

Asynchronous e-Visit Service Implementation

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Executive Summary

The U.S. health system faces an increased shortage of providers in many areas of the country; thus, we must utilize all means to deploy healthcare services where needed and when needed. An E-Visit is an asynchronous non-face-to-face patient-initiated communication through a patient portal. Using asynchronous E-visit communication can help bridge this gap in care and increase access to quality healthcare for all populations. The service has the potential to lower the cost of healthcare as providers can serve these patients when not attending to in-person patients or across greater distances. The rural area provider shortage amplifies the need for this service.

The main focus of this project is to enable better patient and provider experience, increase health outcomes and patient safety and reduce costs for the healthcare organization. Currently, many patients call the medical office and ask for advice. Often, this information does not reach providers until many hours after the phone call; thus, patient care suffers. In many cases, the conversation between the nurse and provider is only recorded as a phone call in the patient chart with no additional details or official diagnosis. The asynchronous e-visit could correct this issue, enable patients and providers to have comprehensive written and recorded communication in the patient chart, and improve patient care and safety. This will also ensure that in a case of problem escalation, the follow-up can be better assessed and appropriate care applied. The currently inefficient process of undocumented phone calls will be replaced by modifying the existing electronic health records and patient portal technologies. New business processes will be established for nurses, providers, and billing staff to replace the current inefficient processes.

Strategic Opportunity and Alignment with Mission/Strategy

The service will provide patients with an additional method to reach out to their primary care provider and ask them questions about their symptoms. It will make it easier for the patient to complete a predefined questionnaire about the problem they are experiencing. The providers would respond faster, which will lead to better patient satisfaction. Asynchronous e-visit will allow patients to stay at work or tend to personal tasks and not lose valuable personal time of 2 – 4 hours to see a provider for a 15 minutes visit, thus increasing work productivity across all industries and saving PTO for more severe problems. In rural areas, this will enable patients to receive faster and better healthcare services or services that they often lack, even in non-designated Health Professional Shortage Area (HPSA).

The e-visit will have a strategic impact on the business in providing new revenue and the organizational ability to adapt and expand existing services and offer the opportunity to retain existing and gain new customers. Implementation of service and workflow changes will enable team members to gain technical and managerial experience introducing the novel product and position the organization for future changes. The first phase of the implementation would consist of a pilot service to test and prototype the limited number of predefined problems/questions and assess the viability of the service offering and limit the disruption to the regular business. After the pilot is completed and the solution is finished, it will be considered for an organization-wide deployment (see Prototyping and Testing section for more information).

As a patient-centered organization that provides comprehensive, compassionate, high-quality care through a family-centered and team-based approach, the organization must innovate and offer new services to their patients that will enable higher-quality care. Implementing the asynchronous e-visit service will help the organization meet its mission statement.

In the future, the service can be expanded with the ability of primary care providers to send patients' medical documents to a specialist, avoiding the long wait times associated with accessing specialist care. This increases the overall quality of care and lowers the cost of care, especially with costly out-of-network specialist care. In addition to faster specialist care, the service will enable PCP to increase control over care coordination.

Research Conducted

Questions Driving Research

- Insurance company reimbursement for the service?
- Financial impact?
- Vermont and Federal regulation regarding this type of service?
- New service impact on current processes/services/employees?
- Is this technology already available in the Medent Electronic Health Records, or will this be additional development or only customization to meet the client's needs?

Action Research and Primary Research

- Interview with a provider about the current process that this service would replace.
- Who are the intended users of the service?
- Will the staffing needs to change to accommodate the new service?
- Electronic Health Records and Patient Portal capability?

Primary research was conducted by interviewing the medical provider at the clinic, who is knowledgeable about the clinic's processes and the current use of telehealth technology.

Regarding the existing information technology, the focus was on the availability of the service in

the current Medent Electronic Health Records and its supporting system and if this would be a custom development that would be potentially prohibitive due to the cost. The research also focused on the economic analysis and assumed projected revenue, staffing requirements to implement the service, and the intended uses and limitations of the new service. The detailed findings are presented throughout this paper.

Literature Review and Secondary Research

- Do any insurance carriers currently reimburse providers for asynchronous visits, and what is the stance of the Centers for Medicare and Medicaid Services on the future of telehealth?
- What state and federal laws are in play; how will they impact service; does any information sharing needs to change (e.g., consent)?

Considering that this is a new service, emphasis was placed on the need for effective leadership and the impact that it could have on employees during the process introduction. Changes to the new ways of conducting business often run into resistance and cannot sustain the needed changes. To guide through the uncertainty and to ensure flexibility, research was also on the project management approach to find the best way to implement the service with the most negligible negative impact on the current staff and customers.

Limited research was conducted on insurance companies' currently published reimbursement practices to supplement the economic model and confirm assumptions.

Since this is a healthcare technology project, numerous laws must be followed. State and federal statutes that govern the use of telehealth services in Vermont and by which all healthcare organizations must comply were analyzed and documented to ensure organizational compliance.

