawal of treatment represents an unexpected breach of

implied obligation.[17] In critical care settings it has generally been considered unethical to cease life-sustaining therapy for the benefit of another.[26] The standards of care would be altered in a disaster scenario,[4,27] however, allowing for the imposition of lifeboat ethics.

Still, this is not an easy transition, even during a critical event. Although the clinical outcomes may be similar and even ethically equivalent, withholding and withdrawing medical care may not be considered the same in an inpatient setting.[28,29] In a clinical setting the termination or suspension of ongoing care is difficult. At least 1 survey suggests that physicians have greater difficulty withdrawing than withholding treatment.[30] The withdrawal of care from 1 group of patients to favor another group of patients (however justified) during a disaster is a foreign concept to most clinicians because such action does not focus on the welfare of individual patients,[31] as it does in routine practice. The principle of proportionality requires that bed allocation and policy be based on suitability.[32]

LIFEBOAT TRIAGE IN HIGH-CONSEQUENCE EVENTS

High-consequence (eg, blast injuries from an explosion) or long-term (eg, pandemic influenza) events can place acute demands on available medical resources. Therefore, surge capacity needs are event specific, determined by the type and magnitude of the event. Dynamic surge capacity needs complicate lifeboat triage decisions by creating an environment in which the urgency and priority of patient medical needs are relative to patient volume, severity of victim injury, and the duration of the high-consequence event. Logistical and operational disaster plans should be developed and tested before a disaster occurs.[33] Similarly, ethical considerations should be discussed as part of disaster preparedness efforts.

> "...an accepted understanding of what constitutes 'sufficient' care during a high-consequence event is important for establishing the ethical parameters of lifeboat triage decisions..."

Depending on the scope, magnitude, and duration of the event, the accepted standard of care may diverge considerably from the routine definition of standards of care.[25,33] Instead of a standard of care, a health care facility may only reach the level of "sufficiency of care" during a high-consequence event.[4] For example, elective surgeries are normally offered as an option within the scope of accepted standards of care for a variety of diseases. However, a high-consequence event with prolonged duration could result in the cancellation of these procedures so that resources could be redirected toward urgent, lifesaving, or life-sustaining procedures. The threshold for what constitutes life-sustaining care could also be lowered if staff degradation and or physical plant damage prevent the delivery of advanced acute and critical care therapies. Depending on the scope, magnitude, and duration of the disaster, sufficiency of care could mean mean little more than providing intravenous fluids or ventilator-assisted breathing. These potential realities make it necessary to discuss and develop an accepted understanding of what constitutes "sufficient" care during a high-consequence event if ethical parameters of lifeboat triage decisions are to be established. These parameters should also ensure that the accepted bounds of moral, ethical, and legal decency are not violated.[24]

With capacity constraints of the lifeboat, the entire population is considered with regard to medical needs. Although lifeboat triage is driven from the population perspective, it ultimately affects individual patients, especially those who may have their care interrupted with an immediate discharge from an inpatient ward. It is reasonable to assume that during a high-consequence event there will be victims who are at greater risk for (salvageable) loss of life or limb than those patients already occupying inpatient beds. In such instances patients with little likelihood of medical benefit (ie, patients for whom medical care is futile) may be the first to be considered for withheld or withdrawn care, the equivalent to disaster triage label "black" (ie, dead or not salvageable). At the same time, inpatients with low risk profiles may need to be discharged to other sites or even back to the community to create capacity care for those in greater need.[7]

In most health systems bedside triage decisions during a high-consequence event are made ad hoc. These decisions rely on the clinical judgment and experience of physicians and not predefined clinical characteristics of hospitalized patients, although work in this area is progressing.[7,34] Physicians are adept at making triage decisions from the perspective of clinical need and are skilled in evaluating the risks and benefits of particular diagnostic and therapeutic procedures.[35,36] However, the training and clinical perspective of physicians may not prepare them well for making ad hoc, population-level allocation decisions at the bedside because these decisions may put the needs of individual patients at odds with the needs of a population of patients.[35,37–39] Physicians are ethically bound by the principles of duty and loyalty to the individual patient. The commitment to an individual patient may make it impossible for a physician to act on behalf of another patient who is likely to benefit more from care.[40] (As an aside, individual attending physicians may not even be readily reachable for decision making during a high-consequence event, particularly at private hospitals.) Thus, a system that allows real-time classification of risks and benefits of hospital services for those already admitted and those potentially requiring services would be a great advantage in ethical decision making.[7,34]

