Background: International child health (ICH) electives can strengthen the skills and shape the values of pediatric residents. Much can be learned from the literature on ICH electives during medical school. Yet there is little published information regarding ICH electives during residency, nor do educational guidelines for such electives exist.

Objectives: To describe existing ICH electives among pediatric residency programs and to develop guidelines for ICH electives during residency training.

Participants and Methods: A survey of 248 pediatric residency programs in the United States, Canada, and Puerto Rico was conducted in November 1995. Consensus guidelines were developed by the executive committee of the American Academy of Pediatrics (AAP) Section on International Child Health. Consensus was achieved via full agreement among the 11 committee members.

Results: Survey response rate was 65%. International child health electives were offered by 25% of respondents. Most had no formal educational structure. An additional 42% of respondents indicated interest in ICH electives and requested more information. The AAP consensus guidelines for ICH electives focus on 4 principles: prerequisites, preceptorship, preparation, and evaluation. The guidelines are based on a conceptual framework that emphasizes reciprocity and continuity.

Conclusions: While only 25% of pediatric residency programs currently offer ICH electives, many more express an interest in doing so. Educational structure for such electives is important and lacking. The AAP consensus guidelines provide a template for meaningful ICH experiences during pediatric residency. These guidelines may be applicable to other specialties as well.


The vast majority of the world’s children live in developing nations, which have the highest levels of child morbidity and mortality. In the United States, a growing number of children are born into poverty. In addition, the United States continues to be a nation of great ethnic and cultural diversity. These facts substantially affect the orientation and skills required of pediatricians in practice today. We live in a global economy; surely we practice global medicine. Yet most pediatric residents receive little formal training in the health care needs of diverse and world populations, both in regard to the disorders seen and the cultural context within which they occur. A meaningful international child health (ICH) experience during residency is one way to provide that training.

Medical educators have long recognized the value of international health electives for medical students. In a recent article, Taylor discussed the benefits of international electives for medical students in the context of 3 educational domains: knowledge, skills, and attitudes. He underscored the lack of opportunity to enhance altruistic values during medical school and the effectiveness of international experiences in addressing that gap. However, simply embarking on an international elective is insufficient. Taylor and other educators agree that a worthwhile educational experience requires preparation and guidance. Unfortunately, these are infrequently provided. A 1990 survey of US medical schools revealed a 2.5-fold increase in the number of medical students participating in overseas electives.
PARTICIPANTS AND METHODS

SURVEY

The surveys were mailed to the directors of 248 pediatric residency programs in the United States, Canada, and Puerto Rico in November 1995. The list of 248 programs represents a complete list of pediatric training programs obtained from the Association of Pediatric Program Directors (APPD) in 1995. Of these programs, 225 were in the United States, 17 were in Canada, and 6 were in Puerto Rico. A second mailing was sent to nonrespondents in April 1996. The last returned survey was received in November 1996.

The survey was developed by the American Academy of Pediatrics (AAP) Section on International Child Health in conjunction with the APPD. It was designed to assess the availability and variability of ICH electives in pediatric residency programs using a qualitative approach. For example, open-ended questions were asked regarding the setting, financing, and goals of such electives. Quantitative results were limited owing to the open-ended design of the survey. Qualitative results were obtained by reviewing survey responses from programs with ICH electives for recurring themes and domains. These results were enhanced by telephone interview of a convenience sample of 5 programs that offered ICH electives. The qualitative results of the survey served as the starting point for the development of consensus guidelines by the AAP Section on International Child Health.

CONSENSUS GUIDELINES

Draft guidelines for ICH electives were developed in the fall of 1996, building on the qualitative results obtained from the survey. The executive committee of the AAP Section on International Child Health chose to develop guidelines specifically for ICH electives in less-industrialized countries. The draft guidelines were discussed in detail at 2 consecutive meetings of the executive committee during a 6-month period. Consensus was achieved via full agreement among the 11 executive committee members.

