Performing Procedures on the Newly Deceased for Teaching Purposes

What If We Were to Ask?

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Background: Performance of procedures on the recently dead for physician training is controversial. It has been suggested that permission be obtained. We investigated whether patients and family members would grant such permission or if even this request might anger the recently bereaved.

Methods: Physicians administered identical surveys to adult emergency department patients and family members in Brooklyn and Oslo to determine their willingness to consent for teaching of specific invasive techniques in the event of their own death or that of a family member. Demographic factors and location (culture) were assessed for effects.

Results: Willingness to consent was directly related to age of decedent and inversely related to perceived invasiveness of the procedure at both sites. In every scenario, respondents in Brooklyn were much less willing to grant permission (2- to 2.5-fold) than were those in Oslo. In Oslo, respondents were more willing to consent for their own bodies to be used as training tools than that of a relative. In Brooklyn, 48.5% would be angry if approached for permission compared with only 8.4% in Oslo (P<.001).

Conclusions: Asking for permission to perform procedures on the recently deceased for physician training purposes may often anger the bereaved. The emotional response to the consent request may be culturally determined. Increased willingness of individuals to permit the use of their bodies in the immediate postmortem period suggests that a preauthorization program similar to organ donor cards might be acceptable, successful, and ethical.

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Physicians must be skilled in several lifesaving procedures that, when necessary, must be performed rapidly and skillfully. Modalities to teach these invasive skills include didactic lectures, videotapes, animal models, mannequins, live patients (in the operating room, emergency department, or other bedside settings), and cadavers. Each method has specific advantages and drawbacks.

When a medical novice performs a procedure, the risk of harm to the patient increases, even under direct expert supervision. This risk is accepted daily in hospitals worldwide, because it is in the best interest of society to train competent physicians. Because of the risk, some defend the use of newly dead patients for teaching and perfecting invasive skills.1-3 In many institutions, this practice is commonplace,4 but few have written policies addressing this issue.5 This practice may make certain staff members uncomfortable,6 and it raises several ethical considerations, specifically whether family consent is required. In 2002, the Council on Ethical and Judicial Affairs of the American Medical Association encouraged obtaining consent from family members for these postmortem procedures and the development of “institutional policies that address the practice of performing procedures on the newly deceased for purposes of training.”7

Several studies indicate that it is feasible to elicit family consent to practice resuscitation skills, even based on a brief emergency department interaction.8-9 Addressing bereaved relatives is one of the most difficult tasks a physician must face. Although requests for autopsy and organ donation have become common, there is
concern that approaching family members regarding issues of consent may elicit a hostile response. This study's objectives were 3-fold: to assess whether family members would consent to allow postmortem procedures for physician teaching purposes, to determine whether family members would be angry at being approached with this request, and to assess whether these responses might vary cross-culturally.

METHODS

A physician-administered survey was conducted by personal interview (R.M.M., A.S., M.H.O., and J.T.F.) on a consecutive sample of patients or family members 18 years or older at 2 emergency department sites with differing patient populations. The sites were The Brooklyn Hospital Center (academic and clinical affiliate of Weill Medical College of Cornell University) and Ullevål University Hospital, both urban university-affiliated teaching hospitals. Institutional review board approval was obtained at both institutions before data collection. Surveys were conducted from identical scripts in English or Norwegian at the respective sites during a 3-day period, between 8 AM and midnight. Only one survey was accepted from each family unit. Patients were questioned directly, if able to respond. If the patient was unable to respond (too ill or too affected by dementia), one adult family member was questioned, if present with the patient. The assessment of whether the patient was too ill or too affected by dementia was determined by the judgment of the physician administering the questionnaire.

