by Neha Kukreja & Vinaya Sharma, Business Solutions

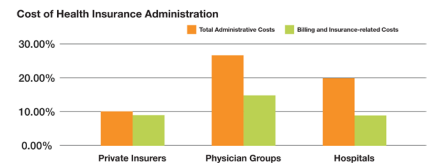# Cognitive Automation in Healthcare Claims Processing

Creating efficiencies with Robotic Process Automation, Intelligent Document Processing, and Artificial Intelligence

In the U.S., where health spending per person was over $5,000 more than any other high-income nation in 2021, the healthcare industry's rising prices, high volume, and strict regulations are impacting quality and value-based care.

Some of the most significant challenges are in claims reimbursements, irrespective of the policy bought. In the current healthcare ecosystem, most workflows are automated; however, the claim system and its workflow still require manual efforts and reviews.

An excessive amount is spent on administrative costs, which increases the cost of healthcare for patients. The majority of excessive expenditure on healthcare administrative tasks is insurance and billing related. Insurers are affected by these administrative tasks, but also physicians, physician groups, hospitals, and patients whose claims are delayed.

The Rising Costs of Health Insurance Administration

Cost of Health Insurance Administration
■ Total Administrative Costs ■ Billing and Insurance-related Costs
30.00%
20.00%
10.00%
0.00%
Private Insurers   Physician Groups   Hospitals

About half of the providers' administrative costs are billing and insurance-related expenses.

The administrative fee is a boon when it contributes to health care delivery and insurance but a bane when it causes overburden and delays in processes. The largest source of these costs is the creation, submission, and processing of health insurance claims.

Of the total GDP, healthcare expenditures contribute a lot and are mainly associated with trillions of claims adjudicated every year.

Close to 3% to 6% of annual revenues & premiums, respectively, or approx. $150 to to $300 billion

annually, is contributed by claims adjudication, which happens manually or electronically.
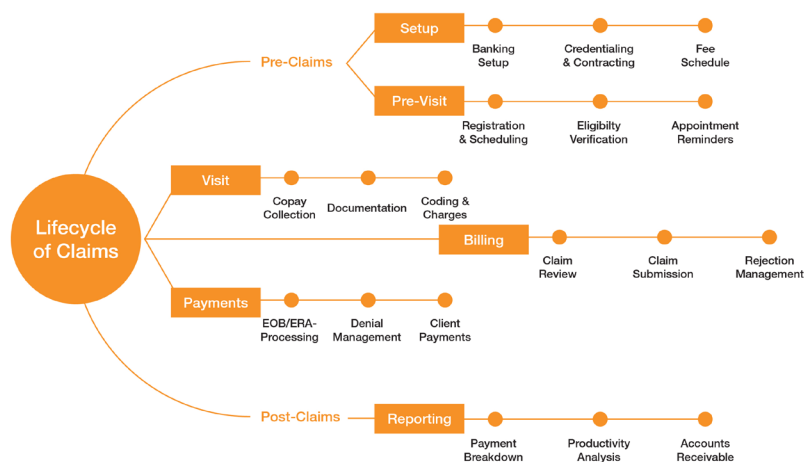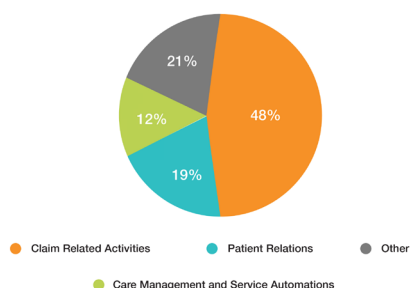
On the other hand, fraudulent claims cost payers over $80 billion annually, as excessive expenses are generally passed on in the form of rising premiums.

Thus, for most payers, optimization strategies include improving customer healthcare outcomes and engaging customers in their health decisions apart from their effective claims management systems or claims processing.

The Claims Lifecycle

A claim undergoes different stages within the insurance company's system, with the complete claims lifecycle illustrated at right.

There are numerous manual activities even before claims come into the system, during review and processing, and afterward once claims are paid.

All transactions related to authorizations, claim reimbursements, and encounters must happen electronically between healthcare entities to be compliant with HIPAA.

