

ENCompass: A Comprehensive Undergraduate Student-Led Model of Implementing a Social Needs Screening and Referral Program

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Abstract

Columbus, the largest city in Ohio, is an epicenter for several overlapping health disparities, including poverty, food insecurity, and infant mortality. A group of volunteer undergraduate students at The Ohio State University sought to reduce some of these disparities through the creation of ENCompass: Empowering Neighborhoods of Columbus. This student organization was developed around a dual mission to (1) address social determinants of health by screening and connecting clients with social resources and (2) cultivate interdisciplinary student leadership through immersive volunteer experiences. In its 9 years of implementation, ENCompass has developed ongoing partnerships with eight clinics and food pantries where, on a weekly basis, ENCompass volunteers conduct social needs screenings with interested clients. This article provides an in-depth description of the ENCompass program, the outcomes ENCompass has provided for the community and its student volunteers, and several lessons learned to offer guidance to those interested in developing similar programs.

Keywords: undergraduate students, social needs screening, social determinants of health, community impact, service-learning



The social determinants of health (SDOH) are “the conditions in which people are born, grow, live, work, and age” (World Health Organization, n.d., para. 1). Income level, physical environment, education, food security, social context, and race are some commonly recognized predictors for health outcomes, driving the social gradient in health (World Health Organization, n.d.). Evidence suggests that adverse SDOH are linked to a variety of diseases (Cockerham et al., 2017), which is why it is crucial that communities with poorer SDOH are equipped with adequate resources to improve health outcomes.

One intervention for addressing the SDOH is social needs screening with subsequent

referrals conducted by health providers or designated patient navigators in health care settings. Social needs screenings ask patients to identify their potential unmet social resource needs, such as food, access to medication, transportation, and housing (Berkowitz et al., 2017). Several studies have shown the possible benefits of these social needs screenings. Screenings at pediatric primary care centers led to reduced family social resource needs and significant improvements in how parents reported their children’s health 4 months after screening (Gottlieb et al., 2016). In a study that offered social needs screenings to mothers at community health clinics, researchers found that, after one year, screened mothers were more likely to be employed and have child care, and less likely to reside in a homeless

shelter (Garg et al., 2015). Moreover, patient attitudes toward social health screenings during health care visits are found to be overwhelmingly positive. Among patients surveyed about their perceptions of social needs screenings, 85% agreed that their health systems should ask about social needs (Rogers et al., 2020).

Although such screenings serve a crucial role in both individual and community health, providers often find these screenings time-intensive, hindering their implementation (Byhoff et al., 2019). Some community health centers may hire social workers or patient navigators to alleviate this issue, but not all centers have the capacity or means to support such programs. One solution, proposed by Rebecca Onie, the founder of Health Leads, in her TED Talk (Onie, 2012), could be the collaboration between clinics and hospitals with colleges and universities through the deployment of undergraduate volunteers, specifically individuals aspiring to careers in health care, social work, public health, and public policy. Undergraduate students often seek community service opportunities to develop their qualifications for their professional careers (Eley, 2003). Students who participate in community-based health activities have been found to value these experiences and be more inclined to further develop their skills in working with underserved populations (Mays et al., 2009; O'Toole et al., 1999; Ramsey et al., 2004; Weissman et al., 2001). Considering these factors, the development of a student organization that specializes in SDOH screenings in partnership with health care and community resource centers may be of interest to experts in both community health and student career development.

This article aims to describe the development and implementation of an undergraduate student-led organization to address SDOH in clients through a partnership between students at Ohio State and organizations within the Columbus, Ohio community. Ohio State is a public land-grant research university, whose main campus is housed within the city of Columbus, Ohio. With a 20.4% poverty rate (U.S. Census Bureau, n.d.), Columbus is an epicenter for several public health issues. According to the 2017 *Community Health Assessment*, 17.9% of households in Franklin County were food insecure (Columbus Public Health, 2017). More than one fourth of homeowners and nearly half of renters were cost-burdened by hous-

ing, using more than 30% of their income to pay for shelter (Community Health Needs Assessment Steering Committee, 2019). The intersectionality of these and other racial and socioeconomic disparities exacerbates public health issues within these communities, such as infant mortality and opioid misuse (Altekruse et al., 2020; Schramm, 2016). As of 2019, Franklin County had an infant mortality rate of about 1.7 times the Healthy People 2030 target (Community Health Needs Assessment Steering Committee, 2019; Healthy People 2030, n.d.-b) and an opioid overdose rate of about 2.2 times the Healthy People 2030 target (Healthy People 2030, n.d.-a; Ohio Department of Health, 2019).

Based on these factors, a group of Ohio State undergraduate students developed ENCompass: Empowering Neighborhoods of Columbus, with a goal to bridge the gap between medical and social care. These students established ENCompass's dual mission of (1) improving the health of individuals living in the community by screening and connecting them with resources that address SDOH while also (2) cultivating interdisciplinary student leadership through immersive volunteer experiences. In this article, we describe the process of establishing and sustaining ENCompass's mission and model, present ENCompass's community and volunteer findings, and share ideas for further improvement of the ENCompass program. Moreover, this article can serve as a resource for individuals from other universities interested in developing a student-led program to address SDOH in their communities.

Historical Perspective

The idea for ENCompass was first conceived in fall 2012 when a group of interdisciplinary undergraduate students enrolled in an introductory public health course and viewed the TED Talk by Rebecca Onie (2012), founder of Health Leads, titled "What If Our Healthcare System Kept Us Healthy?" Onie's idea of deploying undergraduate students to bridge medical and social care resonated with this group of students, and they began a series of discussions with the professor to determine the process to create and implement a similar program addressing SDOH and gaps in care locally.

In spring 2013, these same students enrolled in their professor's independent study course so that additional faculty, peer

mentors, and students could jointly explore models of Health Leads and subsequently cocreate, plan, and implement their vision. This course offered these students designated time to collaborate on the project and contribute ideas in a group setting. A community service project was piloted at a local free clinic, and key stakeholders helped to ensure the feasibility and sustainability of the project. Historical documents produced by these students stipulated that SDOH screenings in a clinical setting should at least address the following: (1) creation, maintenance, and updating of a community resource database; (2) completion of comprehensive follow-ups with clients; (3) protection of patient/client privacy; (4) integration of clinical and social services; and (5) emphasis on interdisciplinary collaboration.

During summer 2013, the students became an official Ohio State student organization, requiring them to finalize their mission (building student leadership through community impact) and the structure/rules of the organization's general body and student Executive Board. A Faculty Advisory Board composed of faculty from the Colleges of Public Health, Social Work, and Medicine along with community business professionals was also created to support the students in developing and sustaining the program. In fall 2013, the students recruited and trained other motivated interdisciplinary students (which expanded their volunteer base), developed partnerships with local health care centers/clinics and food pantries, sought program funding to support organizational infrastructure, and applied for Internal Review Board (IRB) human subjects approval to collect research output/outcome data.

