Concept Note by Healthix Solutions

Overview

Claims Management

Healthcare claims management is the single most expensive process done by the payers. **The JLN Processes (Claims Management) and the development of Automated Claims Processing with fraud detection using ML and AI technologies are two tasks that Healthix Solutions will be looking to work on in the OpenIMIS project**.

Claims management and payment processing currently involves lots of manual processes including:- data gathering, benefit plans mapping and matching, correctly configure deductions and accounting for the payments done.

Development ML & AI

Traditionally, most insurers predict claim payments by taking similar groups of policies and analyzing their historical trends such as frequency of claims, and amounts paid toward such claims. Based on patterns obtained from the datasets, new estimates of claim reserves are manually produced as depicted in Figure 1 below:
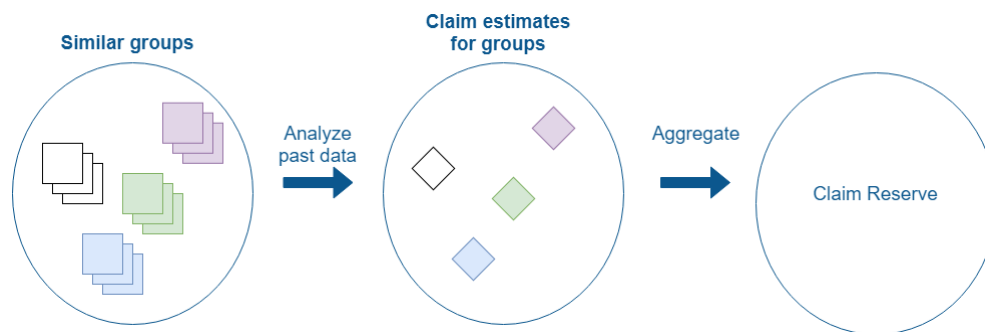
Figure 1: Paper-based insurance claims processing and adjudication workflow

This method produces a good estimate of Claims Reserve, but the **final claim payment is always somewhat different** than the expected one. There are two sources of the difference:

1. Actuaries take the group of similar policies and do not take into account individual characteristics of policyholders. Thus, it can turn out that some individuals are not following the patterns of a group and claims are much smaller or higher for them, impacting the aggregated result.
2. Between a claim's initial filing and full payment, the final amount of the claim can change drastically thus an insurer has set up additional outstanding reserve for possible losses.

Executive Summary

The OpenIMIS initiative drives an interoperable agenda for both the provider and payer players globally. The current deployments in Nepal and Tanzania have priority developments focused on Claims Management, and Members management that would greatly impact efficiency for the different stakeholders.

As Healthix, we wish to replicate our success in Kenya to Nepal where we have developed and deployed similar integrated solutions for Payer and Provider stakeholders. We shall automate claim processing with fraud detection while improving on the JLN Processes of improving Claims Management.

Today, Artificial Intelligence (AI) techniques such as Machine Learning (ML) can be used to discover patterns from non-linear datasets (Figure 2).
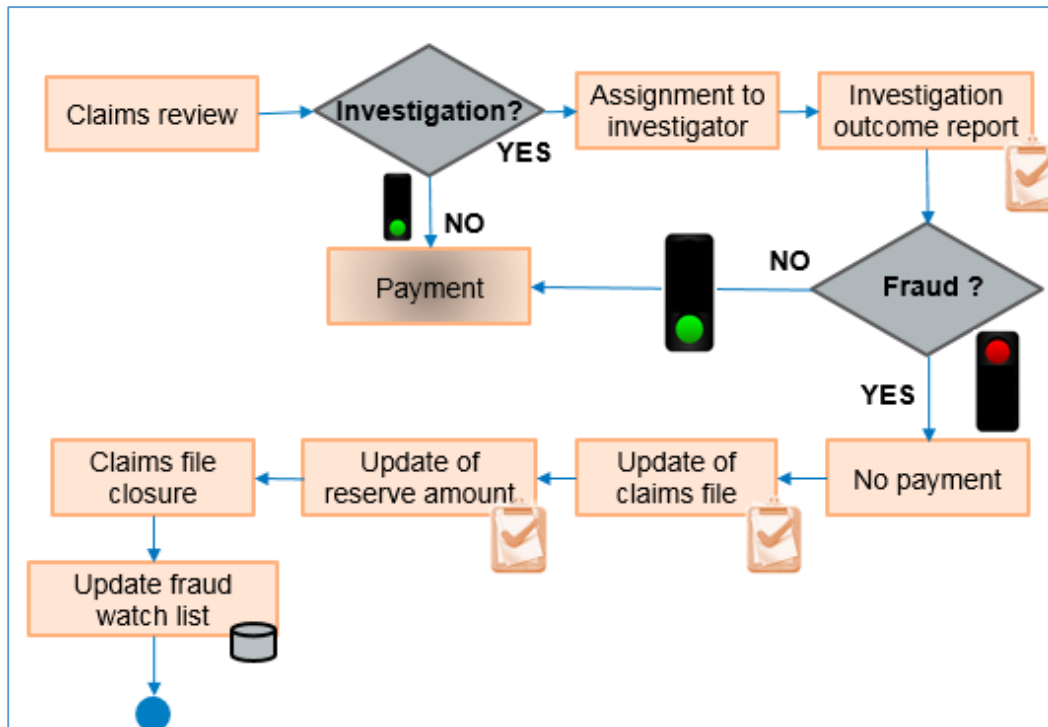

