BIRMINGHAM HEALTH LINKS:
ADDRESSING SOCIAL DETERMINANTS OF HEALTH IN A CLINICAL SETTING

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ABSTRACT

Background A recent body of evidence suggests that addressing social determinants of health in the clinical setting improves health status and helps reach health targets, a topic of important public health significance. The Birmingham Free Clinic (BFC) in Pittsburgh's South Side recently implemented Birmingham Health Links (BHL), a program to address patient's social determinants of health. With nearly half of Birmingham patients considered homeless and over 90% living below the federal poverty level, BFC serves some of the city's most vulnerable.

Program Description BHL is a social services help desk modeled after Health Leads, Inc that trains student volunteers to help patients address the broader social factors that influence health such as employment, food security and housing. Students engage with patients one-on-one to understand their situation, create an individualized action plan and follow-up on a weekly basis by phone until the patients' needs are met to the patient's satisfaction.

Methods A program evaluation included an analysis of patient case files, a patient phone survey using the Client Satisfaction Questionnaire-8 (CSQ-8), and a qualitative analysis of students' weekly reflections.

Results During the first 6 months of the program, 23% of unique clinic patients used the BHL help desk. The top three needs were housing assistance (26%), food assistance (18%) and employment (16%). Twenty percent of cases (n=80) were closed because needs were met and 59% were lost to

follow up after the initial encounter. The phone survey (n=14) found that patients were quite satisfied with their experience. The analysis of student reflections (n=166) found that many students noted personal and professional growth, a new understanding and appreciation for social determinants of health and a shift in their career path to include work with underserved populations as a result of this experience.

Conclusion This model of addressing social determinants of health in a clinical setting shows great promise for being welcomed by patients, for providing future health professionals with an applied understanding of the importance of social determinants on health and shows feasibility due to it's low annual budget.

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PREFACE

I would like to acknowledge a number of people who helped bring the Birmingham Health Links program to fruition and this thesis to completion. First, to Mary Herbert: thank you for believing in the idea from the beginning and for your unwavering support for BHL. You are an incredible mentor and I feel so lucky to have served at the Birmingham Clinic under your supervision – it's an amazing place because of your high standards, dedication and leadership. To Dr. Burke: You signed on to be part of this project when you barely knew me, and went above and beyond in your mentorship. Thank you for your time, your advice and your valuable feedback. Your mentorship is undoubtedly what I value most about my graduate education. To Dr. Ricci: You inspired my interest in public health evaluation. I know how lucky I am to have such an evaluation guru provide insight and feedback on this evaluation project. To Dr. Foster: Thank you for agreeing to be part of my committee after only one meeting together. I appreciate greatly your positivity, willingness to meet, and the social work perspective that you bring. To the clinic staff and volunteers – thank you for being open to this new program and for supporting us as we worked out the kinks. You made integration into clinic smooth and fun! To all the Community Health Fellows and BHL supporters – you all have made this program what it is, and have helped so many Birmingham patients through your compassion and dedication. Thank you for inspiring me. To the Albert Schweitzer Fellowship: Thank you for your faith in me to carry out this project and be a contributor to the 2013-2014 class. Neal – thank you for helping me keep everything in perspective. To my family: I can't thank you enough for your love and support, and for being a second pair of eyes, as always. My friends: thank you for joining me for the long hours spent in CTR and Hillman, and for the beautiful times when we took a break from it all.

1.0   INTRODUCTION

The purpose of this research is to evaluate the efficacy of Birmingham Health Links (BHL), a social services program started at the Birmingham Free Clinic in Pittsburgh's Southside. This process evaluation is being carried out for two reasons. First, to understand the program strengths and identify areas in need of improvement in order to better serve BHL patients. And second, to provide program operations data and a foundation for expansion of this program and model to other health care centers in the area, as desired by physicians in the Division of Maternal and Child Health at the Allegheny County Health Department and a physician at the Squirrel Hill Health Center.

A process evaluation is a formal monitoring process that is essential to ensure that a new program is appropriately delivered to the appropriate target population (Saunders, Evans, & Joshi, 2005). This process evaluation includes: (1) a compilation of program operation statistics to understand how many patients are being served, the needs that patients express and if needs are being met; (2) a patient phone survey to understand patient satisfaction; and (3) a review of weekly reflections from the program's Community Health Fellows to understand the fellows perspective of the program and their experience.

1.1   INTRODUCTION TO THE BIRMINGHAM FREE CLINIC

The Birmingham Free Clinic (BFC), located in Pittsburgh's South Side, was founded in 1994 to serve uninsured, street homeless men. Since then it has evolved to serve any individuals who are underinsured and uninsured. Birmingham is operated by the Program for Health Care to Underserved Populations (PHCUP). The program's mission is to: (1) partner with community agencies to provide health care at no cost to uninsured or otherwise vulnerable individuals; (2) promote volunteerism and service learning among health professional disciplines; and (3) advocate for the needs of the uninsured and medically vulnerable groups. PHCUP operates two clinics, the Birmingham Free Clinic and the Women's Clinic. The Women's Clinic only serves residents at the Women's Center and Shelter (WSC), a safe place for women escaping abuse.

The Program for Health Care to Underserved Populations is housed administratively in UPMC Montefiore, however, their clinics are not UPMC-run clinics but community partnerships. Funding comes from grants, individual donations, grassroots events and some administrative support is provided by the Division of General Internal Medicine in UPMC Montefiore. The physical space and utilities are donated by the Salvation Army.

Each clinic session is run by a medical assistant, a nurse manager, two AmeriCorps National Service Members and a number of volunteers, including health profession students, interpreters for Spanish-speaking patients, medical residents, a pharmacist and an attending physician. Most physicians are employed through UPMC, as UPMC specifically covers malpractice insurance at Birmingham.

The clinic is open for six, three-hour sessions each week, as follows:

Monday 6pm-9pm: First-come, first-serve primary care
Wednesday 8:30am-11:30am: Appointment-based primary care
Wednesday 1pm-4pm: First-come, first-serve primary care

Thursday 9am-12pm: Smoking cessation and medication therapy management clinic
Friday 2pm-5pm: Appointment based primary care and medication therapy management
Saturday 10am-1pm: First-come, first-serve primary care

BFC also offers a number of monthly specialty clinics including: cardiology, pulmonology, endocrinology, dermatology, pediatrics, ear, nose and throat, ophthalmology and a comprehensive diabetes clinic. The diverse times for clinic sessions help to accommodate Birmingham's diverse patient population.

The clinic documents just over 3,000 patient encounters per year for roughly 1,100 individual patients. The common medical needs presented are as follows: 27.5% come for physical exams required for employment, housing, driving or other reasons, 16% have Hypertension, 7.3% have Type I and II Diabetes, 6% have Musculoskeletal pain and conditions, and 5.7% have mental health concerns.

1.2   WHAT IS BIRMINGHAM HEALTH LINKS?

Birmingham Health Links (BHL) was established at the Birmingham Free Clinic in May 2013. BHL uses a social services help desk to link interested patients to non-medical services and agencies that can address their broader health issues, such as employment, food security, or education. The program taps into the dedication and curiosity of graduate and undergraduate students at the University of Pittsburgh and trains these volunteer "Community Health Fellows" to operate the help desk. Fellows work one-on-one with patients to understand and prioritize their needs, provide them with referral information, and conduct weekly follow-up calls until the needs are met to the patient's satisfaction. Outside of their clinic time, fellows are responsible for

maintaining and updating the program's referrals database and attending reflective sessions every other week to address questions and concerns, explore complex patient cases and provide opportunities for personal and professional growth on topics of their choosing. Not including opportunity costs of the volunteer efforts, the estimated annual operating cost of the program is $2,000.

The goal of Birmingham Health Links is to formally integrate social services as a provision of the Birmingham Free Clinic and to empower patients, through information, to address the social and environmental factors that influence their health. Endorsing an ecological model of health and health care, this program recognizes that an individual's health is interwoven with factors that are often not touched on by the physician in the exam room. For example, medication adherence cannot be expected from patients who lack adequate food to take their pills with (Berkowitz, Seligman, & Choudhry, 2014; Sattler & Lee, 2013). Controlled asthma cannot be expected from patients who cannot afford a vacuum or live in poor housing conditions (Custovic & Wijk, 2005; Weinmayr et al., 2013). These are just two of many examples of the need to address social health determinants that Birmingham Free Clinic staff and volunteers encounter regularly. In addition to responding to the needs of clinic patients, the BHL help desk also responds to an internationally recognized movement to incorporate programming to influence social determinants of health, detailed in Section 1.5 below.

