TELEMEDICINE FEASIBILITY STUDY REPORT AND BUSINESS CASE

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1. Executive Summary

Telehealth offers new and effective tools for delivering healthcare services, and opens opportunities to expand the reach and availability of services, while also developing creative new delivery methods. Quantum's executives want to learn if a valid business case exists for telehealth program development to increase access to health services for those served by Palm Beach County's Federally Qualified Health Centers (FQHCs). Furthermore, they want to know the feasibility of collaborating efforts among disparate providers to meet the needs of the community served by the FHQCs via telemedicine technologies. IMST Telehealth Consulting was commissioned to research the opportunity.

IMST conducted research in accordance with industry best practices to assess and define the model for telehealth that would optimize healthcare delivery services. We conducted surveys and focus groups to include the administrative, clinical and information technology stakeholders at three Federally Qualified Health Centers and one site which essentially operates as a 'look-alike' FQHC in Palm Beach County**.** We also conducted 10 clinical site visits for the organizations included in this research, assessed their current state, and defined the desired future state. ***For the purposes of this report, the survey and focus group responses have been aggregated so as to de-identify any one FQHC or site. We also refer to FQHC's as 'organizations,' 'entities' or 'sites.'***

This business case summarizes our findings and reports our evidence-based recommendations. Our analysis of the Palm Beach County FQHC market has informed the development of the business case, which validates an effective demand, exists for telehealth program development.

1.1. Problem Statement

Quantum Foundation takes great pride in their mission to help underserved populations of Palm Beach County obtain access to high quality health care. They do this by funding an array of initiatives. Even with the robust FQHC network, there are gaps in the types of services being provided, as well as geographic and financial barriers for patients and physicians.

Through our research, we discovered that across all of the organizations, an estimated 7,929 patient encounters per month result in referrals for specialty care. There was consensus among the organizations that about 30% of patients don't follow up to receive the specialty care they are referred for. The primary barriers to health care access for the underserved population of Palm Beach County are lack of transportation; long wait times for appointments; language barriers; and prohibitive costs for care. Low levels of health literacy and restrictive clinical availability compound the problem, because people do not realize the severity of their illness by the time they seek health care, and when they have to wait for a long time to be seen, it deters their incentive to go to the clinics.

1.2. Anticipated Outcomes

Establishing a county-wide network of high-bandwidth connectivity can significantly increase the ability for FQHC clinics to use telehealth to connect patients and specialists in rural and urban communities. Developing a telehealth network of specialty physicians, accessible via live video conferencing at each of the clinics can make a significant positive impact on access to health services in Palm Beach County. Providing remote access to specialists at the clinics would generate new revenue sources for the clinics and specialists alike. Patients will also experience better health outcomes.

We anticipate that cost-sharing for the development of the telehealth network can maximize purchasing power and lower overall costs of increasing the number and availability of specialty providers to the safety net populations of Palm Beach County. With proper legal oversight to overcome the special rules for FQHCs as outlined in the Federal Tort Claims Act, we believe using telehealth as a tool for better patient access will yield better health management, with opportunities for expansion of services to outside institutions through strategic partnerships (i.e. prisons, homeless shelters, and schools), leading to increased ROI.

1.3. Recommendations

Short-Term

In the short term, we recommend working with each organization to meet them where they are, according to their current state of organizational readiness. This involves getting those who scored lower on their Telehealth Capacity Assessment ready for future program development and moving forward with developing and planning a pilot program with those who scored higher. We recommend planning to purchase the minimum viable technology for live video conference visits to cover the overwhelming need for psychiatry services. This way, more money is available to invest in resources needed for education, training, and workflow development.

Eventually, as the comfort level with telehealth tools increases, the full range of medical specialists can become available through the network. As telehealth laws evolve in the state of Florida, more modalities of telehealth can be employed, specifically store and forward methods that do not require in-person visits and remote patient monitoring, that empowers patients to be more involved in their health care from their home.

1.4. Justification

Telehealth program development aligns with the organizational missions, vision, values, and strategic plans of all the FQHCs we researched. Overall responses from the stakeholders were positive, with a unanimous expression of need for specialty services, including psychiatric care, endocrinology, gastroenterology, etc. for their underserved and rural populations. It was also unanimous that transportation, financial, and language barriers impede access to care. All the organizations stated long wait times to be seen by specialists. This long waiting list imposes burdens on the patients, their families, the primary care clinics, and overall population health.

Visits to the clinical sites revealed they all have adequate space to accommodate telehealth equipment, despite the need for connectivity upgrades in the rural areas of Belle Glade, Pahokee, and Indiantown. Video conferencing solutions require minimum space, and often a freestanding monitor or laptop computer can be used with a high definition maneuverable camera, to maximize portability. This is because many software solutions have advanced to an encrypted, cloud-based platform, providing clinicians with quick and easy access.

Other uses for the video conferencing equipment are conducting peer to peer consultations; administrative and clinical meetings among team members who work at different sites; and educational in-services for medical residents and nursing students. This adds value by reducing the need for transportation, saving time and improving operational efficiency. We assessed current use of videoconferencing in the FQHCs and report our findings in Subsection 3.1.5.

