

## RESEARCH ARTICLE

## The role of prehealth student volunteers at a student-run free clinic in New York, United States

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**Purpose:** The medical student-run Einstein Community Health Outreach Clinic provides free healthcare to the uninsured adult population of New York, the United States. During the summer, prehealth student volunteers are recruited to assist with clinic operations. **Methods:** We designed a survey study to identify the baseline characteristics of the volunteers between June and August of 2013 and 2014 in order to evaluate the influence of working in a medical student-run free clinic on their education, impressions, and career goals. **Results:** A total of 38 volunteers (response rate, 83%) participated in the study. The volunteers were demographically diverse and interested in primary care specialties and community service. **Conclusion:** After the Einstein Community Health Outreach program, the volunteers showed an improved understanding of the healthcare process and issues relevant to uninsured patients. They also developed favorable attitudes towards primary care medicine and an increased level of interest in pursuing careers in primary care.

**Key Words:** Ambulatory care facilities; Medically uninsured; New York; Primary health care; Volunteers

### INTRODUCTION

According to a nationwide survey study published in 2010, 1,007 known free clinics currently operate in 49 states and the District of Columbia. Of these clinics, 10.8% are affiliated with a university and 11.5% are affiliated with a medical school or medical center. Medical student-run free clinics (SRFCs) provide free or low-cost access to a variety of healthcare services, with most offering chronic disease management, medications, physical examinations, urgent/acute care, health education, and reproductive health services [1]. The Einstein Community Health Outreach (ECHO) Free Clinic is the result of a collaboration between the Institute for Family Health (IFH) and Albert Einstein College of Medicine (Einstein) to provide free health services to the uninsured adult population of New York.

It is open every Saturday at the Walton Clinic in the Morris Heights neighborhood of the South Bronx. The space, facilities, and equipment are provided by the IFH. The clinic provides routine medical exams, physicals, vaccinations, prescriptions, social services, counseling, lab work, women's health visits including gynecological exams and Pap smears, and referrals to specialty care and diagnostic services. ECHO is staffed by volunteer social workers, nurses, and physicians from the IFH and by medical students and physicians from Einstein [2]. During the summer, approximately 25 interested prehealth and premedical students are recruited to assist with clinic operations. They undergo an orientation led by second-year medical students and are guided on-site by clinic staff, attendings, and medical students of all years. Volunteers register patients, schedule appointments, educate patients on topics such as diabetes and hypertension, and assist with research and data entry. Those fluent in another language, especially Spanish, are encouraged to translate during interviews and physical exams. Volunteers are also given the opportunity to shadow and assist third- and fourth-year medical students as they examine and

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counsel patients, devise treatment plans, and present to the attending [3]. In a survey of SRFCs, at least 35% had undergraduate student volunteers, while 5% had high school student volunteers [4]. Prehealth volunteers play an integral role in the provision of healthcare by supporting physicians, medical students, nurses, and staff. Concurrently, the volunteers benefit from a uniquely educational and rewarding hands-on experience. While our literature search retrieved several articles that focused on medical students [5-9], research examining prehealth volunteers in the setting of SRFCs is virtually nonexistent.

This study aimed to identify the baseline characteristics of premedical and prehealth volunteers at ECHO and evaluate the influence of their experiences on their education, impressions, and career goals. Additionally, the surveys allowed us to assess levels of satisfaction among the volunteers and to use these metrics, as well as individual suggestions, to improve the experience of future volunteers.

## METHODS

### Participants and setting

Premedical and prehealth students interested in participating at ECHO fill out a short application online. The premed coordinator reviews the applications and selects approximately 25 students with no prior clinical experience who attend schools where such opportunities are not easily available. For this study, the participants were prehealth and premedical students accepted to volunteer at ECHO over the summer (between June and August) in 2013 and 2014.

### Study design

A member of the research team introduced the study to the volunteers during orientation and obtained their informed consent. Participating volunteers were then emailed a link to a Google Docs form and asked to fill it out before their first day at ECHO. The responses were automatically stored in a secured Google Docs spreadsheet on a research member's account. After their last day at the clinic, the volunteers were sent a second link to a second Google Docs form that remained active for two weeks. The volunteers were sent no more than one additional reminder to fill out the surveys before the forms were deactivated.

