

# SAS for Medical Record Review

## A reviewer driven approach to increase efficiency

### SAS Facts

A recognized leader in more than 25 vendor ranking reports in 2022

Ranked No. 1 for Advanced and Predictive Analytics Market Share by IDC for the last 28 years.

Over 750 patents related to AI and analytics

Five decades of innovation and profitability

### Medical Record Review is a Costly but Necessary Process

Medical Record reviews require highly skilled clinical experts to examine large collections of images from scanned or faxed medical records. Reviews can take multiple hours per case, reducing ROI, customer satisfaction due to long wait times, and putting organizations at risk for legal actions due to unpaid claims.

Hiring additional reviewers doesn't solve the root cause, the fact that high-skilled, high-cost reviewers spend long amounts of time scrolling through large PDFs to find evidence. Additionally, classic optical character recognition (OCR) has struggled to separate the large amount of data from the key items needed by reviewers to decide a review. SAS AI for Medical Record Review uses innovative SAS document vision techniques to elevate and summarize high-impact information, decluttering the documentation and allowing medical reviewers to make determinations more efficiently with high accuracy.

### CHALLENGES

Healthcare organizations are in urgent need for innovation.

**Labor intensive.** Standard medical record review is labor intensive and utilizes high-value, high-cost resources, limiting the return on investment and impacting customers with long-wait times

**Dirty Data.** Most medical records submitted are first printed out, scanned, and often faxed to the reviewer; creating difficult to read documents that confuse and limit the use of traditional OCR technologies.

**Data Overload.** Medical records are often hundreds, if not thousands of pages long; obfuscating important case information among often repetitive progress notes, forcing reviewers to slowly review each page to identify high value information.

**Technology supports the process over the users.** Many medical record case management systems have modernized the case management functions, ensuring that cases are routed appropriately, and all determinations are documented; however, this overlooks the value that technology can bring supporting reviewers and providing short-cuts and efficiencies allowing them to do the job better.

**Even the simple things are hard.** Simple administrative processes such as confirming that the requested documents are included in the medical record can take a long time.

SAS at Scale:  
Medical record  
review is a large  
task, and SAS AI  
for Medical  
Records can scale  
to meet it. For one  
customer, SAS is  
currently  
processing 4  
million images  
every day.

## OUR APPROACH

SAS approaches the issue with the goal of providing precise and powerful data to reviewers to reduce the time spent searching. Using SAS developed proprietary machine learning and advanced OCR techniques, SAS will provide high-value data identification, extraction, and summarization to assist reviewers.

We approach the problem by providing software and services to help you:

**Catalog forms and traverse records easily.** Using proprietary SAS document vision technology, identify different forms in each medical record and create a catalog allowing reviewers move to the most important sections quickly.

**Extract and summarize data from images.** Even from handwritten and copied documents, allowing reviewers to quickly explore changes in care, identify areas of concern and review the original forms for quality assurance.

**Leverage natural language processing and artificial intelligence to ensure quality.** Once extracted, natural language processing and text analytics are used to correct for OCR mistakes and provide contextual clues to potential fraud or relevant information.

**Visualize data natively through case management integration.** Powerful data visualizations can be placed in a case management tool to provide a seamless experience and remove the “log into another system” issues.

## BUSINESS IMPACT

A more efficient medical record review process can not only increase ROI and decrease customer wait times, but it can also help reduce worker burnout. By allowing reviewers to do what they do best, synthesize complex medical data to make a determination on benefits, fraud and other needs.

SAS can help by providing:

- A catalog of the forms found in the medical record.
- Extract data and use natural language processing to highlight high-impact information both through direct matching and contextual analysis.
- Insightful data summaries and/or interactive data visualizations that highlight change in status over time directly from the medical record.
- Seamless integrations letting users keep doing what they already do (no learning a new system) while conducting the work more efficiently.
- Available automated feedback loops to improve domain specific modeling and data extraction.

