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Educating Future Neuroscience Clinicians in Neuroethics: a Report on One Program's Work in Progress

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ABSTRACT

If the new and rapidly expanding discipline of neuroethics is to have a significant impact on patient care, the neuroscience clinicians must become familiar with the discipline, and be competent and comfortable in applying its cognitive base and principles to clinical decision-making. Familiarity with and practical experience in the application of basic biomedical knowledge and principles to clinical decision- making in the neurosciences becomes the essential foundation on which to begin to integrate neuroethics into medical education. The place where the building of this foundation and the initial exposure to neuroethics must begin is in the residency program. This article describes the approach developed in the neurology residency education program at the University of Calgary to move toward achieving this goal. The key elements for the development and successful implementation of the program are outlined and a brief overview of the topics covered in the sessions is described.

Key words: neuroethics, medical education, neurosciences.

Introduction

Neuroethics has two distinct components. First, it encompasses all aspects of ethical decision-making involving patients suffering from neurologic and psychiatric diseases. Second, it elucidates the neuroscientific basis of ethical decision-making.[1]

Training programs for adult and pediatric neuroscience clinicians (primarily neurologists, neurosurgeons and psychiatrists) have a responsibility to incorporate educational activities focused on neuroethics within their teaching programs. This will ensure future neuroscience clinicians begin to develop capacity and expertise in clinical neuroethics to better prepare them for the ethical challenges they will face upon entry into careers in clinical practice or as clinician scientists. In addition, the Royal College of Physicians and Surgeons of Canada (RCPSC), the body which determines objectives for training programs as well as accrediting them, currently mandates training programs to do this[2, 3, 4]. A recent letter in Science highlights the need for neuroethics teaching in neuroscience research education programs.[5]

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This report outlines the development and current status of neuroethics teaching in the adult neurology training program in the Department of Clinical Neurosciences at the University of Calgary. We believe that our experience may be of value to other clinical neuroscience training programs which are developing programs of their own.

How We Arrived at Where We Are Today

The formal teaching of neuroethics began in 2001. The fact that a faculty-wide accreditation visit by the RCPSC was scheduled for early in 2003, undoubtedly helped move the initiative forward. Since 2006, there has been a minimum of six, one-hour sessions per year devoted to neuroethics and professionalism as part of the formal, weekly academic half-day program. The sessions are typically held over the noon hour and the program provides lunch.

Initially the content of the sessions was determined by the faculty member (KB) who was the lead for the program. In 2006, regular resident (PC) input into planning and leadership for the sessions was initiated. In 2007, intermittent formal neuroethics expertise (WG) was added.

Current Demographics of the Neurology Residents

For the 2009-2010 academic year, there are 18 trainees – 4 Post-Graduate Year 5 (PGY5), 3 PGY4s, 2 PGY3s, 3 PGY2s, 5 PGY1s and 1 resident who is currently completing a PhD in neuroscience. 7 of the trainees are International Medical Graduates of whom 4 have their training supported by Saudi Arabian funding, while the other 3 are landed immigrants who had completed their medical degrees in their home countries prior to coming to Canada. Canadian graduates are from 6 different medical schools. The male and female numbers in the program are 12 and 6 respectively.

Structured Versus Unstructured Curriculum

A more structured approach, focusing on acquiring an appropriate cognitive base for neuroethics, was attempted by using the American Academy of Neurology Ethics, Law and Humanities Committee's Case-Based Curriculum for Neurology Residents. Another structured initiative, consisting of 4 sessions, each one focusing on one of the 4 principles (respect for autonomy, nonmaleficence, beneficence and justice) as per the work of Beauchamp and Childress[7] was developed. Selected readings from their widely read text served as reading material on which the discussion would be based. Unfortunately, both of these initiatives failed to engage the residents. As a result, it was decided to switch to a more unstructured curriculum as described below. This approach was successful in engaging the residents in the sessions and thus has been continued.

Nature of the Current Teaching Sessions

All sessions are informal and attendance is not recorded, but they are mandated by the training program. A semi-open group reflects the residents' reality of alternating schedules of call and vacation. Pediatric neurology trainees participate in the program via a telehealth link-up. Reading material or summaries of cases for discussion are pre-circulated electronically. Occasionally a guest speaker may be invited to serve as a resource person for a particular topic being addressed. At the start of the program there was a greater emphasis on discussion of issues of professionalism, but currently the greater emphasis has switched to neuroethics.

Examples of Topics Discussed

1. Big Pharma and its role in marketing of drugs like Plavix® and Neurontin®.
2. Proposed policy for Academic Medical Centers for dealing with industry.
3. Industry funding of medical education.
4. fMRI in relation to emotional engagement in moral judgment.
5. Organ donation after cardiocirculatory death.
6. Incidental findings in experimental brain imaging.
7. The scientific basis of influence and reciprocity.
8. Scientific integrity, publication and retractions.
9. Professional/ethical obligations in the face of risks to personal health (in relation to the anticipated HNI pandemic).
10. Dealing with medical errors.

