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# Educational Objectives for International Medical Electives: A Literature Review

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## Abstract

### Purpose

Although most medical schools and residency programs offer international medical electives (IMEs), little guidance on the educational objectives for these rotations exists; thus, the authors reviewed the literature to compile and categorize a comprehensive set of educational objectives for IMEs.

### Method

In February and July 2012, the authors searched SciVerse Scopus online, which includes the Embase and MEDLINE databases, using specified terms. From the articles that met their inclusion criteria, they extracted the educational objectives of IMEs and sorted them into

preelective, intraelective, and postelective objectives.

### Results

The authors identified and reviewed 255 articles, 11 (4%) of which described 22 educational objectives. Among those 22 objectives, 5 (23%), 15 (68%), and 2 (9%) were, respectively, preelective, intraelective, and postelective objectives. Among preelective objectives, only cultural awareness appeared in more than 2 articles (3/11; 27%). Among intraelective objectives, the most commonly defined 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 appeared in nearly half (5/11; 45%) of all articles. Among postelective objectives, reflecting on experiences through a written project was most common (9/11; 82%).

### Conclusions

The authors identified 22 educational objectives for IMEs in the published literature, some of which were consistent across institutions. These consistencies, in conjunction with future research, can be used as a framework on which institutions can build their own IME curricula, ultimately helping to ensure that their medical trainees 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,<sup>1</sup> and as this recognition of the importance of global health has expanded, medical students and residents have increasingly chosen to participate in international medical electives (IMEs).<sup>1-3</sup> According to recent surveys, 30.8% of U.S. and

Canadian medical students, and 40% of UK medical students, have engaged in IMEs during medical school.<sup>4,5</sup> By 2010, every Canadian medical school had developed a program that allowed their students to engage in IMEs.<sup>6</sup>

Despite the growing number of participants, no clear consensus on appropriate educational objectives for IMEs exists. Consequently, trainees are often under-prepared for their electives,<sup>3,7,8</sup> and their IME experiences can denigrate into "medical tourism."<sup>9</sup> Over the past decade, participants of student-led international initiatives and of international faculty collaborations have begun to develop a standardized global health curriculum with core competencies.<sup>9-13</sup> In the development of core competencies for global health, there has been some discussion of IMEs, but little attention directed toward their overall structure and their educational objectives. Therefore, we conducted a literature review to identify educational objectives for IMEs.

## Method

### Data sources and search strategies

We conducted a systematic search of the literature, seeking articles related to the educational goals of IMEs using

SciVerse Scopus online (SVSo). We used SVSo because it incorporates both the Embase and MEDLINE databases and because it indexes multiple journals in various fields. We searched for articles using the following terms: *medicine* OR *health* OR *medical, elective, international* OR *global, curriculum* OR *education* combined simultaneously with the Boolean operation AND. We conducted our search in 2012 between February 6 and 20, inclusive, and between July 27 and 29, inclusive. We limited our search to English-language publications. A librarian at the University of Toronto assisted with search term development. We defined and agreed on the search terms before accessing SVSo.

### Study selection

We retrieved titles and abstracts for all the articles our search uncovered. We eliminated articles that did not meet the inclusion criterion of describing an institution's experience developing or assessing one or more IMEs. We also 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.

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## Data collection and synthesis

The first author (W.A.C.) extracted all data and categorized educational objectives as preelective, intraelective, or postelective. We refined educational objectives through the assistance of T.B. and determined how frequently each educational objective appeared in the literature based on W.A.C.'s extraction.

