Pediatric Global Health Education: Correlation of Website Information and Curriculum

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Objective Web sites describing residency programs are initial sources of information for applicants. The correlation of global health content on pediatric residency program Web sites with reported curricula is unknown. To determine the accuracy of global health education, information on program Web sites was compared with queried program content responses.

Study design The Fellowship and Residency Electronic Interactive Database was used to assess pediatric residency programs’ Web sites for global health education, applying American Academy of Pediatrics consensus guidelines. The authors developed a questionnaire using these consensus guidelines and contacted each program to assess Web site findings, and $\chi^2$ tests were used to compare data from these 2 sources.

Results Of 194 programs, 177 had operational Web sites, of which 98 participated in the questionnaire (55%). Ninety-three of 177 programs (53%) reported global health education on Web sites, whereas 80 of 98 programs (82%) reported global health education through direct questioning ($P < .001$). Results include provision of resident salaries during global health elective (Web site 5% vs questionnaire 98%, $P < .001$), mandatory training before global health elective (8% vs 20%, $P = .02$), presence of global health elective curriculum (24% vs 75%, $P < .001$), postexperience debriefing (16% vs 29%, $P = .05$), and bidirectional resident exchange (2% vs 13%, $P = .01$).

Conclusions Results indicate continued expansion of pediatric global health education, but significant differences exist between information on Web sites and data obtained through direct questioning. Accurate representation of global health opportunities would allow for more informed decision-making among prospective applicants. Findings also suggest substantial variability in global health curricula that needs to be addressed through improved planning and cooperation among training programs. (J Pediatr 2013;162:543-548).

Pediatric resident interest in global health training has risen in the past several decades with approximately one-half of pediatric residency programs offering a wide variety of global health opportunities in 2006.1 Pediatric residency applicants increasingly place importance on global health training opportunities when selecting a residency program.2 As early as 1989, Duncan et al3 noted an increasing number of inquiries about global health educational opportunities from pediatric residency applicants. In a 2011 survey, nearly one-quarter of respondents described global health training as an essential or very important factor in selecting a residency program.2

The American Academy of Pediatrics (AAP) has developed Consensus Guidelines for International Child Health Electives (CGICE).4 Similarly, the Federation of Pediatric Organizations has prioritized global health education,5 as have the Association of Pediatric Program Directors and the Institute of Medicine.6 Despite this emphasis on global health education, the current climate of pediatric global health training opportunities remains understudied, as the last systematic evaluation was conducted in 2006.1

Several publications have described techniques for implementing global health curricula.7-13 Recommendations have focused on integrated didactic global health education at the home institution paired with a global health elective with an emphasis on establishing clear expectations and fostering reciprocal relationships through culturally sensitive patient care.14,15 Additionally, there may be other practical factors that affect the implementation of global health experiences, including provision of salary and malpractice insurance that could impede resident participation.

In the current technological age, program Web sites have become the major repositories of information for pediatric residency applicants.14 In 2003, almost 80% of respondent applicants to 1 internal medicine residency program used program Web sites in deciding where to apply, and over two-thirds used them to decide where to interview15; and this proportion has likely only increased over time.
Data for this study were collected between April 2011 and March 2012; the study received approval from the University of Wisconsin Institutional Review Board. The study took place in 2 phases. The first phase was Web site evaluation; the Fellowship and Residency Electronic Interactive Database (FREIDA) was used to assess all pediatric residency programs in the US. In a second phase, pediatric residency programs identified through FREIDA were contacted to respond to a questionnaire. Inclusion criteria for pediatric residency programs included location in the US and listing within the FREIDA database.

**Methods**

**Web Site Evaluation**

FREIDA was used to access Web sites and assess all pediatric residency programs in the US for global health education. Each Web site was evaluated a single time by 1 of 2 coders who were trained to extract variables of interest. Training included evaluation of a pilot set of Web sites and feedback from the primary investigator. The primary author (J.Y.) double-coded a subsample of sites by randomly selecting and comprehensively reviewing Web sites of 40 programs (23% of total) to assess interrater reliability. Of 14 evaluated characteristics, 3 errors were identified, yielding an error rate of 0.6%.