### Surveys

The elements of the survey were modeled after those in the existing literature on medical students at SRFCs [10] and volunteers in palliative care hospices [6,8,11]. The survey included questions about the volunteers' general demographics, knowledge of the healthcare process, interaction with staff, and satisfaction with the orientation and the volunteer experience. The first survey contained questions about the volunteers' general

demographics, interests, and activities. These questions provided a basic overview of the volunteers' characteristics, allowing us to investigate how these characteristics may change over the course of subsequent years. Three other questions asked about the volunteers' future plans for involvement in ECHO as well as their future occupational goals. The survey also contained questions gauging the volunteers' interest in working with underserved populations, comfort working with patients, and knowledge of the healthcare process, both in general and as it relates to underserved populations. The volunteers responded to these statements using a five-point Likert scale (disagree, somewhat disagree, no opinion, somewhat agree, or agree). This subset of questions was repeated in the second survey to allow for comparison. Additional questions on the second survey related to the volunteers' experiences at ECHO and asked for any comments or suggestions for improvement.

### Statistical analysis

Statistical analysis was performed using SPSS ver. 17.0 (SPSS Inc., Chicago, IL, USA). Closed questions and statements rated on a Likert scale were analyzed using descriptive statistics. The subset of nine Likert-style questions that appeared on both the first and second surveys were recoded using a 1-to-5 scale and compared using the Wilcoxon signed-rank test.

### Ethical approval

The surveys were reviewed by research coordinators at ECHO and approved by the institutional review board at Einstein (2013-2058) prior to distribution.

## RESULTS

Between 2013 and 2014, a total of 38 volunteers (response rate, 83%) participated in the study. Approximately 40% of the respondents identified themselves as Hispanic or Latin American and just as many were fluent in Spanish. Most were bilingual and spoke a variety of languages, ranging from Arabic to Albanian. The volunteers were also financially diverse, with some reporting annual household incomes of less than \$20,000, while others reported annual household incomes in excess of \$150,000. With the exception of two volunteers who were strictly interested in pursuing physician assistant and nursing, the rest expressed at least some interest in a medical degree ( $n = 32$ ). Among these volunteers, 68.8% were interested in a primary care specialty (internal medicine, family medicine, pediatrics, and obstetrics/gynecology), and 25% were interested in family medicine. Following their experience at the clinic, 92.9% of volunteers expressed an interest in primary care ( $P = 0.008$ ), while 50% ( $P = 0.034$ ) expressed an interest in family medicine.