The collaborative partnership between the Program for Health Care to Underserved Populations and the author were critical to the design and implementation phases of this program. A review of community partnership studies concluded that in spite of their challenges, collaborative partnerships are an effective strategy in community and public health programming in terms of community changes, environmental changes and even population level changes

(Roussos & Fawcett, 2000). Other literature on community partnerships indicates that this collaboration strengthens the program capacity of the partners, empowers both partners in a co-learning process and enhances the relevance, usefulness and potential for sustainability of the programs that emerge from these partnerships (Alexander et al., 2003; Israel, Schulz, Parker, & Becker, 1998). Working in close partnership and collaborating on all decision-making and communications enabled the Birmingham Health Links program to come to fruition.

This close partnership emerged starting in the fall of 2011, when the author began her service year with the Birmingham Free Clinic as an AmeriCorps National Service member. Her daily interactions with clinic patients during her one-year term revealed a strong need to address the social and environmental factors influencing patients' health. She modeled the program is after Health Leads, Inc., a program for which the author was a volunteer at their location at the Children's National Medical Center in Washington, DC in the summer of 2011. Her experience in both venues, the clinic and Health Leads, enabled her to adapt the Health Leads model to Birmingham. In April and May of 2013 the program was piloted in attempt to identify gaps, streamline the process and more effectively train the incoming student volunteers. The help desk officially began operating later in May 2013.

The Health Leads, Inc., model of care has been implemented in many major cities across the United States, from Boston to Chicago (Health Leads) and has proved to be successful in both major hospitals and in small community health centers in meeting critical social or environmental health needs of patients. While a formal evaluation of their outcomes or impact was not available at the time of submission, the success is demonstrated by the organization's continued expansion to different U.S. cities, most recently San Francisco. Health Leads does conduct program evaluations for each of the hospitals and clinics in which they operate, however, the goal of these

evaluations is to understand the cost-benefit to the hospitals and clinics. Their Web site states that their focus is "quantifying the economic… impact of our services on patients, providers, and healthcare institutions" (Health Leads). A conversation with their director of evaluation revealed that their evaluation is mostly economically motivated, and they have not yet done patient satisfaction evaluation although they intend to. On their Web site their impact is quantified by the number of patients they serve each year.

This philosophy of providing more comprehensive care for patients in a medical setting, including social services care, reflects in some ways the philosophy of the Patient-Centered Medical Home. This model puts the patient at the center of care and ensures that services are comprehensive, coordinated and accessible (Patient-Centered Primary Care Collaborative, 2013). This model of care has demonstrated success in a variety of evaluation studies that show improvements in patient and staff satisfaction and quality of care without sacrificing cost (Jaen et al., 2010; Peikes, Zutchi, Genevro, Parchman, & Meyers, 2012; Reid et al., 2009) when compared to baseline measurements before the medical home model was implemented. While the Birmingham Free Clinic is not a medical home, the addition of the Health Links help desk raises the clinic's level of on-site coordinated care of the entire patient, instead of only focusing on the patient's illness. The medical home philosophy of care reflects and informs the Birmingham Health Links model.

1.3   BIRMINGHAM HEALTH LINKS: TARGET POPULATION

The target population for Birmingham Health Links is the uninsured patients seeking medical care at the Birmingham Free Clinic who opt to use the Birmingham Health Links services. Ninety

percent of clinic patients are uninsured, and the remaining 10% are underinsured, meaning they have less than full coverage. An example of an underinsured patient that would be seen at the clinic is someone who has health insurance that only covers women's gynecological care, but the clinic would not see someone who has Medicaid but no dental coverage, for example. About half (49.5%) of patients are homeless and over 90% are living below the federal poverty line. Fifty-eight percent of patients are male and 42% are female. Racial demographics are as follows: 43% black, 31% white, 17% Latino/Hispanic and 6% Asian (Herbert, 2012).

1.4   THE SOCIAL ECOLOGICAL MODEL

The Social Ecological Model provides astute justification for the validity of the Birmingham Health Links philosophy of care. This model suggests that health is influenced by factors at a variety of levels, the interpersonal level, organizational level, community level and public policy level, in addition to the individual level (McLeroy, Bibeau, Steckler, & Glanz, 1988). McLeroy (1988) argues that as a result of this multi-tiered influence on health, health promotion programs should intervene on levels other than just the individual level. As seen in Figure 1, an individual's heath is encompassed and influenced by the relationships that individual has, their community environment, and even social norms. In order to change and improve individual health, factors beyond the individual must be considered, assessed and changed.

Figure 1. Social Ecological Model, CDC

1.5   PUBLIC HEALTH PROBLEM: SOCIAL DETERMINANTS OF HEALTH

As defined by the World Health Organization (World Health Organization, 2013) social determinants of health are the factors in individuals' social and physical contexts where they live, work and age. It has been shown time and again that there is a distinct correlation between social context and health status. Specifically, those on the higher end of the socioeconomic spectrum have better health outcomes than those on the lower end (Daniels, Kennedy, & Kawachi, 1999; Pickett & Pearl, 2001).

There is a recent push toward addressing these social determinants of health in order to improve population health and improve health care delivery and outcomes. In 2009 the World Health Assembly passed Resolution 62.14, "Reducing Health Inequities through Action on the Social Determinants of Health" (World Health Organization, 2011). Specifically, this resolution urges member states to promote the consideration of social determinants of health by providers when caring for patients; to take steps to improve societal conditions that influence health; and to generate new or utilize existing programs to address social determinants of health. In 2010,

Healthy People 2020 added Social Determinants of Health to their list of target objectives (HealthyPeople 2020, 2010). In October 2011 the World Health Organization sponsored the "World Conference on Social Determinants of Health," to promote the action to address social determinants of health. The outcome report from the conference urges member states to "develop and support policies, strategies, programmes, and action plans that address social determinants of health" (World Health Organization, 2012). The importance of addressing social determinants of health is recognized on a global scale.

It has even been shown that health systems that do not target or act on social determinants of health exacerbate health inequities (Rasanathan, Montesinos, Matheson, Etienne, & Evans, 2011). One study found that health care alone only contributes 10 percent to one's life expectancy. Social and environment factors, and the behaviors they influence, account for 60% of one's risk of premature death (Cleary & McNeil, 1988). Even a survey of physicians indicated the influence on social factors on health. Eight-five percent of physicians surveyed indicated that unmet social needs directly led to worse health outcomes. Eighty-five percent also indicated that patient's social needs are as important to address as their medical conditions (Robert Wood Johnson Foundation, 2011). Acting on the social determinants of health in the health care setting is critical for improving health and reaching health targets (Rasanathan et al., 2011; World Health Organization, 2011).

1.6   EVIDENCE OF THE INFLUENCE OF SOCIAL DETERMINANTS ON HEALTH

There is extensive existing research that demonstrates that social factors, or determinants, do have an impact on one's health. Table 1 provides citations for research studies that demonstrate the

influence on health. The factors listed in the table are factors that are frequently addressed by fellows at Birmingham Health Links.

Table 1. Evidence for Social Determinants of Health

Social Determinants of Health Addressed by Birmingham Health Links	Citations of Articles Demonstrating Influence on Health
Food Security (Olson, 1999; Vozoris & Tarasuk, 2003)	• Olson, C. (1999). Nutrition and Health Outcomes Associated with Food Insecurity and Hunger. *Journal of Nutrition.* 129:2 (5215-5245). • Vozoris, N, & Tarasuk, V. (2003). Household food insufficiency is associated with poorer health. *Journal of Nutrition, 133*(1), 120-126.
Employment (Kessler, Turner, & House, 1988; Paul & Moser, 2009)	• Kessler, Ronald C., Turner, J. Blake, & House, James S. (1988). Effects of Unemployment on Health in a Community Survey: Main, Modifying, and Mediating Effects. *Journal of Social Issues, 44*(4), 69-85. • Paul, Karsten I., & Moser, Klaus. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior, 74*(3), 264-282.
Education (Egerter, Braveman, Sadegh-Nobori, Grossman-Kahn, & Dekker, 2009; Ross & Wu, 1995)	• Egerter, S, Braveman, P, Sadegh-Nobori, T, Grossman-Kahn, R, & Dekker, M. (2009). Education matters for health *Issue Brief 6: Education and Health*. Washington, DC: Robert Wood Johnson Foundation. • Ross, C. E., & Wu, C. (1995). The links between education and health. *American Sociological Review, 60*(5), 719-745.
Housing Conditions (Dedman, Gunnell, Davey Smith, & Frankel, 2001; Evans, Wells, & Moch, 2003; Jacobs, 2011)	• Dedman, D. J., Gunnell, D., Davey Smith, G., & Frankel, S. (2001). Childhood housing conditions and later mortality in the Boyd Orr cohort. *J Epidemiol Community Health, 55*(1), 10-15. • Evans GW, Wells NM & Moch A. (2003). Housing and mental health: a review of the evidence and a methodological and conceptual critique. *Journal of Social Issues*, 59, 475-500. • Jacobs, D. E. (2011). Environmental health disparities in housing. *American Journal of Public Health, 101*(SUPPL. 1), S115-S122.
Health Care Access (Kalousova & Burgard, 2013; Lasser, Himmelstein, & Woolhandler, 2006)	• Lasser, K.E., Himmelstein, D.U., & Woolhandler, S. . (2006). Access to care, health status, and health disparities in the United States and Canada: results of a cross-nationsl population-based survey. *American Journal of Public Health, 96*(7), 1300-1307. • Kalousova, L, & Burgard, S. (2013). Debt and Foregone Medical Care. *Journal of Health and Social Behavior, 54*(2), 204-220.

