The Bridging the Gaps Program: Three Decades of Collaborative Service-Oriented Learning in the Health Professions

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Abstract

Health professions educators are continuing to develop training programs for future health care professionals to understand social determinants of health and address practical needs of their training institutions via service-oriented learning. Although individual U.S. programs have piloted different models, evaluations of programs that have demonstrated longitudinal growth and sustainability in the community are lacking, which is important because these programs can have long-term impacts not only on students but also on the communities they serve. In this article, the authors describe the long-term impacts of the Bridging the Gaps (BTG) program. First established in 1991 as an academic health institution and community organization collaborative, by 2019, the BTG program encompassed 9 academic health institution–based programs, partnering with 96 community organizations and employing 187 health professions students across 15 disciplines. By 2019, the program had 5,648 alumni. Of 3,104 alumni, 2,848 (91.8%) felt that the program broadened their understanding of health issues encountered by vulnerable and/or economically disadvantaged populations, and 2,767 of 3,101 (89.2%) felt that the program increased their interest in working with these populations. A total of 142 of 156 (91.0%) reported an effect on their clinical practice, 169 of 180 (93.9%) reported an effect on their professional role, and 64 of 109 (58.7%) reported an effect on their research careers. Of the community partners, 1,401 of 1,441 (97.2%) felt that the partnership between their organization and the BTG program was beneficial, 955 of 1,423 (67.1%) felt that BTG students brought resources to their organization that had previously been unavailable, and 1,095 of 1,421 (77.1%) felt that the linkages between their agency and other organizations were strengthened. The BTG program demonstrates growth and sustainability in its ongoing efforts to integrate training on social determinants of health via service-oriented learning into health professions education.

Social determinants of health (SDH) play a critical role in health, and measures to address them are a key driver in achieving health equity.[1–3] Health care in clinical settings as it pertains to addressing exclusively biomedical aspects of disease contributes only partly to health, and health care organizations have been increasingly called to explore ways to address health in relation to SDH, which may explain up to 90.0% of premature deaths.[4,5] One potential way that SDH can be ingrained into the culture of health care is to ensure future health care professionals have structured, effective educational experiences in community settings, where they learn about nonbiological factors related to health, practice preventive and health promotion activities in collaborative teams, and work with persons from diverse cultural backgrounds.[6]

Several programs based at academic institutions have initiated and evaluated community-based learning programs for health professions students. Although this is indeed a positive step, especially given the significant amount of effort and time that go into building these programs, some limitations exist. First, most programs that have been implemented and evaluated in the United States have been short-term or pilot programs.[7,8] Data on programs that have had a continued presence for decades have been scarce. Such data would provide an opportunity to not only evaluate the long-term and sustained impact of the program but also serve as a model for organizational sustainability in a changing world. Second, many programs focus on a specific health care need or theme, partnering with a single community organization.[9,10] Although such programs serve a community need, they can be limiting and rely on the stability of a single community partner. Third, community-based educational programs seldom assess the impact of the students and service on the community itself, which is especially important with community organizations that serve historically marginalized populations. These community organizations often have initiatives they want to develop, expand, or sustain but are often without the human resources to do so, and as such, service from students should offer tangible resources. Fourth, although some programs focus on interprofessional education, this focus has not been widespread.[11] Interprofessional collaboration and students from varying disciplines working together in teams is a critical skill set in modern health care that, according to the World Health Organization, should be integrated whenever possible.[12]

In this article, we describe the Bridging the Gaps (BTG) program, a multi-

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institutional program entering its 33rd year in 2023 that involves health professions students from varying disciplines across diverse community settings. We also describe the short-term and long-term impact of the program on students and the community. This article fills a need in the literature for the description and outcomes data of a long-running community-partnered program in health professions education.

The BTG Program

History and growth

In 1991, the BTG program was founded to link the provision of health-related service with the training of medical students and, shortly thereafter, other health and social service students. Three decades later, the BTG program remains organized around these 2 activities. Training focuses on gaining understanding of nonbiological factors that affect the health of communities, developing skills to address these issues, and learning about the strengths of multiple professional perspectives in the service of patients, clients, and communities. Service focuses on meeting a community-defined need that sustains or extends the work of community partners and allows students to bring added value to the community organizations served.

