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Innovative Framework for Academic and Public Health Departments' Partnership on Preparing Future Practitioners- Preliminary Data

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This article presents a model to respond to current public health challenges and transform knowledge into preventive strategies. It also presents an innovative way for academic institutes and public health departments to focus on public health workforce development. Academic institutes partnership with public health departments have started fostering service-learning opportunities to engage students in public health with an emphasis on the specific public health outcomes. However, the benefit of service-learning projects on the health departments and the populations served is largely unknown. Recently, these service-learning opportunities are becoming less sustainable due to the inability of preceptors to provide the necessary support for students during the internship project. This article presents an innovative framework developed for sustainable academic health department partnership and describes the rationale for the collaboration. The evaluation of the framework suggested positive outcomes for students, the academic institution, the health department, and the communities. This framework can serve as a guide for academic institutions and public health departments whose goal is to address the current public health challenges via using service-learning method and develop strong public health workforce.

Keywords: University-health department partnership; collaboration; service learning

Introduction

In 2016, the U.S. Department of Health and Human Services (HHS) launched an innovative approach called Public Health 3.0 to meet public health challenges at the local and state levels (DeSalvo et al., 2017). The U.S. HHS calls for the interactive engagement of public health departments and community stakeholders, both in the public and private sector, to build the structured and cross-sector partnerships necessary to address health challenges and promote health at the local and state levels (DeSalvo et al., 2017). Meanwhile, the Institute of Medicine (IOM) identified in their report entitled "Who Will Keep the Public Healthy?" the isolation of schools of public health from actual public health practice. The IOM also expressed the importance of the collaboration between public health agencies and academic institutions for the future of public health (IOM, 2003). Following this acknowledgment, many schools of public health started focusing more on practice by interlinking service learning with their program design. Service learning is a teaching/learning approach that connects students with community organizations so that they can practice their skills and test their classroom knowledge in related service experiences in the community (Brandy, 2017; Voss, Mathews, Fossen, Scott, & Schaefer, 2015).

The collaboration between academic institutions and health departments provides students a platform for service learning. It is built according to the academic health department concept in which the educational institution provides the research and teaching, while the health department serves as the center for practice (Erwin & Keck, 2014). Vann and Farrer (2014) indicated that academic and public health agency partnerships are key to addressing modern health disparities. Further research also revealed that the academic practice of collaboration can strengthen the public health department workforce by assisting in their

program activities and the overall scope of their services (Neri, Ballman, Lu, Greenlund, & Grunbaum, 2014). In addition, these collaborations provide a platform that exposes students to the work of the public health department, furnishes them with culturally diverse learning opportunities, provides field education, as well as chances to apply health promotion principles within the context of public health practice (Akintobi, Dawood, & Blumenthal, 2014).

There are, however, still operational challenges to overcome in order to maximize these benefits. Commonly, public health departments have memorandums of understanding (MOU) with multiple academic institutions in the United States, which allow students to conduct their internships/practica. In traditional models of service learning, preceptors are solely responsible for assigning students to projects, orienting/training the students for their projects, ensuring the projects align with course competencies, and connecting the students to community resources (Brown, 2015). Students work under the supervision of the preceptors to complete their requirements for the given internship/practicum course. However, many public health department preceptors have heavy workloads that reduce their ability to accept students. They do not have the necessary time and resources to supervise the students' projects, help them gain their course competencies, or assist them in acquiring requisite experience (NACCHO, 2014).

In addition, for accreditation purposes, health departments may be primarily interested in evaluating the impacts of their programs on the community. Such assessments usually involve defining continuous quality performance to include means to enhance capacity and overall department performance, as well as optimal ways to advance population health (Kronstadt et al., 2016). To achieve these goals, there is a need for analytical skills, predictive analysis, quantitative and qualitative data interpretation, running reports from information systems, employing statistical software, and using a geographic information system for mapping projects. Many of these skills are currently lacking within the health department workforce (Massoudi, Chester, & Shah, 2016). Therefore, many preceptors are unable to fully provide the expertise and oversight students need to conduct evaluation and assessment projects in health departments.

Although service learning/practicum is an essential and integral component of public health programs, there are still challenges associated with the process for faculty and students. As the requirements for research, teaching, and service continue to increase, faculty have less time to work with community partners to match students to specific projects (Brown, 2015). This gap inhibits relevant frontline feedback for the faculty. Thus, there is a disconnect between the students' assessments in the classroom and the practicum learning that takes place outside of the classroom. Often, faculty lack departmental support, as many view service learning as an add-on, not an integral aspect of a course. An academic liaison in this partnership does not face the same challenges. This role is part of the workload; therefore, this responsibility is not an added role. Students often are not comfortable working with unfamiliar populations, as may occur if their assigned projects are not related to their coursework or prior knowledge.

