Patient Port

"The Best Way to Schedule Patients"

Final Report

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Executive Summary

Overview

PatientPort is a full-stack technology platform that can solve all medical provider's scheduling needs. Our Web-based platform, powered by a proprietary Artificial Intelligence (A.I.), translates between the unique computer languages of Electronic Medical Records (EMRs) to clear out referral scheduling bottlenecks. Additionally, PatientPort interprets faxed referral orders and escalates patients to priority scheduling based on their risk factors and referral diagnosis, saving over 33% on administrative labor.

PatientPort will be sold to any medical providers that schedule referrals, specifically general practice groups, specialists, and psychologists. PatientPort projects positive cash flow in Year 2 with the future target market to upsell from translation app to preferred full-service EMR.

Problem – Faxed orders and competing Electronic Medical Records create costly scheduling inefficiencies

Scheduling patient follow-ups with specialists can take days or weeks because the leading EMRs do not communicate with each other. Our primary and secondary market research shows that 33% of these scheduling orders are still handwritten and faxed. This causes a scheduling bottleneck that 1.) limits a provider's schedule maximization and revenue, 2) increases opportunity costs from wasted staff labor, 3.) worsens staff shortages, and 4.) deprives a patient of seeking faster care.

Additionally, many providers migrated to EMRs or EHRs (Electronic Health Records). However, the migration to these applications evolved without the ability to communicate with each other. Therefore, providers' office staff still need to schedule between these competing EMRs manually or interpret faxed orders.

Solution - Modern A.I. Software for an Outdated Process

PatientPort's value proposition is to make patients healthier faster through schedule optimization using our proprietary A.I. Additionally, patients can use the app to slot into a provider's calendar to receive care once their insurance approves their referral.

PatientPort solves a provider's operational logistics problems by removing the bottleneck to optimize the scheduling apps of other EMRs or be a standalone EMR.

Business Model – Software Subscription as a Service to proprietary translation A.I.

Revenue is generated through per provider licensing fees ($2,200 per provider per month) for an annual Subscription as a Service (SaaS) to the translation software. Our research shows that there are ~13,944 hospitals and ~424,882 providers practicing within hospitals. This leaves us with an average of 30 providers per facility or group, which means our average monthly subscription price is $66,000 and our average yearly subscription price is $792,000.

Competitive Advantages

No EMR competitors offer a comparable full-stack translation A.I. In addition, PatientPort's superior technology is more adaptable and integrative than other schedulers.

- Accurate translation A.I. between EMR/ EHR systems.
- Escalating appointments, as needed, based on patient risk factors and referral diagnosis.
- Slashing referral waiting times by 33%, thereby freeing up office staff.
- Optimizing a provider's calendar allows them to see more patients to increase revenue.

Current status

PatientPort's patents are pending, and it is in beta testing with multiple providers. The following is a summary of the status of the groups we have reached:

- 83% of the providers we surveyed are interested in software that will optimize their referral schedule if the system is HIPAA-compliant, cyber-secure, and easy to use.
- Providers are willing to pay a modest percentage more on subscriptions if the software can reduce 30% of wasted office labor.

The Executive Team

The current executive team, known as Group 4, is composed of:

- CEO who led four start-up technology ventures in sustainable construction.
- COO experienced in strategy, operations, and analytics in the Provider and Payer space.
- CTO with extensive experience in biotech integration and healthcare technologies.
- Customer Success Manager with an M.D. and experience as a market researcher.
- Business Development Manager who launched new products/ software.
- Lead Engineer with experience in technology product development and testing.

Financing and Decision point

PatientPort has been self-funded by the principals of the company up to now. We are in a seed round requesting $500,000 from Angel investors and Venture Capitalists. With the data provided in this report, Group 4 will go with a full launch of PatientPort by January 2023 and requests your investment fund for fixed and variable costs.

Introduction

PatientPort is a full-stack technology platform that can solve most if not all patient scheduling needs faced by a total available market of general and specialized medical practices that use EMRs or EHRs for scheduling, as well as their patient clientele. The Web-based portal (in App, Desktop, and Mobile-on-Web form) will be paid for by providers and integrated into their existing patient information and scheduling systems. It puts the power in the patients' hands, giving them the on-demand ability to schedule appointments for themselves at any time of day, which benefits both providers and patients. The software can instantly reach out to thousands of patients within a medical practice. The system's artificial intelligence (A.I.) will automatically transcribe faxed orders into an existing EMR or as a standalone. The product can potentially increase medical practices' bottom line through cost savings and revenue generation as well as help meet their sustainability goals by reducing paper waste. It also has a wide serviceable available market, since it can be enabled at medical practices anywhere that schedules patients and is able to capture a serviceable obtainable market of patients living in the vicinity of medical practices that use it.

Providers have a tremendous backlog of patients that they need to schedule. Staffing shortages and rising labor costs are making scheduling patients an even more difficult task than before. Patients are not being scheduled for referral services in a timely manner, leading to poor patient experience and poor health outcomes. Faxed orders are costly, time-consuming, and unsustainable, with some facilities receiving upwards of 1/3 of all orders via fax, requiring providers to dedicate multiple full-time employees to handling faxed orders alone. All these reasons create operational bottlenecks and cause facilities to miss out on scheduling appointments efficiently and generating revenue. 42% of patients leave a provider's office without a necessary referral appointment booked, and 45% of providers surveyed said that it was

difficult for them to determine who was in the patient's network (*Kyruus,* 2018). PatientPort can solve these problems with SaaS support and algorithms designed with the patient in mind.

Market Analysis

In developing this venture, we conducted secondary research on the patient scheduling management market, starting by isolating and defining the most pressing questions about the market and our venture. We then identified and evaluated the scope and complexity of issues related to patient scheduling and concluded with features that establish competitive advantages in the market.

Section I: Defining the problem and understanding the market

Identifying the problem

Scheduling delays cause inefficiency for medical offices and prevent patients from receiving care in a timely manner and adding to the detriment of their health, especially when their medical care needs are urgent. For example, a 2007 study found that veterans who visited a medical center with wait times of more than 31 days had significantly higher odds of mortality (*Prentice*, 2007). Providers are also affected by this as they must deal with the uncertainty of the number of appointments from day to day, which can make resource utilization inefficient and even affect clinicians' earnings and job satisfaction levels, resulting in 25%-60% of physicians reporting exhaustion across various specialties (*National Center for Biotechnology Information,* 2015). See Appendix 2 for a further deep dive into the reasons for these scheduling issues occurring.

Patients often fail to receive the follow-up care that they need after a doctor's visit because of the inability to schedule an appointment with specialists that they are referred to by their PCP. It can take months to find availability, during which a patient's medical condition can grow worse or even fatal. While 64% of providers think it is extremely or very important to schedule an appointment before the patient leaves the office for these reasons (A3), only 42% of

patients on average currently leave the office with an appointment booked for their referral. This importance is even higher for specialists as they are recipients of most referrals and typically treat more urgent clinical cases that require an appointment emergently (*Kyruus,* 2018).

Consumer Analysis

PatientPort's primary consumers are medical providers that use EMRs or EHRs. Providers can integrate our HIPAA-compliant API platform into their current patient management and scheduling tool in order to streamline patient access. While many of these options currently offer telehealth, patient portal access, and secure patient information management complying with HIPAA laws, they are still tied to a schedule that prioritizes physicians over Advanced Practice Providers (APPs) for most visit purposes, even when those care needs can be met by varying types of providers. They also rely on a schedule that makes assumptions about urgency for visit based on type of appointment needed rather than determining need based on health factors, which can delay appointments for some in need who may simply request a health checkup or other non-urgent care options.

Section II: Scope and complexity of issues related to PatientPort

Dynamic changes make scheduling in hospitals unnecessarily difficult. From ineffective technology to poor use of information to breakdowns of information flow, hospital efficiencies are hindered where they could be streamlined (Mageshwari & Kanaga, 2012). These challenges are given below. The SWOT analysis (A5) further elaborates upon the market's landscape impacting PatientPort.

A. Ineffectiveness of current information and communication technologies: Current technologies primarily used in this space include cell phones and two-way radios, which tend to break down in times of need. Currently, paper is the primary coordination tool used, which is

easily misplaced, destroyed, or confused. Finally, clinical/nonclinical department interaction can increase the chances of inappropriate patient transfer, while clinical/clinical department interaction can increase the patient's stay time in a department.

B. Lack of common ground: Ineffective information hand-offs lead to inadequate information sharing, which lead to inefficiencies in the hospital system. If the inpatient access department does not receive the appropriate information, as it often does not, it may ultimately make inappropriate assignments and create a temporary bottleneck by holding up necessary resources.

C. Breakdowns in information flow: These issues include the loss of patient information, misrepresentation of patient issues, and transportation of patients to wrong locations. It may also lead to overcrowding of common hospital systems such as blood tests, urine tests and X-rays. In addition, a number of political, economic, social and technological barriers further complicate this industry and the launch of new technology in it (see Appendix 4 for full PEST Analysis). Among these are the difficulty of access to medical facilities as a result of political constraints, the price of healthcare and the growing cost of the healthcare industry, and the healthcare industry's reluctance to adopt new technologies.

This ultimately results in countless touchpoints throughout the hospital system where the system can break down and cause delays, inefficiencies and complications for both medical staff and patients. The complexity of these issues is vast given the many ways in which they can manifest and the high stakes of the operations that they risk interrupting or complicating.

Section III: PatientPort Competitive Advantage

PatientPort will use AI (Natural Language Processor) that will read and transcribe faxed orders into the provider's Electronic Medical Record. PatientPort will help speed up and schedule more referral appointments in addition to appointments with the same provider. Once the provider receives the patient's referral through our API, the patient will get a notification through the app that tells them they have an appointment to schedule. As a key part of the value proposition, PatientPort's proprietary SaaS software will maximize providers schedule and patient's access to timely care by incorporating the following attributes cited by providers and patients are important in our primary research including; Ease of patient use, Ease of provider use, Low SaaS integration fee, Shortened patient wait time, Saving admin time, Low cost to install and HIPAA compliance (see Appendix 6 for value proposition and product benefits).

PatientPort puts the power of time and choice in the patient's hands. The patient can view the different providers within the provider group that they were referred to and pick their provider of choice. The patient can also view the full schedule of providers they were referred to and schedule an appointment at the best date and time that fits their needs without having to wait on a call from a scheduling representative. The wireframe in Appendix 7 further explains how PatientPort will work in the clinical flow, the site layout, and user experience for both providers and patients.

Telemedicine visits can take place through our app – patients can connect with primary care doctors, licensed psychologies/psychiatrists/therapists that meet their needs at a moment's notice, while our HIPAA-compliant open API can communicate with all electronic medical records, giving providers access to everything they need to effectively offer care remotely.

Lastly, PatientPort will collect and distribute feedback and learnings on patient scheduling trends to our providers so that they can better optimize their scheduling templates. See Appendix 8 for PatientPort's Business Model Canvas for an overview of the product, customer, and market.

Market Size & Growth Potential:

This market has a high growth potential with a Serviceable Available Market (SAM) of 15,000+ healthcare facilities in the US and a growth rate of 6.5% compounded yearly. At a price of $2,200 per provider per month, PatientPort has a revenue opportunity of approximately $3M by the end of Year 1. By targeting approximately 13,944 hospitals and 424,882 providers practicing within hospitals (US Bureau of Labor Statistics, 2020; American Medical Association, 2021), we can average servicing 30 providers per facility.

Primary Research

Market Research Questions

The goal of the market research is to answer the following pressing questions,

- What are the problems or pain points that our potential customers are experiencing?
- Do potential customers' current systems or processes create bottlenecks impacting operations?
- Does the current system or process negatively impact their revenue stream?
- What are the current alternative solutions?
- What are the desired product attributes that our customers are looking for?
- What is the willingness to pay from our customers' perspectives for our solution?

Market Research Approaches

To answer the pressing questions, our team devised a three-pronged approach, 1) a conjoint design (Pairwise technique) informed by closed-question qualitative interviews, 2) quantitative surveys (including ranking exercises), and 3) customer discovery interviews.

Our market research focused on the primary users (purchasers for group practices, physicians, and medical office managers) and the secondary users (patients). For the primary users, we focused mainly on authorized purchasers for group practices and did not interview every physician, as not all physicians have in-depth knowledge of the pricing of the various scheduling systems and/or are the decision-makers who determine the willingness to pay (WTP).

In the following sections, we will refer to the evidence generated through these three approaches to substantiate our arguments.

Market Research Findings

Conjoint (Pairwise Surveys):

- Four potential purchasing agents in this survey were asked to compare two attributes against each other and rate one as more desirable.
- The survey respondents were two medical providers, one medical scheduler, and one potential patient. They are the procurement officers for their groups. Two respondents report they operate in Massachusetts, and two reported operating in Connecticut. One respondent is a male provider (25%). One respondent is a female provider (25%). The scheduler is female (25%). The patient chose not to self-identify (25%).

Quantitative surveys:

- A total of seven patients completed the patient survey, two healthcare providers and one office manager completed the provider/scheduler survey.

- Survey respondents were mostly female (71.4%) and included respondents from the 25-34 years old age group (57.1%), the 35-44 years old age group (14.2%), and the 55-64 age group (28.6%). Respondents reported that they live in New York, Maryland, North Carolina, Florida, and California.

Customer discovery interviews:

- Qualitative interviews ranging from 30-40 mins were conducted with one healthcare provider and four patients.

What are the problems or pain points that our potential customers/users are experiencing?

PatientPort is designed for healthcare providers, medical schedulers, and patients. In our research, we sought to understand the challenges or pain points patients, providers, and schedulers face when it comes to scheduling an appointment.

- From the providers' perspectives: Providers reported in the interviews that even with their current software subscriptions, up to 40% of their orders are still on faxed documents (Appendix Tables 5-8).
- From the patients' perspectives: Through the quantitative survey responses, we learned that scheduling is challenging, especially when it comes to referrals, with 86% of patients reporting that scheduling a referral appointment and 57% of patients reporting that scheduling a primary care appointment is either difficult or extremely difficult (Appendix Table 2). This is corroborated by interview findings from the patients.

What are the current alternative solutions?

- From the providers' perspectives: In the interviews, medical providers reported that their offices enroll in multiple software subscriptions. Then administrative staff is assigned to interpret the data on the platforms and match openings in the schedules to each patient.

This process can take up to 15 minutes for one patient. Interpreting the data from faxes can take up to 30 minutes.

- From the patients' perspectives: When it comes to scheduling a medical appointment, patients mostly call up the doctor's office (86%), followed by using a website (29%) (Appendix Table 3). In terms of a competitor, Zocdoc has the most brand awareness (57%) and is used most frequently (57%) by patients. However, patients have also expressed discontent with the method of calling up the doctors' offices, describing it as a cumbersome and time-consuming process, with one patient noting, "*I have to call about five different offices [to get in].*"

What are the desired product attributes that our customers are looking for?

- From the providers/schedulers' perspectives: Our Pairwise research identified several desirable attributes that customers want included in a cross-functional software medical scheduling system. The patient response was not included below although it is included in the Appendix.
    - A secure, HIPAA compliant software system (83%)
    - The software should have an affordable annual subscription cost (63%)
    - The software should be easy for the provider to use (60%)
    - The software should have an affordable installation fee (53%)
    - The software should be easy for patients to use (50%)
    - The software should save administrative time by $\geq$33% reduction (50%)
    - The software should cross-function schedule with other platforms (33%)
    - The software should have an open API to allow communication with other platforms (33%)

    - The platform should be sustainable by conserving paper waste from faxes (17%)
    - The platform should use a "Doodle poll" type of selection feature (13%)
- From the patients' perspective: Patients were asked to rank the attributes we envisioned for PatientPort from 1 to 10, with 1 being most important to them and 10 being least important. Ease of patient use (average ranking 3.5), shortened wait-time (ranking 3.8), and saving admin time by 33% (ranking 4.3) are the most important attributes to patients (Appendix Table 4).
- Additional desired functionalities/attributes expressed by patients and providers are listed in Appendix Table 5.

What is the willingness to pay from our customers' perspectives for our solution?

Our interview research indicates that medical providers are willing to pay between $4000 to $5000 per month for a subscription service (Appendix Table 14) that can perform cross-functional scheduling. For comparison, customers are currently paying for primary EMR software at $9000 per month. Our solution's primary market is adjunctive software that can communicate with several other EMR software through its secure, open-API, and proprietary algorithms. The belief is that administrative staff will be more efficient and can be reassigned to other critical tasks such as transcription and billing. This can also shrink the labor costs by 1 FTE per month while improving scheduling times which can be an acceptable tradeoff.