2. Organizational Readiness Assessment

It is best practice to begin any telehealth initiative with an Organizational Readiness Assessment to assure that a new telehealth program will be successfully adopted and utilized. The decision to implement a telehealth program involves organizational change, and success depends on the administrators, clinicians, and IT personnel having a willingness and ability to move in a new direction. Sustainability depends on alignment of the program with business and clinical goals, which comes from establishing a shared vision that becomes the foundation for all their subsequent decisions. The following subsections summarize the information we learned from the Organizational Readiness Assessment regarding alignment with their current mission, vision, values, and culture; resource availability; stakeholder support and authority; a SWOT analysis, and readiness for technology.

2.1. How Telehealth Adoption Aligns With Each Organization

A key component of assessing organizational readiness is determining how the current state of each organization relates to the desired new program. Our survey and focus group questions were designed to assess various organizational qualities that are critical to telehealth program success. The site visits allowed for preliminary technology assessment, as well as an understanding of current clinical workflows. Discussions about the results are based on the combination of survey results, focus groups, and site visits. The results vary among the organizations, and the discussions provide critical insights into the changes needed to improve organizational readiness for telehealth adoption.

2.1.1. Vision/Mission and Strategic Plan

This section of the assessment inquired about the alignment of telehealth program development with each organization's current mission, vision, and strategic plan. The questions asked if a telehealth project supports the vision for their desired future; if the project aligns with the organization's belief of who it is, what it does, and how it serves; and if telehealth supports their approach to achieving goals and objectives. All four organizations are in alignment in these areas.

2.1.1.a. Vision/Mission and Strategic Plan Examples From Each Site

One site is currently employing live video conference telehealth for diabetes education and mental health services. This site educates nurses who do clinical rotations through their site. They have a real opportunity to develop telehealth education and provide their graduates with the skills to lead the effort to integrate telehealth services across the healthcare continuum. In addition, expansion of their telehealth-based services can increase range of services provided, and allow them to receive more patients. Successful implementation of an optimized telehealth program aligns with their strategy to improve revenues, quality scores, and patient outcomes.

Another site is currently providing telemental health visits for some patients in cooperation with a separate entity. They want to enhance their workflows, and have a successful pilot using best practices. Then, they want to increase of specialty services they can provide in the clinic, to maximize value to their rurally located patients.

Another entity operates 10 clinics throughout the county and continuously assesses patient needs through Satisfaction Surveys, Patient Tracers, and open communication with patients. Goals to reduce barriers to care and increase patient access is routinely incorporated into strategic planning efforts. They strive to provide the highest quality healthcare to all Palm Beach County residents, including the homeless and migrant populations. The site stakeholders we worked with envision telemedicine as a tool to overcome distance as a barrier to specialty health care access.

2.1.2. Organizational Values and Culture

This section of the assessment focused on the alignment between telehealth adoption and organizational values and culture. The inquiries focused on consistency with guiding principles; alignment with existing beliefs, assumptions, and expectations; and whether each organization's culture supported innovation and clinical technology applications. Two sites have already invested in video conferencing solutions and the stakeholders expressed initial success. Another site has invested in new Laptops with webcam capabilities.

2.1.3. Resource Availability

The questions for this section evaluated whether funding was available for initial planning activities; if staff were available to work on the project; and whether leadership groups were in place to foster support for program development. All of the entities indicated adequate resource availability.

Available Staff

The nurse practitioners at **one site** think their program can benefit from a designated telehealth coordinator, to foster their program expansion strategy. The practice managers and office staff at **multiple sites** expressed willingness to cross-train in appropriate telehealth education according to their roles.

A concern from many organizations is the availability of staff to conduct project activities such as program planning, development, and implementation. One organization stated they are currently implementing other projects, and want to exercise caution about overwhelming their staff. All organizations expressed a desire to ensure the best decisions are made regarding capital expenditures, education, training, and workflow development.

2.1.4. SWOT Analysis - Internal and External Factors

A SWOT analysis is beneficial, because it identifies the strengths and weaknesses of each FQHC, and helps identify areas in need of change to move forward with program planning and development. The SWOT analysis also helps identify opportunities that will contribute to success, as well as threats or barriers that can inhibit success.

We begin with the internal factors. **One site** stated their primary strength as helping to initiate telehealth services to assist with diabetes education and mental health counseling, to supplement the significant number of needs in the rural communities served by **another site**. Right now they are seeing patients at on-site.

The weaknesses at a few sites were related to the need for better clinical and administrative education on the nuances of telehealth best practices, along with a strong business case and marketing program; for increased community awareness and utilization. These weaknesses were communicated by a few sites in all of the clinical focus group sessions, which is to be expected at this early stage of investigation.

The primary external factor that was discussed among **all the organizations** was the stringent rules of FQHC operations specifically related to the requirements established by the Federal Tort Claims Act. **Two sites** reported on their surveys that they felt the laws were a major barrier to cooperation among the disparate organizations. Other external factors arose among the organizations. These included defining the originating and distant sites; clinical workflow modification; identification of increased access to specialty practitioners. Most stakeholders expressed excitement about the potential for telehealth programs to reduce wait times and transportation barriers for their patients and opportunities to increase revenues in their clinics.

2.1.5. Preliminary Technology Assessment

Two sites have a Polycom live video platform with a monitor, HD camera, and speaker unit. The software platform allows for secure interaction.

One site does not have any telehealth equipment but their practitioners carry laptops to the patient exam room.

All the organizations are also using some form of an electronic medical records (EMR) system. Many telehealth programs are able to integrate with EMR, but it isn't a requirement to conduct telehealth visits.