The executive committee consisted of 11 physicians who are recognized as leaders in the field of ICH. At the time of guideline development, 10 of the 11 executive committee members had academic appointments at pediatric teaching hospitals in the United States or Canada; 1 member was a liaison from the AAP Section on Residents. Their pediatric careers spanned a mean of 28 years, including a mean of 25 years’ experience in graduate medical education. The committee included the executive director and the current president-elect of the International Pediatric Association. All of the committee members were involved in facilitating ICH electives for pediatric residents. One committee member had established a full track in ICH within a pediatric residency program. Collectively, the committee members had done medical work in more than 70 countries.

RESULTS

SURVEY OF PEDIATRIC RESIDENCY PROGRAMS

Responses were received from 161 (65%) of the 248 residency programs surveyed. Of those who responded, 41 programs (25%) offered formal or informal ICH electives to pediatric residents. An additional 67 programs (42%) did not have an elective in place, but were interested in creating or learning more about ICH electives. The remainder of the survey results are descriptive owing to the qualitative nature of the questions.

Most electives seemed to be unilateral exchanges arranged by individual residents at different sites. Several programs described more formal arrangements with an ongoing exchange at a solitary site. A few of these formal electives included bilateral exchange of residents. A variety of clinical settings were described including outpatient, inpatient, urban, and rural electives. Most of the resident experiences were clinical; a few were research or public health oriented. Preparation ranged from none specified to an organized curriculum that included a 1-month intensive course on international health and a 12-part seminar series required for residents participating in ICH electives. The latter curriculum is part of the ICH training track for pediatric residents at Rainbow Babies and Children’s Hospital in Cleveland, Ohio, and is described in more detail in Table 1.

Program size did not seem to limit resident participation in overseas electives. International child health experiences occurred in programs that ranged from 15 to 120 pediatric residents in training. All of the programs that offered ICH electives maintained the residents’ salaries and good standing during their time overseas. Ten of the responding programs contributed directly to residents’ travel expenses. The brunt of travel expenses was borne by individual residents, although host countries often provided housing. Additional sources of funding included com-
she received extensive US-based training in interna-
dency in the ICH track at Rainbow Babies and Chil-
One of the authors (A.M.) completed her pediatric resi-

The goals of ICH electives and nearly half of the pro-
grams that offered such electives responded (19 of 41). All of the responses pertained to ICH experiences in less-industrialized nations. These goals are listed in Table 2 and were refined by the executive committee of the AAP Section on International Health. The goals highlight the experiential learning that occurs among residents who participate in ICH electives, both in terms of knowledge and values. Several programs commented that the goals of ICH electives would vary depending on the individual resident.

AN ILLUSTRATIVE EXAMPLE

One of the authors (A.M.) completed her pediatric residency in the ICH track at Rainbow Babies and Children’s Hospital in June 1997. As a part of the ICH track, she received extensive US-based training in interna-
tional health and was expected to spend at least 1 elective in an international setting. She traveled to Uganda in her senior year to conduct a research project in collaboration with Ugandan researchers and her US faculty mentor, Karen Olness, MD. After arriving in Uganda, she was called on to join a humanitarian relief effort in Rwanda. She relates her experience here.

As a third-year resident, I was fortunate to be involved in a unique and priceless international experience. I had carefully planned to complete my senior project in Uganda during a 1-month elective. Preparation for the journey included completion of a course in international health, development of a research protocol, and many discussions with the supervising research physician in Uganda. Shortly after arriving in Uganda, I received a call from my mentor and director of Rainbow’s ICH track, Dr Karen Olness. She invited me to join her on an emergency response team to Rwanda. This team would be directed by the International Rescue Committee and was to provide medical assistance during the repatriation of Rwandan refugees.

I had only a few days to prepare for work in Rwanda. Dr Olness arrived in Uganda with many reading materials for me. These included information on the complicated sociopolitical histories of Rwanda and Zaire, recent reports of events, a copy of the Médicins Sans Frontiers handbook, and several French primers aimed at revitalizing my high school French. We left Entebbe for Kigali shortly thereafter, with my somewhat structured and naive list of objectives: To broaden my clinical experience and to help people truly in need. By my return home, this list had expanded to include an understanding of the effects of war on children and to appreciate the intricacies of the international emergency response system.

