Intelligent Document Processing (IDP) for VA Health Clinical Care

AI-based intelligent Document Processing (IDP) ensures quicker turnaround for legal and billing activities, reducing friction in VA Health encounters.

Introduction

Speech-to-text technology is rapidly evolving and improving the ability of clinicians to capture encounter notes accurately and efficiently. Nevertheless, many health organizations remain challenged in handling the physical content patients bring to health encounters. This is largely because the necessary components of patient health records—including health coverage cards, appointment confirmation letters, medical history, medication lists, follow-up instructions, legal documents, patient-created notes, and symptom timelines—can be difficult and time-consuming to intake at the point of care.

Veterans Administration (VA) Health continues to see a year-over-year increase in patient encounters due to trust in the care provided and increased services offered by its clinicians. The use and adoption of remote telehealth visits continue to trend upward, but these remote visits create additional friction for the intake of patient-related content.

Yet these difficulties also present an opportunity. Advanced AI-based Intelligent Document Processing (IDP) technology, such as Tungsten (formerly Kofax) TotalAgility®, can be applied to the VA's existing fleet of multifunction devices (MFP), eCloudFax infrastructure, and patient mobile devices to transform patient records into clean, structured data. In addition to providing an enhanced patient experience, this would help unburden clinical staff from administrative tasks and towards a focus on care and outcomes.

VA Clinical Care Challenges with Patient Content

Processing non-digital patient content is labor-intensive and becomes more difficult and costly as patient interaction and documentation requirements are balanced. Patient-provided content can be vital to achieving the best clinical outcomes, yet that content is often not extracted or available until well after an encounter.

Currently, the benefit of patient-provided patient records is limited. When a patient presents such records during a health encounter, for example, a clinician can only perform a quick visual inspection and/or must rely on details that the patient—a non-clinician—deems relevant and critical information may be overlooked. The stress of the medical encounter can also impact the patient's memory, resulting in an imperfect recall. Because health encounters are often brief due to staffing shortages and increasing patient loads, these discrepancies cannot always be reconciled, and information gaps persist, detrimentally impacting treatment outcomes.

The need to manually transcribe patient data also means that the full implication of that data is not known or available until well after the encounter wherein the data was provided. Furthermore, errors can result from transcribing such patient-provided content, with impacts ranging from inconsequential (time cost of correction) to critical (patient care becomes compromised).

Other documentation provided during the encounter often serves administrative functions irrelevant to a clinician's mission. Because the patient frequently bundles together useful and non-useful documents for ease of carry, clinicians must sort through clinical and non-clinical content during the encounter. This is neither a good use of the clinician's time nor conducive to positive patient interactions.

Legal papers can be especially challenging. Documents such as Advance Directives and Powers of Attorney, for example, can drive treatment decisions, impact a patient's ability to consent, and require the presence of third parties. The ability to process such papers quickly and efficiently can determine the outcome of a health encounter, particularly when time is of the essence (as is often the case with patients).

Insurance and billing documents can likewise impact care decisions made during an encounter. For example, the existence of additional or supplemental insurance coverage impacts cost and can thus be a driving factor in healthcare decisions. Identifying when third-party providers may provide more effective or cost-efficient treatment options can impact patient outcomes and costs, yet this requires advanced processing and coordination.

Finally, the legal implications of securing physical patient content can be especially challenging. Many patients bring sensitive content containing PII and HIPAA-protected information that can expose the healthcare systems to liability should it fall into the wrong hands. Unfortunately, patient identity theft from details accessed during medical encounters has become more common at private healthcare institutions, and safeguards are being implemented to reduce the threat.

