JOURNALS IN MEDICINE

Annals of Family Medicine

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Do Religious Physicians Disproportionately Care for the Underserved?

F. A. Curlin et al.

Purpose: Religious traditions call their members to care for the poor and marginalized, yet no study has examined whether physicians' religious characteristics are associated with practice among the underserved. This study examines whether physicians' self-reported religious characteristics and sense of calling in their work are associated with practice among the underserved. *Methods:* This study entailed a cross-sectional survey by mail of a stratified random sample of two thousand practicing U.S. physicians from all specialties. *Results:* The response rate was 63 percent. Twenty-six percent of U.S. physicians reported that their patient populations are considered underserved. Physicians who were more likely to report practice among the underserved included those who were highly spiritual (multivariate odds ratio [OR], 1.7; 95% confidence interval [CI], 1.1–2.7], those who strongly agreed that their religious beliefs influenced their practice of medicine (OR, 1.6; 95% CI, 1.1–2.5), and those who strongly agreed that the family in which they were raised emphasized service to the poor (OR, 1.7; 95% CI, 1.0–2.7). Physicians who were more religious in general, as measured by intrinsic religiosity or frequency of attendance at religious services, were much more likely to conceive of the practice of medicine as a calling but not more likely to report practice among the underserved. *Conclusions:* Physicians who are more religious do not appear to disproportionately care for the underserved.

Annals of Internal Medicine

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Ethical Issues in Stopping Randomized Trials Early Because of Apparent Benefit

P. S. Mueller

Stopping randomized trials early because of an apparent benefit is becoming more common. To protect and promote the interests of trial participants, investigators may feel obligated to stop a trial early because of the apparent benefit of a study treatment (compared with placebo or other treatment). There are, however, serious ethical problems with doing so. Truncated trials systematically overestimate treatment effects; in cases where the number of accrued outcome events is small, the overestimation may be very large. Generating seriously inflated estimates of treatment effect violates the ethical research requirement of scientific validity. Subsequent use of inflated estimates to inform clinical decision making and practice guidelines violates the ethical requirements of social value and a favorable risk–benefit ratio. Researchers should ensure that a large number of outcome events accrues before stopping a trial and then continue recruitment to assess whether positive trends continue. This can balance the need to protect research participants with the ethical requirements of scientific validity, social value, and a favorable risk–benefit ratio.

Volume 147, Issue 1
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Controlling Death: The False Promise of Advance Directives

Henry S. Perkins

Advance directives promise patients a say in their future care but actually have had little effect. Many experts blame problems

with completion and implementation, but the advance directive concept itself may be fundamentally flawed. Advance directives simply presuppose more control over future care than is realistic. Medical crises cannot be predicted in detail, making most prior instructions difficult to adapt, irrelevant, or even misleading. Furthermore, many proxies either do not know patients' wishes or do not pursue those wishes effectively. Thus, unexpected problems arise often to defeat advance directives, as the case in this paper illustrates. Because advance directives offer only limited benefit, advance care planning should emphasize not the completion of directives but the emotional preparation of patients and families for future crises. The existentialist Albert Camus might suggest that physicians should warn patients and families that momentous, unforeseeable decisions lie ahead. Then, when the crisis hits, physicians should provide guidance; should help make decisions despite the inevitable uncertainties; should share responsibility for those decisions; and, above all, should courageously see patients and families through the fearsome experience of dying.

British Medical Journal

Volume 335, Number 7612
July 28, 2007

Dignity and the Essence of Medicine: The A, B, C, and D of Dignity-Conserving Care

Harvey Max Chochinov

The late Anatole Broyard, essayist and former editor of the *New York Times Book Review*, wrote eloquently about the psychological and spiritual challenges of facing metastatic prostate cancer. "To the typical physician," he wrote, "my illness is a routine incident in his rounds while for me it's the crisis of my life. I would feel better if I had a doctor who at least perceived this incongruity … I just wish he would … give me his whole mind just once, be bonded with me for a brief space, survey my soul as well as my flesh, to get at my illness, for each man is ill in his own way." Broyard's words underscore the costs and hazards of becoming a patient.