## Results

### Articles identified in search strategy

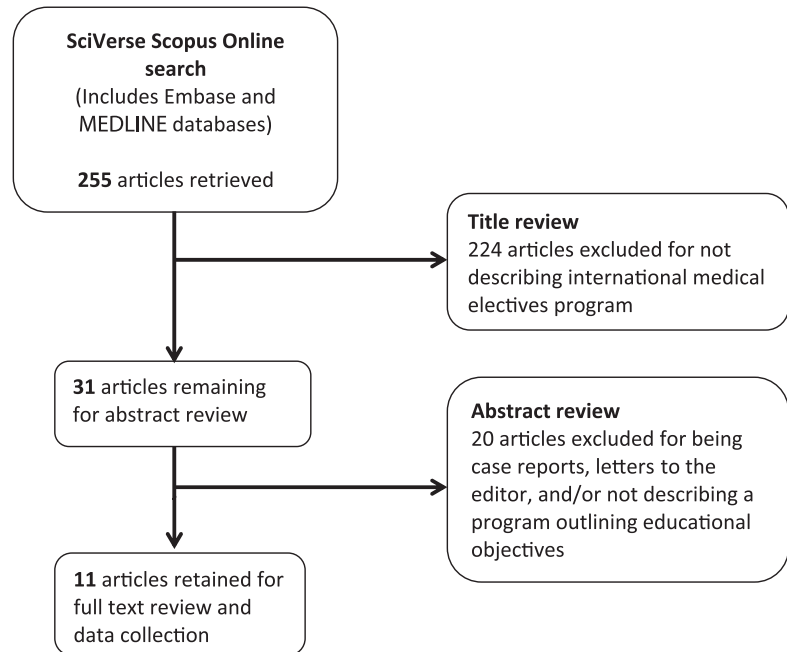
We identified 255 total articles, 224 (88%) of which we excluded for not describing an IME (Figure 1). Of the 31 articles we reviewed in detail, we excluded 20 (64.5%) for not describing educational objectives or for being opinion pieces. The final 11 articles (4% of 255) mentioned 22 unique educational objectives for IMEs (Table 1).<sup>5,14-23</sup>

Authors from across the globe wrote the articles, which described IMEs that were evenly distributed between those for medical students and those for residents, but which varied widely in the number of years they had existed and in trainee destinations (Supplemental Digital Table 1, <http://links.lww.com/ACADMED/A155>).

### Educational objectives

Only 3 of 11 articles (27%) described a preelective educational objective for the IME<sup>16,19,22</sup>; across these articles, five unique preelective educational objectives were identified (Table 1). Of those five objectives, only "increasing cultural awareness" appeared in all 3 articles. Two additional preelective educational objectives cited by 2 of the 11 articles (18%) were "building knowledge of tropical medicine"<sup>16,22</sup> and "learning about resource availability."<sup>19,22</sup>

Table 1 also outlines the 15 educational objectives that we identified for the elective period itself. The most common objectives were "enhancing clinical skills"<sup>5,16-23</sup> and "understanding different health care systems"<sup>5,14-17,19,21-23</sup> (9/11 each, 82%). Seven of 11 (64%) also mentioned "understanding cultural differences in treating patients"<sup>5,14-17,20,22</sup>; 5 of 11 (45%) mentioned "increasing cultural awareness"<sup>18-22</sup> and "learning to manage diseases rarely seen at home."<sup>14,15,18,21,22</sup> Four of 11 (36%) described each of the following: "maintaining and reviewing data entry logs,"<sup>16,17,22,23</sup> "learning about



**Figure 1** Search strategy for identifying articles describing the objectives of international medical electives. The authors used SciVerse Scopus online to search for articles because it incorporates both the Embase and MEDLINE databases and because it indexes multiple journals in various fields.

common health concerns in the developing world,"<sup>16,18,19,22</sup> and "understanding differences in medical education."<sup>5,15,16,19</sup> McIntosh and colleagues<sup>22</sup> at University of Florida College of Medicine described the most intraelective educational objectives (10/15; 67%).

We identified only two educational objectives for the postelective period (Table 1). These were "reflecting on experiences" (9/11; 82%)<sup>5,14-19,22,23</sup> and "understanding culture shock" (1/11; 9%).<sup>16</sup>

## Discussion and Conclusions

In this comprehensive review of literature describing IMEs, we identified 22 educational objectives for the preelective, intraelective, and postelective periods of an IME, as described by different institutions. The majority of educational objectives related to the intraelective period, and the fewest number of objectives addressed the postelective period. Most of the intraelective objectives concerned competency (both clinical and experiential) and cultural awareness.

In general, the literature regarding the preelective period focused primarily on logistical factors and did not emphasize educational objectives. The lack of emphasis on predeparture training was a

surprising discovery, given the increased consideration of the importance of preparing trainees before they embark on an IME.<sup>6</sup> Ideally, future publications describing institutions' experiences with IMEs will focus more on educational objectives for the preelective period, will provide educational designs as models for other institutions, and, ultimately, will help to better prepare trainees for their experiences abroad.