Analysis

The Pairwise analysis (Appendix Tables 6-11) shows that efficient scheduling is desired by providers (target) and their patients. Scheduling appointments and procedures were considered hard by providers and patients (81%). The transfer of paperwork (i.e., fax) was

considered "somewhat hard" to "very hard" (71%). The providers (60%) and patients (55%) tended to desire ease of use for themselves. Costs of annual subscriptions (63%) and installation (53%) were key factors for providers. However, patients felt a whopping 90% of orders were delayed via faxes and impacted their satisfaction with their provider. Interestingly, the scheduler survey showed a desire for patient ease of use (70%) outweighed the provider ease of use (50%). Also, the scheduler survey showed that a reduction of administrative time is desirable (80%). Like patients, the schedulers did not see costs as a significant factor.

Significant risks include other apps refusing to allow integration or deciding to add a similar service. Another risk is layoffs as providers improve efficiency.

Novel applications

The current subscriptions that our clients pay show that it is possible to expand our adjunctive software to primary. Schedulers and patients' usage can influence the purchasing decision and they should be included in our marketing campaign.

Competitive Analysis

Direct Competitors

Since PatientPort's value proposition is to use artificial intelligence (AI) to convert faxed orders into computer orders so providers, patients, and medical schedulers can experience an easier referral and scheduling process, the direct competitors that operate in this space will also have to offer similar services. Moreover, this unique offering can only be executed through proprietary algorithms that enable cross-communication with other EMR software. Two

companies stood out as direct competitors to PatientPort, and they are Phreesia and LumaHealth (Appendix 9A-9B).

Phreesia automates time-consuming processes (e.g., intake, consent management, and scheduling) to free up office staff's time so they can focus on other important tasks (Phreesia, n.d.). It touts itself as the expert in helping doctors navigate complex challenges, such as managing different EMR systems (Phreesia, n.d.). Its selling point of integrating with different EMR systems makes it a direct competitor to PatientPort.

Among its many offerings, LumaHealth brings patient referrals, appointment reminders, and patient scheduling to providers (LumaHealth, n.d.). Its automatic patient referral outreach makes it a direct competitor because it will contact referred patients to book an appointment after it receives and reviews the referrals from the referring doctor (LumaHealth, n.d.). This unburdens patients from having to remember to call offices to request an appointment.

Indirect Competitors

Of the twelve companies reviewed, seven are considered as indirect competitors, and they are listed in Appendix 9A-9B. They are categorized as indirect competitors because although they offer many features that the traditional EMR offers, such as patient scheduling, they lack the novel attributes of transcribing faxed orders using AI, referring patients in a seamless way, and integrating across EMR systems.

Epic is the most noteworthy indirect opponent because it occupied nearly 31% of EMR market share in 2021 (Drees, 2021). Upon seeing PatientPort's features of scheduling appointments based on risk factors and referral diagnosis, Epic can quickly task a team to implement PatientPort's applications into its system to maintain its product's market presence. Their penetration in the market also means they do not have to integrate with "other" EMR

systems as much since almost a third of the US providers use their software. This can lead to an earlier generation of revenue from the new services. This makes Epic a strong potential indirect competitor (Appendix 10).

Market Entrants

Zocdoc, RXNT, and InSynch are considered market entrants because they do not directly refer patients (Zocdoc) or are more of a practice management software than a direct provider-support software (RXNT and InSynch) (InSynch, n.d.; RXNT, n.d.; Zocdoc, n.d.).

Companies that use AI to extract data can also be a strong competitor in the future. Examples of such companies include Etherfax, Concord Technologies, and Cisco Commerce. They can leverage their deep knowledge in recognizing text to transcribe faxed medical orders into actionable orders for medical schedulers. If the company perfects its AI algorithms, it can also interpret the order itself and reach out to patients via automated text messages to schedule an appointment, thereby saving scheduler's time. As indicated in one case study, Cisco Commerce demonstrates that through deep learning and machine learning, it reads manual faxed orders with 85% accuracy and improves the order processing time by 99% (Daly, 2018).

Opposing Forces and Evidence

How to prevent competitors and market entrants from replicating PatientPort's features?

- To build barriers to entry from competitors, PatientPort will patent the algorithms, copyright and trademark the idea, and enhance user interface to increase stickiness (Appendix 11). Machine learning algorithms can be patented by breaking down the software algorithm into a series of mathematical steps and procedures (Mon, n.d.). After copyrighting and trademarking, PatientPort reserves the right to sue copycats. Research

on customer stickiness recommends creating an easy-to-navigate user interface, which is especially important for busy medical practices (Spenner & Freeman, 2012).

How can PatientPort successfully integrate with other EMR systems without having to worry about resistance from the systems?

- It is natural for EMR systems to resist opening up their portals to PatientPort's service, especially when they may see PatientPort as a competitive threat. In fact, EMR systems from different makers were purposefully designed to not be able to talk to each other (Brown, 2021). Effective April 2021, though, the Office of the National Coordinator for Health Information Technology enacted the 21st Century Cures Act, which requires EMR systems to exchange data with each other (Brown, 2021). This will decrease the challenges that PatientPort will face when integrating its services with EMR systems.

Fax machines are getting antiquated. How will you keep providing value to your customers?

- According to a survey, almost 90% of healthcare organizations still exchange information via fax (Morgan, 2021). Even when e-fax is increasing in popularity, PatientPort's competitive advantage in determining the urgency of the appointment based on the risk factors and text identified through faxed orders will still be of value to medical offices.

For additional opposing force, please refer to Appendix 4.

Pricing Analysis

When analyzing the pricing strategy for direct competitors, Phreesia will be the focus as there was no pricing information available for LumaHealth. Offices pay an average of $1333 to $1500 per provider per month (PPPM) for the Phreesia software. Some of the features that are included in its entry-level package include intake workflow, consent management, online appointment requests, and appointment queue to track requests. Add-on applications like

automated self-scheduling and referrals will increase the price to $1500 PPPM. The willingness-to-pay survey indicates that providers will pay an additional $700 per month if there is a software that can reduce the cumbersome scheduling process. Considering that PatientPort will offer similar services as Phreesia but automate the scheduling process by transcribing faxed orders with AI and escalating or down-escalating patient appointments based on risk factors, office capacity, and referral status, $2,200 per provider per month is a reasonable price for PatientPort.

Epic or PatientPop also sell tiered pricing packages. Depending on the level of customization, Epic charges from the low of $200 per month to $35,000 per month (CostHack, n.d.). Services such as standardizing patient charts; integrating with pharmacy, lab, and immunization registries; managing referrals; and scheduling appointments are all customizable and dictate the monthly price of the software (CostHack, n.d.). On the other hand, PatientPop costs between $700-$900 per month (TrustRadius, n.d.). Its higher-end pricing would include online scheduling, text messaging, and intake workflow (PatientPop, n.d.), most of which are considered as part of the basic features for PatientPort.

Market entrants' pricings are available in Appendix 9B. They will not be discussed extensively here as their offerings are markedly different from PatientPort's, so their pricing strategy will not be directly translatable to PatientPort's pricing consideration.

Regardless of whether it is indirect competitors or market entrants, what differentiates PatientPort apart from its cheaper alternatives is that its proprietary AI will enable offices to schedule and escalate appointments, if needed, based on patients' risk factors and referral diagnosis.

Financial Model

Financial Statements

- Income Statement (Appendix 13): There are two income statements included. One that is month-over-month for the first year of operation after acquiring $500k in seed round funding to show when Patient Port will break even, and the revenue and cost assumptions that will lead us there. The other income statement is year-over-year for the next four years to show how Patient Port plans to grow given series A funding following the first year of operation.
- Balance Sheet (Appendix 14): The balance sheet shows a month-over-month view of Patient Port's assets, liabilities, and shareholder equity.
- Statement of Cash Flows (Appendix 15): The statement of cash flows shows when Patient Port will become cash flow positive from operations in year 1.
- Financial Plan (Appendix 16): The financial plan shows PatientPort's forecasted revenue and costs assumptions for the first 5 years of operation.
- Break-Even Analysis (Appendix 17): The break-even analysis show the unit contribution margin, the number of units needed to break even, and the number of sales dollars needed to break even on a monthly and yearly basis.
- Risk Analysis (Appendix 18): The risk analysis gives a breakdown of how PatientPort's sales price can change depending on the different variable outcomes that determine pricing – negotiated per provider per month price and the number of providers that work at a client's facility.

Financial Plan & Breakeven Analysis

A financial plan with a breakeven analysis is included in the appendix below as well as within our excel workbook. In year 1, we are projected to end the year with a net loss of $392k. We are seeking a seed round investment of $500k in exchange for 5% equity in our company. With the proper funding, Patient Port is projected to break even in month 6 of operation. We will use funding to cover overhead and variable expenses, and plan to have a burn rate of ~$66,677 per month. After our first year of operation, we will seek series A funding which will enable us to achieve a rapid growth rate year-over-year through the first 10 years of operation, with an average growth rate of ~49%. By year 10, we will stabilize our yearly growth rate at ~15%.

Assumptions in Notes on Financial Statements

A full list of notes containing assumptions for each line item is located below each financial statement; however, two of the most notable, high-cost assumptions are:

- Pricing: In our Willingness to Pay analysis, our research leads us to estimate that our customers would be willing to pay $2,200 per provider per month for our software solution. To calculate our average sales price, we found the average number of providers per facility in the United States – for this, we targeted primarily hospitals. Our research shows that there are ~13,944 hospitals and ~424,882 providers practicing within hospitals (US Bureau of Labor Statistics, 2020; American Medical Association, 2021). This leaves us with an average of 30 providers per facility, which means our average monthly subscription price is $66,000 and our average yearly subscription price is $792,000.

- Salary: We require six essential employees to grow and scale our business. All employee salaries, aside from the CEO and CTO, are based on salaries from Microsoft. Our employees and their salaries are:
    - CEO - $250,000
    - CTO - $225,000
    - COO - $200,000
    - Software engineer - $180,000
    - Customer success manager - $125,000
    - Business development manager - $150,000

Risk Analysis & Break-even

A risk analysis is included in the appendix (Appendix 18). The analysis is a sensitivity analysis that illustrates how changes in pricing affect our unit contribution margin, units needed for break-even, and sales dollars needed for break-even. The analysis takes into consideration the two main drivers of our pricing model – the differences in providers per facility and the negotiated price per provider per month (pppm) per facility. The risk analysis yielded promising results as the lowest tier, $1,200 pppm for 5 providers, which estimates a break-even of 29 units or just over $2 million in sales. At the highest tier, $3,200 pppm for 55 providers, we estimate a break-even of less than 1 unit or just over $1.2 million in sales. Even at the lowest tier of our risk analysis, we are confident in our ability to secure enough sales volume to break even mid-way through year two of operation. For break-even, we assume that we will negotiate a rate of $2,200 per provider per month per facility with an average number of providers per facility at 30.

Financial Plan's Relationship to Value Proposition

Our greatest value is built upon a one-stop-shop approach for our provider partners and their patients with a full-stack technology platform that leverages proprietary A.I. in order to support our goal of improving the patient experience, increasing care coordination, and becoming more sustainable. Our primary research has shown that there are clear pain points that must be addressed from both the providers' and patients' perspectives. Our full-stack system is a culmination of the segregated software products on the market along with new, innovative systems that address everyone's needs in a simple, efficient manner. Our competitive analysis and willingness to pay analysis show that our product can be sold for $2,200 per provider per month. To improve this currently broken system, we are seeking an investment of $500k in seed round funding in exchange for 5% equity in our company. This investment will help us to cover our overhead expenses in year 1. By year 10, with the help of series A funding, we expect to grow to over $2.8B in net income.

Connecting Competitive & Market Research

In order to accurately price our offering, we conducted a pricing analysis for one of our direct competitors, Phreesia, and followed up with a willingness to pay analysis. Our competitive analysis found that Phreesia's customers pay on average ~$1,500 per provider per month (pppm) for their services, which include applications such as automated scheduling, referral tracking, and billing support. Our willingness to pay analysis found that providers would pay an additional $700 pppm for software that can improve their cumbersome scheduling process. This is how we arrived at an estimated, assumed, average pricing of $2,200 pppm. To mitigate risk and surprises,

we conducted a risk analysis, which shows best-case and worst-case scenarios around pricing; all of which are fruitful.

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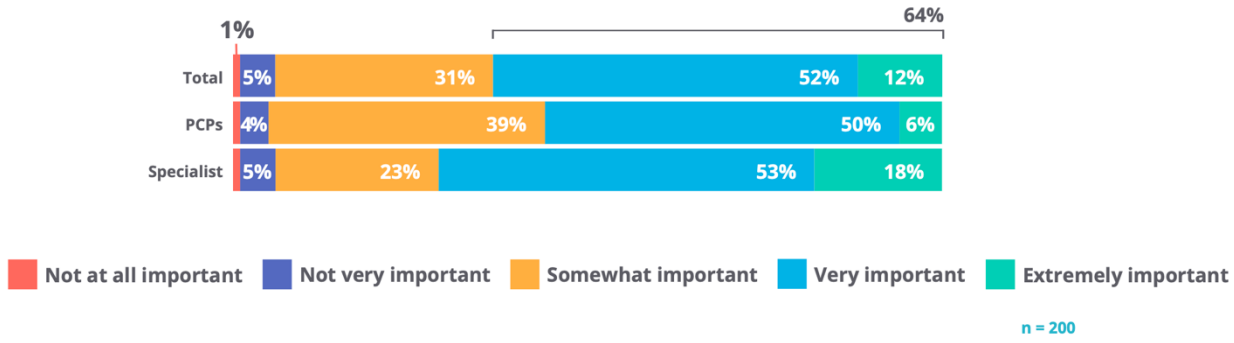
Appendices

Appendix 1: Notable Inefficiencies of the Current Medical Scheduling System

Appendix 2: Importance of Scheduling an Appointment for a Referral Before a Patient Leaves the Office (*Kyruus,* 2018)



Appendix 3: Reasons for current scheduling issue

Supply and Demand Issues	There are simply more patients with care needs than providers to meet them. The Association of American Medical Colleges estimates that by 2025 the United States will have a shortage of 46,000-90,000 providers (*National Center for Biotechnology Information,* 2015).
Provider-Focused Approach	Currently, scheduling follows a provider-focused approach, where providers offer services on receiving payment because they have incentives to offer higher paid services at the lowest possible cost to the provider. On the reverse, patients need accessible services and low out-of-pocket costs. The health-care system currently reflects the priorities of providers and organizations rather than those of patients, resulting in a focus on traditional scheduling systems that are not designed to engage or satisfy patients, but rather to fit a staff schedule that may be out of sync with patient needs.

Outmoded Workforce Models	Despite known issues with physician understaffing, current practices continue to prioritize physicians over other providers, not utilizing advanced practice practitioners (APPs) and other administrative staff to their full potential to provide services like immunizations, pre-visit record screens, escorting patients to exam rooms, and offering remote site consultation (*Gabow and Goodman*, 2014; *Toussaint and Berry*, 2013). Without other practice innovations, current workforce models will not be sufficient to fulfill future health care demands, especially as patient demands shift away from acute care to growing needs for primary care and chronic care management (*IOM*, 2011). Other methods of conveying relevant information and consultation will be required to improve primary care capacity (e.g., phone and Web-based video consultations). APPs have a larger opportunity to participate in the development, redesign, implementation, and

	delivery of technology-based services *(IOM*, 2011).
Priority-Based Queues	Priority-based scheduling assigns varying wait times to different patients based on estimates made about the expected need associated with various types of diseases. Priority-based scheduling procedures frequently only address one requirement per visit, limiting the provider's ability to cover numerous needs of the patient in a single session. Patients diverted to other venues for urgent treatment frequently typically want to follow up with their primary doctor later, turning a one-time appointment into a series of visits, and those requiring regular or less urgent visits may face longer wait times (*Murray and Berwick*, 2003). PatientPort seeks to use an algorithm to determine the urgency of appointments by collecting the following details from the patient during the scheduling process and assigning the appropriate provider type and

	appointment urgency to each: risk factors such as age, gender, BMI, and co-morbidities (multiple complicating diagnoses that may influence the medical outcomes for each individual patient) and classification of patients into different classes based on anticipated capacity utilization and urgency. PatientPort's algorithm will use multi-class scheduling and capacity reservation models that account for the variability in patients' needs and resource requirements among classes. This has the potential to minimize wait times while increasing patient throughput and provider usage at the same time.
Care Complexity	Patients are living longer with complex, chronic diseases as a result of health care innovation and the development of new treatments, resulting in an aging population with increasing medical needs, including physical and emotional conditions that necessitate various types and amounts of health and related services (*Bodenheimer et*

	al., 2009). Providing adequate, cost-effective care for a patient with numerous illnesses may necessitate collaboration with multiple subspecialists, which might exacerbate scheduling issues. This requires the patient or family to plan many appointments, typically on separate days and in different places, generating multiple potential for scheduling errors in the existing provider-centered health care model (*IOM*, 2012).
Geographic Access	The Centers for Medicare & Medicaid Services (CMS) has its own criteria for geographic access and Medicare providers must show that 90% of their provider network complies with the prescribed time and distance requirements (*CMS,* 2015). Patients must therefore rely on office visits as the default option for care due to geographic and physical obstacles. Telehealth or telemedicine can be a great option for these patients instead of going to the doctor's office.

