Identifying Community and Organizational Need for a Congestive Heart Failure Clinic at Orange Regional Medical Center

SUNY Cortland

**The Problem**

Congestive heart failure occurs as a result of the heart not being able to pump blood throughout the body as effectively as possible (Mayo Foundation for Medical Education and Research, 2016). With heart disease as the number one cause of death in America, as reported by the Centers for Disease Control (CDC) in 2014, there is also an extremely high rate of congestive heart failure (CHF). While it doesn’t always lead to CHF, the most common type of heart disease is coronary artery disease—a condition where there is a plaque buildup, consisting of cholesterol deposits, within the walls of the coronary arteries (Centers for Disease Control and Prevention, 2015). With the narrowing of the coronary arteries, blood flow throughout the heart and body becomes increasingly difficult, resulting in severe weakening of the heart muscle, ultimately leading to fluid buildup that is CHF (Centers for Disease Control and Prevention, 2015). This fluid buildup consists of water and salt retention—the body’s way of response to poor circulation, as the retention of ions allow for a higher concentration of blood to be in the bloodstream (Moore, 2014). Excess water and salt can build up in the lungs, which results in difficulty breathing, or fluid retention in the abdomen, lower extremities, or other vital organs. Fluid can be removed with a diuretic (water pills) or other medication prescribed by a cardiologist (National Institutes of Health, 2014). Use of diuretics for fluid removal is most successful when a patient’s blood pressure, weight, pulse, and heart rate are consistently being monitored by a health professional, as it is a method that allows a patient to maintain blood pressure on a daily basis, and therefore works to prevent any serious damage should symptoms be caught early.

The most pressing issue concerning CHF is that most cases are chronic, long-term cases, and the only cure currently available is to have patients undergo a heart transplant (Centers for Disease Control and Prevention, 2015). Although this cure exists, it is inaccessible in the vast majority of cases, as it is exceedingly difficult to acquire a viable heart for transplant. Patients with CHF must manage the chronic condition very carefully on a day-to-day basis to ensure the disease does not progress. Programs designed to educate patients on the lifestyle changes necessary to maintain their health (such as diet management, medication management, and physical exercise) are essential to inhibiting the progression of this chronic disease, because they have such a great impact on the health of the patient’s heart. Regular exercise can increase exercise tolerance, as well as decrease risks such as dyspnea and arrhythmias (Chung and Schulze, 2011) and limiting sodium intake can lower a patient’s blood pressure (Centers for Disease Control and Prevention, 2016).

Orange Regional Medical Center (ORMC) is one of two hospitals that make up the Greater Hudson Valley Health System. Built in 2012, the hospital was constructed to combine two healthcare facilities, Arden Hill Hospital and Horton Medical Center. Since this consolidation ORMC has grown to have a significant presence in the healthcare market for the Mid-Hudson Region of New York. ORMC is located in Middletown, and its sister hospital CRMC is located in Harris, which is in Sullivan County. Orange County residents, as well as New Yorkers living in the Hudson Valley area as a whole, are greatly impacted by heart disease. For each year from 2004 to 2013, the CDC reported that age-adjusted rates for hospitalizations due to heart failure have been consistently higher in Orange County than the New York State average (New York State Department of Health, 2016b). Further data shown in the table below depicts county data from the New York State Department of Health (NYSDOH) and Orange Regional Medical Center.

Figure 1

*CHF discharges in Orange County vs. Greater Hudson Valley Health System, 2014*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Area |  |
| Number of Discharges | Orange County | Greater Hudson Valley Health System | |
| 1,116 (i) | 713 (ii) | |
|  |  | Orange Regional Medical Center | Catskill Regional Medical Center |
| 592 (ii) | 121(ii) |

(i) New York State Department of Health. (2016b). *Congestive heart failure hospitalization rate per 10,000*.

