



Career choices and global health engagement: 24-year follow-up of U.S. participants in the Indiana University–Moi University elective



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ABSTRACT

Background: Global health experiences evoke a profound awareness of cultural differences, inspire learners to prioritize professional values, and provide a lens for addressing global health care challenges. This study compares the long-term career and practice choices of participants in a 2-month Indiana University–Moi University, Kenya elective from 1989–2013 with those of a control group.

Methods: Global health elective (GHE) participants and a random sample of alumni without GHE experience were surveyed on their clinical practice, public health and global health activities.

Results: Responses from 176 former participants were compared with a control group of 177 alumni. GHE participants were more likely than similar controls to provide care to underserved U.S. populations ($p=0.037$), spend time in global health, public health, and public policy activities ($p=0.005$) and be involved in global health advocacy ($p=0.001$). Using multivariable analysis, GHE participants were more likely to be generalists ($p<0.05$), report that healthcare costs influenced medical decision-making ($p<0.05$), and provide healthcare outside the U.S. for ≥ 1 week/year ($p<0.001$).

Conclusions: Many years out of training, GHE participants were more likely to be generalists working with underserved populations, to be cost-conscious in their healthcare decision-making, and to be involved in global health, public health or public policy.

Implications: With the primary care provider shortage and need for greater awareness among providers of healthcare costs, our study shows that that global health experiences may yield broader benefits to the U.S. medical system.

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In 1989, the Indiana University School of Medicine (IUSM) formed an academic partnership with Moi University (MU) in Eldoret, Kenya. The partnership was formed for mutual institutional benefit with the following goals in mind: to assist in delivery of health care services, develop leaders in health care for both the United States and Kenya, and conduct health research.

Although the partnership began as an individual institution partnership, it was expanded in 1997, with other academic institutions in the U.S. and Canada joining the work of IUSM in Kenya and establishing a consortium of universities called the Academic Model Providing Access to Healthcare (AMPATH) Consortium. In reports on the bilateral faculty and learner exchange, trainees often speak of their experiences in terms of “life-changing,” “challenging,” “incredible,” and “enlightening.”^{1–4}

Educators investigating the short-term benefits of global health electives have reported increased knowledge of preventive medicine and public health⁵; increased competency in physical

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examination and procedure skills⁶; a greater likelihood of matching to primary care residencies⁷; with trends toward increased resource efficiency,^{8–14} cultural competence, and a global world view^{15,16}. These findings reflect the opportunities that global health electives provide for personal and professional development in patient care and communication skills, systems based practice, practice based learning and improvement, and professionalism^{17,18}.

There are few long-term studies of outcomes of global health experiences. The University of Wisconsin international health fellowship program surveyed 42 medical student participants 4–7 years after participation, and found that they were more likely to work with underserved populations and engage in community service activities.¹⁰ The Duke University Medicine Residency Program surveyed 59 resident participants and 138 nonparticipants up to 7 years after participation showing that residents who changed career plans during residency tended to move towards general internal medicine or public health.¹¹ A Yale University survey of 96 internal medicine residents who participated in an international health program at U.S. and international sites from 1982 to 1996, showed similar trends towards primary care and care for the underserved compared with nonparticipants.¹⁹ The studies represent a growing body of evidence of the impact of global health experiences. To our knowledge there are no long-term follow up studies that involve medical students and residents from multiple residency programs who participated in a global health elective at a single international site.

1. Methods

The IUSM-Moi elective has grown to host approximately 35–40 medical students and residents from multiple residencies including Internal Medicine, Pediatrics, Obstetrics and Gynecology and combined programs such as Internal Medicine-Pediatrics, Emergency Medicine-Pediatrics, and Pediatrics-Psychiatry-Child Psychiatry each year. In nearly a quarter of a century of partnership with the Kenyan institution, an estimated 560 medical trainees have completed the two-month long global health elective (GHE) with supervised inpatient rotations at Moi Teaching and Referral Hospital which is the teaching hospital for Moi University School of Medicine (MUSM), community health experiences, and weekly opportunities for discussion and reflection (fireside chats) conducted by onsite IUSM faculty.

We designed the follow up study as a cross sectional survey with study and control groups. The survey instrument was developed by study investigators with the input of global health experts and contained items on current medical practice and engagement in primary care, public health, global health, and care of underserved and diverse populations. For past participants, the survey included 38 items and included a series of questions about demographics, dates of rotation(s) in Kenya, stage in training at the time of the elective, current clinical practice, awareness of the cost of care, current engagement with local and global health activities, value of international electives in medical education, and the perceived influence of the GHE. The control group similarly received an abbreviated 23-item survey without questions specific to the GHE, but which included questions on barriers to participation. The study was approved as exempt from further review by the Indiana University Institutional Review Board.

2. Study participants

2.1. Global health elective (GHE) group

The GHE group consisted of IUSM alumni who were identified from program records as participating in the IUSM-Moi elective.

2.2. Inclusion criteria

Participation in the IUSM-Moi elective as a medical student and/or resident between January 1989 and May 2013.

2.3. Exclusion criteria

Due to the focus of the survey on long-term career choices and clinical practice behaviors, any past participant who was currently a student or resident was excluded from the study.

2.4. Control group

We selected a random sample of IUSM alumni who graduated from 1989–2013 from the alumni database, with the number of invitations sent to controls stratified by year of graduation in order to account for the increasing number of GHE participants over the study period.

2.4.1. Study procedures

Investigators gathered contact information including work or home addresses, email, or phone number for former participants in the GH elective. The information was obtained from the university partnership records, the Indiana University Alumni Association (IUAA), and searches of social media sites (Facebook and Linked-In). From October to December 2013, we contacted eligible individuals in the GHE group up to three times by email, inviting them to participate in an online survey using REDCap.²⁰ A reminder was sent approximately one month following the initial mailing and followed by a second survey for all non-respondents. Emailed invitations contained personalized survey links for tracking purposes. We sent non-respondents with postal addresses a survey with a link for online completion and a pre-paid return envelope via postal mail. From December 2013 to March 2014, we contacted a random sample of non-participants identified through the IUAA up to three times by email. The survey was closed after a comparable number of GHE and control group responses were obtained.

2.5. Statistical methods

We used Chi-squared tests to compare groups (participants vs. non-participants) on categorical variables. When there was an overall significance, pair-wise comparisons were done using Hochberg's step-up Bonferroni adjustment for multiple comparisons. Mantel-Haenszel chi-square tests were used to compare groups on ordinal variables. Two-sample *t*-tests were used to compare continuous variables between the groups. All variables significant at the 0.25 level on univariate analysis were included in multivariable logistic regression analysis. Backwards elimination was used to determine the final model. All variables significant at the 0.05 level of significance were retained in the final model. Due to small sample sizes, some categories on scales were combined in the multivariable analysis. Hosmer and Lemeshow goodness of fit test was done to assess the fit of the multivariable model. The same tests were used to compare individuals within the GHE group who participated in multiple electives at Moi University and individuals with a single elective, but Fisher's exact tests were used in place of chi-squared tests when expected cell sizes were less than five.

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