Starting at 1 Philadelphia academic health center, the BTG Community Health Internship Program was adopted by 4 other Philadelphia academic institutions within 5 years. With continued growth by 1997, 2 more sites in Pennsylvania, 1 in Erie and 1 in Pittsburgh, completed feasibility years, and 176 students from 15 health and social service disciplines participated in the program that year, serving 67 community sites. By 2009, a program had been developed in New Jersey and the Lehigh Valley (see Supplemental Digital Appendix 1 at http://links.lww.com/ACADMED/B503 for the academic network as of 2019). During the many years of program dissemination, the individual academic institutions identified organizations that serve marginalized communities and incorporated additional health-related services that students could offer with the goal of collaborating and building service-linked partnerships. In 2019, the most recent year for which data are included in this article, the BTG program had 187 students from 9 academic institutions who partnered with 96 community organizations. Students represented 15 different health and social science professions (Table 1). By 2019, 5,648 alumni from multiple disciplines had worked at 565 community organizations (unduplicated count, many sites partner for multiple years) since program inception in 1991.

Current structure of the BTG program

The BTG program is structured with a main office that oversees implementation of the program model shared among all participating institutions (see Supplemental Digital Appendix 2 at http://links.lww.com/ACADMED/B503 for the BTG program model). The program is guided by an operational group that represents each of the universities, thus contributing ideas and resources of the participating academic institutions and their community partners to the shared effort. The BTG program principles for participation are updated as needed and designed to preserve the collaborative program structure.

The BTG program offers a 7-week (8 in 1 location) paid summer internship program during which students are assigned in teams, often interprofessional, and placed at community organizations. Relationships with community organizations are forged initially through program directors at each school to ensure that the needs of partnering sites are those that students can fulfill. Students are matched with sites based on community need and student interest (see Supplemental Digital Appendix 3 at http://links.lww.com/ACADMED/B503 for the student recruitment and placement statement). Students are supervised by an on-site community preceptor (CP) and an academic preceptor (AP) (see Supplemental Digital Appendix 4 at http://links.lww.com/ACADMED/B503 for descriptions of key roles). Before the start of the program, there is a CP orientation that provides a program overview, including information on student and CP requirements and expectations. The orientation also serves as an opportunity for CPs from different community organizations to network. The CPs are involved in developing student projects that meet the needs of their organization. There is continual assessment of needs with the community organizations every year before the start of the program to ensure fit with the evolving needs of the organizations. In most locations, students are on site 4 days per week with 1 day reserved for didactic sessions. Didactic sessions vary according to program location and are designed to help students understand and learn strategies to address the complex issues that support health inequities while also reflecting on their own attitudes and biases. An open line of communication exists between community sites and academic institutions in case of any challenges. Students create a summary of their work in a final poster or project (see Supplemental Digital Appendix 5 at http://links.lww.com/ACADMED/B503 for student project summaries), which is presented at a fall symposium. Each program location hosts a local symposium, and all program locations are represented at the annual symposium in Philadelphia. The BTG program awards a nationally or locally known person who represents the program's ideals and who serves as the keynote for the large-scale event. The BTG annual symposium is an opportunity to share the students' work with the community organizations, academic institutions, funders, and the public who support the program (see Supplemental Digital Appendix 5 at http://links.lww.com/ACADMED/B503 for program supports).

The BTG program evaluates the different aspects of the program annually using both quantitative and qualitative data. The Community Health Activity Card (CHAC) was created in 2000 as a tool to track the students' self-reported community-based activities (see Supplemental Digital Appendix 6 at http://links.lww.com/ACADMED/B503 for the CHAC). The CHACs are completed weekly and solicit information about the number of days a student spends in the community, the location of the students' encounters, the nature of the services or activities performed by the student, the population served, and the community health issues addressed (Table 2). Additional student-completed questionnaires use a Likert scale and open-ended questions to provide feedback on the BTG's core curriculum (see Supplemental Digital Appendix 7 at http://links.lww.com/ACADMED/B503 for a curriculum

Table 1
Total Number (Percentage) of Bridging the Gaps Program Students by Discipline, 2006 to 2019