Products, Services, Marketing, and Sales

Buyer Personas

The asynchronous e-visit service is intended for busy professionals who do not have ample personal time off and for non-working people who care for others (e.g., elderly, children) and cannot take extended time from caring for others. In addition, the service can be marketed to retirees who may not be able to travel to the clinic.

SOAR Analysis

We want to help the organization lean into what it does well, capitalize on internal and external opportunities for success, aspire to a preferred future, and identify the results we want to see. With that in mind, here is our SOAR analysis for 2022.

Strengths	Opportunities	Aspirations	Results
Compassionate, trusted, and dedicated professionals. Easily accessible professionals. Excellent technology platform with no technology interruptions. Excellent communication skills; able to meet clients where they are and use easily understandable vocabulary.	<u>External</u> A busy population that requires easily accessible medical services. <u>Internal</u> Self-motivated to improve services and patient outcomes. Dedicated professionals committed to providing healthcare services.	Provide the most comprehensive primary care medical service to our patients.	Increase of 100 encounters per month for the first 3 months. Maintain a rate of high satisfaction among customers by over 95% each month. Double the number of encounters and revenue from the previous month for the first 4 quarters.

Value Proposition

	Customer Segment	Value Proposition
Gains Gain Creators	<ul style="list-style-type: none"> • Faster access to medical providers • An additional method to reach healthcare providers • Easier access to a healthcare provider • Increased patient satisfaction • More time spent on other activities (work, personal time) 	<ul style="list-style-type: none"> • Empower patients to take charge of their own healthcare • Higher-quality patient service • Comprehensive and compassionate service to patients • The ability of other providers to review documentation in case of worsening issues • An increase in patient satisfaction leads to customer retention
Pain Pain Relievers	<ul style="list-style-type: none"> • Timely access to healthcare facility for minor problems • Personal scheduling conflicts interfere with clinic hours, leading to dissatisfaction • Inability to take time off from work • Low-value return on investment (lost personal time) 	<ul style="list-style-type: none"> • Shortage of healthcare providers • Time spent on phone calls that are not comprehensive • A holistic approach to the healthcare system • Increased customer satisfaction by providing a low-cost service • Faster service will increase patient satisfaction
Customer jobs Services	<ul style="list-style-type: none"> • Feel comfortable and confident in health care decisions since the visit was documented in the patient chart • Communicate privately and securely with a healthcare provider efficiently 	<ul style="list-style-type: none"> • Documented problems and diagnoses lead to comprehensive care • Patient portal communication provides the ability to transmit messages securely and store information in the patient chart

Promotion

The promotion of the asynchronous e-visit service will focus on building channels in multiple phases to allow for better use of time of our limited team.

- Social media
 - Instagram
 - Facebook
- Owned channels
 - Company website
 - Educational blog
- Paid channels
 - Google ads
- Earned channels
 - Online forums (Facebook groups)

Physical Evidence

Trust is paramount when selling intangible products (services), so we need to build trust with customers who will spread word-of-mouth recommendations that draw in even more clients.

- Focus on personalized selling by explaining to prospective customers how our service can positively change their lives.
- Show our potential customers the tangible benefits of our services using success stories to build credibility.
- Offer advice to clients by addressing any specific issue they have and advise them on how the service will benefit them.

Leadership Capabilities and Requirements

While the project itself is technical, the solution poses adaptive challenges. The approach to implementing this system change requires the leadership to recognize the complexity of the process change and interdependence of all affected organizational units (providers, nursing, finance, scheduling, and information technology) and define the urgency behind the needed change. This process requires successful collaboration between a wide range of stakeholders (functional departments with the existing workload) and external organizations (vendors who have a financial stake). All these parties have different interests, viewpoints, and competencies, and collective leadership is required to succeed and sustain the change (Kuenkel, 2015).

Using the Collective Leadership Compass (Kuenkel, 2015), we can better manage the change and resistance to change, eliminate confusion often present when new services are introduced, and sustain during experimentation. We need to frame the future possibilities to focus on the potential and opportunities that this change will bring to both the organization and customers and employees. At the same time, employees need to be empowered and inspired by their leaders to change, not only to be told that they need to change.

Engagement is about human competency to create a structured arrangement and processes to bring people on board and buy into the change. Early engagement would soften the resistance that will happen during the implementation. Successful and meaningful collaboration that builds trust and unity among people is vital to construct interconnected networks that collectively engage in the process. Collective action will secure that employees collaborate and that collaboration will lead to more innovation, success, and a stable environment.

The innovation phase is critical in allowing employees to be creative and nurturing creative employees to help the team generate new ideas through collective engagement. People

want to be creative, belong, and contribute, but they need leaders to enable them to pursue their proficiency. During the implementation, we will encounter experimentation and prototyping, which means things will not go as planned. We all need to be agile to address problems, remain open to change, and not regress.

Humanity is essential for any of this to work, as stress can be high. The team needs to be mindful of others, be respectful towards each other, have empathy, and attempt to understand each perspective and viewpoint. Cooperation will lead to engagement in a quality dialog that will solve problems and remove assumptions and ambiguities in large projects. The diverse views and experiences will enable everybody to continuously share information, learn from each other, and turn that into collective intelligence to create better outcomes. All these actions would allow us to stay connected and see a greater common good from which we all will prosper. We would enhance the strengths of each other through our contributions and create a sustainable, innovative environment.