Justice and Empirically Based Triage

It may be argued that augmenting surge capacity through premature discharge would result in unacceptable rates of adverse medical events. However, even under routine conditions, there is a considerable risk for adverse events in the postdischarge period. Up to 19% of patients in the 2-week postdischarge period from inpatient medical units experience adverse events.[41] The probability of adverse events among patients whose inpatient care is suspended to create hospital surge capacity could be greatly reduced by the development of evidence-based, empirical clinical criteria to predict which patients are at the least risk for an adverse event upon discharge at any given point during their inpatient stay.[7,34]

The process of establishing objective inpatient triage decision processes is not only important in reducing clinical risks associated with improper discharge but it is also an important step in protecting the ethical principles that guide a just, fair process of lifeboat triage. Without guidelines, lifeboat decisions will be left to the individual judgment of bedside providers, hospital administrators, or public health officials. As evidenced in the aftermath of Hurricane Katrina, ad hoc lifeboat triage decisions expose both patients and providers to the potential chaos caused by ethical dilemmas made under duress and clouded by emotion during a high-consequence event. Ad hoc decisions also exacerbate the potentially subjective and ambiguous definitions of futility and benefit and could make the provider more vulnerable to legal liability, given that case law suggests that such decisions be conducted in a "medically reasonable manner."[24] Unfortunately, perhaps the greatest limitation of ad hoc decision making is providers' unconscious or overt bias. Racial and ethnic disparities in care remain real for health care providers and patients alike. An objective system of comparing risk and benefit, as has been proposed,[7] neutralizes such bias and restores equity and fairness.

> "The ethical principles that inform triage can be used as a guide for framing lifeboat triage decisions."

By using an objective, methodological approach to lifeboat triage for the creation of hospital surge capacity, the potential biases of the subjective terms triage, benefit, and utility are minimized and the focus is placed on maximizing medical benefit for as many patients as possible. In addition, an objective, structured decision-making process for the triage of inpatients is requisite so that public health professionals, clinical care providers, third-party payers, and, most important, patients have a common language they can use in the discussion of resources allocation in the face of dire scarcity.[18] The acceptability of risks in medical decision making should be determined using the most objective estimates available.[17] Risk-stratifying patients using empirical data provides these objective estimates. The development of objective criteria for the early discharge of inpatients makes the process of lifeboat triage legitimate and helps to ensure ethical decision making when the capacity of the lifeboat must be expanded.

Autonomy and Consent

Lifeboat triage policies should be transparent and publicly communicated. Arguments have been made for full-scale public debate regarding the balance between efficiency and equity in disaster triage policy.[38] Community values and expectations regarding the use and distribution of medical resources during a disaster are fundamental in the formulation of triage guidelines. In essence, lifeboat triage, as presented here, should be acceptable to the community at large.[22] Community consent will be more likely if community input and inquiry are sought during the disaster triage policies' development process. Input from the community could be garnered through a variety of mechanisms, including the appointment of community representatives to lead local discussion groups and larger town hall meetings. These mechanisms have proven successful in guiding population-level health decisions that are ethically challenging.[42]

To respect patient autonomy through the process of informed consent, hospitals should inform patients during the admission process that there is the possibility that their care will be terminated or suspended in the unlikely occurrence of a high-consequence event so that resources can be reassigned to other patients who are in need of more urgent or intensive medical care. Assuming that evidence-based protocols are available, patients should be informed that decisions will be based on actuarial risk-potential data. Rehearsing and training in lifeboat triage decisions in concert with other disaster and emergency response efforts would be advisable. Training should create awareness among all of the stakeholders (eg, clinical providers, administrators, patients, community) of how and why certain triage decisions could be made during a disaster. Similarly, methods to ensure accountability and analysis of triage outcomes to ensure fairness should be part of health system planning. Without an open discourse with patients, surrogates, and the larger community about the processes of lifeboat triage, there is the possibility of the perpetuation of patient suspicion and distrust, as occurred post-Katrina.

