abjayon
Bring IT On

September 2022

Digital CX for Healthcare

Whitepaper

In the current times, when Covid still affects a significant number of people and the availability of trained resources is very limited, healthcare organizations continue to face a huge challenge in serving patients effectively. The patient call volumes and appointment requests are high but the front desks are short-staffed, which results in poor patient satisfaction and staff burnout.

Our customer, a leading primary healthcare organization in the state of North Carolina in the US, operates a network of primary healthcare locations across the state and serves more than 120,000 patients. They take pride in being patient-centered with a focus on better clinical outcomes and lower healthcare costs, by providing highly accessible comprehensive primary care. They leverage technology to not only achieve the objectives, but also to drive better patient and provider experience, and operational efficiency.

In 2019, they approached Team Abjayon with the following objectives:

- Reduce the call volume by empowering patients in managing their own health, including being able to make their own appointments, access their personal health information, self-service to update their contact, insurance, demographics, and health information.
- Improve patient engagement by enabling a digital and seamless interaction, proactively providing personalized and relevant health information.
- Automate and optimize practice operation, with focus on the front desk activities and automating patient intake
- Improve payment collection from the patients during the visits
- Improve provider productivity by booking unfilled appointment slots
- Provide a better telehealth experience to patients and providers

During the discovery phase, Team Abjayon worked closely with their Clinical and Practice Operations teams to identify key challenges in achieving these objectives. Even though the patient portal from the EHR provided many functions to meet these objectives, but it didn't provide desired patient experience, nor was it customizable to integrate into practice workflows, and missed key features needed to improve patient experience, engagement, and practice efficiency. In fact, most EHRs have similar limitations.

EHR Limitations

1

Most EHR provided patient portals provide online appointment booking feature to help a patient find and select an open slot of a provider's schedule. However, they often lack key features like a patient booking an urgent appointment at any location or provider in the network, ability for patient to cancel/reschedule an appointment, allowing patient to check-in, including completing necessary forms, for an appointment from home or at arrival, reducing front desk interaction.

2

Most EHRs do not provide ability for patients to upload documents to the practice and have the uploaded documents automatically associated with the patient chart for easy action by either administrative or clinical staff.

3

Forms are used by the healthcare organizations to collect patient details, service requests – change in address etc., consent for certain treatments and the patient screening for behavior conditions like depression, substance abuse, sexual history etc. Some of them can be quite elaborate and complex, those used for new patient registrations, and the evaluation for therapies. Most EHRs provide tools to build the forms and post them on patient portals, however building complex form can be quite tedious for the front desk to handle. Moreover, the forms that a patient fills up depends on the visit type i.e., the reason why patient is visiting. All this typically leads to patients coming to clinical location and filling up paper forms, which are then manually digitized and uploaded into EHR by the front desk.

4 Patient outreach campaigns offered by EHR are often limited to just preventive care and not customizable to include follow up care reminders, chronic condition care reminders applicable to specific patient types. They often don't track patient care journey based on patient types to engage them proactively and offer available care options.

5 At any given day, front desk receives many phone calls from patients seeking some administrative assistance, such as change in address, insurance, identification, payment method etc., releasing of information, general questions etc. Also, some of these require front desk to carry out set of tasks which require further tracking. Most EHRs do not provide tools to handle these service requests comprehensively.

6 Many a times, patients are required to pay out of pocket fee during visits. A busy front desk often misses collecting this fee and patient leaves with outstanding dues. The research suggests that less than 25% outstanding dues are recovered once the patient leaves without paying. Recovery of these dues is a challenge that most EHRs do not help address.

7 For our customer, in 2019, the therapists used telehealth extensively to service the patients. Telehealth became the main mode of care for all providers overnight during Covid and remains heavily used. EHRs often provide telehealth features but they charge a high usage fee, and many have stability issues. Most 3rd party telehealth tools lack clinical workflows and integration – they are just video conferencing products. A good telehealth platform must be cost effective, stable and integrated, which is what most EHRs often lack.

