

**Optimizing The Revenue of The Joslin Diabetes Center**

Prepared By: Hawks Consulting Firm

Prepared for: CEO Dr. Roberta Herman and the Board of Trustees

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## **Executive Summary**

This consultancy report will provide a background on our client, The Joslin Diabetes Center, and address the issues that potentially contribute to the financial deficit that the facility faced in 2008. Within this report, the Hawks Consulting Firm aims to supply the client with recommendations that may be essential to help them avoid their fiscal deficit and may be beneficial to optimizing their annual revenue. The Joslin Diabetes Center established the Joslin Care Model; a team of medical personnel who are knowledgeable about diabetes and passionate to care for these patients. This model has helped them become the premier facility for treating diabetes. However, certain aspects of the model have contributed to problems and barriers arising in the function of the facility. As a result, the center found itself in a financial deficit. We have decided to assess this situation utilizing SWOT analysis to holistically review the operations of the Joslin Diabetes Center. The Joslin Care Model stood out as a strength of the facilities due to its effectiveness and how diverse the medical teams that made up the model were. However, our client's weakness lies within this model as well. With the Joslin Center having about 80,000 patients and expecting to see more, the patient to primary care provider ratio will be disproportionate and the staff will be overwhelmed with the patients they must tend to and provide care. Another weakness lies in the centers' inability to adapt to the new age of medicine. From the SWOT analysis, we were able to assess the threats and potential opportunities for our client as well. The threat that presents itself for the center is the annual net operating loss of about \$2 million and the expiration of the joint venture agreement. An opportunity for the Joslin Diabetes Center is to attempt renewing their venture agreement in order to expunge the deficit that they face annually. Based on the results of the SWOT analysis, the Hawk Consulting Firm drafted a structured plan which consists of short term, midterm, and long term goals to ensure that the center avoids entering a financial deficit and optimize their overall revenue. With the short-term goals, we suggest that the center increases the size of their medical staff to ensure that more patients will be able to be treated and that these patients are treated with optimal care. The midterm goal that we propose is to improve communication between Joslin-affiliated and non-affiliated physicians to avoid any unnecessary expenditure due to these errors. Lastly, we propose as a long-term goal that the center incorporates telehealth into its practice. Telehealth matches perfectly with diabetes treatments and provides physicians the opportunity to monitor their patients remotely. With telehealth becoming a part of the routine for the facility, the physicians and the medical staff would be allotted more time to tend to and effectively treat more patients who have arrived at the facility for more rigorous treatment. We strongly recommend that our clients, the Joslin Diabetes Center, adhere to this plan in hopes of them eliminating their financial deficit and optimize their revenue.

## **Introduction**

Diabetes has become an increasingly important medical condition for the US to contain, but there is no other practice globally that focuses on this issue like The Joslin Diabetes Center. The Joslin Diabetes Center is a world-renowned clinic that has made a remarkable name for itself since its inception in 1956 by Dr. Elliot P. Joslin due to the death of his Aunt by this very same condition. By 1970 Joslin was being rewarded for having the first patients live for 50 years (a subsequently 75 years) due to this intensive care (Porter et al., 2010). This clinic prides itself in providing high-quality diabetes care, being in the forefront of diabetes research, as well as educating medical professionals and the community in the best ways to treat and manage all forms of diabetes. In terms of Diabetes treatment, the clinic followed a unique plan called the Joslin Care Model. This model used 4 specialized teams that were suited to target any type of Diabetes Patient no matter the age, language barrier, or additional medical conditions. Because of this Model, Joslin acknowledges the fact that they are one of the only practices in the world that can handle any related case with efficiency (Porter et al., 2010).