DERIVATION OF TRIAGE AND DISPOSITION GUIDELINES

The scientific literature and expert opinion already support the use of guidelines for making lifeboat decisions for inpatient disposition[7] and regarding ICU resource allocation.[10,43,44] These have and are being developed through expert panels and public discourse.[7,10,45] It is believed that such processes are viewed by the public as legitimate and such protocols are likely to be acceptable.[46] Methods proposed meet the ethical principles outlined in this article. The use of empirical, data-driven triage processes during a high-conse-

quence event and the establishment of a disposition classification system that considers benefits and risk[7] is an important potential measure in ensuring an ethical approach to lifeboat triage.

Even in settings such as the ICU, where triage and discharge guidelines are in place, there remains marked heterogeneity in discharge practices.[44,47] It has been suggested that the unique characteristics of a wide range of possible disasters and/or threats prohibit the establishment of a universal triage protocol for use during high-consequence events.[48–50] When discussing ethically sound lifeboat triage decisions, however, the goal should not be to develop a standardized response but rather to standardize the response.[33]

CONCLUSIONS

The ethical principles that inform triage can be used as a guide for framing lifeboat triage decisions. As evidenced during and in the aftermath of Hurricane Katrina, ethical dilemmas regarding in-hospital triage of patients for the creation of hospital surge capacity are likely to accompany the operational and logistical challenges faced by hospitals in a high-consequence event. These dilemmas should be minimized to balance the principles of justice and fairness with the desire to maximize health benefits for as many patients as possible in the chaotic, resource-constrained setting of a high-consequence event.

Further research and discussion in this area should focus on developing generalized clinical criteria and risk classifications for inpatients so that the outcomes of patients discharged from the lifeboat during a high-consequence event can be better predicted. It is also hoped that such research will serve to avoid ad hoc decisions that place providers in the difficult position of balancing their fiduciary obligations to patients against the good of the larger community and that create distrust between providers and patients. Predictive risk criteria will also strengthen the ethical foundation upon which in-hospital triage decisions can be made objectively and fairly. In addition, the human rights and public policy implications of lifeboat triage decisions merit further discussion.

About the Authors

Chadd K. Kraus is with the Department of Emergency Medicine and the Office of Critical Event Preparedness and Response (CEPAR), Johns Hopkins University; Frederick Levy is with CEPAR; and Gabor D. Kelen with the National Center for the Study of Preparedness and Catastrophic Event Response (PACER), a US Department of Homeland Security University Center of Excellence.

Correspondence and reprint requests to Gabor D. Kelen, MD, Department of Emergency Medicine, Johns Hopkins University, Suite 6-100, 1830 E Monument St, Baltimore, MD 21287 (e-mail: gkelen@jhmi.edu).

Received for publication March 19, 2007; accepted March 30, 2007.

Any opinions, findings, conclusions, or recommendations expressed in this article are those of the author(s) and do not represent the policy or position of the US Department of Homeland Security.

Authors' Disclosure

Funded in part by the Agency for Healthcare Research and Quality (U01 HS14353-01), and by the US Department of Homeland Security through a grant awarded to the National Center for Study of Preparedness and Critical Event Response (PACER) at the Johns Hopkins University (N00014-06-1-0991).

ISSN: 1935-7893 © 2007 by the American Medical Association and Lippincott Williams & Wilkins.