(ii) Sg2. (2015). *Strategic plan cardiology playbook.*

As shown in the table, just over 60% of discharges for CHF in Orange County came from the Greater Hudson Valley Health System (GHVHS); the majority of those discharges coming from ORMC. While the NYSDOH reports Orange County as having the second highest number of CHF discharges for 2014, behind Westchester County, Orange has the highest rate of discharges when rates are adjusted for population (NYSDOH, 2016b). Other factors that call attention to cardiac health among the population in Orange County include: heart attack hospitalization rates (19.3 and 14.8 per 100,000 residents in Orange County and NYS, respectively), hypertension emergency department visit rates (916.9 vs 896.6 per 10,000), as well as mortality rate due to CHF, recorded as 14.5 in Orange County and 12.0 in NYS per 100,000 (New York State Department of Health, 2016a).

A significant issue among patients with heart failure is the fragility of their state. When the disease is not managed correctly, this fragility can have negative impacts on those diagnoses as well as health facilities. For example, quality of life has been known to decrease among CHF patients; as comorbidities amass depression becomes more likely and they perceive their functional status to be lower (Coelho, Ramos, Prata, Bettencourt, Ferreira, & Cerqueira-Gomes, 2005). Such comorbidities can consist of fluid build-up in the lungs, negative effects on the kidneys, and leakage among the heart valves (University of Pittsburgh Medical Center, 2016). As for health facilities like hospitals, having a significant number of patients who are constantly in poor health and being readmitted to the inpatient floors has a negative effect on reimbursement rates, so the facility is spending money to care for this population of patients yet receiving no economic return.

**The Intervention**

Changes in reimbursement requirements by the Centers for Medicare and Medicaid Services (CMS) have targeted hospital readmissions. The Affordable Care Act and Hospital Readmissions Reduction Program require CMS to give lower reimbursements to hospitals that have higher readmission rates (Centers for Medicare and Medicaid Services, 2016). Information generated at ORMC for strategic planning purposes identified 30-day readmission rates for the hospital as being at or near market median for the region, leaving significant room for improvement in this area (Sg2, 2015). Further strategic planning data expressed that cardiovascular readmissions occurred primarily in Orange County; with 174 of the 432 readmits being for CHF (Sg2, 2015). With readmission among CHF patients being consistently high throughout the state and Orange County, Orange Regional Medical Center (ORMC) is taking action to lower readmission rates, and ensure steps are being taken to earn back funds that are not being reimbursed by CMS, while also improve quality of life among CHF patients.

As a major health care facility in the Hudson Valley region, ORMC has the opportunity to continue to grow and make an even larger impact on the population. Due to pressure from CMS, and disparities concerning heart failure throughout the community, there has been an interest among leadership in the cardiovascular department to create an outpatient clinic for CHF patients. The creation of an entire facility of health care professionals dedicated to CHF management will allow patients who attend the clinic to be encompassed in a culture of wellness, and improve the state of their health and quality of life. Patients will be able to contact nurses and monitor their health with telemonitoring scales in their homes that have the ability to send data to the clinic, where they will be reviewed by the nurses daily. When a patient wishes to be seen in person, the outpatient CHF clinic at ORMC will allow him or her to be seen by Certified Heart Failure Nurses (CHFN), pharmacists, and even a cardiologist when needed, all without having to be formally admitted into the hospital. Ideally, this aspect will allow CHF patients to maintain a healthy lifestyle, decrease readmission rates, and increase reimbursement rates.

As an administrative intern, I am going to be involved researching for the business plan. Key departments involved in this process are project planning, cardiology, and administration, and having the opportunity to work with a mixture of clinical and administrative professionals will provide me with a well-rounded experience of what it’s truly like to work within the hospital setting. Creating an entirely new program for a health care facility is a very large project to undertake, and requires extensive research and data analysis in order to create a functional clinic that is beneficial to the community and the hospital. As a result, I believe the stature of this intervention will provide me with one of the most beneficial experiences I could receive while interning and becoming a young professional in the world of health care.

Due to the fact that there is no one set technique identifying how to initiate change within a patient, this intervention is relevant to a combination of theories and models, such as the Health Belief Model, Theory of Planned Behavior, and Social Cognitive Theory.