	PatientPort's SaaS platform can assist in scheduling these online visits, extending access to healthcare for many patients beyond geographical boundaries.

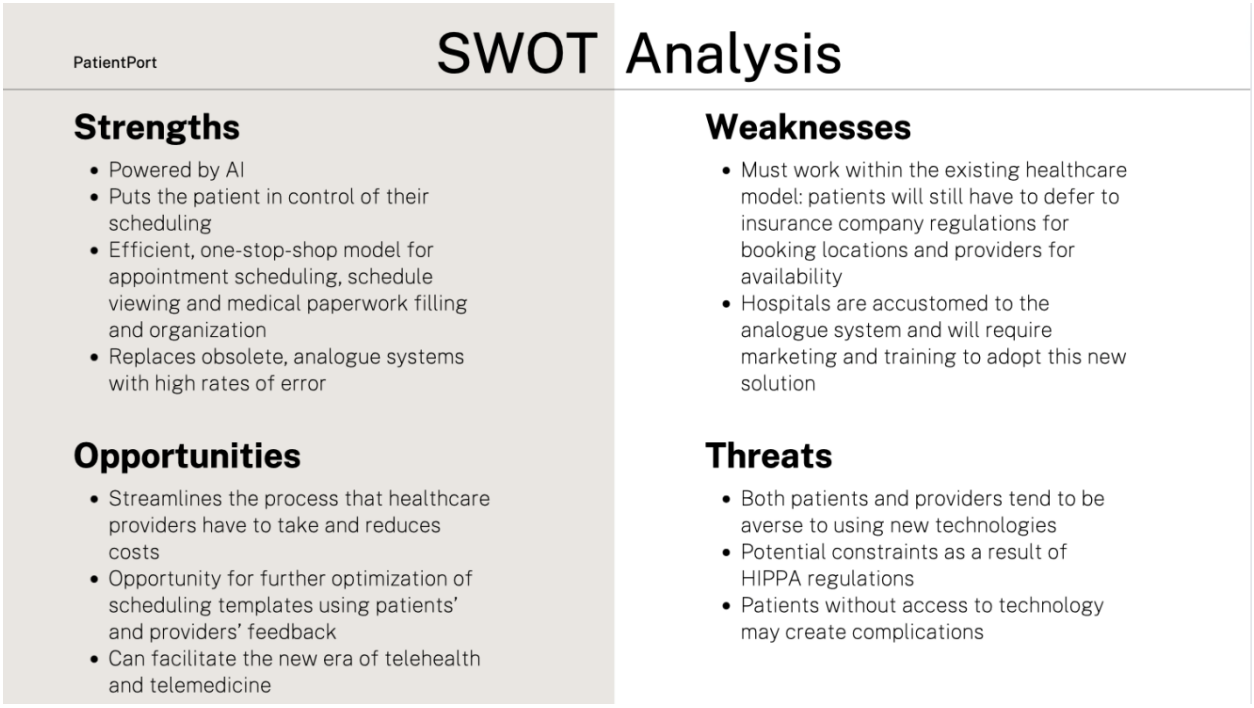
Appendix 4: PEST Analysis

POLITICAL	ECONOMIC	SOCIAL	TECHNOLOGICAL
The Affordable Care Act has reduced the number of Americans without health insurance. Unfortunately, there is still a significant portion of the United States population that lacks the financial means to pay for health care (KFF, 2015). Many practices (particularly specialty practices) do not accept patients who do not have private insurances or otherwise subject them to aggressive	According to White House research during President Obama's term, slowing the annual growth rate of health care costs by just 1.5 percentage points would increase real GDP by over 2% in 2020 and nearly 8% in 2030. This would imply approximately $2,600 higher income for a typical family of four in 2009 compared to income without reform, and almost $10,000 greater income for that same family in	Healthcare access issues begin with provider choice and insurance company regulations, precluding the inefficiencies seen in the hospitals themselves. The Veterans Access, Choice, and Accountability Act of 2014 offers a new national standard for veterans seeking better geographic access, and offers veterans a choice of receiving care in the private sector for those living more	Although healthcare technology is advancing fast, both practitioners and patients are too often reluctant to embrace new innovations as they arise. For example, while experts predict that 85% of customer interactions in 2020 were handled without a human across industries, only 20% were found to trust AI-generated healthcare advice. This is in part due to risk aversion by doctors who

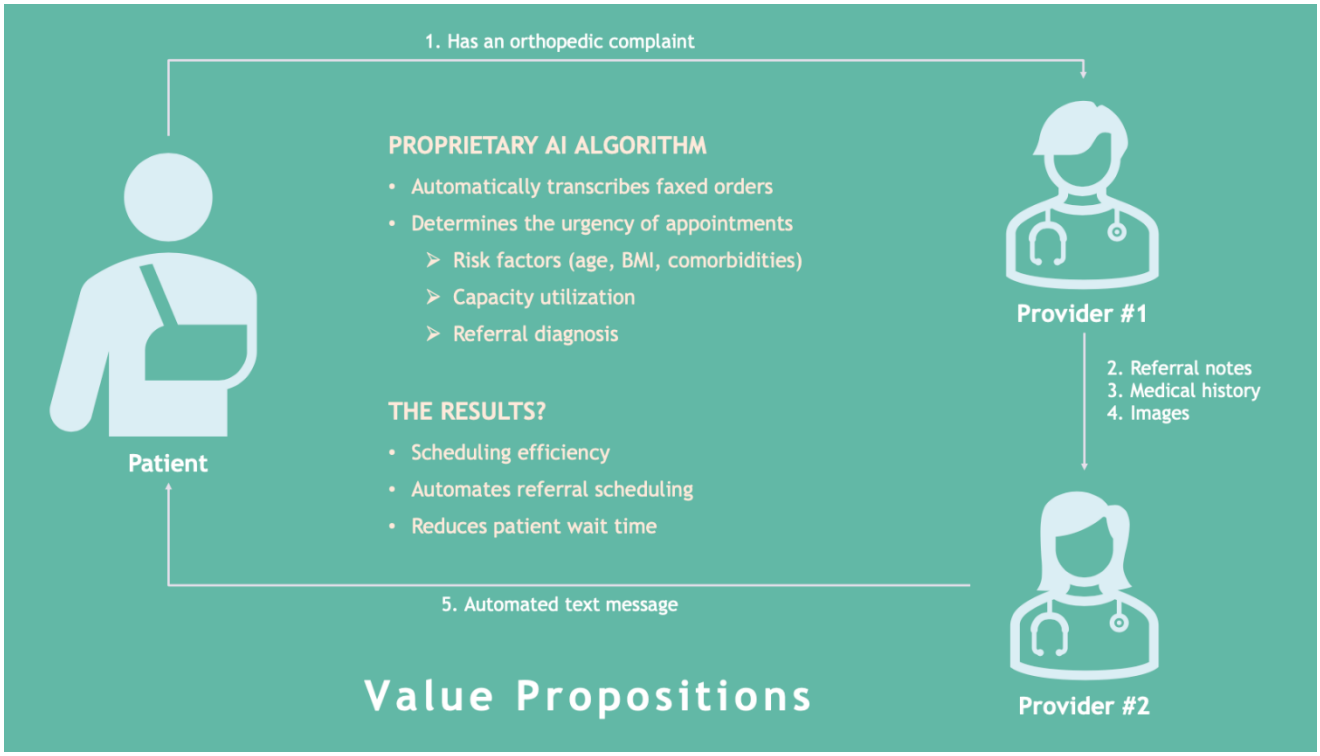
wait times of over a month, even for serious conditions: in one survey of wait times, the average rate of Medicaid acceptance by physicians across five specialties in 15 major metropolitan markets was 45.7% in 2013, down from 55.4% four years earlier. The average acceptance of Medicare patients was 76% (MerrittHawkins, 2017); (Bisgaier and Rhodes, 2011). Furthermore, the divisive party politics surrounding	2030. Slowing the growth rate of health care costs was also estimated to be able to "prevent disastrous increases in the Federal budget deficit," lower the unemployment rate consistent with steady inflation by ¼ of a percentage point lower unemployment by approximately 500,000 each year that the effect of lowered costs is felt. Finally, healthcare reform was said to be likely to "increase labor supply, remove unnecessary barriers to job mobility, and	than 40 miles from the nearest VHA medical facility. However, this highlights the problem faced by regular citizens, for whom access is typically determined by their insurance status. Private insurances require patients to live within a specific geographic service area for enrollment and varies with each payer program. For those who opt to seek care outside of the insurer network out of necessity, patient copayments are	recognize that failure of new technology could have disastrous results in an emergency medical setting. The healthcare industry is also subject to complicated legal restrictions like HIPAA, which creates regulatory and compliance challenges that healthcare workers must approach with care when dealing with sensitive patient health data. HIPAA violations can result in multi-million dollar fines, adding an additional layer of

healthcare systems in the United States further contribute to challenges in streamlining healthcare access.	help to 'level the playing field' between large and small businesses" (National Archives and Records Administration).	typically considerably higher (Congress, 2014).	complexity to the launch of a new piece of technological innovation (Ravitz, 2020).

Appendix 5: SWOT Analysis



Appendix 6: Value Propositions

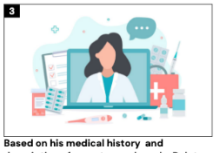


Appendix 7: PatientPort Wireframe

How PatientPort Works – Provider Perspective

Bob is very sick and needs to see a doctor

Dr Khan, Bob's PCP sees Bob virtually through the PatientPort's telehalth platform. Dr Khan can access Bob's medical information and can see Bob's symptom details prior to the appointment



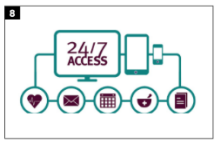
Based on his medical history and description of symptoms, she asks Bob to rest for 2 days, take prescribed medication and visit her in person if Bob's symptoms get worse

Bob's symptoms unfortunately got worse. He scheduled an appointment with Dr Khan in person and filled out a quick form with an update on the worsened symptoms. Dr Khan assesses his worsening condition.

Upon examining Bob and reviewing the worsening symptoms progression on PatientPort, Dr Khan believes Bob should see an Infectious Diseases doctor who can run specialized tests and provide care accordingly. Dr Khan gives Bob a referral. Bob's medical history including Dr Khan's recent notes are uploaded to PatientPort, for the referral doctor to access view PatientPort's HIPAA complient medical information sharing platform.

Bob visits Dr Vasquez, a top rated Infectious Diseases provider within Bob's insurance network, who runs some tests on Bob to identify the cause for illness. Dr Vasquez can access all of Bob's medical information, scheduled Bob's for tests, reviews test results and shares next steps in care with Bob through the PatientPort portal.

Dr Vasquez determines the cause and schedules Bob for a simple, non-invasive procedure to cure the illness. Everybody on Bob's care team uses and updates Bob's medical charts based on the visits and tests Bob has had so far, along with medical history details through PatientPort's secure, HIPAA compliant portal



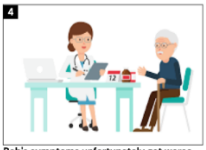
Bob returns home and is recovering in bed. Dr. Vasquez updates prescription and care instructions, medical charts, information on the proceedure Bob had etc. on PatientPort for Bob's easy access, and for future medical providers on Bob's team to review. When Bob is recovered, Dr Vasquez's office gets paid through Bob's online payments on PatientPort. Bob also schedules a follow up appointment with Dr Vasquez in 3 months as per his care plan on the portal.

How PatientPort Works – Patient Perspective

Bob is very sick and needs to see a doctor

He logs into PatientPort to look at his care options. He decides to see his doctor via TeleHealth and schedules an online appointment 15 minutes from now

Dr Khan, Bob's PCP advises Bob to rest for 2 days, take prescibed medication and visit her in person if Bob's symptoms get worse



Bob's symptoms unfortunately got worse, so he logged back onto PatientPort and scheduled an appointment with Dr. Khan for tomorrow

Upon examining Bob, Dr Khan believes Bob should see an Infectious Diseases doctor who can run specialized tests and provide care accordingly. Dr Khan gives Bob a referral. Bob logs into PatientPort and picks an Infectious Diseases doctor based on reviews from the referral list Dr Khan provided in the portal.

Bob visits Dr Vasquez, a top rated Infectious Diseases provider within Bob's insurance network, who runs some tests on Bob to identify the cause for illness

Dr Vasquez determines the cause and schedules Bob for a simple, non-invasive procedure to cure the illness. Everybody on Bob's care team uses and updates Bob's medical charts based on the visits and tests Bob has had so far, along with medical history details through PatientPort's secure, HIPAA compliant portal

Bob returns home and is recovering in bed. He can access his prescription and care instructions, medical charts, information on the proceedure he had etc. on PatientPort. When Bob is recovered, he can also make payments for his medical care and schedule a follow up appointment in 3 months as per his care plan on the portal.