Chest

Volume 132, Number 2
August 2007

Conflict of Interest in Clinical Practice

Mark R. Tonelli

Conflicts of interest, ubiquitous in medicine, occur when the interests of clinicians do not align with the interests of their patients. When systemic and institutionalized, such conflicts become particularly problematic, not only creating risks for individual patients but also undermining the integrity of the medical profession. Financial conflicts of interest arise when the reimbursement of clinicians appears to encourage decisions and actions that are unlikely to be in the best interest of individual patients. More insidiously, the influence of the pharmaceutical and medical device industry on clinicians, whether through gift giving, support of continuing medical education, or guideline development, creates conflicts of interest that may go unrecognized. Recognition and acknowledgment are the first steps in ameliorating conflicts of interest, which can then be disclosed and potentially eliminated.

Critical Care Medicine

Volume 35, Number 4
April 2007

Spiritual Care of Families in the Intensive Care Unit

Richard J. Wall et al.

Objectives: There is growing recognition of the importance of spiritual care as a quality domain for critically ill patients and their families, but there is a paucity of research to

guide quality improvement in this area. The authors' goals were to (1) determine whether intensive care unit (ICU) family members who rate an item about their spiritual care are different from family members who skip the item or rate the item as "not applicable," and (2) identify potential determinants of higher family satisfaction with spiritual care in the ICU. *Design:* Cross-sectional study, using data from a cluster randomized trial aimed at improving end-of-life care in the ICU. *Setting:* ICUs in ten Seattle-area hospitals. *Subjects:* A total of 356 family members of patients dying during an ICU stay or within twenty-four hours of ICU discharge. *Intervention:* None. *Measurements and Main Results:* Family members were surveyed about spiritual care in the ICU. Chart abstractors obtained clinical variables including end-of-life care processes and family conference data. The 259 of 356 family members (73 percent) who rated their spiritual care were slightly younger than family members who did not rate this aspect of care ($p = 0.001$). Multiple regression revealed family members were more satisfied with spiritual care if a pastor or spiritual advisor was involved in the last twenty-four hours of the patient's life ($p = 0.007$). In addition, there was a strong association between satisfaction with spiritual care and satisfaction with the total ICU experience ($p < 0.001$). Ratings of spiritual care were not associated with any other demographic or clinical variables. *Conclusions:* These findings suggest that for patients dying in the ICU, clinicians should assess each family's spiritual needs and consult a spiritual advisor if desired by the family. Further research is needed to develop a comprehensive approach to ICU care that meets not only physical and psychosocial but also spiritual needs of patients and their families.

Volume 35, Number 5
May 2007

Texas Hospitals' Experience with the Texas Advance Directives Act

Martin L.Smith et al.

Objective: The Texas Advance Directives Act (TADA) provides legal immunity for physicians who discontinue life-sustaining treatment judged to be medically inappropriate. The process includes review and affirmation of physicians' judgments by an ethics or medical committee. This study was undertaken to determine awareness of and experience with the medical appropriateness review process at Texas Hospital Association (THA) member hospitals from 1999 to 2004. *Design:* Cross-sectional, descriptive, twenty-item written survey instrument. *Setting*: University cancer center. *Subjects:* 409 hospital members of THA in 2004. *Interventions:* Mailed surveys. *Measurements and Main Results:* Participants returned 197 of 409 surveys usable for analysis (48.2 percent). Eighty-one percent of respondents (n = 159) were aware of all the provisions of the TADA. Thirty percent of respondents (n = 58) stated that their hospitals' TADA policy or procedure had been used to review specific patient cases. However, only forty-six hospitals indicated a specific number of cases reviewed. Six of these forty-six surveys were judged to be too inconsistent to be usable. The forty remaining hospitals reviewed a total of 256 cases. For 70 percent of the 256 reported cases (n = 178), review committees agreed with physicians that the treatments in question were medically inappropriate. *Conclusions:* A minority of THA hospitals have used their policies or procedures to review specific patient cases. Most cases were resolved before the end of the mandated ten-day waiting period because patients died, patients or representatives agreed to forgo the treatment in question, or patients were transferred. Discontinuation of life-sustaining treatment against patient or patient representative wishes occurred in only a small number of cases.