Demographic data and willingness to consent for teaching of invasive procedures in the event of their own death or that of a family member were recorded. A physician gave scripted descriptions of each procedure in layperson terms, and all respondents were given the opportunity to ask questions. Questions dealt with procedures of varying invasiveness and included, in order of invasiveness (from least to most invasive), the following: endotracheal intubation, central intravenous line placement, procedures involving 2-inch or smaller skin incisions (eg, tube thoracostomy and cricothyrotomy), and procedures involving larger than 2-inch skin incisions (eg, thoracotomy). Questions addressed each of these topics in general and as related to the patients themselves and immediate relatives of varying ages. Patients were queried about general issues: whether these procedures should be practiced on the recently dead even with family consent, whether only procedures that might save lives should be practiced, and whether these procedures should be done if performed with respect for the deceased. Patients were also asked to anticipate their emotional response to being asked these questions under those circumstances. A 5-point Likert scale was used for recording responses. The χ² test was used to assess statistical significance at P=.05.

RESULTS

There were 303 respondents, but the response rate was different between sites. Of the 152 persons available in Brooklyn, 102 (67.1%) responded affirmatively, 47 (30.9%) refused, and 3 (2.0%) were missed; of the 249 persons available in Oslo, 201 (80.7%) responded affirmatively and 48 (19.3%) refused. There were no differences in age, sex, race, or religion in the Brooklyn group between respondents and nonrespondents. Between sites, no differences were found among respondents in age, sex, or educational level (Table). As expected, there were differences in race and religion. The Brooklyn respondents were predominantly nonwhite (83.3%) compared with those from Oslo (4.0%). Brooklyn respondents were predominantly Catholic (41.2%), whereas Oslo respondents were predominantly nonreligious (48.8%).

For every procedure scenario, respondents in Brooklyn were much less willing to grant permission (2- to 2.5-fold) than those in Oslo (Figure A and B). At both sites, results indicate an increased likelihood of obtaining consent for procedures on recently deceased adults than children. For deceased infants and children, 56.3% of parents would not grant permission for physicians to practice endotracheal intubation and 48.4% would not grant permission for central line placement. In Oslo, respondents were more willing to permit practice on themselves, if deceased, than on a relative. At both locations, the refusal rate was highest for the most invasive procedure. Many respondents (82.9% in Brooklyn and 93.6% in Oslo), however, agreed that it is acceptable to perform invasive procedures once family consent is obtained (Figure A and B).

Respondents in Brooklyn would anticipate anger at being asked for consent 6 times more frequently than respondents in Oslo (48.5% vs 8.4%; P<.001) (Figure 3). There was an association with age in the Brooklyn group (53.8% of the respondents <40 years would have been angered vs 32.4% ≥40 years [P=.04]), but there was no association with sex, actively practicing a religion, or college education in either group.

COMMENT

In every scenario, respondents in Oslo were much more willing to grant permission to perform procedures on the recently dead than were those in Brooklyn, and were much less likely to be angry if asked. As expected, there were differences in race and religion between the respondents from Oslo and those from Brooklyn, but the groups were similar in age, sex, and educational level. These cultural differences suggest that findings from prior sur-

<table>
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<th>Characteristic</th>
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*Data are given as percentage of each group unless otherwise indicated. †Percentages may not total 100 because of rounding.

Figure 1. Results indicate an increased likelihood of obtaining consent for procedures on recently deceased adults than children. For deceased infants and children, 56.3% of parents would not grant permission for physicians to practice endotracheal intubation and 48.4% would not grant permission for central line placement. In Oslo, respondents were more willing to permit practice on themselves, if deceased, than on a relative. At both locations, the refusal rate was highest for the most invasive procedure. Many respondents (82.9% in Brooklyn and 93.6% in Oslo), however, agreed that it is acceptable to perform invasive procedures once family consent is obtained (Figure A and B).

Figure 2. Respondents in Brooklyn would anticipate anger at being asked for consent 6 times more frequently than respondents in Oslo (48.5% vs 8.4%; P<.001) (Figure 3). There was an association with age in the Brooklyn group (53.8% of the respondents <40 years would have been angered vs 32.4% ≥40 years [P=.04]), but there was no association with sex, actively practicing a religion, or college education in either group.

