and bronchiectasis accounted for 25 percent of the cases, tuberculosis for 16 percent, lung cancer for 12 percent, intracavitary aspergillomas for 12 percent, and bronchitis for 5 percent. Nineteen percent of cases were cryptogenic. The diagnostic yield of HRCT compared to bronchoscopy might be considerably different in a population with a higher prevalence of lung cancer or bronchitis. The authors did not determine the clinical impact of HRCT or bronchoscopy in patient management. This is obviously an important consideration. It is ultimately this potential impact that will determine whether CT or bronchoscopy, or both, are indicated in the assessment of any given patient with hemoptysis.

Nestor L. Müller, M.D., Ph.D., F.C.C.P.
Vancouver, Canada

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Ventilators
Back to the Future

Teaching the fundamentals of ventilator care to medical house staff is the most challenging aspect that I acknowledge in their ICU curriculum. This is due in part to the fact that I have difficulty in understanding the principles and proven values of some of the newer generation of ventilator support systems (pressure support ventilation, airway pressure release ventilation, and inverse ratio ventilation) and the fact that a medical resident’s ICU experience cannot exceed 6 months in his or her 3 years of training. Accordingly, I do not seem to have enough time to expose the residents to a minimum of appropriately selected patients. Such patients would benefit from these new modes, which seemingly facilitate smoother liberation from the ventilator. Frustrated, I then am prompted to wonder whether some of the present technology is prematurely available for clinical use and whether it is time for me to go back to the future to take a second look at why “breathing machines” require modification. Review of the literature, however, would suggest that I can save the trip, and that we all should be concerned with the relative ease with which modifications can be made on commercially available machines.

Ventilator management is both a scientific and a clinical discipline. I believe that in the day-to-day practice of patient care, we should not lose sight of the fact that the quality of care we deliver must rest upon reliable and valid scientific investigation. It is the responsibility of each of us that when we teach these principles to house staff, they are made aware of the indications for the new technology and the limitations that exist.

Twenty years ago, Ziment suggested reasonable guidelines for intermittent positive pressure breathing (IPPB) when the dilemma of the value of IPPB was argued. Ten years ago, Kirby raised our level of concern about the limits and caution associated with the use of high-frequency ventilation. At that same time, Schachter assessed the benefits of respiratory care and warned us that unrestricted development of ventilator technology should not go unchallenged. During the same period, Heenan et al were doing their best to settle some of the controversy about whether synchronization was important when a patient was on the intermittent mandatory ventilator mode of ventilator support. Most recently, Sassoon nicely reviewed these newer modes of positive-pressure ventilation that frequently trouble me. Indeed, she acknowledges that their clinical use requires specialized knowledge and expertise. Finally, this year, Hill clarified applicability of noninvasive ventilation, and whether it works, for whom, and how.

The maturing knowledge of respiratory muscle dysfunction in patients on ventilators, as well as the additional work of breathing imposed by endotracheal tubes, breathing circuits, and ventilators themselves, has in part prompted the desire to devise new technology to facilitate extubation and liberation from the ventilator. Accordingly, any new mode of ventilatory support may be judged suitable for clinical bedside use with another dial, knob, or switch added.

It remains, however, our responsibility as teachers and clinicians to scrutinize the literature. We should welcome clear commentaries and reviews that raise our level of concern and enhance our knowledge of any new technology with its proven indications and acknowledged limitations. Finally, I believe firm restrictions should always be applied when alternate modes of ventilation are to be incorporated in commercially available ventilators.

Robert D. Brandstetter, M.D., F.C.C.P.
New Rochelle, New York

Associate Director of Medicine and Chief of Critical Care, New Rochelle Hospital Medical Center.

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The Rationing of Medical Care in the United States

When resources are limited, decisions have to be made wisely and intelligently about how they should be distributed. One of the most pressing ethical issues in the 1990s is the allocation of scarce medical resources. The scarcity is often one of financial resources to pay for a variety of medical needs, including diagnostic, therapeutic, rehabilitative, screening, and counseling services. The limitations of medical resources may also be in personnel, equipment, and support services.

The classic example of a scarce medical resource is hemodialysis. If a hospital has insufficient hemodialysis capacity for all its patients, and no other facility is able to absorb the extra patients, the hospital must make some difficult decisions. Should it expand its hemodialysis services by denying or restricting other needed medical services? Or should the available hospital funds for program expansion in a given year be devoted to hypertension screening or to well-baby clinics or to substance abuse programs? All these services are vitally needed, yet adequate financial resources to fund them all are just not available.

An alternative to the hospital’s dilemma is to deny hemodialysis services for some of its patients by excluding certain patients because of age, medical diagnosis, ability to pay, social status, or other reasons. Specific selection from the remaining pool of patients for dialysis based on a variety of medical, economic, and psychosocial considerations is then done. Most, if not all, of these exclusionary and/or selection criteria are unethical and immoral. Yet decisions have to be made since the service is just not available for all. A first-come, first-served system seems most equitable, but pragmatic and other reasons may require deviations from that system in specific cases.

The rationing of dialysis when its availability is limited is a harsher but more realistic and honest way of confronting shortage or limited capacity of that service. Yet scarce medical resources require either rationing or reallocation of other resources to relieve the first shortage, thereby creating a new shortage. Who is to judge which patients with chronic renal failure should receive dialysis and which should not? Who can morally assess the quality of life of one patient versus another?

Another example of the scarcity of medical resources is the shortage of ICU beds. This shortage may be due to an insufficient number of beds, too few nurses or other personnel to staff them, or too many eligible patients who require such ICU beds. Four options have been suggested to deal with this problem: cross-utilization of ICU resources, expansion of ICU services, tightening of admission and discharge criteria, and reallocation of services for patients with certain diseases, particularly terminal illnesses. Each of these suggestions is associated with a variety of ethical problems. The expansion of ICU capacity would likely lead to rationing or limitation of other medical services since the funds for such expansion of necessity must come from somewhere. New, uncommitted, and unencumbered money is extremely scarce at all governmental levels—national, state, and local.

The withholding or withdrawal of certain medical services from the elderly or the terminally ill may be appropriate and ethically justifiable under certain limited circumstances. However, the specter of rationing seems to be part of the agenda in many instances, thus putting a price on human life. The Oregon proposal for the rationing of some medical services to its Medicaid patient population is highly controversial, in part because of that reason. Organ transplants will not be paid for in Oregon.

Yet society’s resources are not unlimited. The scarce resources are not always financial. They may be personnel or ICU beds or hemodialysis machines or human organs for transplantation. Cost cutting by government has sparked an intense debate about its effect on the quality of medical care. Health care rationing is inextricably linked with cost containment.