



Published in final edited form as:

Acad Med. 2013 November ; 88(11): 1778–1781. doi:10.1097/ACM.0b013e3182a6a7ce.

Educational Objectives of International Medical Electives – a narrative literature review

William A. Cherniak, MD,

Family Medicine resident at The Scarborough Hospital, The University of Toronto, Faculty of Medicine, Toronto, Canada.

Paul K. Drain, MD, MPH, and

Infectious Disease Physician at Massachusetts General Hospital and the Brigham and Women's Hospital, Harvard Medical School, Boston, USA.

Timothy F. Brewer, MD.

Director of Global Health Programs at McGill University, Faculty of Medicine, Montreal, Canada.

Abstract

Purpose—Most medical schools and residency programs offer international medical electives [IMEs], but there is little guidance on educational objectives for these rotations. We reviewed the literature to compile and categorize a comprehensive set of educational objectives for IMEs.

Methods—We conducted a narrative literature review with specified search criteria using SciVerse Scopus online, which includes Embase and Medline databases. From manuscripts that met inclusion criteria, we extracted data on educational objectives and sorted them into pre-elective, intra-elective, and post-elective categories.

Results—We identified and reviewed 255 articles, of which 11 (4%) manuscripts described 22 unique educational objectives. Among those, 5 (23%), 15 (68%), and 2 (9%) objectives were categorized in the pre-elective, intra-elective, and post-elective periods, respectively. Among pre-elective objectives, only cultural awareness was listed by more than two articles (3/11, 27%). Among intra-elective objectives, the most commonly defined objectives for students were enhancing clinical skills and understanding different health care systems (9/11, 82%). Learning to manage diseases rarely seen at home and increasing cultural awareness were described by nearly half (5/11, 46%) of all papers. Among post-elective objectives, reflecting on experiences through a written project was most common (9/11, 82%).

Conclusions—We identified 22 unique educational objectives for IMEs in the published literature, some of which were consistent. These consistencies can be used as a framework upon which institutions can build their own IME curriculums, ultimately helping to ensure that their students have a meaningful learning experience while abroad.

As the world has become increasingly interconnected, developing an understanding of global health has become an essential component in training a competent 21st century

physician.¹ As recognition of the importance of global health has expanded, medical students and residents have increasingly chosen to participate in international medical electives [IMEs].^{1,2,3} In recent surveys, 30.8% of US and Canadian medical students, and 40% of UK medical students, had engaged in IMEs during medical school.^{4,5} By 2010, every Canadian medical school had a program that allowed their students to engage in IMEs.⁶

Despite the growing number of participants, there has been no clear consensus on appropriate educational objectives of IMEs. Consequently, students are often underprepared for their electives^{3,7,8} and can readily denigrate into “medical tourism”.³ Over the past decade, student-led initiatives and faculty collaborations have been developing a standardized global health curriculum with core competencies.^{2,3,6,9,10,11,12,13} In the development of core competencies for global health there has been some discussion of international medical electives [IMEs], but little attention given towards their overall structure and educational objectives. Therefore, we conducted a narrative literature review to identify educational objectives of IMEs.

Methods

Data sources and search strategies

We conducted a narrative review for articles related to educational goals in IMEs using SciVerse Scopus online [SVSo]. We used SVSo due to its incorporation of both Embase and Medline databases, as well as indexing multiple journals in various fields. We searched for articles containing “medicine” OR “health” OR “medical, elective”, “international” OR “global”, “curriculum” OR “education” combined simultaneously with the Boolean operation AND. The search was conducted between the dates of February 6 to 20, 2012 and July 27 to 29, 2012. The search was limited to English language publications. We defined and agreed upon the search terms before accessing SVSo.

Study Selection

We retrieved titles and abstracts for all manuscripts. We eliminated articles that did not meet the inclusion criteria of describing an institutional experience with developing or assessing one or more IMEs. We excluded case reports, opinion pieces, and articles that did not specifically describe educational objectives. We reviewed references from retrieved articles to identify additional applicable publications.

Data Collection and Synthesis

The first author extracted all data, and categorized educational objectives as either pre-elective, intra-elective, or post-elective. We determined the frequency that each educational objective was identified in the literature.

Results

Articles Identified in Search Strategy

In total, we identified 255 articles, of which we excluded 224 (88%) for not describing an IME (Figure 1). Of the 31 articles reviewed in detail, we excluded 25 (81%) for not describing educational objectives or for being opinion pieces. The final 11 articles contained data on 22 unique educational objectives for IMEs (Table 1). These articles were developed by authors from across the globe, were evenly distributed between medical student and resident electives, but varied widely in their years of experience and IME destination (Table 1).