Our proposed framework was designed to provide a mechanism that supports students in their learning through a collaborative process of service learning project development; assists partners and the community; and establishes a platform to assess the impact of service learning projects. The ultimate goals were to:

1. Provide student with practical hands-on experience
2. Provide the health department human resources and technical expertise support
3. Increase student success and build their capacity to engage in public health

This paper illustrates our innovative partnership framework and provides insights regarding both the benefits and challenges in public health practice.

Method

To facilitate internship/practicum opportunities for students without increasing the preceptors' load, the Chesapeake Health Department's leadership reached out to the Center for Global Health (CGH) at the Old Dominion University. Both entities worked together to design and pilot an innovative framework to support service learning (see **Figure 1**). The study was exempt from the university's Institutional Review Board for all project phases (development of the framework with partners, pilot of the framework, and assessment of the pilot). The Community Campus Partners in Health's (CCPH, 2013) principles were used to guide the framework development. The CCPH was founded in 1996 as a non-profit membership organization that promotes collaborative solutions to achieve health by leveraging resources between communities and higher education (CCPH, 2017). These partnerships are developed based on 12 guiding principles upon which all partners agree. These principles consist of establishing specific purposes for the partnership, having mutual trust, defining measurable outcomes, identifying each partner's strengths and resources, developing a process

for shared power, defining a clear communication strategy, allowing and taking into account feedback from all parties, understanding the benefits for each partner, and establishing an evaluation plan (CCPH, 2017).

Two phases were utilized to ensure an efficient and proficient collaboration. The CCPH was used to guide the partnership development in Phase I and was also the foundation that sustained the process during implementation. The details of each phase are described below.

Phase I: Development of the Framework

During this phase, the leadership of the health department and representatives from the academic unit met three times to brainstorm and identify key elements of the process. Notes were taken during the brainstorming sessions and reviewed to identify the core characteristics. In particular, the discussion included a focus on the need to clearly outline the roles and expectations of each partner in terms of time, the benefits for each partner involved (including students), as well as how to measure the impact of the projects, resources needed, and the types of student projects that would profit both students and the health department. All partners agreed upon a process of measuring the impacts of the service-learning projects before the start of piloting the framework and the need to establish a voluntary process for students to engage in the study. The CGH served as a liaison and was responsible for assisting all parties and facilitating the service-learning projects.

Description of the Service Learning Framework

At the beginning of the process, the students enroll in their internship course with a faculty member in their department at their academic institution. When the students contact the public health department for an internship or practicum placement request, the health department refers them to an academic liaison, who is a faculty member in the university and who works with the public health department. The students are not necessarily from the same university as the academic liaison. The students contact the academic liaison, who reviews their internship requirements (number of hours, start and end of the internship, competencies, and course enrollment verification). The academic liaison works with preceptors at the health department to match the possible service learning projects to the students. After the projects are defined, the students work with the preceptors on site. Throughout this process, the academic liaison provides the student academic support, such as analytical skills, technical help, mentoring, and reviewing their project development and final report. At the end of the service learning, the students are required to submit a final report to the preceptor and all course-required documents to their course instructor. The preceptor also reviews and submits an assessment of the students' performance and skills gained, as well as the impact of the service learning project on the organization, to the course instructor.

