Ethical issues encountered by medical students during international health electives

Laurie Elit,[1] Matthew Hunt,[2,3] Lynda Redwood-Campbell,[4] Jennifer Ranford,[5] Naomi Adelson[6] & Lisa Schwartz[2]

CONTEXT Medical students increasingly wish to participate in international health electives (IHEs). The authors undertook to understand from the students' perspective the ethical challenges encountered on IHEs in low-resource settings and how students respond to these issues.

METHODS Semi-structured interviews were conducted with 12 medical students upon their return from an IHE. A purposive sampling strategy was used. Inductive data analysis using a constant comparative technique generated initial codes which were later organised into higher-order themes.

RESULTS Five themes relating to ethical issues were identified: (i) uncertainty about how best to help; (ii) perceptions of Western medical students as different; (iii) moving beyond one's scope of practice; (iv) navigating different cultures of medicine, and (v) unilateral capacity building.

CONCLUSIONS International health electives are associated with a range of ethical issues for students. Students would benefit from formal pre-departure training, which should include an evaluation of their expectations of and motivations for participating in an IHE, careful selection of the IHE from amongst the opportunities available, learning about the local context of the IHE prior to departure, and the exploration and discussion of ethical and professionalism issues. Other factors that would benefit students include having an invested onsite colleague or supervisor, maintaining an ongoing connection with the home institution, and formal debriefing on conclusion of the IHE.

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[1]Department of Obstetrics and Gynaecology, McMaster University, Hamilton, Ontario, Canada
[2]Department of Clinical Epidemiology and Biostatistics, McMaster University, Hamilton, Ontario, Canada
[3]Centre for Research on Ethics, University of Montreal, Montreal, Quebec, Canada
[4]Department of Family Medicine, McMaster University, Hamilton, Ontario, Canada
[5]Office of Research, University of Waterloo, Waterloo, Ontario, Canada
[6]Department of Anthropology, York University, Toronto, Ontario, Canada

Correspondence: Dr Laurie Elit, Division of Gynaecologic Oncology, Juravinski Cancer Centre, 699 Concession Street, Hamilton, Ontario L8V 5C2, Canada. Tel: 00 1 905 389 5688; Fax: 00 1 905 575 6343; E-mail: laurie.elit@jcc.hhsc.ca

INTRODUCTION

Global health is being granted greater emphasis in medical education. Medical schools are developing global health programmes, and medical students are requesting global health training and creating opportunities when these are not provided by medical schools. The number of graduating students taking advantage of international health elective (IHE) opportunities rose from 6% in 1982 to 38.6% in 2002.[1] The contexts and parameters of IHEs vary among medical schools. In some instances IHEs are conducted without clear oversight by the sending university faculty.[2] A number of commentators have discussed ethical and professionalism issues in IHEs,[3–5] education and training modules have been developed by the British Medical Association,[6] and new guidelines have been proposed by the Canadian Federation of Medical Students.[7] Also in Canada, the Association of Faculties of Medicine of Canada (AFMC)[8] has developed guidelines that highlight competencies associated with IHEs and made recommendations regarding the responsibilities of sending institutions.

International health electives have a range of impacts. Mutchnick *et al.*[9] reviewed 42 publications and described three key benefits of IHEs. Firstly, *professional development* is supported by increased cultural competence, compassion toward patients, communication skills, appreciation for public health, confidence in clinical skills, awareness of resource use and deeper understanding of professional practice issues. Secondly, *personal development* includes the broadening of the student's perspective, an increased sense of independence and confidence, personal growth and the development of the ability to set realistic goals. Finally, a well-developed *global health programme* could lead to a heightened profile of the international programme, promotion of new curricular materials and exposure to a wider range of clinical experience per unit of time.

Ethical issues arise when medical students from high-resource countries travel to settings characterised by constraints on health care resources and different systems of health beliefs and social structures. These issues may be compounded when there is less accountability and support during the IHE. In the past several years there has been increased discussion in the literature regarding questions of professionalism and medical tourism for medical students from high-resource countries who participate in IHEs.[1,3,4,10–21] There remains, however, limited empirical research detailing such situations. We undertook a qualitative inquiry to explore ethics and professionalism for students on IHEs. The objectives of the study were three-fold: to explore medical students' experiences and perceptions of ethical issues encountered on IHEs; to examine how the students responded to these issues, and to investigate what resources and structures were beneficial for helping students prepare for and respond to ethical dimensions of their IHEs.

