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Hens K, Snoeck J, Nys H, Cassiman JJ, Dierickx K. An exploratory survey of professionals on the use of stored tissue samples from minors for genetic research. *Genetics and Molecular Research* 2010;9(2): 973–80.

Stored tissue samples collected from minors raise specific ethical issues. Whereas samples collected from adults involve donors who may autonomously decide on participation, samples collected from children raise concerns pertaining to consent. There is a substantial body of literature regarding stored tissue samples in general; however, there is little information specific to biological samples from minors. The authors sought to clarify the views of professionals in the field of genetics with regard to the usefulness of research on stored tissue samples from minors, the validity and extent of parental consent, the need for a child's assent, and the age at which they believed children could comprehend storage of and research on biological samples. They e-mailed surveys to 194 geneticists in Belgium and received a total of 64 completed questionnaires, a response rate of 35.5%. Nearly all respondents (95.3%) indicated that their institution stored biological samples for genetic research, and the majority (70.2%) had been involved with genetic research for more than four years. Ninety-two percent thought genetic data from minors is useful for research, and 82.5% believed parental consent is valid. The majority (76.5%) indicated that children should be given the opportunity to assent once they could understand the implications of tissue storage and genetic research, and almost all (95.2%) believed that children should be allowed to withdraw their data from a collection when they reach the age of 18. In terms of extent of parental consent, most respondents indicated that parents should be permitted to consent to either well-specified research (79.4%) or research related to a specific condition (77.8%). Fewer respondents (58.7%) believed that parents should be able

to consent to research related to a specific gene, and a little less than half (47.6%) thought that parents could consent to any possible future genetic research. The majority of participants thought that 16–18 years was the age at which children could understand the implications of tissue storage and genetic research. *Overall, Belgian scientists in the field of genetic research believe that research on stored tissue samples collected from minors is useful and that parental consent for such research is valid with the provision that children should be permitted to assent as they grow older.* Such findings provide a framework for future ethical considerations involving stored tissue samples collected from children for genetic research.

Donohue PK, Boss RD, Aucott SW, Keene EA, Teague P. The impact of neonatologists' religiosity and spirituality on health care delivery for high-risk neonates. *Journal of Palliative Medicine* 2010;13(10):1219–24.

Studies suggest that U.S. physicians' religious or spiritual beliefs may affect how they interpret the scientific literature and communicate with patients. It influences their provision of pain medication to dying patients and prompts highly religious physicians to attach less importance to patient wishes. Ethical decisionmaking regarding life-sustaining therapies (LST) frequently occurs when dealing with high-risk neonates. How neonatologists' belief systems affect care delivery for critically ill newborns is vitally important, because parents depend on them to interpret complex information, identify critical opportunities for decisionmaking, and present options for care. Yet their attitudes have been largely unexplored.

To characterize the relationship between neonatologists' religiosity or spirituality and the provision of intensive care services for high-risk newborns, these authors surveyed a convenience sample of practicing

neonatologists attending an American Academy of Pediatrics neonatal-perinatal training program. The survey, based on a case of trisomy 13 or 18 (mean survival time nine and six days, respectively), asked them about their religious or spiritual beliefs, provision of LST for critically ill neonates, and communication with families.

Of the 298 neonatologists that responded to the internet survey (35% response rate), 66.4% considered themselves very or moderately spiritual, and 40.8% very or moderately religious. In response to a hypothetical prenatal consultation for a fetus at 23 1/7 weeks gestation, 96.3% agreed that the physician has a moral obligation to present all options to parents, including the provision of comfort care. More than 95% had no objection to withholding or withdrawing LST, with religion playing almost no part in these decisions. Thirty-eight percent of participants reported no objection to resuscitating an infant with trisomy 13 or 18; 40% of these neonatologists considered themselves very or moderately religious, and 60% slightly or not at all religious. Eighty-nine neonatologists reported that their religious beliefs influence their medical practice. These physicians had similar responses as those not influenced by religion.

Aside from lacking data about the 65% of neonatologists who received the survey but didn't respond, the question still arises about the effect on the parents and neonates who have neonatologists who would not withhold LST in a dying baby because of their religious or nonreligious objections (3.3%) or would not withdraw LST for the same reasons (2%). The only answer seems to be to make sure that an active institutional bioethics committee exists and that both parents and staff have easy access to their consultations.

The authors conclude that for the majority of neonatologists participating in this study, differences in critical care practice cannot be attributed to personal religious or spiritual views. The problem, of course, is with the others.

Preston-Shoot M, McKinn, J. Prepared for practice? Law teaching and assessment in UK medical schools. *Journal of Medical Ethics* 2010;36:694–9.

Despite the recent increasing global focus on medical ethics and professionalism within medical education, there is little in

the literature regarding how medical schools are preparing their students in this area for transition to practice on graduation. Additionally, although there are direct correlations between legal standards and ethical guidelines, the two are not necessarily interchangeable and, in fact, at times can be at odds with one another (i.e., what is ethical may not necessarily be legal, and vice versa). With such a dearth of data about how medical students obtain their knowledge, the authors of this study attempted to form a more complete picture of legal and ethical education in medical schools in the United Kingdom in 2009.