To give an example, a meta-analysis on how unemployment influences mental health showed a significant difference in levels of distress, depression, anxiety, subjective well-being and self esteem between employed individuals and unemployed individuals. Overall, the analysis found that 36% of people who are unemployed have psychosocial problems, compared to only 16% of employed individuals (Paul & Moser, 2009).

Another significant concern for patients who seek Birmingham Health Links services is that of food assistance. Food security is defined by the World Health Organization as "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (WHO, 2013). Studies show that individuals who are food insecure are more likely to report poor health, suffer from multiple chronic conditions and have major depression. These individuals are also more likely to have heart disease, diabetes and high blood pressure compared to people who are food secure (Vozoris & Tarasuk, 2003).

The common social determinants of health that are addressed by Birmingham Health Links, from food security to housing security to having medical debt can all influence both mental and physical health as well as one's ability to seek health care. This brief review demonstrates that these social factors play a huge roll in individual and population health and cannot be ignored.

2.0   METHODS

Three sources were used to gather information about the program, a review of patient case files, a telephone survey with patients and a review of Community Health Fellows' timesheets. Data collection rationale is summarized in Table 2 below. No names of patients or volunteers were used. The University of Pittsburgh Institutional Review Board qualified this project as a quality assurance project and therefore IRB approval was not needed. The letter from the IRB indicating this qualification can be found in Appendix A.

Table 2. Data Sources

Research Objectives	Source of Data		
	Patient Cases	Time Sheets	Patient Surveys
Patient Satisfaction			x
Volunteer Satisfaction		x	
Program Operation	x		

2.1   METHODS: PATIENT CASE FORMS

The patient case forms (n = 80) were used to gain an understanding of the types of needs expressed by patients in the first six months of the program, whether or not needs were being met and the reasons cases were closed. This data source provides information on general program operations.

A patient case form is created for each patient that expresses interest in participating in the Birmingham Health Links program. These forms, and the data extracted from them, were already collected for daily operations and patient workflow at the helpdesk. The form includes patient contact information, the patient narrative (what they are seeking assistance for) the referrals given and all follow-up attempts and outcomes, and can be found in Appendix B. The purpose of the patient cases is to keep a record of patient encounters and follow up attempts in order to effectively serve patients.

The researcher reviewed each patient case form that was closed by October 31, 2013, and tallied the start and end dates of the case, the needs expressed, if those needs were met, the number of follow-up attempts made and the reason the case was closed. Frequencies were calculated using SPSS.

2.2   METHODS: PATIENT SURVEYS

Patient surveys were conducted in order to determine patient satisfaction with the program. Patients whose case was closed by October 31, 2013 (within the first 6 months of the program), were eligible to be called for a phone survey (n = 80). The Client Satisfaction Questionnaire – 8 (Larsen, Attkisson, Hargreaves, & Nguyen, 1979), known as the CSQ-8, was used to understand patient satisfaction with the program. It can be found in Appendix C. This questionnaire was originally published in 1979 and is written at the 5th grade reading level. It is still widely used and has been translated into over 30 languages and has been validated in a number of other studies assessing client satisfaction. A few examples of assessments that have used the CSQ-8 are as follows: an outpatient psychiatric clinic in Geneva, Switzerland (Davya et al., 2009), outpatient

HIV/AIDS services in the United States (Burrage Jr & Vance, 2008) and childbirth related care in Filipino women (Matsubara et al., 2013). The CSQ-8 is scored by summing the eight individual item scores. This gives a potential range from eight to 32, with the higher score indicating that the patient has a greater satisfaction with the program. The CSQ-8 indicates that it does not measure a client's perceived gain or outcome from the service, only how they value the service they received (Larsen et al., 1979). Two open-ended questions were added to the end of the questionnaire to: (1) understand if patients thought their BHL experience affected their health; and (2) to determine what improvements they would make to the program.

When called, permission to ask questions about their experience with the BHL services was requested before proceeding with the survey. The researcher made three attempts to contact eligible patients during three consecutive weeks at three different times: morning, afternoon and evening. If the patient was reached and either completed the survey or declined, they were no longer called. In addition, the researcher did not call a third time for patients whose phone was disconnected or out of service for the first two attempts.

Answers were recorded in an excel spreadsheet. Frequencies were calculated using SPSS for the CSQ-8 questions. A code sheet was developed for the qualitative analysis of the two open-ended questions. The evaluator coded the reflections and used emergent themes to develop the draft codebook. The reflections were then analyzed a second time by the evaluator using the same codebook to ensure a thorough analysis.

2.3   METHODS: FELLOW TIMESHEETS

A review of the timesheets provides program satisfaction data from the perspective of the Community Health Fellows. Timesheets are emailed to the program director on a weekly basis by all fellows. These forms, and the data extracted from them, are already part of the existing workflow. Fellows are required to report the number of hours they spent on BHL efforts for the week (at clinic, on the database and any other hours, such as reflective sessions and trainings), indicate what additions and updates they make to the database and provide a brief reflection on their BHL activities that week. All timesheets submitted during the first two terms of the program were included in analysis (n=166). The timesheet template used by BHL Community Health Fellows is in Appendix D.

The researcher tallied the number of volunteer hours by category and the number of database updates and additions. In addition, all fellow reflections were compiled into one de-identified document sorted by fellow. Fellow names were replaced by numbers. This data was analyzed qualitatively using coding. A code sheet was developed for the qualitative analysis. The evaluator coded the reflections and used emergent themes to develop the draft codebook. The reflections were then analyzed a second time by the evaluator using the same codebook to ensure a thorough analysis. In the results section below, note that quotes are fellows' verbatim reflections, including any spelling or grammatical mistakes.

3.0   RESULTS

3.1   PROGRAM OPERATIONS RESULTS

During the first 6 months of the program, 127 patients used the BHL help desk, or 23% of unique

clinic patients. Community Health Fellows documented a total of 642 volunteer hours and made

428 additions or updates to the referrals database.

Table 3. Frequency of Needs Expressed

Need	Frequency	Percent
WIC	2	1.0
Food Stamps	3	1.5
Financial Assistance	3	1.5
Legal Aid	3	1.5
Transportation	3	1.5
Child Care/Summer Camp	3	1.5
Job Training	4	2.0
Other	4	2.0
Clothing	4	2.0
Further Education	5	2.6
ESL Education	5	2.6
Medicaid	6	3.1
Phone Assistance	9	4.6
Furniture	11	5.6
Housing Assistance	12	6.1
Medical Bill Assistance	18	9.2
Utilities Assistance	19	9.7
Rental Assistance	21	10.7
Employment	28	14.3
Emergency Groceries	30	15.3
Total	193	100

A basic SPSS frequency analysis revealed that there are many needs expressed by BHL patients. Sixty-five patients, or 80% expressed more than one need. The most common need is emergency groceries, which 15.3% of patients in the sample expressed. Other common needs included employment (14.3%), rental assistance (10.7 %), utilities assistance (9.7%) and assistance with paying medical bills (9.2%). The frequencies of all of the needs can be found in Table 3.