A visualization of this structure is presented in Figure 1.

Figure 1

Collective Leadership Compass



Organizational Impact and Change Management

The new service will impact how staff conducts business, which may lead to resistance or back on the old ways. To ensure that we work as a team moving in the same direction, we must engage in change management practices early on, before the implementation starts. Leaders must engage everybody in the discovery process to determine the best approach to make the change and get the buy-in to sustain the change during difficult times.

This requires empathy to ask meaningful questions to which we seek answers (Schein, 2015), engage in deep listening and hear everybody involved (Briskin, 2012), observe their behaviors, and engage with the user (employees, customers, etc.) to understand their concerns (d.school, 2018). The process should lower anxieties and resistance to change.

To change and sustain change requires leaders to be willing to change and learn from their employees and colleagues. When we unpack our empathy findings and define the problems, we can collectively dream and imagine the possibility of the emerging future. The process

requires us to synthesize diverse information from all individuals to create actionable problem statements that we all can get behind and work as a team toward the organizational goal or the mission.

Humble inquiry and collective imagination of possibilities will enable us to ideate and discover new ways to implement the process change. We will be able to design and create the ideal process the whole team can get behind that is necessary for this organization-wide process to be successfully implemented. Only through the positive engagement of others can we create an environment that can innovate and ensure the organization moves forward.

All this will get us to the point where all employees are equally empowered to make a change and willing to contribute to the collective wisdom in which all people learn and grow. That ability will enable easier prototyping and testing required for the management process changes. They will inspire each other as they have a collective belonging, energy, and enthusiasm and will maintain the performance needed for a long process.

Leaders need to understand that a single mindset cannot develop the solutions to problems but require the whole teams to be engaged in the process. People with different backgrounds and understandings will bring the best to the group. They will not limit the possible solutions and create a system in which people are willing to engage, work, and create new things that will move the organization to the future.

Economic Business Case

Assumptions incorporated into the model are IT costs, increased staffing costs with fringe benefits, any professional fees that may be increased, reimbursement based on contractual adjustments, and bad debt reductions. The projected operational expenses and revenue for implementing the new service are depicted in Table 1 Economic model (below).

The EHR vendor's expenses for the new service implementation include implementation costs, staff training on the use of the new solution, and maintenance costs associated with the new service. In addition, there are costs related to the promotion of the new service using existing marketing channels for the first two years.

It is expected that this service will increase the telehealth nursing time by 20 hours per week to account for workflow change to review patients' e-visit medical complaints and ensure appropriate e-visits are routed to the providers for assessment. Provider time is calculated at 12 hours per week across five providers, totaling 208 hours over one year. The current model assumes three providers would offer the service each day for a five-day workweek with no more than six e-visit encounters per day per provider. This would result in 4,680 e-visit encounters per year. The assumption is that the services would not be provided on the weekend. However, that can be changed if there is a desire to use this opportunity during the on-call time.

The economic model assumes revenue to be adjusted based on the number of average insurance carrier types in the State of Vermont. Vermonter's coverage by insurance carrier type is private insurance 53%, Medicare 19%, Medicaid 20%, military 3%, and self-pay 3% (VDH, 2018). Based on the insurance distribution, the total gross revenue is projected to be \$346,320 per year and \$1,766,232 over the five years, with an adjustment of 5% in years 4-5.

The billable revenue is further adjusted to reflect the contractual reimbursement rates of different insurance carriers; private 85%, Medicare 50%, Medicaid 50%, military 50%, and self-pay 100%. Adjusted for contractual allowances of \$103,723, the billable gross revenue is \$242,597 per year and \$1,237,246 over the five years. The bad debts are assumed to have a 7% impact on the revenue at \$24,242 per year or \$123,636 for five years, bringing the net patient revenue to \$218,355 for year one and \$1,113,609 over the five years.

Total operating expenses are projected at \$168,272 for the first year and \$838,863 over the five years, making the operating margin \$50,083 for year one and \$274,747 over the five years.