8 Although the EHRs provide mobile application for the patients, most patients just do not utilize them. These patients usually approach front desk to do check-ins, payments, or seek assistance. A self-service kiosk, just like at the airports, to help patients carry these tasks on their own could reduce the front desk workload significantly. Most EHRs do not cater to this need.

9 Interoperability has been a well-known issue with most EHRs. The ability to exchanges, import, export any data can be a huge challenge. This limits the ability for the healthcare organization to integrate, report, automate business processes and workflows, which affects the efficiency of clinical and business operations staff and experience of patients and providers.

10 Collecting History of Present Illness prior to appointment helps make the patient encounter more efficient, but most EHRs do not have the capability, or it is limited to few standardized questions

Our Approach

After going thru' customer objectives and identifying the limitations of their current EHR and Patient Portal setup, our team worked to put together a customer experience (CX) solution that would bridge these key gaps efficiently. The key was not to replace the existing Patient Portal or the website but to extend the experience in a seamless fashion to meet these requirements.

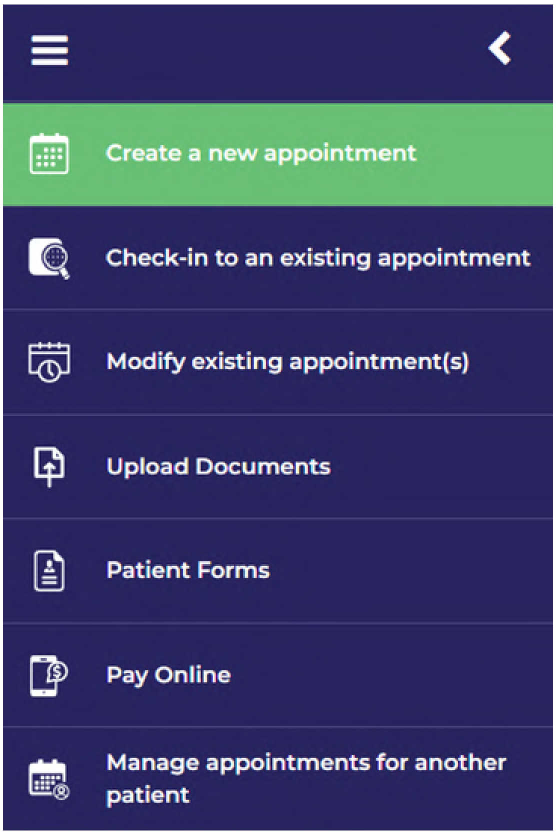
The CX solution provides the following services:

1 **Patient Registry**

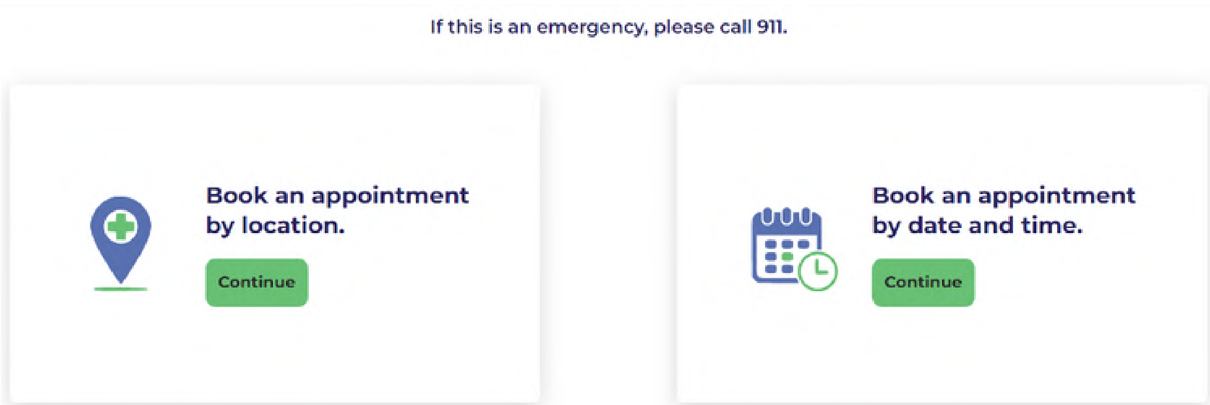
A patient registry with contact, demographics, and other non-medical information to allow easy access, sharing and maintenance of the patient details. This information is kept in sync with EHR.

