

Georgia State University

ScholarWorks @ Georgia State University

---

Public Health Capstone Projects

School of Public Health

---

Fall 1-6-2017

## A Program Evaluation of a Peri-Urban, Multi-Location Care Coordination Program in Georgia and Comparative Analysis of Other United States Care Coordination Programs for Uninsured, High-Risk Patients to Develop Promising Practice Recommendations

Amanda Parker

Follow this and additional works at: [https://scholarworks.gsu.edu/iph\\_capstone](https://scholarworks.gsu.edu/iph_capstone)

---

### Recommended Citation

Parker, Amanda, "A Program Evaluation of a Peri-Urban, Multi-Location Care Coordination Program in Georgia and Comparative Analysis of Other United States Care Coordination Programs for Uninsured, High-Risk Patients to Develop Promising Practice Recommendations." , Georgia State University, 2017. [https://scholarworks.gsu.edu/iph\\_capstone/44](https://scholarworks.gsu.edu/iph_capstone/44)

This Capstone Project is brought to you for free and open access by the School of Public Health at ScholarWorks @ Georgia State University. It has been accepted for inclusion in Public Health Capstone Projects by an authorized administrator of ScholarWorks @ Georgia State University. For more information, please contact [scholarworks@gsu.edu](mailto:scholarworks@gsu.edu).

## ABSTRACT

### A PROGRAM EVALUATION OF A PERI-URBAN, MULTI-LOCATION CARE COORDINATION PROGRAM IN GEORGIA AND COMPARATIVE ANALYSIS OF OTHER UNITED STATES CARE COORDINATION PROGRAMS FOR UNINSURED, HIGH-RISK PATIENTS TO DEVELOP PROMISING PRACTICE RECOMMENDATIONS

By

Amanda Parker

October 4<sup>th</sup>, 2016

**INTRODUCTION:** Having access to care allows individuals to enter a healthcare system and receive medical care that improves their quality of life. Unfortunately, access to care and health outcomes are typically related to one's insurance status. Care coordination programs work to reduce this barrier for high-need patients. One such program is the Sams Care Coordination Program, which connects local hospitals with charity clinics to expand the clinics' capacity by stabilizing staffing, enhancing communication through the shared use of the Epic electronic medical records (EMR) system and providing intensive case management through the use of licensed medical social workers.

**PURPOSE:** This paper will evaluate the Sams Care Coordination Program at Piedmont Healthcare through a cost-avoidance and hospital utilization analysis. Additionally, this paper will provide promising program practices and sustainability options for continued funding.

**APPROACH:** The cost-benefit and hospital utilization analysis will be conducted using program data from FY14 to FY16. A literature review will provide an in-depth look at care coordination models, other existing programs, funding options and promising practice recommendations. A culmination the evaluation and review of literature will be used to guide promising practice recommendations as well as options to sustain the Sams Program funding.

**EVALUATION:** Over the last two and half years, Piedmont has invested more than \$2.4 million dollars in the Sams Care Coordination Program including hospital services, staffing, technology and program support. A cost avoidance analysis shows that Piedmont has saved \$328,515 in direct costs and \$1,214,667 in assumed costs. A hospital utilization study reveals that nearly 60 percent of Sams eligible patient emergency department (ED) visits are reduced annually through the Sams Program and the program is capable of reducing ED encounters by over 1,800 visits each year.

**RECCOMENDATIONS:** The partner clinics should formalize agreements of responsibility with Piedmont Healthcare and their local entities, including metrics for regular reporting. All clinics should be provided with equal access to the Epic EMR system to capitalize on its capabilities in sharing and analyzing patient and population data. Case management should provide increased patient education on emergency department utilization and self-management of chronic disease. As a group, the clinic and hospital leadership should determine the best route of sustained funding past the summer of 2017.

A PROGRAM EVALUATION OF A PERI-URBAN, MULTI-LOCATION CARE  
COORDINATION PROGRAM IN GEORGIA AND COMPARATIVE ANALYSIS OF  
OTHER UNITED STATES CARE COORDINATION PROGRAMS FOR UNINSURED,  
HIGH-RISK PATIENTS TO DEVELOP PROMISING PRACTICE RECOMENDATIONS

by

AMANDA D. PARKER

B.S., COLLEGE OF CHARLESTON

A Capstone Submitted to the Graduate Faculty  
of Georgia State University in Partial Fulfillment  
of the  
Requirements for the Degree

MASTER OF PUBLIC HEALTH

ATLANTA, GEORGIA

30303

APPROVAL PAGE

PROGRAM PLAN OF A PERI-URBAN MULTI-LOCATION CARE COORDINATION  
PROGRAM IN GEORGIA AND COMPARATIVE ANALYSIS OF OTHER U.S. CARE  
COORDINATION PROGRAMS FOR HIGH-RISK PATIENTS TO DEVELOP BEST  
PRACTICE RECCOMENDATIONS

by

AMANDA D. PARKER

Approved:

Dr. Rodney Lyn

Committee Chair

Holly Lang

Committee Member

October 4<sup>th</sup>, 2016

Date

## Author's Statement Page

In presenting this capstone as a partial fulfillment of the requirements for an advanced degree from Georgia State University, I agree that the Library of the University shall make it available for inspection and circulation in accordance with its regulations governing materials of this type. I agree that permission to quote from, to copy from, or to publish this capstone may be granted by the author or, in his/her absence, by the professor under whose direction it was written, or in his/her absence, by the Associate Dean, School of Public Health. Such quoting, copying, or publishing must be solely for scholarly purposes and will not involve potential financial gain. It is understood that any copying from or publication of this capstone which involves potential financial gain will not be allowed without written permission of the author.

Amanda D. Parker

Signature of Author

## Table of Contents

I.	Introduction and need for care coordination.....	8
a.	Piedmont Healthcare (Atlanta, GA) .....	10
II.	Review of literature .....	13
a.	Impacts of insurance status and income on access to care and health outcomes ..	13
b.	Impacts of EMR/HIS systems on care coordination.....	14
c.	Care coordination.....	15
d.	Conceptual frameworks for care coordination programs.....	16
i.	Donabedian’s Quality framework.....	17
ii.	Relational Coordination framework.....	18
e.	Measures related to care coordination .....	18
f.	Components of Successful Care Coordination.....	20
g.	Successful care coordination program examples.....	21
i.	Camden, NJ.....	21
ii.	Boston, MA.....	22
iii.	Atlantic City, NJ.....	25
III.	Sams Care Coordination Program.....	27
a.	About the partner clinics and their communities.....	30
i.	Henry.....	33
ii.	Coweta.....	34
iii.	Fayette.....	36
IV.	Approach.....	37
IV.	Findings.....	43
a.	Program budget.....	44
b.	Hospital utilization data.....	48
c.	Cost-avoidance analysis.....	51
VI.	Discussion and recommendations.....	55
a.	Promising practice recommendations.....	56
i.	Promising practice #1: Relationships and accountability.....	57
ii.	Promising practice #2: Connectivity.....	58
iii.	Promising practice #3: Patient support.....	59
b.	Future of the program.....	62
c.	Barriers and limitations .....	64

## List of Tables

**Table 3.1** Background information on each Sams Care Coordination Program county

**Table 3.2** Overview of Piedmont hospitals involved in the Sams Care Coordination Program

**Table 3.3** Comparing the Sams Care Coordination Program components at each clinic site

**Table 5.1** FY14 Sams Care Coordination expenditures at partner clinics by cost category

**Table 5.2** FY15 Sams Care Coordination expenditures at partner clinics by cost category

**Table 5.3** FY16 Sams Care Coordination expenditures at partner clinics by cost category

**Table 5.4** FY14-16 total program expenses by site

**Table 5.5** ED utilization of low-income, uninsured payor groups FY14-16

**Table 5.6** Cost avoidance analysis for Hands of Hope and Piedmont Henry Hospital Sams Care Coordination partnership

**Table 5.7** Cost avoidance analysis for Fayette C.A.R.E. Clinic and Piedmont Fayette Hospital Sams Care Coordination partnership

**Table 5.8** Cost avoidance analysis for Coweta Samaritan Clinic and Piedmont Newnan Hospital Sams Care Coordination partnership

## List of Figures

**Figure 2.1** Donabedian's Quality Framework

**Figure 2.2** Relational Coordination Framework

**Figure 4.1** Emergency department visits per Sams-qualified patients, FY14

**Figure 5.1** Change in the number of Sams Program patient ED encounters pre- and post-contact with the clinics at PFH and PNH during 2015

**Figure 6.1** Promising practice recommendations for the Sams Care Coordination Program



## **Chapter 1: Introduction and need for care coordination**

Having access to care allows individuals to enter the healthcare system, find care and address their health needs. Unfortunately, access to care is typically related to one's insurance status. According to *County Health Rankings & Roadmaps*, nearly 30 million Americans younger than age 65 are still uninsured in 2016, despite the insurance expansion and mandate under the Affordable Care Act.<sup>1</sup> Additionally, about half of American adults have a chronic disease, but account for nearly 85 percent of the United States' healthcare expenditures.<sup>2</sup> With the national average of uninsured adults being just 9.1 percent in 2015, Georgia ranks fourth-worst in the nation for percentage of uninsured adults at 18.6 percent, equaling about 1.5 million uninsured adults in the state.<sup>3</sup> A lack of health insurance and the presence of chronic disease are highly correlated, especially when examined by income level. Those without insurance that are also low-income are 40 percent more likely to have a chronic disease when compared their wealthier, insured counterparts.<sup>4</sup>

No community can be healthy if a significant portion of the population is excluded from basic healthcare. The uninsured are much less likely to have primary care providers; they also receive less preventive care, dental care, chronic disease management and behavioral counseling.<sup>2</sup> Those without insurance are often diagnosed at later, less treatable disease stages and have worse health outcomes, lower quality of life, and higher mortality rates.<sup>1</sup> In addition to poorer health outcomes, those without insurance and access to appropriate primary care often improperly utilize hospital emergency departments, creating high costs for hospitals in uncompensated care.<sup>2</sup> For example, according to a 2013 study by Kangovi et al., low-income, uninsured patients are twice as likely as higher-income patients to require urgent ED visits, nearly five times more likely to require admission to the hospital, and more likely to return to the

hospital after discharge and require multiple hospitalizations for any given illness. At the same time, they use 45 percent less ambulatory and preventive care than higher-income patients.<sup>5</sup> Because Georgia has such a high population of uninsured adults without appropriate and affordable access to healthcare, creative solutions are needed to provide appropriate healthcare to the uninsured and those unable to afford care as well as reduce the impacts of these costs.

Safety net and charitable clinics are appropriate locations to provide care for those who would otherwise do without healthcare because they are uninsured, underinsured and/or low-income. Because patients at charity clinics do not typically have a primary care physician, they are missing the guidance of a healthcare home to manage preventive care, early screenings and care for chronic conditions.<sup>6</sup> Beyond the more obvious challenges related to lack of resources to pay for traditional medical care, the poverty that is so common among charity clinic patients affects their ability to consistently meet basic needs for food, shelter, transportation and safety. Further, poverty is closely related to malnutrition and stress, which can also contribute to illness and chronic conditions.<sup>7</sup> Often, patients in high-need situations have no idea how much their care actually costs when utilizing an emergency department versus what it could cost in a traditional setting. If they are uninsured, the emergency department is often the only place they know they can receive care.<sup>8</sup>

Care coordination programs are a promising approach to address the needs discussed above regarding the improved navigation of the healthcare system, reductions in healthcare spending and improving health outcomes of high-need patient populations.<sup>2</sup> According to the Agency for Healthcare Research and Quality (AHRQ), a care coordination program is:

“the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities, and is often managed by the exchange of information among participants responsible for different aspects of care.”<sup>2</sup>

The objective of care coordination programs is to improve the quality of care by enhancing the coordination between participants for the benefit of the patient (improved health outcomes) and the system (reduced healthcare expenditures).<sup>2</sup>

The field of care coordination is fairly new and therefore lacks a breadth of data surrounding the conceptual frameworks and effectiveness of care coordination programs, but the available literature will be reviewed. Also, because care coordination programs can vary so widely in scope, they are sometimes difficult to justify or evaluate for effectiveness in cost savings and health outcomes. However, a 2007 study by the Agency for Healthcare Research and Quality (AHRQ) was able to establish some conceptual frameworks and effectiveness of care coordination in health outcomes, specifically for those with previously unmanaged chronic conditions like diabetes and COPD, but not particularly for healthcare expenditures. Though the study demonstrated success of numerous care coordination programs, it was unable to effectively determine the most impactful tactics. It was noted that case management plays a large role in the success of care coordination programs for the improvement of chronic disease health outcomes and the reductions of hospital re-encounters, which should lead to a reduction in healthcare costs.<sup>2</sup>

## **Piedmont Healthcare (Atlanta, GA)**

Piedmont Healthcare's experience as a major medical provider in greater Atlanta and the experiences of its charitable clinic partners demonstrate that low-income individuals without insurance suffer from extremely disorganized medical care. The lack of organization and coordinated care that typifies the medical treatment of many low-income uninsured individuals engenders losses on all sides of the healthcare spectrum. Utilization of the emergency department for ambulatory care-sensitive conditions is costly and inefficient, and disrupts the continuum of care necessary to maintain good health, particularly among low-income, uninsured individuals, who face particular socioeconomic challenges in healthcare. Further, the duplication of services and lab testing that often happens when there is not a single primary physician guiding care is grossly inefficient. While the quality of care rendered by each provider to our target population is likely excellent, the disorganized nature of the overall care provided may also lead to poorer outcomes. Well-supported charitable clinics can help restore the physician-patient relationship for low-income, uninsured individuals,<sup>9</sup> specifically in Piedmont communities.