# SAS is the world's leader in AI and analytics.

But what does that mean?

It means we can rapidly turn huge amounts of complex data into insights you can use.

With SAS, you can apply the most advanced analytics, business intelligence, data management and AI solutions to your toughest business problems. And for five decades, our customers have trusted us to do just that.

We're recognized for our industry-leading technology, social innovation and sustainability initiatives, and pioneering workplace culture.

## More about SAS

Five decades of innovation and profitability

Over 750 patents related to AI and analytics

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88 of the top 100 of the 2021 Fortune 500 list are SAS customers or their affiliates

2022 Microsoft Global Independent Software Vendor Partner of the Year

Recognized around the world for inclusive, meaningful culture and innovative technologies by organizations including Fast Company, Forbes, Human Rights Campaign, Disability:IN and more

## The SAS® Viya® advantage

We empower customers to get more done with a faster, more productive AI and analytics platform. SAS Viya gives you the analytics you need, delivered on your terms, so you can innovate faster, collaborate regardless of skill set or API, and get results you can trust.

Use your own cloud, the SAS Cloud for hosted services, or one of the world's most broadly adopted cloud platforms.



## More about SAS® Viya®

The cloud-native architecture of Viya is deployable in AWS, GCP, Microsoft Azure and Red Hat OpenShift.

It supports:

- Your open source data scientist community.
- APIs that ensure open application access.
- The most popular data frameworks.
- Scalability to any analytical workload.



# Analytics for health care providers

Delivering analytic health innovations to improve lives

Proactive and personalized health care starts with trusted analytics powered by timely and relevant data. Our analytic solutions help you integrate data and unlock insights that can improve health outcomes, enhance operational efficiencies, optimize costs and resources, and improve patient satisfaction.

## How does SAS® help?

Unlock data-driven insights to improve efficiencies and health outcomes

### BENEFITS

- Improve data integration and platform interoperability.
- Enhance patient care, outcomes and experience.
- Optimize health care resources.
- Improve cost management.
- Enhance the quality of care.
- Maximize value-based care models.
- Enhance equity and access.
- Accelerate and scale research.

### Use cases



**VCU Massey Cancer Center** integrates data to explore disparities in cancer and mortality rates in vulnerable populations to improve access and cancer research. [sas.com/vcu](https://sas.com/vcu)



**Amsterdam UMC** improves treatment strategies with faster and more accurate tumor evaluation via AI and accelerates cancer research via predictive modeling and advanced analytics. [sas.com/amumc](https://sas.com/amumc)



**Healthy Nevada Project** improves population health by combining genetic data with environmental, social and health care data to predict, prevent and treat diseases. [sas.com/hnp](https://sas.com/hnp)



**Erasmus MC** predicts whether patients should remain in hospitals after surgeries and if patients can be safely dismissed, increasing patient safety and optimizing bed capacity. [sas.com/erasmus](https://sas.com/erasmus)



**Canada's Centre for Addiction and Mental Health** optimizes care resources, streamlines hospital operations and predicts future demands with analytics. [sas.com/ccamh](https://sas.com/ccamh)



**Hospitals in the Region of Southern Denmark** increase patient safety by predicting, monitoring and reducing hospital-acquired infections using analytics and artificial intelligence. [sas.com/hrsd](https://sas.com/hrsd)



**Belgium's FPS Public Health** predicts infection rates, anticipates the occupancy of hospital beds and provides dashboard monitoring of hospital capacity for critical stakeholders. [sas.com/bfps](https://sas.com/bfps)



**New Zealand's Ministry of Health** predicts and monitors the prevalence of diabetes to optimize health services, resources and health policy planning. [sas.com/nzmh](https://sas.com/nzmh)

Visit for more information: [sas.com/healthcare](https://sas.com/healthcare).

Learn more about the world's analytics leader at [sas.com/about](https://sas.com/about).