Figure 3. In every scenario, respondents in Oslo were much more willing to grant permission to perform procedures on the recently dead than were those in Brooklyn, and were much less likely to be angry if asked. As expected, there were differences in race and religion between the respondents from Oslo and those from Brooklyn, but the groups were similar in age, sex, and educational level. These cultural differences suggest that findings from prior sur-


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veys on willingness to grant permission to perform procedures on the recently dead may not generalize outside the local populations studied.8-10 Although the Council on Ethical and Judicial Affairs of the American Medical Association is recommending and encouraging obtaining consent by family members for these postmortem procedures,7 it seems difficult to develop standardized consent guidelines without first considering individual hospital and patient demographic characteristics.

The fact that patients were more willing to have procedures performed on their own bodies, if deceased, than on a relative suggests that preauthorization by patients may be possible.11 The fact that almost all those surveyed believed that procedures on the recently dead could be performed, if one had consent, implies that obtaining this preauthorization would have little opposition. For example, a program permitting these procedures, similar to organ donation, could be made available when obtaining a driver’s license.

A potential limitation of this study is that it was performed in only 2 cities. The purpose was not to do a thorough mapping of the question but to investigate whether cultural differences do exist, because this would indicate that checking the emotional reaction of the hospital population should be performed before instituting a policy of requesting these procedures on the recently dead from bereaved families. Because the night shifts were excluded, we cannot exclude diurnal variations. One could argue that at nighttime, subjects may even be more easily angered at being approached for consent. The inverse association of willingness to grant consent with the invasiveness of the procedure and the direct association with the age of the deceased person indicate good external validity of the survey. Further external validation measures were the general agreement with having respect for the deceased and performing procedures after the families’ consent was obtained.

**THE DEBATE**

The practice of training physicians to be adept with life-saving procedures by using the bodies of newly dead patients occurs daily. Declaration of death is often delayed to allow residents additional time to perform invasive tech-
niques. There is little agreement, and no consensus, regarding these practices, even among experts. There are, however, a few points that are generally agreed on. Physicians must be proficient with invasive resuscitative techniques. This requires practice, and poorly trained physicians place patients at unnecessary risk. Medical dogma dictates that living patients should not be placed at additional unnecessary risk for training purposes. Human cadavers are good training tools, especially when available alternatives are deficient. It is, thus, common that cadavers are good training tools, especially when available alternatives are deficient. It is, thus, common to justify practicing endotracheal intubation or umbilical line placement in deceased newborns, because there are no good mannequin models and these procedures are lifesaving. Almost two thirds of neonatal critical care techniques are good training tools, especially when available alternatives are deficient. It is, thus, common to justify practicing endotracheal intubation or umbilical line placement in deceased newborns, because there are no good mannequin models and these procedures are lifesaving.

It is, thus, common to justify practicing endotracheal intubation or umbilical line placement in deceased newborns, because there are no good mannequin models and these procedures are lifesaving. Almost two thirds of neonatal critical care programs engage in these practices. The results in Brooklyn, however, indicate that most parents would refuse consent and would be angered if even asked for such consent. Thus, continuing to engage in this practice may be viewed as unethical.

Experts in the field have argued exception to the informed consent policies in regard to this topic. The goal of informed consent is to educate and discuss treatment options involving risks and benefits. Newly deceased patients derive no benefits from intervention and conversely ascribe no risks. Patients entering teaching hospitals implicitly agree to participate in resident training, and patients who are exposed to risks are rarely given adequate informed consent before invasive procedures. Many are not aware of their health care provider’s level of training, ranging from medical student to experienced attending staff physician. Others argue that families cannot reasonably be expected to consent at the initial time of bereavement and that attempts to obtain consent might place an unnecessary and unwarranted stress on the family, as demonstrated by the Brooklyn respondents.