In 2013, recognizing the need for a reduction in hospital utilization costs and improved health outcomes in high-need patient populations, Piedmont Healthcare established the Sams Care Coordination Program. This program connects independent community-based charitable clinics and Piedmont hospitals to create a continuum of care, expand capacity at charity clinics and enable disadvantaged individuals to navigate healthcare and social service systems more effectively. Sams Care meets very specific needs of low-income, high-utilization target populations by providing primary care, navigation, case management and improved care through Epic EMR access, while simultaneously reducing the costs of uncompensated care for high-need patients. Currently the program operates in three adjacent southern Metro Atlanta counties,

including Coweta, Fayette and Henry as a partnership between a Piedmont hospital and charitable clinic. According to research performed surrounding the development and implementation of the Sams Program, this program was one of the first care coordination partnerships between safety net clinics and hospitals in the U.S., and is unique in that it is a multi-location model in a peri-urban environment. Since program inception, Piedmont Healthcare has evaluated the Sams Care Coordination Program at its pilot location after the first six months of program operation, and found that the program had a positive qualitative impact on the health and lives of patients served. Though Piedmont believes this program has continued to be successful to date, further evaluation of the effectiveness of each charity clinic's model of care coordination will provide Piedmont and the subject matter experts at the clinics and hospitals the information necessary to determine the impact on hospital utilization and the uninsured population in Coweta, Fayette and Henry counties. Further evaluation will help stakeholders develop a case to sustain the program long-term, as it is currently only funded through the summer of 2017. The goal of this capstone is to provide a program evaluation through the use of hospital utilization data and a cost avoidance analysis, as well as provide some promising practice guidelines to aim the program towards a sustainable future.

## **Chapter 2: Review of Literature**

### **Impact of insurance status and income on access to care and health outcomes**

It has been well established that there is a direct correlation between access to care and health status.<sup>10</sup> Often times access to care is discussed in terms of insurance status, status of available providers or availability of affordable healthcare options like a local FQHC or charitable clinic.<sup>11</sup> Health status can also be described in a variety of ways such as hospital utilization, chronic disease status and even the patient's perceived health status.<sup>12</sup>

A 1995 study by Bindman et al. found that access to care was inversely related to hospital utilization rates of five common chronic disease including asthma, hypertension, congestive heart failure, chronic obstructive pulmonary disease, and diabetes, particularly in low-income communities. This study demonstrated poorer health outcomes through increased hospital utilization for those who have reduced access to care, which is typically related lack of insurance or being underinsured in conjunction with being low-income.<sup>13</sup> Another study by Ayanian et al. found that long term or chronically(<1 yr.) uninsured adults had significantly more unmet health needs and poorer perceived health than their short-term (>1 yr.) uninsured and insured counterparts.<sup>14</sup> For reference, national statistics indicate that over two-thirds of the uninsured are below 200 percent of the FPL and nearly 40 percent of the uninsured are chronically uninsured.<sup>15</sup> In Georgia, nine in ten (ninety percent) uninsured people have income below 400 percent of the FPL, and three-quarters (75 percent) of the uninsured have at least one full-time worker in their household.<sup>16</sup>

While the overall share of Georgians living in poverty is only minimally higher than the national average at 22 percent vs. 20 percent nationally, Georgia has wide disparities in poverty rates and health by race. Blacks and Hispanics are more than twice as likely as Whites in Georgia

to be poor. Compared to Blacks and Hispanics, Whites are less likely to be obese or have diabetes. Over half (56 percent) of Blacks and Hispanics in Georgia report that they do not have a usual source of care, compared to less than one-fourth (24 percent) of Whites. These trends are mostly consistent with national data on health status and access by race and ethnicity. As of 2015, over 18 percent of GA non-elderly adults remain uninsured. Georgia's uninsured population is actually increasing relative to other states, moving from 7<sup>th</sup> worst to 2<sup>nd</sup> worst in uninsured rates across the US from 2011 to 2015.<sup>16</sup>

Georgia's health care delivery system, including its safety net providers, continue to play an important role in delivering healthcare to the state's vulnerable populations. Georgia's community health centers and hospitals provide access to needed preventive, primary, and acute care services for low-income and underserved residents. The nonelderly, uninsured in Georgia are not equally distributed across the state's counties, with the southern and central counties having higher uninsured rates than other areas of the state. Despite the higher rates of being uninsured, there is still a significant shortage of affordable health care options in these areas and across the state.<sup>16</sup>

### **The impact of EMR systems on care coordination**

Electronic medical record systems reduce the fragmentation of care, specifically when multiple providers are involved and can utilize a shared system.<sup>17</sup> There are five activities of care coordination that EMR systems impact: establishing and maintaining relationships with patients (activity 1) and a point of care (activity 2), collecting and analyzing home monitoring data (activity 3), educating and coaching patients (activity 4), and coordinating with other clinical staff and patients (activity 5).<sup>17,18</sup> EMR systems are capable of more effectively distributing health information to appropriate providers, alerting providers of recent occurrences such as

lab/diagnostic results or a hospital admission.<sup>18</sup> By sharing records between providers through health information exchange systems, duplication of tests or services is reduced and medical errors are less likely to be made. Additionally, electronic record systems allow for easier evaluation and reporting among and between health care organizations on topics such as health outcomes and healthcare utilization, while simultaneously reducing administrative costs associated with traditional health records systems.<sup>19</sup> In addition to reducing administrative costs and healthcare expenditures, 80 percent of healthcare providers report that EMR systems make their hospital, practice or clinic run more efficiently. The culmination of reduced costs and better outcomes result in better care for patients and more seamless care coordination transitions between providers.<sup>20</sup>

Further research on health IT and EMR system's impacts on care coordination is needed to determine the true cost savings long term. Additionally, evaluations of health information sharing systems would be beneficial in continuing to provide innovative care to vulnerable populations amongst providers.<sup>17</sup>

### **Care Coordination**

Care Coordination programs are being implemented across the county in a variety of different ways. The following will discuss some conceptual models of successful care coordination programs, as well as case studies that explore the areas of program focus, measures of evaluation and funding origination. According to the AHRQ, care coordination frameworks can be very broad and should be further explored in future research. There are numerous different models for program goals and mechanisms available to facilitate a care coordination program. Primary goals for care coordination programs include reducing healthcare expenditures and improving health outcomes. The mechanisms used to achieve outcomes vary



greatly from program to program ranging from care management and health-IT enabled coordination to establishing a healthcare home and providers working together to coordinate care. The effects of care coordination are perceived differently by all participants including patients, providers and healthcare systems. For patients, they see a change in how they are able to navigate the healthcare system and health outcomes, providers are better able to communicate patient needs to deliver solutions and health systems are able to reduce healthcare expenditures through reductions in health service utilization.<sup>21</sup>

### **Conceptual Frameworks for Care Coordination Programs**

To date, efforts to identify optimal strategies for coordinating care have been hindered in part by the lack of conceptual frameworks to guide the evaluation of care coordination programs. The section below discusses two of the conceptual frameworks applicable to the Sams Care Coordination program and related metrics applicable to care coordination. The purpose of this discussion is two-fold: to provide brief descriptions of potentially useful frameworks and to demonstrate how these frameworks might be effective in guiding the development, implementation, and evaluation of care coordination interventions.<sup>2</sup> Because of its relevance to the Sams Care program, we will examine these conceptual frameworks from the stand point of service-level decision makers, meaning those who tackle care coordination at the service delivery level (health care providers, social workers, etc.). Taken together, the frameworks include concepts in three domains: baseline assessment of the specific patient care situation, coordination mechanisms, and outcomes of care. These frameworks for care coordination provide evaluators with a guide to understanding the relationships and connections between an intervention and patient outcomes.<sup>2</sup>

## Donabedian's Quality Framework



Figure 2.1

This framework illustrates the intuitive relationship between three related, but different concepts. First, structures of healthcare are defined as the physical and organizational characteristics of care settings (facilities, equipment, personnel, operational and financial processes supporting medical care, etc.).<sup>2</sup> Second, the routes of patient care sit in the middle of the diagram because they rely on the structures to provide resources and mechanisms for participants to carry out patient care activities.<sup>2</sup> Often these arrangements to improve care coordination are executed through the use of case managers or social workers as well as the implementation of additional health IT such as an electronic medical records system.<sup>22</sup> In addition, processes are performed in order to improve patient health in terms of promoting recovery, survival and even patient satisfaction as well as improve hospital efficiency through reduced hospital utilization and therefore reduced costs. This latter concept is well known as the outcomes of medical care.<sup>2</sup>

## Relational Coordination Framework

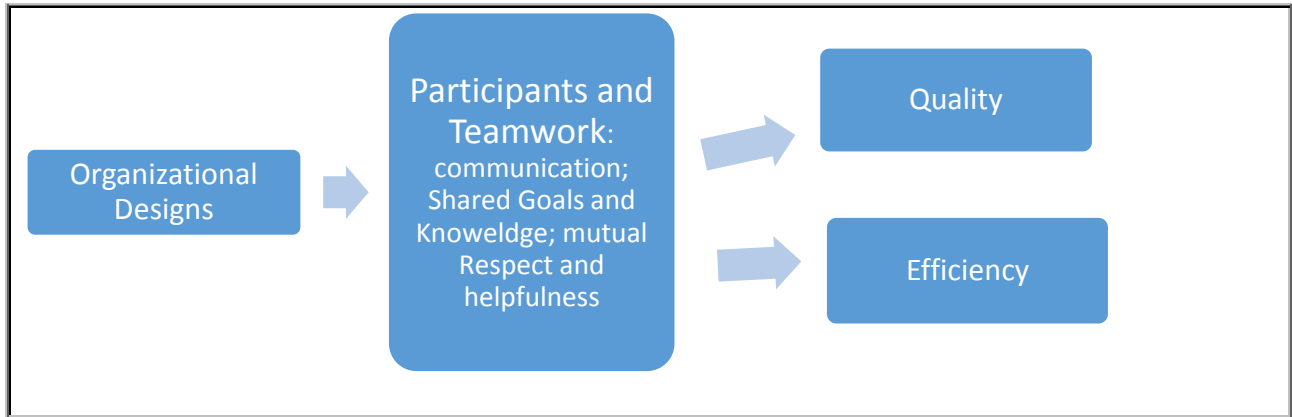


Figure 2.2

Relational coordination aims to focus attention on interactions between participants, such as hospital leadership, charitable clinics and physicians, whose awareness of the relationship of their work to the overarching goals of improving care coordination and to others involved in patient care is crucial, particularly for service organizations like healthcare where there are highly uncertain, time-sensitive, and interdependent activities. Relational coordination is characterized and measured by the following: frequency, timeliness, and problem-solving aspects of communication among participants in care; helpfulness; shared goals and knowledge; and mutual respect.<sup>2</sup> Several studies have shown the success of care coordination between multiple groups, but successful outcomes depend on specific relationships between care coordinators.<sup>2,23</sup>

### Measures Related to Care Coordination

Assessments of care coordination interventions report five types of measures: patient outcomes, cost outcomes, care delivery process measures, coordination mechanism measures, and patient perception of coordination.<sup>2</sup> Both patient and cost outcome measures are the end goals for improvements in care coordination. Assessing these outcomes is important for evaluating care coordination interventions. Care delivery processes typically measure the occurrence of recommended care activities that are expected to arise from appropriately

coordinated work. Measures of care delivery processes are often intended to identify if care practices occurred in accord with recommended guidelines. The last two categories of measures (coordination mechanisms and patient perception of coordination) relate more specifically to care coordination. Measures for interprofessional collaboration have generally been conducted within care settings where organizational units are well defined, as this can vary widely across organizations. More recent efforts have attempted to measure collaboration in other settings, such as coordination across multiple organizations, but the current literature lacks clarity on this topic. Given existing methodological and data collection challenges in measuring the collaboration of well-defined care coordination units, it is unclear how clinician report-based measurement efforts may be extended to settings where interdependent clinicians are more loosely affiliated.<sup>21</sup>

Coordination mechanism measures reported in the literature focus on measurement of information exchanges, enabling resources present in the care setting, or relational coordination among participants. Direct observation of these processes poses substantial methodological and data collection challenges. Indirect measures are more easily gathered and are therefore more typically used. Measures of clinical information exchange include use of medical record audits to identify written or reported evidence of information transfer. Relational process measurements are often self-reported, which may or may not reflect actual collaborative efforts. Further research is needed to understand how differences in perceptions of collaboration and specific components of collaborative interactions may affect delivery of care.<sup>2,21</sup>

Patient-reported perceptions of coordination provide a proxy measure for the overall coordination performance of providers. Patient perceptions can be meaningful, but patients are unlikely to be aware of the breath activities coordinated in their care. As a result, these measures

may provide limited value. Given the limitations of these approaches to measurement, a combination of these measurement approaches within studies are needed to achieve a more comprehensive understanding of care coordination.<sup>2</sup>