Traditional Patient Content Handling results in:

- Limited or costly support for pre-encounter content ingestion

- Limited understanding of critical-care content at the time of encounter

- Reduction in time a clinician can devote to patient interaction

- Clinician dissatisfaction due to administrative burdens involving content handling and data entry

- Increased wait time for patients and clinicians in matters such as gaining consent for treatment and obtaining required insurance authorizations

- Errors related to manual data entry

- Increased cost to the VA Health System due to billing discrepancies with third parties

- Insecure patient content and related liability

- Potential for fraud and abuse and related liability

Transforming patient records into structured data enhances VA Health's clinical care while unburdening staff from administrative tasks.

Conceptual Process of Patient Care

With the proper application of AI-based Intelligent Document Processing (IDP), connected systems, task automation, and process management, patient content can be ingested, identified, and transformed into structured data.

Such data can then be easily summarized and routed to the proper systems and resources—resulting in:

- Enhanced patient care and satisfaction

- Reduced administrative burden on clinical staff

- Quicker turnaround for collaborative legal and billing activities

- Security of patient content

- Clean source data to drive AI and LLM modeling

- Better process insight

- Lessened liability for the healthcare system and clinicians

Instead of relying on physical hardcopy content provided by a patient at the point of care, content would be received and digitally captured during appointment check-in. VA administrative staff would use the existing MFP fleet to capture and process information and then secure the hard copies for return to the patient at checkout.

Digital content is automatically identified and categorized to support downstream functions such as:

- Administrative Content

- Clinical-related content

- Billing

- Legal

- Other

The implications for organization, efficiency, and patient outcomes are wide-ranging. After initial capture, patient content can be re-sorted into granular subcategories and transformed into structured data. The structured data, in turn, can be analyzed to extract entities, create timelines, summarize narratives, redact PII, and score for sentiment or relevance. The structured data can also be matched against existing sources of known data, and administrative staff can flag any discrepancies for manual review and correction. The possibilities are endless.

The IDP solution can also generate and deliver role-based summary reports to the clinician, billing specialist, legal representative, case manager, and other resources supporting patient encounters. Finally, the process routes the structured data and supporting content to the correct system of record—VistA, UI PATH, Oracle Heath (Cerner), or ServiceNow— for continued processing and permanent record keeping.

Automated patient content handling not only enhances efficiency but also ensures security and compliance with PII/HIPAA guidelines, mitigating liability for VA Health.

After initial implementation, the IDP solution can be outfitted to support additional input channels to enhance patient care, reduce administrative burden, and increase content security. For example, the solution can be configured to prompt a patient to provide necessary content days before an onsite encounter or to submit content necessary for a remote Telehealth visit. Content may be submitted via the method of the patient's choosing: iPhone/Android device, web portal, email, or fax. Once content is received, it can be matched to the patient, classified, transformed into structured data, and routed based on predetermined logical process steps.

Enabling these additional input channels provides convenient options to the patient, increases content security, and reduces the administrative burden on VA staff. Additionally, content relevant to clinical care can be received and analyzed before the point of care, and a baseline can be established that can be built upon during the encounter.

Technical Solution Highlights

- The proposed IDP solution acts as connective tissue between the core systems that VA Health currently utilizes. The prebuilt integrations with core VA Health internal systems eliminate the need for costly and fragile custom development.

  o Hardware vendor-agnostic solution with integration to all major Multi-function Devices

  o Supports for iPhone and Android mobile content capture

  o eFaxCloud Integration

  o Email

  o Web Portal Content Ingestion

  o UI PATH bidirectional Integration

  o ServiceNow – For Legacy System Modernization, Workflow, and UX Consistency

  o VistA Mainframe Application

  o Oracle Health (Cerner)

- The IDP solution can scale to support expected VA Health System loads and volumes.

- The IDP solution has been vetted for Federal Security compliance and is Fed Ramp Ready.

- The system will secure data in transit and at rest in compliance with NIST security guidelines. PII/HIPAA compliance.

- Analytics details the complete chain of custody and provides insight into process bottlenecks that VA Health was not previously aware of.

- CAC/PIV support for device and SSO authentication meeting VA Standards.

Organizations can't scale and respond with conventional tools alone.