Economic Model

Table 1: Estimated Five Year Operational Costs

CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	5 YEARS TOTAL
Operational Expenses						
Advertising/Marketing/Website	\$ 3,900	\$ 1,950	\$ -	\$ -	\$ -	\$ 5,850
EHR/Patient Portal/PM Systems Changes	\$ 9,000	\$ -	\$ -	\$ -	\$ -	\$ 9,000
EHR/Patient Portal/PM Systems Maintenance	\$ 4,200	\$ 4,200	\$ 4,200	\$ 4,410	\$ 4,410	\$ 21,420
Total Equipment Per Year	\$ 17,100	\$ 6,150	\$ 4,200	\$ 4,410	\$ 4,410	\$ 36,270
Salaries and Wages						
Telehealth Nurse - Hourly Wage	\$ 36	\$ 37	\$ 38	\$ 39	\$ 41	
x Hours per Year	1,040	1,040	1,040	1,040	1,040	5,200
Total Wages - Telehealth Nurse	\$ 37,440	\$ 38,563	\$ 39,720	\$ 40,912	\$ 42,139	\$ 198,774
Nurse - Hourly Wage	\$ 34	\$ 35	\$ 36	\$ 37	\$ 38	
x Hours per Year	208	208	208	208	208	\$ 1,040
Total Wages - Nurse	\$ 7,072	\$ 7,284	\$ 7,503	\$ 7,728	\$ 7,960	\$ 37,546
Provider 1 Hourly Wage	\$ 80	\$ 82	\$ 85	\$ 87	\$ 90	
x Hours per Year	208	208	208	208	208	\$ 1,040
Total Wages - Provider	\$ 16,640	\$ 17,139	\$ 17,653	\$ 18,183	\$ 18,728	\$ 88,344
Number of Providers - 3						
Total Wages - All Providers	\$ 49,920	\$ 51,418	\$ 52,960	\$ 54,549	\$ 56,185	\$ 265,032
Billing staff	\$ 28	\$ 29	\$ 30	\$ 31	\$ 32	
x Hours per Year	156	156	156	156	156	\$ 780
Total Wages - Billing staff	\$ 4,368	\$ 4,499	\$ 4,634	\$ 4,773	\$ 4,916	\$ 23,190
Total Wages	\$ 115,440	\$ 118,903	\$ 122,470	\$ 126,144	\$ 129,929	\$ 612,887
Other expenses						
Employee Fringe Benefits @30%	\$ 34,632	\$ 35,671	\$ 36,741	\$ 37,843	\$ 38,979	\$ 183,866

Professional Fees	\$ 500	\$ 515	\$ 530	\$ 546	\$ 563	<u>\$ 2,655</u>
Insurance	\$ 600	\$ 618	\$ 637	\$ 656	\$ 675	<u>\$ 3,185</u>

Number of Encounters

Encounters per provider (6/day)	<u>1,560</u>	<u>1,560</u>	<u>1,560</u>	<u>1,560</u>	<u>1,560</u>	<u>7,800</u>
Encounters per 3 providers (18/day)	<u>4,680</u>	<u>4,680</u>	<u>4,680</u>	<u>4,680</u>	<u>4,680</u>	<u>23,400</u>

Revenue / Reimbursement

	\$ 74.00	\$ 74.00	\$ 74.00	\$ 77.70	\$ 77.70	
Number of Encounters	4,680	4,680	4,680	4,680	4,680	23,400
Gross Revenue (\$74.00/Y1-3; \$77.70/Y4-5)	346,320	346,320	346,320	363,636	363,636	1,766,232
Private 53%	\$ 183,550	\$ 183,550	\$ 183,550	\$ 192,727	\$ 192,727	\$ 936,103
Medicare 19%	\$ 65,801	\$ 65,801	\$ 65,801	\$ 69,091	\$ 69,091	\$ 335,584
Medicaid 20%	\$ 76,190	\$ 76,190	\$ 76,190	\$ 80,000	\$ 80,000	\$ 388,571
Military 3%	\$ 10,390	\$ 10,390	\$ 10,390	\$ 10,909	\$ 10,909	\$ 52,987
Self Pay 3%	<u>\$ 10,390</u>	<u>\$ 10,390</u>	<u>\$ 10,390</u>	<u>\$ 10,909</u>	<u>\$ 10,909</u>	<u>\$ 52,987</u>
Total Gross Revenue 100%	<u>\$ 346,320</u>	<u>\$ 346,320</u>	<u>\$ 346,320</u>	<u>\$ 363,636</u>	<u>\$ 363,636</u>	<u>\$1,766,232</u>

Billable Revenue (\$74.00/Encounter/ year 1-3) (\$77.70/Encounter/ year 4-5)

Private 85%	\$ 156,017	\$ 156,017	\$ 156,017	\$ 163,818	\$ 163,818	\$ 795,688
Medicare 50%	\$ 32,900	\$ 32,900	\$ 32,900	\$ 34,545	\$ 34,545	\$ 167,792
Medicaid 50%	\$ 38,095	\$ 38,095	\$ 38,095	\$ 40,000	\$ 40,000	\$ 194,286
Military 50%	\$ 5,195	\$ 5,195	\$ 5,195	\$ 5,455	\$ 5,455	\$ 26,493
Self Pay 100%	<u>\$ 10,390</u>	<u>\$ 10,390</u>	<u>\$ 10,390</u>	<u>\$ 10,909</u>	<u>\$ 10,909</u>	<u>\$ 52,987</u>
Total Billable Gross Revenue	<u>\$ 242,597</u>	<u>\$ 242,597</u>	<u>\$ 242,597</u>	<u>\$ 254,727</u>	<u>\$ 254,727</u>	<u>\$1,237,246</u>
Bad Debt = 7% of Gross Revenue	\$ 24,242	\$ 24,242	\$ 24,242	\$ 25,455	\$ 25,455	\$ 123,636