Discipline	No. (%) of students (N = 3,235)
Medicine	1,656 (51.2)
Nursing	270 (8.4)
Public health	270 (8.4)
Dental medicine	224 (6.9)
Social work	208 (6.4)
Occupational therapy	183 (5.7)
Pharmacy	142 (4.4)
Creative arts therapy	113 (3.5)
Physician assistant	58 (1.8)
Physical therapy	32 (0.9)
Podiatry	24 (0.7)
Law	23 (0.7)
Other (additional graduate-level profession studies not listed)	14 (0.4)
Veterinary medicine	10 (0.3)
Psychology	8 (0.2)

example), major events (orientation and symposium), and program impact. Additionally, students submit required weekly reflective journals and final products or papers, which are used for continuous program improvement and as qualitative evidence of impact. The BTG program seeks input from community partners at the close of the program, asking the CPs to complete a questionnaire to share their perceptions of program effectiveness and student performance. In addition to these questionnaires, self-reported data from the CHAC is used to measure the perceived short-term impact of the program. Two separate surveys, as described below, assess the perceived long-term impact on students and the community organizations.

Impact of the BTG program

To measure the perceived short-term impact of the program, we used self-evaluation data submitted by students weekly during the program from CHACs and questionnaires submitted at the end of the program by students and community organizations and compiled these annually from 2006 to 2019. In those 14 years, 3,235 students started the program, with 3,217 completing the program (1.0% dropout rate). Submission of CHAC data is required for program completion; therefore, the study had a 100% response rate (3,217 CHACs). Of the 3,217 students, 3,104 returned end-of-program questionnaires (96.5% response rate). Similarly, for perceived short-term impact on community partners, between 2006 and 2019, 1,494 CPs from partnering sites were asked to complete an evaluation of the impact of the BTG program on their site, and 1,450 (97.1%) responded to the questionnaire.

To measure perceived long-term impact, we administered 2 surveys—1 to a subset of program alumni and 1 to community partners who participated in the BTG program (see Supplemental Digital Appendix 8 at http://links.lww.com/ACADMED/B503 for the BTG Alumni Network Survey and Supplemental Digital Appendix 9 at http://links.lww.com/ACADMED/B503 for the Bridging the Gaps Community Partner Survey). In 2019, we emailed surveys to the 553 alumni who joined the BTG Alumni Network and participated between 1991 and 2018. Responses were received from 204 alumni (36.8%). Of these, 77 (37.8%) were in medicine, 36 (17.7%) in social work, 26 (12.8%) in nursing, 25 (12.3%) in public health, and 40 (19.6%) in the other disciplines described above. In spring 2020, we surveyed 66 community partners who had participated in the program during the previous 5 years. Forty-one community partners completed the survey (62.1% response rate). Of these, 23 (56.1%) had been partnering with the BTG program for 1 to 5 years and 18 (43.9%) for 6 to 15 years or more. Survey participation was voluntary and nonincentivized. For all survey and evaluation items with Likert scale responses, we combined the *agree* and *strongly agree* responses to indicate positive responses.

Impact on professional and career development

In assessing the perceived short-term impact of the program on students' professional development, responses from the postprogram questionnaire of students from 2006 to 2019 were cumulated. Among 3,104 students, 2,848 (91.8%) felt that the BTG program broadened their understanding of health issues encountered by vulnerable and/or economically disadvantaged populations, and 2,767 of 3,101 (89.2%) felt that the internship increased their interest in working with vulnerable and/or economically disadvantaged populations (Table 3).

To assess the long-term impact of the BTG program on students' career and professional development, we assessed data from the alumni survey. Alumni were asked about their current involvement with underserved populations and/or how the lessons learned from this internship experience have been integrated into their current work. Among the alumni, 163 of 184 (88.5%) reported working in their current role with populations that face social or economic challenges. Of these 163 alumni, 50 (30.7%) reported that this was part of their professional role, and 97 (52.7%) reported that this was in addition to their professional role. In addition, 142 of 156 (91.0%) and 169 of 180 (93.9%) alumni reported that the BTG program had an impact on their clinical practice and professional roles, respectively. Of 178 alumni, 169 (94.9%) and 173 (97.2%) also felt that the BTG program enhanced their understanding of nonbiological factors affecting health and the challenges faced by vulnerable populations, respectively. In addition, 64 of 109 alumni (58.7%) indicated that the BTG program had an impact on their research careers. Students reported that their BTG experience reaffirmed their goal to practice in underserved communities,

Table 2
Community Health Factors Addressed by Bridging the Gaps Program Students, 2006 to 2019