3. Needs Assessment

A needs assessment is a process used to identify the health care needs of the community. The process involves collecting and analyzing data to determine the gap between the current and desired level of service availability. Using data to identify needs allows the FQHC administrative, clinical, and technology stakeholders to better evaluate the rationale for telehealth program development. There are many benefits to conducting a needs assessment, including: gaining a clear understanding of community need; a foundation for program development; clear objectives and shared expectations among stakeholders; improved service coordination; rational resource allocation; the ability to evaluate effectiveness; and gathering information for the market analysis and business case. This section of the report provides our Needs Assessment findings from our combined external research, surveys, focus groups, and site visits. We will also discuss the current and desired state, gap analysis, and identified barriers.

3.1. Needs Assessment Summary

Focus groups and guided interviews were the sources of primary quantitative and qualitative data, and published state and county government data were the sources of secondary quantitative and qualitative information. Involving the decision makers and end users in the assessment process has been proven to increase buy-in and team building for future telemedicine program development. Subsections 3.1.1. through 3.1.5 demonstrate our findings from the four organizations included in our study. These subsections cover demographic and socioeconomic factors, health status, service availability, referral patterns, administration and educational events, and payer mix.

3.1.1. Demographic and Socioeconomic Needs

It's important to know who the FQHCs serve, in order to develop a telehealth program suited to meet their needs. In order to discover more about the population served, we turned to Florida Charts and the data collected by the Florida Legislature, Office of Economic and Demographic Research. Understanding age, race, and ethnicity characteristics allows us to understand their affinity for technology, and develop education and marketing messages that align with the community's culture and language. **Table 1** summarizes the 2015 population data for Palm Beach County and the state of Florida, including the division by race and ethnicity. In 2014, the Florida Legislature, Office of Economic and Demographic Research reported 51% of people in both the county and state fell between the ages of 25 and 54, and they were almost equally split between males and females. Through our surveys, we learned that special language considerations are needed for Bangladeshi, Brazilian, Creole, Haitian, and Mayan patients, which contribute to the 4.9% calculation in **Table 1**.

2015 Population Data for Palm Beach County and the State of Florida

	Total Pop.	White (%)	Black (%)	Hispanic (%)	Other (%)
County	1,381,632	76.9	18	21.4	4.9

State	19,860,805	77.9	16.8	24.4	5.2

Table 1- Population Data for Palm Beach County and the State of Florida
Data Sources: Florida Charts and the Florida Legislature, Office of Economic and Demographic Research

The socioeconomic indicators that correlate with demand for the Palm Beach County FQHC services are the ability to speak English, the percentage of the population living below the poverty level, and the number of unemployed in the population. These factors are related, because people in these categories are more likely to be uninsured or underinsured, and they are eligible to receive services at the Palm Beach County FQHCs. Many of the non-English speaking people in Palm Beach County are migrant farm workers. Low education levels, a sluggish economy, and slow job growth are contributing factors to unemployment and poverty.

Table 2 shows the 2014 socioeconomic indicator data from the Florida Legislature, Office of Economic and Demographic Research. When we totaled the percentages and converted them to the number of people in these three categories, the results brought clarity to the staggering potential demand for health services at the Palm Beach County FQHCs.

2014 Socioeconomic Indicators for Palm Beach County and the State of Florida				
	Pop. Over Age 5 with Little to no English (%)	Total Poverty Rate (%)	Unemployment Rate (%)	Total Potential for FQHC Services
County	12.9	14.6	10.8	522,670 (38.3%)
State	11.7	16.7	10.9	7,693,328 (39.9%)

Table 2- Socioeconomic Data for Palm Beach County and the State of Florida
Data Sources: Florida Charts and the Florida Legislature, Office of Economic and Demographic Research

3.1.2. Health Status

People with chronic diseases and behavioral risk factors utilize more health services than their healthier counterparts. It is important to note, the Pareto Rule applies to health care, meaning 20% of the population utilizes 80% of the health care services. We researched the data provided by Florida Charts to learn how these factors impact the types of services needed in Palm Beach County. Mental health and psychiatric disorders can also lead to substance abuse, violent crimes, and sexually transmitted diseases.

To gain strong insights on chronic disease, the American Telemedicine Association and California Telehealth Resource Centers suggest measuring the heart disease and stroke mortality rates, and the diabetes and asthma hospitalization rates in both the county and the state. This provides a good perspective on the degree of need for the population being served. **Table 3** presents the data for chronic diseases. Heart disease and stroke mortality and rates

are slightly higher in the county versus the state, whereas diabetes and asthma hospitalization are slightly lower.

Average 2013-2015 Chronic Disease Indicators for Palm Beach County and the State of Florida		
Chronic Disease Indicators	**County**	**State**
Heart Disease Mortality Rate*	10,375 (0.75%)	131,195 (0.66%)
Stroke Mortality Rate*	2,488 (0.18%)	29,626 (0.15%)
Age-Adjusted Diabetes Hosp. Rate✦	104,031 (7.53%)	1,730,376 (8.71%)
Age-Adjusted Asthma Hosp. Rate✦	28,208 (2.04%)	442,076 (2.22%)

Table 3- Chronic Disease Indicators for Palm Beach County and the State of Florida
Data Sources: Florida Charts, *Florida Department of Health, Bureau of Vital Statistics, and ✦The Agency for Healthcare Administration

The behavioral risk factors we investigated were cigarette smoking, hypertension, high cholesterol, and sedentary lifestyle. These risk factors can lead to chronic disease. **Table 4** summarizes the county and state behavioral risk factors. Palm Beach County has less cigarette smokers than the whole state. However, the percentage of the population with hypertension, high cholesterol, and sedentary lifestyles in the county, almost mirrors or surpasses the levels across the state. This suggests significant risk exists in the county for people to develop heart disease, diabetes, and asthma, and utilize more health resources at the same rate as the whole state into the future.