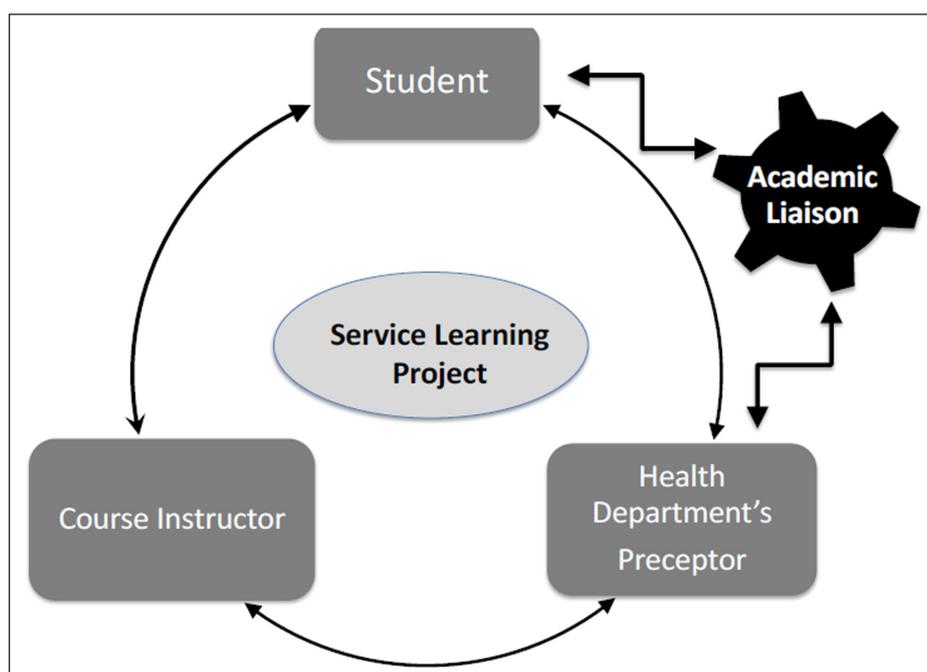


Figure 1: Framework of partnership for service learning.

Phase II: Piloting the Framework

Between 2017 and 2018, the health department and the academic unit selected six health department projects as a pilot for the framework. The students were required to complete 120–200 hours on site for their service learning with their preceptors in collaboration with the academic liaison. After the preceptors assigned their projects, the students received support from the academic liaison for research questions and hypotheses elaboration, data coding and cleaning, predictive analysis, interviewing, qualitative procedures, and database management. On the last day of the service learning, the students and preceptors participated in voluntary interviews to understand their overall experience with this framework. The students were invited individually via email to participate in the interviews. The questionnaire consisted of eight items. The interviews were individual and conducted face-to-face by a faculty member from the Center for Global Health who was not an academic liaison. The students were asked about their service learning experience, perception of the role of the academic liaison, and competencies gained. The preceptors were also asked to reflect on the students’ performance, the role of the academic liaison in facilitating the service learning, as well as the impacts of the project on the organization and community in general. This assessment was coupled with an evaluation of the benefits of the service learning projects for the academic institution. For this assessment, the academic liaison responded to three questions related to the overall impact of the projects for the faculty, students, and educational institution. The data analysis consisted of a content analysis (Neuendorf, 2017), which helped gather the transcribed data from the students’ interviews and the feedback from the preceptors and academic liaison to provide emerging themes to respond to the assessment questions. The analysis was done by a faculty non-academic liaison who was also responsible for all data-gathering. The analysis began with the reduction of the information, which was then coded and analyzed.

Results

As previously stated, six students participated in this pilot. Three graduate students were from the environmental health program, health services research program, and public health program. The remaining three students were undergraduate students from the Bachelor of Sciences in health services administration program. Five preceptors were involved in the pilot study. The preceptors were a health service administrator, nurse educator, physician assistant, program manager, and epidemiologist at the health department, respectively. The data gathered revealed numerous benefits associated with the service learning projects for the students, health department, and local community (see **Table 1**).

Table 1: Summary of Benefits and Achievements of the Service Learning Opportunities by Project.

Service Learning Projects	Student Benefits	Academic Liaison Benefits	Health Department Benefits and Achievements	Community Benefits from the Preceptor's Perspective
Infant-maternal health program effectiveness study	<ul style="list-style-type: none"> • Learned data transfer procedures and policies • Gained knowledge of case-control analysis 	<ul style="list-style-type: none"> • Research opportunities • Publication • Presentation at a national conference • Wrote a technical report • Received awards and recognitions 	<ul style="list-style-type: none"> • Conducted the evaluation of the program • Managed both short- and long-term outcome trends analysis • Enhanced understanding of evidence-based research 	<ul style="list-style-type: none"> • Ability to acquire more funding and provide more services to the community • Serve as evidence-based practice to other health departments
Family Access to Medical Insurance Security (FAMIS) application support	<ul style="list-style-type: none"> • Gained an understanding of the Virginia Medicaid system and program delivery • Acquired an understanding of the FAMIS program 	<ul style="list-style-type: none"> • Collaboration opportunities 	<ul style="list-style-type: none"> • Increased human resources: student supported the staff in program eligibility • Facilitation of program delivery • Improved connection with social workers 	<ul style="list-style-type: none"> • Service was offered to the community without any delay

(Contd.)