METHODS

Design

This study draws on qualitative methodology. Constant comparative techniques, concurrent data collection and analysis, and an iterative analytic approach were employed. Such a research design is well suited to examining research questions that are naturalistic and focused on better understanding processes, experiences and socially constructed meanings, as well as to exploring issues that have not previously been heavily researched.[10,22]

Sampling and recruitment

Purposive sampling was employed and multiple recruitment strategies were used. Respondents were recruited through advertisements posted on the internal electronic communication board of a medical faculty, personal contacts of the researchers and a national global health group (AFMC Global Health Resource Group). Respondents were asked to recommend other medical students who might be interested in participating. Eligible respondents included individuals currently enrolled as medical students who had completed an IHE in a low-resource country within the past year.

The interview guide was developed during a series of conference calls and face-to-face meetings among all the authors and was based on the study objectives. It was pilot-tested with two individuals. At each of several iterations, the team revised the guide to facilitate respondent understanding, enhance ease of responding to the questions and determine the appropriate duration of the interview.

Data collection

A member of the research team (JR), who was experienced in qualitative research, interviewed

respondents in-person or by telephone. Interviews were recorded and transcribed. Each transcript was compared for accuracy with the original recording. The interviewer maintained an audit trail throughout the study, completed a structured abstract of each transcript, and made field notes after each interview. On average the interviews lasted 1 hour.

Data analysis

The interviews were analysed using constant comparative techniques whereby particular instances in the transcripts were compared with all others that were similar or dissimilar with the goal of conceptualising the relationships among pieces of data. Initial codes were identified, described and later organised into higher-order themes.[23–25] One team member (LE) manually coded all the interviews. A sample of five interviews was selected for independent coding by another team member (MH). Results were compared with those of the first coder. Guidelines (decision rules) for coding were developed in order to promote intra- and inter-rater consistency. The initial list of codes was reviewed (by LE and MH) for overlap and divergence and further refined. This process contributed to the development of a set of coding categories and related codes and themes. All of the authors participated in the identification and description of key themes.

Ethics

This study was approved by the McMaster University Research Ethics Board. Written consent was obtained from respondents prior to the interviews, as was verbal consent to the audio-recording of the interviews.

RESULTS

Respondents and demographic information

Twelve students (R21–R33; four male, eight female; one married, 11 single; age range: 23–35 years) were interviewed usually within 2 months (range: 1–21 months) of their return from an IHE. The countries visited included Nepal, India, Thailand, Uganda, Ghana, Kenya, Tanzania, South Africa, Honduras, Nicaragua, El Salvador and Venezuela. The settings of the IHEs varied from rural clinics to academic teaching hospitals. The focus of IHEs included obstetrics, haematology, paediatrics, cardiology, nephrology, internal medicine, family medicine and emergency medicine. The students undertook these IHEs at any time during Years 2–4 of their undergraduate medical training programme. The students were registered at four medical schools in a single province of Canada. None of the universities had a formal relationship with the IHE elective sites. The interviews took place between April and October 2009.

Themes

Uncertainty about how best to help

All respondents reported going to the low-resource country with the desire to learn and to 'help'. In discussing their experiences, students emphasised the needs they witnessed and their desire to provide some form of tangible assistance. This impulse was often associated with uncertainty about how best to help.

Because of their limited ability as medical students to provide clinical assistance, several respondents had considered using their own funds to help improve the situation of a patient. One respondent described seeing a 'desperately poor man' in the hospital who was lying on a very dirty mattress that had no sheet and questioned whether she should buy him a sheet. Another respondent described a woman who arrived at the hospital after undergoing an unsafe abortion and needed an ultrasound but could not afford to pay for it. She described feeling conflict about whether or not to pay for the test.

In these instances, the respondents found that discussion with local health care team members was helpful in evaluating how to respond in such circumstances; however, they continued to express ambivalence regarding their responsibility to assist and about the potential consequences of their choices. Respondents posed questions related to justice and rationing, such as: 'How do you choose whom to help when so many are in need?' 'Does helping one person make a difference or does it create resentment in others who were not helped?' In response to these concerns, some respondents advocated taking an arm's length approach. One respondent started a charity fund that was administered based on explicit criteria. Three respondents, while acknowledging their limited clinical skills, declared that they could still make contributions that benefited individual patients. Another respondent described another type of response in relation to a patient who was about the same age as herself and who was hospitalised with uncontrollable seizures. The overstretched staff at the hospital did not have time to attend to him each time he seized, but the respondent literally stood by him:

'That was… a time... I felt I could do something at least very, very small. And again it's that idea of like bearing witness. Like when we were there and he was looking at me... no-one else was paying any attention and I can't do anything but I want you to know that I'm aware of what's happening.'

