

Implementation of a volunteer university student research assistant program in an emergency department: the nuts and bolts for success

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ABSTRACT

Prospective research studies often advance clinical practice in the emergency department (ED), but they can be costly and difficult to perform. In this report, we describe the implementation of a volunteer university student research assistant program that provides students exposure to medicine and clinical research while simultaneously increasing the capacity of an ED's research program. This type of program provides 15 hours per day of research assistant coverage for patient screening and enrolment for minimal risk research studies, and screening for higher risk studies. The latter is true without the added burden or costs of co-administering university course credit or pay for service, which are common features of most of these types of programs currently in operation. We have shown that our volunteer-based program is effective for an ED's research success as well as for its student participants. For other EDs interested in adopting similar programs, we provide the details on how to get such a program started and highlight the structure and non-monetary incentives that facilitate a program's ongoing success.

RÉSUMÉ

La recherche prospective fait souvent évoluer la pratique clinique en médecine d'urgence (MU), mais les études peuvent coûter cher, en plus d'être difficiles à réaliser. Il sera question, dans le présent rapport, de la mise en œuvre d'un programme bénévole, universitaire, d'assistantat de recherche qui permet aux étudiants d'entrer en contact avec la médecine et la recherche clinique, en plus d'augmenter la capacité d'un programme de recherche en médecine d'urgence. Ce type de programme prévoit un travail d'assistantat de recherche de 15 heures/jour, consacré à la sélection et au recrutement des malades pour des études à risque minimal, et à la sélection des malades pour des études à risque plus élevé. Il s'agit d'un véritable programme de recherche, mais exempt du fardeau ou des coûts liés à la cogestion des crédits universitaires ou au paiement du service, éléments qui alourdissent souvent la plupart de ces types de programmes actuellement existants. L'expérience a démontré que le programme bénévole était à la

fois efficace pour la réussite de la recherche en MU et bon pour les étudiants qui y participent. Les auteurs donnent, à l'intention des services des urgences qui aimeraient adopter ce type de programme, une description détaillée de la mise sur pied de celui présenté ici, en plus de mettre en évidence la structure et les mesures incitatives non pécuniaires qui contribuent à un succès durable.

Keywords: data collection, education, emergency care, funding, hospital volunteers, research, volunteer

BACKGROUND

Research that includes patients in an emergency department (ED) is often difficult and expensive to conduct.¹ As a result, many EDs in the United States have developed and implemented student research assistant programs that provide participants' exposure to medicine and clinical research while increasing the capacity of a department's research program.²⁻⁸ Currently, the majority of these programs function in conjunction with university course credit or for monetary compensation. These programs have shown to be effective for increasing research output and result in a high student participant satisfaction.²⁻⁸ Nevertheless, these programs are often accompanied by the administrative responsibilities and costs of starting and sustaining a university course and a schedule bound to school terms, potentially leaving holiday coverage vulnerable.

RATIONALE

We developed a successful university student volunteer-based research assistant program circumnavigating the

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challenges associated with facilitating a course or payment. In this report, we describe the program and its success to support its value for other EDs interested in adopting similar programs.

DESCRIPTION OF THE INNOVATION

Program development

This type of program applies to EDs that are interested in expanding their academic mandate with respect to prospective patient-based research. The institution should have oversight in place to hire volunteers and to perform research. At our site (The Hospital for Sick Children, Toronto, ON), a pediatric ED physician was selected to champion this initiative. The physician lead conducted a site visit to a program that had existed for a decade and where student participation was tied to university course credit. From this, a program manual of operations was finalized, using a volunteer participant model. All key stakeholders (Volunteer Services, Research Institute, and Department of Pediatrics) and regulatory bodies (Research Ethics Board, Quality & Risk Management) were involved in the approval of the final program. Of note, the biggest challenge in starting such a program often rests with the availability of administrative support and/or physician lead to dedicate the time to ensure that all requirements are met and that logistics for a successful program are in place. With proper support and motivation, this type of program can be up and running in approximately 6 months.

Program leadership and management

The ED physician director of the program engages in routine patient care, trainee education, and research. This physician is not paid or given protected time to direct the program; compensation is provided in the form of academic credit for leadership and program development relevant to the promotion process. In addition to the usual review by ethics and our research team, all research proposals are reviewed by the director for appropriateness, timing/conflicts, and to ensure that study investigators comply with program policies. The full-time program manager is an experienced research coordinator with strong project management skills and without a nursing degree. The program manager reviews all student applications and ensures that all successful candidates are

appropriately credentialed. The manager also acts as a liaison between the students, investigators, research study coordinators, and the program director.

Student participants

We recruit participants by advertising at the largest local university's career website and by providing a link about the program on the hospital's website (<http://www.sickkids.ca/HealthcareProfessionalsandStudents/clinical-research/index.html>). Applicants submit a resume, transcript, letter of interest, list of references, and a select group is interviewed. Successful candidates complete all routine institutional hiring procedures and sign an agreement form that commits them to the program's policies and allows use of their de-identified data for quality assurance and research purposes.

For training, students first attend a 3-hour mandatory hospital and program-specific orientation, where clinical investigators also orient the students to each study. In the subsequent 2 weeks, students participate in two hands-on training sessions led by former research volunteer participants and complete two on-line modules on privacy and program procedures.