Educational Objectives

We identified 5 unique educational objectives for IMEs for the pre-elective time period (Table 2). Of those, only “increasing cultural awareness” was cited by more than two articles. McIntosh et al. at UFCM described all pre-elective educational objectives. Only 3/11 (27%) articles described a pre-elective educational objective in their institutional experience.

Table 2 also outlines the 15 educational objectives that were identified for the elective period itself. The most common objectives were “enhancing clinical skills” and “understanding different health care systems” (both were 9/11, 82%). Sixty-four percent (7/11) and 46% (5/11) also mentioned, “understanding cultural differences in treating patients” and “increasing cultural awareness”/“Learning to manage diseases rarely seen at home”, respectively. Four of 11 (36%) described “maintaining and reviewing data entry logs”, “Learning about common health concerns in the developing world” and “understanding differences in medical education”. McIntosh et al. at UFCM described the most intra-elective educational objectives (10/15, 67%)

We identified only two educational objectives for the post-elective period (Table 2). The two educational objective identified were “composing a reflection of experiences” (9/11,82%) and “Understanding culture shock” (add numbers).

Discussion

In this comprehensive review, we identified 22 educational objectives for the pre-elective, intra-elective and post-elective periods of an IME, as described by different institutions.

In general, when discussing the pre-elective period the literature focused primarily on logistic factors and did not emphasize educational objectives. The most common pre-elective educational objective was “increasing cultural awareness” (3/11, 27%). The lack of emphasis on pre-departure training was a surprising discovery given the increased consideration towards the importance of preparing students before they embark on an IME.⁶ Ideally, future publications of institutional experiences with IMEs will focus more on educational objectives for the pre-elective period, sharing their educational designs with other institutions, and ultimately better preparing students for their experiences abroad.

We found that the majority of educational objectives (15/22, 68%) were related to the intra-elective period. They were developed by institutional faculty members in advance, or listed by medical students and residents in written pre-departure questionnaires. The most common intra-elective educational objectives were “enhancing clinical skills” and “understanding different healthcare systems” (9/11, 82%). It has repeatedly been shown that when students engage in IMEs they improve clinical skills, often due to limited access to expensive investigations and an increased focus on history and physical examination. Setting an educational objective for students to enhance their clinical skills is simply an extension of an already defined benefit of IMEs. Moreover, as a result of building clinical skills students will gain confidence becoming better able to work with foreign medical professionals, achieving the educational objectives of “understanding different healthcare systems” and “understanding cultural differences in treating patients” (9/11, 82% and 7/11, 64% respectively).

The educational objective of “maintaining and reviewing data entry logs” was cited by 4/11 (36%) of articles. By reflectively thinking about patient presentations and reviewing what they have seen, students would know where to focus their attention and what cases they should try to see before completing their IME. Additionally, educators at their home institution, as well as the host institution, would be able to quantitatively assess the experiences gained ensuring that students obtain maximal exposure. Once home, students could then review their logbooks to assist in compiling reflective pieces.

Out of the 22 educational objectives found in the literature only 2 (9%) were related to the post-elective period. Of these, the educational objective of “reflecting on experiences” was most common (9/11, 82%). Reflecting on experiences has been shown to be an important part of learning in medicine.^{22,23} Through reflection students are able to critically think about their experiences and put their thoughts into an organized fashion. Given the dramatic differences in health care and clinical practice abroad, composing a reflective piece is an important objective for students to continue learning once they have arrived back in their home environment.

Upon reviewing the literature, there appears to be a need for consensus on IMEs, yet little has been written specifically addressing educational objectives. In 1999 the American Academy of Pediatrics did develop a consensus set of guidelines for international child health electives [ICHes].⁷ These describe some logistic factors such as how much experience a resident should have before engaging in an elective (18 months), how long the rotation should last (4 weeks) and how to provide appropriate supervision.⁷ They address pre-departure training stating that, “orientation prior to the elective should address cross-cultural awareness, health, and personal safety”.⁷ As well, they mention that, “the resident should prepare written objectives prior to the elective” but do not provide specific examples of appropriate objectives.⁷ In the AAP guidelines there were some points that suggested an emphasis on “hands-on” clinical experiences (similar to our objective of “increasing clinical skills”), and that post-elective the resident should summarize their experiences in a written or oral presentation and engage in a debriefing session (similar to “reflecting on experiences”).⁷

While we included all applicable data, there were some limitations. Our search terms could have missed some articles describing educational objectives, and we did not attempt to identify non-English language articles. Finally, we searched two widely used databases for manuscripts, which should have encompassed the most relevant articles.