During our first day in Kigali, we met with the outgoing medical team director and the country director to review the current situation and our objectives. Early the next morning, we traveled to Kibungo where the refugees returning from Tanzania were entering the southeast corner of Rwanda. The remainder of our team consisted of a representative from the Centers for Disease Control and Prevention, a pediatrician from New York, and nurses from the United States, Australia, and Kenya. We were responsible for maintaining 3 mobile medical units,
which worked in conjunction with a mobile health post. Each mobile unit included a physician, a nurse, a translator, and a driver. In many situations, we would take patients to the health post prior to placement in either the hospital or transit posts. This allowed me to obtain a second opinion when needed.

The clinical experience I received was invaluable. I treated a myriad of diseases, both common and rare: elephantiasis, malnutrition, tuberculosis, malaria, severe diarrhea and dehydration, pneumonia, helminthic infestation, trauma, burns, shingles, complicated and uncomplicated labor, chiggers, and otitis media. A unique element was the forced reliance on my clinical diagnostic skills. There were no complete blood cell counts, serum chemistries, or x-rays. If I diagnosed anemia (congenital pallor) and hepatomegaly with fever, I treated for malaria. It was initially unsettling to diagnose disease without a confirmatory laboratory test, but I quickly learned to trust my examination skills. This is one of the greatest gifts I received through my experience in Rwanda.

This international health experience broadened and revitalized my approach to pediatrics. Many people enter medicine hoping to help people and make a difference in the world. As residents, we work many long days. Unfortunately, these long days do not always end with the sense of having made a difference. During my experience in Rwanda, I was able to reconnect with the original reasons I became a physician and rediscovered my passion for service. Although I am now thousands of miles from Kibungo and the urgent needs of the people there, I still realize the lasting effect of this experience. I find myself ending many more days feeling that I have made a difference.

**AAP CONSENSUS GUIDELINES**

The consensus guidelines are based on the premise that the most meaningful ICH experiences occur in the context of reciprocal ongoing relationships between the United States and host programs. Once such a relationship has been established, the ICH elective can be tailored to the individual programs using the AAP consensus guidelines, which are summarized in Table 3. These guidelines focus on 4 basic principles for meaningful international exchange: prerequisites, preceptorship, preparation, and evaluation. They are intended to maximize the personal and educational benefit of ICH electives for pediatric residents.

### Prerequisites

Residents should complete the first 18 months of their 3-year basic pediatric training prior to the ICH elective. At this level of training, the resident has a solid foundation in pediatrics and the confidence to adapt it to a less-industrialized practice environment. In most settings, the resident can then contribute significantly to the health care team and learn a great deal from the local clinicians. A second prerequisite is that a minimum 4-week block be committed to the elective. This gives the resident time to assimilate the culture and experience. Vacation time may be annexed to the elective block to maximize the time spent in the host country. Third, the ICH elective should be a clinical experience. Clinical experiences are broadly defined to include community or public health work. If at all possible, the ICH experience should be “hands-on.” A 1-month elective is too short a time in which to complete an independent research project, although residents may contribute to ongoing research efforts in the host country.

### Preceptorship

It is crucial to identify a local faculty preceptor in the host country prior to departure. This preceptor may work in conjunction with US faculty on site, but should not be supplanted by such. The local preceptor should provide clinical support and guidance to the resident. More importantly, he or she can be an invaluable personal resource for the resident, who may need help adjusting to the local culture. In addition, residents should have a US faculty preceptor from within their own residency program. The US preceptor should assess the preparedness of the resident prior to departure, provide ongoing support and communication during the elective, and facilitate reentry when the resident returns to the US program. It is preferable for the US preceptor to have personal experience with the host country, ideally in an ongoing relationship with the host program.

### Preparation

An orientation process prior to the ICH elective is essential. In many cases, this will be informal and will vary according to the resident’s previous international experience. The US faculty preceptor should take a proactive role in identifying and preparing residents for problems they may face during the ICH elective. Orientation should include readings on pertinent medical conditions, history, and politics in the host country; conversations with alumni of ICH electives; direct correspondence with the local preceptor; information from travel clinics; and other resources such as the World Wide Web. The resident should demonstrate basic knowledge of the host culture and have an understanding of general safety and health considerations for international travel. Occasionally, an ICH elective is untenable owing to political instability in the host country. This is clearly an important and appropriate consideration in planning an elective.