Community health factor[a]	No. (%) of students (N = 3,235)[b]
Diet and nutrition	2,594 (80.2)
Exercise	2,299 (71.1)
Cardiovascular health	2,112 (65.3)
Oral health	2,044 (63.2)
Communication	1,654 (51.1)
Mental health	1,629 (50.4)
Access to health care[c]	1,479 (45.7)
Obesity	1,282 (39.6)
Poverty	1,251 (38.7)
Child care	1,203 (37.2)
Personal hygiene	1,189 (36.8)
Diabetes	1,187 (36.7)
Homelessness	996 (30.8)
Cultural beliefs or practices	961 (29.7)
Environmental health	939 (29.0)
Violence	930 (28.7)
Substance abuse	926 (28.6)
Insurance or social services[c]	922 (28.5)
Transportation	775 (24.0)
Budgeting or personal finances[c]	744 (23.0)
Sexual questions or issues	738 (22.8)
Women's health[d]	702 (21.7)
Sexually transmitted diseases	672 (20.8)
HIV	628 (19.4)
Asthma	601 (18.6)
Physical disability	585 (18.1)
Computer literacy[d]	555 (17.2)
Immunizations	432 (13.4)
Teen pregnancy	430 (13.3)
Cancer[c]	389 (12.0)
Prenatal care	383 (11.8)
Immigrant health	367 (11.3)
Tuberculosis	99 (3.1)

[a]Community health factors are self-reported weekly by students as part of the Community Health Activity Card.
[b]Students were asked to select all that apply.
[c]Added in 2008.
[d]Added in 2007.

broadened their professional horizons, and encouraged them to think outside the box (see Supplemental Digital Appendix 10 at http://links.lww.com/ACADMED/B503 for quotations in the annual reports).

Interprofessional education

Data from the 2006 to 2019 CHACs showed that of the 3,235 participating students, 2,983 (92.2%) reported working in teams at some point during the program, with 2,247 (69.4%) reporting spending most of their time in interdisciplinary teams. In assessing whether this had a long-term effect, 164 of 175 alumni (93.7%) responded that the BTG program increased their understanding of how to collaborate with other disciplines, 165 (94.3%) felt that the program had increased their understanding of the importance of professions other than their own, and 167 (95.4%) reported increased understanding of the importance of the roles other professions played in supporting health of individuals and communities. Students appreciated the creative thinking, depth of capacities, and different ways of care in delivering community health that came out of interdisciplinary discussions (see Supplemental Digital Appendix 10 at http://links.lww.com/ACADMED/B503 for quotations in annual reports).

Mutual benefit

Mutual benefit is a key program value with the dual goals of service and training because student learning must bring added value to the community organizations served. Data from the 2006 to 2019 CHACs on the number of days students spent serving community partners show that the BTG students provided 86,394 days of service to community partners at no financial cost to the organizations. To evaluate benefit to the community partners, responses from the postprogram survey of community partners from 2006 to 2019 were cumulated. In all, 1,401 of 1,441 (97.2%) responded that the partnership between their organization and the BTG program helped them and those they served, 955 of 1,423 (67.1%) responded that BTG students brought resources and information to their organization that up until then had been unavailable, and 1,095 of 1,421 (77.1%) responded that students' work helped to create or strengthen linkages between their agency and other organizations and community resources (Table 4). The CPs reported appreciation of BTG students' commitment, enthusiasm, and advocacy, along with the resources and skill sets that improved their operations and advanced growth of their organizational missions (see Supplemental Digital Appendix 10 at http://links.lww.com/ACADMED/B503 for quotations in annual reports).

Discussion

The BTG program has been a sustained and increasing presence in the community for more than 30 years, connecting community-based service learning with interprofessional education of health professions students. In this article, we provide a description of the program and a brief evaluation of the perceived short-term and long-term impact of the program. Through the years, students consistently reported the positive effect of the program on their

Table 3
Self-Reported Immediate Impact of the Bridging the Gaps Program on Students, 2006 to 2019

Program impact	Response rate, no. (%) (N = 3,104)	No. (%) of students selecting positive responses[a]
Broadened understanding of the health issues encountered by vulnerable and/or economically disadvantaged populations	3,104 (100)	2,848 (91.8)
Taught important lessons about working with vulnerable and/or economically disadvantaged populations	3,101 (99.9)	2,860 (92.2)
Increased interest in working with vulnerable and/or economically disadvantaged populations	3,101 (99.9)	2,767 (89.2)

[a]Positive responses indicate selection of agree or strongly agree on a 5-point Likert scale.

professional development in working with diverse populations, while collaborating with students from other health disciplines.