The pie chart in Figure 2 shows a simplified visual of the needs expressed, grouping similar needs into categories. For example, the housing assistance category includes rental assistance, housing assistance and utilities assistance. This chart shows the importance of food assistance, housing assistance and employment for BHL patients.
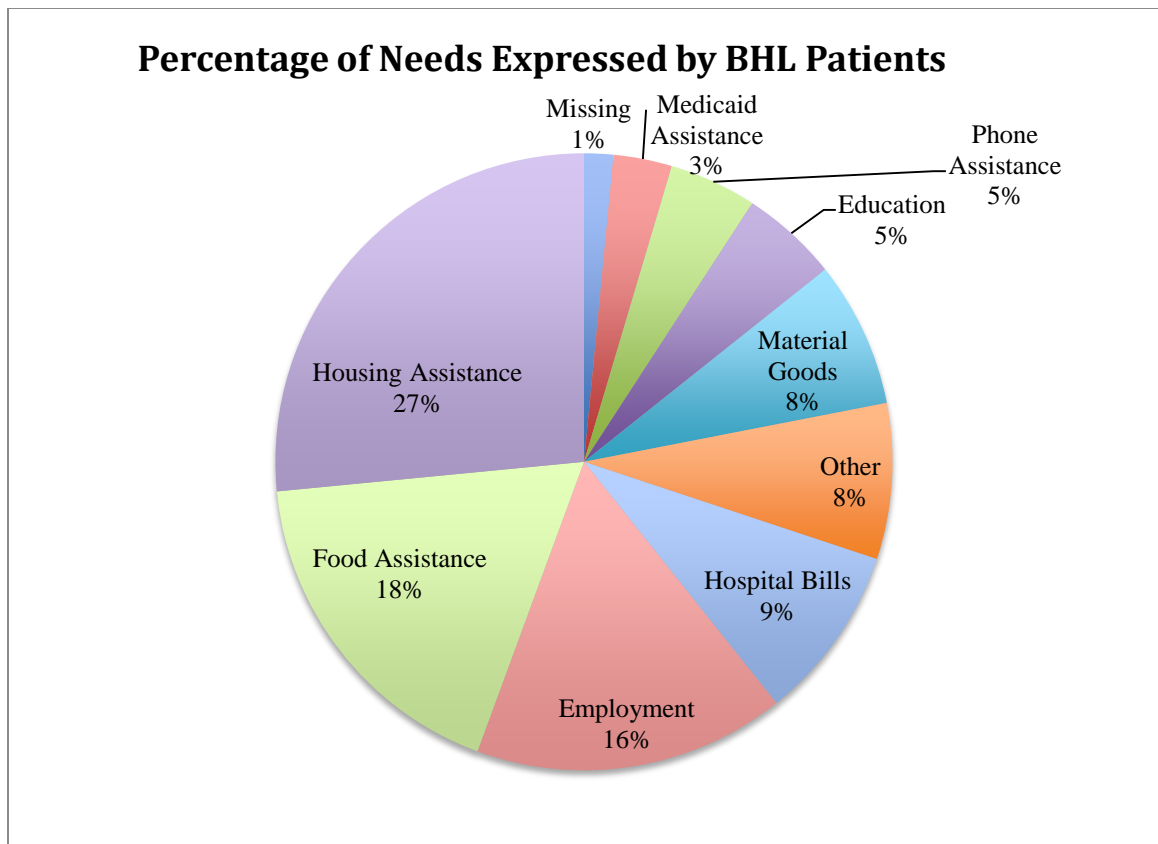
Figure 2. Needs Expressed by BHL Patients, Categorized

Of all of the 173 needs that were expressed in the first six months of the program, 21.4% were met to the patient's satisfaction. Most commonly, in 57.8% of needs expressed, the status of the needs was unknown because the patient was lost to follow up. And finally, the status of 14.45% of needs was unknown because of a lack of documentation. These data are shown in Table 4 below.

Table 4. Final Status of Individual Needs

Final Status of Individual Needs	Frequency	Percent
Need was met	39	20.2
Unknown – undocumented	26	13.5
Unknown – lost to follow-up	109	56.5
Other	1	0.5
Missing	18	9.3
Total	193	100

Of the 80 cases that were analyzed in this sample, 16 cases (20%) were closed because the needs were met to the satisfaction of the patient. Thirty-four cases (42.5%) were closed because three attempts were made to contact the patient without success. Twelve cases (15%) were closed because the patient's phone was disconnected. These data are shown in Table 5.

Table 5. Reasons for Closed Cases

Reason for Case Closed	Frequency	Percent
Needs Met to Patient's Satisfaction	16	20.0
3 Unsuccessful Contact Attempts	34	42.5
Phone Disconnected	12	15.0
Unknown – undocumented	9	11.25
Missing	7	8.75
Faulty Contact Info	1	1.25
Other	1	1.25
Totals	80	100

Table 6 portrays how long cases are typically open. There is a range of 0 days (meaning that adequate contact information was not provided to enable follow-up) to 111 days, and the average number of days a case is open is 32.74 days, or approximately one month.

Table 6. Length of Time Cases are Open

Statistics

DaysUntilClose

N	Valid	62
	Missing	0
Mean		32.74
Mode		28
Std. Deviation		20.105
Minimum		0
Maximum		111

The number of follow-up calls made per patient is indicative of how carefully fellows checked in on their patients. A patient case with zero follow-up calls means that the contact information for the patient was not provided. Table 7 shows that the number of follow-up attempts ranges from zero to 10. A mode of three reflects the vast number of cases that were closed after three unsuccessful follow-up attempts.

Table 7. Number of Follow Up Attempts Per Patient

Statistics

FollowUpAttempts

N	Valid	77
	Missing	0
Mean		3.18
Mode		3
Std. Deviation		1.911
Minimum		0
Maximum		10

3.2 PATIENT SATISFACTION RESULTS

Of the 80 eligible patients, the evaluator was able to attempt to contact 69 (86.25%) because of faulty or non-existent contact information or a language barrier. Of the 69 possible contacts, the evaluator spoke with 18 patients (26.01%), and of those 18 patients, 14, or 77.77% agreed to complete the survey. Figure 3 shows the reasons surveys were not obtained. The most common reason for not obtaining a survey was three unsuccessful attempts to contact the patient (n=30).

Demographic data was not collected during the survey, however sex data is recorded in the patient case form and a comparative analysis found that the survey respondents were representative of the total eligible sample in terms of sex. Of the respondents, seven were male and seven were female. Of the total eligible sample, 38 were male and 42 were female.

Of the four patients who declined to do the survey, one indicated that they had a very negative experience at clinic and did not want to get "all riled up about it," so refused to take the survey. Two patients declined because they didn't remember their experience well enough to answer a survey about it and one patient declined because she had never received services (3 unsuccessful attempts were made to contact her without success. She asked to re-open her case).
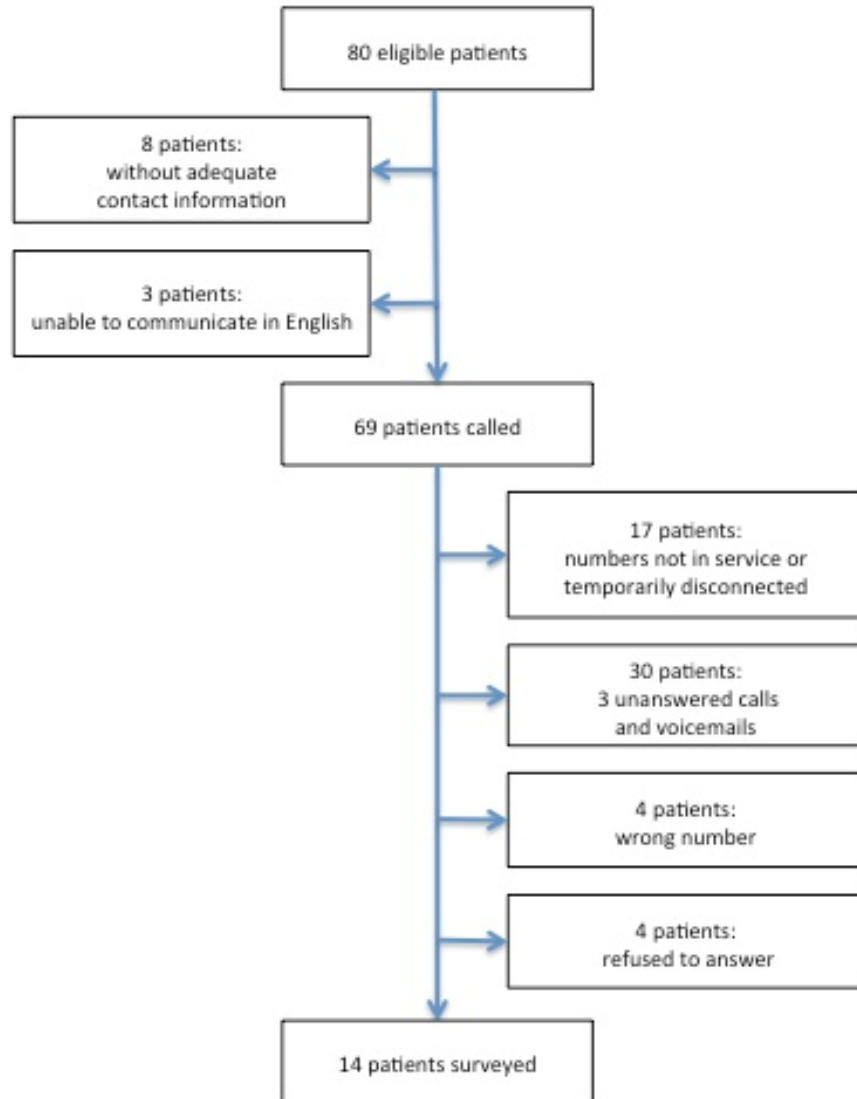
Figure 3. Patient Survey Phone Call Results

In a possible range from 8 to 32, the lowest CSQ-8 score was a 23 and the highest was 32 (there were 2). The average CSQ-8 score was 28.21. The CSQ-8 question that received the lowest average score was the following: "To what extent has our program met your needs?" It had an average score of 3.07 on a scale of one to four, where a score of three indicates "Most of my needs have been met." The two questions that received the highest scores were the first question and the last question. The first question asks, "How would you rate the quality of our service?" on a scale

of one to four, where one is poor and four is excellent. The average score for this question was 3.71. Another top-scoring question was the following: "If you were to seek help again would you come back to our program?" which was scaled from "yes, definitely" to "no, definitely not" and received a score of 3.79. All of the questions and scores are shown in Table 8 below.