EDI X12 Transactions like 837P for professional services and claims and 837I for Institutional services have been implemented to exchange healthcare claims and data.

However, the claim adjudication process has always been challenging to carry out, with all of these manual activities causing long delays.

Challenges with Current Claims Systems

In an effort to process health insurance claims faster, some companies hire external third-party administrators to handle administration in internal digital systems.

Delays in health insurance claim processing may be due to insurer claim review and comparing it with the health plan's scope of coverage, for example. In other cases, miscommunication or a lack of supporting medical records can create obstacles.

Every health care plan has its guidelines and procedures, and information doesn't always flow quickly among providers and insurers.

Multiple processes within the claim system workflow still require manual efforts and, in turn, create more burden with manual administrative tasks that can include:

- Manual paper claims

- Manual adjudication process and multiple touchpoints

- Manual claim denial management

- Maintaining legacy claims systems with no integration for end-to-end lifecycle

- Incompleteness of data from multiple sources

- Fraud, waste, and abuse

With too many business rules and few comprehensive systems competent to handle them, claims processing requires various activities at the employee's end, giving an overall disconnected customer experience.

Challenges with Manual Claim Adjudication Processes

Increasing adjudication costs are often caused by poorly integrated, fragmented, time-consuming manual processes.

From the providers' perspective, the cost lies in creating and submitting claims; for payers, reviewing and processing claims make up the bulk of the expense.

On average, for single claim submission, provider staff times require an average of 3-4 minutes to review, which doesn't include the time spent preparing the claim itself.

Other related processes are carried out by provider staff, such as determining and verifying eligibility and pre-authorizations.

Claims processed successfully, or 'auto-adjudicated' on the first attempt, cost much less per claim. Failed claims will require manual review and intervention to correct code exceptions or data errors that usually cost the insurance company more than usual.

Most claims are submitted electronically through online portals, EDI, or claims clearinghouses. However, the majority are still handled or submitted manually, which costs more than double.

Pie chart:
- 44% Claim Administration
- 46% General Administration
- 10% Comissions
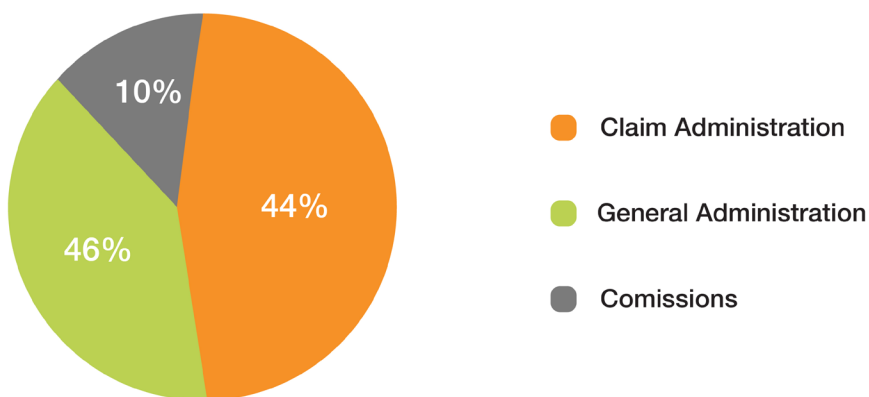
Digital Claim Adjudication Solutions with the Latest Technologies

The EDI ASC X12N transactions implemented under HIPAA help the payer to perform real-time claim adjudication by submitting and receiving transactions in a real-time mode.

Correct information is sent in a trade and, once received in the payer system, could help in processing the claims within a few seconds.

However, as we describe here, other technology solutions can help make the claims adjudication process efficient and even automatic.

RPA: Robotic Process Automation

To stay ahead of the competition, health insurance companies strive to give customers the best possible experience with claims processing optimized for time and money-saving opportunities.

RPA (Robotic Process Automation) solutions act as "claim repair" robots and extensively integrate with backend systems and databases. It is intelligent automation to "error and edit" claims that would otherwise fall into slow and expensive manual remediation and intervention.

RPA solutions help in reducing the claim processing turnaround time and sharply lower operational costs.

The benefits of RPA include:

• Lower healthcare administration costs through automating redundant manual, time and resource-intensive tasks.

• Accelerate the speed of operations through the automation of everyday tasks and also reduce human errors.