Realising their limited ability to help was demoralising and even frightening for the respondents. Several respondents reported having reassessed their ability to help and their capacity to contribute in the setting.

Perceptions of Western medical students as different

Many IHE sites host students from medical schools from around the world. The respondents reported that levels of knowledge and skills proficiency varied among students; however, patients and national staff often assumed that students on IHEs had more knowledge or skills than they actually possessed (R21–R23). Several respondents recounted situations in which patients had requested the student perform a procedure even though there was a more competent local health care worker available (R23). R31 described his discomfort at finding that patients seemed to expect him to be able to help them because he was a Westerner:

'Every time I walked through a hospital… people would beg me to save their lives. …it was like if they think you're White or you seem to actually know some things...'

Respondents also experienced challenging and sometimes awkward situations within the host country's medical community. For example, three respondents (R21–23) felt they received more recognition and more learning opportunities from the staff or community because they were Western. One respondent, who was only in the country for a few weeks, described having been formally introduced at a public venue and reported that a Cuban doctor, who had worked in the country for 6 years, had never been introduced in such a forum.

In relation to these experiences, several respondents emphasised the importance of clarifying one's role as a student as a means of managing heightened expectations and avoiding potential pitfalls. Other respondents stated that, if it was normal practice not to introduce oneself as a student on each patient encounter then, with the goal of being culturally appropriate, they followed this pattern. In describing the rationale for this decision, R26 stated:

'It's not right or wrong, it's just different. It's just a totally different place. It's a different time.'

However, this issue was compounded by language barriers that made it more difficult for respondents to explain their roles to patients and others. Some respondents expressed discomfort when patients did not understand that they were trainees and were not fully qualified. These respondents described feeling like 'an imposter' and found the lack of understanding problematic.

Moving beyond one's scope of practice

Seven respondents (R22–25, 26, 28, 30) chose to go on an IHE because they anticipated having more opportunities to practise clinical skills. By contrast, other respondents (R21–23) expressed concern about carrying out procedures with less supervision and getting into situations in which the tasks they were required to do would exceed their competencies and level of training. All respondents addressed questions of scope of practice in their interviews. For some respondents, the potential level of responsibility given to them on their IHE might exceed that which is possible (and, sometimes, that which is acceptable) for a medical student in Canada. In part, this may reflect the fact that fewer learners stand in line for skills learning opportunities on IHEs. In some circumstances students experienced situations in which they were given responsibilities that exceeded their level of training. R29 described being involved in counselling about a positive HIV test without relevant training or experience and in the absence of supervision. The respondent was concerned about giving misinformation and potentially deceiving the patient, who was likely to have assumed she knew more than she did. In addition, the respondent worried that the patient would have to expend extra time and resources on travelling to duplicate appointments for the same goal because the student was unable to respond to all her needs.

With respect to procedures, respondents described their experiences as 'see one, do one, teach one'. This applied to venipuncture, lumbar puncture, thoracentesis, the administration of flu vaccine or involvement in obstetrical deliveries. R25 rationalised his participation in different procedures by stating that: 'You sort of do what you could do.' R25 expressed concern about balancing learning opportunities with the need to observe what is appropriate for a student at his level of training:

'So to not do anything… I'm not trained to do, that seems a bit of a cop-out, but at the same time, it's hard to finesse the expectations that people have.'

R22 indicated that she had been able to perform certain procedures without 'fear of rejection' from patients, whereas in Canada she had experienced resistance from some patients because of her student status.

Other respondents expressed significant reservations about situations in which they had participated in some procedures, questioning whether they had actually been doing good or harm with respect to patient safety. One respondent said:

'I don't think I should be listening and determining whether or not this kid's heart is functioning.'

Evaluations of whether it was justifiable to perform a procedure were directly related to the availability of adequate supervision. One respondent stated that if the health care staff member who was teaching her was 'someone I trusted and whom I felt knew what they were doing, I would use it as a teachable opportunity' and so she was comfortable about participating in the procedure. If the respondent was less satisfied with the supervision available, she declined to participate in the activity.