A detailed questionnaire was sent to all 31 medical schools in the United Kingdom, and 25 provided responses (76%). The results allowed the authors to analyze the data and draw some conclusions about legal and ethics education among UK medical students. First, the vast majority of medical schools teach law by integrating the topic with ethics and professionalism in clinical areas. Similarly, the number of hours and the chronological location of these topics varied, although most teaching in these areas was found to be early in the educational process (i.e., years one to three). Second, although many schools felt integrating legal education with other clinical topics would “encourage students to connect the legal rules” with clinical practice, many medical schools had no formal way to assess their students’ grasp of these concepts using outcome measures. *Third, the content of these lectures tended to vary widely, with “no single topic covered by more than three-quarters of responding schools,” and with the selection of topics appearing to be “determined partly by clinical relevance but partly by the availability of curriculum space and staff expertise and interest.”* Of note, not all contributors to these topics had “formal ethicolegal training,” and educators were found to consist of individuals from various areas of expertise, including those in clinical academia, those in nonclinical academia, practicing attorneys, and patients or service users.

Although there are undoubtedly limitations to these types of studies, this appears to be an interesting first step in understanding more about the content of a specific area in medical student education within the United Kingdom. It is difficult to appreciate how well the results of this survey transition to medical education within the United States, although it may likely contrast

between the types of material taught, the duration of the educational experience, the types of faculty responsible for providing this information to medical students, and the variation in legal standards in the United States and local jurisdictions would create an even wider discrepancy in the knowledge base obtained by U.S. medical students. As the authors have illustrated, additional study of these concepts is warranted.

Dyrbye LN, Massie FS, Eacker A, Harper W, Power D, Durning SJ, et al. Relationship between burnout and professional conduct and attitude among US medical students. *JAMA* 2010;304(11):1172–80.

Developing a pattern of professional behavior is an integral part of becoming a physician. In spite of the importance of professionalism, relatively little research has focused on how professional and personal distress affects professionalism. The authors conducted a large multi-institutional study measuring multiple dimensions of professionalism and its relationship to burnout and other distress parameters among medical students. This work is important because there is evidence indicating that unprofessional behaviors during medical school may predict unprofessional conduct later in practice. All medical students at seven medical schools in the United States were eligible to participate. Schools were chosen based on their diverse student population, variations in size, geographic locations, public or private status, and the availability of a local investigator who could complete the tasks necessary for the students to participate. Of the 4,400 eligible students, 2,682 (61%) completed the survey for the research. Participating students completed the Maslach Burnout Inventory, which encompasses three domains: emotional exhaustion, depersonalization, and personal accomplishment. A depression screen (Primary Care Evaluation of Mental Disorders) and a quality-of-life measure (Medical Outcomes Study Short-Form) were also completed. Participating students were then asked a series of items regarding professional conduct and attitudes reflective of professionalism, such as engaging in cheating and dishonest clinical behaviors. The Medical Students' Attitudes Toward Providing Care for the Underserved instrument was used to assess students' per-

ception of their responsibility to society. Finally, participants were asked a series of questions regarding conflicts of interest with the pharmaceutical industry. These conflict of interest questions were derived virtually verbatim from the American Medical Association's Ethical Guidelines of Gifts to Physicians from Industry.

The results showed a very small percentage (1.5%) of students having copied from a "crib sheet" or another student during a closed-book examination or having taken credit for another person's work (0.6%). However, dishonest clinical behaviors, such as reporting a physical examination finding as normal, were relatively commonly (43.3%) reported unprofessional behaviors. Remarkably, a substantial proportion of the students had opinions in conflict with the AMA's policy on relationships with industry; for example, 22.4% thought it was appropriate to accept \$500 from an industry representative after completing a short survey, and a relatively small percentage (14%) of students' opinions aligned with all aspects of the AMA policy on relationships with the pharmaceutical industry. A relatively high percentage of students (64.4–90.2%) were altruistic with respect to physicians' responsibility to society. Those students with significant levels of burnout were significantly more likely to have engaged in cheating or dishonest clinical behaviors. Also, students with higher levels of burnout were less likely to be altruistic in their views regarding their responsibilities to society. There was a less consistent relationship between burnout and opinions regarding relationships with the pharmaceutical industry. For example, a one-point increase in depersonalization and a one-point decrease in personal accomplishment score were associated with increased odds of viewing an event or gift as acceptable, but this was not statistically significant. Those medical students with a positive depression screen were more likely to report having copied during a closed-book examination, having reported a physical finding as normal when it had been omitted in the examination, and having said that a test had been ordered when it had not. Students who showed signs of depression were also less likely to report feeling that they could make an impact on the problems of the medically underserved. *In conclusion, this research supports the observation that*

Abstracts of Note

burnout may be one important variable contributing to unprofessional behavior. Further, this research indicates that efforts should be undertaken to reduce burnout among medical students, which would help students develop higher levels of altruism and professionalism.

These Abstracts of Note were written by Aimee Kaempf, Ken Iserson, Steven T. Herron, and Barry Morenz.