Potential Burdens of Low-Tech Interventions Near the End of Life

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Abstract
Decisions to forgo medical interventions are typically made by balancing their benefits and burdens. Often omitted from consideration is the environment in which the proposed treatment is to be administered. A case is presented of a 77-year-old man with end-stage pulmonary fibrosis who developed dependence on high flow oxygen, a technology unavailable in his community outside the hospital setting. Medical staff struggled with the appropriateness of discontinuing the oxygen because it was not the face mask that the patient found burdensome, rather the setting in which the treatment was provided. The case is discussed from the perspective of clinical ethics, organizational ethics, and the law.

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Key Words
Low-technology interventions, oxygen, withdrawal of treatment, environment

Introduction
Ethicists long ago discarded the distinction between “ordinary” and “extraordinary” treatment, choosing instead to focus on the benefits and burdens of medical interventions. How burdensome a patient perceives a given treatment to be and how that patient weighs its benefit are widely acknowledged to be highly subjective assessments. But clinicians recognize that patients usually rank treatments along a spectrum of aggressiveness, and typically withdraw treatments sequentially, depending on both how intrusive they are and how necessary for comfort. Patients very near the end of life who opt for intensive comfort measures are not usually candidates for even simple treatments, such as oral antibiotics—unless these are felt to be the best way to promote comfort. Occasionally, a patient’s suffering is so great that even noninvasive, comfort-promoting treatments are regarded as excessively burdensome, precisely because they may sustain life. Because they find themselves in a state worse than death, they may wish oxygen discontinued or a pacemaker turned off. For most patients, “comfort” is measured in terms of pain and suffering caused either by the underlying disease or by
its treatment. This article addresses another dimension of “comfort” that is often ignored: the environment in which the proposed treatment is to be administered.

**Case Report**

P.F. was a 77-year-old man with severe interstitial fibrosis admitted to an acute care hospital with worsening dyspnea. Inhaled bronchodilators were ineffective as had been trials of prednisone, sildenafil, and bosentan. The patient’s past medical history was notable for congestive heart failure, coronary artery disease, atrial fibrillation, peripheral vascular disease, hypertension, and prostate cancer. Mr. F. was a retired manager who lived alone but whose daughter and many friends lived nearby. He had been independent until one month before hospitalization, when severe dyspnea on exertion necessitated help with shopping, cooking, and cleaning. A palliative care consultation was requested to address symptom management and to help elicit the goals of care.

On examination, Mr. F. was alert and comfortable at rest on a 100% non-rebreather mask but became short of breath on transferring from bed to chair. With any lowering of the oxygen flow rate below the 15 liters/minute provided by the delivery system, his oxygen saturation dropped below 90% and he became tachycardic. Mr. F. articulated that he understood that he was approaching the end of his life and he wanted an exclusive focus on comfort.

The consultant advised using low dose opioids for treatment of dyspnea. She also suggested hospice care in a residential hospice or a skilled nursing facility or, if the patient could afford supplementary private care, in his own home.

A thorough investigation by the hospital care coordinator revealed that neither the local residential hospices nor skilled nursing facilities had the capacity to administer high flow rates of oxygen, nor were any of the area hospices able to supervise use of a 100% non-rebreather mask at home. The palliative care consultant recommended decreasing the oxygen flow rate and treating Mr. F. with morphine as needed to control his dyspnea, as would be done with discontinuation of a ventilator. In addition, she advocated monitoring the patient’s symptoms rather than the oxygen saturation level. If a satisfactory level of morphine could be found, Mr. F. could then be transferred from the hospital and receive hospice care in a less restrictive environment.

The hospitalist caring for P.F. felt that this approach was unethical because it entailed knowingly exposing the patient to hypoxemia, with its attendant risk of myocardial ischemia and death. From his perspective, the treatment of hypoxemia with a 100% non-rebreather mask was noninvasive and nonburdensome, and its withdrawal was unjustified. Mr. F. had not rejected the mask on the grounds that his suffering was intense and that he, therefore, did not want any potentially life-prolonging measures, such as oxygen.

**Ethical Analysis**

Since Judge Benjamin Cardozo ruled in 1914 that “every human being of adult years and sound mind has a right to determine what should be done with his own body,” and that performing surgery without consent constitutes assault and battery, competent patients have been recognized to have a right to refuse medical treatment. Mr. F. was mentally intact and understood his situation: He readily acknowledged that he found the mask acceptable and that the burden of the treatment was related to the requirement that he stay in the hospital to receive care. In weighing the benefits and burdens of the treatment, Mr. F. needed to consider the relative merits of potentially living longer with treatment but being confined to a hospital versus possibly living less long but going home or to a nursing home.