Program experience

Student volunteers cover 0800-2300 in the ED, which is divided into three 5-hour shifts, each covered by two students. In total, there are 42 volunteers who complete at least one shift per week for 6 months. Using a checklist, students identify, screen, consent, and enrol patients into minimal-risk research studies. For higher-risk studies, students screen and identify potential participants, and then notify study-specific staff (Table 1). This model allows student volunteers to comfortably perform study duties on approximately 10-15 studies per term.

To drive improvement of performance, all students receive monthly electronic performance report cards, and areas for improvement are reviewed. The month's highest performer(s) is awarded a \$5 gift card. To learn about research methods, students complete six research methods modules and their respective quizzes over 6 months. Twice a year, volunteers can sign-up for 2 hours of shadowing with a physician. Students complete a feedback survey twice during the session. Upon completion, students are offered an individualized reference letter. Each year, two high-performing

Table 1. Study responsibilities performed by student research assistant volunteers

Student task	May–Dec 2009		Jan–Dec 2010		Jan–Dec 2011		Jan–Dec 2012		Jan–Dec 2013	
	Studies N = 7	Patients N = 3256*	Studies N = 7	Patients N = 7598*	Studies N = 12	Patients N = 9474*	Studies N = 16	Patients N = 9070*	Studies N = 19	Patients N = 9454*
Identification/screening, no. (%) [†]	7 (100)	2604 (80)	7 (100)	6453 (85)	12 (100)	8433 (89)	16 (100)	7165 (79)	19 (100)	7840 (83)
Contacted study-specific staff, no. (%) [‡]	6 (86)	809 (25)	6 (86)	2036 (27)	10 (83)	1928 (28)	11 (69)	2077 (23)	13 (68)	1938 (20)
Obtain consent and data collection, no. (%) [§]	1 (14)	176 (5)	1 (14)	345 (5)	2 (17)	1547 (16)	5 (31)	1838 (20)	6 (32)	1968 (21)
Study specimen handling, no. (%) [¶]	0	0	0	0	1 (8)	323 (3)	1 (6)	25 (0.3)	2 (11)	28 (0.3)

*Patients presenting with eligible chief complaints during student volunteers' hours of coverage (0800–2300 daily)
[†]Number (%) of patients with eligible chief complaints captured for screening by student volunteers
[‡]Number (%) of patients presented with eligible complaints where student volunteers contacted study-specific staff
[§]Number (%) of patients presented with eligible complaints where student volunteers participated in consent and data collection
[¶]Number (%) of patients presented with eligible complaints where student volunteers participated in study specimen handling

students become chief volunteers and help with administrative duties.

Costs

The costs of administrating this program depends on the complexity, availability of the physician lead, and/or existing administrative support. Our program requires a full-time program manager exclusive to the program, which costs approximately \$65,000 per year. The remaining costs are for incidentals and amount to about \$3,000 per year.

DISCUSSION

Development and implementation of a volunteer research assistant program harnesses motivated university students and has high potential to increase the research capacity of an ED. Further, it provides a valuable exposure to clinical research and medicine for the students. Research on our program has demonstrated its effectiveness, capturing approximately 85% of eligible patients for prospective clinical research studies.⁹ Further, nearly 89% of volunteers have subsequently obtained research/professional school positions supported by the program's reference letter.¹⁰ Volunteer satisfaction is very high, and 82% agreed/strongly agreed that it helped progress them toward their career goals.¹⁰ This volunteer-based program success is comparable to those that offer course credit or pay for students.¹⁰

SUMMARY

From an idea to a reality, the description in this report represents the development of a volunteer-based university student research assistant program in an ED. Without the added administrative and/or cost burden of a university course, the volunteer model of these programs can be an effective strategy in increasing the research capacity while supporting the development of students' understanding of medicine and clinical research.

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REFERENCES

1. Wright SW, Wrenn K. Funding in the emergency medicine literature: 1985 to 1992. *Ann Emerg Med* 1994;23(5):1077-81.
2. Cobaugh DJ, Spillane LL, Schneider SM. Research subject enroller program: a key to successful emergency medicine research. *Acad Emerg Med* 1997;4(3):231-3.
3. Davis DP, Poste JC, Kelly D. The UCSD Research Associate Program: a recipe for successfully integrating undergraduates with emergency medicine research. *J Emerg Med* 2005;28(1):89-93.
5. Hollander JE, Reinhard SS, Eskin B, et al. The use of students to assist with clinical research: feasible in a variety of emergency department settings. *Ann Emerg Med* 1998;32(3):S43.

6. Hollander JE, Singer AJ. An innovative strategy for conducting clinical research: the Academic Associate Program. *Acad Emerg Med* 2002;9(2):134-7.
7. Holsti M, Adalgais KM, Willis L, et al. Developing future clinician scientists while supporting a research infrastructure. *Clin Transl Sci* 2013;6(2):94-7.
8. Bradley K, Osborn HH, Tang M. College research associates: a program to increase emergency medicine clinical research productivity. *Ann Emerg Med* 1996; 28(3):328-33.
9. Steadman PE, Crudden J, Boutis K, et al. The effectiveness of a student volunteer-based emergency department research assistant program. *J Emerg Med* 2015;48(1):19-25.
10. Steadman PE, Crudden J, Boutis K, et al. The professional benefits for volunteer research assistants in a pediatric emergency department. *J Emerg Med* 2015;48(3):287-93.