Journal of the American Geriatrics Society

Volume 55, Issue 6
June 2007

Physician Communication with Family Caregivers of Long-Term Care Residents at the End of Life

Holly Biola et al.

Objectives: To assess family perceptions of communication between physicians and family caregivers of individuals who spent their last month of life in long-term care (LTC) and to identify associations between characteristics of the family caregiver, LTC resident, facility, and physician care with these perceptions. *Design*: Retrospective study of family caregivers of persons who died in LTC. *Setting*: Thirty-one nursing homes (NHs) and ninety-four residential care/assisted living (RC/AL) facilities. *Participants*: One family caregiver for each of 440 LTC residents who died (response rate 66.0 percent) was interviewed six weeks to six months after the death. *Measurements*: Demographic and facility characteristics and seven items rating the perception of family caregivers regarding physician–family caregiver communication at the end of life, aggregated into a summary scale, Family Perception of Physician-Family caregiver Communication (FPPFC) (Cronbach alpha, 0.96). *Results*: Almost half of respondents disagreed that they were kept informed (39.9 percent), received information about what to expect (49.8 percent), or understood the doctor (43.1 percent); the mean FPPFC score (1.73 on a scale from 0 to 3) was slightly above neutral. Linear mixed models showed that family caregivers reporting better FPPFC scores were more likely to have met the physician face to face and to have understood that death was imminent. Daughters and daughters-in-law tended to report poorer communication than other relatives, as did family caregivers of persons who died in NHs than of those who died in RC/AL facilities. *Conclusion:* Efforts to improve physician communication with families of LTC residents may be promoted using face-to-face meetings between the physician and family caregivers, explanation of the patient's prognosis, and timely conveyance of information about health status changes, especially when a patient is actively dying.

Volume 55, Number 7
July 2007

Inconsistency over Time in the Preferences of Older Persons with Advanced Illness for Life-Sustaining Treatment

Terri R. Fried et al.

Objectives: To determine whether preferences for future attempts at life-sustaining treatment change over time in a consistent and predictable manner. *Design:* Observational cohort study. *Setting:* Community. *Participants:* One hundred eighty-nine community-dwelling persons aged sixty years and older with advanced cancer, heart failure, or chronic obstructive pulmonary disease. *Measurements:* Participants were asked whether, if faced with an illness exacerbation that would be fatal if untreated, they would undergo high-burden therapy for a chance to avoid death and risk an impaired health state to avoid death. Interviews occurred at least every four months for up to two years. *Results:* When asked about their willingness to undergo high-burden therapy for a chance to avoid death, 35 percent had an inconsistent preference trajectory (e.g., becoming more and then less willing over time or vice versa). The proportion with inconsistent trajectories increased to 48 percent and 49 percent when asked their willingness to risk physical or cognitive disability, respectively, to avoid death. Participants with variable health states over time were more likely to have inconsistent trajectories, although inconsistent trajectories were also common in those with stable health states. *Conclusion*: A large proportion of older persons with advanced illness have inconsistent trajectories of willingness to undergo burdensome therapy or risk an impaired health state for a chance to avoid death. Variability in their health state over time explained this in part, although the frequency of inconsistent trajectories even in those with stable health states suggests that preferences are influenced.