Service Learning Projects	Student Benefits	Academic Liaison Benefits	Health Department Benefits and Achievements	Community Benefits from the Preceptor's Perspective
Prescription take-back box program	<ul style="list-style-type: none"> • Learned networking skills • Improved ability to engage in community research • Gained mapping skills 	<ul style="list-style-type: none"> • Research opportunity • Submitted a technical report 	<ul style="list-style-type: none"> • Established a database of the prescription take-back sites in Hampton Roads 	<ul style="list-style-type: none"> • The map of the sites is available to the community
Administrative data management project	<ul style="list-style-type: none"> • Gained an understanding of administrative database management, policies, and requirements • Learned the procedures for data cleaning and continuous improvement 	<ul style="list-style-type: none"> • Collaboration opportunities 	<ul style="list-style-type: none"> • Received staff support • Facilitation and support of database management 	<ul style="list-style-type: none"> • More proficiency
Family planning/STD survey	<ul style="list-style-type: none"> • Gained skills in survey design • Acquired skills and knowledge in project planning and implementation • Survey administration • Data coding, entry, and analysis 	<ul style="list-style-type: none"> • Research opportunities • Publication opportunities • Presentation at a national conference 	<ul style="list-style-type: none"> • Assessment of needs and gaps identification • Effectiveness of the project 	<ul style="list-style-type: none"> • Opportunity to expand family planning services to other communities
Prescription medication take-back program: recommendations for program promotion	<ul style="list-style-type: none"> • Gained skills in qualitative tool development • Institutional Review Board (IRB) documents development and submission • Interview planning and implementation • Qualitative data analysis 	<ul style="list-style-type: none"> • Research opportunities • Submitted a technical report 	<ul style="list-style-type: none"> • Designed a report of strategies for program dissemination 	<ul style="list-style-type: none"> • Establishment of a work team to implement strategies to raise more awareness of the program

Student Interview Results

Perceived Role of the Academic Liaison

The students largely acknowledged the importance of the academic liaison's role and viewed the support provided as crucial to the success of their service learning:

"My experience with [the] faculty at the Center was very pleasant. I was assigned a project at the health department with a preceptor; however, I received mentoring and assistance throughout my service learning experience from faculty from the Center. The input I received was critical to the successful completion of my project...."

"My experience with the Center was cultivating, engaging and a tremendous learning experience toward my professional development."

"As a student from an online university, the partnership allowed me to conduct my internship at the health department and have assistance from the academic liaison. [...] I believe securing this internship at the health department would not have been possible without the collaboration between the Center and the health department. The academic liaison worked with me throughout my internship."

"I worked with a supervisor at the health department on a research project; however, I met monthly with a faculty from the Center to make sure I am on the right track with my project. I received assistance for my script, tool design, and a review for my final project...."

Competencies Gained

Students reported several interpersonal changes and improvement in analytic and assessment competencies, communication, leadership, and problem-solving skills. Verbatim quotes from the students are presented below:

"...I received practical experience regarding questionnaire development, interviewing, and qualitative data analysis, which were necessary for my project. I took a research method course, but never had a chance to apply the concepts I learned in the course. I would never have had that practical training and support without the assistance of the academic liaison."

"Participating in this internship has helped to develop my professional, communication, writing, and research skills. It has also improved my problem-solving skills and time management."

"I was able to attend meetings with an affiliated organization of the health department and acquired experiences outside the university during the strategic planning. It was a great experience for me."

"...I learned the process of obtaining data for research purposes and all related privacy issues."

"My service learning project consisted of a secondary data analysis for a health department project. I worked closely with faculty at the Center to conduct the analysis. The Center provided me a space to work on the project, as well as training for data cleaning and [an] overview of different analysis methods. The Center also connected me with a faculty specialized in the specific analysis method I needed for my project."

"My experience involved researching program participants' characteristics, developing health-focused programs for children, establishing themes from data analysis, and participating in local and community events. The faculty from the Center assisted me in creating my data analysis worksheet and provided guidelines for suggested lifestyle habits that would be encouraged in community events. The Center provided excellent professional assistance for community engagement, collaborative research, and data analysis."

"Overall, I [am] satisfied with the experience I have gained during my practicum. All in all, a couple of points that I have learned from my service learning experience: First, the importance of reaching out to the community and work on solving problems. Second, establish a good relationship with community partners...."

Preceptor Interview Results

A summary of the preceptors' reflections highlights the importance of the collaboration, students' performance, and the assessment of the projects' impact:

"The health department's partnership with the Center is an important collaboration and is mutually beneficial to both entities and [the] students. The intern is providing expert statistical analysis services in a matched-control study on a specific program. The analysis results will be utilized by the health department to evaluate and demonstrate the efficacy of the program as we evolve into an evidence-based program."

"The Center played a critical role in facilitating the internship program. This facilitation matches students with the service learning projects. Without the administrative and academic support provided

by the Center, the department would not have had the capacity to accept these students, and both the organization and the students would have missed valuable opportunities."

"The project my intern worked on last semester during the internship is very important, not just for the health department, but also for the entire community. The student implemented a survey to identify family planning services use and assess community members' awareness of services provided by the health department. We intend to use the results to identify the gaps in service delivery and design activities to close the current gaps and reach a broader part of the local community."

