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Evaluation of a Structured Predeparture Orientation at the David Geffen School of Medicine's Global Health Education Programs

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Abstract. Given the lack of a standardized approach to medical student global health predeparture preparation, we evaluated an in-person, interactive predeparture orientation (PDO) at the University of California Los Angeles (UCLA) to understand program strengths, weaknesses, and areas for improvement. We administered anonymous surveys to assess the structure and content of the PDO and also surveyed a subset of students after travel on the utility of the PDO. We used Fisher's exact test to evaluate the association between prior global health experience and satisfaction with the PDO. One hundred and five students attended the PDO between 2010 and 2014 and completed the survey. One hundred and four students (99.0%) reported learning new information. Major strengths included faculty mentorship (N = 38, 19.7%), opportunities to interact with the UCLA global health community (N = 34, 17.6%), and sharing global health experiences (N = 32, 16.6%). Of students surveyed after their elective, 94.4% (N = 51) agreed or strongly agreed that the PDO provided effective preparation. Students with prior global health experience found the PDO to be as useful as students without experience (92.7% versus 94.4%, P = 1.0). On the basis of these findings, we believe that a well-composed PDO is beneficial for students participating in global health experiences and recommend further comparative studies of PDO content and delivery.

INTRODUCTION

Global health education is becoming an increasingly important component of medical education. Global health courses, research opportunities, and clinical experiences are strongly desired by medical students.[1] Studies have shown that global health experiences result in improved clinical skills, problem solving, and fund of knowledge.[2–4] Furthermore, these opportunities improve students' understanding of the provision of clinical care in resource-limited settings and cost-effective approaches to health care.[4–6] Studies have shown that students with training in global health demonstrate an increased cultural awareness, willingness to practice in underserved communities, and a more humanistic approach to medicine than those without this exposure.[4,5,7,8] Thus, global health education can be an important avenue to teach students core competencies of medical education.

In 2008, a report from the Association of Faculties of Medicine of Canada listed five priority areas for a comprehensive predeparture training program, including personal health, travel safety, cultural competency, language competency, and ethical considerations.[9] These preparation standards align with the guidelines for training experiences in global health established by the Working Group on Ethics Guidelines for Global Health Training, which include the need to train students in norms of professionalism, standards of practice, cultural competence, conflict resolution, language capability, personal safety, and the implications of differential access to resources.[10] Despite these recommendations, there is no standardized format or widely available curriculum for predeparture training that can serve as a model for medical schools developing global health programs.[11] In a 2010 survey of medical students who performed independent study for global health work, only 28% felt confident about their ability to identify relevant material to use for preparation.[12]

In 2010, the David Geffen School of Medicine University of California Los Angeles (UCLA) Center for World Health (CWH) established the Global Health Education Programs (GHEP) to support medical students desiring research and clinical experiences in lower and middle-income countries. The GHEP signature programs include the 1) Global Short-Term Training Program: 6–8 week research projects completed after the first year of medical school at one of UCLA's partner institutions in low- and middle-income countries and 2) Global Clinical Electives: 3 week rotations at UCLA partner institutions in the fourth year. The research and clinical experiences are open to all UCLA medical students via a competitive application process. Funding is provided to those students accepted into the program. On average, approximately 12–15 students have participated in each of the two signature programs each year. All research and clinical electives have detailed goals, objectives, and curricula; and students are mentored by both UCLA and in-country faculty. As part of the GHEP, a comprehensive full day, in-person, predeparture orientation (PDO) was developed. Immediately after the PDO, students complete an evaluation of the program and a self-assessment of their post-orientation knowledge. In recent years, students have also been asked to complete an evaluation of the PDO upon return from their global health experience.

We performed a retrospective analysis of anonymous student evaluations of our PDO to better understand the strengths and weakness of the structure and content of the program and identify areas for improvement. We hypothesized that students would favorably review the PDO for its format, particularly the inclusion of faculty mentorship and interactive sessions. We also hypothesized that students would report benefits from attending the PDO regardless of prior global experience.