Even though Joslin isn't an inpatient facility, it was the world's largest diabetes clinic and employed over 700 people with yearly revenue of \$97 million. Within each team, there is a wide variety of medical professions ranging from endocrinologists and nephrologists to nurses, dieticians, and mental health professionals, and everything in between. It's important to be fully staffed because there are about 80000 visits every year with about 5000 new patients as of 2008. With its emphasis on research as well, Joslin has developed the Beetham Procedure which scans the retina without the need for pupil dilation. This innovative technology is used in more than 400000 patients worldwide for diabetic retinopathy. With all these exemplary qualities of Joslin Center, it is important that this facility continues to run well into the future (Porter et al., 2010).

For a Center with an incredibly rich and empowering history, it is unfortunate that the inner working and financial situation hasn't been running nearly as smoothly. These problems start financially where for the past few years Joslin Center has been operating at a loss of \$2 million per year while also losing approximately \$80 per patient during visit visits as well. This loss in money would typically be weathered through funding, but as of 2008 the Joint Venture Fund contract is ending (Porter et al., 2010). This deficit has made it almost impossible to invest in multiple other areas which need improvement. These issues include limited resources in the clinic due to a lack of technology, exorbitant procedural times which can make visits as long as 4 hours, inability to efficiently share medical records with other care facilities, and finally an overworked and undermanned staff. These issues are extreme and can lead to Joslin Center closing down in the foreseeable future if left unfixed. For these reasons, the Hawks Consultancy Group brings these issues to Joslin Diabetes Center through their CEO and President Dr. Roberta Herman as well as the Board of Trustees. For clarity's sake, this consultancy report will be using the SWOT method to analyze issues and recommendations that Joslin should use. If these recommendations are implemented, Joslin will continue to be the pillar of light for Diabetes and the Medical community for decades to come.

## Background

Before the recommendations are analyzed, we believe that it is important to understand what diabetes is and how it affects communities. Diabetes is a condition in which the glucose levels in the bloodstream are elevated. This elevation can lead to various symptoms such as confusion, clumsiness, fainting, seizures, coma, and even death. There are multiple types of diabetes, but the most common ones are Type 1 and Type 2 diabetes. Type 1 diabetes typically occurs at a young age or before the age of 25 and can typically be treated with insulin injections along with exercise. Type 2 diabetes, however, is typically linked with one's diet and lifestyle habits. Type 2 cannot be treated with insulin and can only be maintained through diet and exercise. Type 1 affects about 5-10% of all diabetes cases, while Type 2 affects 90-95% of cases (Porter et al., 2010).

Diabetes rates are growing annually, with about an 8% increase each year. There is no sign that this will stop anytime soon, with obesity rates increasing as well. Since 2008 obesity rates have increased by 26%. On top of this, Joslin's primary pool of patients is also being affected (Adult obesity facts, 2021). This is a problem that Massachusetts isn't immune to as well. Diabetes prevalence has increased from 3.9% in 1993 to 8% today. These prevalence rates have also disproportionately affected minority Hispanic and Black communities up to 4% more than white communities (Massachusetts diabetes DATA). This data epitomizes the continued need for facilities like Joslin Diabetes Center.

## SWOT Analysis

<b>Strengths</b> <ul style="list-style-type: none"><li>• The center has a thorough and well-established care model</li><li>• Full-spectrum of medical staff for a comprehensive patient experience</li></ul>	<b>Weaknesses</b> <ul style="list-style-type: none"><li>• Disproportionate staff to patient ratio</li><li>• Communication issues with Primary Care Physicians</li></ul>
<b>Opportunities</b> <ul style="list-style-type: none"><li>• Renew the Joint Venture Agreement</li></ul>	<b>Threats</b> <ul style="list-style-type: none"><li>• Net operating loss of \$2 million per year</li><li>• Lack of a Joint Venture Agreement</li></ul>

### *Strengths*

**The Joslin Diabetes Center is regarded as the leading force in diabetes research and care, with thorough and innovative treatments that have transformed the lives of many patients.** With an extensive care model, the Joslin care center operates across three different domains, specializing in clinical, research, and other care initiatives. Diabetes affects many parts of human health. The center has divisions focused on adult and pediatric care, eye care, kidney care, diabetes research, and education for all patients. The case study mentions the wide variety of services, stating that there were “approximately 50 clinical physicians in endocrinology, nephrology, internal medicine, neurology, ophthalmology and psychiatry, 25 diabetes educators, including nurses, dieticians, and 8 exercise physiologists, six mental

health professionals, and 44 faculty-level research physicians or PhDs” (Porter et al., 2010). With a strong backbone of staff types and services, Joslin can provide many benefits to their patients.