Taking advantage of the longevity of the program, by surveying program alumni, we assessed the perceived long-term impact of the BTG program on alumni's professional roles and development—something that has only rarely been assessed by similar programs. These findings agree with other work that has shown the influence of exposure to medically underserved areas on clinical practice choices of medical students.[13]

A key program value of the BTG program is mutual benefit to the communities that the students serve, emphasizing the equally important service aspect of the program in addition to education. This positive effect on the community stakeholders was seen in the community partner surveys. We believe this is an important metric that should be evaluated thoroughly because there is always a chance that specific service from large health care institutions may not specifically fit the evolving needs of community organizations. Continuously reassessing needs and benefit to community organizations also helps strengthen collaborations with the CPs and, in our experience, has played a significant role in maintaining the longevity of the BTG program.

Stout et al[14] describe the steps required for successful and trustworthy collaborations between health care and community organizations, including identifying shared values and outcomes, being clear about the level of collaboration, developing mechanisms for accountability and resolving conflicts, and holding each other accountable to deliver on the plan. Collaboration built through trust is a core value of the BTG program—being transparent about what it can and cannot provide has contributed to sustaining relationships across many stakeholder groups, including academic institutions, community partners, and funders, for many years. In addition to adhering to the overall program model, an important lesson is that parts of the programmatic effort are curated by the context of a given institution and the community partners they serve. Each institution and partner brings a different culture and skill set to the whole, which enhances the program for all involved.

There are limitations to the evaluation data in this article. First, self-reported data in the surveys with students, alumni, and community organizations can introduce social desirability and sampling biases, especially with Likert scale questions. However, respondents were encouraged to be honest with their responses, and self-reporting of data was often the best way to obtain immediate feedback that aided in improving site-specific curricula and activities. Second, availability of data on perceptions or knowledge of students before starting the program would have provided more robust statistical analyses and evaluation of program impact. Although with our large sample sizes showing consistent data, this limitation is partially overcome. Third, more objective outcomes data on the long-term impact of the program would be useful, for example, tracking longitudinal career choices

Table 4
Self-Reported Impact of the Bridging the Gaps Program on Community Organizations, 2006 to 2019[a]

Program impact	Response rate, no. (%) (N = 1,450)	No. (%) of students selecting positive responses[b]
The partnership between my agency and Bridging the Gaps has helped the agency and those we serve	1,441 (99.3)	1,401 (97.2)
Bridging the Gaps brought resources and information to my agency or program that up until now have been unavailable	1,423 (98.1)	955 (67.1)
The students' work helped to create or strengthen linkages between my agency and other organizations or community resources	1,421 (98.0)	1,095 (77.1)

[a]Data are based on completion of an evaluation by community preceptors at the end of each annual program.
[b]Positive responses indicate selection of agree or strongly agree on a 5-point Likert scale.

of alumni, which is outside the scope of this study. However, the primary goal of the BTG program is that students acquire skill sets to understand and work with others to address the impact of the nonbiological factors that influence health work, irrespective of career choice. Fourth, data more recent than 2019 were not included because, during the COVID-19 pandemic, the BTG program quickly pivoted to an online program, offering community partners remote support, experiences of which may not be representative of the previous years and are outside the scope of this article.

Conclusions

One way that academic health centers can begin to expand their offerings is to ensure that future health care professionals have structured experiences embedded in community settings during their training. Learning directly from community members and leaders and engaging in a relevant curriculum allow health professions students to better understand the systemic hurdles that make health and well-being a challenge in marginalized communities. These experiences also illustrate the key role of partnership and collaboration with communities as well as with colleagues in other health professions in creating a long-term, mutually beneficial program. We believe the BTG program has built a long-standing presence in the community with positive collaborations, which has aided its growth and sustainability in its ongoing efforts to integrate training on SDH via service learning into health professions education.

The BTG program is currently working on a 3-year project to explore capacity-building initiatives that provide mutual benefit to the BTG constituents. More broadly, we intend to continue studying the impacts of the BTG program to understand how its features could be transferred or used by other organizations seeking to integrate training on SDH into health professions education while continuing to adapt to the evolving needs of communities they are situated in.

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