Journal of General Internal Medicine

Volume 22, Number 7
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The Influence of Default Options on the Expression of End-of-Life Treatment Preferences in Advance Directives

Laura M. Kressel, Gretchen B. Chapman, and Elaine Leventhal

Background: Advance directives promise to preserve patient autonomy, but research indicates that end-of-life preferences can be influenced by the way in which questions are posed. *Objective:* To determine whether preferences expressed by geriatric patients on advance directives are influenced by the default response inherent in the question. *Design:* Mailed survey containing one of three versions of an advance directive. *Setting:* General internal medicine outpatient medical practice. *Participants:* Outpatients aged sixty-five or older (n = 106; response rate, 27 percent). *Interventions:* In the "withhold" version of the survey, participants indicated situations where they would want treatments withheld (i.e., the default preference was in favor of treatment). In the "provide" version, participants indicated situations where they would want treatment provided (i.e., the default preference was against treatment). In the forced-choice control version, participants made an explicit decision to withhold or provide treatment for each situation. *Main Outcome Measure:* Participants' treatment preferences. *Results:* Preferences differed by condition, $F(2, 103) = 3.61$, $MSE = 0.09$, $\eta_2 = 0.07$, $p = 0.03$. Participants tended to express the default preference, and thus were more likely to favor treatment in the "withhold" condition than in the "provide" condition. Preferences in the forced-choice control condition were intermediate. *Conclusions:* The default inherent in a question can impact preferences for medical treatment. This default effect limits the utility of advance directives.

Volume 22, Number 9
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Surviving Surrogate Decision-Making: What Helps and Hampers the Experience of Making Medical Decisions for Others

Elizabeth K. Vig et al.

Background: A majority of end-of-life medical decisions are made by surrogate decision makers who have varying degrees of preparation and comfort with their role. Having a seriously ill family member is stressful for surrogates. Moreover, most clinicians have had little training in working effectively with surrogates. *Objectives:* To better understand the challenges of decision making from the surrogate's perspective. *Design:* Semistructured telephone interview study of the experience of surrogate decision making. *Participants:* Fifty designated surrogates with previous decision-making experience. *Approach:* The authors asked surrogates to describe and reflect on their experience of making medical decisions for others. After coding transcripts, the authors conducted a content analysis to identify and categorize factors that made decision making more or less difficult for surrogates. *Results:* Surrogates identified four types of factors: (1) surrogate characteristics and life circumstances (such as coping strategies and competing responsibilities), (2) surrogates' social networks (such as intrafamily discord about the "right" decision), (3) surrogate–patient relationships and communication (such as difficulties with honoring known preferences), and (4) surrogate–clinician communication and relationship (such as interacting with a single physician whom the surrogate recognizes as the clinical spokesperson vs. many clinicians). *Conclusions:* These data provide insights into the challenges that surrogates encounter when making decisions for loved ones and indicate areas where clinicians could intervene to facilitate the process of surrogate decision making. Clinicians may want to include surrogates in advance care planning prior to decision making, identify and address surrogate stressors during decision making, and designate one person to communicate information about the patient's condition, prognosis, and treatment options.

Journal of Reproductive Medicine

Volume 52, Number 4
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Effects of Tubal Ligation among American Women

M. N. Warehime, L. Bass, D. Pedulla

Objective: To examine two possible negative effects for women who have had a tubal ligation, using a nationally representative sample. *Study Design:* The authors' research used bivariate statistics to profile women with tubal ligations as compared to those without tubal ligations, and logistic regression models to examine the relationship between having a tubal ligation and two measures that indicate sexual dissatisfaction. *Results:* They found that women who have had a tubal ligation are more likely than women who have not had a tubal ligation to report (1) stress interfering with sex and (2) seeing a physician regarding sexual problems, controlling for relevant variables. *Conclusion:* Women, their physicians, and the public in general should have more detailed information regarding the effects of sterilization so that more informed decisions can be made about contraception and surgical sterilization procedures.

The Lancet

Volume 370, Number 9584
July 28, 2007

Outcome of Assisted Reproduction

Alastair G. Sutcliffe and Michael Ludwig

In vitro fertilization has been done for nearly thirty years; in developed countries at least 1 percent of births are from assisted reproductive therapies (ART). These children now represent a substantial proportion of the population, but little is known about their health. Some of the morbidity associated with ART does not result from the techniques but from the underlying health risks of being subfertile. Much of the amplified risk associated with ART is related to high birth order. However, risk of intrauterine and subsequent perinatal complications is enhanced after ART, and urogenital malformations can be present in boys, even in singleton infants. No increase in discord or other difficulties within families has been recorded. Long-term follow-up of children born after ART to reproductive age and beyond is necessary.