Because program curricular content is found in different locations for various program Web sites, a systematic approach was used. If the “Search” capability was available, this function was used by typing the words “global,” “international,” and “world.” Next, information was evaluated under the headings “Quick Facts,” “Brochure,” and “Frequently Asked Questions.” Global health content was next sought under the sections “Education” and “Curriculum.” All remaining headings, including “Our Residents,” “Electives,” “Community Health,” and “Goals and Objectives,” were then investigated and reviewed. Any information relating to a global health educational opportunity was noted, and the program was recorded as offering global health education.

**Questionnaire Evaluation**

Each program was then contacted by phone and e-mail during a 4-week period in August and September 2011. Publicly available contact information from FREIDA, including e-mail addresses and phone numbers of program coordinators, was used. One week prior to the study, each contact e-mail address received a notice with the questionnaire to introduce the study.

All participants provided informed consent, and a phone script was used to evaluate the same characteristics as the Web site phase. If program coordinators were uncomfortable or unfamiliar with this information, study members asked for referral to personnel engaged in administration of these activities, such as chief residents, program directors, or other faculty members. If there was no answer to the phone call, a follow-up e-mail was sent to the program coordinator. This process was repeated at least 3 times for nonresponders over the following 3 weeks. Approximate percentages of participating respondents are as follows: 52% were chief residents, 31% were global health faculty, 13% were program coordinators, and 4% were program directors.

**Variables Considered**

The variables of interest were developed after performing a thorough literature review with the assistance of a medical librarian as well as consideration of the AAP CGICE. Additional variables emerged after reviewing the guidelines with a group of residents with global health experience. After examining these variables, 2 domains were identified: curricular and practical components. These variables were then applied to both the Web site and questionnaire study phases (Table I).

**Statistical Analyses**

Data analysis was conducted using STATA software version 10 (STATA, Cary, North Carolina). All P values were 2-sided, and P < .05 was used to indicate statistical significance. Descriptive characteristics were calculated for both the information from Web sites and data obtained through direct questioning. The $\chi^2$ test for proportions was used to compare data regarding displayed information presented on Web sites with those obtained from questionnaires, as well as to compare the geographic distribution of programs.

**Results**

At the time of the study, 194 pediatric residency programs were listed on FREIDA, all of which were assumed to have been in active status; of these, 177 had operational Web sites available for evaluation. The distribution of these 177 programs was 27% from the Northeast, 25% from the Midwest, 34% from the South, and 14% from the West. Ninety-three of the 177 programs (53%) mentioned a global health opportunity on its Web site (Table II). There was no statistical
difference by geographic location between all 177 programs and those with global health content.

Ninety-eight of the 177 programs participated in the questionnaire phase yielding a response rate of 55%. Geographic distribution of respondents was not statistically different from the total 177 programs. Eighty of the 98 respondents’ programs (82%) offered global health education (Table II). Geographic distribution of programs offering global health was not statistically different from the total of 177 programs.

Most programs’ responses matched their Web site findings (Table III). A small number of programs denied having global health opportunities, but their Web site indicated that global health experiences were offered (Table III). A substantial proportion of respondents who reported having global health education did not have global health offerings noted on their Web sites (Table III).

Comparison of Web site information with data from direct questioning demonstrated a significantly different rate of global health opportunities (Table II). Significant differences between Web sites and direct questioning were shown for the requirement of mandatory training sessions prior to global health elective, the existence of global health elective curriculum, postexperience debriefing, and bidirectional exchange of residents (Table II). For the identification of primary on-site contact personnel, there was no statistical difference between data reported on Web sites and those obtained through direct questioning (Table II).