2013 Adult Behavioral Risk Factors for Palm Beach County and the State of Florida		
Behavioral Risk Factors (%)	**County (%)**	**State (%)**
Cigarette Smoking	9.5	16.8
Hypertension	34.4	34.6
High Cholesterol	38.4	33.4
Sedentary Lifestyle (Combined Overweight and Obesity)	60.1	62.8

Table 4- Behavioral Risk Factors for Palm Beach County and the State of Florida
Data Sources: Florida Charts, Florida Department of Health, Bureau of Epidemiology, Florida BRFSS survey

A large demand for mental health and psychiatry services exists in the county. We investigated suicide death rates, violent crimes (murder, aggravated assault, and forcible sex offenses),

alcohol-suspected motor vehicle crashes and HIV Infection cases. **Table 5** displays the county and statewide data for mental health and psychiatric indicators. The frequency of these indicators in the county is nearly identical to the state.

Average 2013-2015 Mental Health and Psychiatric Indicators for Palm Beach County and the State of Florida		
Mental Health and Psychiatric Indicators	**County**	**State**
Suicide Deaths	**679 (0.05%)**	**9,005 (0.04%)**
Murders	**249 (0.02%)**	**2,991 (0.02%)**
Aggravated Assaults	**11,977 (0.87%)**	**179,700 (0.9%)**
Forcible Sex Offenses	**1,950 (0.14%)**	**30,831 (0.15%)**
Alcohol-Suspected Motor Vehicle Crashes	**3,552 (0.25%)**	**49,872 (0.25%)**
HIV Infection Cases	**932 (0.07%)**	**13,842 (0.07%)**

Table 5- Mental Health and Psychiatric Indicators for Palm Beach County and the State of Florida
Data Sources: Florida Behavioral Risk Factor Surveillance System county-level telephone survey conducted by the Centers for Disease Control and Prevention (CDC) and Florida Department of Health Bureau of Epidemiology

3.1.3. Service Availability

In the surveys we distributed to the clinical and administrative stakeholders, we included questions designed to assess service availability for each organization. They were designed to discover patient barriers to access, such as transportation, hours of operation, long wait times, and lack of insurance. We discovered what specialty services are needed but not available to the community served by the FQHCs. We identified populations with language and cultural barriers that can strain patient and provider relationships. Finally, we learned what the gaps are between health care service needs and available resources, as well as where the demand for services regularly exceeds resources. **Table 6** illustrates our service availability findings for each organization.

Service Availability Assessment				
	Site 1	**Site 2**	**Site 3**	**Site 4**
Access Restrictions	Long wait times Lack of transport Space constraints In one site, the few specialists in town have limited office hours (once or twice a week)	Location Lack of transport Lack of specialty care Lack of providers that accept Medicaid and sliding scale fees	Rural locations Costs	Lack of transport Costs Lack of health literacy

Lack of Insurance	✓ (55% self-pay)	✓ (65% self-pay)	✓ (20% self-pay)	✓ (70% self-pay)
Needed Services That Are Not Available	OB/Gyn Psychiatry HIV Services Hematology Endocrinology Radiology Dietician Optometry Dental specialties	Substance Abuse Treatment Psychiatry Cardiology Prenatal care Dental Gastro-Intestinal Podiatry Ophthalmology Radiology Pharmacy dispensary	All specialties Priorities are Mental health Radiology Lab Orthopedics	Gastro-Intestinal Cardiology Oncology Pharmacy Radiology Psychiatry Mental health Substance abuse Pediatric Orthopedists and Optometry/ Ophthalmology for uninsured
Services That Are Available	Primary Care Immunizations Dental Mental Health (therapy and LCSW) Lab Women's Health (1 site) Financial counseling Pharmacy (1 site)	Diabetes self-management Psych. Evals. Medication management Primary care Preventative care Immunization Gynecology Wellness	Primary Care Dental Pediatrics OB/Gyn	Pediatrics Primary Care OB/Gyn Perinatal HIV and STD testing Immunization Outreach services Dental Wellness Case management Homeless outreach Discount pharmacy (340B)
Language/ Cultural Needs	Need for translators Most of the sites have bilingual staff and language line	Religious/spiritual competency Spanish and Creole	None	Creole, Spanish, and Mayan
Gaps Between Needs and Available Resources	Difficulty recruiting Primary Care Specialists Specialists in the area, restrict the number of Medicaid and Medicare recipients they see and are unwilling to provide sliding scale fees to the uninsured. Psychiatry is a major gap Dental Nephrology Urology Orthopedics Dietician	The gaps can be narrowed by authentically sharing resources. Often, the problem is the distance between providers that are willing to share, making it difficult for clients to go from one place to another Dentists are scarce Mental health Substance abuse	All specialties Priorities are mental health, radiology, and lab	The result of a lack of specialty care for uninsured is resulting in repeated visits Mental health has a major gap Resources for pediatric optometry
Provider Shortages	Primary Care Pediatrics Dental	Psychiatry Dental Ophthalmology Mental health Health education	All services, especially Mental Health and Dental	Psychiatry Dental OB/Gyn

Table 6- Service Availability among Palm Beach County FQHCs Based on Survey Results

3.1.4. Referral Patterns

A review of clinical referral patterns helps to identify the type of services where organizations are losing revenues from inability to provide the care at their own sites. For the uninsured and underinsured, opportunity costs extend beyond the clinics. When patients cannot access health services, they are more likely to be hospitalized, which presents a greater financial burden on the health care system as a whole. Our needs assessment surveys asked clinicians and administrators about their predominant referral patterns including the primary diagnoses and health care services they are unable to address; current referral relationships with distant sites and specialists; whether health care providers travel to their sites from another organization to provide care to their patients; and if providers from their sites travel to other organizations to supplement scarce resources; and the number of patient referrals per month. **Table 7** lists our findings based on the stakeholder responses to these questions.