### **Components of Successful Care Coordination Programs**

A successful care coordination program should reduce expenditures of beneficiaries and improve beneficiary outcomes, which results in reduced hospital expenditures through reductions in hospital/healthcare utilization.<sup>2,23,24</sup> In the case of the Sams Care Coordination Program, the main focus is reducing hospital expenditures as the program participants are receiving free or nominal cost care through the partner clinics. There have been three types of effective programs to achieve these results: transitional care interventions, self-management education interventions and coordinated care interventions.<sup>24</sup> Key components of transitional care surround engaging with the patient during hospital admission and intensive follow-up post discharge to improve self-management. These programs often utilize health coaches and target specific chronic conditions to improve outcomes. Self-management education programs engage patients and care givers to reach goals through one on one sessions and group coaching sessions. These are typically short-term programs. Coordinated care programs teach patients about how to communicate with providers effectively and manage their health conditions. Additionally, patients are monitored between physician visits by nurse or health coach interactions, who also assist in scheduling appropriate physician care as needed. The primary goal in these types of programs is to avoid large health related incidents by providing regular care and management. According to the National Health Policy Forum, the most effective programs combine transitional care and coordinated care efforts. The goal is to target patients while in the hospital

for an adverse health event and transition them into an appropriate setting while providing education and coordinated care to prevent future adverse events.<sup>24,25</sup>

### **Successful Care Coordination Program Examples**

Programs to provide intensive patient care and/or social work for high-need patients have been implemented in a variety of scales in Seattle, San Francisco, Boston, Atlantic City, Las Vegas and Camden, New Jersey, and some of these programs have been subjects of formal or informal evaluations.<sup>8</sup> Sams Care and its evaluation are unique in comparison to these programs primarily because the program is being implemented in outer-edge suburban areas where patient choice in medical providers is much more limited. Since a resident in the target area is almost certainly going to use the services of the local Piedmont hospital and/or Piedmont's charity clinic partner, Piedmont can evaluate Sams Care's impact not only on a certain medical system's high-need, high-utilizing patients, but also on most high-utilizing residents of a certain area. This could lead to further follow-up studies on Sams Care's impact on overall community health in a target area. Though all of these programs target high-need patients who over-utilize healthcare, these other programs primarily target individuals with some form of health insurance, whether private or government-run, while Piedmont's program targets the uninsured.

#### **Camden, N.J.**

One of the most successful care coordination programs is based in Camden, N.J., and is called the Camden Coalition of Healthcare Providers, which was founded in 2007. Dr. Jeffery Brenner based the idea for the program on a local police reform that felt major crime was bred in minor neighborhood disorder and therefore resources should be focused in these areas. He felt that the same thing applied to healthcare in that specific sects of the population were over-utilizing the hospital system primarily for low-acuity needs, but causing extreme expenditures.

With focused resources on these populations, money could be saved and health outcomes improved.<sup>6</sup> To do this, Dr. Brenner developed a database where patient information from three local hospitals was gathered in real-time to track the area's "super-utilizers" of healthcare and target them for care. The program's success is based on four principals: motivational interviewing, trauma-informed care, accompaniment and harm reduction.<sup>26</sup>

Motivational interviewing is a conversational technique that engages the patient's motivation to change based on his or her own needs and wants rather than a provider's goals.<sup>6,27</sup> In this population, the patients often lack trust in healthcare providers' intentions. This mechanism allows clinicians and health coaches to build a relationship with patients and make patients feel that their needs are being met appropriately. Trauma-informed care is a framework for care that recognizes the prevalence of trauma in a population, identifies the presence of trauma symptoms in an individual, acknowledges the role that trauma has played in a patient's life, and seeks to avoid re-traumatization.<sup>28</sup> The accompaniment principle means that care coordinators should be active, but short-term participants in healthcare provider visits and other interactions, with the goal of helping develop the patient's ability for self-advocacy and independent navigation of complex healthcare systems. This program operates on a 90-day model to get patients' chronic conditions under control and establish them in a primary care medical home. A care coordination team member accompanies patients to all appointments while enrolled to help them navigate a confusing and overwhelming healthcare system, as well as educate them to be their own healthcare advocates. As in all of healthcare, the goal to reduce harm is a set of strategies and ideas aimed at reducing negative consequences of various human behaviors, especially those associated with drug use, which Dr. Brenner noticed a pattern of through his research of high-utilizers.<sup>26</sup>

This program heavily utilizes care managers to reach vulnerable populations. Using a real-time database of all local hospital records, the coach identifies patients with frequent hospital admissions and emergency department visits. The care managers meet with the patient at bedside while they are in the hospital to offer care coordination services. Participating patients work with teams of social workers, community health workers, nurses and health coaches to address medical and behavioral issues, as well as barriers to wellness including housing, transportation, primary care and other services.<sup>8</sup> It should be noted that this program operates solely on home visits and phone calls.<sup>26</sup> As of 2014, they were able to reduce ER visits in their “super-utilizers” group by 40 percent, reduce hospital admissions in the “super-utilizers” group by 57 percent, and reduce costs of care by 56 percent.<sup>6,25</sup> Since 2009, the program has continued to be successful in reducing healthcare costs and improving health outcomes for this sect of the population in Camden. Currently, MIT is conducting a randomized control trial to analyze the effect of the coalition’s care coordination on participants' hospital readmission rates, compared to a control group receiving routine care.<sup>26</sup>

The Camden Coalition of Healthcare Providers is funded through grants and private foundations.<sup>8,26</sup> The Nicholson Foundation focuses on improving access to healthcare for vulnerable populations in New Jersey and funds the coalition at \$1 million dollars annually.<sup>29</sup> Also funding the program is the Bristol Myers Squibb (BMS) Foundation, which promotes health equity worldwide. The BMS foundation funds several diabetes-related programs for the coalition at a cost of \$3 million dollars every five years, or \$600,000 annually.<sup>30</sup> Additionally, the Center for Medicare and Medicaid Innovation provided early funding for the program that concluded in 2014 at an unknown cost.<sup>31</sup> In early 2016, the coalition was awarded \$8.7 million



through the AARP, the Atlantic Philanthropies and the Robert Wood Johnson Foundation to create a national center to improve care for “super-utilizers” across the country.<sup>32</sup>

### **Boston, Mass.**

Following the healthcare reform, Massachusetts General Hospital participated in the Medicare demonstration program, which provided funding to finance the care coordination of their most chronically expensive beneficiaries. If the cost of care for this patient group falls by at least 5 percent, the program is allowed to keep a part of the savings. Otherwise, the institution must return funding. When the program started, the hospital had 2,600 chronically ill patients, accounting for \$68 million of Medicare spending that year.<sup>8</sup>

The patients were spread across 19 participating primary care practices. Each practice was provided with a nurse whose sole job was coordinating care for these patients. In between visits with physicians, the nurses conducted patient visits and surveillance calls, and addressed issues that might otherwise have resulted in a hospital visit. The program had a high enrollment of potential participants at 87 percent and equally as high patient satisfaction rates. Within three years, inpatient hospital stays and ED visits were down by more than 15 percent in this patient population.<sup>6</sup> Additionally, there was more than a 7 percent reduction in Medicare spending for this population. By six years into the program, there were 4,500 participants, hospital admission rates were down by more than 20 percent in high-use populations, ED visits were down an additional 13 percent<sup>25</sup> and there was a more than 12 percent cost savings of enrolled patients. This means that for every dollar spent, the program saved at least \$2.65.<sup>25,33</sup>

### **Atlantic City, N.J.**

The Special Care Center at a private practice in Atlantic City cares for the high-need patients employed by the two largest self-insured local employers: the casino union and the

hospital. The employers agreed to pay a flat fee per patient, rather than a fee for service system. Patients were allowed unlimited visits, without copayments or bills. This reduced administrative and billing costs significantly, as well as encouraged providers to provide optimal service to keep bringing in patient fees. The clinic was designed to provide care for the sick, high-need patients by guaranteed same-day scheduling for acute illness, implementing an EMR system customized to track patient outcomes and goals as well as a staff to help patients meet goals.<sup>8</sup>

A large part of this program's success is the daily staff meetings to discuss the care and needs for every patient being seen that day. These meetings include physicians, mid-level providers, social workers and health coaches. The health coaches are unique in that they do not usually come from healthcare backgrounds, but rather customer service areas, and are trained for the job to help patients meet their non-clinical needs. The coaches meet with patients at least every two weeks, much more often than they see the physicians. In addition to health coaching, the clinic operates a 24-hour call line for low-acuity needs to keep patients from visiting the ED while the clinic is closed.<sup>6,8,25</sup>

Within a year of implementation, ED visits and hospital admissions were down by more than 40 percent and patients with chronic disease had markedly better health outcomes. Though certain healthcare costs rose as a result of the program, like drug costs and clinic staffing, an independent health economist found that there was a 25 percent cost savings overall during the first year, when compared to a control group.<sup>6,25</sup> Additionally, nearly 70 percent of their patient population had decreased their LDL cholesterol to under 100 points, up from only 50 percent when the program was implemented.<sup>25</sup>

The hospital associated with this program, AtlantiCare Hospital, has found a way to benefit from the reduced healthcare costs of its patient population by attracting patients from

other systems due to more competitive pricing, cushioning it from a future where less hospitals will be able to thrive. Programs similar to this are established in Boston, Seattle, and Las Vegas.<sup>6</sup> It should be noted that this program model is significantly different from Piedmont's case since the Atlantic City group targets insured populations that over-utilize healthcare and the Sams program targets the uninsured to reduce the costs of uncompensated care. Because the Sams Care program is so unique in nature, these programs offer the closest comparison for ideas of best practice, sustainability, funding and success.<sup>8</sup>

### **Chapter 3: Sams Care Coordination Program**

In 2013, Piedmont Healthcare completed a thorough community health needs assessment in Fayette, Coweta and Henry Counties, revealing an overwhelming need for clinics to provide more adequate community-based resources to low-income, uninsured and underinsured patients.<sup>34</sup> Through the generosity of the Sams Family with a lead gift of \$270,000, Piedmont was able to respond to this need by creating the Sams Care Coordination Program. Since then, Piedmont has invested nearly \$2.5 million into the program so that patients experience higher quality, consistent care tailored to their medical conditions as well as underlying barriers to health. The majority of this funding came from the Piedmont Healthcare Foundation and Community Benefit budgets, with only two smaller contributions including a \$25,000 grant and around \$250,000 in employee contributions. The short-term targeted outcome of the Sams Care Coordination Program is reduced utilization of the emergency department by low-income patients for ambulatory care sensitive conditions. Reduced utilization of the ED by this high-need population equates to reductions in the burden of uncompensated care for the hospital, which is also a significant goal of the program. The long-term targeted outcomes are improvements in health outcomes for patients served, increased satisfaction with care, and an increase in efficiency of healthcare services and navigation, as well as a decrease in the overall number of medical visits made by patients served. By creating a health home through Sams Care, Piedmont and the clinics are able to help navigate the patients toward wellness, providing preventative care and management of chronic illness rather than episodic emergent interactions.

Piedmont's collaborating partners, Coweta Samaritan Clinic, Fayette C.A.R.E. Clinic and Hands of Hope Medical Clinic, are central to the Sams Care Coordination Program – as much as Piedmont's hospitals. All partners work closely with each other for data reporting, patient

referrals, case management, and sharing information in Epic. Because of these partnerships, Piedmont and the partner clinics are able to more closely align end goals around patient care, including common quality measures as evidenced by the shared use of the Epic system. Additionally, these partnerships allow stakeholders to candidly express areas of need, such as further collaboration on discharge planning for low- and no-income uninsured patients presenting at the emergency department.

Piedmont Healthcare was one of the first U.S. healthcare systems to provide electronic medical records access to charity clinic partners. By providing the clinic partners access to EPIC, they are able to tailor the care around the patient to provide atypical navigation to those who need it most with a benefit to all parties. The increased communication and coordination through Epic in conjunction with the use of licensed medical social workers is key to successfully meeting the needs of this vulnerable patient population. Epic has enabled social workers to identify patterns of emergency department usage for specific patients, indicating that additional or modified treatment, as well as additional social services, may be necessary. In other words, Piedmont is able to provide concierge medicine to its most vulnerable populations, support charity clinic partners and reduce uncompensated care costs for its hospitals through the Sams Program.

By supporting clinic partners with a licensed medical social worker inside the clinic, Piedmont can discover barriers to care and work to eliminate them, as well as navigate these patients towards a healthier and happier life. It is not unusual for charity clinics to have a social work aspect to their services. However, Sams Care and the case management provided as part of the program integrate medical treatment, social services and electronic medical records for low-income uninsured patients, which is only done in a few programs across the U.S. Currently, all

three clinics have a part-time social worker on staff to meet patient needs; however, all three clinics utilize their licensed social worker differently. One clinic has a part-time social worker that works from the clinic to interact with patients and receives referrals from the hospital emergency department. This model allows the social worker to schedule meetings with patients in need of services during normal clinic hours. The second clinic utilizes their part-time social worker within the emergency department at the hospital. This social worker tailors their work schedule to be in the ED during high-volume times, in hopes of meeting with patients while they are utilizing the ED improperly. The third clinic utilizes a hybrid model of employment for their social worker, meaning they have a full-time social worker that is employed part-time by the clinic and part-time by the hospital. This model allows the social worker to split their time between the clinic and the hospital, with an office at both, to better address patient issues where they arise, and to act as a liaison between the hospital and the clinic in the most efficient and effective means possible.