Table 8. Client Satisfaction Questionnaire Questions and Results

CSQ-8 Question	Low Score	High Score	Average Score
1. How would you rate the quality of service you have received?	Poor	Excellent	3.71
2. Did you get the kind of service you wanted?	No, definitely	Yes, definitely	3.43
3. To what extent has our program met your needs?	None of my needs have been met	Almost all of my needs have been met	3.07
4. If a friend were in need of similar help, would you recommend our program to him or her?	No, definitely not	Yes, definitely	3.64
5. How satisfied are you with the amount of help you received?	Quite Dissatisfied	Very Satisfied	3.5
6. Have the services you received help you to deal more effectively with your problems?	No, they seemed to make things worse	Yes, they helped a great deal	3.5
7. In an overall, general sense, how satisfied are you with the service you have received?	Quite Dissatisfied	Very Satisfying	3.57
8. If you were to seek help again, would you come back to our program?	No, definitely not	Yes, definitely	3.79

The first open-ended question added to the end of the CSQ-8 for the phone survey, "how do you feel that your experience with Birmingham Health Links influenced your health?" elicited a variety of responses. Seven of the 14 respondents indicated that they felt their experience did impact their health. One said, "Yes, I got addresses, phone numbers, places where I go for help. Going there helped my health. I don't need help anymore." Another answered, "Yes. It opened doors and referred me to services. I am appreciative of the help I got." Two respondents indicated that it did not impact their health. For example, one said, "It did not impact my health, but working with the students was fine." Five respondents did not directly answer the question, but had positive

things to say about their experience overall. For example, one said, "The way the [student] approached me… The clinic is outstanding. They were very positive. The way they treated me was excellent."

The last question of the survey, "what can we do to improve the program?" received mixed results. Eight of the 14 respondents indicated that no changes were needed. For example, one said, "Nothing, it's great. Keep doing what you're doing." Another responded, "No changes needed. My questions were answered and the questions he couldn't answer were referred to someone else." There were two participants who noted that changes should be made to the hours that the clinic is open. For example, one said, "The only downfall is the hours. I work far out and it's hard to get to the clinic for the few hours it is open. Otherwise the way you treated me and the way you helped me was great."

There were four other responses from other patients. One indicated a need for more volunteers, one indicated a need for a mental health professional on staff at clinic (there is one), one noted "I'd rather not talk about that," and one did not have time to respond to the question.

3.3   FELLOW SATISFACTION RESULTS

A total of 166 reflections submitted by 15 different fellows from the summer and fall sessions were analyzed. The qualitative analysis of these reflections revealed a number of trends that can be organized into two general categories. One category is the variety of ways fellows expressed that they were positively influenced by different aspects of the fellowship. This includes the ways in which patient interactions influenced fellows; how the experience as a whole has changed their perspective on social determinants of health; and lastly how their experience has helped to guide and inform future plans. The second general category is useful feedback on various aspects of the fellowship, from the training sessions to specific tasks at clinic. This includes reports of positive feedback from patients; feelings about the database and training sessions; and frustrations with following-up with patients, the workload at clinic and with certain referrals. All quotes are directly from fellow reflections, including grammatical or spelling errors.

3.3.1   Positive Impact on Fellows

In their reflections, fellows shared a lot of positive feedback about how various aspects of the fellowship have influenced them in different ways. They are explored in detail below.

3.3.1.1 Fellows Gain Motivation from the Patients they Serve

A number of fellows wrote about how patients they worked with motivated them to work even harder in their role as a fellow. For example, one fellow was specifically motivated by a patient who praised his efforts as a fellow. He wrote, "One of the best feelings I got from this week was when I walked into the clinic and recognized people that I had talked to about the Birmingham

Health Links Program previously, and one of the patients told me to "keep doing what I'm doing" and that I'm "doing a great thing." People like that are what motivate me to continue on, and make me realize that what I'm doing is highly valuable to the underserved community" (Fellow 11). Fellow 4 had a very similar reflection, writing simply, "Hearing and talking to the clients motivates me and makes me work harder with other parts of fellowship work."

Fellow 6 found herself motivated by her own perceived failure to help a patient. She wrote, "I remember the patient I worked with who had needs beyond the scope that the Health Links could help. When we provided him with several suggestions, he said that it was ok and it was time to help someone else. He was defeated. Being unable to help is one of the worst feelings… These are the situations that motivate me to continue to learn as much as I can and return time and time again to try to help."

For a fourth fellow, a patient who was seeking help inspired him without speaking any words, reassuring him of the value of his work. He wrote, "When I arrived to the clinic, there was someone waiting for me at the door holding BHL business card in his hand. He made me feel how important we are" (Fellow 4).

3.3.1.2 Fellows Expressed Personal Growth as a Result of their Patient Interactions

Throughout the reflections emerged a theme of fellows observing personal growth, particularly in areas of communication and organization. For example, Fellow 2 indicated improvement in her patient communication skills, writing "I think it has even further improved my skills as far as relating to and listening to patients in a way that can make them feel appreciated."

Another fellow observed personal improvements in time management and patient communication. She wrote: "I realized that I have learned a lot more during the fall semester, especially on time management at clinic and balancing between volunteer work at clinic and school

work, and also in developing a more effective patient communication skill…" (Fellow 12). Another fellow noted her poor communication skills at the beginning and how they have improved over the term. She wrote, "At the beginning I definitely felt as if some things were shaky. I didn't know how to communicate or relate with patients very well, what resources would work, and how to efficiently manage my time at the clinic. As I got more and more experience, I really learnt all of those skills."

Fellow 9 expressed growth in a different area – that of understanding and dissipating stereotypes. She wrote, "I appreciate the opportunities working for the help desk affords, because it enables me to dispel stereotypes and to learn from the individuals we help."

Lastly, one fellow did not speak of personal growth, but he spoke of a realization that he had a need for growth in certain areas. He wrote, "It is quinticential that as a future professional I learn how to balance between the various aspects of an position. There were moments when poor time management resulted in missing important pieces… and I am working to improve my commitment and workload as well" (Fellow 3).

3.3.1.3 Fellows Gain Perspective on their Own Lives through Patient Interactions

Fellows indicated through their weekly reflections that their time at clinic and their interactions with patients have given them perspective on their own lives. For one fellow, the experience made her put her own tribulations into perspective. She wrote, "My stress over my grades has been making me feel that I am a very selfish and unproductive person. It's been my work and my encounter at the clinic that keeps me motivates every week and makes me feel good about myself. It's the patients in the clinic that reminds me that not doing well on a quiz is not the end of the world and something worse could have happen to my life. I begin to realize that perhaps I have

benefited from the patients more than they have benefited from the support I refer them to (Fellow 12)"

For another fellow, one patient interaction in particular gave her perspective on her qualms about pursuing higher education. She wrote, "During the past few weeks I had been confused and frustrated with my life. I was reconsidering some of my life decisions, mainly school. I wasn't sure whether or not I am doing the right thing or making choice. Everything was piling up and I was becoming very overwhelmed… But at clinic I brought a patient back that reminded why I am right in my decision and reassurance that everything will work out. We talked, and she reminded me that I love people. I love talking to them and connecting with them even when it seems like we'd have nothing in common, we do. Helping her helped me to realize that I need this job to keep reminding why I go to school" (Fellow 10).

A third fellow did not gain perspective on his internal struggles as the other two did, he gained perspective on his own privilege. He wrote, "This opportunity I have had working at BHL has made me very appreciative of my life and the privileges I have been given to get as far as I have gotten."

3.3.1.4 Changing Perspectives on the Value of Social Determinants of Health

There were a number of fellows who reflected on how their experience at the help desk has changed their perspective. These changes are all variations on the theme of understanding or coming to value the influence and importance of social determinants of health.

One fellow noted that her views of poverty and healthcare have changed and she is passionate about getting others to understand her views. She wrote, "Most importantly, I think I have really tried to translate everything I have learned through BHL to other parts of my education,

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and I notice myself looking at various issues through a different perspective. Over the semester I have had quite a few heated discussions with family members and friends discussing issues of poverty, health care, and education. It is a good feeling to be educated enough to meaningfully contribute to those discussions and cause others to see issues another way." Another fellow noted a change in her views of certain social determinants of health. She wrote, "I feel like I am learning so much through this fellowship, and I am really appreciative of that. I find myself looking at sociopolitical and health care issues from a completely different angle than I did before" (Fellow 12).

A third fellow came to understand the influence of the social context especially with regards to access. She wrote, "My experience from Birmingham Health Links in the past week made me realize the importance of social context in determining one's health… For example, helping a patient get a landline so that his son can make emergency calls for his heart condition, made me realize the importance of accessibility to resources for health" (Fellow 5).