Site-Layout and User Experience:

Site Layout

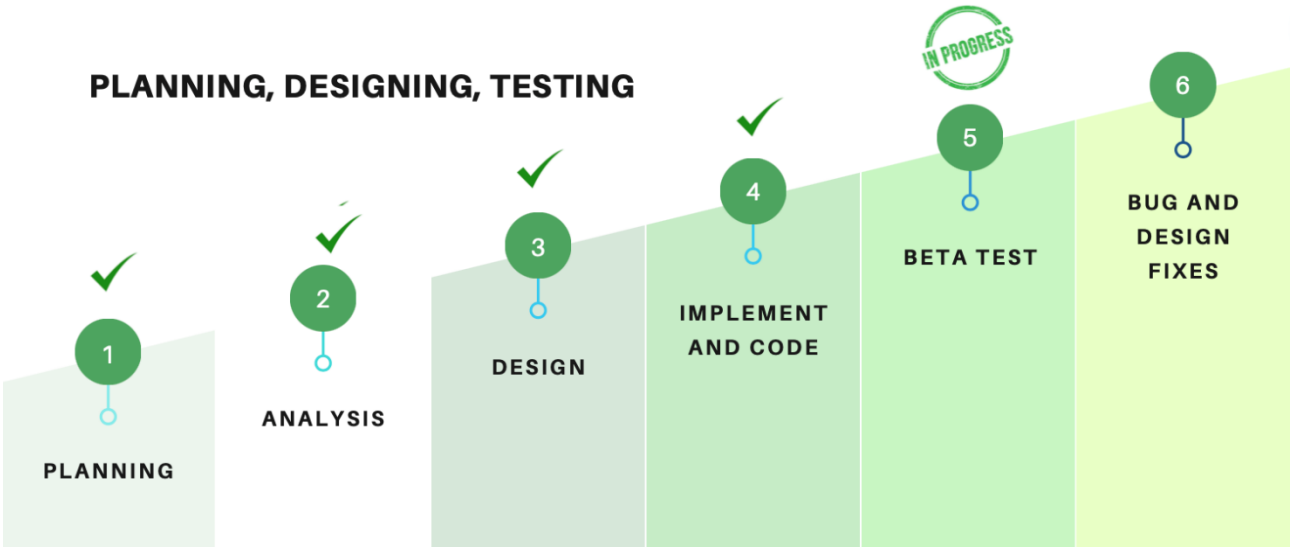
PatientPort's platform layout and UI are proprietary, as it incorporates AI technology for patient input and HIPAA compliant software for patient referral and medical information sharing

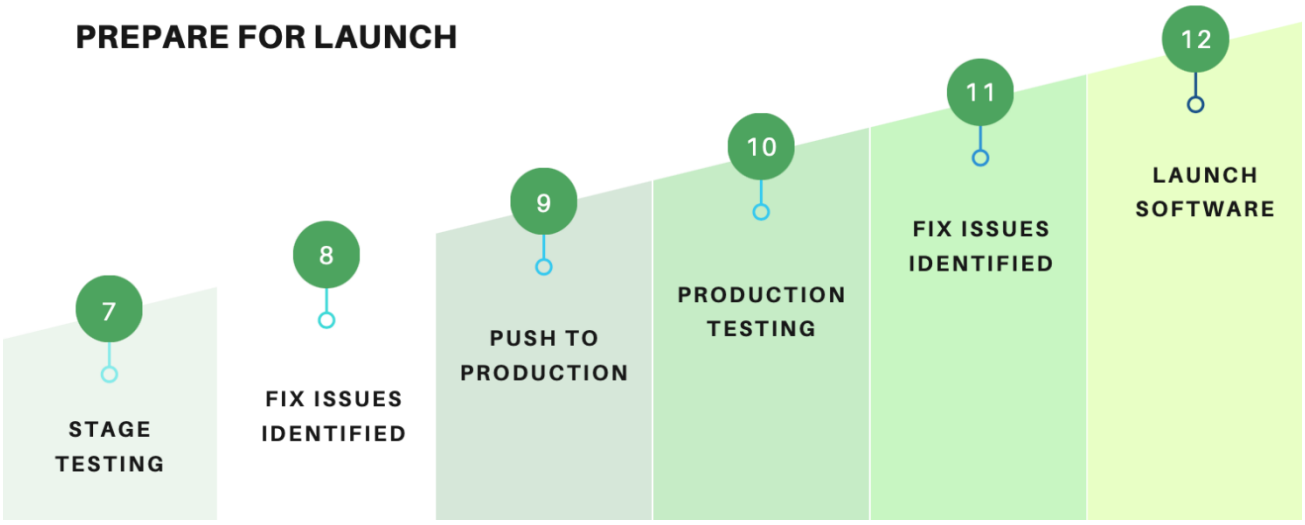
User Interface

This technology is in its beta testing phase and is in the process of acquiring UI feedback from 50 PCP providers, 50 specialized care providers and 100 patients

Steps to Launch

The next phase will be bug fixes, stage testing, production, production testing and then rollout .




PREPARE FOR LAUNCH
7
STAGE TESTING
8
FIX ISSUES IDENTIFIED
9
PUSH TO PRODUCTION
10
PRODUCTION TESTING
11
FIX ISSUES IDENTIFIED
12
LAUNCH SOFTWARE

Appendix 8: PatientPort Business Model Canvas

Key Partners
- General Medical Providers
- Special Medical Providers
- Insurance Companies
- Mobile carriers such as Apple, Android, Windows
- Medicare/ Medicaid
- Veterans Administration
- Other EMR and HER providers

Key Activities
- Translating fax orders through the A.I.
- Translating between EMRs and EHRs to auto-schedule appointments
- Web and On-Demand Maintenance
- Customer technical support

Key Resources
- IT engineers
- Field integrators
- Mobile operating system
- Open API licenses to other EMRs
- 24-hours NOC engineers for online tech support

Value Proposition
Problem statement

EMRs cannot communicate with each other thereby causing avoidable scheduling delays affecting patient care and provider revenue.

Solution
- Use an integrative A.I. software that can translate between competing EMRs.
- The A.I. system can also automatically translate hardcopy faxes to actionable care instructions.

Key Attributes
- - Healthcare on demand
- - Slashing 33% off scheduling wait times
- Freeing up office staff
- Affordable integration fee
- Affordable monthly SaaS

Customer Relationships
- Direct marketing to medical practices
- B2B direct sales contact
- Provide secure, reliable service
- 24-hours customer and technical support

Channels
- Online platform
- Web platform
- Mobile app
- Physician Network
- eFax and Fax machines

Customer Segments
Primary users:
- Most general medical practices that use EMRs or EHRs (i.e., Phreesia, MyChart)
- Most specialist medical practices that use EMRs or EHRs.

Secondary users:

Most patients that use EMRs or EHRs apps to schedule appointments

Cost Structure
Fixed: Administrative costs, API token costs, computer lab fees, hourly labor employees, office hardware

Variable: Salaried employees, maintenance fees, marketing, travel costs, utilities cost

Revenue Streams
- Physician-paid Initial integration fee
- Physician-paid sales of open-API tokens (annual fee)
- Physician paid monthly fees for Subscription as a Service (SaaS) with annual contracts
- Add-on packages for Managed Subscription as a Service (MSaaS)

The Business Model: PatientPort

Osterwalder, A. (2004). *The business model ontology: A proposition in a design science approach. S.l.: s.n.*

JOHNS HOPKINS CAREY BUSINESS SCHOOL

Quantitative patient survey results

Table 1. Frequency of patients making an appointment each year (n=7)

	To see a healthcare provider	For a referral	To get a lab test or imaging	For a procedure
3 times or less in a year	43%	100%	86%	86%
Between 4-6 times a year	57%	0%	14%	14%
Between 7-9 times a year	0%	0%	0%	0%
10 or more times	0%	0%	0%	0%

Table 2. Patients' perspectives on ease of scheduling and/or transfer of paperwork (n=7)

	Schedule a primary care appointment	Schedule a referral appointment	Schedule a lab test/imaging	Schedule a procedure	Transfer of paperwork
Very easy	0%	0%	14%	0%	0%
Somewhat easy	14%	0%	29%	0%	0%
Neither easy nor difficult	29%	14%	14%	14%	29%
Somewhat Difficult	57%	57%	29%	43%	57%
Extremely difficult	0%	29%	14%	14%	14%
Never had the experience	0%	0%	0%	29%	0%

Table 3. Alternative methods to PatientPort, expressed by patients (n=7)

Question	**Response**	**Number of respondents (%)**
Methods used to schedule a medical appointment	Text the doctor's office	1 (14%)
	Call the doctor's office	6 (86%)
	Schedule it in-person at the doctor's office	1 (14%)
	Use a website	2 (29%)
	Use an App	1 (14%)
Have you **heard of** any of the following software that can help	ZocDoc	4 (57%)
	Healthgrades	1 (14%)
	Practice Fusion	0 (0%)

you schedule an appointment?	Vitals	0 (0%)
	PatientPoint	0 (0%)
	Others	1 (14%) reported Quest lab, various pharmacy websites immunization appointment scheduler
Have you **used** any of the following software that can help you schedule an appointment?	ZocDoc	4 (57%)
	Healthgrades	0 (0%)
	Practice Fusion	0 (0%)
	Vitals	0 (0%)
	PatientPoint	0 (0%)
	Others	1 (14%) reported Millennium, Healow; 1 (14%) reported NextMed, Valant

Table 4. Attributes ranking results by patients (n=6)*

Attributes	**Attribute Descriptions**	**Average Ranking** (1 is most important, 10 is least important)
Ease of patient use	What is the value to you for the app to be easy for a patient to use?	3.5
Shortened wait time when scheduling a doctor's visit	What is the value to you for the scheduling app to shorten wait times from multiple weeks to only a few days?	3.8
Saving admin time by 33%	What is the value to you for a scheduling app to reduce the medical administrators time so they can work on scheduling patient appointments sooner?	4.3
Cost to install	What is the value to you that the app has low integration costs for the medical provider?	4.8
HIPAA compliance	What is the value to you for a health appointment scheduling app to comply with HIPAA and other privacy laws?	5.2
Doodle poll for availability	What is the value to you for the app that allows patients to provide their availabilities by selecting the time blocks they are free and the provider review and provide a time that overlaps between the provider and patient?	5.7

Conservation of paper through eliminating most faxes	What is the value to you of the app reducing paper usage for a medical practice?	5.8
Open API/ ability to talk to other scheduling software	What is the value to you for a health appointment scheduling app that can interact with other health scheduling apps?	6.0
Ease of provider use	What is the value to you for app to be easy for a medical provider to use?	7.5
Annual Subscription cost	What is the value to you for the annual subscription costs to be low compared to other apps?	8.3

*1 patient did not provide ranking for the attributes

Table 5. Additional desirable attributes expressed by providers and the patients**

Expressed by patients	Expressed by providers
- Auto fill medical record, background, family history etc. - Automate waiting list feature - Able to check for providers that are in network - Integration with insurance and billing – one stop shop	- One-stop-shop for patients to schedule, screen and view their history, including electronic health record - Two-way calendar communication, scheduling can be done by provider / reschedule by patient - Documentation capacity - Patient payment ability - Let patients know estimated out of pocket automatically with benefits explanation - Flags possible duplicate orders - Provides accurate exam prep information - Can speak with multiple different EMR (outgoing and incoming) - Flag non-par insurances

**Expressed through the interviews and/or quantitative survey free text section

Table 6. Ranked Pairwise Attributes (without patient input)

Circle One:	(without patient input) PatientPort Pairwise: Going left to right indicate whether 0 = Less Desirable, 1 = More desirable Whatever number is placed in the row, the opposite must be placed in the horizontal											
Provider or Patient	HIPAA compliance	Annual Subscription cost	Ease of provider use	Cost to install	Ease of patient use	Saving admin time by 33%	Open API/ ability to talk to other scheduling software	Scheduling a Dr visit	Conservation of paper through eliminating most faxes	Doodle poll for availability	SUM	Weight
HIPAA compliance	3	3	3	3	3		3	3	1	3	25	0.833333333
Annual Subscription cost	2	1	2	2	3	2	2	3		2	19	0.633333333
Ease of provider use	3	2	2	2	3	0	2	3	1		18	0.6
Cost to install	2		2	2	2	1	2	2	2	1	16	0.533333333
Ease of patient use	2	1		1	3	0	3	3	1	1	15	0.5
Saving admin time by 33%	2	1	2		3	0	3	2	1	1	15	0.5
Open API/ ability to talk to other scheduling software		1	1	1	2	0	1	3	1	0	10	0.333333333
Scheduling a Dr visit	2	1	0	0	2	0		3	1	1	10	0.333333333
Conservation of paper through eliminating most faxes	1	1	0	0		0	1	2	0	0	5	0.166666667
Doodle poll for availability	0	1	1	1	1	0	0		0	0	4	0.133333333

	Provider	Scheduler	
Use Scheduling software	2	1	
Percentage of schedule from software vs. faxes	66%		

Table 7. Pairwise Attributes: Provider 1

Circle One:	PatientPort Pairwise: Going left to right indicate whether 0 = Less Desirable, 1 = More desirable Whatever number is placed in the row, the opposite must be placed in the horizontal											
Provider or Patient	Open API/ ability to talk to other scheduling software	Cost to install	Ease of patient use	Saving admin time by 33%	Conservation of paper through eliminating most faxes	HIPAA compliance	Scheduling a Dr visit	Doodle poll for availability	Annual Subscription cost	Ease of provider use	SUM	Weight
Open API/ ability to talk to other scheduling software		0	0	1	1	0	0	1	0	0	3	0.3
Cost to install	1		1	1	1	1	1	1	1	0	8	0.8
Ease of patient use	1	0		1	1	0	1	1	0	0	5	0.5
Saving admin time by 33%	0	0	0		1	0	1	0	0	0	2	0.2
Conservation of paper through eliminating most faxes	0	0	0	0		0	0	1	0	0	1	0.1
HIPAA compliance	1	1	1	1	1		1	1	0	1	8	0.8
Scheduling a Dr visit	1	0	0	0	1	0		1	0	0	3	0.3
Doodle poll for availability	0	0	0	1	0	0	0		0	0	1	0.1
Annual Subscription cost	1	0	1	1	1	1	1	1		1	8	0.8
Ease of provider use	1	1	1	1	1	0	1	1	0		7	0.7

Date interviewed	4.28.22
Occupation	Provider
Location	MA, Springfield
Use Scheduling software	Yes
Percentage of schedule from software vs. faxes	70%

Table 8. Pairwise Attributes: Scheduler

Circle One:	PatientPort Pairwise: Going left to right indicate whether 0 = Less Desirable, 1 = More desirable. Whatever number is placed in the row, the opposite must be placed in the horizontal											
Provider or Patient	Open API/ ability to talk to other scheduling software	Cost to install	Ease of patient use	Saving admin time by 33%	Conservation of paper through eliminating most faxes	HIPAA compliance	Scheduling a Dr visit	Doodle poll for availability	Annual Subscription cost	Ease of provider use	SUM	Weight
Open API/ ability to talk to other scheduling software		1	0	0	0	0	0	1	1	0	3	0.3
Cost to install	0		0	0	0	0	0	0	1	0	1	0.1
Ease of patient use	1	1		0	1	0	1	1	1	1	7	0.7
Saving admin time by 33%	1	1	1		1	0	1	1	1	1	8	0.8
Conservation of paper through eliminating most faxes	1	1	0	0		0	1	0	0	0	3	0.3
HIPAA compliance	1	1	1	1	1		1	1	1	1	9	0.9
Scheduling a Dr visit	1	1	0	0	0	0		1	1	1	5	0.5
Doodle poll for availability	0	1	0	0	1	0	0		0	0	2	0.2
Annual Subscription cost	0	0	0	0	1	0	0	1		0	2	0.2
Ease of provider use	1	1	0	0	1	0	0	1	1		5	0.5

Date interviewed	4.28.22
Occupation	Scheduler
Location	CT, New Haven
Use Scheduling software	Yes
Percentage of schedule from software vs. faxes	80%

Table 9. Pairwise Attributes Provider 2

Circle One:	PatientPort Pairwise: Going left to right indicate whether 0 = Less Desirable, 1 = More desirable. Whatever number is placed in the row, the opposite must be placed in the horizontal											
Provider or Patient	Open API/ ability to talk to other scheduling software	Cost to install	Ease of patient use	Saving admin time by 33%	Conservation of paper through eliminating most faxes	HIPAA compliance	Scheduling a Dr visit	Doodle poll for availability	Annual Subscription cost	Ease of provider use	SUM	Weight
Open API/ ability to talk to other scheduling software		0	1	0	1	0	1	1	0	0	4	0.4
Cost to install	1		1	1	1	0	1	1	0	1	7	0.7
Ease of patient use	0	0		0	1	0	1	1	0	0	3	0.3
Saving admin time by 33%	1	0	1		1	0	1	1	0	0	5	0.5
Conservation of paper through eliminating most faxes	0	0	0	0		0	0	1	0	0	1	0.1
HIPAA compliance	1	1	1	1	1		1	1	0	1	8	0.8
Scheduling a Dr visit	0	0	0	0	1	0		1	0	0	2	0.2
Doodle poll for availability	0	0	1	0	0	0	0		0	0	1	0.1
Annual Subscription cost	1	1	1	1	1	1	1	1		1	9	0.9
Ease of provider use	1	0	1	1	1	0	1	1	0		6	0.6

Date interviewed	4.29.22
Occupation	Provider
Location	CT, Waterbury
Use Scheduling software	Yes
Percentage of schedule from software vs. faxes	66%

Table 10. Pairwise Attributes: Patient

Circle One:	PatientPort Pairwise: Going left to right indicate whether 0 = Less Desirable, 1 = More desirable Whatever number is placed in the row, the opposite must be placed in the horizontal											
Provider or Patient	Open API/ ability to talk to other scheduling software	Cost to install	Ease of patient use	Saving admin time by 33%	Conservation of paper through eliminating most faxes	HIPAA compliance	Scheduling a Dr visit	Doodle poll for availability	Annual Subscription cost	Ease of provider use	SUM	Weight
Open API/ ability to talk to other scheduling software		1	1	0	0	0	0	0	1	1	4	0.4
Cost to install	0		0	0	0	0	0	0	1	0	1	0.1
Ease of patient use	0	1		1	1	0	1	1	1	1	7	0.7
Saving admin time by 33%	1	1	0		1	0	1	0	1	1	6	0.6
Conservation of paper through eliminating most faxes	1	1	0	0		0	0	0	1	1	4	0.4
HIPAA compliance	1	1	1	1	1		1	1	1	1	9	0.9
Scheduling a Dr visit	1	1	0	0	1	0		1	1	1	6	0.6
Doodle poll for availability	1	1	0	1	1	0	0		1	1	6	0.6
Annual Subscription cost	0	0	0	0	0	0	0	0		1	1	0.1
Ease of provider use	0	1	0	0	0	0	0	0	0		1	0.1