**Social Cognitive Theory.** The intervention relates to the Social Cognitive Theory in that patients are faced with the task of acquiring the behavioral capability, or knowledge, of CHF and lifestyle management. This construct explains that patients are often predisposed to be unwilling to seek out information about CHF because of expected outcomes, or low self-efficacy. In order to motivate patients to change health behaviors for the better, health care professionals at the CHF clinic must educate patients on self-management, medication management, and dietary changes so they are more confident in their knowledge. When patients have increased confidence, or self-efficacy, they are more likely to initiate change in their life and set higher goals (Stacey, 2016).

**Health Belief Model.** The development of the CHF outpatient clinic addresses a component of the Social Cognitive Theory that revolves around perceptions. The *Rivier Academic Journal* identifies perceptions regarding health decisions as “screening behaviors” because the patient uses them to weight the options of engaging in the behavior (Stacey, 2016). These perceptions could consist of possible benefits, obstacles, or harms the patient could experience by engaging in the health behavior. For example, a patient with CHF may recognize the benefits of engaging in regular physical activity to decrease risks for dyspnea and arrhythmia, however, the patient may not engage in such physical activity because he or she also identifies lack of transportation to get to the gym, and fear of injury or hospitalization as obstacles and threats.

**Theory of Planned Behavior.** Theory of Planned behavior focuses on intention and whether or not the patient is fully ready to commit to the behavior change (Stacey, 2016). A reinforcing construct of the theory is that of social norms. While many patients may believe they are ready to change their lifestyle for the better, they are also very likely to give in to the encompassing culture of what is considered to be normal or accepted. The intervention will likely face the most difficulty when trying to combat social norms associated with diet; altering perceptions patients have about substituting high sodium, processed foods, for healthy and nutrient dense choices. Convincing patients to forego consuming a salt-filled diet, and instead opt for a nutrient dense, plant-based diet will be a constant obstacle for clinicians throughout the entire disease management process.

Since CHF is a chronic condition that plagues about 5.7 million Americans (Centers for Disease Control and Prevention, 2016) there have been different approaches to developing treatment plans. Each approach is an example of an evidence-based intervention and consists of: nurse-led, home-based, primary care provider, telemonitoring, and a multidisciplinary model (Stacey, 2016). The intervention chosen by ORMC is an example of the multidisciplinary model. Literature dissecting each of the models has reported indisputable evidence that supports the development of hospital outpatient clinics due to the comprehensive data the clinicians are able to obtain, education patients receive, and constant monitoring of patient health status (Stacey, 2016). The multidisciplinary model uses telemonitoring so the patient can be monitored by nurses from the comfort of their own home, yet they have the option to be seen in the outpatient facility if needed. Another crucial aspect that allows the outpatient multidisciplinary model to be successful is the ability of the nurses to thoroughly educate their patients, and create a level of comfort with them (Stacey, 2016). The hospital will use nurse practitioners to allow patients to receive high quality care at a lower expense than a physician-led clinic would cost, although there will always be one cardiologist at the clinic, or on call.

**Data Collection**

In order to support the business proposal of creating a CHF outpatient clinic at Orange Regional Medical Center, a great deal of data must be provided. The creation of a new hospital service must be proposed to both, the executive administrators, as well as the board executives. Approval by the board of executives will be the deciding factor regarding the creation of the CHF clinic. A great deal of data collected will have to do with the patient population in the community of Orange County and the Greater Hudson Valley in general. By using Epic (the electronic medical record system used at ORMC), and Strata Health Solutions (software used to analyze data and generate reports from information supplied from Epic) it will be possible to determine the amount of CHF-associated discharges and readmissions at the hospital during 2015, and for 2016 through November. This data will show the community’s need for this intervention. All of the information used will be quantitative, and information will be displayed using tables so findings can be easily recognized and understood.

For the hospital, this information will provide answers to important operational questions that must be determined, such as the projected size and location of the facility, cost, and the amount of revenue this new service will generate, as well as how many full-time employees will be needed. Developing a strategic plan for the operational and financial components will be crucial when resenting the proposal to the board of directors, as they oversee all of the decisions that have to do with the organization’s strategic planning (Arnwine, 2002).