Conclusions

We identified that some institutions are providing students with defined educational objectives for IMEs, and that these educational objectives predominantly focus on the intra-elective period (15/22, 68%). We found it surprising that little attention was dedicated to the pre-elective period (5/22 or 23% of educational objectives and only 3/11 or 36% of institutions), and that relative to the interest in Global Health and IMEs, so few institutional experiences were published in the literature at all (11 in total). Through the American Academy of Pediatrics there has been a push to define ICHEs core competency guidelines, but this work requires generalization to additional subspecialties as well as to medical students and residents as a whole.

It is important to note that no medical trainee would be sent into a North American hospital without appropriate guidance and structure for their learning experience, and IMEs and their host institutions should be held in the same regard. Institutions should focus on developing and implementing educational objectives to better prepare their students for IMEs. Through developing and refining educational objectives and publishing experiences with IMEs a framework will be created for institutions to develop their own IMEs curriculum best suited for their own medical students and residents. There is much work to be done with respect to evolving these programs, and future research is needed to address the logistic objectives of an IME and the impact that it has on host communities if undertaken to the developing world. Through these efforts it will be possible to decrease medical tourism, increase educational benefits of rotations, and perhaps ultimately lead to the development of partnerships and mutual exchanges of knowledge and resources.

Acknowledgments

Funding/Support: Dr. Drain was supported by the Harvard Global Health Institute, the Fogarty International Clinical Research Scholars and Fellows Program at Vanderbilt University (R24 TW007988), and a Program for AIDS Clinical Research Training grant (T32 AI007433).

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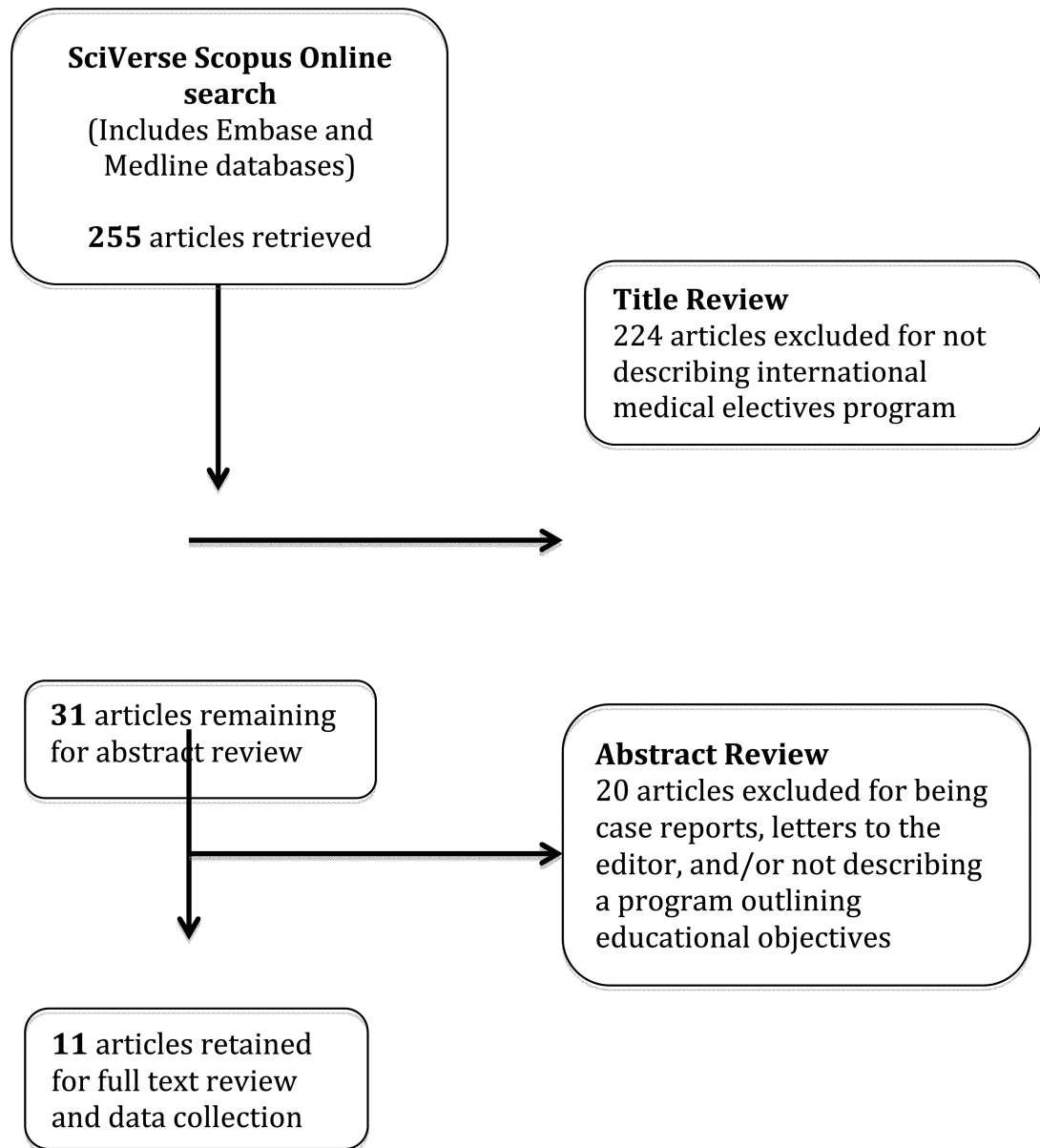