New England Journal of Medicine

Volume 356, Number 26
June 28, 2007

Disclosing Harmful Medical Errors to Patients

T. H. Gallagher, D. Studdert, and W. Levinson

Studies from more than six countries report a high prevalence of harmful medical errors. Most providers and patients realize that health care services are potentially hazardous and that errors sometimes occur despite the best efforts of people and institutions. Patients expect to be informed promptly when they are injured by care, especially care that has gone wrong. However, a divide between these expectations and actual clinical practice is increasingly evident.

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June 28, 2007

Compact versus Contract: Industry Sponsors' Obligations to Their Research Subjects

M.M. Mello and S. Joffe

Public unease about industry's influence on clinical research has never been greater. Recent events have elevated concerns about financial ties among investigators, academic medical centers, and industry sponsors, and disquieting findings have emerged about the legal relationships these entities form to conduct clinical trials. Tort litigation brought by injured research subjects has accentuated the legal dimensions of clinical research re-

lationships. These areas of focus converged in *Abney v. Amgen*, an important case decided in March 2006 by the U.S. Court of Appeals for the Sixth Circuit. The dispute centered on the legal obligation of an industry sponsor to provide clinical-trial participants with an investigational medication after the termination of a study. The court held that despite a provision in the consent form stating that subjects could elect to continue taking the study drug for up to two years after the trial ended, the sponsor had no obligation to provide the drug. It grounded this conclusion in a determination that the plaintiffs had not entered into a legal relationship with the sponsor that would bind Amgen to fulfill this promise. The Abney case raises weighty legal issues for academic medical centers and their research faculty, as well as troublesome ethical questions. The case underscores that notwithstanding the advantages of an arms-length relationship between academic investigators and industry sponsors, such an arrangement has undesirable legal consequences.—Abstract compiled from text of article.

Volume 357, Number 1
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In Vitro Fertilization with Preimplantation Genetic Screening

S. Mastenbroek et al.

Background: Pregnancy rates in women of advanced maternal age undergoing in vitro fertilization (IVF) are disappointingly low. It has been suggested that the use of preimplantation genetic screening of cleavage-stage embryos for aneuploidies may improve the effectiveness of IVF in these women. *Methods:* The authors conducted a multicenter, randomized, double-blind, controlled trial comparing three cycles of IVF with and without preimplantation genetic screening in women thirty-five through forty-one years of age. The primary outcome measure was ongoing pregnancy at twelve weeks of gestation. The secondary outcome measures were biochemical pregnancy, clinical pregnancy, miscarriage, and live birth. *Results:* Four hundred eight women (206 assigned to preimplantation genetic screening and 202 assigned to the control group) underwent 836 cycles of IVF (434 cycles with and 402 cycles without preimplantation genetic screening). The ongoing-pregnancy rate was significantly lower in the women assigned to preimplantation genetic screening (52 of 206 women [25 percent]) than in those not assigned to preimplantation genetic screening (74 of 202 women [37 percent]; rate ratio, 0.69; 95% confidence interval [CI], 0.51–0.93). The women assigned to preimplantation genetic screening also had a significantly lower live-birth rate (49 of 206 women [24 percent] vs. 71 of 202 women [35 percent]; rate ratio, 0.68; 95% CI, 0.50–0.92). *Conclusions:* Preimplantation genetic screening did not increase but instead significantly reduced the rates of ongoing pregnancies and live births after IVF in women of advanced maternal age.