In order to support the proposal of creating a new service line within the cardiology department of ORMC, hospital data concerning CHF-associated diagnosis-related groups (DRGs) was generated through Strata Health Solutions. Information regarding discharges, length of stay, payor group, cost, and readmissions was pulled for DRGs 291, 292, and 293. This grouping of DRGs makes up the triad for heart failure and shock, and consists of about five percent of total Medicare inpatient discharges nationwide (Healthcare Financial Management Association, 2010).

Figure 2

*MS-DRG heart failure and shock triad*

|  |  |
| --- | --- |
| DRG | Classification Components |
| 291 | Heart failure & shock with major comorbidities & complications |
| 292 | Heart failure & shock with comorbidities & complications |
| 293 | Heart failure & shock without comorbidities & complications |

Centers for Medicare and Medicaid Services. (2008). *List of diagnosis related groups (DRGS), FY2008*. Retrieved from https://cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareFeeforSvcPartsAB/downloads/DRGdesc08.pdf

Healthcare Financial Management Association. (2010). *National average costs by department for heart failure and shock*. Retrieved from https://ahd.com/HFM-DataTrends\_MAR10.pdf

The heat map above displays the criteria that classify a medical diagnosis to each DRG number. The colors red, yellow, and green depict the weight of each DRG according to CMS; red having the most weight, followed by yellow, and then green with the least of the three (Healthcare Financial Management Association, 2010). These weights are assigned in correspondence to cost variation, so more costly conditions are assigned a higher weight (US Department of Health and Human Services, 2001).

**Results and Analysis**

The following tables and graphs depict quantitative information collected through the use of Strata Health Solutions.

Figure 3

*Inpatient cases and average length of stay (ALOS) by DRG*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **FY2015** | | |  | **YTD Nov FY2016** | | |  | **YTD Nov Annualized** | | |
|  |  |  | **Cases** | **Patient Count** | **ALOS** |  | **Cases** | **Patient Count** | **ALOS** |  | **Cases** | **Patient Count** | **ALOS** |
| **Catskill Regional Medical Center** | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 291 | 59 | 50 | 5.78 |  | 58 | 49 | 5.34 |  | 64 | 53 | 5.34 |
|  |  | 292 | 67 | 58 | 4.84 |  | 60 | 52 | 4.55 |  | 73 | 57 | 4.55 |
|  |  | 293 | 22 | 20 | 2.50 |  | 15 | 14 | 2.80 |  | 24 | 15 | 2.80 |
|  | **Total CRMC** |  | **148** | **117** | **4.86** |  | **133** | **103** | **4.70** |  | **161** | **125** | **4.70** |
|  | | |  |  |  |  |  |  |  |  |  |  |  |
| **Orange Regional Medical Center** | | |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 291 | 296 | 255 | 5.90 |  | 286 | 237 | 6.36 |  | 323 | 259 | 6.36 |
|  |  | 292 | 226 | 191 | 4.66 |  | 223 | 187 | 4.32 |  | 247 | 204 | 4.32 |
|  |  | 293 | 76 | 72 | 3.70 |  | 68 | 63 | 3.28 |  | 83 | 69 | 3.28 |
|  | **Total ORMC** |  | **598** | **470** | **5.15** |  | **577** | **441** | **5.21** |  | **652** | **531** | **5.21** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total GHVHS** | |  | **746** | **579** | **5.10** |  | **710** | **537** | **5.11** |  | **814** | **657** | **5.11** |

Figure 3 shows inpatient cases and average length of stay for each case by DRG. Patient count is added to this to represent the unique number of patients. Cases are the number of discharges. For example, in 2015, 579 people made up 746 of the discharges for these DRGs in the Greater Hudson Valley Health System (GHVHS) as a whole. When annualized, it is apparent that number of cases (discharges) for 2016 from January through November is higher than that of fiscal year 2015 for ORMC. This is also true for the sister hospital, CRMC. Throughout the health system, DRG 291 has the highest average length of stay (ALOS). The highest average length of stay recorded being for the YTD through November for fiscal year 2016 at 6.36 days.