2 **Communication**

A chatbot is built and plugged into the website to guide the patient. Preconfigured notifications are sent to the patients via. SMS and emails for the reminders and alerts. These notifications are also stored in the message center access inside the application.



3 **Appointment & Check-In**

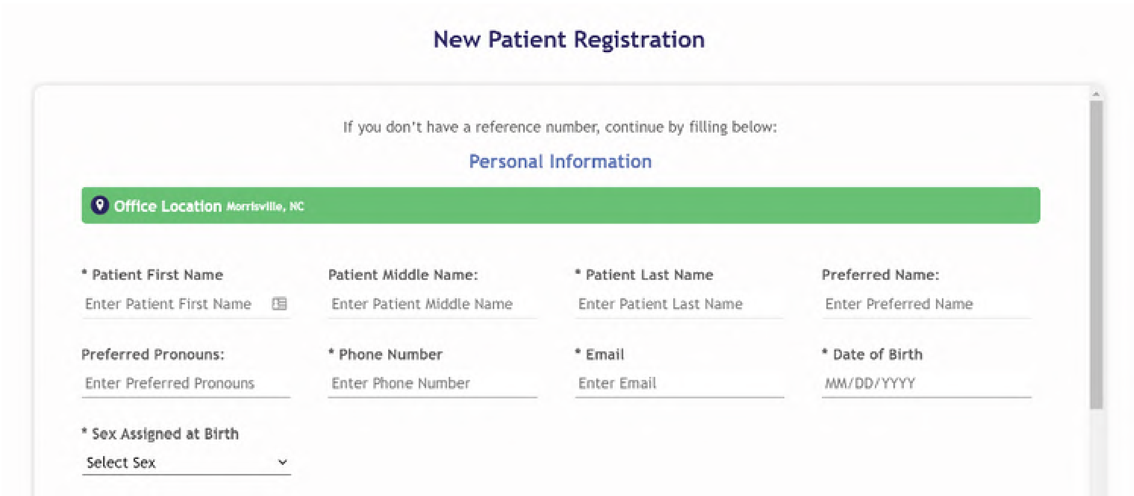


Support appointment search by a provider or a timeslot. A timeslot search shows open appointments for multiple providers in the order or geo proximity. The feature can be triggered from the "Book Now" action button on the home page of the customer website and further provides "See a Doctor Now" ability to the patient.

The feature supports both in-person and telehealth appointments. The providers can control the hours when they provide services via telehealth or in-person or both. The new patients can do quick registration and request appointments immediately. The history of present illness (HPI) is collected from the patient to inform the clinical teams. Payment, insurance, and address changes requirements are also collected as needed. Notifications are generated to remind the patients of the appointments. The patient is allowed to modify or delete the appointments. A fee is levied for a late minute cancellation or a no-show situation.

Patients are also allowed to check-in remotely or in-person before arriving for an appointment. The front desk gets notified when the patients checks-in along with a reminder to collect any outstanding dues.

4 Forms and Support Manager



All forms are digitized and made available to the patients. The forms are posted in EHR using HL7 interfaces. The forms that require further manual processing are processed using remote process automation (RPA) methods.

Also, a bot automatically sends the link to the forms that a patient needs to fill up for each visit type before an appointment. This reduces the burden on the front desk immensely.