Referral Pattern Assessment

	Site 1	Site 2	Site 3	Site 4
Predominant Patterns	Provider refers patients out for all specialty services. The only exceptions are for general dentistry, Mental Health Counseling, and Social Work. Referral clerks (located off site) process authorizations. Medical Assistants assist with non-auth referrals. Specialists All radiology services Psychiatry Orthopedics Dermatology Community Resource Centers, Hospitals, and other sites for overflow	Insured patients are referred to specialists Cardiology Gastro Psychotherapy Ophthalmology Podiatry	Refer to local specialists if they are available. However, many patients, especially children must be referred far out of their local area	Within the organization, but to a site closer to patient's home A referral coordinator and Project Access manager help with outside referrals Grant managers help arrange mammograms, they have info. on affordable radiologic services and are working with a hospital to collaborate on radiologic services Participating specialists for patients with insurance plans Hospitals Other local mental health providers
Types of Services Referred	Psychiatry Pediatric Surgery Pediatric Cardiology Radiology Cardiology Endocrinology Ophthalmology Optometry Gastroenterology Podiatry Nephrology Urology Dermatology Infectious Disease Orthopedics Physical Therapy Nutrition Pulmonology Rheumatology Pain Management Durable Medical Equipment	Dental Prenatal Psychotherapy Case management Cardiology Preventive Care	Mental health Radiology Lab Orthopedics	Mental Health Gastro-Intestinal Cardiology Oncology Infectious disease Podiatry Endocrinology

	ENT Pain Management			
Common Diagnoses and Health Services Referred	**Diagnoses:** Abnormal EKGs Chest pain Back pain Fractures Cancer STDs **Services:** All diagnostic imaging (i.e. Mammography Ultrasound) Psychiatry Mental health Colonoscopies Biopsies Endocrinology	Substance Abuse Psychiatry Cardiology Prenatal care Dental GI Podiatry Ophthalmology Podiatry Radiology OB/Gyn Endocrinology	All specialty care services	Stomach issues Liver problems HIV/AIDS Cancer treatment Heart disease Hypertension Severe diabetes Screening mammograms Cardiac GI Surgical conditions
Existing Referral Partners	Local imaging centers Project Access for uninsured specialty care Referred to credentialed providers in the community, Referred from insurance panels, word of mouth, outside agencies.	Other FQHCs Center for Child Counseling Family First Boys Town Dept. Of Children and Families	Yes	The ability to refer depends on insurance coverage Project Access is a safety net Personal provider relationships (i.e. call for a favor or advice) Grants for mammogram access Discount pricing Relationships with providers at U of Miami for HIV management
Do Outside Providers Travel to Your Site?	Mixed responses	Yes	No	No
Do Your Providers Travel to Outside Orgs?	No	No	Yes	One OB-Gyn
Number of Referrals /Month	**5,789**	**30-40**	**1,800**	**300**

Table 7- Referral Patterns among Palm Beach County FQHCs Based on Survey Results

3.1.5. Administrative and Educational Events

Other uses for the videoconferencing equipment are conducting peer to peer consultations; administrative and clinical meetings among team members who work at different sites; and educational in-services for medical residents and nursing students. This increases utilization of the investment and saves time and travel expenses, while improving operational efficiency. In our survey, we assessed the stakeholders' current way of conducting administrative and clinical educational events. We wanted to learn if there was any experience with virtual meetings, web-based continuing education programs, video grand rounds, or group patient sessions being

conducted at sites with existing videoconferencing capabilities. Finally, we discovered if there were meetings and events that any of the stakeholders are travelling to now, but they don't necessarily require in-person attendance. **Table 8** summarizes the responses. Most of the FQHC stakeholders we surveyed have experience with videoconferences and webinars.

Current Administration/Educational Events Via Videoconference				
	Site 1	**Site 2**	**Site 3**	**Site 4**
Current Educational Events Requiring Time/Travel	Yes- Admin. team No- Management and Clinical	No	Yes	Yes- Clinical team members attend webinars
Interest in Accessing Off-Site Educational Events or Meetings Virtually	Mixed interest- Clinical and Admin./Management are more interested than IT	Yes, and clinicians also attend webinars	Yes	Yes, they already participate with the Southeast FL AETC in Miami
Current Events and Meetings That Don't Require In-Person Attendance	Yes	Yes- Clinical No- Admin. and Management	Yes	Yes, many staff meetings do not require in-person attendance

Table 8- Current Administration/Educational Events via Videoconference among the FQHCs

3.2. Current and Desired State

Current State

We learned that a high demand for health care services exists at the FQHCs, secondary to the socioeconomic indicators in the county. This demand results in patients waiting to be seen. Limited hours and lack of transport make it challenging for patients to coordinate public transportation to and from their local clinic. None of the clinics are open 24 hours, but mainly Monday through Friday from 8am to 5pm. Some sites have extended hours a few days a week.