### *Weaknesses*

One weakness of the Joslin Diabetes Center is the **disproportionate staff-to-patient ratio**. In 2008, the Joslin Diabetes Center saw approximately 80,000 patients seeking their services. That same year, the Joslin Diabetes Center was expecting approximately 5,000 new patients. As of 2008, the center currently has approximately 50 clinical physicians of various specialties, 25 diabetes educators (nurses, dieticians, and exercise physicians), and 44 faculty research physicians and PhDs (Porter et al., 2010). When comparing the number of patients to the number of staff, it is pretty easy for them to become overwhelmed. According to a study conducted by the American Nurses Association, 40% of the nursing units stated they are understaffed. In comparison, 96% of the nurses indicated that they were fatigued before their shifts (PRN Funding, 2016). Nurses play a pivotal role as caretakers; therefore, if the productivity level is poor from the nursing staff, this may reflect negatively on their financial status. The same is expected of the primary care physicians; if they are overwhelmed, their productivity levels can also decrease, negatively impacting the financial performance of the center. Thus, the Joslin Diabetes Center must improve its staff’s quality to make strides towards escaping the financial deficit.

Another weakness of the Joslin Diabetes Center is **the communication error between Joslin Physician and Primary Care physicians with other health facilities**. The Joselin Diabetes Center did not offer primary care for its patients other than diabetes-related care. Although endocrinologists at Joslin felt it was important to manage other non-diabetic health issues closely related to diabetes, such as Hypertension. So they often prescribed medications and counseled patients on lifestyle modification. But a more collaborative relationship between Joslin physicians and the primary care physicians of the patients with diabetes complications needing inpatient treatment was unachievable due to a lack of shared medical records across levels of health facilities. However, **they did share information through written communication sent by Joslin**. This resulted in not being able to track complications of diabetes that patients suffer and the cost of treating those complications.

### *Opportunities*

**The Joslin Diabetes Center has the opportunity to renew a joint venture agreement.** The joint agreement allowed the Joslin center to make investments into education and the study of diabetes for its adult and pediatric patients while also creating partnerships for clinical services and research. Overall, optimizing the revenue and eradicating the Joslin Center’s financial deficit should include implementing, overseeing a joint venture agreement. A renewal of the joint agreement will provide the clinic with a maximum contribution of 3,500,000 as stated under the previous agreement to offset the net operating loss of 2 million per year. The agreement also poses non-monetary value by improving the communication and partnership between the Joslin Center and the Beth Israel Deaconess Medical Center (BIDMC). Following the renewal, clinicians from BIDMC and Joslin will work together to ensure appropriate medical consultations and establish benchmarks for quality improvement, overseeing new changes to the system. The agreement will demand further enhancements of the electronic medical record system that links inpatient and outpatient records for joint BIDMC-Joslin patients.

## *Threats*

Despite standing as a world-renowned medical center, the Joslin Diabetes Center operated at a net loss of over \$2 million in 2008. **This shortage in funding is a significant threat to the center.** The Joslin received \$40 million in research revenue in 2007, with grants from the National Institute of Diabetes and Digestive and Kidney Diseases, the National Institutes of Health (NIH), and other research funding sources (Porter et al., 2010). The incorporation of a joint venture agreement beginning in 1998 allowed the center to account for financial losses through each year the agreement was enacted. Although the agreement with Care Group, Inc had soon ended, Joslin then joined a new venture agreement with BIDMC, who carried out an equitable method for the financial losses of this care clinic. While effective for diabetic needs, the Joslin care model did not contain a reputable financial structure that would benefit the company as a stand-alone. For this reason, the center continues to lose roughly \$80 per patient.