Forms are also provided for seeking administrative support. These support requests are then tracked and maintained by the front desk for further processing.

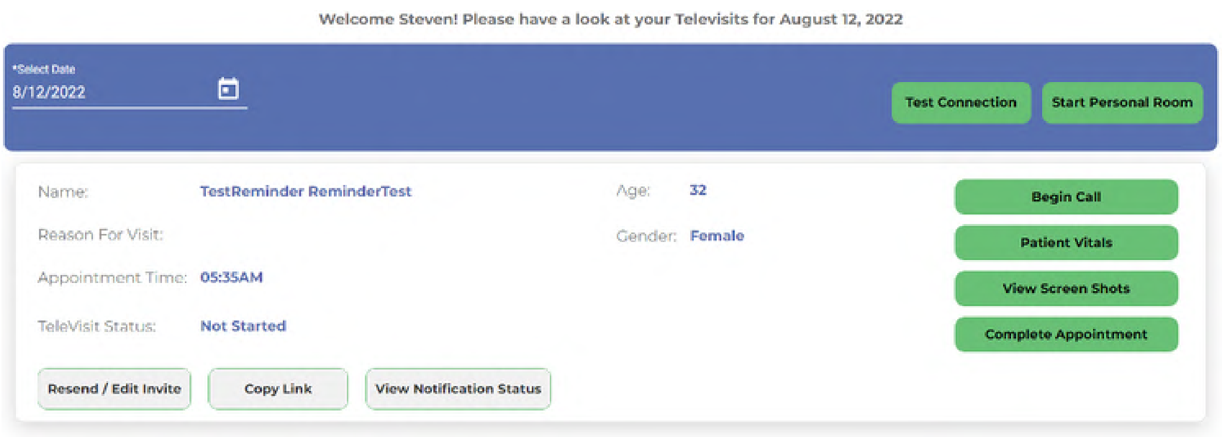
5 **Payment Integration**

Outstanding dues are extracted from EHR and provided to the patients during booking, and check-ins. The front desk is reminded of the collection when the patient arrives for an appointment. The system is integrated to a payment gateway to handle credit card payments.

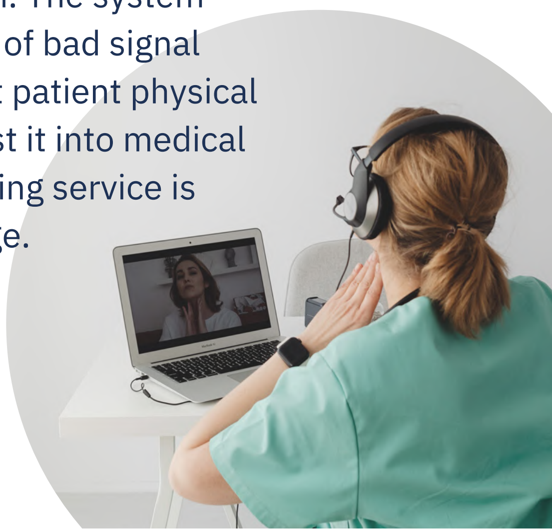
6 **Kiosk**

A kiosk version of CX application is installed on iPads hosted in the reception area. Front desks guide the patients to these kiosks for the self-serve transactions.

7 **Telehealth**



The CX platform is integrated with Twilio Video and the clinical workflows was built into. The application allows easy participation by medical assistants and scribes during the session. The system identifies and warns the patient and the provider of bad signal situations. Providers can allow to easily snapshot patient physical conditions (rash, eyes etc.) using camera and post it into medical charts. The subscription cost of the video streaming service is fraction of what the EHRs vendors typically charge.



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Integrations

The system is deeply integrated into the EHR system via HL7 interface to support bidirectional exchange of patient data, provider schedule and appointments, medical charts, documents, payments. It also provides APIs that can be used for integrating other applications that need this data, such as 3rd party reservation systems, reporting, financial accounting system.