DOI: 10.1097/DMP.0b013e318065c4ca

REFERENCES

1. Hardin G. Lifeboat ethics: the case against helping the poor. Garrett Hardin Society Web site. *http://www.garretthardinsociety.org/articles/art_lifeboat_ethics_case_against_helping_poor.html.* Accessed February 12, 2007.
2. Hines SW. On the relations of medical triage to world famine: an historical survey. In Lucas GR, Olgetree TW, eds. *Lifeboat Ethics: The Moral Dilemmas of World Hunger*. New York: Harper & Row; 1976:29–51.
3. Joint Commission on Accreditation of Healthcare Organizations. Health care at the crossroads: strategies for creating and sustaining community-wide emergency preparedness systems. National Conference of State Legislatures Web site. *http://www.ncsl.org/programs/health/ep3-12-03.pdf*. Accessed Febrauary 19, 2007.
4. Joint Commission on Accreditation of Healthcare Organizations. Surge hospitals: providing safe care in emergencies. Joint Commission on Accreditation of Healthcare Organizations Web site. *http://www.jointcommission.org/NR/rdonlyres/802E9DA4-AE80-4584-A205-48989C5BD684/0/surge_hospital.pdf*. Accessed February 12, 2007.
5. National Academies, Institute of Medicine (IOM): Committee on the Future of Emergency Care in the United States Health System.The future of emergency medical care in the United States health System. *Ann Emerg Med*. 2006;48:115–120.
6. *Hospital Preparedness: Most Urban Hospitals Have Emergency Plans but Lack Certain Capacities for Bioterrorism Repsonse*. US Government Accountability Office; 2003. GAO-03-924.
7. Kelen GD, Kraus CK, McCarthy ML, et al. Inpatient disposition classification for the creation of hospital surge capacity: a multi-phase study. *Lancet*. 2006;368 (9551):1984–1990.
8. Davis DP, Poste JC, Hicks T, Polk D, Rymer TE, Jacoby I. Hospital bed surge capacity in the event of a mass-casualty incident. *Prehospital Disaster Med*. 2005;20:169–176.
9. Hick JL, Hanfling D, Burstein JL, et al. Health care facility and community strategies for patient care surge capacity. *Ann Emerg Med*. 2004;44:253–261.
10. Hick JL, O'Laughlin DT. Concept of operations for triage of mechanical ventilation in an epidemic. *Acad Emerg Med*. 2006;13:223–229.
11. Cocanour CS, Allen SJ, Mazabob J, et al. Lessons learned from the evacuation of an urban teaching hospital. *Arch Surg*. 2002;137:1141–1145.
12. Shultz CH, Koenig KL, Lewis RJ. Implications of hospital evacuation after the Northridge, California, earthquake. *N Engl J Med*. 2003;348:1349–1355.
13. Hayes BE, et al. A prehospital approach to multiple-victim incidents. *Ann Emerg Med*. 1986;15:458–462.
14. Griffin D. New Orleans hospital deaths still stump coroner. CNN Web site. *http://www.cnn.com/2007/LAW/02/01/katrina.hospital/index.html.* Accessed February 12, 2007.
15. Nossiter A, Hauser C. 3 arrested in hospital deaths after Katrina. *New York Times* Web site. *http://www.nytimes.com/2006/07/18/US/18cndorleans.html?ex=1179115200&en=d24cl8657_40fd3fc&ei=5070*. Accessed February 19, 2007.
16. Roig-Franzia M, Connolly C. Louisiana investigates allegations of euthanasia at hospital. *Washington Post*. October 15, 2005:A03.