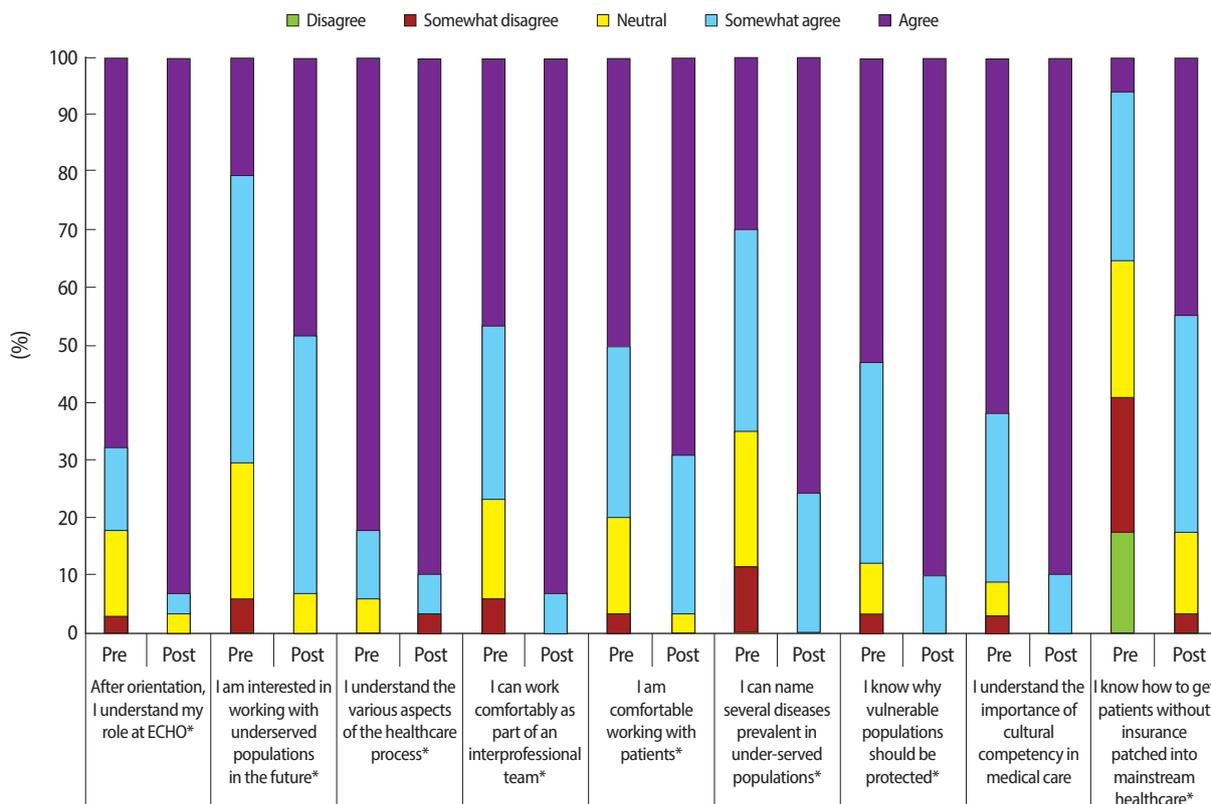


Fig. 1. Volunteer responses before and after the Einstein Community Health Outreach (ECHO) program. \*P-value < 0.05.

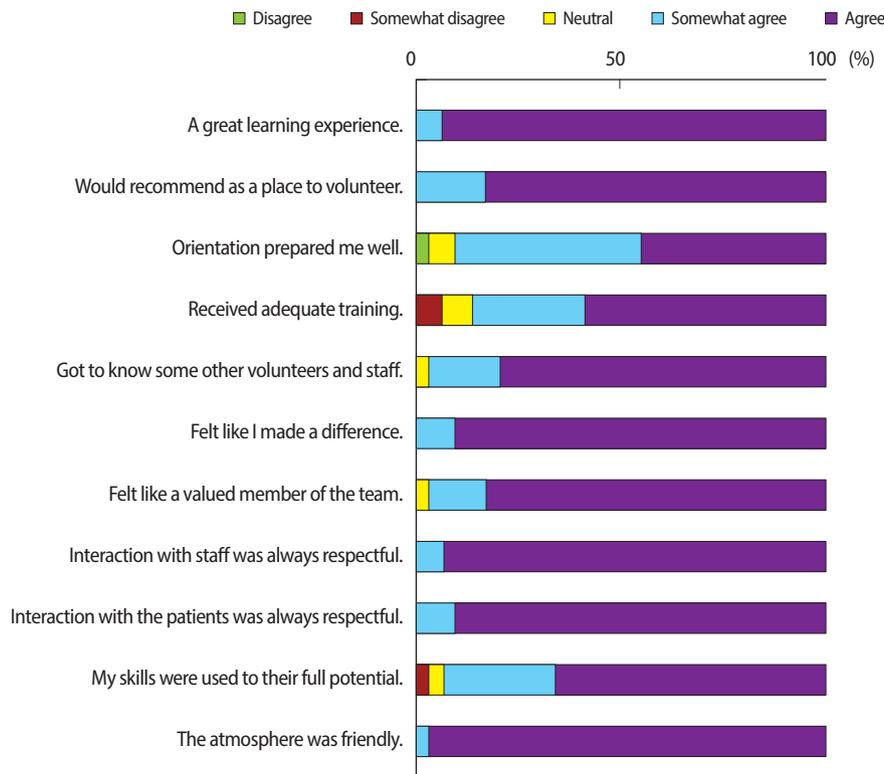
The pre and post responses are compared in Fig. 1 and all showed statistically significant differences ( $P < 0.05$ ), except for the statement regarding cultural competency. Of note, 82% of respondents initially expressed an interest in working with underserved populations, but fewer than 65% were able to name diseases prevalent in underserved populations and only 35% knew how to connect uninsured patients with mainstream healthcare. After working at the clinic over the summer, the percentage of volunteers interested in working with underserved populations rose to 96.6% ( $P = 0.024$ ). Over 93% felt that they understood the various elements of the healthcare process, which was a marked increase from 70.6% ( $P = 0.005$ ) before ECHO. We also observed an increase in the number of respondents who could name several diseases prevalent in underserved populations ( $P = 0.000$ ) and who knew how to transition uninsured patients to medical care outside of the clinic ( $P = 0.000$ ).