Program Development

Implementation of ENCompass Mission

ENCompass volunteers meet with clients at local food pantries and health clinics to assess client-specific SDOH. After careful screening (see Appendix A for screening form), ENCompass volunteers provide a packet of information to clients for resources to meet their individual and family needs. Documented below are essential yearly components of this process, including volunteer recruitment and training, site recruitment and partnership, client SDOH screenings and documentation, and the

overall organizational governance to sustain these efforts.

Volunteer Recruitment

At the beginning of both fall and spring semesters, approximately 25 new undergraduate students are selected by the Executive Board to join ENCompass, providing a foundation to maintain a broad volunteer base and to generate unique ideas to advance ENCompass's mission. Undergraduate students are deliberately chosen instead of graduate students due to the larger impact they can have on the program (via more years attending the institution and more flexible schedules) and the larger impact the program can have on them (via developing students' skill sets during a formative stage in their lives). Typically, volunteers are recruited by the Member Development and Recruitment Committee during the university's involvement fair as well as by email newsletters through various colleges/majors (typically among the social work- and health-related departments). To be selected, students are required to complete both a written application and an interview. The application and interview questions are intended to gauge students' interest in public health and community service as well as their expected level of commitment to the organization. Selected students then attend a volunteer orientation, complete volunteer training, shadow experienced volunteers, and attend weekly scheduled general body meetings.

Volunteer Training

ENCompass volunteers complete approximately 10 hours of training. Prior to their first shift, ENCompass volunteers complete a consultation training, hosted by the Executive Board, that educates students on the ENCompass mission and model. Since volunteers interface directly with clients and collect identifiable information, they are also required to undergo two CITI (Collaborative Institutional Training Initiative) trainings: (1) Social and Behavioral Training for Human Subjects Protection (CITI Program, n.d.-b) and (2) Responsible Conduct of Social and Behavioral Research (CITI Program, n.d.-a). Volunteers are asked to sign a digital nondisclosure conflict of interest form as mandated by the university for all student researchers. Finally, volunteers must shadow an experienced volunteer at least once at their assigned site to fully expose

them to their responsibilities and introduce them to staff at that particular site. Some volunteer sites additionally require volunteers to go through a more rigorous intake process, including collection of vaccine records, background checks, and electronic medical record training.

Volunteer Shifts

ENCompass volunteers provide consultations to interested clients at their designated sites. Each volunteer is responsible for serving their assigned weekly 2-hour shift and is typically scheduled to serve the same shift for the duration of an academic semester to fit with their class schedules. In addition to site consultations, volunteers are also expected to conduct phone follow-ups with all clients 2 weeks postconsultation.

A typical volunteer shift involves a multi-step process to ensure that volunteers are respecting the clients as well as the community site's staff. First, volunteers check in with the supervisor on call at the site to let them know that ENCompass is present. Then, volunteers set up their workspace at their designated area at the site, which is typically in close proximity to where both clients and staff are located (e.g., a social work office, nurses' station, or near the waiting room, depending on the flow and set-up of the site). Once volunteers are situated, they begin offering consultations (as described in the Client-Based SDOH Screenings and Documentation section). Finally, at the end of each shift, volunteers document their shift attendance, provide deidentified information about their consultations, and detail any technical or logistical issues they may have encountered during the shift.

Scheduling and transportation logistics are paramount when determining volunteer shifts. The VP of Site Engagement requests that all volunteers provide their general weekly availability using WhenToHelp, an online volunteer scheduling platform, and uses this information to designate weekly shifts to volunteers. Several sites are not within walking distance from campus, nor can public transit be used to access these sites (the furthest site is 10 miles away). For these situations, the VP schedules at least one individual per shift who has access to a car. ENCompass tries to reserve funds to pay gas mileage for these shifts; however, this is not always possible.

Site Recruitment and Partnership

When assessing new sites, ENCompass investigates two alignment factors about the sites: (1) core mission and values and (2) interactive workflow with clients. At potential sites, ENCompass volunteers conduct a 1–2 month pilot (feasibility) study to understand the site's workflow, services provided, client interactions, and office/clinic space in order to develop a plan for incorporating ENCompass services in this flow. During this feasibility study, ENCompass volunteers begin providing consultations for clients to determine the optimal workflow with input from volunteers and the site's staff. Adequate feasibility indicates confidence that sufficient numbers of clients will continue to request and be connected to SDOH resources. ENCompass finalizes its partnership with the site by coordinating a weekly volunteer schedule and by obtaining site staff signatures on IRB-approved research documentation. The site will designate a specific coordinator, typically a social worker, who is familiar with the resource needs of the clients. This coordinator is the primary contact for all future ENCompass communication and serves as the liaison between ENCompass volunteers and the rest of the site staff to ensure that staff are aware of ENCompass's involvement in the site workflow.

Not all previously selected sites have been optimal locations for ENCompass's work. Encountering challenges with various community sites has offered ENCompass students valuable lessons regarding the importance of examining whether ENCompass could fit into each site's workflow and structure. For instance, one of ENCompass's first volunteer sites was an acute wound care clinic. In theory, this clinic would be a good fit since a majority of clients had considerable social resource needs and were often scheduled for routine care, allowing for ENCompass follow-ups to occur in person. However, ENCompass volunteers found that acute wound clinic patients were often in too much pain to complete full consultations. ENCompass later chose to pilot at a different nearby clinic that served a similar group of clients but addressed overall and long-term care. ENCompass's services meshed well with this clinic's mission and workflow, allowing this site to currently remain a volunteer site.

Client-Based SDOH Screenings and Documentation

ENCompass consultations (Figure 1) begin with a pitch (Figure 2) to clients at each site. The pitch is a brief description of available services ENCompass volunteers can connect clients with, followed by asking whether the client is interested in a consultation. Some organizations, such as food pantries, require that volunteers deliver the pitch to clients in the waiting area, whereas other organizations, such as clinics, allow volunteers to deliver the pitch to clients individually in their patient rooms.

At sites where the pitch is given to clients in a waiting area, clients are told where the ENCompass “workspace” is located at the site, so they have a choice to visit the workspace sometime during their visit (e.g., if they are at a food pantry, they can come before or after they receive their food). At sites where the pitch is given to individuals in their private patient rooms, these patients can let the ENCompass volunteer know whether they would like to proceed with a consultation. If they agree, the initial screening takes place in the patient room.

Information from interested clients is entered by an ENCompass volunteer into the Client Need Screening Form via FoodBank Manager software (however, future data collection and storage will use IRB-approved Qualtrics software for its increased ease of use and built-in data visualization capabilities). This form consists of contact information, current housing, employment, income, insurance status, and resource needs. Appendix A provides a full list of screening questions. Volunteers then return to their workspace to identify resources (using various resource databases such as 211, CAP4Kids, Aunt Bertha) for the client based upon the screening form. Key information about each resource is placed into a comprehensive resource packet called a “social prescription.” Before the client leaves, the ENCompass volunteer gives them their resource packet and discusses the resources provided.