Figure 1. Search strategy for identifying articles describing a curriculum for an institutional experience with an IME.

Table 1

Programs describing educational objectives for international medical electives.

Papers	Medical student [MS] or resident [R] elective	Institution	Years of IME experience	Major IME destination(s)
Miranda et al 2005	MS	University College London [UCL]	4	Bangladesh, Brazil, Cuba, Ecuador, India, Nepal, Peru, Tanzania and Zambia
Valani et al 2011	MS	McMaster University [MMU]	8	Toronto *
Nishigori et al 2009	MS	University of Tokyo [UT]	4	Japan and the UK
Frederico 2006	R	University of Colorado [UCol]	6	Peru and Guatemala
Vora et al 2010	MS	Chicago Medical School and Rosalind Franklin University of Medicine and Science [CMS]	1	India, Nepal, China, South Korea, Vietnam, Ecuador, Czech Republic, Armenia and Ghana
Silverberg et al 2007	R	Mount Sinai School of Medicine [MSSM]	1	The Dominican Republic
Imperato et al 1996	MS	State University of New York, Downstate Medical Center [SNYMC]	25	India, Kenya, Thailand (most prevalent)
Diston et al 2009	R	The University of California at San Francisco [UCSF]	8	South Africa
Holmes et al 2012	MS	University of Buffalo [UB]	~30	Costa Rica, Ecuador, Peru, Mexico, Cuba, Dominican Republic, El Salvador, India, England, Ireland, Switzerland, Congo, Lesotho, Mozambique
McIntosh et al 2012	R	University of Florida College of Medicine [UFCM]	1	Paraguay
Sawatsky et al 2010	R	The Mayo School of Graduate Medical Education [MSGME]	7	Kenya, Haiti, Nepal, Tanzania, India, Jamaica, Mexico

* Elective includes students from Jordan and Israel

Table 2

Educational objectives and the institutions reporting them.

Pre-elective educational objectives	N (%)	Institutions
Building knowledge of tropical medicine	18	UCol, UFCM
Increasing cultural awareness	27	UCol, SNYMC, UFCM
Understanding culture shock	9	UFCM
Language training	9	UFCM
Learning about resource availability	18	SNYMC, UFCM
Intra-elective educational objectives		
Attending lectures	18	MMU, UCol
Enhancing clinical skills	82	UCL, UCol, CMS, MSSM, SNYMC, UCSF, UB, UFCM, MSGME
Learning research methodology	9	MMU
Engaging in research projects	18	UCL, MMU
Learning a foreign language	27	UCol, UB, UFCM
Maintaining and reviewing data entry logs (diseases, procedures, patient demographics)	36	UCol, CMS, UFCM, MSGME
Understanding different health care systems	82	UCL, MMU, UT, UCol, CMS, SNYMC, UB, UFCM, MSGME
Learning about common health concerns in developing world	36	UCol, MSSM, SNYMC, UFCM
Understanding clinical ethics	27	UT, MSSM, UFCM
Increasing cultural awareness	46	MSSM, SNYMC, UCSF, UB, UFCM
Learning to manage diseases rarely seen at home	46	MMU, UT, MSSM, UB, UFCM
Understanding differences in medical education	36	UCL, UT, UCol, SNYMC
Gaining surgical experience	27	MSSM, UCSF, UB
Functioning in low resource settings	27	CMS, UCSF, UFCM
Understanding cultural differences in treating patients	64	UCL, MMU, UT, UCol, CMS, UCSF, UFCM
Post elective educational objective		
Understanding culture shock	9	UCol
Reflecting on experiences	82	UCL, MMU, UT, UCol, MSSM, SNYMC, UFCM, MSGME