Overall, the volunteers were satisfied with the orientation and their interactions with the patients and staff (Fig. 2). They reported being valued members of the healthcare team and enjoyed making a difference in people’s lives. However, a small subset of volunteers felt inadequately prepared for the roles they were assigned.

## DISCUSSION

Our study showed the volunteers at ECHO to be a diverse group of individuals who in many ways represented the multicultural population of the Bronx. This may be one explanation of why the only metric that showed no statistically significant change before and after ECHO was cultural competency in medical care. The predominance of volunteers from lower socioeconomic and underrepresented backgrounds warrants further exploration of how many of the volunteers have had limited access to healthcare themselves and how that has impacted their attitude towards healthcare in general and community-oriented medicine in particular. The results appeared to follow the general trends observed in a similar study of 209 medical students who were found to lack knowledge pertaining to patients’ social and access-to-care issues, particularly in underserved and uninsured populations [10]. Those who participated in SRFCs gained experience over time and became comfortable providing medical assistance and outside access to primary and specialty care to their patients.

A large aspect of any SRFC is the hands-on instruction provided at the clinic. For undergraduate students not used to this type of teaching in a clinical setting, the experience is un-



**Fig. 2.** Responses of premedical and prehealth students to questions related to their experiences at the Einstein Community Health Outreach program.

doubtedly daunting. Additionally, the rotation of different staff members, attendings, medical students, and volunteers makes it difficult to standardize what the volunteers learn and experience. Much depends on the enthusiasm and the eagerness of the medical students and staff members to teach, so that the volunteers may contribute more meaningfully in the roles they have been assigned. Medical students are encouraged and constantly reminded to use and instruct the volunteers as much as possible, and most medical students cherish that role. Nonetheless, room remains for specific suggestions to be incorporated into the medical students' orientation so that they know exactly what is expected of them. For instance, showing clinical shadows how to take vitals and letting them practice on patients is beneficial for both the volunteer and the medical student, and should become the norm rather than the exception. A large percentage of volunteers expressed interest in pursuing primary care medicine. These numbers are partly explained by the nature of the volunteer work, in that students with a strong interest in primary care and community service self-selected during the application process. Participation in ECHO further contributed to their positive attitudes towards primary care medicine and community service. This effect has also been noted in medical students after participation in free clinics [6,9].

Regarding the limitations of this study, the surveys were

only conducted at one SRFC, which, in combination with a relatively small sample size, limits the generalizability of the results. However, given the paucity of literature on prehealth and premedical volunteers at SRFCs, the study provides a baseline for all further research in this area.

In conclusion, the preliminary evidence from ECHO suggests that prehealth students can experience a significant improvement in their understanding of the healthcare process and issues relevant to uninsured patients after participation in an SRFC. Participation in ECHO was also associated with positive changes in their attitudes and interest towards primary care medicine, especially family medicine, as reflected in their long-term career goals. Survey studies such as this can play a vital role in the assessment and development of volunteer programs at SRFCs.

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## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

## SUPPLEMENTARY MATERIAL

Audio recording of the abstract.

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