Date interviewed	4.30.22
Occupation	Patient
Location	MA, Springfield
Use Scheduling software	Yes
Percentage of schedule from software vs. faxes	10%

Table 11. Pairwise Ranked Attributes (with patient input)

Circle One:	(with patient input) PatientPort Pairwise: Going left to right indicate whether 0 = Less Desirable, 1 = More desirable Whatever number is placed in the row, the opposite must be placed in the horizontal											
Provider or Patient	Open API/ ability to talk to other scheduling software	Cost to install	Ease of patient use	Saving admin time by 33%	Conservation of paper through eliminating most faxes	HIPAA compliance	Scheduling a Dr visit	Doodle poll for availability	Annual Subscription cost	Ease of provider use	SUM	Weight
Open API/ ability to talk to other scheduling software		2	2	1	2	0	1	3	2	1	14	0.35
Cost to install	2		2	2	2	1	2	2	3	1	17	0.425
Ease of patient use	2	2		2	4	0	4	4	2	2	22	0.55
Saving admin time by 33%	3	2	2		4	0	4	2	2	2	21	0.525
Conservation of paper through eliminating most faxes	2	2	0	0		0	1	2	1	1	9	0.225
HIPAA compliance	4	4	4	4	4		4	4	2	4	34	0.85
Scheduling a Dr visit	3	2	0	0	3	0		4	2	2	16	0.4
Doodle poll for availability	1	2	1	2	2	0	0		1	1	10	0.25
Annual Subscription cost	2	1	2	2	3	2	2	3		3	20	0.5
Ease of provider use	3	3	2	2	3	0	2	3	1		19	0.475

	Provider	Scheduler	Patient
Use Scheduling software	2	1	1
Percentage of schedule from software vs. faxes		66%	

Table 12 – Financials: Willingness to Purchase and Breakeven

	Multiply											
	FTE	**Cost**	**Hours**	**52wks/year**	**/**	**months/year**	**=**	**Cost of business**	**/**	**Margin**	**=**	**Sales**
Operations	6	$100	40	52	/	12	=	$ 104,000.00	/	0.6	=	$ 173,333.33

Fee =			**Ops Cost =**	
Subscriptions WTP	$ 4,500.00	x	0.6	$ 2,700.00

	Operations		**WTP**			**Breakeven**
Breakeven	$ 104,000.00	/	$4,500.00	=	23.11111111	24 customers
Revenue	$ 173,333.33	/	$4,500.00	=	38.51851852	39

Table 13 – Provider Qualitative Interview

- First of all can you tell me about yourself?
    - I am a 66 year old woman and I am of proper weight for my side but I have found that once I got to a certain age that doctors didn't want to uh watch certain things like high blood pressure and high cholesterol and um they focused on medication a lot and um I feel that I'm, my mental capacity is fairly in order most of the time.
- And so can you tell me like typically how to use schedule and like a medical appointment with the doctor?
    - Yeah before Covid I had no problem calling a doctor and saying I'd like to get in or because of an issue for um making an appointment for a um of a physical examination. Um ty frame was bubble. Um And since Covid um there are doctors that I can called where I cannot get into the office that I must talk to them over the phone first before um having any kind of procedure done. And it's been uh it's almost impossible sometimes to get a doctor and now that I've moved to get new doctors and very overwhelming. In fact I was just looking online right before you called um to look to see what doctors are in my area for general practice um and uh december billed to Medicare.
- Okay so um can you tell there are a few points I want to follow up on. But first of all um do you um So did you mention that you find it more difficult after covid? Um Do you know the possible reason why it was more challenging?
    - What I've been told by the offices that they only want a certain number of patients in the waiting room at a given time. So they're uh they're making lots appointments throughout the day. So less capacity than at the doctor's office and you know it's in your head you're understanding that concept but as far as you needing medical care it's not helpful at all.
- The other part you mentioned that you know you've moved to a new area and uh so you're trying to find a good primary care doctor and so tell me a little bit more about the process
    - I happened to see an email that I received from Medicare this morning right before you called and it said it can help you with find the doctors in your area. So you put in your address, you put in how far of a distance you're willing to travel and what specialty you're looking for? As far as the type of doctor. Um, and if you want a male or female, well, I like female doctors and they came up with one doctor, but that's just the Medicare site alone. Um, and the Medicare site was looking at doctors where, um, the doctors will accept the Medicare price. Mm hmm. So that I paid less out of pocket. Um, I'm willing to be more flexible and look at doctors who take patients that are on Medicare, but I will have to be a copay because otherwise I get, I get noah. They were like a list of four doctors and they were all males. And I would have had to travel to get a female doctor. Got it. Um, and then you looked at the Medicare, Does that mean that insurance is a plays a role in how you select your doctors? Uh, well, that's what the site was informed anything else. But that's why I can't, I have to go out of the Medicare look, um, for a primary doctor. Um, but you know, it's just concerning for people who do have to be

very careful and only go with doctors that charged the Medicare price. Um, I'm fortunate enough where I can financially look outside of that realm.

- And so once you find you know your choices of doctors, how do you go about and reaching out to the doctors and making an appointment?
    - Oh, I called on my phone as opposed to going to their site. Okay. And I tell them I'm new to the area. I tell them what type of insurance I have. And I asked them if they accept that insurance. Um, there have been times when I have calls for, let's say a mammogram and they said we no longer take that type of insurance when and that occurred when I was on the Medicare advantage plan. Um, I found that that is less accepted by offices than regular Medicare and that's why I've gone back to regular Medicare. Um, um, and I asked the one facility where I wanted to get the mammogram where I had always gone for a mammogram. Um, well I'll pay cash. And they said no, they have an insurance that we take or we will not accept you.
- And do you like making appointments through the telephone calling up the offices?
    - Yes, I do. Because that way I'm talking to a person and there can be a conversation back and forth with question.
- And what is um, like what kind of information do you do you want to get out of the conversation?
    - Typically how many doctors do they have in their office? Um because if my doctor, let's say is not available, I want to know that there is another doctor in the office that um can you take me with an appointment? Um I um I do do some research online about the office before I call them because I oftentimes like to look to see what their background is, how long they've been practicing um where they went to school. Um Oh what else? Well, that's predominately what I do. How long they Oh and I also if online um after I see where they went to school and how long they've been practicing if there are any reviews from patients. Um I think sometimes that can say a lot now granted a lot of the people may uh only the voicing their opinions on the doctor if it's a negative opinion and the people, we have a positive opinion may not write anything at all. Um but you know, I feel that any thoughts that are put down um I usually strong statements and because people have taken the time to go on the internet and to write the review and then I'll make the call to the office once I get a little information as to what doctors are working there. Um and what's your background power mm hmm. Okay. Well I want to know, you know how long it takes to get an appointment? What insurance they take?
- And have you ever had to do a referral? Can you tell me a little bit about the process? So once your primary care doctor refers you to a specialist um then what happens, how do you go and schedule an appointment with a specialist?
    - I called them up. Okay. And I'll say my primary care doctor recommended you. She feels that I need to see a specialist. Uh This is the the problem that I'm having um And how quickly can you get me in?
- Does your primary doctor only refer one option or do you get a few options?

- Yeah Sometimes zero options. She'll just say you know you need to see this type of doctor and she'll leave it up to me because it could be depending on what kind of insurance I have. But usually if there is any recommendation it's 1 person. Okay. Okay. Um but oftentimes none at all. And just say you know I'm concerned about your you know bone density. Right? And and a lot of times it's up to me to do all the hard work and to speak out a specialist and get into a specialist and that does.

- So when you say hard work, do you mean that's you know, um What do you mean by hard work? What are the steps that are difficult?
    - Uh seeking out the specialist give me an appointment made, giving it made in a timely manner. And is it easy or hard to make an appointment in a timely matter? Well, like I said, with the culprit, nothing's in a timely manner. And I can give you an example of this. Left summer the first week of july, I went to the emergency room. I was having heart palpitations and uh they did all kinds of tests and they said that I was not giving a heart attack. Um I came to the conclusion that it had to do with my cholesterol medicine and when I was taking this what time during the day. And so I changed that time on my own. So sometimes I feel like you have to do your own advocate for your care, you understand your body more than anybody else does. Um So anyways they get with the test, they said, boy, you have a large hiatus hernia. We're a little concerned about this. Use your specialist. They did not recommend any particular one. I searched out gastroenterologists myself, it was difficult finding someone that was taking my um Medicare advantage plan at the time. I did find an office finally, and they were able to get me in a fairly quickly which surprised me. Well once I got there it ended up being a very young doctor who they had just hired. He was he was terrible, terrible. And uh he didn't even do any kind of examinations. He asked a couple of questions. He said I think you need an ear nose and throat doctor, not a gastroenterologist. Um And I I knew that it had to do with my head alterna. But I thought all right, Listen to this doctor and I'll set an appointment with the nearest nose and throat specialist. Now let me tell you all along here, we're talking about 6-8 weeks every time I call a doctor's office to make an appointment to get in. So I do call an ear nose and throat specialist. Wait another six weeks to be limited to him. He does an examination where he's literally up into my sinuses and down my throat with the scope and he's saying it's not an ears nose throat problems. And I told him about my high adult hernia. He said that's what the problem is. Um So then I have to wait another 6-8 weeks to call another gastroenterologist and I have to see them initially because now I'm a new patient I have to before don't even do it. And an endoscopy on me Which takes then another 6-8 weeks. So we're talking now from the beginning of July and then the endoscopy I just got in the last couple of weeks, wow that is very long time goal was to get an endoscopy to see how this hyena was doing right. So I am not happy and I'm not sure if it's just what's happening with Covid and the care and concern that they have now with offices. But um I definitely see a difference in care for me since before

Covid and uh being a new patient with these doctors as opposed to a patient that they already know

- When you're referred or you know when you go see a new doctor um do they ever ask you for your paperwork from your previous doctor?
    - Yes in fact. Um And this is a weird thing to, so when I knew I was going to be moving here, I asked certain doctors that I had in New Jersey about spending giving me the paperwork in order to have it all set and ready for when I go into a new doctor. That's what the doctor said to me in the office. Then once I go to pay my bill in the in the lobby area those scales who handle all the paperwork like oh just wait until you get a new doctor and have them call us and we'll send it to them okay Through an email, okay through an email me carrying a disc or paperwork. So you know I was not getting the same information from the office girls and the doctor. Now an example also of their type of thing occurring here. Um In the last month I went to see a dentist. Well um I called up my old dentist and said can you send my my file to this new dentist. Um And they said well we can but it's nothing that we take it's not going to take place in the next couple of days which is what I want. Um So they just said go into the dentist, tell them we will be sending it in the next week. Um And don't get any x rays. You had x rays within the last six months. So that's what I had to pressure my nutritionist with. I had to tell her um I don't want any x rays. The x rays are coming. I had them with him. In fact my old Dennis said give the new dentist this specific case, let them know the exact date that you have your x rays.
- Did your old dentist tell you why they couldn't send it within a, you know, a few days and it has to wait until the following week?
    - Well actually that was not the only office that said that to me. Um there were two or three other offices um that I requested my files to be sent and they all said that it would take a bit of time. Huh? Well with one office with the dentist office, they said that the woman who does that and there was only one woman in the office who could do it and she was not going to be back in the office for a few days.
- And then you know have you ever had a time where you had to go through a diagnostic test? And how do you go about to schedule that?
    - Oh calling up my phone. Okay. Um And it has it and I'm not really and I'm not doctors don't oftentimes recommend someone because they don't know what kind of insurance you have. Oh so whatever your insurance is that's who then you need to look for and call for any kind of medical help or image.
- So does that mean that your doctor just tells you that okay you need to go and have a mammogram and um and then it's up to you to go and search for which center takes your insurance?
    - Yes
- What about diagnostic testing? How long does it take from when you call them to when you actually get in?
    - Actually, that didn't take all that long. I could do it within uh let's say 2-7 days.

- And then to follow up for the doctors to say you get referred to a specialist um and you have to you know the doctor didn't tell you what kind of which specialists just say okay you need to see an E. N. T. Doctor. Um
- How many phone calls or how many doctors office do you have to call um for them to take you as a patient typically?
    - Well first of all I do do my work online to see what specialists or what particular doctor takes my insurance like I said it's all insurance driven and you get that information online and I could get information online if I don't do it online first. And I'm just calling random offices I would say. Um I have to call about five different offices, five different offices, wow. Um So what was the gastroenterologist, neurologist I was looking for? It was it was horrendous. And and sometimes I would make calls for an office after I thought that they were online that taking my insurance and then I would call them and said we no longer not take their insurance, wow. And I get one off to say that we're always reevaluating what insurance is we take. Yeah and let's say a much older person and this is a difficult task for them to yeah they can't they're gonna need you know family member to help them out.

- <Explain concept of PatientPort to patient>
    - So ideally it was I always said I'm available just about any time. Okay So availability is not in order to be able to get in. I would say more in the morning you know afternoon evening I'd say anytime and it was still difficult.
    - And you don't want to just take any doctor either. And of course doctors who you you can to research are really good doctors. Um you're going to wait longer for them. I find it when I get older, that kind of information is important to me. It's not just having the doctor who who can take me the quickest. But I want a good doctor because as you get older you do have more um physical issues to deal with or to be watching over for. And I want a doctor is going to be on top of things.
- Would you be comfortable of the apps scheduling an appointment for you or would you still prefer to call the doctor's office?
    - Call the doctor's office.
- Okay. And is it because you know you you mentioned different things that you can get additionally from when that you speak to the office lady on the phone?
    - Yes Mm hmm.
- What are the websites that you typically go to find these doctor reviews?
    - It will be the site of um the insurance I have. So when I had a medical advantage plan, it was through Humana. So I had a look through Humana. Um now it's basic Medicare um and I go and there's a Medicare dot gov site. Um I'm trying to think of how it was when I had the insurance to martin's employer. I don't remember how I did that one that was through a process blue shield program for government avoid.
- And if they say the website or the app or the service can facilitate um you know, document transfer between each offices. Do you like that? Do you have any concerns about that or are you indifferent by information being shared?

- Yes. How it's shared. And also the specialist um you know I can get the fact that the specialists can probably get your information or the your medical records quicker. I think it's the specialist can get the records quicker if they call.

- Right so this um for instance this I guess the app where the service um for instance it can help connect the doctor's offices.
    - So um well initially I have I have to say something okay. Right. Yes you have to give the started by the patient because the patient has to give their ok to having information being sent to another doctor.
- Yes that is a given but yes that that is uh yeah we have to comply with all the data security rules. Yes. Right
- And so for instance you know if you um say Okay you look on the app or that you look on the website and then out of the five specialist that takes your insurance you're like okay I like this guy because he you know he went to Yale he has 15 years of experience um he's an E. N. T. Doctor which is who I need to see and then um then to give the okay to the website and then the website then connects your primary care office to this specialist.
    - Anything where I get some help and it's not all up to me. Sounds great. Oh okay. What what you're talking about I think sounds great. As long as I um of course through what is required legally give you permission to do this process.
    - I find that um it's oftentimes the reverse of what you've mentioned prime because you're talking about primary doctor with specialist. I find it when I go to a specialist, it's the specialist saying who is your primary doctor uh to get this information so that they haven't and their record.
    - But yes, if there is some kind of process that you could do online but it's also patients learning how to use these online apps because sometimes it can be very intimidating, especially people who are not computer savvy. Now I do use computers. But sometimes these apps with dr processes are a little difficult and you have to have um all these passwords and everything. Well, I'm up to to the ceiling and passwords. Got it. Uh you and me both. The procedure has to be patient friendly because it's being done online.
- Is there anything else you'd like to share?
    - No, but I think you've got to kinda got a feel of my frustration with the medical system. Yes, I did. And they have a hospital has an emergency room hospital, uh doctor tell me, you know, we're concerned about a particular issue and then it takes, You know what? 9, 10. I think it was 10 months before I finally got in to see the right doctor and for him to do the test that I wanted done. So I do feel as though um patients need to be heard more. Like that there's a process that you can do to help that along. And it has to be patient friendly to you. Like I said, you know, the older these patients become, the more they may not be able to do a lot of this themselves online.