In conjunction with the US preceptor, the resident should develop written objectives prior to embarking on

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**Table 3. American Academy of Pediatrics Consensus Guidelines for International Child Health Electives**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>The resident should have completed the first 18 months of pediatric residency</td>
<td><strong>A minimum 4-week elective block should be committed to the elective</strong></td>
</tr>
<tr>
<td>Orientation prior to the elective should address cross-cultural awareness, health, and personal safety</td>
<td><strong>The elective should be a clinical experience, preferably “hands-on”</strong></td>
</tr>
<tr>
<td>The resident should prepare written objectives prior to the elective</td>
<td><strong>The resident should share a common language with other members of the health care team in the host country</strong></td>
</tr>
<tr>
<td>The resident should share a common language with other members of the health care team in the host country</td>
<td><strong>There should be a formal evaluation process during the elective</strong></td>
</tr>
<tr>
<td>The resident should summarize the experience in a written or oral presentation</td>
<td><strong>There should be a debriefing session for the resident on his or her return home</strong></td>
</tr>
</tbody>
</table>

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the ICH elective. These objectives may reflect the goals outlined in Table 2. They can be personalized to reflect the individual interests of the resident and the local conditions of the host country. Last, the resident should identify a common language in which to communicate with mentors, coworkers, and patients. In many cases, the host clinicians will be proficient in English and can help with translation. A list of questions that can help facilitate personal preparedness is provided in Table 4.

**Evaluation**

There should be a formal evaluation process for the resident during the ICH elective. This should include feedback from both the local and US faculty preceptors. Its main purpose is to help residents identify how their objectives were met. The resident should give a written summary or oral presentation of the ICH experience on return to the United States. This can be formal as a grand rounds presentation or as informal as shared journal entries. This process helps residents integrate the ICH experience into their pediatric training and may facilitate future electives for other residents. Often overlooked is the need for a debriefing session when the resident returns home. This is vital, as reverse culture shock can be greater than that experienced in the host country.

**Table 4. Personal Preparation for International Child Health Electives**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why are you doing an international elective?</td>
<td>Why will you contact in an emergency?</td>
</tr>
<tr>
<td>Who are your hosts? Who will be your day-to-day working colleagues?</td>
<td>The host program, and will give firsthand knowledge of the teaching and living arrangements available to residents.</td>
</tr>
<tr>
<td>What are their expectations? What prior experience have they had with visiting residents?</td>
<td>It may be helpful to formulate a written understanding of expectations between US and host programs. However, this is less important than the understanding that develops out of the collegiality of a sustained relationship. This understanding should address the anticipated skill level of US residents, their prescribed duties while performing the elective, the amount of teaching provided, and practical considerations such as housing, food, and transportation.</td>
</tr>
<tr>
<td>In what type of medical environment will you be working? What are the laboratory capabilities? Do they reuse medical supplies? Do they have textbooks?</td>
<td>A key element in most successful ICH programs is bilateral exchange. Visiting international residents often maintain an observer role in the United States owing to licensure and malpractice issues. This role can be as rewarding as the experience US residents have in ICH electives. The visiting residents can accomplish the same goals described for US residents. In addition, they contribute a unique international perspective to teaching rounds and other routines at the US program. Many host countries will provide funding for residents to travel to the United States for electives.</td>
</tr>
<tr>
<td>What are the relevant political, ethnic, economic, and cultural issues?</td>
<td>If a sustained relationship with a single host program is not possible, individual electives may be arranged by residents via their own or faculty contacts. These tend to be more risky, as there is no previous or ongoing experience on which to build the elective. To the extent possible, these should be based on personal relationships within the host country and follow the same considerations discussed earlier.</td>
</tr>
<tr>
<td>What are the common medical problems?</td>
<td>Funding for ICH electives varies widely and relies on multiple sources. These include departmental support, individual or faculty grant funding, community resources, host country resources, and personal expense by the resident. Most ICH electives are self-financed by residents. In the fall of 1998, the AAP Section on International Child Health began a small pilot program to pro-</td>
</tr>
<tr>
<td>What will your duties be? What is the dress code in your work environment?</td>
<td></td>
</tr>
<tr>
<td>What languages are spoken and by whom? How will you communicate?</td>
<td></td>
</tr>
<tr>
<td>What are the logistics? How will you get there? What will your accommodations be? How will you obtain food and clean water? What transportation will you use?</td>
<td></td>
</tr>
<tr>
<td>What are the personal security and health risks for you? How will you prevent personal injury or illness? Should you bring medications? Get immunizations?</td>
<td></td>
</tr>
<tr>
<td>How will you communicate with your family, friends, and colleagues at home?</td>
<td></td>
</tr>
</tbody>
</table>