In the past, clinic closures due to limited provider availability and long waitlists have significantly contributed to uninsured patients utilizing the emergency department as a source for primary care and low acuity needs. Prior to this funding, all three clinics utilized volunteer practitioners for the majority of their staffing needs, meaning appointments were limited. Because of the Piedmont partnership, all three clinics are now open additional hours and are seeing more patients, which aims to reduce the burden of uncompensated care on the hospital and starts to address the healthcare needs of underserved populations in these communities. In total, Piedmont funds three nurse practitioners, three licensed medical social workers, two medical assistants, one scribe, one eligibility specialist as well as a nurse. Additionally, the

Piedmont hospitals within those communities provide lab and diagnostic services at no cost to the clinic or patient. For one partner clinic, the hospital also provides clinical space and utilities.

### About the clinics and their communities

According to *County Health Rankings & Roadmaps*, the region of Coweta, Fayette and Henry counties, which are served by the partner clinics, have consistently demonstrated poor health outcomes which are described in table 3.1. Of the top five causes of death in Coweta, Fayette and Henry counties, all are conditions commonly associated with unhealthy lifestyles such as the use of tobacco, high-fat diets and lack of exercise.<sup>1</sup> In addition to poor health outcomes, the Center for Disease Control peer county comparison report found that both Coweta and Fayette counties scored in the least favorable quartile for cost barrier to care compared with peer counties and all three counties scored in the least favorable quartile for percentage of uninsured individuals.<sup>35</sup>

Table 3.1

<b>Demographics for Counties Served by Sams Care Coordination Program</b>						
<b>County</b>	<b>Adult uninsured rate</b>	<b>% of households &lt;100% FPL</b>	<b>Unemployment rate</b>	<b>Racial breakdown</b>	<b>Significant health concerns</b>	<b>% of pop in poor or fair health</b>
<b>Henry</b>	22% <sup>1</sup>	11.2% <sup>1</sup>	7.3%	50% <sup>12</sup> White 40% African American 10% Other	Diabetes, Stroke, Heart Disease <sup>1</sup>	16% <sup>1</sup>
<b>Fayette</b>	16%	8%	6.2%	65% White 22% African American 13% Other	Asthma, Heart-disease and Stroke	12%
<b>Coweta</b>	20%	12.7%	6.2% *over 14% in African American pop.	72% White 18% African American 10% Other	Metabolic and hypertensive disease	14%

Piedmont is the primary acute care facility in each of these counties, so improvements in the care for high-need individuals would make a significant difference on community health

outcomes and local healthcare expenditures. Piedmont Fayette Hospital (PFH) is a 189-bed facility and is currently being expanded by about 30 percent. In FY15, PFH had almost 68,000 emergency department visits and over 13,000 inpatient admissions. Piedmont Henry Hospital (PHH) is a 215-bed hospital. In FY15, PHH had nearly 84,000 emergency department visits and over 13,000 inpatient admissions. Piedmont Newnan Hospital (PNH) is a 136-bed facility. In FY15, PNH had nearly 55,000 emergency department visits and 8,000 inpatient admissions. The emergency departments at Piedmont Newnan, Piedmont Fayette and Piedmont Henry have the highest volumes in the Piedmont Healthcare system. Specifically, Piedmont Henry is generally the busiest in the state. Each emergency department director estimates that more than 30 percent of patients are treated for non-emergent services such as cold, flu, and general aches and pains. During FY14, 2,100 high-need patients were treated between the three clinics, for a total of 12,785 patient visits or roughly six visits per patient. Three hundred and fifteen of these patients came directly from ED referrals to the clinics. These figures start to frame the issue that the Sams Program can impact in local communities.

Table 3.2

<b>Overview of Piedmont Hospitals Involved in Sams Program</b>				
<b>Site</b>	<b>Clinic Partner</b>	<b># of beds</b>	<b># of ED visits in 2015</b>	<b># of inpatient admissions in 2015</b>
<b>PFH</b>	Fayette C.A.R.E Clinic	189	67,555	13,171
<b>PHH</b>	Hands of Hope	215	83,520	13,156
<b>PNH</b>	Coweta Samaritan Clinic	136	54,257	8,102

The following depicts the state of health and insurance status in Henry, Coweta and Fayette Counties. Additionally, it portrays the current capabilities of the partner clinics and how Piedmont's support has impacted their capacity.



Table 3.3

<b>Comparing the Sams Program at each clinic site</b>						
<b>Site</b>	<b># of employees funded by Sams</b>	<b># of active patients</b>	<b>Annual Visits Capacity</b>	<b>Primary care provider</b>	<b>LMSW work-site</b>	<b>Epic Use</b>
<b>Hands of Hope</b>	5	1000	5,300	Nurse Practitioner	PHH ED	Read-Only
<b>Fayette C.A.R.E.</b>	3	600	4,500	Volunteer Physicians	at clinic	Full use
<b>Coweta Samaritan</b>	3	625	6,000	Volunteer Physicians	½ at clinic, ½ at PNH ED	Full use

Because each community is unique, Piedmont’s involvement at each clinic is different. For example, clinic and hospital leadership in Henry County work closely to coordinate and fund additional staff at a local level, while the other two clinics coordinate and fund additional staff through Piedmont Healthcare. At all three clinics, the nurse practitioner spends 100 percent of his or her time in the charity clinic, while the licensed medical social worker operates differently at each clinic. Fayette C.A.R.E. Clinic and Coweta Samaritan Clinic have full use of Epic, while Hands of Hope currently has read-only access to Epic. At this time, the data captured at each clinic is unique depending on its current needs, technology and the skillset of employees.

In the past, the clinic and hospitals have experienced barriers in collecting data and evaluating processes because of limited resources. Each hospital emergency department has a different mechanism in place for reporting uninsured charity clinic patient data and each social worker/clinic has their own system in place for tracking hospital referrals. Likewise, tracking inpatient charity clinic patient volumes have proved difficult and inconsistent, as this is not a formal part of social work and it would take away from time with patients. Additionally, because

benchmarks for data collection have never been defined, each clinic tracks data for its own use but is not consistent from clinic to clinic.

## **Henry**

The Sams Care Coordination Program at Piedmont Healthcare provides funding for five employees to the Hands of Hope Medical Clinic to increase the clinic's ability to serve the uninsured in Henry County. These employees include a full-time nurse practitioner, a full-time medical assistant, a part-time licensed medical social worker, a quarter-time clinic eligibility specialist and a quarter-time nurse. Additionally, the hospital provides read-only access to the Epic EMR system as well as lab services at no cost to the clinic or its patients. The clinic is not currently scheduled to receive full access to Epic. The cost of all of these services will be discussed in detail in the program budget section of this report.

Hands of Hope is the only charitable clinic in Henry County and was founded in 2004. It is currently housed on the Piedmont Henry Hospital campus and the clinic space is provided at no charge by the hospital. The clinic provides primary care for patients more than 32 hours a week and dental care by appointment. Hands of Hope currently has four full-time employees and four part-time employees, as well as approximately 65 active volunteers, including the physicians who donate their time. Currently, there are approximately 1,000 active patients at the clinic, all of whom must be uninsured, 300 percent of the FPL or below, and a resident of Henry County to qualify for services.

The clinic now has the capacity to perform approximately 5,328 patient visits annually, which was expanded from just 1,728 visits in June 2015, thanks to the Sams funding. The expansion essentially doubled the physical space of the clinic and provided funding to expand

capacity in staff and operating hours to better meet the needs of the community. Hands of Hope utilized their expanded capacity to be able to see patients same day or very quick in comparison to other safety net clinics through their use of a mid-level provider who is overseen by a part-time medical director. This is very unique as many clinics have a backlog of patients waiting to be seen. Additionally, the clinic was provided viewing capabilities of Piedmont's EMR system to help reduce barriers in communication and sharing information. Since expanding, patient visits are up by over 22 percent and more than 2,000 patient visits have been performed in the last year. Additionally, patient recertification's are up 124 percent from the previous year, likely meaning that patients are satisfied with the clinic's services, but also indicating that patients are remaining uninsured and low-income for extended periods of time. The clinic requires a nominal fee per visit (\$10 for first visit and \$5 for any additional visits) for patients who are able to pay this fee. If patients are unable to afford this fee, the fee is waived and services are provided free of charge. This fee helps establish accountability on behalf of the patient and also provides a small amount of income to the clinic.

### **Coweta**

The Sams Care Coordination Program at Piedmont Healthcare provides funding for two employees to the Coweta Samaritan Clinic to increase the clinic's ability to serve the uninsured in Coweta County. These employees include a part-time nurse practitioner and a part-time medical assistant, as well as a hybrid-employed licensed medical social worker (LMSW), whose salary is funded half through Sams and half by Piedmont Newnan. This LMSW is a Piedmont employee, but utilizes half of her time providing social work services for the clinic. Additionally, the hospital provides the Epic EMR system to the clinic as well as lab services at no cost to the clinic or its patients.

Coweta Samaritan Clinic (CSC), founded in 2011, is the only charitable clinic in the county and employs three full-time employees as well as four part-time employees, plus the LMSW who is employed by Piedmont. The remaining medical care and administration is provided by more than 80 active volunteers. Currently the clinic serves patients in primary care and specialty care in the fields of cardiology, gynecology, dermatology, endocrinology, infectious disease, gastroenterology, rheumatology, orthopedics, and imaging. Additionally, the clinic provides counselors, nutrition guidance and an off-site dental clinic. Currently, the clinic sees an estimated 625 patients. To qualify for services at CSC patients must be 200 percent or below the FPL, uninsured and live in Coweta County.

In mid-2014, Coweta Samaritan Clinic began receiving funding from Piedmont for the Sams Program. During 2014, the clinic saw more than 2,200 patient visits. During 2015, this figure rose to almost 2,900, an almost 25 percent increase in patient visits thanks to expanded staff capacity. The clinic has adequate clinical space to provide up to 6,000 patient visits a year, but is constrained by the number of volunteer providers. Unfortunately, the clinic is temporarily seeing a reduction in the volume of patient visits due to the terminal illness of one of their primary volunteer physicians. This physician has been responsible for about 500 patient visits annually in previous years.

## **Fayette**

The Sams Care Coordination Program at Piedmont Healthcare provides funding to the Fayette C.A.R.E Clinic to increase clinic capacity through increased staffing. These employees include a part-time nurse practitioner, a part-time social worker and a part-time medical assistant, as well as a grant writer for a portion of fiscal year 2015. Additionally, the hospital provides the

clinic with use of the Epic EMR system to improve communication between the clinic and hospital, as well as lab services at no cost to the clinic or its patients.

The Fayette C.A.R.E clinic is one of two charitable clinics in Fayette County. However, the other charitable clinic is only open to patients one evening per week. Fayette C.A.R.E clinic is open to patients four days a week, and sees patients between 30 and 40 hours per week based on volunteer provider availability. The clinic employs nine staff members, most of whom are part-time. Currently, the clinic has just fewer than 600 active patients and conducts about 3,000 patient visits per year. Based on funding provided through the Sams Program to expand clinic capacity, the clinic provided 2,934 patient visits in 2015, up from 2,593 visits in 2013, prior to expansion. The clinic provides primary care, dental and vision care, as well as specialty care in the fields of dermatology, cardiology, physical therapy, gynecology, chiropractic care and preventive education. To qualify for clinic services, patients must live in Fayette County, be uninsured and under 400 percent of the FPL. Additionally, the clinic operates on a sliding fee scale for those who fall between 200 and 400 percent of the FPL, and provides free services for those below 200 percent of the FPL.

## **Chapter 4: Approach**

According to the CDC, program evaluation is defined as “the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future program development.”<sup>36</sup> This report aims to provide a program evaluation, by utilizing both a hospital utilization analysis and a cost-avoidance analysis using program data. A program evaluation of this nature will provide data on the outcomes of interest in the Sams Care Coordination Program, including a reduction in the number of high-need patients utilizing the ED for low-acuity needs and a reduction in costs to the hospital by transitioning these patients to an appropriate healthcare setting. This evaluation will assist in determining the success of program efforts thus far and inform participating hospitals and partner clinics for future program decisions. Additionally, the report will make recommendations for promising practices that will guide the program towards being more desirable for funding by continuing to improve program efficiency. This report will utilize program data from several sources, including Piedmont Healthcare, local Piedmont hospitals and charity clinic partners, as well as peer-reviewed literature.

Because the Sams Care Coordination Program deals with a patient population, it was critical that patient records were protected in compliance with healthcare privacy regulations for the purpose of this project, such as health records and personal information like social security numbers. To achieve this, only approved Piedmont Healthcare and charity clinic personnel handled records that contained identifiable data. These individuals provided aggregate data to the evaluator, a contractor for Piedmont Healthcare and Georgia State University graduate student, for use in analysis. It should be noted that Piedmont Healthcare did not restrict the evaluator

from making any observations or recommendations for the purposes of this project and components of this capstone will be shared with clinic partners who may utilize figures from hospital utilization and cost avoidance analyses for future grant writing purposes.

