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Medical Extraction:

The First Step in the Journey to Accelerated Underwriting

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At its core, accelerated underwriting is an "attempt at getting more people insured with less hassle than the older, more traditional route of having to take part in an invasive medical exam (Root, 2017)." Being able to accelerate the life underwriting process is not an easy feat though and there are many things that an insurer could improve/change to get there.

You could implement a mobile app so it's easier for applicants to apply. Or you could use an attending physician statement (APS) summary service to review large APSs for you. Or maybe you hire more underwriters to accelerate the process. There are a lot of places where you could begin on the journey to accelerated underwriting, but we suggest going all the way back to the starting point: data capture.

ROADBLOCKS TO ACCELERATED UNDERWRITING

Life insurers capture and process some of the most complex documents of any industry. Underwriters are tasked with having to quickly review an application and mentally extract decision-critical information to create an approximate story of the applicant's medical history in their head. It's a lot to keep track of and it isn't easy. Throw in a legacy capture system, an unreliable APS summary and a shrinking workforce, and it's obvious why a fully-underwritten policy takes an average of 4-6 weeks to underwrite (Fisher, 2018).

Traditional Capture Just Doesn't Cut It

Today, some insurers still perform old-fashioned document and data capture routines. This consists of scanning paper documents into flat digital image files, then manually indexing each document which requires someone to re-key data off the image into a file.

While most organizations have moved beyond this archaic capture method, they're now stuck in traditional capture systems.

Traditional capture systems can only capture and extract data from known and predictable document types aka structured documents. However, this isn't helpful when a life insurance application contains handwritten notes, forms with written annotations and comments, and a variety of document types.

Traditional capture systems also **do not account for the context of the data** it's capturing. It's purely just taking data off documents and pushing it into a system.

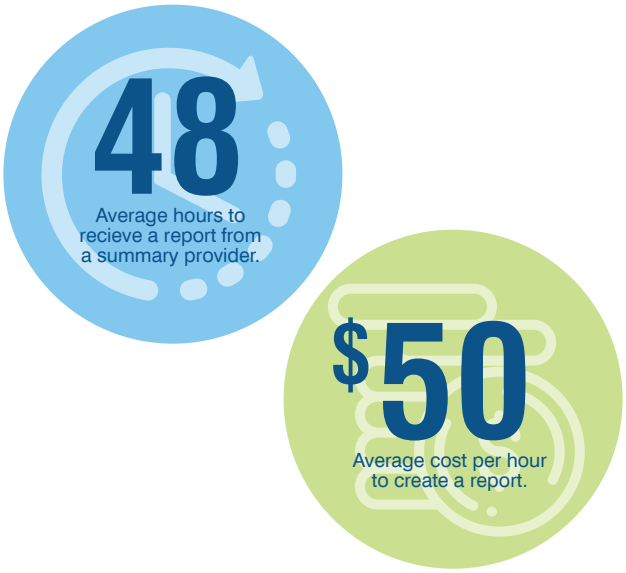
In addition, **traditional capture systems can only find generic data** that they're pre-programmed to look for like date, location, organization, company, etc. They're not designed to extract medical terminology like "carcinoma" or "arrhythmias."

The industry average for intelligent character recognition is about 70%. (Maloney, 2017)

APS Summaries Fall Short

To expedite the APS review process, many providers rely on offshore companies to review medical documents and make a summary of its contents for them.

Our clients report that this process is not trustworthy and sometimes even makes the underwriting process longer than if they had manually reviewed it.



The Workforce is Shrinking

Another obstacle on the journey to accelerated underwriting is that the labor force is shrinking. As more and more senior underwriters retire, junior underwriters are left to make complex decisions. The Insurance Journal predicts that 400,000 employees will retire from the insurance industry workforce in the next few years (Johnson, 2017).

Simultaneously, upper-level managers are feeling the pressure to make underwriting more efficient and increase throughput without hiring more people.

Knowing what decision-critical information to look for in an application and acting on that quickly comes with time – something that insurers don't have.

A MUST-HAVE ON YOUR JOURNEY TO ACCELERATED UNDERWRITING: MEDICAL EXTRACTION

Pyramid Solutions Medical Extraction provides life insurers with the foundation for accelerated underwriting by intelligently capturing and extracting vital decision-making data.

Think of Medical Extraction as top-of-the-line walking shoes or a fully-equipped car that you're wearing or taking on your journey. If your mode of transportation – the most essential tool on your journey – is not the best it can be, then your journey will be much more difficult.

Medical Extraction ultimately positions insurers to experience increased efficiency, reduced underwriting times and increased employee productivity. By lessening the amount of information underwriters have to review, and giving them only critical decision data, they can quickly make the ultimate decision – approve or deny.