• Accurate decision-making reduces costs, improves patient care, and enhances healthcare staff productivity.

AI: Artificial Intelligence

An AI-based claims processing and adjudication system can assist in leakage and fraud prevention by identifying abnormal price patterns among providers, such as upcoding and overcharging for services.

AI algorithms can help identify false claims while automatically and successfully clearing out the normal claims.

Currently, 70% of healthcare claims are flagged as unusual (potentially incorrect).

The administrative staff in the insurance company checks these claims manually in detail and based on business rules.

Various intelligent and smart audit algorithms help in the accurate identification of the incorrect claims.

AI methodology helps and aims to identify those claims for which manual intervention could be high.

This allows the administrative staff to have their capacity

Challenges with the current Claims Adjudications process due to lack of AI
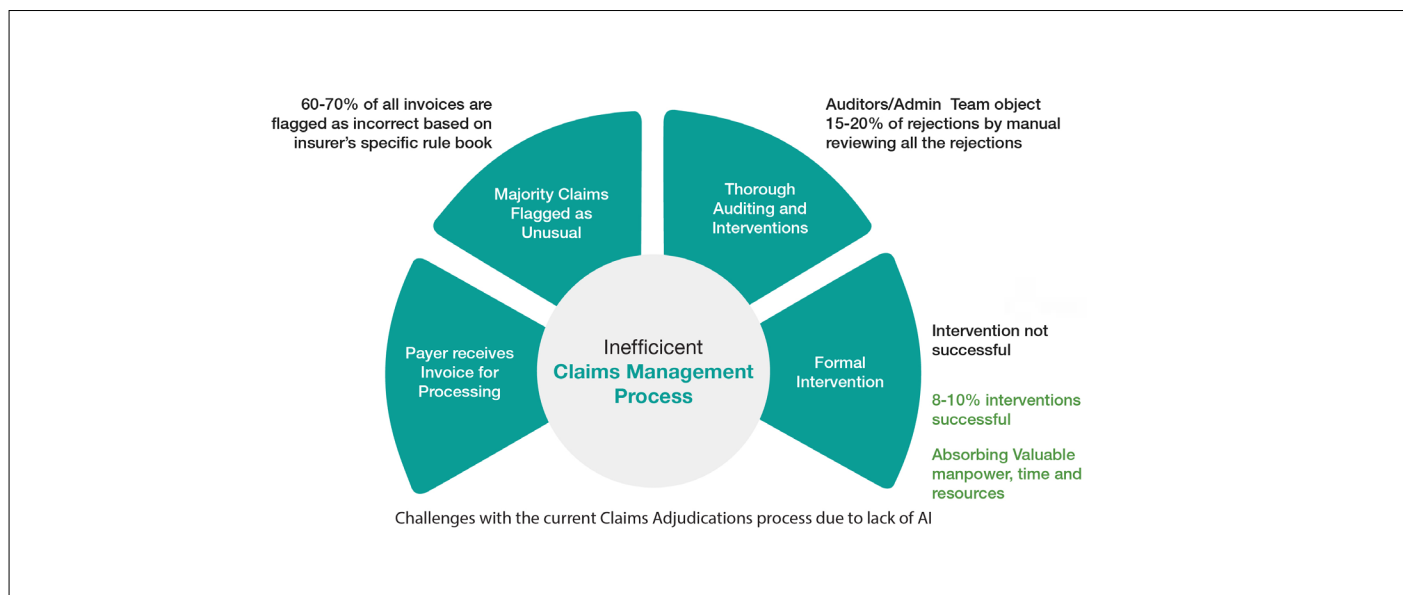
routed to only those claims which require their manual review rather than going and reviewing each claim sequentially, whether or not it requires consideration.

IDP: Intelligent Document Processing

OCR (Optical Character Recognition) is usually the 'go-to' technology for capturing data and digitizing documents.

But digitization is almost impossible in documents containing signatures, hand-writing, or images because of OCR's template-dependent data extraction methods.

Organizations deal with multiple types and magnitudes of data; still, most data is unstructured or semi-structured.

Using RPA for these data sets results in automation failure and fatigue.

Fixing this data challenge to enable Straight-Through-Processing is vital to an enterprise's intelligent automation success.