In Palm Beach County, patients in Belle Glade and Pahokee may have to travel long distances to access any specialty services, because these are rural locations and therefore specialty providers are scarce. Even patients in less rural locales, like Palm Springs and North Palm Beach need to travel almost two hours to Miami-Dade to obtain specialty services such as ophthalmology, cardiology, nephrology, podiatry and gastroenterology. This is because those providers will accept uninsured patients, compared to specialists in Palm Beach County. Most of these specialties are in demand for the communities served by the Palm Beach County FQHCs, as listed in the section 'Types of Services Referred' from **Table 7**.

The good news is that all of those specialties are amenable to being delivered via telemedicine. **Figure 9** lists all the medical specialties in which telehealth programs are being successfully implemented across the healthcare continuum.

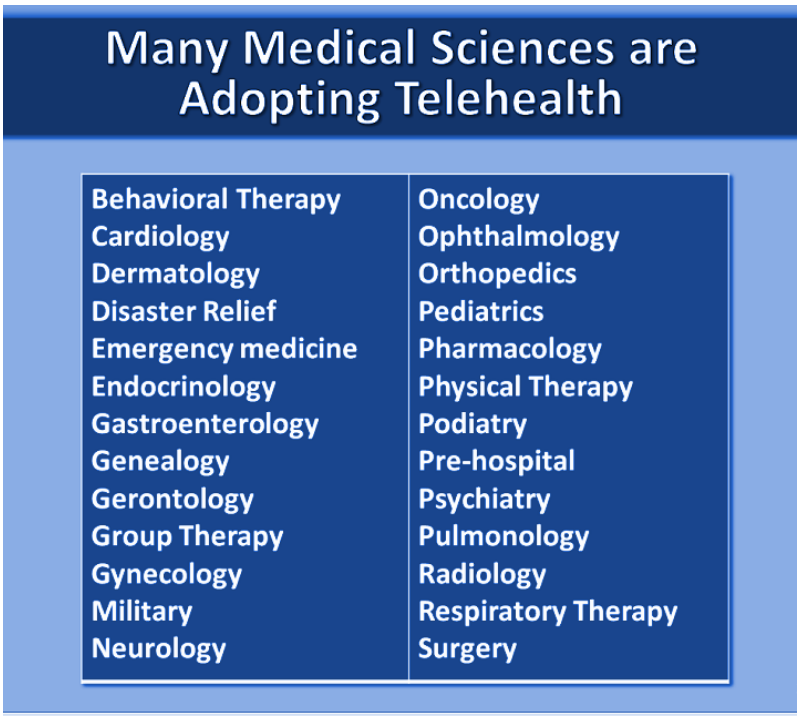

Figure 9- Specialty Services That Can Be Delivered Via telehealth

Desired State

Based on our assessments, we believe there is a great opportunity for the FQHCs to leverage their facilities to increase access to specialty care for their patients with telehealth programs. The referral patterns data in **Table 7** proves a strong business case exists and may incentivize more local specialists to provide video consults. Practitioners at the originating site (where the patient is located) and distant sites (where the provider is located) would share the costs and benefits of telehealth network access, leading to economies of scale. These initiatives align with value based care models, and allow each site to realize more reimbursement for improved quality scores. If patients can report to their local clinic and be telepresented to the remote specialist by the physician, nurse practitioner, physician assistant, or nurse, patients would be able to avoid long wait times, and transportation challenges.

Developing a telehealth network of specialty physicians who are affordable to access via appointment with patients at the clinic would increase turnaround time for patient diagnosis and treatment. It would also allow the FQHCs to offer more comprehensive services and enable them to have access to a larger network of specialists, while reducing distance as a barrier. Enabling patients to receive specialty services remotely at their local clinic will create new revenue generating opportunities for FQHCs and specialists, while providing better service for patients who are reliant on the community health system for access to health care.

The Payer Mix assessment in **Table 9** shows that the majority of patients served are self-pay or uninsured. In many cases, telehealth visits cost less than an in-person visit. If an FQHC is the originating site, Medicare will cover the costs. It's feasible to develop a cost structure that

mirrors the existing sliding scale fees for self-pay patients. There are select private insurers in Florida that reimburse for telehealth visits too.

3.3. Gap Analysis

The difference between the current state and the desired future state is significant. The excerpt from **Table 6** below outlines the gaps between needed and available health services.

Site 1	Site 2	Site 3	Site 4
Psychiatry is a gap. Dental Belle Glade: Nephrology Urology, Orthopedics Lake Worth: Dietician	Dentists are scarce Mental health Substance abuse	All specialties Priorities are mental health, radiology, and lab	Mental health has a gap. Resources for pediatric optometry

Excerpts from surveys are included below:

> *"The gaps can be narrowed by authentically sharing resources. Often, the problem is the distance between providers that are willing to share, making it difficult for clients to go from one place to another."*

> "*Specialists in the area restrict the number of Medicaid recipients they see and are not willing to provide slide fee scale to our uninsured patients.*"

> "*It is difficult to find/replace providers, [there are] language barriers [and] space constraints, and a large demand for services. In addition, [we have a] lack of access to specialty services, especially Psychiatry."*

> *"The result of a lack of specialty care for uninsured is resulting in repeated visits; there is an infinite need but finite resources"*

3.4. Identified Challenges to Implementation of Telehealth

Lack of Personnel

Many organizations do not have adequate staff to designate to program planning and development, and hiring more people for the task is a constraint. IMST Telehealth Consulting is willing and able to work on behalf of Quantum Foundation to plan, develop, and implement the program.