Table 14 – Qualitative Interview for Willingness To Pay

1. Which of the following best describes your practice type?
    a. Solo/duo practice
    b. Group practice
    c. Hospital owned
    d. Academic health center
    e. Other

2. On average, how many patient appointments do you (or staff at your practice) schedule each month: 2022 avg 10,984 per mo.

3. What is the percentage breakdown for the purpose of the patient appointments?
    a. for regular visits/routine checkups: ___ %
    b. from referrals: _____ %
    c. for imaging/lab test: __100__ %
    d. for procedures: _____ %
    e. others, please specify _____ : _____ %

4. Have you **heard** of the following medical scheduling software (check all that apply)?
    a. EpicMyChart
    b. Phreesia
    c. Zocdoc
    d. Patient Pop
    e. Epic Cadence Enterprise Scheduling

5. Have you **used** any of the following medical scheduling software (check all that apply)?
    a. EpicMyChart
    b. Phreesia
    c. Zocdoc
    d. Patient Pop
    e. Epic Cadence Enterprise Scheduling

6. In your experience of scheduling patients, how easy is it to find a time slot that works for both the patient and the provider?
    a. Very easy
    b. Somewhat easy
    c. Neither easy or hard
    d. Somewhat hard ***Due to BackLog and Insurance guideline**
    e. Very hard

7. In your experience of scheduling patients, how easy is the process to transfer the required paperwork for the patient between the primary provider and the referred specialist?
    a. Very easy
    b. Somewhat easy

c. Neither easy or hard
d. Somewhat hard
e. Very hard

Please rank the order of importance to your practice:		
10 is the most important		
1 is the least important		
Attributes	**Description**	**Rank**
Open API/ ability to talk to other scheduling software	Key question: What is the value to you for a health appointment scheduling app that can interact with other health scheduling apps?	4
Cost to install	Key question: What is the value to you that the app has low integration costs for the medical provider?	6
Ease of patient use	Key question: What is the value to you for the app to be easy for a patient to use?	3
Saving admin time by 33%	What is the value to you for a scheduling app to reduce the medical administrators time so they can work on scheduling patient appointments sooner?	5
Conservation of paper through eliminating most faxes	What is the value to you of the app reducing paper usage for a medical practice?	8
HIPAA compliance	What is the value to you for a health appointment scheduling app to comply with HIPAA and other privacy laws?	2
Scheduling a Dr visit	What is the value to you for the scheduling app to shorten wait times from multiple weeks to only a few days?	1

Doodle poll for availability	What is the value to you for the patient to select the doctor from a Doodle poll comparison scheduler?	10
Annual Subscription cost	What is the value to you for the annual subscription costs to be low compared to other apps?	9
Ease of provider use	What is the value to you for app to be easy for a medical provider to use?	7

1. What are your biggest paint points with your current scheduling software?

    a. Incoming fax line not reliable=- would rather most offices to order through EC link
    b. Provider education for proper diagnosis codes to exam ordered
    c. A lot of duplicate orders being placed
    d. Auto expired orders after x amount of time per practice
    e. Not enough staff to keep up with volumes (not really a software issue)

2. If you can, describe an ideal scheduling software, what features would it have?

    a. Self scheduling option
    b. Lets patients know estimated out of pocket automatically with benefits explanation
    c. Flags possible duplicate orders
    d. Provides accurate exam prep information
    e. Can speak with multiple different EMR (outgoing and incoming)
    f. Flag non par insurances

3. How much would you be willing to spend on a software that could solve all of the pain points you listed?

    They currently pay $8/9k per month for Phreesia. They would be willing to pa about $5k more per month for a software that could solve their pain point, which is about $156k per year. This would be broken down by 6 facilities, so about $26k per facility. They do pay additional every month on other software that Our product could produce, so we can add that amount to our ending total. Joyce did not know the exact amounts current

Appendix 9A: Competitive Analysis

	Our product	Direct Competitors		Indirect competitors							Market entrants				
Product Features	**Patient Port**	**Luma Health**	**Phreesia**	**Epic**	**PatientPop**	**athenaCommunicator**	**Kareo**	**eClinicalWorks**	**AdvancedMD**	**Mend**	**Zocdoc**	**RXNT**	**InSynch**	**Etherfax**	**Concord Technologies**
AI transcription of faxed orders	Y													Y	Y
Referral system	Y	Y	Y	*											
Integrates across EMR systems	Y		Y												
Risk factor identification	Y	Y	Y												
Patient can schedule appointments	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				
Automated text and email reminders	Y	Y	Y	Y	Y	Y	Y		Y	Y	Y				
Complete intake questionnaires	Y	Y	Y	Y	Y		Y	Y		Y					
Prompts patients to make specific appointments (preventative care)	Y	Y	Y												
Telehealth	Y	Y		Y	Y			Y	Y	Y	Y		Y		
Message doctors	Y	Y		Y			Y	Y	Y			Y	Y		
Patient scheduling trends	Y		Y												

*Epic's referral services focus on referring patients to see providers via telemedicine, and it is not clear how easy this referral process is. The goal of this compare and contrast exercise is to determine competitors that refer patients by using text messages to help patients schedule appointments automatically. For this reason, Epic is placed in the Indirect Competitor List.

Appendix 9B: Competitor Pricing

		Monthly Cost	Additional Cost	Start-up cost
Direct competitors	Phreesia	$1333-$1500/provider		
	Luma Health	-		
Indirect competitors	Epic	$200–$35,000, depending on the facility and features		+ $1200 for self-hosted solutions + $500,000 for large hospitals and clinics
	PatientPop	$700-$900, depending on the features		
	athenaCommunicator	-		
	Kareo	-		
	eclinicalWorks	$449-$599/provider, depending on the services		
	AdvancedMd	-		
	Mend	-		
Market Entrants	Zocdoc	$25	+ $35 per appointment booked	
	RXNT	$125-$199/provider, depending on the features		
	InSynch	-		
	Etherfax	-		
	Concord Technologies	$49.95/1000 pages $14.95/300 pages $10.95/100 pages	+ $0.07/additional page	

-, Information not available from the company site or primary research.

Appendix 10: Porter's Five Forces

Threat of new entrants	Bargaining power of buyers	Bargaining power of suppliers	Threat of substitutes	Intensity of competitive rivalry
Monderate risk	Moderate power	Strong power	Strong risk	Strong risk
Entrant like Zocdoc poses a risk because aptients want to be seen by good doctors. If Zocdoc begins to help patients connect with secondary providers, then that could make it difficult for us to retain our market share. Zocdoc is rated as having moderate risk because they still have to build the software to extend this service. Entrants like Etherfax and Concord Technologies that already have a foundation in extracting data from faxed documents using AI will also pose a moderate risk because they will have to build a relationship with EMR	The buyers of PatientPort are primarily doctors, who want to reduce the inefficiency of faxed orders and resolve delayed or missed referrals by automating this service, especially when there is labor shortage in healthcare right now. For this reason, the possibility of them refusing to adopt this service is low. They can still have bargaining power as this is an adjunctive software that is added to the primary EMR system. As indicated from the primary research, their willingness to pay for a subscription service is $4000 a month.	"Suppliers" in this case are the patient portals that we have to send the faxed orders to. They may prevent us from connecting with them in an effort to deter us from gaining a market share. In order to do business with them, they may ask for high percentage of rebate or interoeprability fee in order for us to do business with them.	Luma Health and Phreesia are the direct subsitutes we compete with. They can also expand their offering and transcribe faxed orders. Luma Health also already offers referral system, which is an attractive attribute that sets our software apart.	We face fierce competition as there are 2 direct competitors, 7 indirect competitors, and at least 5 market entrants. Other competitors can pick up our ideas and add them into their systems. Epic is one of the most noteworthy indirect competitors as it has over 30% of market share in 2021 (Drees, 2021).

systems, whereas our team already has expertise in this space.				
>>> Our strategy: Instead of becoming competitors with one another, PatientPort would like to porpose collaborating with them. We can sell our services through them, so their recommendations on which doctors to visit can be paired with our proprietary AI platform in referring patients based on faxed orders. They can also sell their service to us (doctor recommendation). For the AI data extraction companies, we will have to build customer stickiness fast and before they enter into the EMR space.	*>>> Our Strategy:* To enhance adoption of PatientPort, we will make their purchasing decisions simple by making it easy for them to understand our value propositions, market our product on repuatable sources to increase their confidence of buying, and allow them to compare features with our competitors. This type of decision simplicity index has been proven to help with acquiring sticky customers (Spenner & Freeman, 2012).	*>>> Our strategy:* The 21st Century Cures Act mandates patient portals to open up and exchange information with each other. PatientPort's launch is at an opportune time because the act went into effect in April 2021. This helps PatientPort to have more leverage when reaching out to EMR systems for integration with their softwares.	*>>> Our Strategy:* The steps and procedures for the machine learning algorithm can be patented, which may act as a barrier to entry. Copyrighting and trademarking PatientPort has also been a classific strategy to reduce competition. Several other strategies for barriers to entry are also listed in Appendix 3.	*>>> Our Strategy:* We will create "stickiness" by introducing unique user interface and personalization. We will also patent the steps of the machine learning algorithms and pursue any copyright infringements from violators. See Appendix 3 for more detail.

Appendix 11: Barriers to Entry

Strategy	Rationale	Execution tactics
Patent machine learning algorithms	• Algorithms on their own are considered foundational tools for scientific tools and therefore are viewed as abstract ideas that are not patentable (Mon, n.d.) • Once the software algorithm is broken down in a series of steps, then the "process" becomes patentable as it has just shifted from an abstract idea into the patentable process category (Mon, n.d.)	• Software developers will work with patent attorney to break down the algorithms into a series of steps to patent the machine learning algorithms
Copyright and trademark the idea	• Codes related to developing the software can be copyrighted (Kupfer, 2020) • The brand can also be trademarked (Kupfer, 2020)	• When writing the codes and developing the software, the developer should note the dates and times when he/she begins developing (Kupfer, 2020) • The developer should also save the source code and any other integral parts of the development process in the company's portal (Kupfer, 2020) • The company shall monitor and pursue any copyright infringement if other apps steal PatientPort's ideas (Kupfer, 2020)
Customer stickiness	• Building brand stickiness fuels growth and creates sustainable and recurring revenue model (Nepal, 2018) • Repeat customers are six to seven times cheaper to maintain than to acquire a new one (Nepal, 2018) • Customer stickiness to one brand also diminishes their willingness to migrate to a different platform (Nepal, 2018)	• Make it easy for consumers to gather and understand information about a brand (Spenner & Freeman, 2012) • Provide educational materials and simplify the onboarding experience to ensure customers understand how to use PatientPort (Nepal, 2018) • Cultivate enough data on the platform such that it will be difficult to migrate to another platform • Build an action-oriented dashboard so administrative staff can review their action items at a glance • Build an analytical tool so the office can analyze how adherent patients are at following up with the referrals

Appendix 12: Additional Opposing Force

Opposing Force	Response
What if the office prefers the traditional fax method and refuses to use EMR systems to send faxes?	One of the reasons that medical offices are reluctant to move away from the traditional faxing machine may be due to budgetary constraints. These offices are often skilled nursing facilities and behavioral health centers that did not receive the federal funds for EMR adoption when the 2009 Health Information Technology for Economic and Clinical Health Act (HITECH Act) went into effect (Brown, 2019). As a result, they still use fax machines out of necessity. To help alleviate their financial concerns while allowing them to experience task efficiency with PatientPort, we will roll out tiered pricing to our customers. The pricing for the software will be based on the number of patients an office sees. The lower the volume, the more cost-effective the software will be. Lower tiered software will come with basic features, with the option to upgrade to a higher functionality. Regardless of the tier a practice chooses, all will come with the option to read faxed information. Additionally, the American Rescue Plan awarded $6.1 billion in funding to Health Resources & Services Administration (HRSA) to prevent, mitigate, and respond to COVID-19 and to improve health care services and infrastructure (HRSA, 2021b). Federally qualified health centers may apply for funding from HRSA to pay for digital applications like patient portals; information technology systems that enhance data collection, exchange, and reporting; and electronic health record systems (HRSA, 2021a). With this funding, practices that are underfunded may begin to benefit from the benefits of PatientPort.

Appendix 13 – Income Statement

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year 1
	Revenue													
a	Total Revenue	$ -	$ -	$ 66,000	$ 66,000	$ 66,000	$ 132,000	$ 198,000	$ 330,000	$ 330,000	$ 330,000	$ 330,000	$ 330,000	$ 2,178,000
b	New Clients	0	0	1	0	0	1	1	2	0	0	0	0	
c	New Revenue	$ -	$ -	$ 66,000	$ -	$ -	$ 66,000	$ 66,000	$ 132,000	$ -	$ -	$ -	$ -	
d	Returning Clients	0	0	0	1	1	1	2	3	5	5	5	5	
e	Recurring Revenue	$ -	$ -	$ -	$ 66,000	$ 66,000	$ 66,000	$ 132,000	$ 198,000	$ 330,000	$ 330,000	$ 330,000	$ 330,000	
f	Cost of Revenue	$ -	$ -	$ 16,147	$ 1,147	$ 1,147	$ 17,294	$ 18,442	$ 35,736	$ 5,736	$ 5,736	$ 5,736	$ 5,736	$ 112,858
g	Gross Profit	$ -	$ -	$ 49,853	$ 64,853	$ 64,853	$ 114,706	$ 179,558	$ 294,264	$ 324,264	$ 324,264	$ 324,264	$ 324,264	$ 2,065,142
	Operating Expenses													
h	Office Lease	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 54,000
i	Salaries	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 92,500	$ 1,110,000
j	Benefits	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 3,272	$ 39,264
k	Insurance	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 42	$ 504
l	Internet	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 215	$ 2,580
m	Food	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 1,440	$ 17,280
n	Equipment	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 620	$ 7,440
o	Earnings Before Income Tax	$ (102,589)	$ (102,589)	$ (52,736)	$ (37,796)	$ (37,796)	$ 12,117	$ 76,969	$ 191,675	$ 221,675	$ 221,675	$ 221,675	$ 221,675	$ 834,004
p	Income Tax	$ -	$ -	$ -	$ -	$ -	$ 4,241	$ 26,939	$ 67,086	$ 77,586	$ 77,586	$ 77,586	$ 77,586	$ 408,611
r	**Net Income**	**$ (102,589)**	**$ (102,589)**	**$ (52,736)**	**$ (37,796)**	**$ (37,796)**	**$ 7,876**	**$ 50,030**	**$ 124,589**	**$ 144,089**	**$ 144,089**	**$ 144,089**	**$ 144,089**	**$ 425,463**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
	Revenue										
a	Total Revenue	$ 2,178,000	$ 14,256,000	$ 33,264,000	$ 71,280,000	$ 147,312,000	$ 299,376,000	$ 603,504,000	$ 1,211,760,000	$ 2,428,272,000	$ 4,861,296,000
b	New Clients	6	12	24	48	96	192	384	768	1536	3072
c	New Revenue	$ 2,178,000	$ 9,504,000	$ 19,008,000	$ 38,016,000	$ 76,032,000	$ 152,064,000	$ 304,128,000	$ 608,256,000	$ 1,216,512,000	$ 2,433,024,000
d	Returning Clients	0	6	18	42	90	186	378	762	1530	3066
e	Recurring Revenue	$ -	$ 4,752,000	$ 14,256,000	$ 33,264,000	$ 71,280,000	$ 147,312,000	$ 299,376,000	$ 603,504,000	$ 1,211,760,000	$ 2,428,272,000
f	Cost of Revenue	$ 80,736	$ 517,800	$ 1,208,200	$ 2,589,000	$ 5,350,600	$ 10,873,800	$ 21,920,200	$ 44,013,000	$ 88,198,600	$ 176,569,800
g	Gross Profit	$ 2,097,264	$ 13,738,200	$ 32,055,800	$ 68,691,000	$ 141,961,400	$ 288,502,200	$ 581,583,800	$ 1,167,747,000	$ 2,340,073,400	$ 4,684,726,200
	Operating Expenses										
h	Office Lease	$ 54,000	$ 55,620	$ 57,289	$ 59,007	$ 60,777	$ 62,601	$ 64,479	$ 66,413	$ 68,406	$ 70,458
i	Salaries	$ 1,110,000	$ 1,533,180	$ 2,680,441	$ 4,679,698	$ 8,586,926	$ 16,914,229	$ 33,685,970	$ 67,351,037	$ 134,807,376	$ 269,851,057
j	Benefits	$ 39,264	$ 42,833	$ 50,937	$ 67,916	$ 102,431	$ 171,819	$ 310,807	$ 588,898	$ 1,145,140	$ 2,257,654
k	Insurance	$ 504	$ 504	$ 504	$ 504	$ 504	$ 504	$ 504	$ 504	$ 504	$ 504
l	Internet	$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580
m	Food	$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280
n	Equipment	$ 7,440	$ 8,116	$ 9,652	$ 12,869	$ 19,609	$ 32,557	$ 58,894	$ 111,588	$ 216,989	$ 427,795
o	Earnings Before Income Tax	$ 866,196	$ 12,078,086	$ 29,437,118	$ 64,051,146	$ 133,171,692	$ 271,300,629	$ 547,443,286	$ 1,099,608,700	$ 2,203,815,126	$ 4,412,098,872
p	Income Tax	$ 419,051	$ 4,227,330	$ 10,302,991	$ 22,417,901	$ 46,610,022	$ 94,955,220	$ 191,605,150	$ 384,863,045	$ 771,335,294	$ 1,544,234,605
r	**Net Income**	**$ 447,145**	**$ 7,850,756**	**$ 19,134,126**	**$ 41,633,245**	**$ 86,561,670**	**$ 176,345,409**	**$ 355,838,136**	**$ 714,745,655**	**$ 1,432,479,832**	**$ 2,867,864,267**