Respondents identified that the key difference between undertaking an elective in Canada versus an IHE referred to the clarity of expectations regarding supervision. In the experience of the respondents, Canadian health care staff consistently ensured that students understood the context, risks and benefits of procedures, and were themselves aware of the students' level of training and the potential for harm. In the IHE setting, students had to use their own judgement:

'And everyone decides for themselves what your limitations are and what you're comfortable with… Sometimes it's not about ''Oh I care what the patient says''… Because a lot of [the] time the patient will let you do anything.'

Identifying which activities to participate in and which to avoid was an important concern for respondents.

Navigating different cultures of medicine

The respondents reported tension between 'advocating for the patient' and 'fitting in with the team'. In some circumstances, respondents questioned whether they ought to advocate for the needs of particular patients despite their limited understanding of the local context. One example concerned the lack of disclosure of a patient's HIV status. Some respondents felt disclosure was important and were distressed by the decision not to disclose or to offer the patient the choice of learning his or her diagnosis. Others examples occurred in hospital settings in which the number of ill and dying patients exceeded local resources to care for them. Respondents reported questioning whether to advocate for specific medications or oxygen for particular patients.

Respondents expressed the opinion that, in some circumstances, it is better to go along with how things are done in the local setting. R24 opined that 'You want to respect their way of practising' and R26 stated that she adapted to the 'culture of medicine as they practise [it] in [country]. I didn't really want to be different.' Respondents also discussed situations in which they had felt strongly that they would like to be able to advocate for particular patients. One example involved giving HIV test results in an environment in which many people could overhear the discussion. Another situation referred to the assessment of two patients in the same room, where one was having her history taken and the other was undergoing a gynaecological examination. R27 reported:

'The idea that privacy seemed not to exist. I just kept on putting myself in her shoes… do I want to have my pap test done with three other people in the room that have nothing to do with the pap test? And for me personally the answer is no… So I was just kind of lost as to is this okay or this something that should be stopped and again going to the point of okay in Canada this would never fly, but the fact that it wouldn't happen back home does it make it not okay for it to be happening here?'

A recurring concern related to the taking of photographs by fellow students. Several respondents described scenarios in which photographs or videos were taken of patients within the hospital environment without patient consent. Most of the respondents reflected on the motivations for taking these photographs and questioned whether they were intended to increase the photographer's 'prestige' as he or she showed the images to family, friends or colleagues. Differentiating between photographs intended for medical education purposes and those taken as mementos of the trip was suggested, but respondents also emphasised that seeking consent was usually possible.

Several respondents described how they would have liked to model change by introducing themselves to each patient (R24, R26), looking the patient in the eye, or washing their hands after seeing each patient (R26), in settings in which these acts did not routinely occur. R21 described how she wished she had been able to ask for the patient's consent prior to herself and nine other students performing an abdominal examination. However, she had felt constrained within the local medical hierarchy. As medical students, respondents sensed that they had little influence to change the process of medical practice. They were also anxious not to adopt 'a paternalistic view of ''I know better than you because I come from this more developed country'''. One respondent reported that he 'really did not want to be remembered as one of these people that come in and impose their values and their experiences'. This assertion reflects the preoccupation expressed by several respondents who did not wish to damage patient–professional relationships or ongoing IHE opportunities within the community.

Unilateral capacity building

All respondents spoke of the personal value of participating in an IHE. All respondents identified a range of benefits, including improving clinical skills, expanding perspectives on illness and poverty, developing international relationships, and exploring potential career choices. However, not all of the respondents evaluated their IHE as a positive experience. Some identified negative aspects of their IHE despite evaluating it overall as a success. Only R21 felt she had been given too few opportunities to do things and had been allowed only to observe. Two respondents questioned the learning value of their IHEs because they perceived a lack of sustainability in many of the interventions. Four respondents expressed concern that their attendance on an IHE represented a drain on local hospital resources. Health care staff often focused on the needs of the Western medical students. Four respondents noted that local staff sometimes spent time translating for the students on IHE. One respondent asserted that '…it wasn't right to leach off their regular duties to translate for the elective students' (R22). In some settings, local doctors spent considerable time teaching the elective students and, therefore, had less time to provide patient care or teach their own students:

'…[local doctors are] really overworked and they took time to painstakingly go through each patient with us. And I felt so guilty afterwards.'