## **Policy Recommendations**

### *Short Term*

To ensure that the Joslin Diabetes Center is making strides towards coming out of its financial deficit, we, as the Hawk Consulting Firm, have provided short-term recommendations that can be implemented immediately at the center. One of these short-term recommendations includes expanding the teams that make up the Joslin Care Model. This expansion requires the recruitment of more primary care physicians, nurses, as well as medical assistants. Although recruiting more staff may seem counterintuitive to the financial goals expected, the center may benefit from seeing more patients without feeling overwhelmed. Increasing the primary care physicians in the facility would allow for better, more efficient treatments and interactions with their patients. Since the Joslin Diabetes Center boasts about the education that takes place at the facility, they should be listed amongst the teaching hospitals that are a part of the National Resident Matching Program (NRMP). The NRMP is a program designated for medical school students to be matched into a residency program of their choice to continue their training as physicians (NRMP, 2020). Thus, the Joslin Diabetes Center can be sure that they are receiving residents that are passionate about treating patients with diabetes, especially the two main populations impacted by diabetes: geriatric and pediatric (CDC, 2020).

Along with the increase of primary care providers, the center also needs to increase the size of the nursing staff. The nursing staff plays a significant role that influences the hospital's financial performance, especially in such a high-quality environment as the Joslin Diabetes Center (Everhart et al., 2013). Medical facilities that face financial hardship are often quick to cut the nursing staff to save money; however, they do not recognize the benefits of having an adequate nursing staff that can help improve their financial status. The Joslin Diabetes Center should strive to hire nurses that have expertise in the specialty of diabetes. Overall, increasing the medical staff would help boost productivity at the center, ensuring that patients receive quality care. The staff will not feel as though they are overwhelmed with responsibilities, and they will be capable of better treating more patients than average. If this recommendation is employed, the Joslin Diabetes Center will begin to see upward trends in their overall revenue.

### *Mid Term*

A study by (Renders. et al.,2020) done to evaluate the management of diabetes mellitus showed that adherence to diabetes care standards improved by 35.1%, with better outcomes when members of a multidisciplinary team could communicate and share information about patients easily. The Joslin Diabetes Center lacks a shared medical record for effective communication between Joslin's physicians and the patient's primary care physician from other facilities, making it difficult to interact with health providers and comprehensively track complications suffered by them along with the cost of treating these complications. The transfer and receipt of patient information between different levels of care and locations ensure continuity and promote successful treatment.

To establish a smooth transitioning of care within different health facilities and improve communication between healthcare providers, the Hawks Consultancy Firm has provided a midterm recommendation which involves investing in Clinical Communication and Collaboration(CC&C) platform that will centralize all communications, provide a complete patient history and empower Joslin's Physicians. The US Hospitals wastes \$12 billion annually due to communication inefficiencies among care providers (Agarwal et al., 2010). With chronic diseases such as diabetes and the healthcare expenditure on the rise, patient expectations are also high. Implementing clinical communication and collaboration systems at the Joslin Diabetes Center will coordinate activities among healthcare providers and enable them to share information through text, documents, telemetry, images, and video. This seamless communication will help to improve transitioning of care. This proposed innovation hopes to be fully implemented at the Joselin's Diabetes center within two years running in 2 phases:

**1<sup>st</sup> Phase** – Role-based Messaging: This has proven to affect the quality of care patients receive. With role-based messaging, a nurse can reach a specialist on call by messaging the role when tied to a shift schedule. (no phone number or name is required).

**2<sup>nd</sup> Phase** – Connecting care teams across facilities: This can be characterized as the Integration phase, where there is integration between clinical communication platforms and vital hospital systems. This comprises a unified single communication platform that ties the entire health system together with a virtual care option supporting direct communication between care providers and patients through text, voice, or video.