Two weeks after the initial consultation, the ENCompass volunteer follows up with each client served through email or Google Voice phone call or text, depending on the client-designated contact preference from the initial consultation. With the client, volunteers complete the ENCompass Follow-Up Survey, which inquires about which

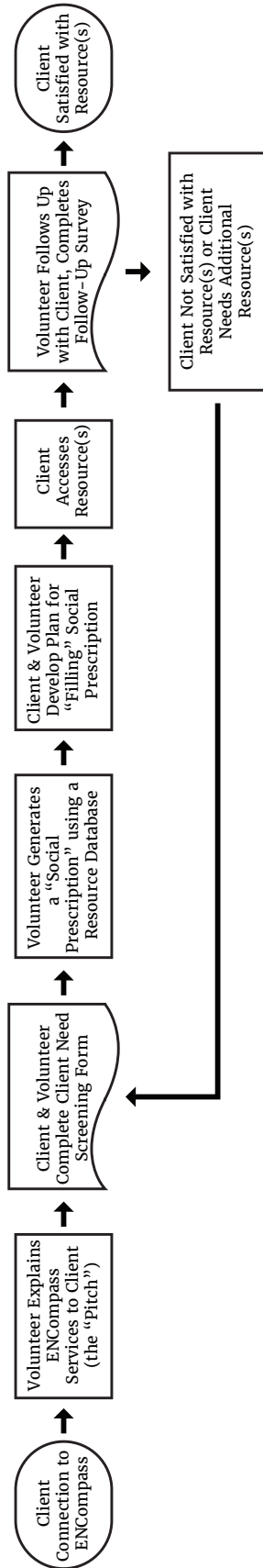
resources the client was able to utilize and which resources were helpful to the client. Appendix B provides a full list of follow-up questions. An additional follow-up consultation is scheduled if the volunteer provided the client any additional resource recommendations during the first follow-up consultation or upon client request.

Organizational Governance

Volunteers are required to attend weekly one-hour general body meetings in addition to their shifts. These meetings are organized and presided over by the ENCompass Executive Board (Figure 3). The first half of the meeting involves general announcements, and typically speakers representing various public health, social work, and health care agencies are invited to speak to members about their work and provide insight on different community health topics. Key public health issues facing Columbus residents such as infant mortality and opioid misuse are addressed.

The second half of the meeting involves engagement with ENCompass committees. The ENCompass program enables members to utilize their diverse backgrounds and interests to serve on one of six committees within ENCompass: Site Engagement, Research and Data Analytics, Information Technology, Public Relations and Advocacy, Membership Development and Recruitment, and Outreach. In committee meetings, members collaborate to expand ENCompass’s outreach, raise funds, analyze data, and optimize volunteer workflow and service delivery in response to challenges and changing community need. Each committee is led by a vice-president (VP), who is elected by the general body annually and holds the position for a one-year term. The Executive Board comprises two co-presidents, the secretary, the treasurer, and all the VPs (see Figure 3 and Table 1 for further descriptions). The Executive Board meets regularly with a faculty advisor who has worked closely with the organization since it was established. This relationship has been pivotal to ENCompass’s success due to the faculty advisor’s knowledge of the public health field, understanding of Columbus’s social issues, and ability to form connections between the organization and members of the university and Columbus communities. The faculty advisor serves as a liaison between the student Executive Board and the Faculty Advisory Board, who meet

Figure 1. ENCompass Consultation Model



Note. An oval represents a starting/ending point. A rectangle with a curved bottom represents that a form/survey is completed at this point.

Figure 2. ENCompass Pitch

“Hi, my name is [first name] and I am a volunteer with ENCompass, a student organization at The Ohio State University. ENCompass connects individuals with various services within the Columbus area, such as food pantries, affordable clothing stores, rent and utilities assistance, and more. We can also help connect you with vision and dental care services, or anything else you may need at this time. Our services are free and confidential, and should only take around 10–15 minutes. Does this sound like something you might be interested in?”

