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Reinvigorating Healthcare Industry with Intelligent Automation

Author: Jivan Borole

The COVID-19 pandemic has had an unprecedented impact on the entire world, especially global financial markets and the overall business and industrial domains. One sector that has felt the maximum impact of COVID-19 is healthcare delivery, giving rise to the innate need for automation across the healthcare sector more than ever.

The impact of COVID-19 on the Healthcare Industry

- The healthcare industry has temporarily eased off focus on non-communicable diseases that would otherwise take precedence such as cardiovascular, pulmonary & metabolic diseases and cancer.

- Patients are finding it difficult to raise medical insurance due to limited or lack of streamlined insurance counters in hospitals.

- Healthcare facilities need to stay operational causing psychological stress in frontline healthcare workers because they're at the risk of being exposed to the virus.

- Insufficient treatment of other ailments, especially chronic diseases, in the short-term may lead to long-term burden on healthcare.

- Primary healthcare for non-critical illnesses, such as general physicians who would actively engage with patients, has stopped due to lockdowns.

- Depletion of resources, such as manpower, equipment and medical supplies, as healthcare facilities prepare for treating COVID-19 patients.

Can Intelligent Automation make things better?

Certainly, there are some areas that can be looked at for implementing Intelligent Automation (IA), especially digital levers such as Robotics Process Automation (RPA), Advanced OCR, and Artificial intelligence (AI) to reduce the impact of the COVID-19 pandemic and improve patient treatment timeline. In fact, Intelligent Automation can help improve both clinical as well as non-clinical processes. Let's see how:

Intelligent Automation in **clinical** processes

Patient discharge

Bots can be used to draft the accurate guidelines that patients can follow to pick up their prescriptions, laboratory tests, plan follow-up visits, etc. This can be complemented with OCR engines that can extract patient specific information from PDF / scanned reports and prescriptions which the bots can use to prepare guidelines.

Virtual Nursing

Virtual nursing assistants make customer service straightforward and hassle-free. Intelligent Automation comes into play in areas where critical thinking and clinical judgements are required, along with the technical competencies, by leveraging AI, OCR and RPA. Some use cases include:

- Patient appointment scheduling – RPA can train chatbots to streamline patient appointments, based on treatment expected, locality, physician availability, diagnosis and so on.

- Classification and diagnosis – Both RPA and OCR can together classify pathology /radiology reports and identify an illness based on the symptoms and categorize them for coaching and monitoring patient health status.

Medical Imaging

Medical imaging scans provide detailed reports that are usually represented as graphs, maps and images. Identifying the changes since the last scan of a patient is time-consuming and prone to errors. AI can help eliminate such challenges by identifying the changes in reports, thereby helping in early detection of critical illnesses such as cancer and tumours.

Electronic Medical Record (EMR) Audit

: EMRs hold a patient's data in a digitized mode, with details such as patient information, treatments, allergies, prescriptions and overall medical history. In an ideal scenario, a pharmacist is mandated to contact the patient and ask a predefined set of questions, based

on which, the order for medicines is shipped. The pharmacist can be penalized if an audit reveals that the proper protocol was not being followed. Automating this entire process by using Intelligent Automation and RPA bridges the gap between diagnostic imaging unit and patient care environments based on the account number/order number.

Patient Follow-up/ Patient Statements

Digital assistants can be used to follow up with the patients for any pending balance due after the insurance claim is processed.

Generating Audit Reports

RPA bots, along with AI, can be leveraged to collect data from multiple applications/system and generate audit reports far more effortlessly as compared to humans.

Intelligent Automation in **non-clinical** processes

Fraud Detection in Claims

Fraudulent claims involve wilful cheating or misrepresentation of data to acquire unauthorized benefits. To detect these fraudulent claim incidences in healthcare, RPA and machine learning can prove useful in bifurcating the original and duplicate claims by providing fraud risk prediction. Today, most of the real-time data is stored in databases, which helps to identify and classify thousands of patterns on the user's claim based on (i) supervised ML that recognizes pattern for the known input and output data, based on predefined class labels and (ii) unsupervised ML that recognizes hidden patterns only from the input data, i.e. without class labels.

Account Settlement

Healthcare systems need to prepare the invoices for the patients visiting to them, based on the services offered. It becomes tedious, complicated and error-prone for medical staff while calculating the costs of various medical tests, consultations, bed charges, food and other facilities. Intelligent Automation automates this entire process, thereby reducing payment delays, keeping track of the payments and notifying the patients

Medical Insurance Claim Processing

Processing medical insurance is challenging and time consuming, and even the slightest error in claims filing or lapse in maintaining a patient's data may result in the claim getting rejected. To address such issues, RPA along with Advanced OCR, can be used to minimize human touchpoints, reduce errors and enhance chances of success.

Insurance Eligibility Verification

This is the process of verifying a patient's insurance in terms of services eligibility for reimbursement, coverage status, active / inactive status, etc. RPA-powered bots supplemented with AI, complete eligibility verification with more speed, accuracy and efficiency. There are two types of verification processes:

- Basic verification - The bot verifies patient details including name, address and contact information, claim limits, plan types and coverage timelines, whether the provider is within or outside the network, etc. On verification, the bot enters the verified data into the insurance eligibility verification form.

- Advanced insurance verification – In addition to the basic verification process, bots can understand insurance renewal rate frequency, health fund usability and other inclusion and exclusion clauses based on AI/ML algorithms using a cognitive approach.

The road ahead

The COVID-19 pandemic has revealed some interesting patterns. For instance, Primary Care can now be delivered digitally, with physical access to doctors no longer being a constraint. Organizations that were once reticent in adopting Intelligent Automation are now ready to implement it from the top down, and at scale. They now understand that Intelligent Automation is not just about technology deployment, but more about business sustenance and experience transformation. By implementing Intelligent Automation, healthcare organizations cannot just restore their business, but also adapt better to market changes and build operating models in line with the new normal way of working that has been set by the pandemic.

Author

Jivan Borole

Senior Project Manager, Intelligent RPA Practice, LTI

Jivan is a certified Advanced RPA professional, with 16 years of diversified experience in managing and providing solutions on intelligent Automation, and Digital Integration & Transformation across various platforms and domains including insurance, health care, manufacturing, and banking & finance. He is an experienced RPA CoE Lead, and has played a crucial part in setting up an Intelligent Automation Competency center for a top US- based insurance company. In the current role, he is responsible for managing Intelligent Automation deliverables for some of the key insurance clients.