Better use of the electronic medical records(EMR) for messaging, patient tracking, and more robust integration has demonstrated great diabetes improvement among patients.

### *Long Term*

As healthcare is evolving and adapting to modern technology, there are many new tools available to healthcare providers, including telehealth. **Telehealth is well suited for diabetes and improves health outcomes in diabetes patients.** Telehealth can be used to manage diabetes by analyzing different patient data remotely and responding to emergency events. Diabetes requires interpretation and predetermined responses to many types of data measured in the home by the patient, such as fasting blood glucose and HbA1c levels (Klonoff, 2009). By having data collected by patients input into a central system, physicians can overview a patient's health status and assess how that patient is doing. Combined with



decision support software, part of the process can be automated as many of the data collected follows similar patterns as other patients have experienced (Klonoff, 2009). Programs that have utilized telehealth for diabetes have found improved health outcomes, better HbA1c and fasting blood glucose control, and decreased hypoglycemia risk (Zhou 2014). With better data tracking and a central system where physicians can oversee how patients manage their diabetes, telehealth is a viable program that delivers better results for patients.

While telehealth has demonstrated improved diabetes outcomes for patients, more important to note is the cost reductions for healthcare clinics that come with telehealth programs.

**Telehealth reduces costs for healthcare providers by providing many services remotely.** While some services require a visit in person, many benefits related to diabetes management can be conducted remotely just as efficiently. Patients utilizing telehealth services have far fewer office visits and office-based services, which has been found to reduce costs by about \$88 per month for a typical diabetes patient (Whaley et al., 2019). With fewer clinic visits, the staff is freed up to perform other important tasks. Telehealth is particularly well suited for diabetes management as it requires interpretation and predetermined responses that can be measured by the patient remotely. Joslin could utilize a telehealth program similar to the Livongo Clinic in the Whaley et al. (2019) study to manage diabetes patients with a telehealth program. Physicians would be able to monitor all patients rather than meeting with each patient one by one. While this does require patients to have the technology, only a smartphone or computer is needed for participants to utilize this service. With few barriers for patients and reduced medical spending for Joslin, Telehealth is a viable long-term option that would help address the financial deficit concerns.

## **Conclusion**

The Joslin Diabetes Center prides itself as the flagship center for diabetes care, and we, as the Hawk Consulting Firm, would like for them to maintain their status. The center established the Joslin Care Model that has proven itself to be effective throughout the years; however, certain aspects of the model have failed to conform to modern times, resulting in the financial deficit they experienced in 2008. Therefore, the Hawk Consulting Firm recommends that the Joslin Diabetes center consider renewing their venture agreement and follow a structured plan, which includes short-term, midterm, and long-term goals to help them eradicate their financial deficit while optimizing their revenue at the same time. By renewing their venture agreement, the center will be able to continue to fund their groundbreaking research and provide care to the influx of patients that they will be expecting within the next fiscal year. We also recommend that the Joslin Diabetes Center follow a structured plan composed of short-term, midterm, and long-term goals. The center should recruit more medical staff such as primary care providers and nurses in the short term. By doing so, the center would increase its production quality by allotting the staff the opportunity to treat more patients and provide them with quality care. In the midterm, the center should adapt to the Clinical Communications and Collaboration platform to improve communication between primary care providers at different facilities. By doing so, the center would be able to reduce communication inefficiencies that potentially cause unnecessary expenditure. Lastly, as a long-term goal, the Joslin Diabetes Center should incorporate telehealth into their practice. The introduction of telehealth would provide manageable care for both the patient and the physician, and physicians can provide these services remotely. This frees up time for the staff to tend to more patients, which is essential to improving

the facility's financial performance. By incorporating these recommendations into the fabric of the facility, the Joslin Diabetes Center will be able to bounce back from the financial deficit they have experienced and potentially optimize their overall revenue.

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