Lack of Knowledge of the Telehealth Implementation Process

It is also necessary to educate the clinical, administrative, and IT teams on the nuances of virtual visits and the implementation process. We recommend the end users obtain Telehealth

Certification as Clinical Presenters, Coordinators, or Liaisons with the National School of Applied Telehealth, in alignment with their current role. Telehealth Coordinator students will learn how to modify workflows to allow for smooth integration into the daily operations. Workflow development processes include scheduling, obtaining consent, and sharing the right clinical information with the distant provider prior to the specialty consult. Telehealth Clinical Presenter students will learn equipment specifications, and best practices for telepresenting. They will also learn room design considerations, like wall color, lighting, and noise levels. The technology selection criteria to consider during the planning and development phase include bandwidth, image resolution, interoperability, and security encryption.

Lack of Adequate IT Infrastructure

The need for widespread increase in bandwidth to ensure network connectivity, especially in the rural areas, will need to be addressed during program planning and development. All of the FQHCs stated they are using electronic medical records, and there is wireless and hard-wired internet access at all sites. High bandwidth connections or broadband are best suited to the data and live motion images used by live interactive telehealth encounters. Recommended minimum speeds for telehealth applications range between 384 kilobits and 512 kilobits at lower speeds. In order to conduct optimal virtual visits without delays in communication, higher bandwidth requirements are needed.

Lack of technology standards that support interoperability of equipment is seen as a barrier. While communication networks can take live interactive video and store and forward images anywhere in the world; not all equipment and software can communicate between manufacturers and models. Solutions to these barriers must be developed and implemented so telehealth can become a more widely accepted tool used to address the rapidly changing healthcare ecosystem.

Legal Constraints

For **FQHC's** the Federal Tort Claims Act dictates relationships allowed among FQHCs. There are ways to overcome this barrier, through legal contractual relationships that comply with the law.

Another important legal consideration is interstate licensure for telehealth providers. While telehealth reduces geographical and physical barriers, clinical licensure is still on a state to state basis. This means a provider needs to have a license in each state where they want to provide services. Regarding physician licensing, there is currently little opportunity to avoid obtaining multiple licenses.

Lack of Full Stakeholder Support

We covered this barrier during the Organizational Readiness Assessment section. Buy-in from all stakeholders at the administrative, clinical, and technological level is crucial before beginning any telehealth endeavor.

4. Market Analysis

Market analysis is very important to successful telehealth program development. It provides information that helps to define the telehealth program model; determines what customer needs will be fulfilled; and assesses the demand for the service. In addition, market analysis identifies how the program will provide value to customers; whether the program will be competitive in the marketplace; sheds light on what target messages engage key customers; and assures a sustainable delivery model. This section of the report analyzes customer needs; identifies and analyzes competing programs and determines service charges.

4.1. Customer Needs Analysis

Internal Customers

Feedback from clinic staff and administrators in six domains is included below.

Value:

Clinical Staff: Increased access to care; reduction in emergency room visits and hospitalizations; enabling better collaboration among the medical team; optimization of scarce clinical resources; and advance patient-centered care.

Administrators: Reach new markets; keep health care dollars inside the organization; save money on hospitalizations; avoid readmission penalties; optimal use of resources; and generate new sources of revenue and reimbursement.

Community Outreach: Marketing telehealth services to the community served will enhance quality of relationships, because patients will know the organization has taken advantage of technologies that address their most critical needs and barriers to health care access.

Needs:

Clinical Staff: Learn the intricacies of delivering telehealth services, from scheduling and obtaining consent, to operating the equipment and telepresenting the patient for the provider at the distant site. Include all key providers in the program planning and development from the very beginning to ensure all insights are considered and integrated into the program.

Administrators: They will need to conduct a cost/benefit analysis, and budget for initial program development and future expansion. Collaboration among clinical, admin., and IT stakeholders is a major key to program success. Also, RFP development, vendor demonstrations and professional technology selection provides guidance in purchasing decisions for a minimal viable pilot program. Then, plan to scale the program development incrementally. Billing managers need to learn the coding intricacies to ensure maximum reimbursement, and pricing models for self-pay patients need to be determined.

Community Outreach: Education and training to effectively communicate the benefits of telehealth to the patients and community partner organizations; to generate maximum demand for the services. At sites already conducting telehealth, internal stakeholders are seeking to expand their outreach to increase the benefits they can offer and realize more revenues.

Responsiveness to Needs:
Internal customers have expressed transportation and financial barriers prevent patients from showing up to specialty care appointments. Telemedicine allows patients to maintain their sites as their medical home, while receiving specialty services remotely and obtaining supplementary guidance and follow-up care there, too.

Needs to Operate the Program:
At all the organizations, Practice Managers will need to take a brief Telehealth Coordinator course; clinicians will need to take a brief Telehealth Clinical Presenter Course. Community Outreach team members will need to take a Certified Telehealth Liaison course. The administration and IT team will need to work together to procure and install the solutions in the clinical facilities. Today, many live-video solutions are turn-key, and can be accessed with existing computer equipment, for minimal cash outlays. Usually, it's just a monthly fee for the service and a fee per visit passed to the patient or the insurer.