Figure 3. ENCompass Organizational Structure

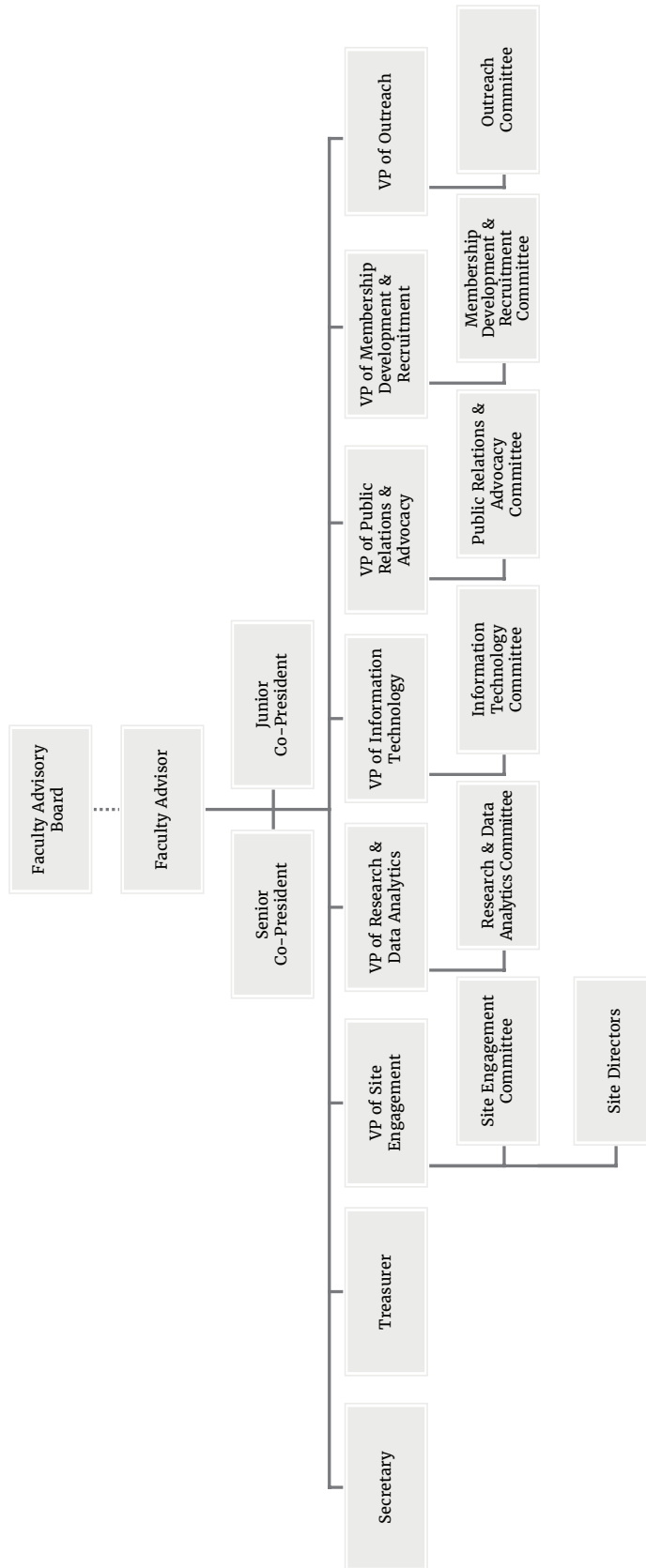


Table 1. Student Executive Board Positions and Leadership Responsibilities

Position	Leadership Responsibilities
Co-president (senior)	<ul style="list-style-type: none"> • Organizes and leads weekly Executive Board meetings. • Helps VPs set goals each semester; revisits and reevaluates goals each semester. • Facilitates transition of executive member positions each year. • Grows organization by meeting community members and lobbying expansion of organization locally. • Meets regularly with the faculty advisor for strategic planning. • Trains junior co-president to ensure continuity and a smooth transition.
Co-president (junior)	<ul style="list-style-type: none"> • Works with senior co-president to determine annual goals, develop and maintain community partnerships, and lead organization and executive teams through two consecutive school years. • Leads internal update presentations during weekly general body meetings. • Organizes quarterly meetings each year for the student Executive Board and the Faculty Advisory Board.
Treasurer	<ul style="list-style-type: none"> • Manages bank accounts, prepares and maintains annual budget, oversees auditing, prepares required financial reports, requests funding, and pays organization bills. • Works alongside the VP of outreach to apply for grants and funding and to coordinate fundraisers for both the organization and the community.
Secretary	<ul style="list-style-type: none"> • Manages organizational duties of ENCompass, including monitoring of attendance, taking minutes of all general body, executive, and advisory meetings, updating organization calendar, obtaining appropriate facilities for organization meetings and activities, and reminding all members of upcoming meetings and events.
VP of site engagement	<ul style="list-style-type: none"> • Oversees organizational matters relating to volunteering members and handles official correspondence of ENCompass with current and future volunteer sites. • Committee duties: Designates site directors at each volunteering site to help in the implementation of the ENCompass service model. <ul style="list-style-type: none"> • Site directors are responsible for preparing biannual site reports, detailing the effectiveness and utility of ENCompass volunteers at each site, and presenting findings to both the ENCompass Executive Board and the coordinators at each site.
VP of research & data analytics	<ul style="list-style-type: none"> • Oversees collection and analysis of volunteer consultation data. • Works closely with faculty advisors to ensure IRB approval and review. • Coordinates research training and develops research projects for the committee to focus on each year. • Committee duties: Works alongside the Site Engagement Committee to determine new areas of need and subsequently develop new volunteer sites in these areas. Analyzes client and consultation data and curates findings to coordinate presentations and publications to showcase ENCompass's efficacy and model.
VP of information technology	<ul style="list-style-type: none"> • Develops and improves the online tools used by ENCompass members, including the website and resource database. • Committee duties: Collaborates with Site Engagement Committee to refine the consultation process and manage technological barriers.

Table continued on next page

Table 1. Continued

Position	Leadership Responsibilities
VP of public relations & advocacy	<ul style="list-style-type: none"> • Manages the social media accounts and works alongside the VP of IT to develop the ENCompass website and online presence. • Committee duties: Markets ENCompass on online platforms for both recruitment and external representation. Develops online content to educate followers on national social justice issues and methods of advocacy and reform.
VP of membership development & recruitment	<ul style="list-style-type: none"> • Coordinates all recruitment efforts, new member orientation, training, and continued education throughout the year. • Committee duties: Invites speakers to general body meetings to expose members to multiple aspects of health, including topics surrounding social work, public health, and policy development. Designs activities for the general body to introduce members to new ideas and concepts within public health.
VP of outreach	<ul style="list-style-type: none"> • Plans and implements all fundraising events and community outreach activities. • Committee duties: Coordinates with donors and collaborates with community organizations to coordinate fundraisers for ENCompass and other community organizations. In past years, fundraising drives have included coat drives, infant essentials, and sanitary products.

Note. All members of the student Executive Board also serve as volunteers, whose responsibilities are detailed in the Client-Based SDOH Screenings and Documentation section.

quarterly to further develop new ideas and ensure that organizational operations are running smoothly.

Program Findings

Reflecting on ENCompass’s dual mission to (1) address SDOH by screening and connecting clients with social resources and (2) cultivate interdisciplinary student leadership through immersive volunteer experiences, the ENCompass program has two main sets of findings: (1) community (sites versus clients) findings and (2) volunteer findings. Explanatory information is also included with these findings.

Community Findings

Sites

Since 2012, ENCompass has implemented programming throughout 13 community sites in Columbus. Eight of these partnerships have been maintained with weekly volunteers still serving each site. Six of the eight current sites are clinics (two adult free clinics serving ethnic minority groups, two pediatric care clinics serving low-income families, one adult primary care and mental health management clinic, and one obstetrics and gynecology clinic), and two of the eight current sites are food pantries. The five sites where ENCompass is no longer

serving clients, either due to poor alignment found during the site’s pilot feasibility study or later workflow changes that prevented continued ENCompass volunteering, include a medical student-run free clinic, a wound care clinic, two food pantries, and an evening financial literacy program. In addition, ENCompass volunteers attend pop-up events throughout the community, which have historically included events at local libraries and university-sponsored health screenings. ENCompass volunteers have also partnered with Ohio State’s Kirwan Institute for the Study of Race and Ethnicity to create comprehensive resource maps of Columbus communities.

Strategies That Enhance ENCompass-Client Interactions

A variety of factors often influence client participation rate (PR) at each site, defined as the number of clients agreeing to participate in an ENCompass consultation divided by the number of clients who were approached. The ENCompass PR may also be thought of as a consent rate or take-up rate. Clinics typically have higher PRs than food pantries, likely due to the more organized structure of appointments at clinics. For example, at the two pediatric care clinics serving low-income families (PR = 39%, 40%), clients have an assigned time to meet with an ENCompass volunteer

before or after meeting with their physician. This structure, compared to the two food pantries where volunteers pitch to groups of clients in waiting rooms (PR = 11%, 12%), leads to increased client interaction. Additionally, at clinics, the providers may introduce ENCompass members to the client before the ENCompass volunteer enters the room. This brings greater legitimacy to the ENCompass volunteer and likely leads to better interaction and transfer of resources to the client. Although PRs are lower at food pantries, they invite a greater portion of the community, enabling volunteers to pitch to more clients overall. Finally, client perceptions play a role in willingness to complete a consultation (i.e., if the client is in a rush to retrieve food items/other services offered by the site).

When comparing types of clinics, free clinics often have higher PRs than primary care clinics. Free clinics have likely had more time to interact with the community and establish a reputation, yielding higher trust. For example, ENCompass's two adult free clinics serving ethnic minority groups (PR = 90%, 51%) have a stronger relationship with the communities they interact with most. Both clinics have physicians who speak Arabic or Spanish, attempting to connect to the Arabic and Latinx communities, respectively. Instead of needing an interpreter, these providers communicate directly with patients, leading patients to trust the clinic as a whole, including additional service providers such as ENCompass volunteers.

In February 2021, the research team developed and distributed an IRB-approved evaluation survey to the eight current community site partners to ask site staff for their feedback on the ENCompass program. The survey included three Likert-scale questions where respondents provided ratings about the ENCompass program on a scale of 1–5 (1 = *strongly disagree*, 5 = *strongly agree*; a higher score on each item reflects a more favorable response). Respondents answered all three questions favorably: (1) whether ENCompass has improved the site's quality of care ($\bar{x} = 4.5 \pm 0.5$), (2) whether ENCompass has integrated well into the site's workflow ($\bar{x} = 4.25 \pm 0.43$), and (3) whether the site would recommend ENCompass's services to other sites ($\bar{x} = 4.63 \pm 0.48$).

