

Title: "Where's the closest AED?": An Interprofessional initiative to improve the "drop to shock" interval on Duke University's Campus"

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Focused Question: Can groups of interprofessional students work together to engage in a Plan-Do-Study-Act (PDSA) cycle to determine locations of Automated External Defibrillators (AED) on the entire Duke campus, produce a short video, and supplement existing informatics tools to educate the public on prompt activation of the emergency response system?

Background: Finding opportunities to formulate Interprofessional Education (IPE) student-led teams has potential to transform Duke health professions education. Exposing learners to a team of committed interprofessional project collaborators will lead to on-going partnerships that will focus on the development of students' knowledge, skills, and attitudes. This lays the foundation for team-based, safe patient care. Activities that allow for experiential learning opportunities for students to learn together (and from each other) across disciplines breaks down the traditional silos that lead to fragmented patient care. The project proposed will be one of these such activities. Although it will only impact a small percentage of students from the various health professions, the impact will be meaningful and will plant the seeds for a change in attitudes towards IPE with implications for delivery of patient-centered care. This framework can be replicated for other IPE related projects/activities with a wide multitude of focuses. The Interprofessional Education Collaborative Expert Panel (2011) connects the work done by the Institute of Medicine's (IOM) core competencies for all health professionals (IOM, 2013). This project team's goal is to create systematic approaches for developing interprofessional competencies. Interprofessional education occurs "when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010). Project collaborators envision all participating students to deliberately work together with a goal of building a safer and better patient-centered and community/population oriented U.S. Health care system (Interprofessional Education Collaborative Expert Panel, 2011). This project has the potential to impact the Duke campus and the Durham community since around 10,000 sudden cardiac arrests occur annually in the workplace, according to the Occupational Safety and Health Administration (OSHA). A combination of early CPR and defibrillation can increase a person's chance of survival significantly. The average response times for first responders once 911 is called is 8-12 minutes. For each minute defibrillation is delayed, the chance of survival is reduced approximately 10%. In an ideal world, a successful Public Access Defibrillation program's objective is to achieve a 3-minute response time from collapse of victim to arrival of the AED unit. The activation of 911, initiation of CPR, and delivery of an AED to the location become crucial steps for survival. The efficacy of defibrillation is directly tied to how quickly a shock is administered. Thus, it is imperative that all be aware of the location of AEDs. The American Red Cross supports the position that improved training and access to AEDs could save 50,000 lives each year. The Red Cross believes that all Americans should be within four minutes of an AED and someone trained to use it. There is not central place where information on where all of the AEDs on campus are located. Anecdotally, when students at

the school of nursing are asked where the closest AED is located, many cannot identify the location. Students in this project will be challenged to conduct a risk assessment to define a targeted approach to providing AEDs in the highest risk, most appropriate locations. They will write the script for a Public Service Announcement (PSA) that can be disseminated in the future to the Duke Community. This exercise will allow an IPE group of students to work in an interactive manner with a goal in mind...production of a 2-minute PSA. Project collaborators will provide mentorship and expert insight into development of the PSA. An added advantage of this model is in exposing students to the on-going collaborative work spirit between an interprofessional group of faculty members. Duke University subscribes to the LiveSafe app (<https://www.livesafemobile.com/>). It is a mobile two-way safety communications platform and risk mitigation tool used by universities. It is designed specifically to light up dormant human sensors to help manage risk to the campus, people, and drive prevention of incidents. It gives universities an immediate path to communicating safety information to constituencies. And it delivers peer-to-peer and self-service tools to help everyone in the community stay safe, in everyday and high risk scenarios. This project will support collaboration with the Duke University Facilities Management Department to add locations and instructions on use of AEDs on the Duke University Campus map at maps.duke.edu and create a link in Duke Resources in the Duke LiveSafe app.

Specific Aims: Funding from Duke AHEAD will allow our interdisciplinary team to accomplish the following aims: 1. To engage students in a meaningful IPE activity that will ultimately impact the entire Duke Community 2. To educate students on the importance of timely activation of emergency response system as well as the vital function of an AED 3. To create a public service announcement (PSA) to educate those on campus on how to respond to a cardiac arrest with immediate 911 activation, initiation of CPR, and retrieval of an AED 4. To collaborate with the Duke University Facilities Management Department to add the location and instructions on use of AEDs on the Duke University Campus map at maps.duke.edu and create a link in Duke Resources in the Duke LiveSafe app.

Methods: Students who are interested in participating in this project will meet the following eligibility requirements:

- Be enrolled in one of the health profession schools on Duke campus including schools of nursing, medicine, physical therapy, and physician assistant
- Attend a 2-hour educational session lead by project collaborators highlighting the core competencies for interprofessional collaborative practice
- Availability and commitment to participate in a series of on-campus meetings with assigned IPE small groups (meeting time will be made by group consensus and typically will take place in the evening when there are fewer competing academic obligations)

Students who are interested in participating in this project will complete the following application process that will be reviewed by project collaborators:

- Current resume
- Interest and Impact Statement (150 words) addressing the following prompts: 1. What interests you in this interprofessional opportunity? 2. What do you intend to do with the training?