We categorized the majority of the educational objectives we identified into the intraelective period. The majority of institutions identified "enhancing clinical skills" and "understanding different health care systems" as intraelective objectives. Prior research has shown that when trainees engage in IMEs, they improve their clinical skills, often because of both their limited access to expensive investigations and to an increased focus on medical history taking and the physical examination.<sup>1</sup> Setting an educational objective for trainees to enhance their clinical skills may be simply an extension of an already-recognized benefit of IMEs. Moreover, as a result of building clinical skills, trainees may gain confidence and become better able to work with foreign medical professionals, potentially contributing to the two educational objectives of "understanding different health care systems" and

**Table 1**  
**Educational Objectives for International Medical Electives and the Institutions Reporting Them\***

Educational objectives	No. (% of 11) schools reporting the objective	Institutions <sup>†</sup>
<b>Preelective educational objectives</b>		
Increasing cultural awareness	3 (27)	UCol, <sup>16</sup> SNYMC, <sup>19</sup> UFCM <sup>22</sup>
Building knowledge of tropical medicine	2 (18)	UCol, <sup>16</sup> UFCM <sup>22</sup>
Learning about resource availability	2 (18)	SNYMC, <sup>19</sup> UFCM <sup>22</sup>
Understanding culture shock	1 (9)	UFCM <sup>22</sup>
Learning a new language	1 (9)	UFCM <sup>22</sup>
<b>Intraelective educational objectives</b>		
Enhancing clinical skills	9 (82)	UCL, <sup>5</sup> UCol, <sup>16</sup> CMS, <sup>17</sup> MSSM, <sup>18</sup> SNYMC, <sup>19</sup> UCSF, <sup>20</sup> UB, <sup>21</sup> UFCM, <sup>22</sup> MSGME <sup>23</sup>
Understanding different health care systems	9 (82)	UCL, <sup>5</sup> MMU, <sup>14</sup> UT, <sup>15</sup> UCol, <sup>16</sup> CMS, <sup>17</sup> SNYMC, <sup>19</sup> UB, <sup>21</sup> UFCM, <sup>22</sup> MSGME <sup>23</sup>
Understanding cultural differences in treating patients	7 (64)	UCL, <sup>5</sup> MMU, <sup>14</sup> UT, <sup>15</sup> UCol, <sup>16</sup> CMS, <sup>17</sup> UCSF, <sup>20</sup> UFCM <sup>22</sup>
Increasing cultural awareness	5 (45)	MSSM, <sup>18</sup> SNYMC, <sup>19</sup> UCSF, <sup>20</sup> UB, <sup>21</sup> UFCM <sup>22</sup>
Learning to manage diseases rarely seen at home	5 (45)	MMU, <sup>14</sup> UT, <sup>15</sup> MSSM, <sup>18</sup> UB, <sup>21</sup> UFCM <sup>22</sup>
Learning about common health concerns in the developing world	4 (36)	UCol, <sup>16</sup> MSSM, <sup>18</sup> SNYMC, <sup>19</sup> UFCM <sup>22</sup>
Maintaining and reviewing data entry logs (of, for example, diseases, procedures, patient demographics)	4 (36)	UCol, <sup>16</sup> CMS, <sup>17</sup> UFCM, <sup>22</sup> MSGME <sup>23</sup>
Understanding differences in medical education	4 (36)	UCL, <sup>5</sup> UT, <sup>15</sup> UCol, <sup>16</sup> SNYMC <sup>19</sup>
Functioning in low-resource settings	3 (27)	CMS, <sup>17</sup> UCSF, <sup>20</sup> UFCM <sup>22</sup>
Gaining surgical experience	3 (27)	MSSM, <sup>18</sup> UCSF, <sup>20</sup> UB <sup>21</sup>
Learning a foreign language	3 (27)	UCol, <sup>16</sup> UB, <sup>21</sup> UFCM <sup>22</sup>
Understanding clinical ethics	3 (27)	UT, <sup>15</sup> MSSM, <sup>18</sup> UFCM <sup>22</sup>
Attending lectures	2 (18)	MMU, <sup>14</sup> UCol <sup>16</sup>
Engaging in research projects	2 (18)	UCL, <sup>5</sup> MMU <sup>14</sup>
Learning research methodology	1 (9)	MMU <sup>14</sup>
<b>Postelective educational objective</b>		
Reflecting on experiences	9 (82)	UCL, <sup>5</sup> MMU, <sup>14</sup> UT, <sup>15</sup> UCol, <sup>16</sup> CMS, <sup>17</sup> MSSM, <sup>18</sup> SNYMC, <sup>19</sup> UFCM, <sup>22</sup> MSGME <sup>23</sup>
Understanding culture shock	1 (9)	UCol <sup>16</sup>

\*The authors collected the data in this table from a literature review, using the SciVerse Scopus online database in two separate searches performed in 2012 between February 6 and 20 and between July 27 and 29, inclusive.

