



# Service-Based Learning for Residents: A Success for Communities and Medical Education

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**BACKGROUND AND OBJECTIVES:** Community-based service-learning opportunities could support residents' acquisition of Accreditation Council for Graduate Medical Education (ACGME) competencies, but this concept has not been tested, and such programs are difficult to find. The objective of this work was to assess the value and the ACGME competency relevance of a service-learning program for residents that could be easily replicated nationally.

**METHODS:** Forty-one family medicine residents from three training programs participated in the Stanford Youth Diabetes Coaches Program at six high schools in California and Georgia serving minority students of low socioeconomic status. Residents completed online surveys to provide qualitative feedback and assess the program's impact on their acquisition of residency program competencies and self-management support proficiencies, including prior use and planned use of action plans—a key self-management support strategy.

**RESULTS:** Ninety-five percent of residents indicated that the program was a valuable experience that contributed to acquisition of residency program competencies, including interpersonal and communication skills and communication with teens. Compared with baseline, significantly more residents reported intention to use action plans with patients following participation. Themes from qualitative feedback included: valuing the overall experience, increasing opportunities to practice teaching, enhancing their ability to communicate with adolescents, contributing to the health of the community, recognizing the potential of action plans, and increasing intent to use action plans.

**CONCLUSIONS:** This pilot demonstrated that a brief service-learning program can enhance standard residency curriculum by encouraging acquisition of ACGME competencies and promoting utilization of self-management support in clinical practice.

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A central theme of the Accreditation Council for Graduate Medical Education (ACGME) general physician competencies is effective communication and the ability to support the chronic disease self-management of diverse patient populations.<sup>1</sup> These competencies promote quality of care and improve population health but are often difficult to teach and evaluate.<sup>2</sup>

Community-based service-learning opportunities for medical residents hold potential to address these ACGME competencies by providing important skill building opportunities, increasing understanding of the communities they serve, and imparting values such as social consciousness.<sup>3</sup> Yet, there is a lack of system-wide incorporation of service-learning opportunities in graduate

medical education that may stem from lack of access to suitable programs, an underestimation of their educational benefit,<sup>4</sup> and time limitations resulting from residency duty hour standards.

To fill this critical gap, we developed and pilot tested the Stanford Youth Diabetes Coaches Program (SYDCP), a service-learning program in which residents train high school students from low-income, ethnic minority communities to become self-management coaches for family members with diabetes.<sup>5</sup> We investigated family medicine residents' perceptions of how participating in the SYDCP contributes to the acquisition of ACGME program requirements and competencies, including: implementing community-based disease prevention and health promotion activities, enhancing interpersonal and communication skills, performing community health assessment, communicating effectively with a diverse patient population, and incorporating self-management support strategies with patients. The objective of this work was to assess the value and ACGME competency relevance of a service-learning

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program designed to provide residents with ACGME competency-focused learning within a manageable time commitment that could be easily replicated nationally.

### Methods

In Fall 2012 and Spring 2013, 41 family medicine residents from three training programs, one in San Jose, CA, and two in Atlanta, GA, participated in the SYDCP at six local high schools serving ethnic minority students of low socioeconomic status. The SYDCP brings physicians into high schools to teach a structured curriculum of eight sequential, 1-hour classes proven to increase youth health management knowledge and psychosocial assets.<sup>5</sup> The residents learn and teach skills necessary to support self-management, including communication skills, problem-solving, and setting achievable goals through action planning. All detailed training materials were developed and pilot tested over 3 years and were accessible to residents on the program website. Residents in Atlanta volunteered to participate and adjusted their schedules to accommodate participation. Residents in San Jose participated as a requirement during their community health rotation. A research team member provided residents with a brief orientation and asked them to adhere closely to the training materials. Each resident taught one to four classes at the partner high school. Within 12 weeks after participation, residents completed an online evaluation survey consisting of 12 questions: seven Likert-scale questions—one assessing perceived program value, four measuring self-assessed impact of program participation on skill development, one assessing baseline “pre-program” use of action plans with patients, and one measuring intended future use of action plans with patients; one multiple choice regarding time needed for preparation; and four open-ended feedback requests. The Institutional Review Board at Stanford University approved this study.