Respondents emphasised the importance of recognising that the IHE is intended as a learning opportunity and that they are the primary beneficiaries:

'We're not volunteers, we're medical students and I think we all went in realising that we're going for a learning experience and we're taking more out of it than we probably can give back. Like the only reason why they're so responsive to international students there is because they're hoping that you'll have a good experience, that you'll tell people in Canada and also that maybe when you graduate that you might go back for a bit.'

In some settings, local hospitals or universities were responsible for fees or educational licences, or in-kind costs such as those of meals or living accommodation for IHE students. R21 described how financial costs on her IHE were recouped by the receiving institution through a fee she was required to pay.

In light of their limited clinical skills and ability to provide tangible assistance, several respondents questioned the value of sending students on IHEs at early stages in their medical training. These respondents speculated that the benefit would be greater to all if the experience occurred later in their training.

DISCUSSION

Many of the challenges experienced by the students in this study reflect a mismatch between the conditions encountered in low-resource settings, student expectations of the IHE and the support and oversight available from both local and home institutions. This study's findings illuminate a range of ethical issues that students encounter during IHEs. Thus, it is critical that students are given the opportunity to prepare for these electives. Developing effective pre-departure training is an important component of this preparation. Pre-departure training will be strengthened by the discussion of cases and opportunities for interaction amongst participants. However, preparation will be further enhanced if formal pre-departure training is accompanied by efforts on the part of students to learn about the social, political and cultural contexts of the locales in which they will conduct their IHEs. Discussing the planned IHE with a student who has previously undertaken an IHE in that setting would be a valuable initiative and the creation of a record of past IHE participants would facilitate this. Students should also develop specific and realistic learning objectives to guide their IHE

experience. Goecke *et al.*[26] argue that explicit objectives that are agreed by all parties (students, IHE site and sending medical school) are an essential aspect of IHE organisation. In addition, structured debriefing after the IHE can help students work through unresolved issues upon their return.

Supervision on IHEs will inevitably be influenced by the availability of staffing in the local setting. However, the likelihood of adequate supervision should be evaluated in advance and throughout an IHE to ensure that learning objectives can be met and that students and patients are safe. If students return to IHE sites at which other students have been received in the past, the likelihood that supervisory structures will be accurately evaluated is increased. A further opportunity to address this responsibility in a modest fashion refers to a model in which a member of the faculty staff is made responsible for the electives programme and can be contacted to resolve any problems that cannot be sorted out locally. A faculty member might also accompany students on IHEs. In addition, such an arrangement would increase the contribution made by the IHE and help to counterbalance or reverse the 'drain on local resources' identified by one respondent in this study.

As Crump *et al.*[27] describe, student experiences on IHEs are shaped by institutional arrangements. Ethical analysis of IHEs should not be limited to consideration of the particular ethical challenges encountered by individual students. Rather, broader questions of reciprocity, equity and solidarity should be asked. Further inquiry that examines these links is warranted and would contribute to a deeper appreciation of the ethical aspects of IHEs.

This study draws attention to questions regarding the circumstances and conditions under which students should undertake IHEs in low-resource settings. Evaluation of these questions should occur in discussion with partners in the low-resource countries. Undergraduate and postgraduate faculties of medicine need to be aware of the ethical challenges that arise in these settings and should develop and adopt guidelines for student participation in IHEs.

This research has helped to illuminate key ethical challenges encountered by medical students during IHEs. Further inquiry along several avenues would be beneficial to better understand the ethical dimensions of IHEs. Specifically, investigation into how IHEs are experienced by clinicians, patients and administrators in institutions in the host country would provide critical perspectives on these questions. In addition, the present study includes a small number of students from one province in Canada; we reached theme saturation after conducting interviews with 12 medical students. A study with a larger and more diverse study sample would contribute to broadening understanding of this topic.

CONCLUSIONS

Medical students who take part in IHEs in low-resource settings experience a range of ethical challenges that refer to: (i) uncertainty about how best to help; (ii) inaccurate perceptions of Western medical students by patients and staff; (iii) questions around scope of practice; (iv) difficulties in navigating different cultures of medicine, and (v) how to build capacity unilaterally. A range of activities can help support students on IHEs and should include ethics-focused pre-departure training that considers the student's motives for participating in an IHE, the choice of IHE, the setting of realistic learning objectives, and learning about the local context of the IHE prior to placement. Other methods of support include the maintenance of continued links with the sending medical school and the provision of debriefing after the IHE is completed. Institutional arrangements associated with IHEs warrant further examination regarding equity, reciprocity and partnership.