Clients

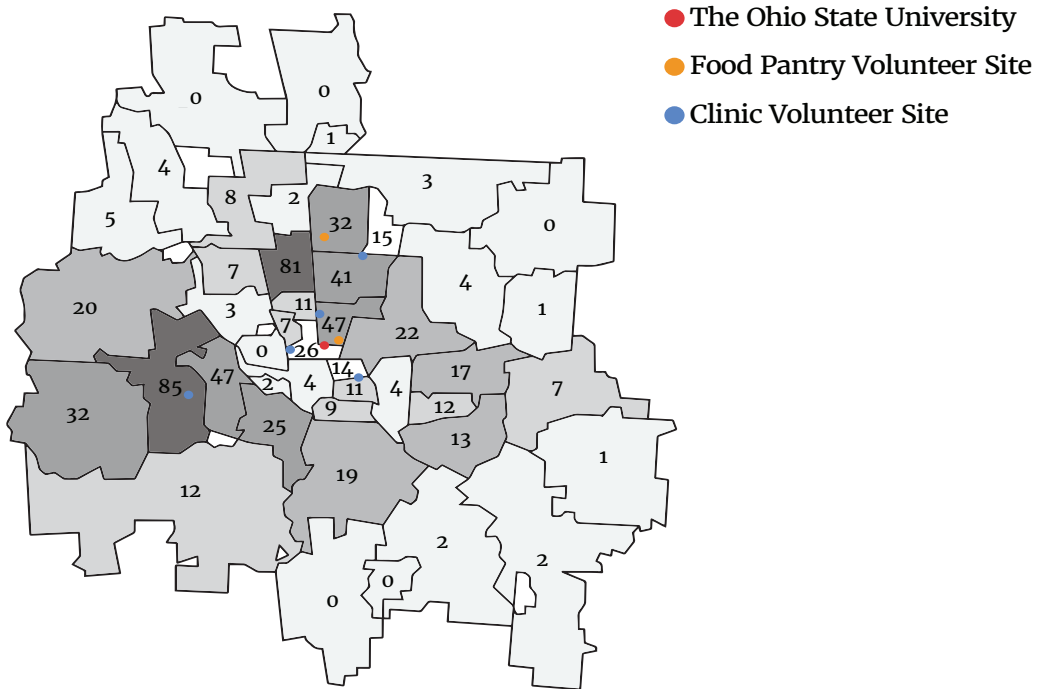
From 2015 to 2019, ENCompass volunteers completed 717 client consultations at the

eight current sites and pop-up events. A majority of consultations (658, 92%) were with clients who reported to live in the Greater Columbus Area (Franklin County and small parts of the surrounding six counties). ENCompass volunteers have served clients who reported living in 39 (87%) of the 45 zip codes within the Greater Columbus Area (Figure 4). ENCompass clients tend to concentrate in the zip codes where the eight active community sites are located. ENCompass volunteers are able to reach Columbus's neediest neighborhoods, as is demonstrated by the 10 zip codes with the largest number of consultations being those with the highest number of emergency department visits (Community Health Needs Assessment Steering Committee, 2019) and those designated as high need by the Community Need Index (Dignity Health, n.d.; Roth & Barsi, 2005).

As noted in Table 2, during ENCompass's 717 consultations, volunteers have been able to connect clients with more than 2,411 resources. The top five most commonly requested resources among clients were food (301 requests, 42% of clients), dental care (241, 34%), utilities assistance (237, 33%), housing/rent assistance (229, 32%), and clothing (198, 28%). Additionally, many clients have requested resources outside the program's typical scope, such as prenatal care (11, 2%) and tobacco/substance use support (10, 1%). Table 2 shows alignment of requested resources with available county-level statistics.

Volunteer Findings

Since 2012, ENCompass has had approximately 261 volunteers. To better understand the impacts of the ENCompass program on its volunteers, the ENCompass Research and Data Analytics Committee distributed an IRB-approved survey to ENCompass alumni using previously stored contact information. The survey asked respondents to share information about their undergraduate major(s) and professional outcomes (Figures 5a and 5b) and provided a text entry form for alumni to share their experiences with the ENCompass program. Among the 130 volunteers who were contacted, 40% completed the survey. For the open-ended question, three independent researchers reviewed each response and assigned a binary code representing the presence of eight themes selected a priori based on the structure of the interview questions and

Figure 4. Volunteer Site Locations and Client Consultation Density

Note. This map was made using Tableau software. It shows the 45 zip codes of the Greater Columbus Area. The numbers in each zip code represent the number of client consultations that volunteers completed from 2015 to 2019, with corresponding darker shading indicating a greater number of client consultations completed with clients who reside in that zip code. Two clinic volunteer sites are housed in the same facility.

preexisting knowledge of volunteer experiences in the organization. The agreement between coders was excellent, here defined as Krippendorff's alphas ≥ 0.80 .

Although survey data show that interdisciplinary recruitment is indeed present in the ENCompass program, a large majority of volunteers came from the Colleges of Public Health, Medicine, and Arts & Sciences. A large percentage of responding members pursued fields within health care, with most individuals going on to complete medical or public health graduate degrees.

In the open-ended responses for particular themes, almost every respondent provided positive commentary regarding their experiences with ENCompass (Table 3). More than 60% of respondents shared that ENCompass was formative in shaping their career direction, and 40% discussed the knowledge they gained about the SDOH. Other common themes that emerged included skills gained, inspiration to work with underserved com-

munities, general positive comments about the program, and feedback/recommended improvements. Many participants with different career paths shared responses that covered multiple themes:

ENCompass is the number one thing that has shaped my professional trajectory. Through ENCompass, I learned that I wanted to care for patients directly . . . while making systemic change at a community, public health, and policy level. I am passionate about caring for the underserved and ENCompass laid the foundation for my deep commitment to serve our neediest communities. Moreover, . . . I learned leadership skills that have allowed me to succeed in my future endeavors. I learned how to create a successful organizational structure, motivate/support my peers, create partnerships with other organizations, and so much more. Thanks

Table 2. Frequency of Client Requested Resources

Category	Resource	Frequency of request, N = 717	Alignment with Franklin County Statistics, 2019
Basic and supplemental health	Dental care	241 (34%)	30% of residents had not visited a dentist or dental clinic within the last year. 11% of adults age 19–64 and 5% of children age 3–18 could not access needed dental care.
	Eye care	184 (26%)	
	Family doctor	138 (19%)	
	Prescriptions	78 (11%)	
	Doctor for women's needs	67 (9%)	11% of pregnant residents had not had a health checkup in the past year.
	Mental health	55 (8%)	22% of adult residents had been told they have a form of depression.
	Insurance	44 (6%)	10% of residents did not have health insurance coverage.
Household needs	Food	301 (42%)	17% of residents were food insecure. 14% of households used food stamps. 54% of households using food stamps had children under the age of 18 present.
	Utilities assistance	237 (33%)	
	Housing/rent assistance	229 (32%)	32% of households had housing costs of at least 30% of their income.
	Clothing	198 (28%)	
	Furniture	129 (18%)	
	Transportation	73 (10%)	
	After school programs	68 (9%)	
Jobs and education	Job resources	113 (16%)	4% annual average unemployment rate.
	English classes	72 (10%)	13% of residents spoke a language other than English at home.
	GED classes	51 (7%)	10% of residents over age 25 had not graduated from high school.