Support for Program:
There is unanimous agreement within **most sites** that a need for a telehealth program exists due to patient barriers to access and lengthy wait times for specialty services. Early successes at **a few sites** have confirmed positive outcomes, but there is a great need to expand access and increase revenue streams.

Concerns and How to Mitigate Them:
At **some sites,** concerns exist due to limited knowledge and questions about reimbursement. Education, proven profitability, and demonstrations of lessons learned would be effective ways to overcome these uncertainties.

External Customers

Value:
Implementing telehealth reduces barriers to access, which can lead to improved health outcomes, and lower overall costs for health services.

External Customer Expectations:
Reduced wait times for mental health and other specialty services, improved health outcomes, lower overall costs for care, and reduced hospital admissions.

Needs:
Patients: Psychiatry patients have special needs and they need clinicians to facilitate that visit with a mental health professional that understands their unique needs and will provide a nurturing, private, environment of care. Many patients also need reduced transportation barriers and shorter wait times to be seen. This is especially important for medication management. Psychiatric medication therapies must be meticulously maintained in order for patients to maintain optimal mental health. Any lag in medication refills can produce adverse results in their

treatment. Access to the technology needed to participate in telehealth, training for the technology to be used and reassurance of patient privacy are also important.

Sponsors/Supporters: They need to ensure adequate time and resources are allocated to the program's development. They need to be involved in facilitating cooperation among administration, clinical, and technology stakeholders and to stay informed of project planning, development, and implementation. In addition, they should remain informed on utilization, performance, and outcomes of the program for successful expansion and to gain support from partner organizations.

Payers/Insurers: Medicare pays for some telehealth services, especially in remote rural areas, but has several restrictions. Medicare needs evidence of the patient being in an eligible location, facility, and is being seen by an eligible provider. In addition, they require an eligible CPT billing code. Medicaid is the most common route states are taking is to cover telehealth services. They have almost the exact same requirements as Medicare, but are less stringent on rural location requirements. Like Medicaid, regulations for telehealth reimbursement by private payers are set by the state. Patients are also able to pay out-of-pocket for telepsychiatry visits. The costs may be able to match current sliding scale fees pending a detailed cost/benefit analysis.

Governing/Oversight Agencies: The Agency for HealthCare Administration's (AHCA) Telehealth Advisory Council is currently conducting a statewide study to promote telehealth parity laws at the Florida legislative branch level. AHCA recognizes that telehealth reduces barriers to health care access and is an advocate for statewide adoption and reimbursement. The Florida Department of Health (FL-DOH) oversees licensing and practice eligibility of health professionals. The FL-DOH has designated prescribing laws via telehealth encounters. The only exception to prescribing controlled substances virtually is for psychiatric medications, otherwise it is not allowed. The FL-DOH also ensures appropriately licensed practitioners are working within their scope of practice.

Psychiatry/LCSW/Specialist Network: Patient consent, adequate patient history prior to visit, and patient accountability to attend their appointments. They also need compensation contracts, which may be established through a third-party or directly with the practitioner.

IT Directors: Active involvement in program planning, development and implementation. They need access to the technologies for troubleshooting, unless that service is provided by the chosen service vendor. Learn about and employ optimal connectivity and image quality to maximize patient/provider engagement, both at the originating and distant sites. Security of the connection is also a critical factor, as well as learning and implementing room requirements for maximum quality and outcomes.

Responsiveness to Needs:

Overall, the institution to institution model of delivering telemental health care is responsive to external stakeholder needs. Implementing telehealth reduces barriers to access, which can lead to improved health outcomes, and lower overall costs for health services. As long as stakeholders are willing to work together to learn, plan, develop, and implement the program using best practices and an incremental approach, the outcomes are expected to be highly successful.

External Partner Opportunities:

Two sites have expanded outreach to rural areas, but there are market opportunities for expansion to schools, homeless shelters, and prison inmates. **One site** has many partners in the community, including schools and homeless resource centers. Community outreach activities at all the organizations will identify them, and existing stakeholders can facilitate new partnerships.

4.4. Service Charges

In the Executive Summary of this report, we said there is effective demand for telehealth services among the FQHCs. We estimated the total number of monthly referrals from all the FQHCs to a wide range of specialists was 7,929. The excerpt from our Referral Patterns Assessment (**Table 7**, below) shows the number of estimated monthly off-site referrals per organization.

Site 1	Site 2	Site 3	Site 4
5,789	**30-40**	**1,800**	**300**

Given the number of referrals at each organization, there is an opportunity to significantly increase monthly and annual revenues.

5. Successful Models

Other states have developed successful telehealth programs for FQHCs, including Georgia, Mississippi and Arizona. A network of physicians for each organization to share access and connectivity costs, resulted in optimal revenues for the clinics, increased access to care for the critical populations, and reduced costs for the patients and organizations.

The American Telemedicine Association and Healthcare Information Management Systems Society telemedicine established critical success factors to abide by when implementing health technologies, based on Lessons learned from failed program development efforts.

Critical Success Factors

Ensure Leadership Engagement	Educate Patients & Community (External Marketing)
Establish Governance	Assign Implementation Team
Identify Program Champions	Develop Detailed Project Plan Based On Phased Approach –Standardize Implementation And Support Processes – Integrate Telehealth Services Into Standard Of Care Workflow – Provide Effective Training
Build Consensus (Internal Marketing)	Monitor, Measure, And Communicate Success