The structure of an ICH elective will and should vary by program. However, the elective must meet the basic requirements of the RRC. These include written goals and objectives, identification of teaching staff, and a method of evaluation. In addition, considerations unique to the international health setting should be addressed, such as cross-cultural orientation, language proficiency, and personal safety. The AAP consensus guidelines fulfill these criteria.

How can pediatric residency programs effectively translate these guidelines into practice? The critical first step is the development of a collaborative relationship with professional colleagues in the host country of interest. There are many ways to initiate this. Pediatric faculty often work or travel overseas, they may have ongoing contact with foreign academic institutions or practitioners, or foreign medical graduates may have close ties to their home institutions. In our experience, host country physicians are usually welcoming and gracious in developing relationships that foster educational exchange. The success of the elective hinges on the strength of the personal relationship that develops between the US and host country faculty.

Ideally, ICH electives should be based on a sustained relationship between US programs and host programs. This gives residents the greatest assurance that they will receive appropriate supervision and preceptorship during their time in the host country. Such an exchange requires continuity and commitment on both sides. The US residency program director may provide continuity, or may delegate this role to the faculty member most engaged with the host country. Site visits by US faculty can strengthen and personalize the relationship with the host program, and will give firsthand knowledge of the teaching and living arrangements available to residents.
vide ICH travel grants for pediatric residents. At this time the program has minimal funding, but there is hope that it will grow.

Other administrative issues include licensing and malpractice requirements. Many less-industrialized countries have no malpractice requirements and a letter stating this will usually satisfy department regulations and administrators in the United States. Although direct clinical experience is preferred, a variety of factors may limit US residents to an observer role, making licensure less of an issue. In terms of educational credit, the RRC allows pediatric residents to participate in outside rotations that enrich but do not replace their core experiences. Because most pediatric residency programs offer at least 1 call-free elective during the second and third years, ICH electives should be possible for those residents who desire such an experience.

While one strength of this article is the collective experience of pediatric program directors and ICH experts, important additional information might be gained directly from past participants in ICH resident electives. The degree to which these electives influence the cultural sensitivity, commitment, and ultimate career trajectories of residents needs to be more clearly established. Further, the effect of these electives on the reciprocating international programs could be explored, with consideration of how to increase the benefit to the host country.

International child health electives have the potential to add breadth and depth to pediatric residency training. Careful preparation and educational structure are necessary to ensure meaningful international experiences. Few resources exist to help provide this structure for ICH electives during residency. The AAP consensus guidelines provide a framework that can be used to make ICH electives a part of most pediatric residency programs.

Accepted for publication May 6, 1999.

Portions of this article were presented at the following meetings: Poster presentation at the International Health Education Consortium 7th Annual Conference, San Jose, Costa Rica, March 4, 1998; and oral presentation at the International Health Special Interest Group, Ambulatory Pediatric Association Annual Meeting, New Orleans, La, May 2, 1998.

Special thanks to the other members of the executive committee of the AAP Section on International Child Health: Alan Cross, MD; Jeffrey Goldhagen, MD; Robert Haggerty, MD; Donald Hillman, MD; Elizabeth Hillman, MD; Karen Olness, MD; Jane Schaller, MD; Joanne Selkurt, MD; Dharmanurthi Vidyasager, MD. Additional thanks go to Kenneth Roberts, MD, and the Association of Pediatric Program Directors for their support and assistance with the survey. We also thank our anonymous reviewers for their helpful comments.

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REFERENCES