### **Approaches for budget development and cost-avoidance analysis**

One of the primary goals or outcomes of the Sams Care Coordination Program is to reduce the costs of care associated with over-utilizers of the Piedmont Healthcare system. To measure if the program achieves this, a program budget and cost avoidance analysis will be utilized. The evaluator was provided records of all income and invoices related to the Sams Care Coordination program including staffing costs, hospital services, Epic installation and maintenance, grant writing, program consultants and operating expenses. These invoices contain information such as the date, partner clinic name and description of expenditure. The budget was broken down by fiscal year (2014, 2015, or 2016), as well as by location (Fayette, Henry or Coweta). It should be noted that this data is for the actual costs incurred by the hospital, not what the hospital would charge for services. The hospital data was derived through the Epic EMR system, which allows hospitals to track data by payor fields, date and scope of services. Each partner clinic has its own payor field to help organize information. The remainder of data was collected through EPSi Budget Manager, which tracks invoices that don't involve patient services like staffing and operational program expenses that come from Piedmont Healthcare budgets. This information was used to build a total program budget from the program implementation in January 2014 through May 2016. A complete program budget did not exist previously. The new budget helped demonstrate investments from Piedmont Healthcare to the partner charitable clinics and assisted in determining if the funding invested was greater or less than costs avoided.

The goal of a cost-avoidance analysis in this evaluation is to determine if the costs of care for Sams eligible patients are lessened by providing funds to expand partner safety net clinics and transitioning this patient population to clinics vs. treating their low-acuity needs in the hospital setting. The cost avoidance analysis is the most critical component of this evaluation, as it demonstrates the value of the program to Piedmont hospitals and partner clinics. Additionally, it can be used to help build a case for future grant funding, as it provides program outcome data. Per request of the evaluator and Community Benefit department at Piedmont Healthcare, the directors of finance at Piedmont Henry Hospital, Piedmont Newnan Hospital and Piedmont Fayette Hospital worked together to create a common algorithm that was used to generate a cost avoidance analysis. Piedmont Henry and Fayette were able to utilize this algorithm, but Piedmont Newnan was not able to pull matching data during the timeframe of this project. All three analyses are listed below, but only the first two are truly comparable. The third is for reference, but doesn't make the same assumptions as the other two and reflects lesser avoided costs due to this. The analysis for PHH and PFH accounts for the total patient population at each clinic, while the analysis for PNH only accounts for new clinic patients during CY15. This means that the figures for PNH only represent a small portion of the patient population and would likely reflect similar figures as the PHH analysis if accounting for all patients. The cost avoidance analysis looked at both the direct and assumed cost savings of inpatient encounters and emergency department encounters of clinic patients, as Piedmont is the primary acute hospital in each county and it can be assumed that patients would utilize Piedmont for care if the clinics weren't available resources.

The data for cost-avoidance was pulled from the Tableau MOAQ by patient encounter dates utilizing a list of patient names and social security numbers to cross reference patients. This



cost avoidance analysis was for calendar year 2015 (CY15), as it is most recent completed dataset of Piedmont Healthcare finances. This analysis includes both direct and assumed costs avoided from each partner clinic and hospital relationship. The analysis uses both direct and assumed costs to determine total costs avoided by the clinic/hospital relationship. Direct costs avoided are determined using the number of clinic patients that presented in the Piedmont ED during CY15. It is assumed that one ED visit per patient is acceptable as it may be a true emergent health situation. As nearly 70 percent of ED visits in this patient population are low-acuity visits, any additional visits are considered avoidable. To determine this, subtract one ED visit per clinic patient presenting in ED from the total number of ED visits by clinic patients in CY15. An average cost (not charge) per ED visit is used to determine the amount of avoided costs through ED visits by multiplying times the number of avoidable ED visits. Avoidable in-patient admissions are calculated by using the rate of clinic patients presenting in the ED that require hospital admission and multiplying times the number of single ED visit patients, as these are the patients likely to visit the ED for an actual health emergency. Again, an average cost is applied to determine avoidable in-patient costs. Assumed costs avoided are calculated using the same methods, except utilizing the number clinic patients who did not present at a Piedmont location during CY15. It is assumed that these patients would use the Piedmont ED's for their primary care needs as Piedmont is the primary hospital in each community and because of the locale, it is unlikely that these patients would be seen at a non-Piedmont facility. The above methodology was used for both the Henry and Fayette program sites. The Coweta (PNH) cost-avoidance analysis utilizes a similar methodology for the avoided costs, but this analysis only accounted for the new clinic patients that presented during CY15, not the new and existing clinic patients as the other analyses accounted for.

## **Approach for hospital utilization analysis**

The other primary outcome or goal of the Sams Care Coordination Program is to reduce low-acuity emergency visits by providing improved continuity of care through a care transition to a partner clinic and intensive case management. One way Piedmont is able to measure this is through a hospital utilization analysis. Because the Piedmont hospital is the primary acute care facility and the clinics are the only charitable healthcare providers in each county, it is assumed that patients would be seen primarily in one of the two settings. It should also be noted that even if a patient were to go out of their home county for care, it would likely still be to a Piedmont hospital based on locale. If care is managed appropriately in the charity clinic setting, there should be a reduction of hospital visits by this high-need patient population. Hospital utilization data was collected by a Piedmont Healthcare data analyst through the Epic EMR system. Data pulled was also for CY15, to match the cost-avoidance analysis. It should be noted that the Hospital-Utilization data only contain patient encounters for Piedmont Fayette and Newnan. This is because Piedmont Henry has not extended full use of the Epic EMR system to its partner clinic and thus data isn't reported in the same fashion. The data represents the number of emergency department visits by clinic-eligible patients (uninsured, low-income patients) pre- and post-first contact with the clinics. Aggregate and site specific data was pulled for this analysis to determine to the total number of visits that were reduced because of the Sams Care Coordination Program at the local charitable clinics. Data is described using descriptive statistics.

## **Approach for developing promising practice recommendations**

An evaluation of the literature on care coordination was conducted to develop recommendations to improve program practices and provide options for sustaining program

funding. The literature review was limited by the fact that the Sams Care Coordination Program is quite unique in comparison to other care coordination programs. This is because it targets an uninsured, peri-urban population and is funded primarily through the hospital system, while most programs target a Medicaid population and are government funded. The articles for the literature review were pulled from the Georgia State University library's databases, including PubMed, Alt HealthWatch, Business Source Complete and MEDLINE. Literature was pulled on other care coordination programs, the financing of care coordination programs and best practices in care coordination.

## **Chapter 5: Findings**

The evaluation of the Sams Care Coordination includes a program budget to examine expenditures by year and clinic; hospital utilization data to examine reductions in low-acuity emergency department utilization by Sams-qualified patients; and a cost avoidance analysis to determine the direct and assumed savings through the Sams Care Coordination Program to Piedmont Healthcare.

Evaluation of care coordination programs is an essential process to ensure that not only are the services rendered valuable to beneficiaries, but also for garnering program support.<sup>21,22,23</sup> Value can mean improvement in health outcomes, efficient use of services or slowed healthcare expenditures. Evaluation allows one to determine if the program is successful, identify areas for improvement, fulfill contractual parameters and build support for the program.<sup>22</sup> In this case, evaluation is being utilized to determine if the program is successful. If so, clinic partner will be able to utilize figures to build support for continuity of program funding. This particular evaluation strategy to determine the costs spent and saved by the healthcare system in addition to a hospital utilization analysis are non-invasive and fairly easy to calculate on an on-going basis for future evaluations. The program has decided not to measure specific health outcomes at this time, as the program is primarily economic in nature and it is not particularly feasible since this would require considerable time and coordination to measure at this point. Should this aspect become more feasible or valuable to potential stakeholders, it may be reconsidered.

In summary, over the last two and a half years Piedmont Healthcare has invested nearly \$2,500,000 into the Sams Care Coordination program to improve access to appropriate and affordable care for high-need, un-insured patients. In return, the Sams Care partner clinics have

saved Piedmont \$328,515 in direct costs and \$1,214,667 in assumed costs for a total of \$1,543,182. Additionally, since program inception, we have seen a significant reduction (60 percent) in emergency department utilization by Sams Program eligible patients that presented to the ED.

## **Program Budget**

Piedmont Healthcare is committed to working with its clinic partners to improve the health of the underserved people of its communities. Piedmont has supplied funding for 10 clinic staff positions, lab work, diagnostic services, equipment, strategic planning, program space and utility assistance. Additionally, Piedmont made a financial investment to provide Epic access to the clinic partners, which includes licensing and staff training. Piedmont has also provided technology and equipment upgrades for the clinics. Piedmont utilized a grant writer to write formal applications to corporate and private foundations as well as federal, state and local government sources.

The tables below denote the salary costs of funded positions, Epic installation and maintenance, the cost of hospital services provided to clinic as well as an other expenses category. This information will be organized by fiscal year (July 1 to June 30), as well as total program expenses and by clinic. Please note that these figures are a compilation of invoices and calculations from the Piedmont Healthcare Foundation, Community Benefit department and hospital finance departments. Amounts may not be exact, as some figures include the value of in-kind services or Piedmont salaried employee time contributions, but can be used to estimate the total funding support provided to the clinics by Piedmont Healthcare. The staff cost category includes the amounts paid to clinics for expanded staff capacity (E.g. mid-level providers, social

workers, medical assistants). Hospital Services includes imaging, diagnostic, and laboratory services. It should be noted that hospital services contribute significantly to the Sams Care program, but would continue to be supported by Piedmont independent of the Sams program if the program were to discontinue at any point in time. For this reason, figures excluding hospital services are also provided. Epic costs include the direct costs of the product and installation as well as the in-kind value of maintenance and IT services. The other category includes program planning costs, grant writers, program consultants, clinic operating expenses and portions of Piedmont employee salaries who worked diligently to coordinate the Sams Care program.

Table 5.1

<b>FY14 Program Expenses</b>					
Clinic Location	Staffing	Hospital Services	Epic	Other (grant writer, consultants, clinic space/ planning, Pied. coordinators)	Total (by location)
Coweta	-	\$129,680.50	-	\$11,666.67	\$141,347.17
Fayette	\$59,969.79	\$43,644.50	\$55,390.45	\$11,666.67	\$170,671.41
Henry	-	\$70,333.00	-	\$11,666.67	\$81,999.67
<b>Total</b>	<b>\$59,969.79</b>	<b>\$243,658.00</b>	<b>\$55,390.45</b>	<b>\$35,000.00</b>	<b>\$394,018.25</b>

Fiscal year 2014 ran from July 2013 to June 2014. The Sams Program piloted at its first clinic site in January of 2014. These figures represent the first six months of funding support for Sams Care. Excluding hospital services, Piedmont funded the Fayette C.A.R.E clinic at a cost of \$127,026.91 for staffing, Epic installation, Piedmont employee support, program planning and operating expenses. Excluding hospital services, Hands of Hope and Coweta Samaritan were both supported at a cost of \$11,666.67 for program planning and Piedmont employee coordination efforts.

Table 5.2

FY15 Program Expenses					
Clinic Location	Staffing	Hospital Services	Epic	Other (grant writer, consultants, clinic space, planning, Pied. coordinators)	Total (by location)
Coweta	\$119,313.68	\$253,972.00	\$25,635.90	\$10,000.00	\$408,921.58
Henry	\$200,317.00	\$164,745.00	-	\$43,600.00	\$408,662.00
Fayette	\$105,850.00	\$74,654.00	\$5,000.00	\$25,662.50	\$211,166.50
<b>Total</b>	<b>\$425,480.68</b>	<b>\$493,371.00</b>	<b>\$30,635.90</b>	<b>\$74,262.50</b>	<b>\$1,028,750.08</b>

In fiscal year 2015, the program expanded to two additional sites, Coweta and Henry, based on the successful results of a limited evaluation conducted on the Sams Program at Fayette. Excluding hospital services, Piedmont contributed \$154,949.58 to Coweta Samaritan, \$243,917 to Hands of Hope and \$131,512.50 to Fayette C.A.R.E, for a total of \$530,379.08 in fiscal year 2015.

Table 5.3

FY16 Program Expenses					
Clinic Location	Staffing	Hospital Services	Epic	Other (grant writer, consultants, clinic space, planning, Pied. coordinators)	Total (by location)
Coweta	\$122,651.98	\$142,813.00	\$50,598.91	\$14,083.33	\$330,147.22
Henry	\$200,317.00	\$121,702.00	-	\$47,683.33	\$369,702.33
Fayette	\$103,335.00	\$208,627.00	\$400.00	\$14,083.33	\$326,445.33
<b>Total</b>	<b>\$426,303.98</b>	<b>\$473,142.00</b>	<b>\$50,998.91</b>	<b>\$76,224.99</b>	<b>\$1,026,294.88</b>

In fiscal year 2016, the program continued at all three locations and the second location received the Epic EMR system. Excluding hospital services, Piedmont funded the Coweta Samaritan Clinic at a cost of \$187,334.22, the Hands of Hope at a cost of \$248,000.33 and the

Fayette C.A.R.E. at a cost of \$118,193.33, for a total of \$553,527.88 covering staffing, clinic space, Piedmont coordinator support, Epic, a grant writer and a program consultant.