Figure 4

*ORMC financial class for heart failure DRGs*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | FY2015 | |  | YTD Nov FY2016 | |  | YTD Nov Annualized | |
|  |  | **Cases** | **ALOS** |  | **Cases** | **ALOS** |  | **Cases** | **ALOS** |
|  | Blue Cross | 21 | 3.38 |  | 23 | 5.70 |  | 23 | 5.70 |
|  | Comm / HMO | 37 | 4.57 |  | 29 | 5.17 |  | 40 | 5.17 |
|  | Medicaid | 11 | 4.55 |  | 10 | 4.80 |  | 12 | 4.80 |
|  | Medicaid HMO | 14 | 3.50 |  | 22 | 3.32 |  | 15 | 3.32 |
|  | Medicare | 450 | 5.30 |  | 422 | 5.28 |  | 491 | 5.28 |
|  | Medicare HMO | 61 | 5.66 |  | 70 | 5.33 |  | 67 | 5.33 |
|  | Self Pay | 4 | 3.50 |  | 0 | 0.00 |  | 4 | 0.00 |
|  | Other | 0 | 0.00 |  | 1 | 3.00 |  | 0 | 3.00 |
| **Total ORMC** |  | **598** | **5.15** |  | **577** | **5.21** |  | **652** | **5.21** |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

Information depicted in Figure 4 shows a breakdown of insurance coverage used for each case at ORMC for heart failure DRGs during FY 2015, and YTD 2016 through November. In 2015 and the eleven months represented of 2016, the majority of cases discharged are Medicare patients.

Figure 5

*ORMC inpatient cases and ALOS of readmissions for DRGs 291—293*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **FY2015** | |  | **YTD Nov FY2016** | |
| **Readmit Flag** | **Cases** | **ALOS** |  | **Cases** | **ALOS** |
|  | | | | |  |  |
| N | 435 | 4.92 |  | 420 | 5.03 |  |
| Y | 163 | 5.78 |  | 157 | 5.72 |  |
| **Total** | 598 | 5.15 |  | 577 | 5.22 |  |
|  |  |  |  |  |  |  |

Table 5 identifies the number of discharges flagged as a readmit in the Epic system for the CHF DRG discharges for the length of time shown. Y represents a readmission and N is not a readmission. The totals identified are the total number of CHF discharges; however the readmits does not necessarily mean the patient was readmitted with one of the CHF DRGs, but instead shows that this given number of CHF patients were admitted into the hospital within 30 days of being previously discharged for CHF. In 2015, 30% of these discharges were readmitted and through November 2016 27% of these discharges were readmitted.

Figure 1

*Frequency of discharge for CHF patients, Jan. 2015 through Nov. 2016*

Through the use of medical record numbers, the trend line in Figure 1 depicts how many patient discharges each one of the CHF patients has incurred, for any DRG, from January 2015 through November 2016. During this period of time (about two years) 585 patients were identified. As the trend shows, 268 of inpatient discharges for this population of patients had only one discharge for the 22 month time period. Conversely, 317 patients had more than one inpatient discharge, and over 50 patients had 5 or more discharges during this time period.

Table 6

*ORMC profit loss by payor per case for DRGs 291—293, FY 2015*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Cases** | **ALOS** | **Billed DRG CMI** |  | **Payment per Case** | **Direct Cost per Case** | **Margin per Case** | **Profit Loss per Case** |
|  | | | |  |  |  |  |  |
| Blue Cross | 21 | 3.38 | 1.0181 |  | $16,509 | $4,688 | $11,821 | $8,788 |
| Comm / HMO | 37 | 4.57 | 1.1842 |  | $11,798 | $6,426 | $5,372 | $1,209 |
| Medicaid | 11 | 4.55 | 0.9581 |  | $6,864 | $5,736 | $1,128 | $(2,381) |
| Medicaid HMO | 14 | 3.50 | 1.0545 |  | $8,888 | $4,322 | $4,566 | $1,667 |
| Medicare | 450 | 5.30 | 1.2187 |  | $8,711 | $6,719 | $1,992 | $(2,481) |
| Medicare HMO | 61 | 5.66 | 1.1706 |  | $10,089 | $7,259 | $2,830 | $(2,007) |
| **Total ORMC** | 598 | 5.15 | 1.1953 |  | $9,209 | $6,592 | $2,617 | $(1,756) |
|  |  |  |  |  |  |  |  |  |

Table 6 represents the dollar amount of profit or loss for ORMC for each case during 2015, as this information is not readily available for 2016. Self-pay (4 cases) was removed from the table to depict a better representation of the division of profit and loss by payor. As shown, ORMC had a total loss of $1,756 per CHF case in 2015. The three payor groups contributing to this total loss are all CMS cases; Medicaid, Medicare, and Medicare HMO.

