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Original Contributions

THE EFFECTIVENESS OF A STUDENT VOLUNTEER PROGRAM FOR RESEARCH IN A PEDIATRIC EMERGENCY DEPARTMENT

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□ **Abstract—Background: Emergency Department (ED) student-based research assistant programs have been shown to be effective in enrolling patients when the students receive university course credit or pay. However, the impact on research outcomes when university students act as volunteers in this role is relatively unknown. Objectives: The main objective of this study was to determine how often potentially eligible children were accurately identified by volunteer research assistants for enrollment into prospective research in the ED. We also examined the frequency of successful enrollments and the accuracy of data capture. Methods: This was a prospective cross-sectional study of university student volunteer research assistant performance in a tertiary care pediatric ED between March 2011 and July 2013. The participant's primary role was to screen and facilitate enrollment of ED patients into clinical research. For each volunteer, we recorded demographics, number of screenings, enrollments, and data capture accuracy. Results: Over five 6-month sessions, 151 student volunteers participated. Of these, 77.3% were female, 58.8% were undergraduate students, and 61.1% were interested in medical school. Student volunteers accurately screened 11,362/13,067 (87.0%) children, and they accurately identified 4407/4984 (88.4%) potentially eligible children for study enrollment. Of the 3805 eligible for enrollment exclusively by the students, 3228 (84.8%) families/children consented and completed all study procedures. Furthermore, students correctly entered 11,660/12,567 (92.8%) data points. Conclusions: Utilizing university student volunteers to facilitate research enrollment in the ED is effective and allows for the capture of a high percentage of potentially eligible patients into prospective clinical research studies.** © 2015 Elsevier Inc.

□ **Keywords—research; data collection; education; funding; volunteer; hospital volunteers; emergency care**

INTRODUCTION

Prospective research in medicine is very important as it holds the highest potential for changing practice. However, research that requires enrollment of patients from the emergency department (ED) is often difficult and expensive to conduct (1). Therefore, in the last several years there has been the development and implementation of student-based research assistant programs that provide daily on-site research presence in the ED for the purposes of screening and enrolling potentially eligible ED patients into a wide variety of studies (1–4). Students in these programs generally participate for 4-month blocks and obtain university course credit or pay for the experience. Research on these programs has demonstrated that methods used to collect research data were 97% complete and accurate, there were significant increases in publications at the ED with such a program, and there was high student participant satisfaction (1,2,5).

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However, there are some programs where university students participate as volunteers, and therefore are not paid nor receive academic credit. Currently, there is limited evidence on the success of volunteer-based ED research assistant programs. One study included 25 volunteer research assistants and found that participants were reliable and covered 95.6% of shifts (3). Although this work is encouraging, it included a small pool of volunteers for a short period, and this research did not address volunteer effectiveness with respect to the screening and capture of potentially eligible patients into prospective research studies. Further, this research was conducted in a general ED and therefore, volunteer performance in a children's ED is also relatively unknown.

The main objective of this research was to determine how often potentially eligible children were accurately identified by university student volunteer research assistants for the purposes of enrollment into prospective ED research. Secondary objectives included the frequency of successful enrollment by university student volunteer research assistants in studies exclusively administered by these students, and the accuracy of data capture.

MATERIALS AND METHODS

Study Design and Setting

This was a prospective cross-sectional study of university student volunteer research assistants in a tertiary care pediatric ED. The study hospital's ED treats approximately 65,000 patients per year, and functions as a clinical, teaching, and research hospital. This research was approved by the institution's research ethics board.

Program Description and Management

Our ED student volunteer program is modeled after previously described programs (1,5,6). The program director is a pediatric emergency physician who is engaged in patient care, education, and patient outcomes research. The director reviews all faculty proposals for participation in the program to ensure that the studies are appropriate for student participation. A full-time program manager with experience as a research coordinator interviews and selects the best candidates for the program. She ensures that the successful students are credentialed, meet all hospital regulatory and security requirements, and have proper research ethics certification prior to starting the program. The manager tracks attendance and a detailed performance evaluation of each volunteer participant. She provides monthly feedback to all volunteers on their performance. Finally, she is trained to perform all the student-required duties for each study and liaises between the students, investigators, and research coordinators, and the program director.

Study Population

Volunteer participants were recruited by advertising with the local university. Applicants were required to be currently enrolled in a university program, submit a curriculum vita, a transcript, a letter of intent, and a list of references. There were 42 positions available per term, and on average, 20 of the positions were filled by returning high-performing volunteers, and 20 by new volunteers. All participants attended two orientation sessions. The first is to orient the participants to the policies of becoming volunteers at the study institution, procedures and expectations of the program, privacy regulations, and ethical conduct of studies. On the second orientation day, the volunteers got briefed on the purpose and methods of all the studies currently enrolling patients in the ED, and there is an interactive workshop on how to critically think about chief complaints and how they may apply to a particular study. Finally, they also participated in two paired shifts in the ED over 2 weeks, where they learned about how to effectively screen and enroll from out-going student volunteers. The volunteers were all required to complete a minimum of 23 5-h shifts over a 6-month period. All shifts were ideally double-covered and occurred daily from 8:00 a.m. to 1:00 p.m.; 1:00 p.m.-6:00 p.m.; and 6:00 p.m.–11:00 p.m. All volunteers who participated in this program consented to collection of demographics, performance metrics, participation in surveys during and after exiting the program, and to have their de-identified data used for research purposes. There were no exclusion criteria.

Research Studies and Database

Studies eligible for participation included all studies that had enrollment facilitated by the student volunteer research assistant program from March 2011 to July 2013. Study data were collected and managed using REDCap electronic data capture tools hosted at the study institution (7). For the purposes of this study, we recorded volunteer participant demographics, attendance, and performance for each study with respect to the following: identification of potentially eligible patients, enrollment into studies where applicable, success of consent where applicable, and accuracy of data capture for each patient screened or enrolled.

Outcomes

The main outcome was the proportion of potentially eligible children who were accurately identified by student volunteers for enrollment into prospective research