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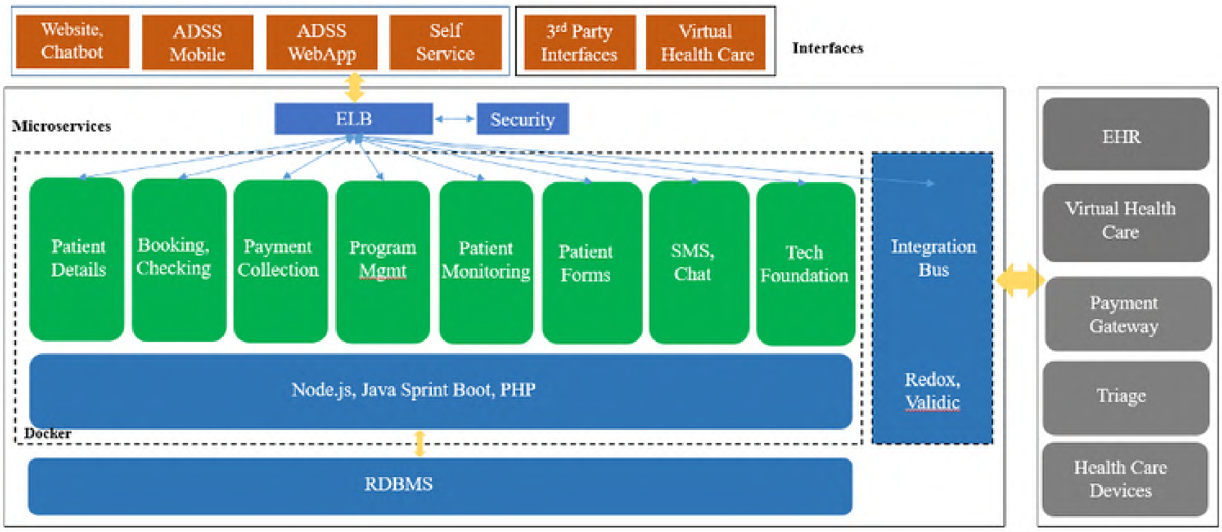
Architecture and Compliance



Considering that the customer is a fast-growing organization, the solution was built using microservice based architecture to scale up as per business needs. Being a healthcare solution, the solution was made fully HIPAA compliant and thoroughly tested for security vulnerabilities. The UI is fully responsive so that it can be hosted on web, kiosk or mobile. The technology stack doesn't use any major licensable component to avoid recurring license cost.

The Outcome

The system was rolled out in phases through 2019 and went fully live in 2020. The results came out spectacular and were hugely appreciated by the customer team.

The project came under spotlight immediately as the Covid pandemic set in. In matter of couple of days, entire organization was able to switch to “telehealth-first” mode and serve the patients seamlessly. Providers were able to handle appointment remotely and all operations ran smoothly.

Since the rollout, the online appointments received went up from 15% to 37% of total appointments each month. During Covid, telehealth was used uninterrupted for almost 50% appointments. The number has come down to 25% since then but remains the preferred mode of care for many.

Almost all patients find appointments within 48 hours. Provider schedules are also used efficiently, resulting into nearly 25% reduction in unfilled slots. During Covid, all locations received ~12% new patients because of this.

All locations went paperless. Digital forms, support manager, kiosks reduced the front desk burden significantly and allowed them to focus on more important tasks such as payments etc. The call answer rate went up from 50% to almost 80%, resulting into overall patient satisfaction rate.

New location migrations are automated with use Integrations and RPA. This was much needed to support fast commissioning of new locations into the system.

The patient data was integrated with BirdEye and Salesforce Marketing Cloud for a vastly improved patient feedback and campaign system. The data was also provided to NetSuite ERP, and BI system to achieve a comprehensive business management solution stack.

Questions?
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