**Discussion**

Data analysis of inpatient discharges, readmissions, and profit loss in regards to CHF patients support the creation of an outpatient CHF clinic at Orange Regional Medical Center. With hundreds of patients being admitted due to this chronic disease, many of whom stay for longer than two days at a time, the hospital has to suffer a considerable amount of loss for each case. With the majority of CHF discharges being CMS patients, (having either Medicare or Medicaid) the hospital is put in an unfavorable position regarding readmits as well. As dictated in Figure 1, more than 50% of CHF patients were admitted five or more times in a 22 month span, while four of those patients were admitted a staggering 11 or more times throughout that time period. It is apparent through the data analysis that there is a considerable population of people in the Mid-Hudson Region of New York who have been admitted to Orange Regional Medical Center for CHF. As cardiovascular disease continues to have a prominent mortality rate throughout the region and state, CHF will continue to be significant within this community, and the current approach to delivering healthcare to this population will not suffice.

Data collection for this analysis was very thorough due to the strict rules regarding documentation in a hospital setting. Information was entered into the Epic system by clinicians to build onto each patient’s electronic medical record, and then the information from Epic was linked to Strata, leaving little room for human error in the transcription process. There is always a possibility of an improper diagnosis or coding error, but the information presented is very reliable. ORMC’s financial analyst and her team reviewed all data shown.

**Recommendations and Reflections**

Since ORMC is part of the Greater Hudson Valley Hospital System, patients from its sister hospital, Catskill Regional Medical Center (CRMC) will be able to us the CHF clinic as well. Creating this clinic at ORMC’s main campus will allow patients from both hospitals to easily access its services, but will also attract patients to the south of Orange County, all the way down to Westchester. Migrating this population of about 600 CHF patients (shown in Table 3) to an outpatient CHF clinic instead of admitting them as inpatients multiple times a year would not only save the health system money in cost and reimbursement from CMS, but also allow space within the hospitals for others in need. By decreasing the amount of chronic inpatient admissions the hospital will be able to fill inpatient beds with acute patients, which is beneficial to a hospital because high turnover of patients generates revenue. In addition, this migration will also greatly benefit CHF patients, as it will allow for a culture of disease prevention and chronic disease management to proliferate within the community.

Creating an RN facilitated outpatient CHF clinic, as an extension of ORMC’s main campus would be extraordinarily beneficial to hospital finances, as well as the health of the community. Telemonitoring, education, and physical exercise will allow patients to achieve a higher quality of life and become more independent. Education regarding disease management will allow patients to truly comprehend what is happening to their body, and the consequences that will arise from improper self-care. This will be further reinforced through telemonitoring, as a clinician will be able to see the patient’s vital signs in real-time, having the ability to contact them immediately and spare them from suffering further readmissions, complications, or death. With the largest group of patients at ORMC being discharged for the most severe of the three heart failure DRGs, (as seen in Table 3) it is obvious that this population is in need of an intervention that focuses on managing this chronic disease.

Completing the research for this intervention was incredible because it was an actual service line being explored by the hospital. With a successful cardiac catheterization program already up and running, ORMC is looking to expand its cardiology department, as well as expand its outpatient presence, and CHF clinic will allow this to happen. Luckily, the data extensively supported the creation of this new service line, which made research an even more positive experience, as it was going in the right direction. This project taught me a great deal about the migration of healthcare and what living and working during this period of healthcare reform is really going to mean for Americans. The most challenging aspect was managing the volume of quantitative data and the amount of reading that went into fully understanding all of the aspects of the CHF clinic.