Built with **cognitive capture** capabilities, Medical Extraction takes data capture to the next level. It combines imaging, natural language processing, cognitive learning and medical references to intelligently capture data pertaining to the three leading causes of death:

1. Cancer

2. Heart Disease

3. Diabetes

Name: Doe, Jane
Gender: Female
Age: 60 Race: Caucasian
Height(in): 63 Weight(lb): 160
Diagnosis:
PF Reference: Knudson (1983)
Calibration: Date: 03/21/00
Inspire Avg: 3.01

Id: 06943
Date: 06/13/03
Temp: 24 PBar: 742
Physician: Proctor
Technician: bc
Version: IVS-0101-05-2A
Pred Volume: 3.00
Expire Avg: 3.00

In addition, Medical Extraction **automatically pulls data from industry data sources like MIB and pushes it to underwriting systems** for a complete understanding of an applicant's medical history.

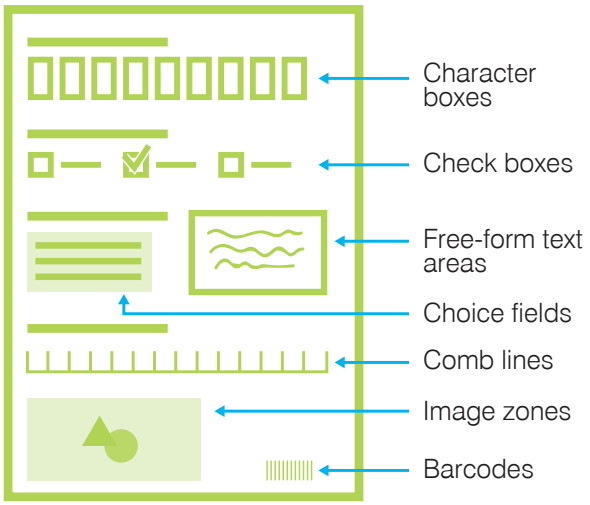
When integrated with an underwriting system, Medical Extraction **powers your accelerated underwriting journey.** If Medical Extraction finds positive diagnosis for cancer, heart disease or diabetes, it flags the applicant as high-risk, so the underwriter can immediately decline the policy application without spending hours of wasted effort.

Conversely, it can facilitate quick approvals for the underwriter. If it does not find any critical conditions related to cancer, heart disease or diabetes, then it can flag the applicant as low-risk.

This prevents an underwriter from devoting precious time towards applications that are obvious approvals or denials. Instead, they can focus on complex cases. Additionally, the ability to fast-track applications creates **more throughput with the same number of underwriters,** enabling the organization to expand and grow into new markets.

What Cognitive Capture Does for Insurers

The beauty of advanced document capture is that it can capture data from unstructured documents and document fields. This means documents don't have to follow a specific template or be a specific file type to be captured. It can pull information from:



Add Context to Data

Reading medical history information is a cognitively labor-intensive activity, especially if there is a lot of it. Cognitive capture does this manual work for you. It uses natural language processing to add context to the data it captures so that it can read a document like a human would.

If your traditional capture system gave you a string of numbers such as 011618, it would be meaningless. Nothing can be done with "011618." If it put the words "Office Visit Date" in front of it, you have an idea of what the number means. If the name of a medical office is also provided, now you have something to work with.

Custom Medical Extractors

Let's take a quick detour to explore this more.

Medical Extraction adds context to data by leveraging annotators and custom-built medical extractors.

EXTRACTOR LIBRARY	WHAT IT EXTRACTS
Organization	Company, government entity, military organization, school, committee
Generic	Capitalized word, decimal, file name, URL, number, percent
Person	Person's Name
Location	Address, city, county, country, continent, state, zip code
Custom Medical Extractors	Practitioner name, anatomy, drug, medical condition, medical facility

These medical extractors can even distinguish between a patient or doctor name and:

- Lab results, diagnoses, prescriptions, hospitalizations
- Declared drug and/or alcohol use

For example, let's say the below line of text was on a medical document:
Jane Doe met with Dr. John Smith on 01/16/18 complaining of trouble breathing; 120/78 mm HG

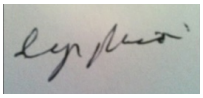
The extraction result would be:
Practitioner name: Dr. John Smith
Patient name: Jane Doe
Date: 01/16/18
Medical condition: trouble breathing

Flag Handwriting

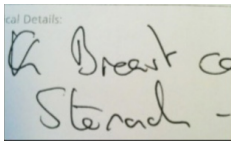
Handwriting is like a pothole on the journey to accelerated underwriting – expected, unavoidable and somewhat annoying.

Unfortunately, there's no software in the world that can extract handwriting with 100% accuracy – especially when it comes to physician chicken scratch. But, if the doctor took time to make some notes, it's likely to be important.

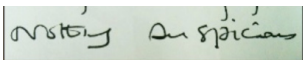
Medical Extraction devised a technique for recognizing blocks of handwritten text. **It does not read the text, but it recognizes the fact that it exists** and alerts an underwriter to visually inspect it. The underwriter can flag the area if it contains valuable information about a condition or prescription.



"dysplasia"? OR "lymphoma"



Breast Ca.... "Steroids"? OR "Stomach"?



"Nothing" suspicious OR "Notably" Suspicious?

Using Data to Improve Your Accelerated Underwriting Journey

Now that you have all this data on an applicant, what should you do with it? Think of it like a map.

The data and information are your guide to deciding whether to approve or deny an applicant.