### Results

Thirty-nine of 41 residents completed surveys. Residents reported that participation required 30 to 60 minutes preparation in addition to the 1 hour of class time. Ninety-five percent of residents agreed or strongly agreed that participation was a valuable experience that aided in the acquisition of competencies, including interpersonal and communication skills, and, in particular, communicating with teens (Table 1). Residents also agreed that participation contributed to the health of the community and that they knew their community better afterward. There was a statistically significant increase in the number of residents who intended to use action plans (a key self-management skill) with patients in the future after participating in the teaching experience ( $P < .01$ ). Eighteen of 39 residents responded to open-ended feedback questions. Emergent themes included: opportunities to practice interpersonal, communication, and teaching skills; an enhanced ability to communicate with adolescents; a sense of contributing to the health of the community; and intention to use action plans with patients in the future (Table 2).

### Discussion

In this pilot study, residents perceived this brief service-based learning opportunity as a valuable experience that directly enhanced their ability to impact the health of the community, provided an opportunity to practice interpersonal and communication skills and learn more about the community they serve as physicians, and improved their ability to communicate with teens. Additionally, the study demonstrated that after program participation, there was a statistically significant increase in the number of residents who indicated an intention to use action plans, a goal-setting tool, with patients. An action plan is a specific behavioral step along the path to achieving a larger health goal, and the creation of an

action plan facilitates the integration of the small step into daily life.<sup>6</sup> Action plan utilization has been proven to be a key self-management support skill,<sup>7</sup> and health professionals' proficiency to support patients' self-management correlates with improved patient outcomes.<sup>8</sup>

The SYDCP and all related materials can be shared remotely with primary care residencies via the web. The curriculum has been developed to necessitate minimal out of class prep time by residents and minimal time and resource expenditure, increasing likelihood of program sustainability. In addition to promoting the acquisition of ACGME core competencies, the SYDCP may provide further benefits for residents and communities. It is understood that formal experiences in service-learning during medical training positively influence physicians' community engagement in the future,<sup>9</sup> and this experience may help residents recognize their potential as community health advocates and leaders.

This study was constrained by the small sample size and use of self-assessments as a proxy for knowledge and skill gain. We piloted the SYDCP at three sites and intend to extend the curriculum program to other residency sites and specialties to increase the sample size. Given the evidence supporting the benefits of this approach, future steps could include examining possible correlations between number of class sessions taught and perceived competency acquisition and intention to utilize self-management support. Additionally, it would be useful to survey resident participants at several time points after participation to assess the duration of the program benefits that are reported. Future studies may follow residents after graduation to determine whether program participation has an impact on participants' future practice styles, career choices, and community involvement.

Despite these limitations, this pilot demonstrated that a brief service-learning program can be

**Table 1: Family Medicine Resident Self-Report on SYDCP Influence on Teaching, Communication, Community Engagement, and Action Plan Usage Value\***

| Resident Survey Item  | "Strongly Agree" or "Agree" n (%) <sup>a</sup> | ACGME Family Medicine Program Requirements <sup>b</sup>  | ACGME General Competencies <sup>c</sup>  |
|---|--|--|--|
| Teaching the SYDCP was a valuable experience for me as a resident.  | 37 (94.9%)                                     |  |  |
| Participating in the SYDCP contributes to the health of the community in a unique way.                      | 37 (94.9%)                                     | Community-based disease screening, prevention, health promotion [IV.A.5.b).(9).(h)]  | Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health (1.9)  |
| Participation in the SYDCP gave me an opportunity to practice interpersonal and communication skills.       | 38 (97.4%)                                     | Interpersonal and communication skills [IV.A.5.d)]   | Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds (4.1)  |
| Participation in the SYDCP gave me an opportunity to learn more about the community I serve as a physician. | 36 (92.3%)                                     | Experience in community health assessment [IV.A.5.b).(9).(m)]  | Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care (3.9)  |
| Participation in the SYDCP improved my ability to communicate with teens.                                   | 32 (82.1%)                                     | Community-based health education of children and adults [IV.A.5.b).(9).(o)]; Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds [IV.A.5.d).(1)] | Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation (5.5) |
| Prior to participating in the SYDCP, I used action plans with patients in a clinical setting. <sup>d</sup>  | 27 (69.2%)                                     |  |  |
| In the future, I will use action plans with patients in a clinical setting. <sup>d</sup>                    | 38 (97.4%)                                     | Community-based health education of children and adults [IV.A.5.b).(9).(o)]  | Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes (3.10)                          |