Note. This table includes client resource requests from 2015 to 2019. Clients were able to request multiple resources that fit into multiple categories. Additional resources requested included child support/care (23, 3%), reading assistance (21, 3%), mammograms (15, 2%), translations (17, 2%), shelters (14, 2%), prenatal care (11, 2%), tobacco/substance abuse support (10, 1%), library programs (8, 1%), wound care supplies (7, 1%), and referral to Planned Parenthood (3, <1%). Franklin County statistics were gathered from the *Franklin County HealthMap2019* (Community Health Needs Assessment Steering Committee, 2019). Blank cells represent an absence of applicable data in *Franklin County HealthMap2019*.

to ENCompass, I am . . . committed to caring for the underserved both through compassionate patient care and through being a leader in public health/advocacy. (Note: This quote has been edited to maintain confidentiality.)

ENCompass was easily the best experience I had in undergrad. Changed my life and definitely prepared me for a career in social work.

I enjoyed my time with the program. I helped create and run the PR committee which helped me develop new and diverse skills and played a role in me later pursuing a career in design.

Lessons Learned and Future Steps

Integration and Outcomes of Dual Mission

The ENCompass program was developed to bring together a multidisciplinary cohort of students who share a passion for addressing health disparities and to provide opportunities for these students to make an impact on the public health of their community. Through weekly volunteering, students have been able to connect local community members to resources that support social needs. These engagements have allowed students to develop their interpersonal and professional skills while also thinking critically and creatively about how to best address person-specific social needs. Weekly meetings provide students an outlet to reflect and discuss their volunteer experience.

Figure 5a. Volunteer Majors

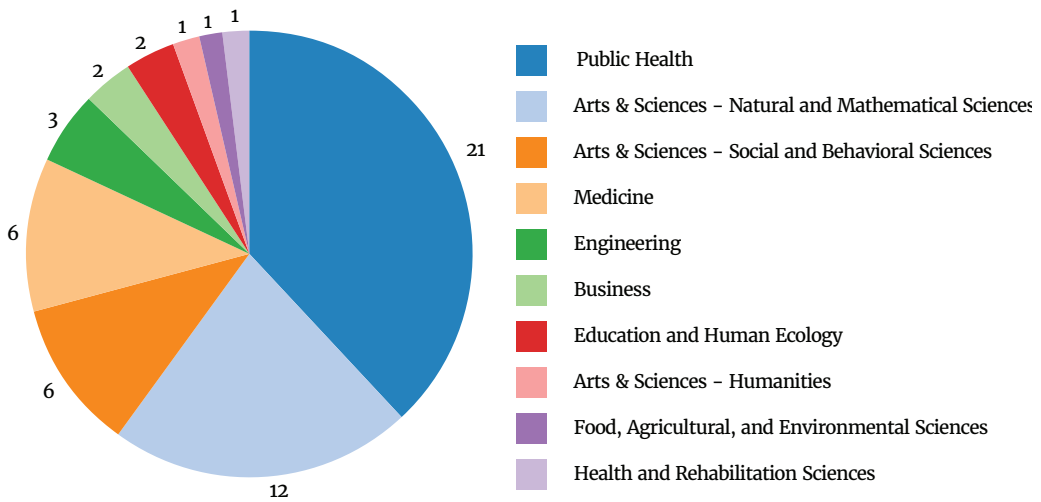


Figure 5b. Volunteer Career Paths

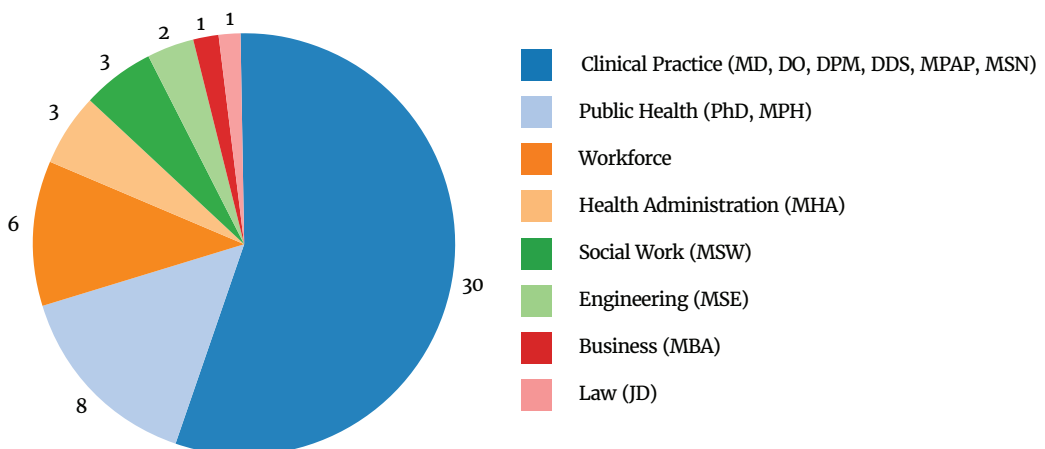


Table 3. ENCompass Volunteer Alumni Survey Themes

Theme	Definition	Frequency N = 40	Example
Career	ENCompass furthered career/education	23 (58%)	"ENCompass is the number one thing that has shaped my professional trajectory."
Knowledge	ENCompass provided public health or SDOH knowledge	16 (40%)	"ENCompass was the organization that introduced me to public health, a field I had never heard of until college."
Skills	ENCompass helped with skills (leadership, research, collaboration)	9 (23%)	"I learned leadership skills that have allowed me to succeed in my future endeavors."
Inspired orientation toward underserved	ENCompass inspired a career or experiences working with underserved populations	9 (23%)	"It [ENCompass] was the first time I realized I felt energized and inspired working one-on-one with people, especially those in a vulnerable part of their lives."
Organization growth	Proud to see the growth of ENCompass	7 (18%)	"I was one of the founding members . . . of the organization [and] I am so so happy to see that all the good work we started is only growing!"
Collaboration	ENCompass provided the opportunity to collaborate with peers and/or advisors	7 (18%)	"Loved my time connecting with like-minded students [on] campus and the feeling of making a difference in the community we served."
Other positive	Response did not fit other categories, but ENCompass had a positive impact	7 (18%)	"ENCompass was my favorite undergraduate organization and I was very fortunate to be part of the team."
Feedback	Response gave negative feedback or commentary on ENCompass	6 (15%)	"I volunteered but only met with one or two people after a few hours. When I did follow-up calls it was hard to check with people if they had received what they needed or not."
Other	Response did not align with any other categories	1 (3%)	"It was a fairly new program when I was a volunteer. I don't have much to share."