Opposing experts argue for full disclosure and informed consent by family before using newly deceased patients for any purpose. They argue that discovery of these practices could erode trust between physicians and the communities they serve, and are reminiscent of the days of grave robbery. These practices open the door to civil and criminal legal action. Manipulating a newly dead patient in any way may violate religious or cultural belief systems regarding corpse treatment.

State and federal supreme courts have not made definitive rulings with respect to permission or prohibition of the use of newly dead patients for medical teaching purposes. However, several states have corpse mistreatment laws and others have awarded punitive damages to families after unauthorized postmortem manipulation. Others have suggested affixing an addendum to autopsy consent forms permitting medical training during procedures.

The consent debate on newly dead patients seems to have come full circle. While many hospitals continue to practice the “don’t ask, don’t tell” policy of invasive skills training, the idea of informed family consent has reached the forefront. It may be feasible with reasonable success to obtain family consent and thereby alleviate the ethical dilemma, in concert with the recommendations of the Council on Ethical and Judicial Affairs of the American Medical Association. The fact remains that many hospitals engage in these practices.

Society wants physicians well trained in procedures, especially those that may be lifesaving. Opportunities to practice lifesaving procedures, however, are limited. There are several possible solutions to this ethical dilemma. Realistic mannequins have recently been designed for simulating actual emergency situations and providing for the repeat practice of procedures. However, the mannequins and their software are expensive. A strikingly life-like cadaver model has been developed for practicing many different emergency or routine surgical procedures. In this model, the cadaver is perfused with a blood-colored fluid in the venous and arterial systems, and the arterial system is connected to an aortofemoral balloon pump. The cadavers’ tissues become pliable, arterial pulsations occur, and realistic bleeding is simulated. Based on our findings, a legislative approach to arrive at a preauthorized form of consent for permitting postmortem procedures could be sought, similar to the system used by organ donation groups. This would avoid the need for family consent, avoid the hurdles involving hospital policy and administration, avoid regional and demographic differences between patient groups, avoid the practice of using slow codes on patients, and perhaps increase the pool of procedure donors.

In conclusion, willingness to grant permission to perform procedures on the recently deceased for physician training purposes varies with the invasiveness of the procedure and the culture of the respondents. In certain cultures, almost half of the respondents would be angry if such permission were even requested. The willingness of individuals to permit the use of their own bodies in the immediate postmortem period suggests that a preauthorization program similar to organ donor cards might be an acceptable, successful, and ethical means to assist with physician training.

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REFERENCES


Announcement

Call for Submissions for Cover Art on the Theme of Medicine and Art. Submissions are invited for the front cover of the Archives of Internal Medicine. We seek to portray art work created by clinician-readers of the ARCHIVES. Submissions must be of your own work, and art that has to do with the theme of medicine is of particular interest. Creativity is appreciated.

Themes may be wide ranging. For instance, some may render the therapeutic encounter, others may depict emotions of physical or mental illness. Some may be interested in artistic renderings of anatomy, physiology, microbiology, medical equipment, historical medical documents, or medicinal herbs. Others may be interested in social or environmental roots of illness or social/spiritual rituals used in response to illness. Some may depict pieces from other art forms such as drama, music, or dance that have a medical theme.

Sculpture, paintings, drawings, photography, fabric art, graphic art, metalwork, crafts, computer art, depictions of medical specimens—perhaps historical artifacts—and other forms of art are all acceptable so long as they can be captured in a photographic submission. A series of related pieces can also be submitted, although publication of a complete set cannot be guaranteed. The picture may be black and white or color and at least 3.5 X 5 inches but no larger than 8 X 10 inches. If you wish to submit a digital photograph, please see the digital art submission guidelines on our Web site at www.archinternmed.com. The picture must be oriented horizontally. No recognizable people should appear in the picture.

Submissions may be accompanied by a paragraph of less than 250 words written by the artist about the art piece. Submissions should identify the clinician-artist’s specialty and year of graduation from medical or other graduate school.