Table 5.4

<b>FY14-16 Total Program Expenses</b>				
	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>Total</b>
<b>Coweta</b>	\$141,347.17	\$408,921.58	\$330,147.22	\$880,415.97
<b>Henry</b>	\$81,999.67	\$408,662.00	\$369,702.33	\$860,364.00
<b>Fayette</b>	\$170,671.41	\$211,166.50	\$326,445.33	\$708,283.24
<b>Totals</b>	<b>\$394,018.25</b>	<b>\$1,028,750.08</b>	<b>\$1,026,294.88</b>	<b>\$2,449,063.21</b>

In the two and half years the program has operated, Piedmont has donated \$2,449,063.21 toward the clinics participating in Sams Care: \$911,754.45 has gone toward staffing additional employees at the clinics, \$1,210,171.00 has gone toward providing hospital services such as lab and diagnostic services for the clinics; \$137,025.26 has gone toward Epic installation and maintenance at two of the clinics; \$67,200 has gone to the Hands of Hope clinic to provide space for the clinic; \$12,250.00 went toward a grant writer for a grant that benefitted all three clinics; and \$10,662.50 went toward a program consultant and grant writer, as well as \$5,000 in operating expenses, for the Fayette C.A.R.E. Clinic. A value of \$90,000 was utilized from one community benefit employee and one foundation employee at Piedmont to coordinate the Sams Care program. \$5,000 was provided to the Georgia Charitable Care Network to assist in planning the Sams Care Coordination Program. In total from fiscal year 2014 to 2016, the Fayette C.A.R.E Clinic has received funding and services at a cost of \$703,658.24, the Coweta Samaritan Clinic has received funding and services at a cost of \$880,415.97, and the Hands of Hope Medical clinic has received funding and services at a cost of \$860,364.00.



## **Hospital utilization data**

A key measure of success for the Sams Care Coordination Program is the emergency department utilization rate at each participating hospital. This figure allows Piedmont to target the populations who fall through the cracks of the U.S. healthcare system and provide the intense case management and medical care they need to get and stay healthy. Often, these populations are forced to resort to using emergency departments for low-acuity visits or preventable illness because they cannot afford the appropriate care in a traditional setting. The Sams Program targets those who are uninsured and improperly using the emergency department to help establish them at one of the partner clinics. The clinic then becomes their medical home. This process improves individuals' health by providing consistent and appropriate care in a traditional setting and reduces the hospital's cost of expensive and irregular treatment in the emergency department, which often falls into a category of uncompensated care for the hospital.

Piedmont can see how its work in the clinics is accomplishing its community benefit goals of increasing access to necessary and appropriate care for uninsured patients, reducing preventable readmissions and empowering patients to self-manage their health. However, to date there has not been a tool to measure the results. Currently Piedmont is relying more on anecdotal evidence and aggregate market data, which, while helpful, does not fully quantify or justify Piedmont's involvement with the charity clinics in its communities.

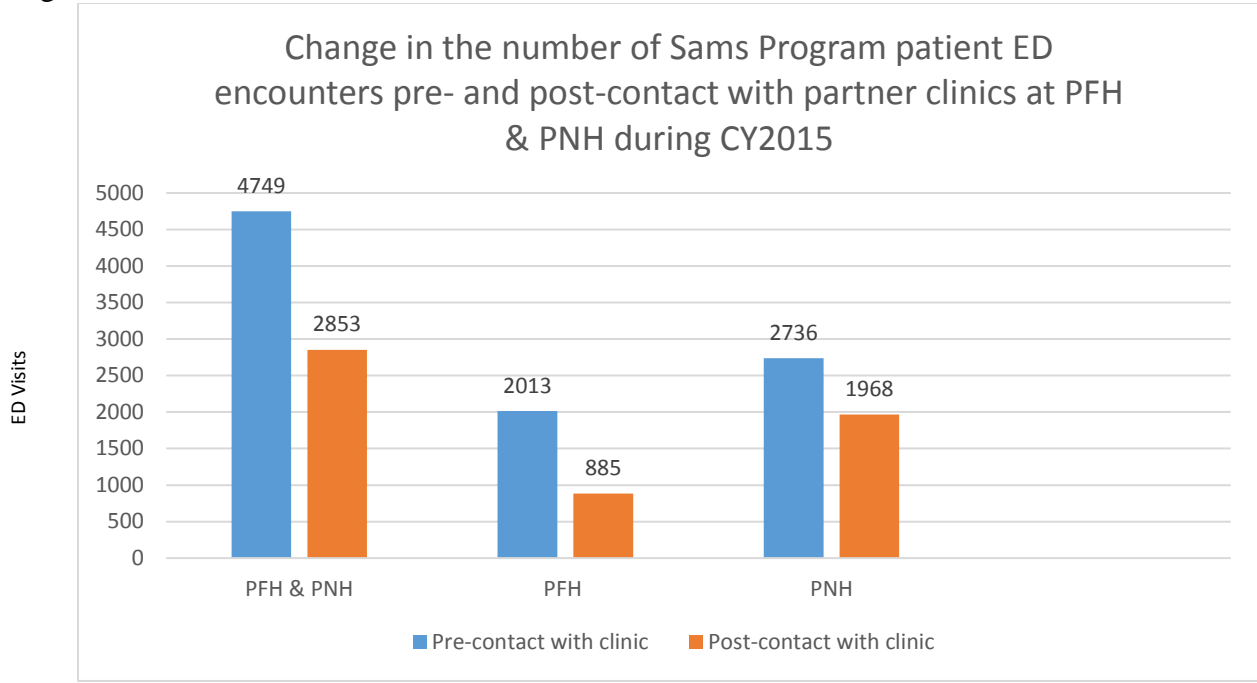
Table 5.5

<b>ED Utilization of low-income, uninsured payor groups FY14-16</b>									
	FY14			FY15			FY16		
	PFH	PNH	PHH	PFH	PNH	PHH	PFH	PNH	PHH
# of total ED visits by all patients	61,182	49,279	77,753	67,567	54,130	83,516	74,747	57,479	84,024
# of ED visits by eligible patients (self-pay and other payor)	13,566	12,628	26,144	12,594	12,408	22,870	15,352	13,567	24,098
% of total visits by eligible patients	22.20 %	25.60 %	33.60 %	18.60 %	22.90 %	27.40 %	20.50 %	23.40 %	28.70 %

The above table represents the number of total ED encounters, the number of ED encounters by self-pay and other payor groups and the percent of total encounters by those patients. The self-pay and other payor groups represent the patient groups who are uninsured or qualify for uncompensated care. Sams Program eligible patients fall into this category. There are many more patients in this category than are directly impacted by Sams, but the reductions in overall encounters can likely be accredited to the Sams Program. For reference, the Sams Program was initiated at its first location as a pilot program in January of 2014 or half way through FY14. It should also be noted that some visits are warranted emergency visits. Because some visits are true emergencies, this figure does not exclude patients that already receive care at local clinic. By estimate and through examination of diagnosis code, an average 67 percent of those visits were likely ambulatory care-sensitive, which means they could have been treated in an outpatient setting, such as a physician's office or clinic. This means that each year, an estimated 35,000 visits were low-acuity and could have been handled in a primary care setting. From FY14-16, the PFH emergency department has seen a 1.7 percent reduction in overall encounters by self-pay and other payor groups. PNH has seen a 3.9 percent reduction in overall

emergency department visits. PHH has seen a 4.9 percent reduction in emergency department visits.

Figure 5.1



The above graph represents the change in ED and counters pre- and post-contact with the partner clinics because of the Sams Program. The reduction is due to the transition of patients to the clinics for their low-acuity needs instead of over utilizing the ED. While more than 75 percent of Sams patients show up less frequently in the ED after contact with the clinic, there are a few patients who still over utilize the ED. An analysis of the rate of change showed 0.04 to 0.27 fewer ED visits per patient per month. This equals out to 158 fewer ED visits per month or 1896 less visits in 2015 at the PFH and PNH ED. Additionally, the data was scoured for “frequent flyers” or patients who show in the ED 5 or more times during a 12-month period, which showed that there were 38 fewer visits per month or 456 fewer visits in 2015 from this population post-contact with a partner clinic. Overall, these figures represent a 60.07 percent reduction in ED utilization by Sams Program eligible patients. It should be noted that this data

only accounts for data from two of three Sams Program sites. Figures from PHH were not included as their partner clinic (Hands of Hope) does not have Epic and thus matching records are not available.

### **Cost-avoidance analysis**

Determining the true cost-avoidance of the Sams Care Coordination program has proven difficult in the past, as there was not a standardized tool for measurement. Additionally, because the Sams program operates so differently than most care coordination programs, tools that worked for other programs were not applicable to Sams. Because cost avoidance is such a primary factor for Piedmont in funding the Sams Care program, a tool to measure this is needed. Each finance department at a Piedmont Hospital involved with Sams and PHC leadership worked together to create a standardized metric for measuring cost-avoidance. It should be noted that as FY16 finances have not yet been finalized, the analysis utilizes CY15 data. It should also be noted that Piedmont Newnan Finance Department had not yet utilized the formula at the time of this report, so comparing all three sites to each other is not completely possible until they do so. The cost avoidance analysis of the two available clinic/hospital relationships are below. A separate look at the costs avoided through the Coweta Samaritan Clinic and Piedmont Newnan Hospital is below as well, but it should be noted that the different methodology used to calculate this relationship reflects lesser outcomes than are likely accurate. This is because that analysis only accounts for new patients to CSC during CY15, not all clinic patients as the other two analyses include. Direct Cost Avoidance is related to the number of clinic patients that actually presented to the Piedmont Hospital emergency departments. We can estimate how many visits and admissions were avoided by looking the patient encounter data. Assumed Cost Avoidance is related to the number of clinics patients that have not presented to Piedmont Hospital emergency

departments in the last year. It was assumed that if the clinics were not in operation, these patients would have presented to the Piedmont Hospitals, as they the primary location for uncompensated care each county and surrounding counties, by using the same frequent flier and admission rates as the Direct Cost patients.

Table 5.6 Cost avoidance analysis for Hands of Hope and Piedmont Henry Hospital Sams Care Coordination partnership

<b>HofH; CY15 estimated benefit</b>	
Total # of Patients	727
# in PHH ED <i>in CY15</i>	38
# managed outside PHH ED <i>in CY15</i>	689
<b>Direct Cost Avoidance</b>	
# of Frequent Flier Patients	23
Average Visits per Patient	4
Avoidable Visits per Patient	3
# of Single Visit Patients	15
<b># of Avoidable ED Visits</b>	<b>45</b>
Cost per ED Visit	\$126.06
Avoided ED Costs	\$5,673
# of Single Visit Patients	15
HoH ED to IP Admission Rate	15.89%
<b># of Avoidable ED Admissions</b>	<b>2</b>
Cost per IP Admission	\$5,387.90
Avoidable IP Costs	\$10,776
<b>Assumed Cost Avoidance</b>	
# of non-PHH ED Patients	689
% frequent fliers	60.53%
Assumed # of Frequent Fliers	417
<b># of Avoidable ED Visits</b>	<b>1,251</b>
Cost per ED Visit	\$126.06
Avoided ED Costs	\$157,715
HoH ED Admission Rate	15.89%
<b># of Avoidable IP Admissions</b>	<b>109</b>
Cost per IP Admission	\$5,387.90
Avoidable IP Costs	\$589,799
<b>Total Avoided Cost</b>	<b>\$763,963</b>

Table 5.7 Cost avoidance analysis for Fayette C.A.R.E. Clinic and Piedmont Fayette Hospital Sams Care Coordination partnership

<b>FCC; CY15 estimated benefit</b>	
Total # of Patients	714
# in PFH ED <i>in CY15</i>	172
# managed outside PFH ED <i>in CY15</i>	542
<b>Direct Cost Avoidance</b>	
# of Frequent Flier Patients	68
Average Visits per Patient	2.8
Avoidable Visits per Patient	1.8
# of Single Visit Patients	104
<b># of Avoided ED Visits</b>	<b>190</b>
Cost per ED Visit	\$138.10
Avoided ED Costs	\$26,190
# of Single Visit Patients	104
FCC ED to IP Admission Rate	12.84%
<b># of Avoided ED Admissions</b>	<b>13</b>
Cost per IP Admission	\$5,938.26
Avoided IP Costs	\$77,197
<b>Assumed Cost Avoidance</b>	
# of non-ED FCC Patients	542
% frequent fliers	39.53%
Assumed # of Frequent Fliers	214
<b># of Avoided ED Visits</b>	<b>391</b>
Cost per ED Visit	\$138.10
Avoided ED Costs	\$53,962
FCC ED Admission Rate	12.84%
<b># of Avoided IP Admissions</b>	<b>70</b>
Cost per IP Admission	\$5,938.26
Avoided IP Costs	\$413,191
<b>Total Avoided Cost</b>	<b>\$570,540</b>

Table 5.8 Cost avoidance analysis for Coweta Samaritan Clinic and Piedmont Newnan Hospital Sams Care Coordination partnership

<b>CSC; CY15 estimated benefit</b>	
Total Patients Seen by CSC in <b>CY 2015</b>	556
Total New Patients in <b>CY 2015</b>	191
Total Pre-established Patients	365
Data Based on New Patients in <b>CY2015:</b>	
<b>ED Visits Prior to Initial clinic contact</b>	<b>321</b>
Number of Unique Patients	105
% of clinic patients w/ ED visits	55%
Average Visit per Patient	3.1
<b>ED Visits After Initial Clinic Contact</b>	<b>263</b>
Number of Unique Patients	89
% of Patients w/ Visits	47%
Average Visit per Patient	3.0
IP Admissions Prior to Initial	35
Number of Unique Patients	22
Admission per CSC Population	18%
IP Admissions After Initial	24
Number of Unique Patients	11
Admission per CSC Population	13%
<b>Assumed Annual ED Visit Reduction:</b>	
<b>Visit Reduction for Patients in Year 1 @ CSC</b>	<b>58</b>
Assumed ED Visit Reduction for Pre-existing CSC Patients	90
Total ED Visits Reduced	148
<b>Direct Cost per ED Visit</b>	<b>\$310.54</b>
<b>Avoided ED Costs</b>	<b>\$46,070</b>
<b>Assumed Annual IP Admission Reduction:</b>	
Admissions Reduction for Patients in Year 1 @ CSC	11
Assumed IP Admissions Reduction for Pre-existing CSC Patients	21
Total Admissions Reduced	32
<b>Direct Cost per ED Visit</b>	<b>\$5,078.22</b>
<b>Avoided IP Costs</b>	<b>\$162,609</b>
<b>Total Annual Benefit</b>	<b>\$208,679</b>

The above analysis shows a total cost avoidance of \$1,543,182.00 between the three clinic and hospital relationships. Again, it should be noted that the analysis for Coweta is almost definitely low, as it only includes new clinic patients who presented in the ED and an estimate for the number of assumed visits of pre-existing patients. It also did not account for the number of clinic patients who were managed outside the PNH ED in CY15. Also note this figure only

accounts for CY15, or Q3-4 of FY15 and Q1-2 of FY16 on Piedmont Healthcare's fiscal calendar. If it were assumed that figures for CY16 remained at a constant, which is reasonable based on year to date figures, there could be more than \$3,086,364 in avoided costs since program inception.