Note. Respondents were able to share responses that fit into multiple categories.

periences with the group, while also offering continued education on public health topics from experts in the field. Site staff overall feel that ENCompass is beneficial to their organizations, and previous volunteers feel that ENCompass has left a positive impact on their undergraduate and future careers.

The initial years in piloting the ENCompass program have enabled volunteers to make an impact on their community; however, the program can be improved both internally and externally. Outlined below are some future directions the ENCompass program plans to take to better implement its mission.

Consultation Quality Improvement

Weekly volunteering has enabled ENCompass members to explore communicating with clients and addressing client needs. In doing so, however, ENCompass has also recognized that consultations can be improved in a variety of ways to best help clients, including the use of virtual communication and directly linking clients to resources.

Virtual Communication

The ENCompass model was created prior to the safety guidelines imposed during the novel coronavirus (COVID-19) pandemic. In autumn 2020, ENCompass students devised a tele-help model for the program, asking site directors to advertise the ENCompass phone number and have clients call this number if they need social service support. Although the in-person model likely allows for higher participation rates, a hybrid model could be used in the future to enable volunteers to work with clients both on site and off site via telecommunication. In the existing model, clients receive the ENCompass phone number; however, future models could ask that sites also keep the ENCompass contact information available on their websites and in person. Since ENCompass members visit the sites only on designated days and times, this increased access to contact information will enable the clients who enter the organizations on ENCompass “off-days” to contact ENCompass and request services.

Follow-Up Communication and Direct Linkage to Resources

As previously discussed, ENCompass members are asked to follow up with their clients to check if the designated needs have been

met and/or if there are further questions that could be addressed. The participation rate for follow-up is quite low (12%). Over time, ENCompass has experimented with different follow-up methods, such as in-person, phone calls, texts, and survey links. ENCompass volunteers have also tried conducting follow-ups during their scheduled shifts, at general body meetings, and on their own time. See the Client-Based SDOH Screenings and Documentation section for the most recently implemented follow-up method. Previous research has found that clients who have been adequately assisted in registering for and contacting the resource organizations often have better outcomes than those who are just provided with the contact information (Gottlieb et al., 2016). Future program models could ask volunteers to contact the community organizations for the clients and/or help them register for programs. For a more time-efficient approach, volunteers could provide step-by-step instructions on how to register for/contact certain social service organizations if the client has questions about doing so. In the future, ENCompass is interested in training volunteers to help clients register for government services such as Medicare/Medicaid, SNAP benefits, and utility payment assistance. These additional services would remove a barrier for clients who need these resources but don't have the time and/or computer access to sign up themselves. Learning the details about these assistance programs would also be beneficial for volunteers for their future careers. In implementing this change, ENCompass plans to continue collecting data about how many clients were able to be directly connected with resources, and also still include a follow-up that asks clients how this direct connection may have benefited them.

Volunteer Education Improvement

Through weekly presentations and discussions, ENCompass strives to keep its volunteers up to date on public health initiatives occurring in the local community while also providing a fundamental understanding of health disparities, health policy, and SDOH. Included below are some potential ideas for how to (1) further develop this educational component and (2) introduce more perspectives into ENCompass programming.

Diversity and Advocacy Training

By serving Columbus community members and learning about SDOH at general body

meetings, ENCompass members can attest to the systemic barriers that create social needs in the surrounding community. To truly address the SDOH, ENCompass volunteers recognize the need to advocate for reform that brings about equity in all institutions of society. Researchers have identified agency (working within the system to improve health) and activism (reforming the system to improve health) as two subsets of health advocacy (Dobson et al., 2012). The current ENCompass model practices agency by addressing factors for poor health by connecting Columbus residents with social resources. However, ENCompass can improve its health advocacy work by working more upstream to dismantle the systemic inequities that inherently disfavor ENCompass's population of interest (Castrucci & Auerbach, 2019). To promote activism among its members, ENCompass plans to collaborate with organizations on campus and in the Columbus community that promote civic engagement. In the past, ENCompass partnered with OSU Votes, a student-led movement to register, educate, and encourage students to vote. Looking forward, ENCompass plans to partner with other activism groups on campus to explore additional ways to influence policymaking and social issues, such as contacting representatives, raising awareness on social media and through educational events, crowdfunding, creating community focus groups, and participating in public demonstrations.

Interdisciplinary Recruitment

At its founding in 2012, ENCompass members represented a variety of disciplines across campus. These students identified interdisciplinary collaboration as a key component of successful models that addressed SDOH. As the organization evolved, the academic disciplines of students grew more homogeneous, with a majority of members pursuing pre-health-care-related degrees (as shown in Figures 5a and 5b). This shift could be attributed to recruitment efforts through Ohio State's College of Public Health and other outlets with a health-oriented audience. Additionally, ENCompass's recruitment specifically looks for students with a passion for public health. Moving forward, ENCompass looks to reach students beyond the traditional health-related fields to recruit an interdisciplinary group of students, as envisioned by its founding members. Prioritizing the recruitment of students with

a variety of academic backgrounds and skill sets enhances ENCompass's ability to serve the Columbus community. For instance, committees like Information Technology and Research and Data Analytics would benefit from members with a strong background in computer science that is not always included in premedicine, public health, or social work curriculums. Skill sets brought by business or public affairs majors could bring additional perspective to ENCompass's Site Engagement and Public Relations and Advocacy Committees. A multitude of factors influence health; therefore, members with a diverse array of skills and knowledge are best equipped to address these factors. As ENCompass extends its reach across a variety of disciplines at Ohio State, the program's mission of awareness and activism is furthered as well.

Community Advisory Board

ENCompass members have also discussed the possibility of developing a community advisory board in order to improve ENCompass's ability to serve its clients. So far, the development of the program has heavily relied on the expertise of the current faculty advisor and larger Faculty Advisory Board, composed of researchers and organization leaders with expertise within the fields of public health and social work and significant knowledge of and connections to local communities. Having additional engagement from the clients ENCompass serves could provide numerous benefits for the program's reach.

Closing Remarks, Recognition, and Call to Action

The ENCompass program has brought significant value to both Ohio State students and the Columbus community through providing a meaningful service-learning opportunity for undergraduate students that helps to address health disparities. The organization was recognized by Ohio State's Outstanding Student Organization Award, has received sponsorship from Nationwide Children's Hospital, and was selected to present at a Clinton Global Initiative annual meeting and Ohio State's Denman Undergraduate Research Forum. As an established student organization that is well-known by the university community, ENCompass hopes to remain a sustainable organization that continues to evolve each year. Through continuing to develop

community partnerships, diversifying the volunteer pool, and actively educating volunteers on the many factors that contribute to health inequity, ENCompass plans to continue growing and furthering its impact on the Columbus community. Moreover, with the many effects of the COVID-19 pandemic on social needs services, ENCompass hopes to, in the future, evaluate how the organization has evolved in response to these changes. Just as ENCompass was inspired by Health Leads, ENCompass hopes that this model can be used to inspire other universities to develop similar student organizations focused on helping their local communities and developing student interest in public health.



Note

¹ Elizabeth L. Schwartz and Shreya Shaw share first authorship.