Notes:

a Total Revenue is calculated by adding New Client Revenue & Returning Client Revenue.

b New Clients are the number of new clients that we have secured during the relevant fiscal year

c New Revenue is calculated by multiplying the number of new clients by the annual revenue associated with a facility of 30 providers at a negotiated per provider rate of $2,200 per month, multiplied by 12 for the yearly revenue.

d Returning Clients are the number of clients returning from previous years.

e Recurring Revenue is calculated by multiplying number of returning clients by the annual revenue associated with a facility of 30 providers at a negotiated per provider rate of $2,200 per month, multiplied by 12 for the yearly revenue.

f Cost of Revenue are the variable costs associated with the initial set up, ongoing support, and hosting expenses.

g Gross profit is the Total Revenue (a) less Cost of Revenue (f).

h Office lease is based upon a small, private office located in New York City. The estimated price is $4,500 per month, and we estimate a 3% increase YOY.

i Salaries are inclusive of the entire team and account for the growth in clients, which induce a growth in the team to support the clients success. A 3.8% yearly raise is included to cover the cost of inflation.

j Benefits are calculated by multiplying the average cost of premiums per employee per month for a small group plan in 2018 ($409) by the total number of members on the team during the relevant year, multiplied by 12 to get the yearly cost.

k Insurance is estimated to be $504 per year for corporate renters insurance.

l Internet costs are estimated based on high speed internet, which comes out to about $215 per month, or $2,580 per year.

m Food costs are provided to the staff 3 times per week, and are estimated at $20 per person.

n Yearly equipment cost is calculated by including the cost of a macbook, monitor, keyboard, trackpad, and dongle every 3 year per employee.

o Earnings before income tax is calculated by Gross Profit (g) less the total operating expenses (h-n).

p Income tax is estimated at 35% if the Earnings Before Income Tax (o) is positive for the fiscal year. If EBIT is negative, then the assumed income tax is set to 0%.

r Net Income is calculated by Earnings Before Income Tax (o) less Income Tax (p).

Appendix 14 – Balance Sheet

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year 1
	Assets													
a	Cash	$ 397,411	$ 294,822	$ 242,086	$ 204,350	$ 166,613	$ 174,489	$ 216,643	$ 291,202	$ 310,702	$ 310,702	$ 310,702	$ 310,702	$ 3,230,424
b	Total Assets	$ 397,411	$ 294,822	$ 242,086	$ 204,350	$ 166,613	$ 174,489	$ 216,643	$ 291,202	$ 310,702	$ 310,702	$ 310,702	$ 310,702	$ 3,230,424
	Liabilities													
c	N/A	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
d	Total Liabilities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Shareholder Equity													
	Common Stock													
e	Outstanding	$ 158,964	$ 117,929	$ 96,834	$ 81,740	$ 66,645	$ 69,796	$ 86,657	$ 116,481	$ 124,281	$ 124,281	$ 124,281	$ 124,281	$ 1,292,170
f	Founding Team Equity	$ 139,094	$ 103,188	$ 84,730	$ 71,522	$ 58,315	$ 61,071	$ 75,825	$ 101,921	$ 108,746	$ 108,746	$ 108,746	$ 108,746	$ 1,130,648
g	Employee Pool	$ 79,482	$ 58,964	$ 48,417	$ 40,870	$ 33,323	$ 34,898	$ 43,329	$ 58,240	$ 62,140	$ 62,140	$ 62,140	$ 62,140	$ 646,085
h	Seed Round Equity	$ 19,871	$ 14,741	$ 12,104	$ 10,217	$ 8,331	$ 8,724	$ 10,832	$ 14,560	$ 15,535	$ 15,535	$ 15,535	$ 15,535	$ 161,521
i	Total Equity	$ 397,411	$ 294,822	$ 242,086	$ 204,350	$ 166,613	$ 174,489	$ 216,643	$ 291,202	$ 310,702	$ 310,702	$ 310,702	$ 310,702	$ 3,230,424
j	Total Liabilities & Equity	$ 397,411	$ 294,822	$ 242,086	$ 204,350	$ 166,613	$ 174,489	$ 216,643	$ 291,202	$ 310,702	$ 310,702	$ 310,702	$ 310,702	$ 3,230,424

Notes:

a Total cash in year 1 is left over from the potential equity investment in the seed round. Subsequent years include cash from operations in the form of revenue.
b No other current assets forcasted, therefore total assets is equal to cash.
c No current liabilities at this time.
d Total liabilities is $0 because there are no liabilities to report.
e 40% of the 10,000,000 issued stock is outstanding.
f Founding team owns 35% of stock.
g Employee pool contains 20% of stock.
h Seed round equity investor controls 5% of stock.
i Total equity is the total value of the common stock, which is the summation of lines (e-h).
j Total liabilities and equity is the total equity plus the total liabilities. This number equals the total assets.

Appendix 15 – Statement of Cashflows (Direct Method)

	Cash Flow From Operations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year 1
a	Revenues	$ -	$ -	$ 66,000	$ 66,000	$ 66,000	$ 132,000	$ 198,000	$ 330,000	$ 330,000	$ 330,000	$ 330,000	$ 330,000	$2,178,000
b	Operating Expenses	$ 102,589	$ 102,589	$ 118,736	$ 102,589	$ 102,589	$ 118,736	$ 118,736	$ 134,883	$ 102,589	$ 102,589	$ 102,589	$ 102,589	$ 80,736
c	Other Expenses	$ -	$ -	$ -	$ -	$ -	$ 4,642	$ 27,742	$ 68,291	$ 79,594	$ 79,594	$ 79,594	$ 79,594	$ 419,051
d	Net Cash from Operations	$ (102,589)	$ (102,589)	$ (52,736)	$ (36,589)	$ (36,589)	$ 8,621	$ 51,521	$ 126,826	$ 147,817	$ 147,817	$ 147,817	$ 147,817	$ 447,146
	Cash Flow From Investing													
e	N/A	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Cash Flow From Financing													
f	Equity Issuance	$ 500,000	$ 397,411	$ 294,822	$ 242,086	$ 205,497	$ 168,908	$ 168,908	$ 168,908	$ 168,908	$ 168,908	$ 168,908	$ 168,908	$ 168,908
g	**Cash Flows**	$ 397,411	$ 294,822	$ 242,086	$ 205,497	$ 168,908	$ 177,529	$ 220,429	$ 295,734	$ 316,725	$ 316,725	$ 316,725	$ 316,725	$ 616,053

Notes:

a Revenues are taken from the Income Statement line item (a).
b Operating Expenses are the summation of lines (f, h-n) from the income statement..
c Other Expenses are line item (p) from the income statement.
d Net Cash from Operations are line item (r) from the income statement
e N/A due to no cash flows through investments..
f Equity Issuance is assumed based on a $500k investement during seed round funding in exchange for 5% equity.
g Total Cash Flow is determined by adding line items (d, e, f).

Appendix 16 – Financial Plan

		Assumption		Year 1	Year 2	Year 3	Year 4	Year 5
Revenues								
a	Providers Per Facility		30					
b	Price per Facility per Month		$2,200					
c	Beginning Members			0	6	18	42	90
d	Attrition		100%					
e	Ending Members			0	6	18	42	90
f	New Members			6	12	24	48	96
g	Monthly Fees			$ 396,000	$ 1,188,000	$ 2,772,000	$ 5,940,000	$ 12,276,000
h	Yearly Fees			$ 2,178,000	$ 14,256,000	$ 33,264,000	$ 71,280,000	$ 147,312,000
i	Total Revenue			$ 2,178,000	$ 14,256,000	$ 33,264,000	$ 71,280,000	$ 147,312,000
Costs								
	Variable Costs							
j	Initial Setup (per new client)		$15,000	$ 90,000	$ 180,000	$ 360,000	$ 720,000	$ 1,440,000
k	Ongoing Support (all clients)		$6,167	$ 25,000	$ 75,000	$ 175,000	$ 375,000	$ 775,000
l	Hosting Cost (all clients)		$9,600	$ 57,600	$ 172,800	$ 403,200	$ 864,000	$ 1,785,600
m	Total Variable Costs			$ 80,736	$ 427,800	$ 938,200	$ 1,959,000	$ 4,000,600
	Fixed Costs							
n	Office Lease	$6,500 per month + 3% annual increase		$ 54,000	$ 55,620	$ 57,289	$ 59,007	$ 60,777
o	Salaries	3.8% annual increase		$ 1,110,000	$ 1,533,180	$ 2,480,441	$ 4,679,698	$ 8,586,926
p	Benefits	$609 per employee per month		$ 39,264	$ 42,833	$ 50,937	$ 67,916	$ 102,431
q	Insurance	$42 per month		$ 504	$ 504	$ 504	$ 504	$ 504
r	Internet	$215 per month		$ 2,580	$ 2,580	$ 2,580	$ 2,580	$ 2,580
s	Food	$1,440 per month		$ 17,280	$ 17,280	$ 17,280	$ 17,280	$ 17,280
t	Equipment	$2,540 per employee every 3 years		$ 7,440	$ 8,116	$ 9,652	$ 12,869	$ 19,409
u	Total Overhead			$ 1,231,068	$ 1,660,114	$ 2,618,682	$ 4,639,854	$ 8,789,908
v	**Net Income Before Tax**			**$ 866,196**	**$ 12,168,086**	**$ 29,707,118**	**$ 64,681,146**	**$ 134,521,492**

Notes:

a Estimation of 30 providers per facility on average in the hospital setting by dividing the number of active providers working in the hospital setting by the total number of hospitals.
b Price of $2,200 per provider per facility is calculated by the willingness to pay analysis from the pricing analysis within the competitive analysis.
c Beginning members are the number of members at the start of the fiscal year.
d Attrition rate is assumed to be 100%.
e Ending members is the number of members from the beginning of the year, less the members lost through attrition.
f New members are the number of members gained during the relevant fiscal year.
g Monthly fees are the average monthly fees that we expect from the number of clientele within the relevant year.
h Yearly fees are the average yearly fees that we expect from the number of clientele within the relevant year.
i Total revenue is equal to the yearly fees.
j Initial Set up is estimated based on the expenses associated with traveling to and from the client's facility and staying for 1 week to ensure proper installation and execution.
k Ongoing support is calculated by dividing the salary of a customer success associate by 30, which gives the percent of the salary dedicated towards 1 client.
l Hosting costs are the estimated costs to host on the Amazon Web Services cloud.
m Variable costs are the summation of (j, k, l).
n Office lease is based upon a small, private office located in New York City. The estimated price is $6,500 per month, and we estimate a 3% increase YOY.
o Salaries are inclusive of the entire team and account for the growth in clients, which induce a growth in the team to support the clients success. A 3.8% yearly raise is included to cover the cost of inflation.
p Benefits are calculated by multiplying the average cost of premiums per employee per month for a small group plan in 2018 ($609) by the total number of members on the team during the relevant year, multiplied by 12 to get the yearly cost.
q Insurance is estimated to be $504 per year for corporate renters insurance.
r Internet costs are estimated based on high speed internet, which comes out to about $215 per month, or $2,580 per year.
s Food costs are provided to the staff 3 times per week, and are estimated at $20 per person.
t Yearly equipment cost is calculated by including the cost of a macbook, monitor, keyboard, trackpad, and dongle every 3 years per employee.
u Total Overhead is the summation of (n-t).
v Net Income Before Tax is calculated by taking Total Revenue (i) less Variable Costs (m) and Total Overhead (u).

Appendix 17 – Break-even Analysis

		Per Month	Per Year
a	Selling Price	$ 66,000	$ 792,000
b	Total Variable Costs	$ 16,147	$ 28,767
c	Ongoing Support	$ 347	$ 4,167
d	Intial Set-up	$ 15,000	$ 15,000
e	Hosting Expense	$ 800	$ 9,600
f	**Unit Contribution Margin**	**$ 49,853**	**$ 763,233**

	Break-Even by Units	Per Month	Per Year
g	Total Fixed Costs	$ 102,589	$ 1,231,068
h	Unit Contribution Margin	$ 49,853	$ 763,233
i	**Units Needed For Break-Even**	**2.06**	**1.61**

	Break-Even by Sales Dollars		
j	Total Fixed Costs	$ 102,589	$ 1,231,068
k	Contribution Margin Ratio	75.53%	96.37%
l	**Sales Dollars Needed for Break-Even**	**$ 135,817**	**$ 1,277,468**

Notes:

a Selling price is calculated by $2,200 per provider per month and is based on the assumption of 30 providers on avg.
b Total Variable costs are outlined by line items (c-e).
c Ongoing support is calculated by dividing the salary of a customer success associate by 30, which gives the percent of the salary dedicated towards 1 client.
d Initial Set up is estimated based on the expenses associated with traveling to and from the client's facility and staying for 1 week to ensure proper installation and execution.
e Hosting costs are the estimated costs to host on the Amazon Web Services cloud.
f Unit Contribution Margin is calculated by Sales Price (a) less variable costs (b).
g Total fixed costs are the culmation of expenses associated with line items (h-n) in the income statement.
h Contribution margin is line item (f).
i Units needed for break-even is calculated by dividing the fixed costs by the contribution margin.
j Total fixed costs are the culmation of expenses associated with line items (h-n) in the income statement.
k Contribution Margin Ratio is calculated by dividing the contribution margin by the selling price.
l Sales Dollars Needed for Break-Even is calculated by dividing fixed costs (j) by the contribution margin ratio (k).