## **Chapter 6: Discussion and recommendations**

During the two and half year program period, Piedmont Healthcare has invested \$2,444,438.21 into the three partner locations. Roughly half of this amount (\$1,210,171.00) would have been spent regardless of the program in hospital services expenses, as the hospital has and will continue to provide free lab and diagnostic services to all partner clinic locations. This leaves \$1,234,267.21 in additional expenditures that Piedmont would not have spent on the clinics without the development and implementation of the Sams Care Coordination Program. According to Common Wealth Fund's 2014 evaluation of care coordination programs, the amount invested is relatively consistent with the program case studies examples discussed earlier, specifically in terms of staffing, social work and technological expenses. For example, the care coordination project in Camden, NJ handles 3-4 times the number of patients annually as the Sams program and its annual funding is equally proportionate.<sup>25</sup>

An estimated \$1.54 million in costs has been avoided through the program in both direct and assumed costs during 2015. If this cost avoidance figure is similar to what is expected for 2016, there would be \$3.1 million dollars in avoided costs from the Sams care program, providing a significantly positive margin for costs avoided versus dollars spent. This is likely a very low estimate, as the PNH/CSC relationship has been more successful than the analysis shows, as it didn't account for the total volume of clinic patients. Additionally, there has been a 2-5 percent decrease in total emergency department utilization at the three locations and nearly 2,000 visits avoided at PFH and PNH during 2015 alone in the Sams eligible patient population. If this figure could include PHH ED utilization, this number would likely double as the ED at PHH is the busiest in the system (and state) and the program at this partner clinic location has



seen the highest impact of the program in transitioning patients from the hospital to clinic as well as avoided costs. In comparison, the care coordination program in Boston saw a 13 percent reduction in ED visits by the 4,500 patients enrolled, which would equate to a 2-4 percent reduction in total ED visits.<sup>25</sup> Additionally, the Boston program concluded that \$2.65 was saved for every dollar spent on care coordination in this high need patient population.<sup>33</sup> Piedmont healthcare has been unable to equate a figure of this nature, but plans to determine in the future.

Overall, it is apparent that the program has had positive impacts on hospital utilization. To date, there have been greater total financial inputs into the program than costs avoided, but this is likely going to change to a positive cost margin once cost avoidance figures are determined for CY16. However, if hospital services costs are deducted, the program has shown a positive margin of costs avoided vs. expense invested. Based on this alone, the program shows success in the program's short term goals of reducing expenses and hospital utilization in this patient population. Long term goals of improving community and vulnerable populations health has not yet been evaluated, but should be once the program has operated for a significant period of time. In summation, this evaluation suggests that the program is worthwhile for all parties involved: Piedmont Healthcare Hospitals, local safety net clinic partners and the high-need, low-income patient population.

### **Promising practice recommendations**

The following promising practice recommendations and strategic planning strategies aim to make the Sams Care Coordination Program not only sustainable, but an even stronger asset to the communities it serves. The recommendations below are a culmination of ideas from

participating clinics views based on their current successes and failures as well as other comparable programs and a review of current literature.

There are three primary components to promising practices that may be beneficial for the Sams Care Coordination Program, with several recommendations included in each component. The three categories are: relationships and accountability, connectivity and patient support.<sup>37</sup> Each component correlates closely with the others, so it is important that all three areas are effective to ensure the others' success.

### **Promising practice #1: Relationships and accountability**

The leading recommendation for promising practice involves relationships and accountability.<sup>2,37</sup> Currently, there is not a written agreement between the hospitals and clinics regarding the Sams Care Coordination Program that establishes expectations. This written agreement is key, in addition to building strong interpersonal relationships between leadership at the clinics and hospitals. The combination of written expectations and interpersonal relationships will help set the stage for building value of the program<sup>37</sup> to Piedmont leadership. This is important because funding is only established through the end of fiscal year 2017 and the program needs to be at its strongest to build a case for funding, whether from Piedmont Healthcare or external sources. Based on success in other care coordination programs, this report recommends that clinics report quarterly to the hospitals on cost avoidance and hospital utilization of clinic patients.<sup>6,32,33</sup> These reports can ultimately demonstrate worth of the program to Piedmont leadership, with the hope of securing funding for the future of the program. Additionally, all clinics should use the new financial impact formula for cost avoidance that the finance departments at PHC, PFH, PHH and PNH agreed upon, which was discussed previously.

By utilizing a streamlined formula for reporting, the clinics and hospitals are able to fairly assess program success and effectiveness. In the past, each clinic and hospital has had a different way of reporting costs and cost avoidance, which makes comparison from site to site nearly impossible. If clinics also wish to report on improvements in health outcomes, they may do so. However, this component should not be required at this time, as the primary goals of Sams Care are economic in nature. If the hospital were to monitor health outcomes, it could be seen as overstepping boundaries in the delivery of quality care.<sup>37</sup> As valued partners in healthcare, Piedmont trusts that clinics are delivering excellent care to their patients.

### **Promising practice #2: Connectivity**

In addition to building value, establishing accountability will improve data availability, coordination, utilization and diffusion of information.<sup>37</sup> Not only does improved communication through shared medical records reduce duplication of testing, it can also be used to identify “frequent flyers” in the emergency department, or those who visit the ED five or more times a year.<sup>2,24,33</sup> Once identified, Epic can create an automated report to notify clinics of patients to follow up with for care. A system similar to this was created early on in the Sams Care Program, but failed. At the time, Epic was still new to Piedmont and required a learning curve. Now that employees are accustomed to the Epic system and have better working relationships with partner clinics, this system should be more successful. As the discharging institution, the hospital is responsible for notifying clinic of ED visits for uninsured “frequent flyers” who have a chronic disease, as well as ED and in-patient visits of current clinic patients. The clinics should be responsible for following up with patients and referrals, ideally within 24 to 48 hours of the ED visit, but no later than one week following ED visit. It should be noted that a notification system

might be different at PNH than PHH and PFH due to patient privacy regulations. This is because the social worker for the clinic in Coweta is also a Piedmont employee, but the social workers at the other clinics are not.

As discussed above, connectivity and sharing of information is critical to improving and sustaining a successful care coordination program. Ideally, all clinic partners would have access to Epic (EMR) in house and be able to utilize its capabilities. Currently two of three clinics have full use of Epic, while the third location only has read-only access. The third location is not scheduled to receive full access and will need to continue with alternate communication processes. In the future, it may be appropriate to discuss the possibility of clinics taking responsibility for the maintenance of the Epic renewal licenses. This would not be an extraordinary burden to clinics financially, but demonstrates the clinics' investment and value placed on the tool.<sup>37</sup> Additionally, this would be one less item for the hospital to approve funding for and could entice the hospital to give in other areas that would benefit the clinic.

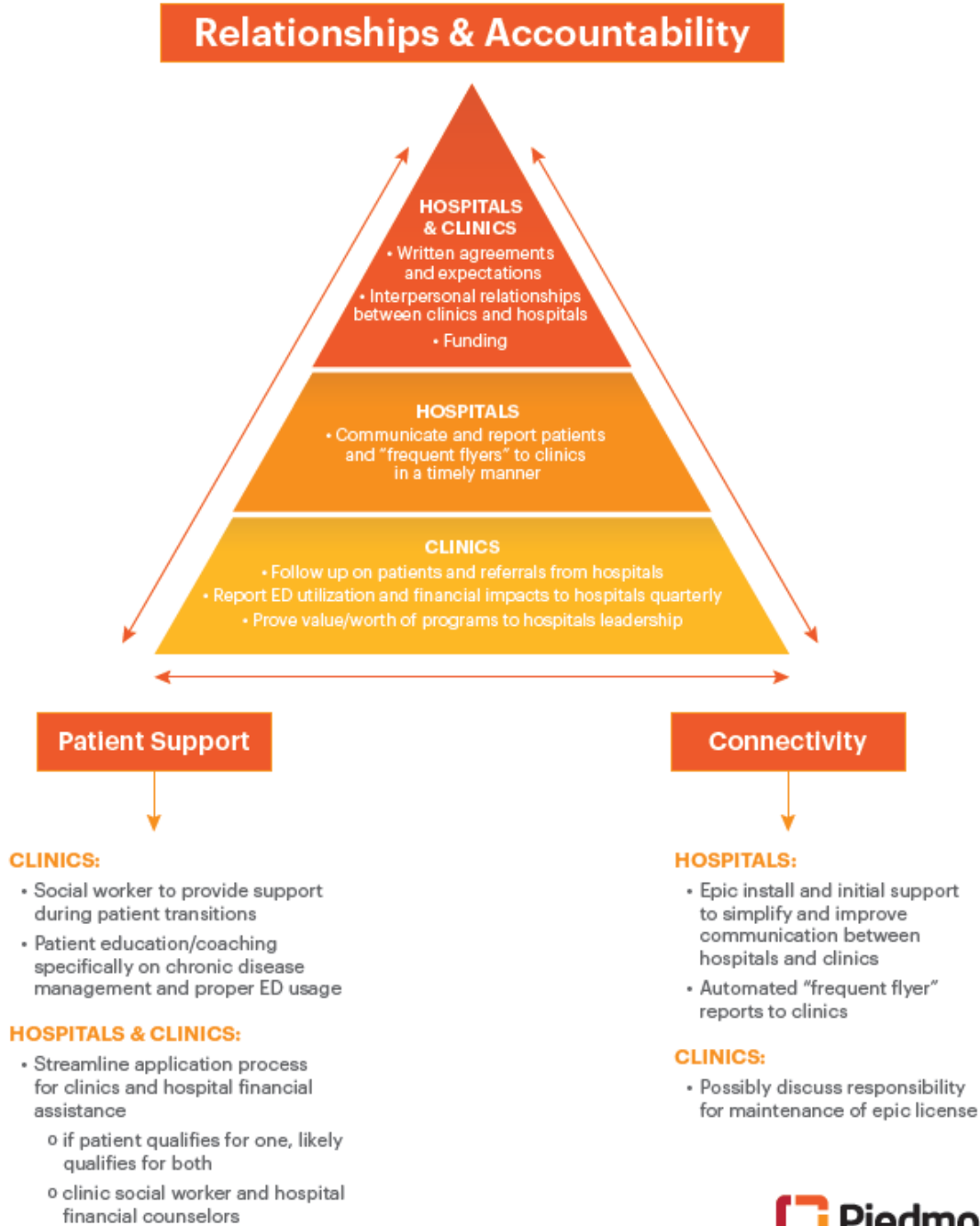
### **Promising practice #3: Patient support**

The third area of recommendation for best practice surrounds patient support. Ultimately, this component is handled by the clinic's social worker, with support from the hospital.<sup>25,37</sup> The social worker should continue to provide support to patients during their transition to the clinic through active coordination. Currently, the social workers and clinics provide limited coaching and education to patients in areas like diabetes management and proper utilization of the emergency department. This is an area that has a large opportunity for growth and can be supported by the hospital through the provision of educational materials. In addition to education, patients could benefit from additional support in the financial assistance application

process, as many have significant difficulty navigating this barrier to care. Currently, patients have to go through multiple application processes to receive care at the clinics and hospitals. The hospital recently simplified its financial assistance policy and it now more closely aligns with requirements to receive care at the charitable clinics. There is an opportunity for the hospitals and clinics to consider streamlining the patient application process. Because the application process for both facilities are cumbersome and require many of the same components, it would be ideal to apply for both simultaneously. This process could take place in the clinics with support from financial assistance counselors at hospital.