\* California and Georgia, 2012–2013; n=39.

a. Items on a 5-point Likert scale, "strongly agree" to "strongly disagree," lowest being most agreement

b. <http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/120pr07012007.pdf>

c. List 2, Englander R, Cameron T, Ballard AJ, Dodge J, Bull J, Aschenbrener CA. Toward a common taxonomy of competency domains for the health professions and competencies for physicians. *Acad Med* 2013;88(8):1088-94.

d. Intent to use action plans significantly differs from prior usage, Wilcoxon rank sum  $P < .01$

SYDCP—Stanford Youth Diabetes Coaches Program

embedded within standard residency curriculum to help physicians acquire ACGME core competencies, better support patient self-management, and develop understanding of community health. Our results suggest that program participation

could have a lasting impact on participants' clinical practice.

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Table 2: Samples of Theme Characteristic Quotes From Resident Survey\*

| Themes   | Resident Responses  |
|--|---|
| Value of Experience  | <ul style="list-style-type: none"> <li>• Teaching was one of the best experiences I have had so far as a resident. Connecting with students and learning about the unique needs of a community was so important.</li> <li>• This was a truly wonderful experience for me. I love teaching and having this interaction with fresh, young minds helped to both build my confidence and encourage my passion but also gave me a chance to share what I've learned and have been taught by my great teachers.</li> <li>• It actually educated me as well as the students I was talking to because I had to do some studying.</li> </ul>   |
| Ability to Communicate With Adolescents                        | <ul style="list-style-type: none"> <li>• The program really helped me understand the true lack of knowledge many teens have about health topics in general.</li> <li>• It was a good experience to practice presenting information about health coaching and diabetes in a way that was accessible to youth.</li> <li>• Great experience working with high school students, learning about their attention spans and how to present information in an engaging way.</li> </ul>  |
| Contributes to the Health of the Community                     | <ul style="list-style-type: none"> <li>• The experience allowed me to share valuable medical knowledge with a population in need.</li> <li>• I enjoyed getting out in the community to teach kids who otherwise would never have learned important lifestyle and dietary habits that will help them become healthy productive adults.</li> <li>• It was a great platform to speak to a non-medical audience.</li> <li>• Adolescents are a challenging population to access because they don't often come into clinic. I think this program provides a valuable and unique opportunity for interaction with this demographic. Many students stayed after class to chat with us and ask general questions.</li> </ul> |
| Opportunity to Practice Interpersonal and Communication Skills | <ul style="list-style-type: none"> <li>• Learning to explain diabetes at a 10th grade level will help me with communicating with my patients about their diabetes in a way that they may understand.</li> <li>• It's always fun to teach kids, and it gave me some insight on how to explain things differently to my patients.</li> <li>• It was great interacting with the kids on their turf and hearing their thoughts about the way their worlds work.</li> </ul>  |
| Intention to Use Action Plans With Patients                    | <ul style="list-style-type: none"> <li>• I also learned about action plans in a way that is easy to use with patients. I plan on using this in my everyday practice.</li> <li>• I will use action plans to help my patients set achievable goals in meeting goals for hypertension, hyperlipidemia, and diabetes.</li> <li>• I've begun using actions plans for my own learning goals, so I will definitely introduce patients to the concept as I believe it is an invaluable tool in making lasting change.</li> </ul>  |
| Opportunity to Practice Teaching Skills                        | <ul style="list-style-type: none"> <li>• We have limited opportunities to teach so this was a good opportunity to improve my teaching skills.</li> <li>• Getting involved with youth... also helped me as a teacher to improve my teaching.</li> <li>• I liked being able to educate them about important health issues which I am sure will not only impact their family members but will hopefully make a difference in their personal health and positively influence their health in future.</li> </ul>   |

\* California and Georgia, 2012–2013; n=18

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