Statement of Operations

Total Gross Revenue	\$ 346,320	\$ 346,320	\$ 346,320	\$ 363,636	\$ 363,636	\$1,766,232
Less: Contractual Allowances						
Private 15%	\$ 27,532	\$ 27,532	\$ 27,532	\$ 28,909	\$ 28,909	\$ 140,415
Medicare 50%	\$ 32,900	\$ 32,900	\$ 32,900	\$ 34,545	\$ 34,545	\$ 167,792
Medicaid 50%	\$ 38,095	\$ 38,095	\$ 38,095	\$ 40,000	\$ 40,000	\$ 194,286
Military 50%	<u>\$ 5,195</u>	<u>\$ 5,195</u>	<u>\$ 5,195</u>	<u>\$ 5,455</u>	<u>\$ 5,455</u>	<u>\$ 26,493</u>
Total Contractual Allowances	\$ 103,723	\$ 103,723	\$ 103,723	\$ 108,909	\$ 108,909	\$ 528,986
Less: Bad Debts	<u>\$ 24,242</u>	<u>\$ 24,242</u>	<u>\$ 24,242</u>	<u>\$ 25,455</u>	<u>\$ 25,455</u>	<u>\$ 123,636</u>
Total Revenue Deductions	<u>\$ 127,965</u>	<u>\$ 127,965</u>	<u>\$ 127,965</u>	<u>\$ 134,364</u>	<u>\$ 134,364</u>	<u>\$ 652,623</u>
Net Patient Revenue	\$ 218,355	\$ 218,355	\$ 218,355	\$ 229,272	\$ 229,272	\$1,113,609

Total Operating Revenue	<u>\$ 218,355</u>	<u>\$ 218,355</u>	<u>\$ 218,355</u>	<u>\$ 229,272</u>	<u>\$ 229,272</u>	<u>\$1,113,609</u>
Operating Expenses						
Equipment	\$ 17,100	\$ 6,150	\$ 4,200	\$ 4,410	\$ 4,410	\$ 36,270
Total Wages	\$ 115,440	\$ 118,903	\$ 122,470	\$ 126,144	\$ 129,929	\$ 612,887
Employee Fringe Benefits	\$ 34,632	\$ 35,671	\$ 36,741	\$ 37,843	\$ 38,979	\$ 183,866
Professional Fees	\$ 500	\$ 515	\$ 530	\$ 546	\$ 563	\$ 2,655
Insurance	\$ 600	\$ 618	\$ 637	\$ 656	\$ 675	\$ 3,185
Total Operating Expenses	<u>\$ 168,272</u>	<u>\$ 161,857</u>	<u>\$ 164,578</u>	<u>\$ 169,600</u>	<u>\$ 174,555</u>	<u>\$ 838,863</u>
Operating Margin	<u>\$ 50,083</u>	<u>\$ 56,498</u>	<u>\$ 53,776</u>	<u>\$ 59,673</u>	<u>\$ 54,717</u>	<u>\$ 274,747</u>

Assumptions

- Clinic Location: State of Vermont
- Vermont Population: 645,570 (Census, 2021)
- Vermont Population Insurance Type (Vermont, 2018):
 - Private Insurance – 53%
 - Medicare – 19%
 - Medicaid – 22%
 - Military – 3%
 - Self-Pay -3%
- Clinic Patient Population: 14,000 patients
- Number of providers: 3 Physicians, 1 Physician assistant, 1 Nurse practitioner
- Number of providers offering service: three per day for five days a week
- Potential Visits per year: 18/day = 4,680/year

Information Systems

The asynchronous e-visit service is a new service that will require modification of existing electronic health records (EHR), practice management, and patient portal software to accommodate the function of the new service. Since the system impact is broad, an analysis of the workflow impact on the existing system is required.

The patient portal requires a new configuration to allow patients to start the e-visit. As part of that setup, the organization must define what illnesses will be included in the e-visit. The portal will present a patient with instructions on who can use the service, the limitation of the service (e.g., non-urgent care), billing information, and the provider response expectations. The patient portal vendor will need to configure the software to allow for the practice-defined patient fillable e-visit templates (e.g., urinary tract infection, etc.) that would enable the patient to provide as much information to provide a correct diagnosis. As part of the templates, there needs to be an option to receive attachments from patients that include images (e.g., a picture of a rash) and other supporting documents. A patient portal will need the ability to receive direct payment for the e-visit from the patient and the option for the patient to instruct the clinic to bill the insurance company for this service. The e-visit service should only be available to established patients and prevent new patients who do not have established care from scheduling an e-visit.

The EHR software, as a central repository of patient health information and a platform where providers and nurses record information, will need to be set up with a connection to the patient portal so that providers and nurses can receive patient messages. The EHR software will need to be configured to accommodate data from new templates and enable communication with patients using the existing patient portal solution. In addition to the EHR link to the patient

portal, a connection to the practice management (financial software) needs to be set up to enable billing to the insurance companies and receive payments from patients.

Financial software will need to be set up with insurance billing codes to enable accurate and timely billing of the services and a configuration to receive information from providers that the service was performed and to send billing information to the insurance companies for remittance. Also, financial software will need to capture and track data associated with the e-visit and the revenue generated by this service. This information will be used to create reports to evaluate e-visit use and its performance over a specific timeframe.