Fellow 13 noted a change in her understanding of poverty and how to fight it. She wrote, "This program is really helping me start to see that providing these resources for those in Pittsburgh is the gateway to fighting poverty and social injustices in this city and others." In a reflection later in the term this fellow confirmed her understanding of poverty and it's role in health care. She wrote, "…I am so thankful that I decided to become a BHL fellow. This experience has already been so rewarding, as I am able to truly understand Pittsburgh poverty first hand. In school, they rarely teach you about things like welfare, healthcare, and self-sustenance. This program is a great opportunity to learn directly from the patients themselves, through the members of the clinic, and through the other fellows about how much of an impact a patient's socioeconomic status has on their health."

3.3.1.5 The BHL Experience Has Helped Guide Future Plans

Fellows' reflections revealed that this experience guided or influenced their desired career path. For example, Fellow 14 expressed a new interest in not-for-profit organizations and has already started to pursue that interest. She wrote, "This experience has actually also helped me figure out more about my future. I still want to go into the field of medicine but I am taking a class next semester to learn more about nonprofits, and also got accepted into Students Consulting for Nonprofit Organizations which is a organization that helps different nonprofits around the area." In addition, this fellow stated a desire to combine her interest in medicine with both public health and social work. She wrote, "I would love to incorporate some sort of service through either public health or social work in my career path- I'm going to look into Americorp as well."

Another aspiring physician indicated that the fellowship gave her a more specific population of focus for her medical career. She wrote, "Overall, my experience at Birmingham has led to decide that I will concentrate on providing health care to the underprivileged population when I enter medical school" (Fellow 12).

For a third fellow, the BHL experience seemed to confirm her interest in the intersection of public health and medicine. She wrote, "To see public health and medicine working in action for the greater good of the Birmingham Health Clinic patients was very exciting and I hope to continue to pursue this type of multidisciplinary work in my career" (Fellow 9).

3.3.2 Useful Feedback on the BHL Program

3.3.2.1 Feelings about the Required Database Efforts

One trend that emerged in the fellow's reflections is that the database efforts are valuable, even if some found it unpleasant. Fellow 1 wrote, "While I was working on the database, it really hit me that I can help to make a difference in someone's life by doing these kinds of small tasks." This fellow later wrote, "This week was a time to really reflect on how we need to improve database in a way that we find programs that variety groups of people can be qualified in many different fields." Another fellow wrote, "The… database research implies that having a concise and resourceful database is a foundation and the first step to prepare before I get to help other people."

Two fellows openly expressed dislike for the database, but also an understanding that their efforts have some value. One wrote "I think the database work was probably my least favorite aspect of the fellowship, but the database work allowed me to understand how difficult it is for patients to get a hold of the right agencies and the right people at those agencies" (Fellow 2). Fellow 12 had a similar reflection; this individual wrote "At first, I felt that the data base work is boring… But after I did a couple clinic sessions and spoke with patients, I learned about their needs and patients' needs gave me direction and motivation for the data base work."

3.3.2.2 Positive Patient Feedback

Another common theme that emerged in the weekly reflections from fellows is gratitude that patients often expressed to them for their efforts. Fellow 13 wrote, "The most memorable thing a patient told me this semester during follow up was that she looks forward to hearing our call every week and our emotional support gave her strength to pull her live together again."

A second fellow found that a patient reaffirmed their responsibility. They wrote: "Although I made few mistakes throughout the process of assistance, such as forgetting what to say on the phone, he was very thankful for my assistance, and gave me a sense of responsibility to continue the process" (Fellow 1). One fellow quoted a patient's email thanking the fellow for their efforts in their weekly reflection. The email read: "The morale of my story is where were the other agency's input, I came to your agency primarily for a toothache and I have been feeling and getting your support every since, I wish I came when the problem first came up, instead of going to other places, I'm sure with your help and support I don't think all this would happen…" (Fellow 9).

3.3.2.3 The Challenge of Following-Up with Patients

Following-up with patients was a definite source of frustration for fellows, as exemplified in the excerpts from their weekly reflections shown here. Fellow 7 wrote, "I am… having great difficulty following up with my clients. In fact, I have not been able to get ahold of any of them after the initial visit and have already had to send out a last attempt letter for one client. I am trying not to get too discouraged. Hopefully next week will be more fulfilling." The same fellow indicated that there was no improvement in following-up with patients later in the term. She simply wrote, "Still struggling with follow up which is frustrating."

Fellow 10 specified the reasons that she wasn't able to follow-up with patients when she voiced her frustration in this reflection: "When I was making calls…many did not answer their phones, some had disconnected lines, and others gave us their friends number in hopes they'd be around to take the call. It is difficult to not be frustrated when it is hard to reach out and connect with people."

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3.3.2.4 Frustration with Work-Load at Clinic

Fellows were frustrated with their work-load at clinic for different reasons. Some were overwhelmed with the amount of work they had and were concerned they were not providing adequate care to their patients. Others felt that there was not enough to do during their time at clinic.

Fellow 10 felt that she had too many patients to manage and coordinate referrals for. She wrote, "During clinic this week I felt very frustrated. I don't think each patient is getting enough of my attention because of the quantity of people that I have in my case load." Fellow 11 felt similarly, that there was too much to do and not enough help. He wrote, "This week was particularly difficult because I spend most of the time following up with patients that needed to be contacted that day. I was the only one working that week so I was not able to properly balance completing this task and being able to talk to patients in the clinic was particularly difficult."

Another fellow expressed having a heavy workload during their clinic shift. Fellow 15 wrote, "This week was a little overwhelming. We had a lot of patients we wanted to follow up with and a few new patients that needed some information." The same fellow noted the following week her relief at not having as much to do at clinic. She wrote, "It was a relief to have some free time during clinic to really work with a patient and do in depth research on the spot for her."

A fourth fellow was underwhelmed with her time at clinic in one reflection, and overwhelmed in another. In one reflection she wrote, "This week was relatively slow at the clinic. I had time to catch up on all of my case files and even close several of them. Nothing interesting happened." However, in another reflection she noted the opposite. She wrote, "Clinic this week was slightly overwhelming. When I arrived there were 10 or so support request forms to be addressed."

3.3.2.5 Expressing Frustration with Certain Social Service Categories

One trend that emerged from the weekly reflections submitted by fellows was frustration over certain social services, or a lack of adequate services. Fellow 1 wrote about her frustration with the limited programs for people with disabilities. She wrote, "I am really… frustrated that there are not that many programs that are for the disabled." Another was frustrated with changes in the Medical Assistance program in Pennsylvania. She wrote, "One of the things I saw this week that really frustrated me was the new cutbacks on Medicaid. I had a patients come in who had monthly checks from early retirement, but needed health insurance" (Fellow 15).

Fellow 15 also found herself frustrated with the lack of programs fit for her particular patients' needs. She wrote, "As incredible as it was to see him take steps towards improving his life, this experience also showed me how the system fails people. While looking for resources for him, we found very few that were designed to help people transition between crisis and self-sufficiency. I feel like there is a very large gap in the scale of social services. The services that are affordable are often times created to serve the most extreme cases of poverty but there are few resources for people who have been in a crisis situation but would like to move forward."

Another fellow found herself frustrated with housing specifically, and the adequacy of services in general. With regards to housing, she wrote, "The housing situation in Pittsburgh is frustrating. It seems like housing is the biggest obstacle for most of our patients, and it's the biggest barrier to taking care of their other concerns, such as finding a job, etc.. This sounds redundant, but I just wish there was an easier way to track down and arrange affordable, permanent housing." She voiced general frustrations as well, writing "The most difficult part of the [BHL] experience was not always being able to help patients to the extent they needed or reaching road blocks with patients, not knowing what else we could do or where else we could turn to. However, I think the

difficult and frustrating parts of the experience are the ones that allow us to really put ourselves in our patients' shoes and ultimately, to provide better support for our patients." A last fellow expressed frustration with false advertising of a program for transportation. She wrote, "On Port Authority's website, they claimed that they provide Welfare to Work for the Allegheny County. However, when I tried to call the Port Authority office for more information on their Welfare to Work program, they denied its existence" (Fellow 13).

3.3.2.6 Feeling Overwhelmed After Training

A number of fellows expressed feeling overwhelmed after the training session. For example, fellow 14 wrote, "The training both excited me as well as overwhelmed me." Fellow 2 similarly expressed feeling overwhelmed. She wrote, "I thought the orientation was slightly overwhelming but helpful in preparing us for what we need to do when we start coming to clinic." Lastly, Fellow 7 similarly expressed feeling overwhelmed. She wrote, "I am slightly overwhelmed by all the materials provided and what is expected of me, but I think it will be a great experience and I can't wait to start!" The same fellow, in her reflection from the second week, described in more detail her feelings of being overwhelmed with the tasks in front of her. She wrote, "I found [the mock client sessions] to be quite scary as it quickly became obvious to me how unprepared I am to do this. I struggled try to find the appropriate words to say and was totally clueless about what resources to suggest to the mock client."