Examples of Cases Discussed

1. A young man living at home with his spouse and 3 small children was found to have cocaine with him when hospitalized with an acute delirium secondary to cocaine addiction. The discussion focused on whether or not the treating neurology team had a responsibility to notify Child Welfare about the situation.
2. A patient with Creutzfeldt-Jacob Disease and the neurology team's responsibility in providing information about the diagnosis to family members when there was a wish by some members to withhold the information from others.
3. A patient with an end-stage glioblastoma multiforme for whom the family wanted "all available treatment including cardiac resuscitation" undertaken to attempt to maintain the patient's life.
4. A patient with a large, benign frontal lobe tumor declined

recommended surgical treatment. The discussion focused on whether or not the patient had capacity to make this decision.

5. A young woman with end-stage amyotrophic lateral sclerosis requiring ventilation and nutrition via a G-tube when the only place available to provide this level of support was in an intensive care bed in the acute care hospital. The discussion focused on what level of health care the patient could justifiably expect to receive versus justice to others in terms of using a limited resource.

6. A patient who attempted suicide was admitted to the ICU, as ventilation was required. The neurologist involved felt that continued support and observation was required to determine whether or not there would be recovery. The family insisted that ventilatory support be withdrawn and only comfort measures offered. There was no advance directive and no one had been designated as a power of attorney. The discussion focused on what should be done.

Discussion

Little has been written about ethics teaching in adult neurology training programs. A 1996 publication in Neurology[8] reported results of a 1991 survey conducted by the Ethics and Humanities Subcommittee of the American Academy of Neurology on ethics education (the term 'neuroethics' had not yet been coined) in neurology residency programs in the United States. No program that responded to the survey reported any formal education activities in ethics. In 2004, Schuh and Burdette[9] reported their experience with a formal neurology resident ethics curriculum. No further reports were found.

In informal discussions with others, it appears that regular teaching sessions devoted to neuroethics within a formal academic teaching program are uncommon in neurology training programs in Canada. We believe that the initial and then continuing enthusiastic support of the program director, Dr William Fletcher, has been critical to the success of the program. It was his decision to assign time for ethics in the formal educational program which demonstrated to residents and staff that this was not simply an add-on topic to be learned on an ad hoc basis.

There have been challenges to offering our program. Although our program is of modest size in comparison to other Canadian programs, the actual number of residents in any one year is small. Thus the program has to be designed to appeal to all level of trainees. This will necessarily lead to some repetition of material from year to year and occasional presentation of material for which more junior trainees may be less prepared. However, the current focus on case-based discussion makes this less of a problem as trainees at all levels experience these clinical challenges. We also believe that as an adequate moral space, it goes beyond conventional seniority.

We believe that our approach provides the residents with the opportunity to develop their sensitivity to the neuroethical dimensions of clinical care and an approach to learning how to deal with the issues. At the same time, by framing discussions and decision making in terms of specific ethical principles, the cognitive base of the discipline can be learned as well.

We have been unable to come up with a satisfactory method of evaluating our program to determine if we are meeting these goals. There is no doubt that having a more formal, didactic program with an evaluation at the end[9], would show short-term outcomes in terms of acquisition of cognitive material. However, this would not tell us anything about whether we were making a difference in the long term (for example once the trainees enter practice), which is the goal of our work.

Although our trainees are becoming more comfortable with identifying and approaching neuroethical issues in their patients, they frequently have difficulty engaging their attending staff in discussing and arriving at plans to deal with the issues. An ongoing program for staff aimed at facilitating their abilities to verbalize their understanding of and approach to decision making would be one way to deal with this. Another option would be to have Neuroethics Ward Rounds for the team supported by someone with ethics expertise on a regular basis. One way of developing this expertise would be to have an ethics elective for a resident interested in taking an active part in teaching neuroethics to trainees. To date we have not implemented any of these initiatives.

A final challenge is the issue of sustainability of resident and preceptor leadership. Currently another staff physician has agreed to begin participating in the sessions with the long-term plan of taking over the role of program leader to replace KB, who has been involved with the program since its inception. PC, the resident leader will be completing his residency this academic year, and a search for a replacement resident leader who has an interest in neuroethics as well as interest in developing expertise needs to be initiated. Additionally, a new program director has just taken over leadership of the program.

For those clinical neuroscience programs considering developing a formal program in neuroethics, we offer the following recommendations.

1. Obtain a commitment of support for the proposed program from the program leadership.

2. Identify a teacher/clinician as the leader of the program and provide that person with the opportunities to develop their expertise in the discipline of neuroethics if they do not have that expertise already.

3. Identify a resident to be co-leader of the program and provide that person with opportunities to develop their expertise in the discipline. One such opportunity would be an ethics elective for that resident.

4. Identify an ethicist (ideally a neuroethicist) to act as a consultant to the program leaders and to occasionally participate in sessions.

5. Didactic presentations should generally be avoided. Ethical principles need to be named and discussed within the framework of case or literature discussions.

6. Case-based discussions should focus on cases that residents have dealt with or observed during the course of their clinical rotations.

Conclusion

In this report we make the case for the inclusion of neuroethics teaching within the formal academic education programs of clinical neuroscience training programs and describe the approach and experience of the adult neurology training program in the Department of Clinical Neurosciences at the University of Calgary in doing this. A number of recommendations are made for programs, which are considering developing neuroethics teaching.

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