The UCLA Global Health Education Programs' Predeparture Orientation Curriculum. The PDO is mandatory for all students participating in GHEP research and clinical experiences and takes place on a Saturday over approximately

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6 hours at the home of a global health faculty member. The PDO is highly interactive and is composed of the following sessions: a welcome from the CWH leadership and a discussion of the importance of professionalism; a session on health and safety, including postexposure prophylaxis, prevention and management of common health issues, and information about travel and evacuation insurance; a case-based session on cultural humility and ethics; site-specific sessions where students meet with mentors familiar with their site to discuss logistics (travel, housing, in-country transport, and rotation details) and site-specific safety issues; and an interactive small group session, in which each student presents a site-specific clinical and/or public health topic (see Table 1 for detailed content). For students performing research, the PDO includes an additional session on interacting with mentors, research principles, research ethics, and organizing, analyzing, and presenting data. The PDO includes faculty and trainees (medical students and residents) who have traveled to UCLA partner sites and who serve as mentors to foster discussion and interaction.

MATERIALS AND METHODS

The study population was derived from students participating in GHEP research and clinical experiences from the inception of the program in 2010 through 2014. We analyzed existing data from anonymous surveys administered after each PDO. The survey evaluated the duration, structure, and content of topics covered, as well as a self-assessment of knowledge gained in the areas of health and safety, cultural humility and ethics, and clinical/public health knowledge relevant to the site (Supplemental Appendix 1). Questions used the Likert scale (1–4 with 1 being "No, not at all" and 4 being "Yes, definitely") and free responses. During the 2013 and 2014 academic years, an additional survey was administered after the elective was completed. This post-elective survey assessed global health experience before participation in the program and asked the student to assess how well the PDO prepared them for their elective. No incentives were offered for completion of these evaluations. The study was given a nonhuman subjects designation by the UCLA Internal Review Board IRB 14-001279.

Statistical analysis. Summary statistics were generated using Microsoft Excel. Fisher's exact test was used to evaluate the association between prior global health experience and satisfaction with the PDO. Open-ended survey data were analyzed using qualitative methods. Data were then coded using a grounded theory approach to identify core themes and subthemes.[12] Higher order concepts were summarized and are described based on the number of students reporting the particular theme (*N*, %).

RESULTS

One hundred and seven medical students participated in the GHEP research and clinical experiences between 2010 and 2014. Of these, 105 students attended the PDO and completed the survey, yielding a response rate of 100%. Forty-eight students (45.7%) participated in the research elective and 57 (54.3%) participated in the clinical elective.

When asked whether they "learned new information" as a result of the orientation, 90 students (85.7%) reported "yes, definitely," and 14 (13.3%) reported "yes, for the most part." The most common themes to open-ended questions about lessons learned from the PDO included health and safety information ($N = 102$, 36.7%), site-specific logistics ($N = 43$, 15.5%), and cultural humility ($N = 40$, 14.4%). One student stated that he/she would "call UCLA after a possible HIV exposure" and another would "be more aware of how I may have beliefs or values different than the people I am seeing." Reflecting on the ethical and cultural humility case studies, one student explained that he/she felt "more comfortable on how to approach different medical situations in resource-limited areas and what challenges [I] should expect." Another student felt "better prepared for some of the difficult emotional and social situations [I] might face."

Students identified several strengths of the PDO, including faculty mentorship during the small group discussions ($N = 38$, 19.7%), the opportunity to interact with the UCLA global health community (faculty, staff, residents, other medical students; $N = 34$, 17.6%), and hearing and sharing global health experiences ($N = 32$, 16.6%). Of those who were surveyed about the role of faculty involvement in the PDO, 83 (91.2%) replied "yes, definitely" that faculty were supportive and encouraged questions and discussion. One student responded, "I especially appreciated the doctors [who had been to the site] sharing their personal experiences and being open and honest about the potential pros and cons we are likely to face." Another commented on the sense of community: "I'm glad we were able to do it at [the faculty member's] house as this added to the personal feel and feeling of family."