With regard to mandatory training sessions, some programs indicated that this training occurred through general cultural sensitivity training that all residents complete (questionnaire: 8%). Others required formal, scheduled meetings with global health or other faculty members (questionnaire: 8%). Many programs required the resident to independently develop goals and objectives (questionnaire: 23%). When an affiliated host institution was established, some identified a primary on-site contact who was associated with the home institution (questionnaire: 59%), but 45% of these programs responded that a specific contact was not required if a resident chose to go to a nonaffiliated site.

On a resident’s return from a global health elective, many programs required a presentation to be given (questionnaire: 30%). Others required a short paper (questionnaire: 3%), whereas some mandated a meeting with a faculty member (questionnaire: 5%). Some programs offered bidirectional exchange of learners, but most noted they have not occurred recently (questionnaire: 9%).

All comparisons for practical variables showed significantly greater rates of reporting information for direct questioning versus Web sites, including the provision of resident salaries, capability to avoid using vacation time during the global health elective, and the payment of malpractice insurance by the residency program (Table II).

One program reported providing salary support only if the resident participates in global health elective during a vacation or sick leave. Several programs required the resident to take 1 week of vacation during the global health elective, reflecting elective stipulations of the program (questionnaire: 4%). Some reported that malpractice

### Table I. Global health assessment questions applied to pediatric residency Web sites and program questionnaires

<table>
<thead>
<tr>
<th>Global health curricular questions</th>
<th>Percent of Web sites with global health education (n = 93)</th>
<th>Percent of questionnaires with global health education (n = 89)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a global health curriculum offered at the home institution?</td>
<td>36</td>
<td>36</td>
<td>.10</td>
</tr>
<tr>
<td>Is there an exchange of learners offered?</td>
<td>24</td>
<td>24</td>
<td>.10</td>
</tr>
<tr>
<td>Are residents required to have postexperience debriefing when they return from their rotation at the away site?</td>
<td>30</td>
<td>30</td>
<td>.10</td>
</tr>
<tr>
<td>Is there a limit to the number of residents who can participate in away electives per year?</td>
<td>30</td>
<td>30</td>
<td>.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Global health practical questions</th>
<th>Percent of Web sites with global health education (n = 93)</th>
<th>Percent of questionnaires with global health education (n = 89)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a global health curriculum offered at the home institution?</td>
<td>36</td>
<td>36</td>
<td>.10</td>
</tr>
<tr>
<td>Is there an exchange of learners offered?</td>
<td>24</td>
<td>24</td>
<td>.10</td>
</tr>
<tr>
<td>Are residents required to have postexperience debriefing when they return from their rotation at the away site?</td>
<td>30</td>
<td>30</td>
<td>.10</td>
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<tr>
<td>Is there a limit to the number of residents who can participate in away electives per year?</td>
<td>30</td>
<td>30</td>
<td>.10</td>
</tr>
</tbody>
</table>

### Table II. Comparison of Web sites with questionnaires among programs with global health curriculum

<table>
<thead>
<tr>
<th>Global health component</th>
<th>Percent of Web sites with global health education (n = 93)</th>
<th>Percent of questionnaires with global health education (n = 89)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curricular</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural sensitivity training prior to global health elective</td>
<td>8</td>
<td>20</td>
<td>.02</td>
</tr>
<tr>
<td>Presence of curriculum for global health elective</td>
<td>24</td>
<td>75</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Local contact available at global health site</td>
<td>23</td>
<td>33</td>
<td>.18</td>
</tr>
<tr>
<td>Post-experience debriefing after global health elective</td>
<td>16</td>
<td>29</td>
<td>.05</td>
</tr>
<tr>
<td>Exchange of residents offered between host and home sites</td>
<td>2</td>
<td>13</td>
<td>.01</td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program payment of malpractice insurance while at global health site</td>
<td>1</td>
<td>71</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Paid salary while at global health site</td>
<td>5</td>
<td>98</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No requirement of vacation</td>
<td>28</td>
<td>90</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

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insurance was not needed and was not provided (questionnaire: 8%), whereas others were unsure whether malpractice was paid for by the program (questionnaire: 9%). One program required the resident to sign a malpractice waiver, and 3 programs asked the resident to pay malpractice insurance.