Since this is a new service implementation that impacts the existing platform, the configuration and implementation must be performed first in a testing environment. The regression testing of existing business processes and functions must be performed to ensure no impact on the current business operations. All functional units impacted by the change will need to complete the testing, as any issues not identified during the testing window can profoundly affect the current operations.

Processes Improved and Added

Once the asynchronous e-visit is implemented across the entire organization, many efficiencies will be gained with the provider and nurse's time use. The service will provide patients with an additional method to reach out to their primary care provider and ask them questions about their symptoms. Also, an organization will add additional revenue since some of these patient problems are currently resolved via phone calls, and the organization does not bill these services.

Efficiencies gained are increased privacy and security since communication with patients is not conducted over the phone. Patient problems will be documented on time during e-visits

like all other services and enable better follow-up if patient issues are not resolved and require an in-person visit. The service will provide higher patient satisfaction as patients do not have to take time out of their busy lives for simple problems that do not require an in-person visit.

Financial efficiencies gained are a better overview of the actual provider and nurse's cost as some of these currently non-billable phone calls are captured. In addition, the new e-visits will add additional revenue to the organization. Audit history of labor expenses associated with the new service and accurate employee time accounting can be used for better human resource planning.

Performance metrics

The following performance metrics will be collected over time to ensure the service is providing value to the organization and its customers:

- E-Visit volume
- Service adoption metrics
 - Customer usage over time
 - Number of repeating users
- Average e-visit service (per unit) cost
- Number of unique patients using the service
- Financial – monthly/quarterly – revenue/expenses
- Customer perceived value
 - Satisfaction feedback from internal staff
 - External feedback from customers to receive constructive feedback to improve the service

We will measure the following key performance indicators (KPIs) to ensure the success and value of the service:

- Pre-lunch signups to gauge interest and get early service feedback. That information could better define the customer and adjust the messaging to new customers.
- Service adoption rate to inform the company if anything needs adjusting (e.g., product, price, quality).
- Customer usage – how are customers using the service (e.g., what type of e-visit)

Project Implementation Plan

Stakeholder Analysis

Asynchronous e-visit could be implemented for all patients who do not have easy access to medical services and patients who need non-urgent care and do not require physical contact or machine diagnostic services. Patients with low bandwidth internet access would benefit from this service, as the requirement for implementation is lower when compared to the traditional telehealth video visit. It would enable healthcare organizations to provide the service over a greater distance quickly without a need for a more expensive in-person visit. Another area of the healthcare system that will benefit from the service is communication between Skilled Nursing Facilities (SNFs) staff and patients' providers. The stakeholders that would be interested in the project are Healthcare organizations (e.g., Primary care practices, Specialists, Hospitals, Skilled Nursing Facilities, Respite care, Physical Therapy, and others); Patients; Grant funding programs (e.g., CMS, State Health and Human Services Agencies, HRSA, AHA, and others); The Media companies; Public/Community relations organizations; Healthcare trade associations and regional telemedicine resource center (e.g., Rural Health).

Risk Assessment

Financial Risks

Two identified moderate risks are present, 1) failure for the customers or providers not to embrace new service or workflow changes, 2) being late to market, and others taking a market share (e.g., insurance companies offering asynchronous e-visits).