Medical Extraction is just one of many capabilities of the Pyramid Solutions Life Underwriting Solution. When insurers leverage this capability, the result is easy-to-interpret analytics.

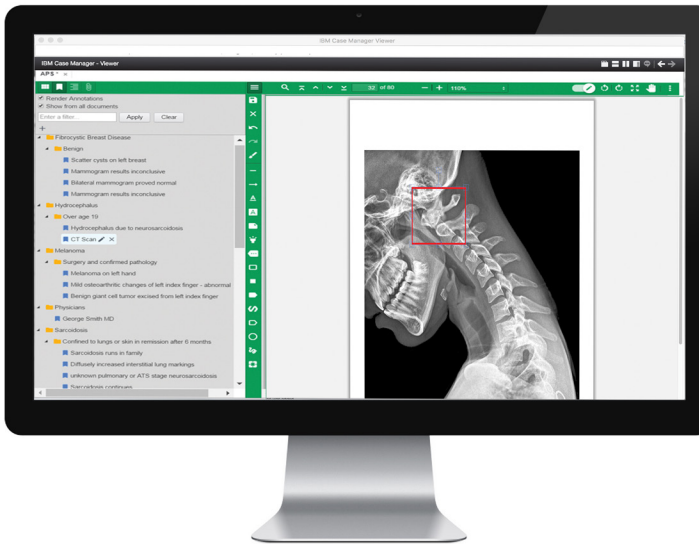
The data it extracts is presented in a pictorial summary that shows medical conditions and prescriptions along a timeline of the applicant's life. Using this information, underwriters can quickly notice areas of concern and focus their investigations there.

Every good map has a legend – that's what bookmarks are to us.

Bookmarks are a way for underwriters to easily navigate through their extensive documents.

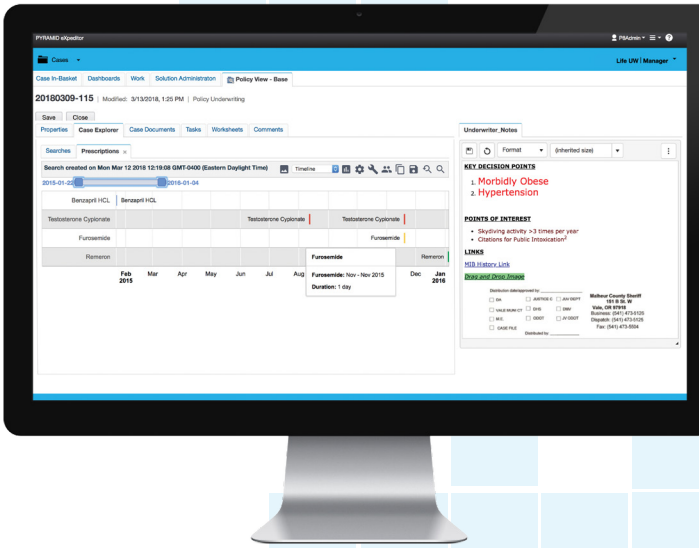
As Medical Extraction identifies a section of handwriting, a blood pressure reading or prescription information, the Life Underwriting Solution adds a bookmark to it and lists it in a menu, so the underwriter can click on it and jump directly to where the data is in the document. This eases the difficult job of a life insurance underwriter by giving them direct access to the information they need to determine the insurance risk.

Also easing the job of underwriters is that the Pyramid Solutions Life Underwriting Solution brings everything — extracted data, reports, bookmarks — together into a single interface. Here, underwriters can access tools, further analytics, checklists, a notepad, case folders and more to get a 360-degree view of an applicant.



Third-Party Data Sources Medical Extraction Pulls From

- HL7
- MIB
- IntelliScript
- MVR
- Credit reports



BENEFITS

- Reduced operating cost
- Reduced approval/deny times
- Increase employee productivity
- Overall increased efficiency
- Mitigate risk
- Underwrite more policies without more people

FEATURES

- Flags handwriting
- Able to process unstructured files
- Extracts and classifies information seamlessly into an underwriting system
- Generates bookmarks for the underwriting system
- Pulls and processes information from:
  - Medical Index Bureau information (MIB)
  - Prescription information (IntelliScript)
  - Healthcare provider systems (HL7 data)
- Integrates into various SORs

SUMMARY

Your journey to accelerated underwriting, doesn't have to be hard. To get there, it's best to start where it all begins. Medical Extraction facilitates fast decision-making, so underwriters can process more applications in less time, with less stress and more confidence. By integrating the tool into a comprehensive underwriting engine, the benefits will continue to multiply. Learn more about Medical Extraction and Pyramid Solutions' life insurance solutions at PyramidSolutions.com.

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ABOUT
PYRAMID SOLUTIONS

Your process needs to flow smoothly and we're here to help with enterprise information management solutions. Pyramid Solutions provides solutions for advanced case management, business process management and advanced document imaging to drive greater operational efficiency and reduce dependency on paper-based and manual processing.

With years of experience in the insurance industry, we have a deep understanding of the most complex content management systems. With your business goals leading every decision, we offer creative, effective solutions. For additional information about Pyramid Solutions, visit PyramidSolutions.com.

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