The most common weaknesses identified from the surveys included too little participation from students with prior experience at their site ($N = 48$, 26.1%), gaps in information about local culture ($N = 44$, 23.9%), and not enough depth provided about the types of clinical problems and management approaches they would see during their elective ($N = 38$, 20.7%).

In the 2012–2013 and 2013–2014 academic years, 54 students (51.4%) completed the additional post-elective survey. Of these students, 41 (76.0%) had prior global health experience and 13 (24.0%) had no previous experience. Fifty-one students (94.4%) "agreed" or "strongly agreed" that the PDO had prepared them for their elective. Students with prior global health experience found the PDO to be as useful as students without prior experience (92.7% versus 94.4%, $P = 1.0$). As part of this post-elective survey, 10 students made suggestions for improving the PDO in free text format. Of these responses, two (20.0%) suggested an increase in preparation around local medicine practices, three (30.0%) suggested an increase in information on logistics and travel, and five (50.0%) suggested more site-specific information based on experiences of past visiting UCLA medical students.

DISCUSSION

Our study demonstrates the effectiveness of an in-person PDO with mentorship from faculty and more senior trainees. To maximize the value of global health programs for both students and host sites, medical schools have adopted a variety of strategies for preparing students for global health experiences, varying from independent study to formal predeparture education.[9,12] However, the effectiveness of these approaches

TABLE 1
Content of the Global Health Education Program Predeparture Orientation at the David Geffen School of Medicine at the University of California, Los Angeles

Session	Component description	Format	Time allotted
Opening comments			
Global Health Education Program leadership team	Welcome and introductions Pass out personalized binders and flash drives Overview of the structure of the day and course objectives	Didactic with full group	30 minutes
Expectations and professionalism			
Director of the Global Health Education Programs	History of UCLA Global Health Education Programs Explanation of professionalism and its importance Review of the UCLA Code of Conduct* Professionalism in practice—real world examples and lessons learned	Didactic with full group	30 minutes
Health and safety			
Infectious diseases faculty	Prevention of illness/accidents (food, animal, water, and road risks) Review of vaccines, antibiotics, antidiarrheal medications, and antimalarial prophylaxis Occupational and nonoccupational HIV exposures and postexposure prophylaxis Routine and emergency health care, including evacuation insurance Introduction to emergency protocol	Didactic and interactive case-based discussion	1 hour
Logistics: review of orientation materials and academic requirements			
Faculty from the Global Health Education Programs	Review predeparture checklist† Review binder materials Review site-specific documents Explain process for obtaining postexposure prophylaxis from UCLA student health Review emergency protocol Complete administrative forms (course enrollment, stipend, medical release, and consent for future contact) Review other forms (photo release, student evaluations from host clinical or research supervisors, and PDO evaluation) Discuss academic assignments (activated learning blog and development of global health cases) Discuss assignment for required post-elective feedback session (reflection on experience)	Didactic	1 hour
Site-specific break out groups (over lunch)			
Faculty from the Global Health Education Programs and medical students or residents with prior experience at the specific site	Brief student presentations on a clinical or research topics relevant to the global site‡ Discussion and review of site-specific logistics (culture, food, working environment, travel logistics, safety, packing and pretravel preparation, and other helpful tips)	Small group (3–4 students and 1–2 mentors including faculty plus resident or senior medical student), interactive	2 hours
Cultural humility and ethics cases			
Faculty from the Global Health Education Programs	Brief lecture on cultural humility and ethical challenges of working globally Discussion of 7–9 cases with a focus on ethics and cultural humility Open discussion of personal experiences of faculty, trainees, and students in ethical and cultural challenges	Small group and full group, interactive case-based discussion§	1 hour
Wrap-up			
Faculty from the Global Health Education Programs	Final comments, summary of day Additional questions and answers Complete PDO evaluations	Didactic	30 minutes