<sup>†</sup>UCol indicates University of Colorado; UFCM, University of Florida College of Medicine; SNYMC, State University of New York, Downstate Medical Center; MMU, McMaster University; CMS, Chicago Medical School and Rosalind Franklin University of Medicine and Science; MSSM, Mount Sinai School of Medicine; UCSF, University of California, San Francisco; UB, University of Buffalo; MSGME, Mayo School of Graduate Medical Education; UT, University of Tokyo; UCL, University College London.

“understanding cultural differences in treating patients.”

Several articles mentioned the intraelective educational objective “maintaining and reviewing data entry logs.”<sup>16,17,22,23</sup> By systematically listing and thinking about patient presentations and

reviewing what they have seen, trainees may learn where to focus their further training efforts. Additionally, educators at the home institution, as well as at the host institution, may use the patient encounter logs to quantitatively assess the experiences trainees gain, ensuring that students and residents obtain maximal

exposure. Further, once trainees return home, their logbooks may assist them as they compile reflective pieces.

Very few educational objectives concerned the postelective period. Of the two that we identified, the educational objective “reflecting on experiences” was cited by nearly all institutions. Research has shown that reflecting on experiences is an important part of learning in medicine.<sup>24,25</sup> Through reflection, trainees are able to critically think about their experiences and organize their thoughts. Given the dramatic differences in health care and clinical practice across countries with varying levels of resources, composing a reflective piece can be an important way for students and residents to continue learning after they have arrived home.

On reviewing the literature, we believe that the further development of IME educational objectives is necessary, as little has been written specifically addressing this issue. In 1999, the American Academy of Pediatrics (AAP) did develop a consensus set of guidelines for international child health electives (ICHEs).<sup>7</sup> These guidelines cover some logistical factors, such as how much experience a resident should have before engaging in an elective (at least 18 months), how long the rotation should last (at least 4 weeks), and how to provide appropriate supervision.<sup>7</sup> These logistics are important considerations, and future research may reveal the optimal timing of IMEs during medical education, the ideal degree of supervision necessary during IMEs, and/or the most advantageous duration of IMEs.

In terms of educational objectives, the AAP guidelines do address predeparture training, stating that “orientation prior to the elective should address cross-cultural awareness, health, and personal safety.”<sup>7</sup> As well, they mention that “the resident should prepare written objectives prior to the elective,” but these guidelines do not provide any specific objectives.<sup>7</sup> The AAP guidelines suggest that an emphasis on “hands-on” clinical experiences is important, which echoes the objective “increasing clinical skills.” The guidelines also point out that, post elective, residents should summarize their experiences in a written or oral presentation and engage in a debriefing session,<sup>7</sup> which mirrors the objective “reflecting on experiences.” We

believe that developing competencies or educational objectives for IMEs that could be applied across medical disciplines would be helpful moving forward.

Although we included and categorized all identified applicable data, there are some limitations. Our search could have missed some articles describing educational objectives, and we did not attempt to identify non-English-language articles or those not listed in either SVSo or the reference lists of identified articles. We did, however, search two widely used databases, which should have indexed the most relevant articles.

Although some institutions are providing their students and residents with defined educational objectives for IMEs, these educational objectives predominantly focus on the intraelective period. Surprisingly, authors have dedicated less attention to the pre- and postelective periods, and—relative to the ever-increasing interest in global health and IMEs—very few have published on their institutions' experiences at all (11 publications total). Although the AAP has pushed to define the core competency guidelines for ICHEs, additional work is required before these efforts may be generalizable to additional subspecialties as well as to medical students and residents as a whole.

Importantly, no medical trainee would provide clinical care in a U.S. or Canadian hospital without appropriate guidance and structure for their learning experience. IMEs and their host institutions should uphold the same standards. Institutions should focus on developing and implementing educational objectives to better prepare their medical trainees for IMEs. Understanding how institutions are defining the specific educational objectives of IMEs for their medical students and residents could help formulate a comprehensive and cross-disciplinary set of core competencies for IMEs. The development and refinement of educational objectives, along with the publication of IME experiences, may provide a framework that institutions may use to develop IME curricula best suited for their own medical students and residents.

Much work remains to develop IME programs, and future research is needed to further address the educational objectives of IMEs and the impact that

these activities have on trainees and host communities. These efforts should decrease the incidence of medical tourism, increase the educational benefits of rotations, and perhaps ultimately lead to partnerships based on a mutual exchange of knowledge and resources that positively impacts the host communities.

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