4.0   DISCUSSION

4.1   OVERALL PROGRAM OPERATIONS

The basic program operations data paints an important picture of the number of patients and the most common needs. This information is valuable for not only focusing program efforts but also to convince potential funders of the program's worth. Birmingham Health Links served 23% of unique patients who visited the clinic during the first six months of the program, a demonstration that the program is being used and that there is a need among patients at Birmingham for social services assistance. Knowing the most commonly expressed needs is valuable because it guides the focus of the database efforts and the fellow training on the topics most commonly requested by patients.

4.2   PROGRAM STRENGTHS

The data revealed two major positive attributes of the Birmingham Health Links program, patient satisfaction with the program and fellow satisfaction with their experience. Patient satisfaction is a critical outcome because it is a well-regarded as a measure of successful service (Cleary & McNeil, 1988; O'Brien & Stewart, 2009). The 14 patients that responded to the phone survey viewed the program very positively overall, with an average CSQ-8 score of 28.41. This is higher then the reported norm of 27.8, specific for patients in health or counseling settings (Attkisson &

Greenfield, 2004). Most studies in the literature compared CSQ-8 scores between control and intervention groups or compared pre-intervention scores to post-intervention scores. However, one study that did not have comparison groups reported an average CSQ-8 score above 28 and concluded there were "high levels of satisfaction with the service" (Gates, Copeland, Norberg, & Digiusto, 2011). Thus, compared to the reported norm and another similarly expressed score in the literature, the CSQ-8 score for this evaluation study demonstrates high satisfaction from Birmingham Clinic patients. Noteworthy outcomes from the survey are that survey respondents expressed that the service they received was of high quality and indicated that they would return to the program if similar problems or concerns arose.

Patient feedback was also revealed through some of the fellows' reflections, all of which were positive, with fellows reporting sincere gratitude from patients. While this feedback was not specific, the fellows' reports demonstrate an appreciation for the program and its ability to help patients. This positive feedback from patients suggests that patients welcome this service of addressing social determinants in a clinical setting.

The open-ended questions at the end of the survey revealed that the majority of respondents felt that no improvements were needed for the BHL program and that their participation in the program positively affected their health. Some respondents also noted that they were treated well and given helpful information. Positive feedback from patients and overall satisfaction supports the notion that Birmingham Health Links is a successful service.

Another strength of the program is the opportunity that the fellows feel it provides them. The volunteers are critical to the success of the program; fellows who respect the program and the philosophy and who are satisfied with their experience are far more likely to be effective with their patients. While there are logistical concerns that need to be addressed with regards to the

responsibilities and requirements of the fellowship, it is clear that fellows value their clinic experience. Reflections indicate that fellows really care about the patients they are serving, as many indicated that they found motivation in the stories, comments and relationships they had built with patients. In addition, reflections indicated a broader impact on fellows' lives and interests. Many comments revealed that fellows feel that this experience provides a venue in which to develop critical professional skills such as time management and communication, has helped them put their own struggles and tribulations into perspective, has helped them understand and come to value the importance of social determinants of health, and has even influenced and helped to guide their career paths.

This positive experience that helps undergraduate and graduate students understand social determinants of health is incredibly valuable for the future of medicine and public health. The World Medical Association (WMA) endorses the idea that health professionals can and should promote and address the social determinants of health. Specifically, a WMA report stated, "The medical profession can be advocates for action on those social conditions that have important effects on health" (World Medical Association, 2011). The WHO also calls for the development of health workforce that is trained in social determinants of health (World Health Organization, 2012). The fellow reflections reveal that this program is helping to do just that with the small group of volunteers who serve as Community Health Fellows. Thus, not only are the Health Links volunteers satisfied, they are also gaining experiences that is internationally recognized as critical to improving health.

4.3   PROGRAM LIMITATIONS

The data also brought to light some limitations of the program that should be addressed. The most drastic issue that was revealed by the fellow reflections and the patient case form analysis is the problem with follow up. Of the 173 needs expressed by patients whose case was closed by October 31, 2013, the outcome for a vast majority (57.8%) was unknown because the patient was lost to follow-up. The data on reasons that cases were closed reflects this follow-up problem as well. About 57.5% of cases were closed because either three unsuccessful calls were made or the phone was disconnected.

Frustration with following-up with patients was expressed very explicitly in the weekly reflections from fellows as well. While fellows cannot make patients pick up their phones or call them back or pay their phone bills so their phones do not get disconnected, an emphasis needs to be placed on getting adequate contact information and information for an alternative contact. In addition, a clear explanation of the program policy of following up weekly should be expressed in the first encounter with the patient. While this large loss to follow-up is notable, it does not mean that the program is failing to meet the needs of these individuals, it just means that the outcome is unknown. It is possible that the action plan provided to the patient during their initial encounter was sufficient to help them address their concerns.

The loss to follow-up data reveal the importance of providing appropriate referrals during the first encounter so that even if patients are not able to take calls or call back, or they are not interested in doing so, they have sufficient information to help to meet their needs if they chose to do so. There also needs to be a larger emphasis placed on obtaining adequate contact information, informing patients of the program policy to call weekly until the patient is satisfied and to inform patients of this concern so that they can provide insight into their personal communication

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situation, such as whether or not they usually pick up their phone, if they check their voicemail, etc.

Another area of improvement that was revealed was volunteer documentation in patient case files. It is concerning that the outcome is unknown for almost 15% of needs because it was not documented. In addition, 11.3% of cases were closed for reasons that were not documented in the patient case file. It is critical to emphasize to the fellows the importance of documentation in the patient case forms, even after the fact. In addition, it is important for the director to closely monitor patient case templates and provide adequate supervision to fellows.

Another program limitation, revealed through the fellow reflections, is the motivation to complete the database requirements. While they did not really enjoy the work, some appreciated its value and importance. That being said, changes to help make the database efforts more enjoyable should be considered, such as reducing the required time from the one hour per week it is now or increasing the presence and incentives for the database competition.

Fellows also reflected on the workload at clinic, both having not enough to do and having too much to do. This conflicting feedback is expected due to the nature of the clinics – some are open to the public and others are appointment-based. However, it is important to address these concerns in order to keep fellows satisfied with their experience. Providing an option for fellows to use if clinic gets overwhelming, such as passing on some of their follow-up responsibilities to others, would help resolve concern about having too much to do at clinic. For those who feel that they do not have enough to do during some of their shifts, providing a list and instructions for other tasks that need to be completed that they can turn to when the workload is light, could help resolve this problem.

A final theme of the fellows' reflections that should be addressed is the pattern of feeling overwhelmed after the training session. Voiced by a number of fellows, the skills, techniques and information provided in the trainings should be addressed. Having returning fellows join in the new fellow training to provide advice and reassurance might be a valuable way to tackle these feelings of being overwhelmed. Of course, these feelings are to be expected on a small scale, but perhaps they can be reduced to where new fellows feel more comfortable going into their first shift.

4.4   DISCUSSION OF METHODOLOGY

The response rate for the phone survey was a limitation of the methods of collecting patient satisfaction data. The phone survey only elicited 14 responses, a response rate of 20%. This threatens the validity of the results, especially given that we do not have the data to know if our respondents comprised a representative sample of the eligible patient pool. That being said, research demonstrates that surveys among individuals with lower socioeconomic status, nonwhites and individuals on public assistance typically have low response rates (Zaslavsky, Zaborski, & Cleary, 2002), demographics that reflect those of the clinic population. Given the similar characteristics of Birmingham's patient population, the response received in this evaluation is not surprising. Future studies should consider including techniques of converting refusals and investigating indeterminate phone numbers (Allison & Yoshida, 1989) or incentivizing participation in the phone survey to increase response rate.

Another limitation is the internal validity of the open-ended questions, which was brought into question based on patients' responses. Two responses indicated that perhaps questions were

being answered with the clinic in mind, instead of the Health Links desk. One respondent said she felt healthier because her asthma was improved because she got an inhaler. Another said "the clinic is outstanding." During the introduction to the phone survey, before permission to survey was requested, the surveyor clarified that these questions were only in reference to the Health Links desk, not the medical clinic. While both of these comments are positive, they call into question the internal validity of the phone survey. That being said, these comments also demonstrate the perceived integration of the program into clinic services and clinic flow by patients, which perhaps reflects a feeling of coordinated care, a pillar of the medical home model discussed previously.

Despite these concerns of the internal validity of the research, the evaluation had a strong design, pulling data and information from three different sources – the patient case files, the patients and the Community Health Fellows. These three data sources provided three unique perspectives and gave a comprehensive picture of the program implementation process.

5.0   CONCLUSION

5.1   PRACTICE CHANGE PLAN

This process evaluation reveals that while there are some very positive attributes of the Birmingham Health Links program and the associated Community Health Fellowship, there are certainly areas that need improvement in order to meet the goals of: (1) most effectively serving the patients in need; (2) providing a valuable learning experience for Community Health Fellows; and (3) creating an organized, efficient and successful model of operations to ensure sustained success of the program and to ease the expansion of the program to other community health centers. The practice change plan is explained in Table 9.