Figure 6.1

# PROMISING PRACTICES FOR SAMS CARE COORDINATION PROGRAM



05522-0818

## **Future of the program**

Currently, Piedmont has agreed to maintain the current funding structure through the end of FY17, or June 2017. This means that Piedmont will continue to fund expanded staffing positions, and maintain Epic at Fayette C.A.R.E. and Coweta Samaritan. However, funding past this date has yet to be determined. This will directly cost Piedmont between \$400,000 and \$500,000 over the next 12 months. In addition to this direct funding, Piedmont will provide an additional \$250,000 to \$500,000 for hospital services. Once this fiscal year is over, the Piedmont Healthcare Foundation will no longer be utilized for program funding. However, now that measurable program outcomes have been established through hospital utilization and cost avoidance data, the program should be more successful in sustaining external or local hospital funding than prior to this report.

There are several options available to sustain funding in various formats. First, it is possible that Piedmont could choose to continue funding the Sams Program, as it does benefit the hospital. This could be done either from a system standpoint or at a local hospital level. It would be necessary for the clinics to provide reports demonstrating value of services rendered and uncompensated care costs saved by the hospital, as well as creating and maintaining strong relationships with hospital leadership and staff. If handled at a local level, each hospital would have the discretion of funding the Sams program. This could mean significant changes in the amounts funded to each clinic, as well as the possibility of hospitals choosing to discontinue funding at any or all program locations. In the past, receiving grant funding for the Sams Program has been tricky. Because Piedmont has been the lead convener of Sams to date, it has submitted proposals for grants. The challenge is that many grant sources see Piedmont as a large and well-funded entity capable of supporting its own programs. What these grantors do not see is

the multitude of other community benefits Piedmont provides and that there is not an endless fund for maintaining community programs. However, if the clinics sought grants independent of Piedmont, they could continue and grow the work that they are currently doing. This would likely mean that each clinic would be responsible for securing its own grants. To share funding across the clinics, the Sams Program would need to be established as its own non-profit (501c3) and apply for grants under this joint name, without Piedmont's involvement. At this time, the clinics are not interested in establishing Sams as its own non-profit. If the hospitals do not continue funding and the clinics do not wish to seek grant funding, there is the possibility of terminating the program. Terminating the program would mean a loss of the employees added through the Sams Program, meaning that low-acuity ED visits and uncompensated care costs at the hospitals will likely return to their previous states. Though the clinics would potentially lose staff if the program folds, they would continue having access to Epic and receiving hospital services at no cost.

Based on a review of other current programs and literature, the evaluator has determined that a combination of two of the above options is the best opportunity to sustain Sams Care Coordination funding. Clinics applying for their own grants in conjunction with the clinics building value with their local hospitals would be an appropriate solution to ongoing funding needs.<sup>19</sup> This would reduce some of the burden for local hospitals to fund the program, as well as show the clinics' commitment to making the program successful. With reduced funding from Piedmont, the hospitals would see an improved return on investment because they would be investing less and still seeing the same reductions in hospital utilization. The downside to this approach is that it would further segregate the program model, which would essentially be



operating differently at each location, even more so than it currently is and provides the local hospital the opportunity to discontinue funding their partner clinic at any time.

### **Barriers and limitations**

Barriers to the Sams Care Coordination Program largely center on building resources for the program, including sustaining funding past July of 2017. Program stakeholders will need to create a plan to execute fundraising goals outside of Piedmont Healthcare, in addition to building program value with hospital leadership in hopes of continued program funding from the system or local hospitals. There are four separate organizations working toward a shared goal, though this shared goal is expressed differently in each community and local issues can significantly impact the program. The program could be damaged by poor relationships between hospital and clinic leadership, as well as external community issues impacting the hospital or clinics. Additionally, the program evaluation is limited by the availability of data on health outcomes. Though the clinics say they have seen improvement in chronic disease management and overall health, this information has not been quantified. Since Piedmont's goals are primarily economic in nature, it could be seen as overstepping boundaries of care to require health outcomes be reported. Also, due to patient privacy regulations, patients were not surveyed to measure health behaviors, disease management or patient satisfaction. In the future, these variables could be measured using standardized measures such as the Health Assessment Questionnaire (HAQ), Patient Health Questionnaire (PHQ-9), questions from the CDC's Behavioral Risk Factor Surveillance System (BRFSS), or Health-Related Quality of Life (HRQOL-14). Future evaluations could also include a more in-depth look at return on investments (ROI) and cost-effectiveness studies.

## References

1. Why Is Access to Care Important to Health? County Health Rankings 2016. <http://www.countyhealthrankings.org/our-approach/health-factors/access-care>. Accessed May 20, 2016.
2. Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies. Agency for Healthcare Research and Quality. June 2007. <http://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/evidence-based-reports/caregap.pdf>. Accessed July 25, 2016.
3. Keiman JS. 2015's Rates of Uninsured by State Before & After Obamacare. <https://wallethub.com/edu/rates-of-uninsured-by-state-before-after-obamacare/4800/>. Accessed July 12, 2016.
4. Wilper A, et al. A national study of chronic disease prevalence and access to care in uninsured U.S. adults. *Ann Intern Med* 2008; 149:170-76.
5. Kangovi S, Barg FK, Carter T, Long JA, Shannon R, Grande D. Understanding Why Patients Of Low Socioeconomic Status Prefer Hospitals Over Ambulatory Care. *Health Affairs*. 2013;32(7):1196-203. <http://www.ncbi.nlm.nih.gov/pubmed/23836734>. Accessed June 22, 2016.
6. Birs A, Liu X, Nash B, et al. Medical Care in a Free Clinic: A Comprehensive Evaluation of Patient Experience, Incentives, and Barriers to Optimal Medical Care with Consideration of a Facility Fee. *Cureus*. 2016;8(2):500. <http://www.ncbi.nlm.nih.gov/pubmed/27014534>. Accessed June 15, 2016.
7. CDC Health Disparities and Inequalities Report — United States, 2013. Centers for Disease Control Weekly Morbidity and Mortality Report. 2013;62(3). <http://www.cdc.gov/mmwr/pdf/other/su6203.pdf>. Accessed May 12, 2016.
8. Gawande A. The Hot Spotters. *The New Yorker*. January 24, 2011. <http://www.newyorker.com/magazine/2011/01/24/the-hot-spotters>. Accessed May 3, 2016.
9. Weiner S. I Can't Afford That!: Dilemmas in the Care of the Uninsured and Underinsured. *J Gen Intern Med*. 2001; 16(6): 412–418. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1495228/>. Accessed July 9, 2016.
10. Deaton A. Health, Income, and Inequality, NBER Reporter: Research Summary Spring 2003. The National Bureau of Economic Research. <http://www.nber.org/reporter/spring03/health.html>. Accessed June 1, 2016.
11. Clare F. Current Issues in Access to Healthcare. *Medscape for Public Health*. January 27, 2004. <http://www.medscape.org/viewarticle/466706>. Accessed June 15, 2016.
12. Hillestad R, Bigelow J, Bower A, Girosi F, Meili R, Scoville R, Taylor R. Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, And Costs. *Health Affairs*. 2005; 24(5). <http://content.healthaffairs.org/content/24/5/1103.full>. Accessed June 15, 2016.
13. Bindman AB, Grumbach K, Osmond D, Komaromy M, Vranizan K, Lurie N, Billings J, Stewart A. Preventable Hospitalizations and Access to Health Care. *Journal of the American Medical Association*. 1995;274(4):305-311. <http://jama.jamanetwork.com/article.aspx?articleid=389289>. Accessed June 15, 2016.
14. Ayanian JZ1, Weissman JS, Schneider EC, Ginsburg JA, Zaslavsky AM. Unmet health needs of uninsured adults in the United States. *Journal of the American Medical Association*. 2000;284(16):2061-9. <https://www.ncbi.nlm.nih.gov/pubmed/11042754>. Accessed June 15, 2016.
15. McBride T. Uninsured Spells of the Poor: Prevalence and Duration. *Healthcare Finance Review*. 1997;19(1): 145–160. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4194493/>. Accessed June 15, 2016.
16. The Georgia Healthcare Landscape, 2014. <http://kff.org/health-reform/fact-sheet/the-georgia-health-care-landscape/>. Accessed June 14, 2016.
17. Wald JS, Novak LL, Simpson CL, Slagle JM, Banger AK, Peterson NB. Health IT-Enabled Care Coordination and Redesign in Tennessee. Agency for Healthcare Research and Quality. June 2015. <https://healthit.ahrq.gov/sites/default/files/docs/citation/hit-enabled-care-coordination-and-redesign-in-tn-final-report.pdf>. Accessed June 15, 2016.
18. Benefits of EHRs: Improved Care Coordination. HealthIT.gov. <https://www.healthit.gov/providers-professionals/improved-care-coordination>. Accessed June 15, 2016.
19. Health Information Exchange (HIE): Benefits. HealthIT.gov. <https://www.healthit.gov/providers-professionals/health-information-exchange/hie-benefits>. Accessed June 15, 2016.
20. Benefits of EHRs: Medical Practice Efficiencies and Cost Savings. HealthIT.gov. <https://www.healthit.gov/providers-professionals/medical-practice-efficiencies-cost-savings>. Accessed June 15, 2016.
21. Section 7: Measuring Value in a Care Management Program. Content last updated October 2014. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/professionals/systems/long-term-care/resources/hcbs/medicaidmgmt/medicaidmgmt7.html>

22. <http://www.ahrq.gov/professionals/prevention-chronic-care/improve/coordination/atlas2014/chapter3.html>
23. Chapter 3. Care Coordination Measurement Framework. Content last updated June 2014. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/professionals/prevention-chronic-care/improve/coordination/atlas2014/chapter3.html>
24. Effective Care Coordination: Coordinating Care for Adults with Multiple Chronic Illnesses, Searching for the Holy Grail. National Health Policy Forum. 2009. [http://www.nhpf.org/library/handouts/Brown.slides\\_03-27-09.pdf](http://www.nhpf.org/library/handouts/Brown.slides_03-27-09.pdf). Accessed June 15, 2016.
25. Hong CS, Siegel AL, Ferris TG. Caring for High-Need, High-Cost Patients: Makes for a Successful Care Management Program? Commonwealth fund. August 2014. [http://www.commonwealthfund.org/~media/files/publications/issue-brief/2014/aug/1764\\_hong\\_caring\\_for\\_high\\_need\\_high\\_cost\\_patients\\_ccm\\_ib.pdf](http://www.commonwealthfund.org/~media/files/publications/issue-brief/2014/aug/1764_hong_caring_for_high_need_high_cost_patients_ccm_ib.pdf). Accessed June 9, 2016.
26. Healthcare Hotspotting. A project of the Camden Coalition of Healthcare Providers. <http://hotspotting.camdenhealth.org/care-interventions-101/>. Accessed July 12, 2016.
27. Miller, Rollnick. Chapter 3-Motivational Interviewing as a Counseling Style. Enhancing Motivation for Change in Substance Abuse Treatment. 1991. <http://www.ncbi.nlm.nih.gov/books/NBK64964/>. Accessed June 15, 2016.
28. Trauma-Informed Approach and Trauma-Specific Interventions. 2015 <http://www.samhsa.gov/nctic/trauma-interventions>. Accessed June 15, 2016.
29. Nicholson Foundation. <https://thenicholsonfoundation.org/>. Accessed June 15, 2016.
30. Bristol Myers Squibb Foundation. <http://www.bms.com/responsibility/grantsandgiving/Pages/default.aspx>. Accessed June 15, 2016.
31. Centers for Medicare and Medicaid Services. <https://www.cms.gov/>. Accessed June 15, 2016.
32. Khemlani A. Camden Coalition gets \$8.7M to establish national center. NJBiz. March 8,2016. <http://www.njbiz.com/article/20160308/NJBIZ01/160309783/camden-coalition-gets-87m-to-establish-national-center>. Accessed July 15, 2016.
33. Fact Sheet-Phase One: MGH Medicare Demonstration Project for High-Cost Beneficiaries. Massachusetts General Hospital. 2010. [http://www.massgeneral.org/News/assets/pdf/CMS\\_project\\_phase1FactSheet.pdf](http://www.massgeneral.org/News/assets/pdf/CMS_project_phase1FactSheet.pdf). Accessed July 12, 2016.
34. Piedmont Healthcare. 2010 Community Health Needs Assessment. Atlanta, GA: Piedmont Healthcare, 2010.
35. Community Health Status Indicators (CHSI 2015). The Centers for Disease Control and Prevention. <http://wwwn.cdc.gov/communityhealth>. Accessed July 7, 2016.
36. Introduction to Program Evaluation for Public Health Programs: A Self-Study Guide. Centers for Disease Control. 2012. <http://www.cdc.gov/eval/guide/introduction/index.htm>. Accessed June 15, 2016.
37. Sugarman JR, Phillips KE, Wagner EH, Coleman k, Abrams MK. The Safety Net Medical Home Initiative: Transforming Care for Vulnerable Populations. Medical Care Journal of the American Public Health Association.[http://journals.lww.com/lwwmedicalcare/Fulltext/2014/11001/The\\_Safety\\_Net\\_Medical\\_Home\\_Initiative\\_3.aspx](http://journals.lww.com/lwwmedicalcare/Fulltext/2014/11001/The_Safety_Net_Medical_Home_Initiative_3.aspx). Accessed May 15, 2016.
38. US Census Bureau, American Community Survey 5-Year Dataset. [www.census.gov](http://www.census.gov). Accessed May 25, 2016.