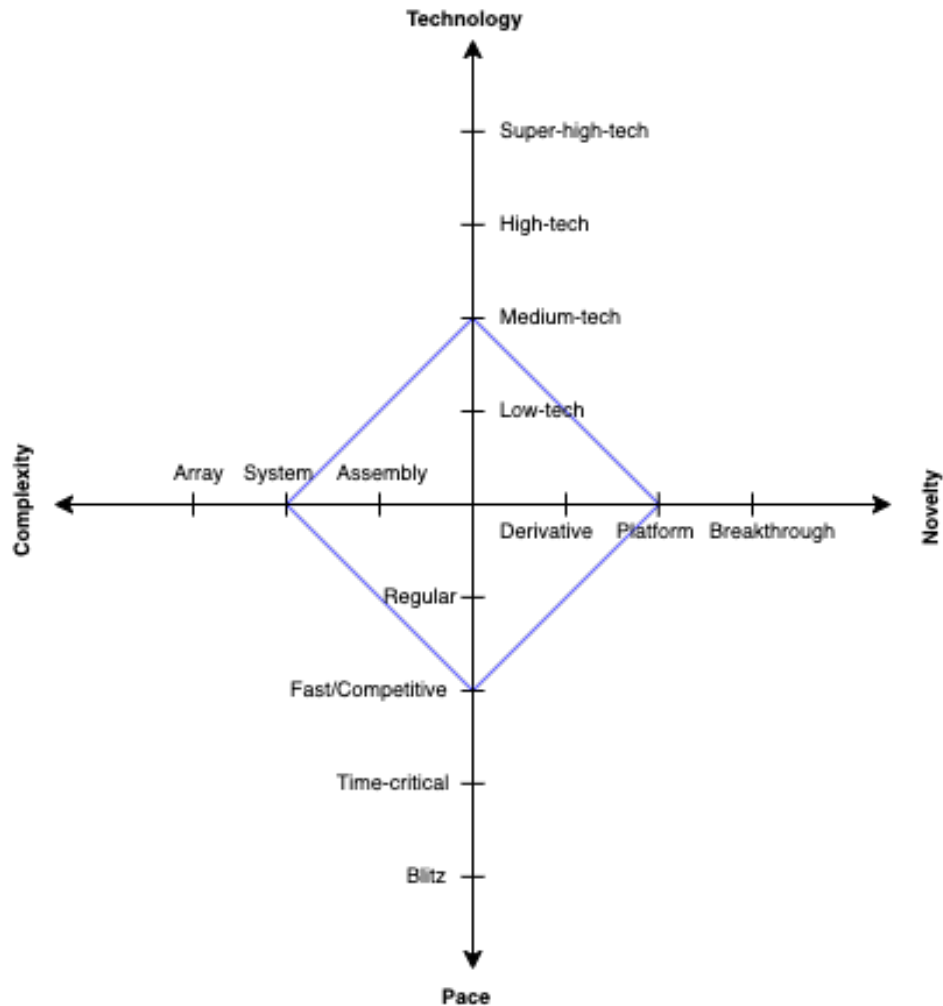
Privacy & Security Risks

The asynchronous e-visit service will use the existing patient portal for provider-patient communication. All privacy, security, and audit policies are passed from the patient portal. There is a probability that a patient uses the asynchronous e-visit feature to report a critical condition that should be reported by calling the office or emergency services; however, this is a standing patient portal communication risk.

Technological Complexity Analysis

The service is a medium technology (figure 2) product where efficiency is important not to increase the work. The service adds value to customers as they have an additional way to contact providers. The impact on the team is moderate as they will gain experience in product modifications (e.g., EHR, billing system, patient portal), and the service adds additional organizational capability and prepares the organization for any new changes that may come. There is a moderate risk for failure if the customers or providers do not embrace new service or workflow changes.

Figure 2



Implementing the system for asynchronous e-visit service will have internal staff and patients as customers. We will need to have multiple contracts with vendors that require integration. The project will need vendor support and new development and vendor support after the project completion. Planning and tracking activities between different vendors and internal staff will require formal control of technical, finance, and scheduling tasks. We will have frequent updates to management on the project status (technical, financial, schedule issues, and others.). Documentation will include management documentation (progress status reports, burn rate) and technical and workflow documentation for internal and external parties. The primary focus is on system requirements, design, integration, formal communication with customers, and

change management. Industry and corporate standards are followed especially billing and healthcare software integration.

The project is fast and competitive and focuses on time to market – new service adds value to customers as they have a new way to contact providers. There is a risk of being late to market and others taking a market share (e.g., insurance companies offering e-visits). We will need strong coordination with staff, contractors, and pilot phase patients. The current team is qualified to perform the required job to implement the service. To ensure the safety of patients, we need to have structured procedures for workflow changes and management involvement in approving workflow changes.

Project Management Approach

The adaptive project management approach will better serve the asynchronous e-visit service. The reason is that the service is new to the organization and will require a pilot phase to assess and validate the service before full implementation. Depending on what is discovered during the pilot phase, the pilot phase will most likely include changes and iterations, and the organization-wide solution may look different than initially planned. Also, any assumptions used for initial planning would be easier to correct if found to be incorrect. Some potential changes are billing system changes to account for different insurances, EHR and patient portal adjustments, and workflow changes and adjustments to discover the optimal workflow.

High-Level Project Activities

- EHR & Patient portal activities
 - Reach out to the EHR vendor/IT team to build the forms
 - Determine if there is an existing patient form that can be modified for this use

- Patient Form/Questionnaire
 - Build clinic specific inclusion/exclusion criteria and create clinic specific forms
- Billing
 - Discover billing codes or establish a flat fee schedule if not covered by insurance
- Hiring
 - Establish a new telemedicine nurse coordinator position
 - Create a job description
 - Advertise position
 - Hire a new employee
- Marketing
 - Social media presence
 - Update website
 - Create patient education material (e.g., waiting room poster)
 - Radio and TV advertising
- Provider and Staff Education
 - Create provider-specific education regarding the workflow
 - Identify pilot team

Prototyping and Testing

Prototype

- Patient initiate e-visit
- The new window opens with payment instructions about insurance payment or a flat-fee payment if not covered and a reminder that the service is not for urgent care

- A new pop-up window with an explanation of what e-visit is and how long it will take to get a response from the provider
- The patient completes the questionnaire
- The form is sent to a telemedicine nurse coordinator to triage for urgency –
 - if approved by the nurse, the form is sent to the provider to their e-visit folder
 - If not approved by the nurse – a message is sent to the patient to schedule an in-person visit
- Provider opens patient questionnaire that automatically creates a new progress note in the EHR with patient history and review of symptoms already populated
- The provider creates a healthcare plan, sends a message back to the patient, completes the billing portion of the visit, and completes the visit.
- E-visit automatically appears on the schedule, which will help the billing department in billing activity
- Create a mockup website page and a radio/TV advertising script