Table 9. Birmingham Health Links Practice Change Plan Part 1

Actions to Improve Program Operations	
Action	**Rational for Action**
Create and print a sign for Birmingham Health Links to hang above the desk and outside of the designated BHL area.	To help patients differentiate between the Birmingham Free Clinic and Birmingham Health Links so that future program evaluation can be more successful and to help inform patients of the difference between the two entities with regards to medical appointments or care.
Highlight the top 8 needs to fellows for their database efforts.	To increase accuracy and quality of database work in the areas our patients most commonly need help with.
Develop forms for each top need with the top 3 referrals (as assessed by the fellows).	To increase efficiency of patient encounters and creating action plans for patients.

Table 10. Birmingham Health Links Practice Change Plan Part 2

Actions to Improve Patient Satisfaction	
Include the startling statistics about follow-up and meeting needs with fellows during trainings sessions.	To make fellows aware of the problem in order to 1) ease their frustration with follow-up and 2) help them understand the importance of the first encounter.
Include an introduction to the BHL program for fellows to give patients before starting with explanation of follow-up concerns.	To ensure patients know the role of BHL and to make them aware of the difficulties of following-up with the hope of eliciting suggestions from them for their individual situation.
Actions to Improve Fellow Experience	
Reduce the database effort requirement from one hour per week to one agency per week.	To increase fellow's enjoyment of the fellowship, as this was mentioned as an unfavorable part.
Increase the presence of the database competition through weekly score updates instead of bi-weekly score updates.	To further incentivize the database efforts and try to make the task more fun and enjoyable.
Provide an option for fellows who are overwhelmed at clinic to pass up to three follow-up calls onto the program director to complete in their place.	To ensure that fellows do not feel overworked and can continue to provide high quality care to all patients in their caseload.
Provide instructions for specific, useful tasks (such as the need forms discussed above) for fellows to complete if clinic is not busy.	In order to keep fellows from being bored and to help make each minute of their time worthwhile.
Invite returning fellows to the training/orientation for new fellows.	To allow returning fellows to give advice, help calm any anxiety about the first shift and provide reassurance.

Working in close collaboration with clinic staff enabled the Birmingham Health Links program to be adapted from the Health Leads model to fit the specifics of the Birmingham Clinic, and stand as the fully integrated program it is today. This evaluation generated much valuable information that can be used to change and improve the program to better serve BHL patients and volunteers through the implementation of the action plan above. A follow-up study could be

conducted to determine if the changes made, as guided by the action plan, improved the process

outcomes explored here. Creating a stronger program grounded in evaluation has the potential to

contribute to the sustainability of the program at Birmingham, as areas of weakness will be

addressed. Understanding basic program operations data is also critical to the long-term goals of

expanding the Birmingham Health Links program to other health care centers, because it provides

a data-driven understanding of the program, how the program helps patients and what needs the

program helps to address. This is also important for helping to convince potential funders of the

program's worth so that the program can be financially sustained at Birmingham.

5.2   THE BIGGER PICTURE

This study served as a preliminary exploration of the Birmingham Health Links program and

helped to identify program strengths as well as areas needing improvement. The data guided a

program change plan, or action plan that program directors can implement to ensure that the

highest quality service is provided to the patients and volunteers. Further research is needed to

explore if patients who utilize the Health Links services have positive changes in their health

outcomes as well as positive changes in their quality of life perceptions. Research could also

explore if patients have a perceived increase in their self-efficacy after their experience with the

Health Links desk, as one goal of Birmingham Health Links is to empower patients with the

information to change their social and environmental circumstances. This notion of self-efficacy

is a pillar of health behavior change (Janz & Becker, 1984).

While the results are not generalizable and future research is certainly needed, there are a

few lessons to be noted from this evaluation. The high satisfaction from patients suggests that

addressing social determinants of health in the clinical setting may be welcomed by patients beyond those at the Birmingham Clinic. If further evaluation finds the program to be successful in terms of improving health outcomes, the low annual operating cost makes this program promising because of its financial feasibility. And lastly, the qualitative data from fellows indicated that this model may be an effective way to ground future health professionals in an applied understanding of the social determinants of health.

APPENDIX A

LETTER OF APPROVAL FROM THE UNIVERSITY OF PITTSBURGH IRB

3500 Fifth Avenue
Suite 106
Pittsburgh, PA 15213
412. 383.1480
412. 383.1528 (fax)

University of Pittsburgh
Institutional Review Board

From : Christopher M. Ryan, PhD
       Director, University of Pittsburgh Institutional Review Board
To: Jennifer Sloan
       University of Pittsburgh Graduate School of Public Health
RE: Birmingham Health Links Process Evaluation
Date: November 13, 2013

The above referenced project description has been reviewed by the University of Pittsburgh Institutional Review Board and a determination has been made that this evaluation project may be initiated. No additional IRB oversight is required because this project does not meet the federal definition of research [45 CFR 46.102(d)].

BIRMINGHAM HEALTH LINKS PATIENT CASE FORM

Birmingham Health Links
Patient Case Form

First Name: Last Name:

Date of First Encounter:

Type of Encounter: ☐ In-person ☐ Phone Call ☐Left message ☐Phone Disconnected ☐
Other: _____

Current Address:
Gender:

Home Phone: Cell Phone: Email:

Preferred Contact: ☐ Home   ☐ Cell   ☐ Email

        Alternative Contact Name: Relation: Number:

Patient Narrative:
_____
_____
_____
_____

Priority of Concerns:

1:
        Action 1:
        Action 2:
2:
        Action 1:
        Action 2: Click here to enter text.

3:
    Action 1:
    Action 2: Click here to enter text.

Date of Follow-Up:

Result of Follow-Up: ☐ Spoke with Left voicemail ☐Left msg w/another ☐Phone disconnected ☐Wrong number
    ☐Other: Click here to enter text.

Patient Narrative (if applicable): .

Concern 1 Met? ☐Yes ☐No ☐In progress ☐Other: Click here to enter text.
Concern 2 Met? ☐Yes ☐No ☐In progress ☐Other: Click here to enter text.
Concern 3 Met? ☐Yes ☐No ☐In progress ☐Other: Click here to enter text.

Case is: ☐Closed ☐Open
Explanation (only if closed): Click here to enter text.

Date of Follow-Up: Click here to enter text.

CLIENT SATISFACTION QUESTIONNAIRE – 8

The Client Satisfaction Questionnaire (CSQ-8) was used to understand patient satisfaction with

their BHL experience. The questions can be found below.

CLIENT SATISFACTION QUESTIONNAIRE

Please help us improve our program by answering some questions about the services you have received. We are interested in your honest opinions, whether they are positive or negative. *Please answer all of the questions.* We also welcome your comments and suggestions. Thank you very much; we really appreciate your help.

Circle your answer:

1. How would you rate the quality of service you have received?

4	3	2	1
Excellent	Good	Fair	Poor

2. Did you get the kind of service you wanted?

1	2	3	4
No, definitely	No, not really	Yes, generally	Yes, definitely

3. To what extent has our program met your needs?

4	3	2	1
Almost all of my needs have been met	Most of my needs have been met	Only a few of my needs have been met	None of my needs have been met

4. If a friend were in need of similar help, would you recommend our program to him or her?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

5. How satisfied are you with the amount of help you have received?

1	2	3	4
Quite dissatisfied	Indifferent or mildly dissatisfied	Mostly satisfied	Very satisfied

6. Have the services you received helped you to deal more effectively with your problems?

4	3	2	1
Yes, they helped a great deal	Yes, they helped	No, they really didn't help	No, they seemed to make things worse

7. In an overall, general sense, how satisfied are you with the service you have received?

4	3	2	1
Very satisfied	Mostly satisfied	Indifferent or mildly dissatisfied	Quite dissatisfied

8. If you were to seek help again, would you come back to our program?

1	2	3	4
No, definitely not	No, I don't think so	Yes, I think so	Yes, definitely

APPENDIX D

BIRMINGHAM HEALTH LINKS FELLOW TIME SHEET TEMPLATE

Birmingham Health Links
Fellows Timesheet

Directions: Timesheets should be emailed as an attachment to <u>jes198@pitt.edu</u> by midnight each Wednesday. They should reflect the work of the previous Sunday through Saturday. Your first one is due Wednesday September 4th -- remember training and reflection sessions count!

Name:
Date:

Total hours:

Hours at clinic:

 # Hours spent on database:

    Database Updates Completed (just the organization names):
    Database New additions (just the organization names):

    Other Hours:

Brief Reflection: Please reflect on your week as a BHL fellow. Reflections only need to be one paragraph. These are important so that you are able to come prepared to the reflection sessions and they are important for your own personal and professional growth. Please take them seriously!

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