Volume 357, Number 3
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Organ Donation after Cardiac Death

R. Steinbrook

Although the numbers of organ donors and transplantations in the United States have more than doubled over the past twenty years, the demand for organs continues to dwarf the supply. In 2006, there were about twenty-nine thousand solid-organ transplantations; as of June 2007, there were about ninety-seven thousand people on waiting lists for organ transplantation. About three of every four organs that are transplanted are recovered from deceased donors. The most rapid increase in the rate of organ recovery from deceased persons has occurred in the category of donation after "cardiac death" — that is, a death declared on the basis of cardiopulmonary criteria (irreversible cessation of circulatory and respiratory function) rather than the neurologic criteria used to declare "brain death" (irreversible loss of all functions of the entire brain, including the brain stem). Organs were recovered from 645 donors after cardiac death in 2006, as compared with 189 in 2002; these donors accounted for 8 percent

of all deceased donors in 2006. At the Organ Procurement Organization at the University of Wisconsin, the New England Organ Bank in the Boston area, and the Finger Lakes Donor Recovery Network in New York, such donors accounted for more than 20 percent of all deceased donors.—Abstract compiled from text of article.

Volume 357, Number 4
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The Spread of Obesity in a Large Social Network over 32 Years

N.A. Christakis and J.H. Fowler

Background: The prevalence of obesity has increased substantially over the past thirty years. The authors performed a quantitative analysis of the nature and extent of the person-to-person spread of obesity as a possible factor contributing to the obesity epidemic. *Methods:* They evaluated a densely interconnected social network of 12,067 people assessed repeatedly from 1971 to 2003 as part of the Framingham Heart Study. The body-mass index was available for all subjects. They used longitudinal statistical models to examine whether weight gain in one person was associated with weight gain in his or her friends, siblings, spouse, and neighbors. *Results:* Discernible clusters of obese persons (body-mass index [the weight in kilograms divided by the square of the height in meters], ≥30) were present in the network at all time points, and the clusters extended to three degrees of separation. These clusters did not appear to be solely attributable to the selective formation of social ties among obese persons. A person's chances of becoming obese increased by 57 percent (95% confidence interval [CI], 6–123) if he or she had a friend who became obese in a given interval. Among pairs of adult siblings, if one sibling became obese, the chance that the other would become obese increased by 40 percent (95% CI, 21–60). If one spouse became obese, the likelihood that the other spouse would become obese increased by 37 percent (95% CI, 7–73). These effects were not seen among neighbors in the immediate geographic location. Persons of the same sex had relatively greater influence on each other than those of the opposite sex. The spread of smoking cessation did not account for the spread of obesity in the network. *Conclusions:* Network phenomena appear to be relevant to the biologic and behavioral trait of obesity, and obesity appears to spread through social ties. These findings have implications for clinical and public health interventions.

Volume 357, Number 7
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Medical Abortion and the Risk of Subsequent Adverse Pregnancy Outcomes

J. Virk, J. Zhang, and J. Olsen

Background: The long-term safety of surgical abortion in the first trimester is well established. Despite the increasing use of medical abortion (abortion by means of medication), limited information is available regarding the effects of this procedure on subsequent pregnancies. *Methods:* The authors identified all women living in Denmark who had undergone an abortion for nonmedical reasons between 1999 and 2004 and obtained information regarding subsequent pregnancies from national registries. Risks of ectopic pregnancy, spontaneous abortion, preterm birth (at less than thirty-seven weeks of gestation), and low birth weight (<2500 g [5.5 lb]) in the first subsequent pregnancy in women who had had a first-trimester medical abortion were compared with risks in women who had had a first-trimester surgical abortion. *Results:* Among 11,814 pregnancies in women who had had a previous first-trimester medical abortion (2,710 women) or surgical abortion (9,104 women), there were 274 ectopic pregnancies (respective incidence rates, 2.4 percent and 2.3 percent), 1,426 spontaneous abortions (12.2 percent and 12.7 percent), 552 preterm births (5.4 percent and 6.7 percent), and 478 births with low birth weight (4.0 percent and 5.1 percent). After adjustment for maternal age, interval between pregnancies, gestational age at abortion, parity, cohabitation status, and urban or nonurban residence, medical abortion was not associated with a significantly increased risk of ectopic pregnancy (relative risk, 1.04; 95% confidence interval [CI],