Testing

- Test the form that was created by the IT team. Test the diagnosis and problem list that was deemed acceptable for the asynchronous E-visit
- Test the flow of the patient questionnaire and how it translates to the progress note
- Check coverages by different insurance carriers
- Check other area clinic's E-visits fee schedules and ensure that the fee is comparable to other healthcare organizations
- Ensure that the advertising language is easy to understand
- Establish advertising frequency

- Test the website advertising location
- Test the patient form for conciseness
 - Test if the patient finds the material helpful
- Test the provider's written or video workflow material
 - Test if the providers find the education material helpful
- Define a testing team that includes providers and patients

Managing scope creep

It is imperative that the project team focuses only on the project deliverables and does not attempt to correct any newly discovered process inefficiencies. This will ensure the project stays on track and conforms with the project timeline and budget. Suppose implementation problems arise that will impact the delivery timeline and budget. This information must be communicated to the team lead and project sponsor to align expectations. After that, the project team should prioritize newly discovered work and adjust the plan accordingly.

Legal Implications

The following Federal and State legal statutes affect the project implementation and adoption.

Informed Consent

The patient must supply informed consent before a medical provider starts any treatment. In case of a patient's incompetency, an agent can give consent, and consent is not needed in an emergency. The patient bill of rights requires a coordinating care provider to provide complete and current information about the patient's medical diagnosis, treatment, and known prognosis (18 V.S.A. §1852). A health care provider must obtain and document a patient's written or oral

consent for the use of telemedicine to deliver billable services, unless in case of a medical emergency. Before delivering the first patient E-Visits, the patient must sign and store a written patient consent in the patient medical chart.

Individuals under 18 are minors and, in most events, are not capable of consenting to their health care and require a parent or court-appointed guardian to make health care decisions for a child. For sexually transmitted infections, drug or alcohol dependency, a minor 12 years of age or older may provide informed consent for their treatment (18 V.S.A. § 4226). Minors of any age may give informed consent for treatment in case of rape, incest, or sexual abuse.

HIPAA Compliance

The health care organization and its vendors must follow all privacy and security rules, and the electronic systems must comply with all security aspects. The organization must develop and implement policies and procedures before launching the service to ensure confidentiality, integrity, and accessibility of all electronic protected health information (ePHI) the health care organization or business associate creates, receives, maintains, or transmits, and that all employees and business associates follow these policies. The covered entity must assign privacy and security personnel responsible for developing and implementing policies and procedures that govern the use and disclosure of protected health information (PHI), receive complaints (§ 164.530), and prevent, detect, contain, and correct security violations (§ 164.308).

Privacy of Individually Identifiable Health Information

The following procedures must be implemented before the commencement of the project:

- Create a notice of privacy practices that describes the uses and disclosures of PHI and provide it to all patients

- Establish a complaint process and document all complaints, and retain for a minimum of six years
- Implement reasonable safeguards to protect the PHI from accidental uses or disclosures, and sanction any employee who does not comply with privacy policies and procedures

Security Standards for the Protection of Electronic Protected Health Information

The following procedures must be implemented before the commencement of the project:

- Implement policy and procedure for a frequent review of information system activities
- Conduct risk assessment to detect potential vulnerabilities of the ePHI and implement reasonable security measures to reduce risks and vulnerabilities
- Implement a policy and procedure that allows access to only persons or software programs that have been given explicit access to the ePHI
- Assign a unique user identifier to all personnel that has access to patient medical records to ensure an audit of the medical records access can be completed and that no unauthorized persons can access patient records
- Implement emergency access procedure to access patient records in case of emergency
- Establish policy and procedure for handling security incidents and sanction any employee who does not comply with security policies and procedures
- Implement a contingency plan to ensure the patient medical information is not lost
- Implement encryption and decryption process for all systems that contain ePHI

- Create a policy and procedure to limit physical access to computer systems containing ePHI

Liability And Malpractice Impact

A new Business Associate Agreement will not be required since the e-visit service will use technology services from a previously established vendor with electronic patient health information access. The e-visit services must follow already established policy and procedure for maintaining patient health records. To comply with Vermont 18 V.S.A. § 1905(8), hospitals must retain records for ten years, and all health care organizations should retain patient medical records for the same period to comply with the medical malpractice law (12 V.S.A. § 521).

Reflections on the Opportunity and the Research Process

NOT COMPLETE

- Self-reflection on how the entire program fits into the project.
- Are all areas of management practice represented?
- New ways of thinking

Considering that the project is a new service, it is clear that it includes all areas of the MBA program. Creating a matrix and outline in the first week was probably the most helpful thing, and it provided me to reflect on what I have learned throughout the past 12 months in the MBA program and think through things that are relevant to the project. It can be hard to remember and state what was learned when asked. Still, clarity comes when presented with a

problem, like a Capstone project, and there is a reflection. You start to remember that all those weekly assignments create a puzzle built in the form of a complete project.

While some classes needed some updates to reflect the changing environment, and some learning material sometimes felt like jumping through hoops and unnecessary, it was required. The program was great as it applied true and proven concepts that can be used in any business.

I am grateful for the feedback and guidance from many outstanding faculty members, and I am incredibly thankful for my classmates who shared their life experiences and gave me feedback on my thinking. The collective learning experience was exceptional.

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