Appendix 18 – Risk Analysis (Sensitivity Analysis)

Sales Price

Number of Providers per Facility

Price per Provider per Month	55	50	45	40	35	30	25	20	15	10	5
$ 3,200	$ 2,112,000	$ 1,920,000	$ 1,728,000	$ 1,536,000	$ 1,344,000	$ 1,152,000	$ 960,000	$ 768,000	$ 576,000	$ 384,000	$ 192,000
$ 3,100	$ 2,046,000	$ 1,860,000	$ 1,674,000	$ 1,488,000	$ 1,302,000	$ 1,116,000	$ 930,000	$ 744,000	$ 558,000	$ 372,000	$ 186,000
$ 3,000	$ 1,980,000	$ 1,800,000	$ 1,620,000	$ 1,440,000	$ 1,260,000	$ 1,080,000	$ 900,000	$ 720,000	$ 540,000	$ 360,000	$ 180,000
$ 2,900	$ 1,914,000	$ 1,740,000	$ 1,566,000	$ 1,392,000	$ 1,218,000	$ 1,044,000	$ 870,000	$ 696,000	$ 522,000	$ 348,000	$ 174,000
$ 2,800	$ 1,848,000	$ 1,680,000	$ 1,512,000	$ 1,344,000	$ 1,176,000	$ 1,008,000	$ 840,000	$ 672,000	$ 504,000	$ 336,000	$ 168,000
$ 2,700	$ 1,782,000	$ 1,620,000	$ 1,458,000	$ 1,296,000	$ 1,134,000	$ 972,000	$ 810,000	$ 648,000	$ 486,000	$ 324,000	$ 162,000
$ 2,600	$ 1,716,000	$ 1,560,000	$ 1,404,000	$ 1,248,000	$ 1,092,000	$ 936,000	$ 780,000	$ 624,000	$ 468,000	$ 312,000	$ 156,000
$ 2,500	$ 1,650,000	$ 1,500,000	$ 1,350,000	$ 1,200,000	$ 1,050,000	$ 900,000	$ 750,000	$ 600,000	$ 450,000	$ 300,000	$ 150,000
$ 2,400	$ 1,584,000	$ 1,440,000	$ 1,296,000	$ 1,152,000	$ 1,008,000	$ 864,000	$ 720,000	$ 576,000	$ 432,000	$ 288,000	$ 144,000
$ 2,300	$ 1,518,000	$ 1,380,000	$ 1,242,000	$ 1,104,000	$ 966,000	$ 828,000	$ 690,000	$ 552,000	$ 414,000	$ 276,000	$ 138,000
$ 2,200	$ 1,452,000	$ 1,320,000	$ 1,188,000	$ 1,056,000	$ 924,000	$ 792,000	$ 660,000	$ 528,000	$ 396,000	$ 264,000	$ 132,000
$ 2,100	$ 1,386,000	$ 1,260,000	$ 1,134,000	$ 1,008,000	$ 882,000	$ 756,000	$ 630,000	$ 504,000	$ 378,000	$ 252,000	$ 126,000
$ 2,000	$ 1,320,000	$ 1,200,000	$ 1,080,000	$ 960,000	$ 840,000	$ 720,000	$ 600,000	$ 480,000	$ 360,000	$ 240,000	$ 120,000
$ 1,900	$ 1,254,000	$ 1,140,000	$ 1,026,000	$ 912,000	$ 798,000	$ 684,000	$ 570,000	$ 456,000	$ 342,000	$ 228,000	$ 114,000
$ 1,800	$ 1,188,000	$ 1,080,000	$ 972,000	$ 864,000	$ 756,000	$ 648,000	$ 540,000	$ 432,000	$ 324,000	$ 216,000	$ 108,000
$ 1,700	$ 1,122,000	$ 1,020,000	$ 918,000	$ 816,000	$ 714,000	$ 612,000	$ 510,000	$ 408,000	$ 306,000	$ 204,000	$ 102,000
$ 1,600	$ 1,056,000	$ 960,000	$ 864,000	$ 768,000	$ 672,000	$ 576,000	$ 480,000	$ 384,000	$ 288,000	$ 192,000	$ 96,000
$ 1,500	$ 990,000	$ 900,000	$ 810,000	$ 720,000	$ 630,000	$ 540,000	$ 450,000	$ 360,000	$ 270,000	$ 180,000	$ 90,000
$ 1,400	$ 924,000	$ 840,000	$ 756,000	$ 672,000	$ 588,000	$ 504,000	$ 420,000	$ 336,000	$ 252,000	$ 168,000	$ 84,000
$ 1,300	$ 858,000	$ 780,000	$ 702,000	$ 624,000	$ 546,000	$ 468,000	$ 390,000	$ 312,000	$ 234,000	$ 156,000	$ 78,000
$ 1,200	$ 792,000	$ 720,000	$ 648,000	$ 576,000	$ 504,000	$ 432,000	$ 360,000	$ 288,000	$ 216,000	$ 144,000	$ 72,000

Unit Contribution Margin

Number of Providers per Facility

Price per Provider per Month	55	50	45	40	35	30	25	20	15	10	5
$ 3,200	$ 2,083,233	$ 1,891,233	$ 1,699,233	$ 1,507,233	$ 1,315,233	$ 1,123,233	$ 931,233	$ 739,233	$ 547,233	$ 355,233	$ 163,233
$ 3,100	$ 2,017,233	$ 1,831,233	$ 1,645,233	$ 1,459,233	$ 1,273,233	$ 1,087,233	$ 901,233	$ 715,233	$ 529,233	$ 343,233	$ 157,233
$ 3,000	$ 1,951,233	$ 1,771,233	$ 1,591,233	$ 1,411,233	$ 1,231,233	$ 1,051,233	$ 871,233	$ 691,233	$ 511,233	$ 331,233	$ 151,233
$ 2,900	$ 1,885,233	$ 1,711,233	$ 1,537,233	$ 1,363,233	$ 1,189,233	$ 1,015,233	$ 841,233	$ 667,233	$ 493,233	$ 319,233	$ 145,233
$ 2,800	$ 1,819,233	$ 1,651,233	$ 1,483,233	$ 1,315,233	$ 1,147,233	$ 979,233	$ 811,233	$ 643,233	$ 475,233	$ 307,233	$ 139,233
$ 2,700	$ 1,753,233	$ 1,591,233	$ 1,429,233	$ 1,267,233	$ 1,105,233	$ 943,233	$ 781,233	$ 619,233	$ 457,233	$ 295,233	$ 133,233
$ 2,600	$ 1,687,233	$ 1,531,233	$ 1,375,233	$ 1,219,233	$ 1,063,233	$ 907,233	$ 751,233	$ 595,233	$ 439,233	$ 283,233	$ 127,233
$ 2,500	$ 1,621,233	$ 1,471,233	$ 1,321,233	$ 1,171,233	$ 1,021,233	$ 871,233	$ 721,233	$ 571,233	$ 421,233	$ 271,233	$ 121,233
$ 2,400	$ 1,555,233	$ 1,411,233	$ 1,267,233	$ 1,123,233	$ 979,233	$ 835,233	$ 691,233	$ 547,233	$ 403,233	$ 259,233	$ 115,233
$ 2,300	$ 1,489,233	$ 1,351,233	$ 1,213,233	$ 1,075,233	$ 937,233	$ 799,233	$ 661,233	$ 523,233	$ 385,233	$ 247,233	$ 109,233
$ 2,200	$ 1,423,233	$ 1,291,233	$ 1,159,233	$ 1,027,233	$ 895,233	$ 763,233	$ 631,233	$ 499,233	$ 367,233	$ 235,233	$ 103,233
$ 2,100	$ 1,357,233	$ 1,231,233	$ 1,105,233	$ 979,233	$ 853,233	$ 727,233	$ 601,233	$ 475,233	$ 349,233	$ 223,233	$ 97,233
$ 2,000	$ 1,291,233	$ 1,171,233	$ 1,051,233	$ 931,233	$ 811,233	$ 691,233	$ 571,233	$ 451,233	$ 331,233	$ 211,233	$ 91,233
$ 1,900	$ 1,225,233	$ 1,111,233	$ 997,233	$ 883,233	$ 769,233	$ 655,233	$ 541,233	$ 427,233	$ 313,233	$ 199,233	$ 85,233
$ 1,800	$ 1,159,233	$ 1,051,233	$ 943,233	$ 835,233	$ 727,233	$ 619,233	$ 511,233	$ 403,233	$ 295,233	$ 187,233	$ 79,233
$ 1,700	$ 1,093,233	$ 991,233	$ 889,233	$ 787,233	$ 685,233	$ 583,233	$ 481,233	$ 379,233	$ 277,233	$ 175,233	$ 73,233
$ 1,600	$ 1,027,233	$ 931,233	$ 835,233	$ 739,233	$ 643,233	$ 547,233	$ 451,233	$ 355,233	$ 259,233	$ 163,233	$ 67,233
$ 1,500	$ 961,233	$ 871,233	$ 781,233	$ 691,233	$ 601,233	$ 511,233	$ 421,233	$ 331,233	$ 241,233	$ 151,233	$ 61,233
$ 1,400	$ 895,233	$ 811,233	$ 727,233	$ 643,233	$ 559,233	$ 475,233	$ 391,233	$ 307,233	$ 223,233	$ 139,233	$ 55,233
$ 1,300	$ 829,233	$ 751,233	$ 673,233	$ 595,233	$ 517,233	$ 439,233	$ 361,233	$ 283,233	$ 205,233	$ 127,233	$ 49,233
$ 1,200	$ 763,233	$ 691,233	$ 619,233	$ 547,233	$ 475,233	$ 403,233	$ 331,233	$ 259,233	$ 187,233	$ 115,233	$ 43,233

Units Needed for Break-Even

Number of Providers per Facility

Price per Provider per Month	55	50	45	40	35	30	25	20	15	10	5
$ 3,200	0.59	0.65	0.72	0.82	0.94	1.10	1.32	1.67	2.25	3.47	7.54
$ 3,100	0.61	0.67	0.75	0.84	0.97	1.13	1.37	1.72	2.33	3.59	7.83
$ 3,000	0.63	0.70	0.77	0.87	1.00	1.17	1.41	1.78	2.41	3.72	8.14
$ 2,900	0.65	0.72	0.80	0.90	1.04	1.21	1.46	1.85	2.50	3.86	8.48
$ 2,800	0.68	0.75	0.83	0.94	1.07	1.26	1.52	1.91	2.59	4.01	8.84
$ 2,700	0.70	0.77	0.86	0.97	1.11	1.31	1.58	1.99	2.69	4.17	9.24
$ 2,600	0.73	0.80	0.90	1.01	1.16	1.36	1.64	2.07	2.80	4.35	9.68
$ 2,500	0.76	0.84	0.93	1.05	1.21	1.41	1.71	2.16	2.92	4.54	10.15
$ 2,400	0.79	0.87	0.97	1.10	1.26	1.47	1.78	2.25	3.05	4.75	10.68
$ 2,300	0.83	0.91	1.01	1.14	1.31	1.54	1.86	2.35	3.20	4.98	11.27
$ 2,200	0.86	0.95	1.06	1.20	1.38	1.61	1.95	2.47	3.35	5.23	11.93
$ 2,100	0.91	1.00	1.11	1.26	1.44	1.69	2.05	2.59	3.53	5.51	12.66
$ 2,000	0.95	1.05	1.17	1.32	1.52	1.78	2.16	2.73	3.72	5.83	13.49
$ 1,900	1.00	1.11	1.23	1.39	1.60	1.88	2.27	2.88	3.93	6.18	14.44
$ 1,800	1.06	1.17	1.31	1.47	1.69	1.99	2.41	3.05	4.17	6.58	15.54
$ 1,700	1.13	1.24	1.38	1.56	1.80	2.11	2.56	3.25	4.44	7.03	16.81
$ 1,600	1.20	1.32	1.47	1.67	1.91	2.25	2.73	3.47	4.75	7.54	18.31
$ 1,500	1.28	1.41	1.58	1.78	2.05	2.41	2.92	3.72	5.10	8.14	20.10
$ 1,400	1.38	1.52	1.69	1.91	2.20	2.59	3.15	4.01	5.51	8.84	22.29
$ 1,300	1.48	1.64	1.83	2.07	2.38	2.80	3.41	4.35	6.00	9.68	25.00
$ 1,200	1.61	1.78	1.99	2.25	2.59	3.05	3.72	4.75	6.58	10.68	28.47

Sales Dollars Needed for Break-Even

Number of Providers per Facility

Price per Provider per Month	55	50	45	40	35	30	25	20	15	10	5
$ 3,200	$ 1,248,067	$ 1,249,793	$ 1,251,909	$ 1,254,564	$ 1,257,994	$ 1,262,596	$ 1,269,087	$ 1,278,974	$ 1,295,782	$ 1,330,759	$ 1,448,020
$ 3,100	$ 1,248,624	$ 1,250,407	$ 1,252,593	$ 1,255,337	$ 1,258,882	$ 1,263,640	$ 1,270,363	$ 1,280,582	$ 1,297,983	$ 1,334,245	$ 1,456,298
$ 3,000	$ 1,249,217	$ 1,251,062	$ 1,253,324	$ 1,256,162	$ 1,259,831	$ 1,264,756	$ 1,271,716	$ 1,282,301	$ 1,300,339	$ 1,337,983	$ 1,465,234
$ 2,900	$ 1,249,853	$ 1,251,763	$ 1,254,105	$ 1,257,046	$ 1,260,847	$ 1,265,950	$ 1,273,165	$ 1,284,143	$ 1,302,867	$ 1,342,002	$ 1,474,908
$ 2,800	$ 1,250,534	$ 1,252,515	$ 1,254,944	$ 1,257,994	$ 1,261,937	$ 1,267,233	$ 1,274,722	$ 1,286,124	$ 1,305,587	$ 1,346,335	$ 1,485,416
$ 2,700	$ 1,251,267	$ 1,253,324	$ 1,255,846	$ 1,259,014	$ 1,263,110	$ 1,268,613	$ 1,276,399	$ 1,288,258	$ 1,308,520	$ 1,351,020	$ 1,496,870
$ 2,600	$ 1,252,057	$ 1,254,196	$ 1,256,819	$ 1,260,114	$ 1,264,376	$ 1,270,103	$ 1,278,209	$ 1,290,564	$ 1,311,694	$ 1,356,102	$ 1,509,405
$ 2,500	$ 1,252,912	$ 1,255,139	$ 1,257,872	$ 1,261,304	$ 1,265,745	$ 1,271,716	$ 1,280,170	$ 1,293,063	$ 1,315,140	$ 1,361,634	$ 1,523,180
$ 2,400	$ 1,253,839	$ 1,256,162	$ 1,259,014	$ 1,262,596	$ 1,267,233	$ 1,273,468	$ 1,282,301	$ 1,295,782	$ 1,318,892	$ 1,367,677	$ 1,538,390
$ 2,300	$ 1,254,848	$ 1,257,276	$ 1,260,258	$ 1,264,004	$ 1,268,853	$ 1,275,378	$ 1,284,625	$ 1,298,750	$ 1,322,996	$ 1,374,308	$ 1,555,271
$ 2,200	$ 1,255,951	$ 1,258,494	$ 1,261,617	$ 1,265,543	$ 1,270,626	$ 1,277,468	$ 1,287,170	$ 1,302,004	$ 1,327,502	$ 1,383,615	$ 1,574,113
$ 2,100	$ 1,257,161	$ 1,259,831	$ 1,263,110	$ 1,267,233	$ 1,272,573	$ 1,279,765	$ 1,289,970	$ 1,305,587	$ 1,332,472	$ 1,393,708	$ 1,595,282
$ 2,000	$ 1,258,494	$ 1,261,304	$ 1,264,756	$ 1,269,097	$ 1,274,722	$ 1,282,301	$ 1,293,063	$ 1,309,550	$ 1,337,983	$ 1,398,720	$ 1,619,234
$ 1,900	$ 1,259,972	$ 1,262,937	$ 1,266,580	$ 1,271,164	$ 1,277,106	$ 1,285,115	$ 1,296,500	$ 1,313,959	$ 1,344,127	$ 1,408,818	$ 1,646,559
$ 1,800	$ 1,261,617	$ 1,264,756	$ 1,268,613	$ 1,273,468	$ 1,279,765	$ 1,288,258	$ 1,300,339	$ 1,318,892	$ 1,351,020	$ 1,420,210	$ 1,678,023
$ 1,700	$ 1,263,462	$ 1,266,795	$ 1,270,893	$ 1,276,053	$ 1,282,749	$ 1,291,788	$ 1,304,658	$ 1,324,450	$ 1,358,808	$ 1,433,163	$ 1,714,642
$ 1,600	$ 1,265,543	$ 1,269,097	$ 1,273,468	$ 1,278,974	$ 1,286,124	$ 1,295,782	$ 1,309,550	$ 1,330,759	$ 1,367,677	$ 1,448,020	$ 1,757,797
$ 1,500	$ 1,267,910	$ 1,271,716	$ 1,276,399	$ 1,282,301	$ 1,289,970	$ 1,300,339	$ 1,315,140	$ 1,337,983	$ 1,377,871	$ 1,465,234	$ 1,809,409
$ 1,400	$ 1,270,626	$ 1,274,722	$ 1,279,765	$ 1,286,124	$ 1,294,393	$ 1,305,587	$ 1,321,586	$ 1,346,335	$ 1,389,708	$ 1,485,416	$ 1,872,234
$ 1,300	$ 1,273,775	$ 1,278,309	$ 1,283,670	$ 1,290,564	$ 1,299,536	$ 1,311,694	$ 1,329,104	$ 1,356,102	$ 1,403,621	$ 1,509,405	$ 1,950,372
$ 1,200	$ 1,277,468	$ 1,282,301	$ 1,288,258	$ 1,295,782	$ 1,305,587	$ 1,318,892	$ 1,337,983	$ 1,367,677	$ 1,420,210	$ 1,538,390	$ 2,050,198