17. Beauchamp TL, Childress JF. *Principles of Biomedical Ethics, 5th ed*. New York: Oxford University Press; 2001.
18. Society of Critical Care Medicine Ethics Committee. Consensus statement on the triage of critically ill patients. *JAMA*. 1994;271:1200–1203.
19. Kessel R. Triage: philosophical and cross-cultural perspectives. In: *Ethics and Critical Care Medicine*. Moskop JC, Kopelman L, eds. Dordrecht, The Netherlands: D. Reidel; 1985.
20. Bell NK. Triage in medical practices: an unacceptable model? *Soc Sci Med*. 1981;15F (4):151–156.
21. Hardin G. Triage. In: *Promethean Ethics: Living with Death, Competition, and Triage*. Seattle: University of Washington Press; 1980:56–71.
22. Winslow Gerald R. *Triage and Justice*. Berkeley: University of California Press; 1982.
23. Sinuff T, Kahnamoui K, Cook DJ, et al. Rationing critical beds: a systematic review. *Crit Care Med*. 2004;32:1588–1597.
24. Hartman RG. Tripartite triage concerns: issues for law and ethics. *Crit Care Med*. 2003;31 (Suppl):S358–S361.
25. Rubinson L, Nuzzo JB, Talmor DS, et al. Augmentation of hospital critical care capacity after bioterrorist attacks or epidemics: recommendations of the Working Group on Emergency Mass Critical Care. *Crit Care Med*. 2005;33 (Suppl):E2393.
26. Truog RD. Triage in the ICU. In: *Life Choices: A Hastings Center Introduction to Bioethics*. 2nd ed. Howell JH, Sale WF, eds. Washington, DC: Georgetown University Press; 2002.
27. Wise RA. The creation of emergency health care standards for catastrophic events. *Acad Emerg Med*. 2006;1–3.
28. Levin PD, Sprung CL. Withdrawing and withholding life-sustaining therapies are not the same. *Crit Care*. 2005;9 (3):230–232.
29. Vincent JL. Withdrawing may be preferable to withholding. *Crit Care*. 2005;9 (3): 226–229.
30. Tallgren M, Klepstad P, Petersson J, Skram U, Hynninen M. Ethical issues in intensive care: a survey among Scandanavian intensivists. *Acta Anaesthesiol Scand*. 2005;49: 1092–1100.
31. Koenig KL, Cone DC, Burstein JL, Camargo CA. Surging to the right standard of care. *Acad Emerg Med*. 2006;13 (2):195–197.
32. Kalb PE, Miller David H. Utilization strategies for intensive care units. *JAMA*. 1989;261:2389–2395.
33. Parker MM. Critical care and disaster management. *Crit Care Med*. 2006;34:S52–S55.
34. Kelen GD, Kraus CK, et al Creation of health system surge capacity by the immediate discharge of inpatients. *Acad Emerg Med*. 2006;13 (5): S94.
35. Zawacki BE. ICU physician's ethical role in distributing scarce resources. *Crit Care Med*. 1985;13 (1):57–60.
36. Cookson R, Dolan P. Principles of justice in health care rationing. *J Med Ethics*. 2000;26:323–329.
37. Hiatt HH. Protecting the medical commons: who is responsible? *N Engl J Med*. 1975;293:235–241.
38. Veatch RM. Disaster preparedness and triage: justice and the common good. *Mt Sinai J Med*. 2005;72 (4):236–241.
39. Marsh FH. On the allocation of critical care resources. *J Crit Care*. 1993;8 (1):60–63.
40. Lo B. Bedside rationing of health care. In: *Resolving Ethical Dilemmas: A Guide for Clinicians*. 3rd ed. Philadelphia: Lippincott Williams & Wilkins; 2005:189–205.
41. Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med*. 2003;138:161–167.
42. Hines B. Health policy on the town meeting agenda. *Hastings Cent Rep*. 1986;16 (2):5–7.
43. Task Force of the American College of Critical Care Medicine, Society of Critical Care Medicine.Guidelines for intensive care unit admission, discharge, and triage. *Crit Care Med*. 1999;27 (3):633–638.
44. Sprung CL, Geber D, Eidelman LA, et al. Evaluation of triage decisions for intensive care admission. *Crit Care Med*. 1999;27 (6):1073–1079.
45. Phillips SJ, Knebel A, eds. *Providing Mass Medical Care with Scarce Resources: A Commmunity Planning Guide*. Prepared by Health Systems Research Inc. Rockville, MD: Agency for Healthcare Research and Quality; 2006. AHRQ Publ No. 07-0001.
46. Norheim OF. Healthcare rationing—are additional criteria needed for assessing evidence-based clinical practice guidelines? *BMJ*. 1999;319: 1426–1429.
47. Heidegger CP, Treggiari MM, Romand JA, et al. A nationwide survey of intensive care unit discharge practices. *Intensive Care Med*. 2005;31 (12):1676–1682.
48. Larkin GL, Arnold J. Ethical considerations in emergency planning, preparedness, and response to acts of terrorism. *Prehospital Disast Med*. 2003;18 (3):170–178.
49. Pesik N, Keim M, Iserson K. Terrorism and the ethics of emergency medical care. *Ann Emerg Med*. 2001;37:642–646.
50. Domres B, Koch M, Manger A, Becker HD. Ethics and triage. *Prehospital Disast Med*. 2001;16 (1):53–58.