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Appendix A. ENCompass Client Need Screening Form

Section 0: Information automatically collected about screening	
1. Date	
2. Time	
3. Volunteer conducting screening	
Section 1: Client demographic information*	
1. Is this a real client?	() Yes () No
2. Consent to service?	() Yes () No
3. Consent to research?	() Yes () No
4. Location of visit	Select from drop down list of all sites
5. First Name	
6. Middle Name	
7. Last Name	
8. Gender	() Male () Female
9. Date of birth	
10. Age	
11. Primary language	
12. Street address	
13. Apartment/Suite	
14. City	
15. State	
16. Zip code	
17. Total number of individuals in household	
18. Number of adults in household	
19. Number of children in household	
20. Single parent household	() Yes () No
21. Housing status	() Rent () Own home () Live with family/others () Homeless
22. Do you have a cell phone?	() Yes () No
23. Cell phone number	
24. Do you have access to this cell phone for the next 3 months?	() Yes () No
25. Email address	

Continued on next page

Appendix A. Continued

26. Employment status	<input type="checkbox"/> Full time <input type="checkbox"/> Part time <input type="checkbox"/> Retired <input type="checkbox"/> Student <input type="checkbox"/> Contract/Consulting <input type="checkbox"/> Unemployed
27. Yearly household income (if unsure, put ?)	
28. Do you have any medical insurance or medical assistance?	<input type="checkbox"/> Yes <input type="checkbox"/> No
29. If yes, do you have Medicare or Medicaid?	<input type="checkbox"/> Medicare <input type="checkbox"/> Medicaid <input type="checkbox"/> MyCare (both)
30. If you have Medicaid, who is your provider?	<input type="checkbox"/> Buckeye Health Plan <input type="checkbox"/> CareSource <input type="checkbox"/> Molina <input type="checkbox"/> Paramount <input type="checkbox"/> UnitedHealthCare <input type="checkbox"/> Aetna <input type="checkbox"/> Other <input type="checkbox"/> I don't know
31. Do you have any other health care plans?	
32. Are you a veteran?	
33. Are you or anyone you live with handicapped or disabled?	
Section 2: Social needs screening*	
1. Basic health	<input type="checkbox"/> Family doctor <input type="checkbox"/> Dental care <input type="checkbox"/> Eye care <input type="checkbox"/> Prescriptions
2. Basic health: Elaborate on needs	
3. Supplemental health	<input type="checkbox"/> Mental health <input type="checkbox"/> Tobacco/substance abuse support <input type="checkbox"/> Insurance <input type="checkbox"/> Wound care supplies
4. Supplemental health: Elaborate on needs	
5. Household needs	<input type="checkbox"/> Housing/rent assistance <input type="checkbox"/> Shelters <input type="checkbox"/> Utilities assistance <input type="checkbox"/> Food <input type="checkbox"/> Clothing <input type="checkbox"/> Furniture <input type="checkbox"/> Transportation

Continued on next page

Appendix A. Continued

6. Household needs: Elaborate on needs	
7. Jobs/Education	<input type="checkbox"/> Reading assistance <input type="checkbox"/> GED classes <input type="checkbox"/> ESL/ESOL classes <input type="checkbox"/> Translations <input type="checkbox"/> Job resources <input type="checkbox"/> Library programs
8. Jobs/Education: Elaborate on needs	
9. Family services	<input type="checkbox"/> School meals <input type="checkbox"/> Child support/care <input type="checkbox"/> Adult care <input type="checkbox"/> Fatherhood programs <input type="checkbox"/> After school programs
10. Family services: Elaborate on needs	
11. Women's/child health	<input type="checkbox"/> Doctor for women's needs <input type="checkbox"/> Pediatric/prenatal care <input type="checkbox"/> Mammograms <input type="checkbox"/> Planned Parenthood
12. Women's/child health: Elaborate on needs	
Section 3: Resource recommendations**	
1. Resource name	
2. Resource category	
3. Resource address	
Note: Questions 1–3 are repeated for each resource recommended.	
4. Status	<input type="checkbox"/> Client successfully given information <input type="checkbox"/> Client walked out without information <input type="checkbox"/> Client did not want information
5. Did you schedule a follow-up with the client?	<input type="checkbox"/> Yes <input type="checkbox"/> No, will be unable to contact client again (no phone) <input type="checkbox"/> No, client did not want a follow-up <input type="checkbox"/> No, other
6. Preferred method of contact for follow-up:	

Note. Parentheses refer to multiple choice answer choices. Square brackets refer to select all that apply answer choices.

*Section for volunteer to complete with client.

**Section for volunteer to complete without client, after compiling “social prescription”/resource packet.

Appendix B. ENCompass Client Follow-Up Survey

Section 1: Introduction	
1. Status of follow-up	<input type="checkbox"/> Completed <input type="checkbox"/> Left message (1st time) <input type="checkbox"/> Left message (2nd time) <input type="checkbox"/> Did not answer (1st time) <input type="checkbox"/> Did not answer (2nd time) <input type="checkbox"/> Busy (Call back) <input type="checkbox"/> Phone disconnected <input type="checkbox"/> Texted (1st time) <input type="checkbox"/> Texted (2nd time) <input type="checkbox"/> Emailed (1st time) <input type="checkbox"/> Emailed (2nd time)
2. Did you use the resource(s) recommended to you at your last visit?	<input type="checkbox"/> Yes, I used all of the resources <input type="checkbox"/> Yes, I used some of the resources <input type="checkbox"/> No, I used none of the resources <input type="checkbox"/> Refuse to answer <input type="checkbox"/> I don't know <input type="checkbox"/> Not applicable
3. If you only used some of the resources, please explain why	
4. If no, why did you not use the resources?	
Section 2: Resources used	
1. What was the name of Resource 1 that you used?	
2. What service did Resource 1 provide for you/ your household?	
3. Was Resource 1 helpful?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refuse to answer <input type="checkbox"/> I don't know <input type="checkbox"/> Not applicable
4. Would you recommend Resource 1 to a friend?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refuse to answer <input type="checkbox"/> I don't know <input type="checkbox"/> Not applicable
5. Additional comments about Resource 1	
Note: Questions 1–5 are repeated for each resource used.	

Continued on next page

Appendix B. Continued

Section 3: Outside resources used	
1. Did you use any outside resource(s) not recommended by an ENCompass volunteer since your last visit?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refuse to answer <input type="checkbox"/> I don't know <input type="checkbox"/> Not applicable
2. What was the name of Outside Resource 1 that you used?	
3. What service did Outside Resource 1 provide for you/your household?	
4. Was Outside Resource 1 helpful?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refuse to answer <input type="checkbox"/> I don't know <input type="checkbox"/> Not applicable
5. Would you recommend Outside Resource 1 to a friend?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refuse to answer <input type="checkbox"/> I don't know <input type="checkbox"/> Not applicable
6. Additional comments about Outside Resource 1	
Note: Questions 2–6 are repeated for each outside resource used.	
7. Did you schedule another follow-up?	<input type="checkbox"/> Yes, client requested <input type="checkbox"/> Yes, unable to reach client <input type="checkbox"/> No, client declined <input type="checkbox"/> No, unable to reach client multiple times