0.76–1.41), spontaneous abortion (relative risk, 0.87; 95% CI, 0.72–1.05), preterm birth (relative risk, 0.88; 95% CI, 0.66–1.18), or low birth weight (relative risk, 0.82; 95% CI, 0.61–1.11). Gestational age at medical abortion was not significantly associated with any of these adverse outcomes. *Conclusions:* The authors found no evidence that a previous medical abortion, as compared with a previous surgical abortion, increases the risk of spontaneous abortion, ectopic pregnancy, preterm birth, or low birth weight.

Pediatrics

Volume 120, Number 1
July 1, 2007

Physician Medical Decision-Making at the End of Life in Newborns: Insight into Implementation at 2 Dutch Centers

A.A. Verhagen et al.

Objective: Decisions regarding end-of-life care in critically ill newborns in the Netherlands have received considerable criticism from the media and from the public. This might be because of a lack of proper information and knowledge. The authors' purpose was to provide detailed information about how and when the implementation of end-of-life decisions, which are based on quality-of-life considerations, takes place. *Methods:* They reviewed the charts of all infants who died within the first two months of life at two university hospitals in the Netherlands from January to July 2005 and extracted all relevant information about the end-of-life decisions. They interviewed the responsible neonatologists about the end-of-life decisions and the underlying quality-of-life considerations and about the process of implementation. *Results:* Of a total of thirty deaths, twenty-eight were attributable to withholding or withdrawing life-sustaining treatment. In eighteen of twenty-eight cases, the infant had no chance to survive; in ten cases, the final decision was based on the poor prognosis of the infant. In six patients, two successive different end-of-life decisions were made. The arguments that were most frequently used to conclude that quality of life was deemed poor were predicted suffering and predicted inability of verbal and nonverbal communication. Implementation consisted of discontinuation of ventilatory support and alleviation of pain and symptoms. Neuromuscular blockers were added shortly before death in five cases to prevent gasping, mostly on parental request. *Conclusions*: The majority of deaths were attributable to withholding or withdrawing treatment. In most cases, the newborn had no chance to survive and prolonging of treatment could not be justified. In the remaining cases, withholding or withdrawing treatment was based on quality-of-life considerations, mostly the predicted suffering and predicted inability of verbal and nonverbal communication. Potentially life-shortening medication played a minor role as a cause of death.

Sleep

Volume 30, Number 3
March 1, 2007

The Effects of 53 Hours of Sleep Deprivation on Moral Judgment

William D.S. Killgore et al.

Study Objectives: Functional neuroimaging studies suggest a prominent role for the medial prefrontal cortex in the formation of moral judgments. Activity in this region has also been shown to decline significantly during sleep loss. The authors therefore examined the effects of two nights of sleep deprivation on several aspects of moral judgment. *Design:* Participants made judgments about the "appropriateness" of various courses of action in response to three types of moral dilemmas at rested baseline and again following fifty-three hours of continuous wakefulness. *Setting*: In-residence sleep laboratory at the Walter Reed Army Institute of Research. *Participants:* Twenty-six healthy adults (twenty-one men, five women). *Interventions*: N/A. *Measurements*

and Results: Compared to baseline, sleep deprivation resulted in significantly longer response latencies (suggesting greater difficulty deciding upon a course of action) only for moral personal (i.e., emotionally evocative) dilemmas, whereas response times to moral impersonal (less emotionally evocative) and nonmoral dilemmas did not change significantly with sleep loss. The effect of sleep deprivation on the willingness to agree with solutions that violate personally held moral beliefs was moderated by the level of emotional intelligence, as measured by the BarOn EQ-i. Persons high in emotional intelligence were less susceptible to changes in moral judgments as a function of sleep loss. *Conclusions*: These findings suggest that sleep deprivation impairs the ability to integrate emotion and cognition to guide moral judgments, although susceptibility to the effects of sleep loss on this ability is moderated by the level of emotional intelligence.