"The intern I had this semester has been such an enthusiastic and dedicated intern. [She] was tremendous support for our Medicaid enrollment and outreach program. We had only one outreach worker on the grant, and she had to be out for over six weeks. This service learning project allowed us to avoid a gap in the delivery of our services. The intern assisted families with Medicaid applications and worked with the social workers to assist families in obtaining any additional documentation they may need to provide for the determination of eligibility. The fact that she was able to fill the gap through this service learning was crucial for the department, our partners, and the entire community. We did not have to stop service delivery...."

"The intern identified all the prescription take-back box sites in Hampton Roads. This list was shared with all partners and will help map the locations and make them available to all stakeholders."

Academic Liaison Interview Results

The feedback from the academic liaison identifies the benefits of the service learning projects for the students and faculty and the ability of the faculty to engage in community projects:

"The collaboration between the health department and the school is essential for both faculty and students, especially as we move forward with the school of public health in the region. This collaboration provided a platform for students to connect the theories they have learned in class with the practical public health work."

"As someone that was involved with working closely with students, I saw them improve in such a short time; they were very engaged and were eager to learn skills they know will help them as professionals."

"Many of these projects allowed faculty to engage in the community. Also, we had the opportunity to publish papers, technical reports, and present in national conferences."

Overall, the findings from the students' interviews suggest that the participants (1) recognized the critical role of the academic liaison, (2) gained skills in analytics and project planning, (3) engaged in network opportunities with professionals in the field of public health, and (4) developed and refined skills such as critical thinking, communication, and problem-solving. The findings from the preceptors' interviews imply that the respondents (1) acknowledged the support provided by the academic liaison and (2) recognized the benefits of the projects for the health department and community.

Discussion

This partnership is very beneficial to the health department, university, faculty, and students. (Yeager, Balio, Kronstadt, Beitsch, 2017). The health department provides a venue for students to apply theoretical knowledge to practical public health activities, with academic support available from faculty. In return, students contribute invaluable assistance to the health department by increasing the human resources and enhancing analytical opportunities. Three students were hired at the health department as a result of their service-learning projects during the pilot period. Students gained analytical skills for research projects and immeasurable practical experience within the local community. Faculty had the unique opportunity to engage in community research, submitted two abstracts for presentation at national conferences, and wrote two papers and three technical reports in partnership with the health department as the result of the pilot project.

The innovation dimension includes two components. First, this academic public health practice does not limit itself to students from the host university; instead it is open to students from other universities in the U.S. The opportunity is unique because many students are enrolled in online institutions all over the United States. Thus, making it difficult to find internships or practicum placements within public health agencies.

This model serves as a platform for individuals in Hampton Roads who are enrolled at different universities to have the chance to engage in public health Service learning. Second, the academic liaison plays a unique role as the pillars of the framework by facilitating service learning placement, project development, coordination and serves as a bridge between academic institutions (students) and the health department.

Although service learning is a core component of public health programs intended to build capacity for students while strengthening the partnership between academic institutions and community in addressing a variety of public health issues, there remain challenges associated with the process. The main challenge of this framework is related to the limited number of service learning opportunities compared to the number of inquiries received each semester. To overcome this challenge, the academic liaison is significantly engaging other local public health organizations for site placement and for preceptorships. Some of the limitations of this study are related to the small sample size, the use of self-reported information from participants, and the use of a single site for site placement. In addition, community members were not interviewed or consulted about any perceived benefits to them. The strength of this study is backed by a qualitative design, which provides details of the projects and benefits as related to each participant. Further studies should include quantitative measures with larger sample sizes, including diverse community organizations, to identify the impacts of the service learning projects.

Conclusion

Through this innovative collaboration, students are provided with leadership while working on research projects, developing public programs, and implementing educational interventions to advance the promotion of public health. These service learning opportunities strengthen students' learning, create a platform to assess the determinants of health in the community and define community-centered solutions. This framework is the beginning of a much larger conversation with public health organizations in the region and academic institutions on the opportunities for community health projects evaluation. This approach can serve as a model for other communities and academic institutions to tackle service learning challenges.

Implications for Policy and Practice

- The findings have implications for future public health workforce development for research and practice.
- This collaboration can help improve internship/practicum processes for academic institutions and public health organizations.
- This framework emphasizes the importance of continuous collaboration between academic institutions and community partners in addressing public health issues.
- For students, the framework helps them apply their theories into practical public health work, pursue graduate studies due to newfound interests in public health.

Competing Interests

The authors have no competing interests to declare.

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