HIV = human immunodeficiency virus; PDO = predeparture orientation; UCLA = University of California Los Angeles.
*Code of Conduct included in Supplemental Appendix 2.
†Predeparture checklist included in Supplemental Appendix 3.
‡Global health faculty assign each student a clinical or public health topic before the orientation. Each student prepares a 15-minute talk with a handout or Microsoft PowerPoint to share with the group.
§Students are divided into groups of three and assigned cases to discuss and present to the full group; discussion moderated by faculty member.

has not been well documented and there is no rigorous evidence base upon which medical schools can design their PDO programs. Preliminary research on delivery of global health education indicates that students prefer a small group format over lectures[13] and that in-person meetings have been the most effective way to deliver predeparture resources.[12] A study of a lecture-style predeparture training showed that while students' confidence increased across all areas (i.e., health and safety, language competency, and cultural and ethical sensitivity), their confidence in addressing ethically and culturally sensitive

issues increased least.[14] The authors suggested that small group discussions would have been more effective for imparting skills in cultural sensitivity and ethics.

We specifically designed our PDO to minimize didactic delivery and optimize interactive small group learning. We also opted for a required in-person format instead of allowing students to complete an online course or independent study, as we did not feel the nuances of cultural competency and ethical challenges in global health could be accurately addressed using a web-based format or self-directed learning exercise. In addition, an online course or independent study would not allow for specific messaging related to global partner sites, particularly regarding rapidly changing logistics and shifts in clinical guidelines and public health issues, nor could this format foster mentor–mentee relationships or a sense of community. Our data suggest that the structure of our PDO was successful, with self-reported increases in knowledge, an appreciation of faculty involvement and mentorship, and gratitude for being connected to the larger UCLA global health community.

Our program is unique among those reported in the literature because of the combined mentorship from faculty and UCLA trainees with prior experience at each site. A clear theme from the evaluations was students' strong desire to have more time during the PDO to learn from other students' experiences at their site, including topics related to local culture, medicine, and logistics. In response to this feedback, the participation of these trainees has increased over the years and has allowed the PDO to create a sense of community for both current GHEP students and global health alumni. Our findings about the positive impact of involvement of faculty and trainees are consistent with medical education literature, which emphasizes the importance of mentorship as an opportunity to model professionalism, humanism, and ethical and cultural humility.[15–18]

Our program evaluation is strengthened by inclusion of a subgroup of students surveyed after their elective to determine whether the PDO adequately prepared them for their experiences. This survey confirmed the benefits of the PDO and showed that all students, regardless of prior global health experience, perceived these benefits. This finding suggests that even those individuals who have participated in global health activities have gaps in knowledge and preparation and can benefit from further training, particularly as they may be embarking in new roles related to medical research or clinical care. These students can also serve as peer mentors to their fellow medical students with no prior global health experience.

Study limitations. Our study was a retrospective review of anonymous surveys created for the purpose of evaluating the PDO. Several of the questions in the survey were adapted over time in response to changes in the PDO or new methods for program evaluation, and our analysis was limited to questions that were consistently included in the survey over the 4 years of the program. In addition, the post-elective survey was added several years into the development of the program and is available for only 2 out of 4 years. The survey was not designed to elicit feedback on individual components of the PDO and we are therefore unable to assess which of the content areas was most successful. We recently revised our survey, such that students complete evaluation questions on each section of the PDO and will be able to share these data in future studies. We did not collect data from a control group of medical students who performed global health work and either had no formal predeparture training or completed an independent training course, and therefore cannot draw conclusions about the success of our PDO compared with other formats for predeparture training.

CONCLUSIONS

Our data demonstrate that an in-person, interactive predeparture training is a successful model for providing students with skills for research and clinical experiences in global health. Students consistently highlighted mentorship from faculty and the opportunity to interact and learn from other trainees who previously participated in electives as strengths of the PDO. Notably, regardless of prior global health experience, medical students found the PDO beneficial for acquiring skills useful to global health, fostering mentorship, and building a global health community. There is a need for comparative studies of different strategies for delivering predeparture training and sharing best practices among academic medical centers supporting global health opportunities for medical trainees.

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