Seventy-nine programs did not respond to the questionnaire (Table III). Compared with respondent programs, nonrespondent programs were less likely to have global health information on Web sites (P = .02).

### Discussion

More than 80% of respondent programs and >50% of program Web sites offer global health experiences. This is a substantial increase from prior studies. Although multifactorial in nature, this likely reflects programs’ recognition of the importance and influence that these experiences have on applicants’ selection of residency programs.

Compared with actual curricula, data suggest that information about global health education on Web sites is not accurate and/or is incomplete. We demonstrated that <70% of global health information on Web sites was consistent with data obtained from questionnaires. These differences are striking and present challenges to applicants in interpreting available information when initially selecting residency programs.

Data regarding provision of cultural sensitivity training, establishment of global health elective curricula, and exchange of residents showed significant differences between Web sites and questionnaires. Variability in postexperience debriefing also is large. Less than one-third of Web sites commented on 3 key practical issues: provision of malpractice insurance, the payment of salary, and the capability to offer these experiences without using vacation time. The absence of these institutional supports can present major practical barriers to resident participation in global health experiences. Provision of malpractice insurance is critically important, and it has been recommended that residents should not participate in a global health experience without this protection. Training programs should ensure that residents are properly licensed.

Despite development of AAP CGICE over a decade ago, our findings illustrate that less than one-third of programs are mandating 3 key components: cultural sensitivity training, identification of primary on-site contact personnel, and postexperience debriefing. Most, but not all, programs report a curriculum for the global health elective. Considering practical components, most responses indicated provision of malpractice and salary and have addressed the use of vacation time to participate in global health electives, but this still is not universal.

Variability of curricular and practical characteristics of global health offerings and their representation on Web sites may not only affect applicants in their residency selection but it also may inaccurately represent the unique characteristics of a residency program. Some degree of standardization and interprogram collaboration could improve these activities. Stanton et al suggested that collaborative efforts start at the levels of the Association of Pediatric Program Directors or through the Global Health Education Consortium. These efforts have begun in the Association of Pediatric Program Directors, and regional partnerships between pediatric residency programs are being developed.

The most significant limitation of this cross-sectional study is nonresponse bias. Respondent programs were more likely to have global health information on Web sites compared with nonresponders. Second, we were not able to obtain data regarding titles for all respondents. Many responses were obtained from nonglobal health faculty, which could limit the validity of responses. However, programs may have global health curricula without having a specific global health faculty member. Because chief residents typically are intricately aware of a residency program’s actual curricula, their use as respondents may have optimized capture of global health residency program content. It also is possible that chief residents may have an incomplete understanding of the practical variables handled solely by the global health faculty, which could affect the validity of responses. Whereas Web sites should not be used as a gold standard for evaluating global health curricula, it is the best available method to evaluate nonrespondents and is the most appropriate method to assess the global health education information available to applicants prior to interviews.

Concordance of global health curricula described on Web sites with program reports continues to be problematic. Incomplete electronic representation of curricula could have serious consequences to individual applicants and does little to foster the accountability of programs or to enhance the global health educational opportunities that are offered. Findings suggest that the quality of global health educational opportunities is inconsistent, indicating incomplete preparation of curricula, as demonstrated by variable adherence to the AAP consensus guidelines. Prior to offering global health experiences, residency programs should have a clear understanding of the training environment at the host institution, including knowledge of the malpractice and licensure requirements. To improve training opportunities, these issues must be addressed and resolved in a purposeful manner through meaningful
collaboration among programs as well as strong, cooperative leadership.

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References