While I was not the one preparing the business plan, after reading the finished product that was written by the nursing director for cardiology, I discovered many more details about the project that hadn’t even occurred to me. Key pieces that were crucial to the plan such as the organizational chart for employees, SWOT analysis, and a sequential timeline from establishing a steering committee for the creation of the clinic, to the actual go-live date hadn’t even crossed my mind. I truly valued every step of this project, as well as my fieldwork experience in its entirety, because I was never restricted from information. Having the ability to sit with financial analysts and collect live data from just days beforehand was profoundly significant for me, because I know that without it I would have been stuck with state data from two years prior. With such strong evidence in support of this intervention, viable finances, and an aggressive desire to expand, I predict the creation of an outpatient CHF clinic at Orange Regional Medical Center to be a reality in the future; and I am grateful to have taken part contributing in research.

References

Arnwine, D. L. (2002). Effective governance: the roles and responsibilities of board members. *Proceedings (Baylor University. Medical Center)*, *15*(1), 19–22.

Centers for Disease Control and Prevention. (2015). *Heart disease.* Retrieved from http://cdc.gov/heartdisease/facts.htm

Centers for Disease Control and Prevention. (2016). *Sodium fact sheet.* Retrieved from http://cdc.gov/dhdsp/data\_statistics/fact\_sheets/fs\_sodium.htm

Centers for Medicare and Medicaid Services. (2016). *Readmissions reduction program, HRRP.* Retrieved from https://cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program.html

Chung, C. J., & Schulze, P. C. (2011). Exercise in Patients with Heart Failure. *The Physician and Sportsmedicine*, *39*(4), 37–43. http://doi.org/10.3810/psm.2011.11.1937

Coelho, R., Ramos, S., Prata, J., Bettencourt, P., Ferreira, A., & Cerqueira-Gomes, M. (2005). Heart failure and health related quality of life. *Clinical Practice and Epidemiology in Mental Health : CP & EMH*, *1*, 19. http://doi.org/10.1186/1745-0179-1-19

Healthcare Financial Management Association. (2010). *National average costs by department for heart failure and shock*. Retrieved from https://ahd.com/HFM-DataTrends\_MAR10.pdf

Mayo Foundation for Medical Education and Research. (2016). *Diseases and conditions: Heart failure.* Retrieved from http://mayoclinic.org/diseases-conditions/heart-failure/basics/definition/con-20029801

Moore, K. (2014). *Congestive heart failure basics*. Retrieved from https://ghc.org/healthAndWellness/?item=/common/healthAndWellness/conditions/heartDisease/chfBasics.html

National Institutes of Health. (2014, Aug. 25). *Medical encyclopedia: Pleural effusion.* Retrieved from https://medlineplus.gov/ency/article/000086.htm

New York State Department of Health. (2016a). *Cardiovascular disease indicators: Orange County.* Retrieved from https://health.ny.gov/statistics/chac/chai/docs/chr\_33.htm

New York State Department of Health. (2016b). *Orange County congestive heart failure hospitalization rate per 10,000.* Retrieved from https://health.ny.gov/statistics/chac/hospital/h4.htm

New York State Department of Health. (2012). *Orange County indicators for tracking public health priority areas.* Retrieved from https://health.ny.gov/prevention/prevention\_agenda/indicators/county/orange.htm

Sg2. (2015). *GHVHS 2015 strategic plan cardiology playbook.* Middletown, NY

Stacey, Lauren M. (2016). CHF clinics: Benefits, models, utilization, and patient compliance. *InSight:* *Rivier Academic Journal, 12,* 1. Retrieved from https://rivier.edu/journal/ROAJ-Spring-2016/J931\_Stacy.pdf

United States Department of Health and Human Services. (2011). *Medicare hospital prospective payment system: How DRG rates are calculated and updated*. Retrieved from https://oig.hhs.gov/oei/reports/oei-09-00-00200.pdf

University of Pittsburgh Medical Center. (2016). *Heart failure: What happens to the body.* Retrieved from http://upmc.com/patients-visitors/education/cardiology/pages/heart-failure-what-happens-body.aspx