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REFERENCES

1 Smith JK, Weaver DB. Capturing medical students' idealism. *Ann Fam Med* 2006;**4** (1) (Suppl):32–7.

2 Godkin MA, Savageau JA. The effect of a global multiculturalism track on cultural competence of preclinical medical students. *Fam Med* 2001;**33** (3):178–86.
3 Crump JA, Sugarman J. Ethical considerations for short-term experiences by trainees in global health. *JAMA* 2008;**300** (12):1456–8.
4 Shah S, Wu T. The medical student global health experience: professionalism and ethical implications. *J Med Ethics* 2008;**34**:375–8.
5 Pinto AD, Upshur REG. Global health ethics for students. *Dev World Bioeth* 2009;**9** (1):1–10.
6 British Medical Association. http://www.bma.org.uk/. [Accessed 20 May 2011.]
7 Canadian Federation of Medical Students. http://www.cfms.org/. [Accessed 20 May 2011.]
8 Association of Faculties of Medicine of Canada. http://www.afmc.ca/. [Accessed 20 May 2011.]
9 Mutchnick IS, Moyer CA, Stern DT. Expanding the boundaries of medical education: evidence for cross-cultural exchanges. *Acad Med* 2003;**78** (10) (Suppl): 1–5.
10 Ramsay KM, Weijer C. Ethics of surgical training in developing countries. *World J Surg* 2007;**31**:2067–9.
11 Einterz EM. The medical student elective in Africa: advice from the field. *CMAJ* 2008;**178** (11):1461–3.
12 Banatvala N, Doyal L. Knowing when to say 'no' on the student elective. Students going on electives abroad need clinical guidelines. *BMJ* 1998;**316**:1404–5.
13 Cohen J. Students whose behaviour causes concern: role of universities. *BMJ* 2008;**337**:a2884.
14 Bowman D. Students whose behaviour causes concern: ethical perspective. *BMJ* 2008;**337**:a2882.
15 Trowell J. Students whose behaviour causes concern: the GMC's view. *BMJ* 2008;**337**:a2876.
16 Radstone SJJ. Practising on the poor? Health care workers' beliefs about the role of medical students during their elective. *J Med Ethics* 2005;**31**:109–10.
17 Anonymous. The overseas elective: purpose or picnic? (Medical students' elective period.) *Lancet* 1993;**342** (8874):753–4.
18 Bateman C, Baker T, Hoornenborg E, Ericsson U. Bringing global issues to medical teaching. *Lancet* 2001;**358**:1539–42.
19 Federico SG, Zachar PA, Oravec CM, Mandler T, Goldson E, Brown J. A successful international child health elective: the University of Colorado Department of Pediatrics' experience. *Arch Pediatric Adolesc Med* 2006;**160**:191–6.
20 Alcuskas MP. From medical school to mission: the ethics of international medical volunteerism. *Virtual Mentor* 2006;**8** (12):797–800.
21 Conard CJ, Kahn MJ, DeSlavo KB, Hamm L. Student clinical experiences in Africa: who are we helping? *Am Med Assoc J Ethics* 2006;**8** (12):855–8.
22 Schein M. Ethics of surgical training in developing countries. *World J Surg* 2007;**31**:2070–1.
23 Huberman AM, Miles MB. Data management and analysis methods. In: Denzin NK, Lincoln YS, eds. *Collecting and Interpreting Qualitative Materials*. Thousand Oaks, CA: Sage Publications 1998;179–210.
24 Strauss AL, Corbin JM. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 2nd edn. Thousand Oaks, CA: Sage Publications 1998;159–93.
25 Miller W, Crabtree BF. Primary care research: a multimethod typology and qualitative road map. In: Crabtree BF, Miller WL, eds. *Doing Qualitative Research*. Newbury Park, CA: Sage Publications 1992;17–21.
26 Goecke ME, Kanashiro J, Kyamanywa P, Hollaar GL. Using CanMEDS to guide international health electives: an enriching experience in Uganda defined for a Canadian surgery resident. *Can J Surg* 2008;**51** (4):289–95.
27 Crump JA, Sugarman J & the Working Group on Ethics Guidelines for Global Health Training (WEIGHT). Global Health Training. Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* 2010;**83**(6):1178–82.

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