OCR would provide 50-70% accuracy, require a 100% manual quality check, and is limited in its ability to deal with different data types.

These requirements can only be addressed by AI-based IDP solutions capable of processing unstructured or semi-structured documents with greater accuracy and are more resilient to changes.

The benefits of IDP include:

• Faster turnaround times due to increased straight-through processing.

• Improved accuracy with minimum manual intervention.

• Increased productivity and efficiency of digital and non-digital workforce.

The IDP platform is based on a massive, pre-built database of labeled data points.

It incorporates an [AI technology](#) known as transfer learning, which enables a model trained on one task to be used for a related other and negates the need to train on thousands of documents to achieve accuracy.

Example: To achieve a high accuracy rate of document digitization, one GlobalLogic project integrated with another organization to digitize invoices and filter medical records.

This process is achieved by training the model using thousands of historical invoices. As a result, invoices digitized through IDP will have a minimum threshold accuracy of 75% for field-level extraction. Document quality has a significant bearing on data extraction accuracy.

When accuracy is low, documents will be automatically tagged for manual intervention.

The IDP platform will learn from these types of cases to provide better output and achieve greater accuracy.

IDP Proposed System Flow
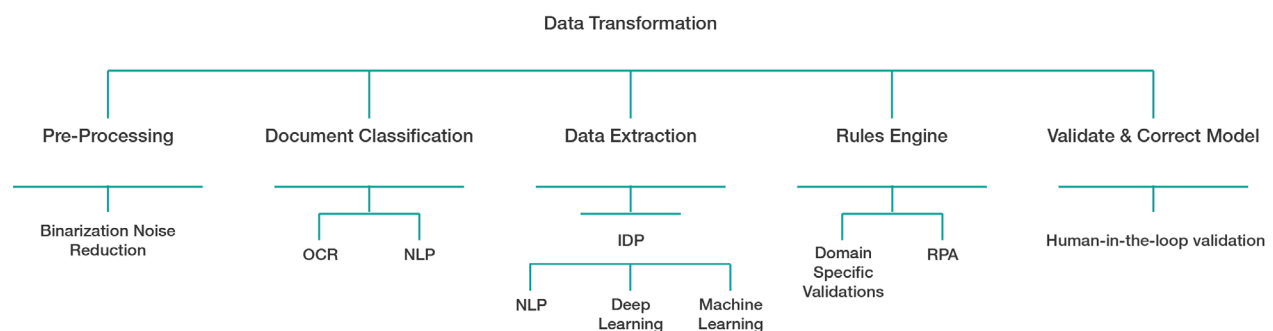
Technology Giant Preparedness

In the age of digital transformation, the enterprises that will stay profitable are those with innovative, integrated insur-tech systems with multi-level automation.

Many small and large healthcare IT vendors have already started investing in these platforms; for example:

Capgemini's new platform uses AI & ML to simplify and reduce the burden of processing documents and extracting data from them.

Accenture and UiPath, a leading robotic process automation platform, announced an expanded business collaboration. At the University of Chicago Medical Center, the Accenture team has harnessed the power of the UiPath Intelligent Automation platform to drive innovation and improve employee and patient experiences.

Incedo also automated the paper claim submission process for CMS 1500 claim form, leveraging UiPath auto-mation technology.

The **Cognizant** team transformed EmblemHealth (a non-profit healthcare insurance company with $10 billion in revenue) by speeding claims processing through advanced RPA.

Wipro's Medicare platforms will combine with PLEXIS' healthcare payer claims and care management platforms to deliver efficient and effective management of the entire value chain.

Conclusion

Healthcare organizations must opt for cognitive technologies to enhance their products and services, automate claims processing workflows, and reduce administrative costs and delays in reimbursement.

With rapidly evolving technologies such as RPA, AI, and IDP, healthcare leaders can drive strategy, improve processes, and positively impact both providers and end customers, making it a win-win situation for every entity involved in the healthcare claims ecosystem.

What's Next?

Managing digital transformation programs is inherently complex.

Learn how to instill predictability and use the provided templates to ensure success in GlobalLogic's guide, 'Managing Complex Digital Transformation Programs.'

Learn more at GlobalLogic.com/Insights