**Organizational Ethics Perspective**

The pace of development of new palliative interventions during the past decade has been remarkable: BiPAP (bilevel positive airway pressure) can keep patients alive without the use of a ventilator; a pleural catheter can help drain pleural effusions without subjecting patients to a sclerosing procedure under general anesthesia; and drugs such as erythropoietin can maintain hemoglobin levels, preventing debilitating weakness. But just as hospices sometimes refuse to enroll patients receiving these interventions because of concerns with cost, facilities also refuse to
admit such patients because they do not have the necessary equipment and staff or because protocols are not in place to deal with these technologies.

Most skilled nursing facilities do not have wall-oxygen and must rely on bulky oxygen tanks. Administration of greater than 6–8 liters/minute necessitates connecting multiple tanks, which may simply not fit in the available space. Skilled nursing facilities also rarely have a respiratory therapist on staff to hook up two tanks with special “Y-connectors.” To accept a patient whose technical needs exceed what is customarily provided, the facility has to be able to accommodate the equipment, arrange a back-up plan should there be problems with the system, and educate staff about the proper usage of the equipment.

**Legal Analysis**

Physicians have become accustomed to withdrawing and withholding treatments that are invasive and confer little benefit. As many as 90% of deaths in the intensive care unit are preceded by the withdrawal of one or more technologies. In the case of Mr. F., the hospitalist had no qualms about agreeing to a “do not intubate” status: He acknowledged that if the pulmonary fibrosis progressed to acute respiratory failure and if Mr. F. were intubated, the likelihood that he could successfully be weaned from the ventilator was vanishingly small. He implicitly recognized that being tethered to a ventilator might be an unacceptable burden to Mr. F. He did not think, however, that he could ethically authorize a decrease in the oxygen flow rate because Mr. F. was awake and alert, enjoyed talking to friends and family, and did not find the treatment uncomfortable. Court cases have made clear that the right to withdraw or withhold treatment is independent of the specific therapy being considered and have addressed a wide variety of interventions in both competent and incompetent patients: ventilators (Bartling), artificial nutrition and hydration (Bouvia, Cruzan), chemotherapy (Saikewicz), hemodialysis (Spring), and surgery (Candura).

**Case Resolution**

Mr. F. consented to a decrease in the oxygen flow rate and the use of opioids to control his symptoms. He wished to spend whatever time he had left outside the hospital, preferably at home but, if necessary, in a facility near his daughter and his closest friends. He did not wish to spend what at that point was thought to be his last weeks of life in the hospital.

After extensive discussions with the patient, his daughter, the chaplain, and the palliative care consultant, the hospitalist accepted the patient’s right to refuse high flow oxygen therapy because it confined him to the hospital. He wrote an order for long-acting opioids for treatment of dyspnea as well as for short-acting opioids for breakthrough symptoms. He noted in the medical record that the patient had opted for intensive comfort measures and that vital sign measurement, oxygen saturation readings, and laboratory tests were to be discontinued. The patient’s primary nurse said she would sit with the patient when the oxygen flow rate was lowered and be prepared to administer supplementary morphine for comfort. Both the patient and the medical team understood that withdrawal of high flow oxygen might be followed by the patient’s death, much as is often the case with removal of a ventilator.

The patient died before receiving his first dose of morphine and before the oxygen flow rate was altered.

**Conclusion**

Competent patients can decide what medical interventions to accept or reject based on their personal assessment of the relative burdens and benefits. Even a seemingly benign intervention such as oxygen can entail significant burden if the institutional arrangements required for its administration are intolerable. But an analysis based exclusively on “rights” is far too narrow.

The case of Mr. F. shows that physicians have an obligation to try to find means of promoting comfort that do not entail unwanted interventions. At the same time, hospice and nursing home medical directors have the obligation to try to make palliative technology available to patients who wish to use it. Sometimes all that is required is to borrow a protocol from the acute care hospital for use in the long-term setting. In other cases, special
equipment and extensive in-service education are prerequisites for instituting a new technology.

The case of Mr. F. also suggests that it is the ethical responsibility of hospital personnel to inform the facilities with which the hospital has an established relationship of the importance of the technology. Although new protocols could not have been put into place in time to assist P.F., identifying a need could help make the technology available for future patients.

References