A 2-hr orientation meeting will be scheduled that will include the Core Competencies for Interprofessional Collaborative Practice (IPEC, 2011). Topics that will be presented by project collaborators include review of key definitions and principles that guide interprofessional competencies, the concept of “interprofessionality”, defining team-based care, and application of IPEC competencies to the proposed project. Students will be asked to complete ICCAS – Interprofessional Collaborative Competencies Attainment Survey before participating in the learning activity and after the learning activity at two time points throughout the project (prior to orientation session and at the project completion. This tool is a self-reported survey used to measure the effectiveness of interprofessional education activities and the level of competency attained. It was found to be a reliable and valid assessment of the participant’s attitude towards interprofessional collaboration. Click Here for ICCAS Questionnaire Archibald, D., Trumpower, D., & MacDonald, C. J. (2014). Validation of the interprofessional collaborative competency attainment survey (ICCAS). *Journal of Interprofessional Care*, 18(20), 1–6. doi:10.3109/13561820.2014.917407

Students from the schools of medicine, nursing, physical therapy, and physician assistant will “crowdsource” (tap into collective intelligence to complete a task) to complete a risk assessment to define a targeted approach to providing AEDs in the highest risk most appropriate locations. Mixed groups of 4-5 students will collaborate to meet project objectives over a set period of time. Students will be strategically placed in mixed groups to assure the “interprofessional” nature of this project and work together to meet

the objectives for the project. Students will be charged with identifying a leader and coming up with strategies on how to navigate this project. A campus location will be assigned to a group to determine if AEDs are centrally located within the highest risk and most concentrated population areas, availability of phones to call 911, and building accessibility. Currently, there is no campus entity listing AED locations. Student groups will complete the PDSA cycle to determine how they will strategically locate campus AEDs. Groups will be guided by collaborators from the disciplines and will explore current Duke resources for emergency preparedness and feasibility of supplementing current informatics resources with AED location and general operating instructions. Outcome measurement: 1. Pre/Post Test- ICCAS – Interprofessional Collaborative Competencies Attainment Survey 2. Dissemination of project results to each disciplines grand rounds (i.e. Department of Medicine Grand Rounds, School of Nursing Teaching Conversations, Hospital Nursing Grand Rounds) 3. Addition of AED locations on Duke LiveSafe app 4. Development and dissemination of PSA Data management and analysis Descriptive statistics will be used to summarize the demographic characteristics of the students, including age, sex, type of undergraduate degree, and health professions school enrolled in. This project will measure the effectiveness of the interprofessional education activities using the ICCAS tool attained at three time points during the project. The times of data collection are at baseline, after participation in the orientation educational intervention, and at the final debrief meeting of the project. Each student will use the last four digits of their phone number as an individualized code. The project PI will record the code numbers on the enrollment log and match the individualized code numbers at the three data collection points. Log will be stored in a locked file cabinet by the investigator. All data, including demographics and information collected on the ICCAS will be identified with a code number only. Students will not be identified personally in in the dissemination of this data.

IRB Status: Plan to submit

Challenges: IPE initiatives involving students from health profession schools are often faced with many challenges including; matching students’ rigorous schedules, finding adequate space to gather, faculty investment in the development and coverage of IPE activities, and administrative support. These challenges will be mitigated by project collaborators. Specific challenges related to this proposal include gaining access to locked areas on campus that require a key, an access card or code for entry and getting the locations of AEDs on campus pinned on the Duke LiveSafe app. Student groups will be expected to mitigate the project specific challenges and come up with solutions to these challenges.

Budget: \$4500

PI effort		
Consultant	Videographer for filming of public service announcement	\$3,000
Equipment	Purchase of refurbished AED	\$1,000
Computer		
Supplies	Support of student meals during meetings	\$500
Travel		

Works Cited: Archibald, D., Trumpower, D., & MacDonald, C. J. (2014). Validation of the interprofessional collaborative competency attainment survey (ICCAS). *Journal of Interprofessional Care*, 18(20), 1–6. doi:10.3109/13561820.2014.917407 Core Competencies for Interprofessional Collaborative Practice (IPEC, 2011) retrieved from https://members.aamc.org/eweb/upload/Core%20Competencies%20for%20Interprofessional%20Collaborative%20Practice_Revised.pdf LiveSafe app retrieved from <https://www.livesafemobile.com/> Margalit, R., et al. (2009). From professional silos to interprofessional education: Campuswide focus on quality of care. *Quality Management in Health Care* 18(3): 165-173. United States Department of Labor, Occupational Safety and Health Administration (OSHA, 2003). Saving Sudden Cardiac Arrest Victims in the Workplace

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