Fig2: shows ML procedures

Consortium Team

Healthix Solutions registered in Kenya is the lead in this development and deployment of digital health insurance solutions. Healthix is a technology company specializing in Healthcare (Providers) and Insurance (Payers) industry; connecting Insurance/Payers and Providers with a focus to improve patient care. We are enabling a vibrant Healthcare Ecosystem through a Shared Exchange platform (Enterprise Bus) we have developed (seamless integrated exchange services between all Healthcare players).

We provide value in Claims submission, Referral management, Preauthorization requests & responses, member eligibility verification and tracking, Claims adjudication and payment management amongst other services. The shared enterprise gateway makes it possible for the different players to exchange data real-time.

Our team is versatile and well blended to provide expertise in medical health, insurance segment, analytics and visualizations. Our experience spans more than 20 years in senior Level management and technology deployment with specialty is in the development and operationalization of digital health platforms. We have project management, Product Architects, Account Managers, Terminology specialists, Software Developers and Payer expertise.

Background or Problem Statement

"Claims adjudication" is a phrase used in the insurance industry to refer to the process of paying **claims** submitted or denying them after comparing **claims** to the benefit or coverage requirements
After a medical **claim** is submitted, the insurance company determines their financial responsibility for the payment to the provider. This **process** is referred to as **claims adjudication**. The insurance company can decide to pay the **claim** in full, deny the **claim**, or to reduce the amount paid to the provider.

In most scenarios, the efficiency of the medical claims adjudication process can be hampered by;
1. Unwanted claims – being processed.
2. Duplicated claims – that are undetected at first instance.
3. Delayed execution by the payer companies on the claims – leading to accumulation.
4. Lack of Automation – technology that looks at key missing components can speed the process
5. Paper-based review – automating paper is a lengthy and laborious process.

There are three possible statuses for Claims submitted by the payers.
1. R**epudiated claim: -** this is a **claim** that has been rejected by an insurance company.
2. Fully Paid
3. Partially Paid Claim

It is a **process** of the examination of claims and determining the outcome of these claim benefits. When the claim is filed and received goes through a 5 stage **process** to determine how the claim should be paid;
1. Initial **processing**,
2. Automated review,
3. Manual review,
4. Determination, and
5. Payment.

After the fifth stage if the provider is dissatisfied with the verdict by the payer (normally on the Repudiated Claim & the partially paid Claim), the provider is allowed to appeal using the reasons used by the payer to deny the claim so that the claim submission is readdressed.

AI and ML are critical for the Automated, Manual review and determination of the payments to be made to a claim in the claims adjudication process. AI and ML processes will work hand in hand to deliver better, accurate and timely claims adjudication procedures to the OpenIMIS project.

Community Feedback

The following schedule is proposed to ensure that all the project outcomes are achieved:

Time Driven Activities

Deliverable	Timeline	Responsible
Inception Evaluation and reporting	2 weeks after project kick off	Lead Expert
Status updates on the designs & progress	Every 2 weeks	Lead Expert
Monthly publishing of the completed modules and source Code	Monthly updates on Attlasian	Lead Expert
Quarterly reports and updated work plans	5th day of every month	Project Team
Final report	Oct.2020	Lead Expert

Event Driven Activities

Deliverable	Event	Responsible
Conceptual Design of the new modules and the migration path	Review of the different deployments and any enhancements.	Project Team
Review and monthly discussions of Designs of the API endpoints	After conceptual review of the new system & monthly reviews	Project Team
Gap Analysis	After collective review of the new system architecture	Project Team
Design and Testing of the APIs	After agreed design is commissioned	Healthix Team
OpenIMIS modules Appended to the new architecture	After new system has been deployed and is operational	Project Team
Project Completion	After the system architecture has been adopted and deployed.	Healthix Team

Schedule

The following is a high-level work plan.

Activity	Team Location Month/ Quarter
JLN Claims Management	
Improve claims review by developing a configurable claims review engine:	[Healthix, TZ, Nepal]
Automating the claims adjudication support;	[Healthix, Kenya]
Develop configurable linear controls on claims	[Healthix, Kenya]
completed claims, partially accepted and repudiated claims	[Healthix, TZ, Nepal, Kenya]
Payment Configuration	[Healthix, Kenya]
Create Appeals procedures	[Healthix, Kenya]
Automated claim processing with fraud detection using ML and AI technologies	
Build configurable claims engine	[Healthix, TZ, Nepal]
Build AI-based Claim Adjudication and fraud detection	[Healthix, Kenya]
Prototyping, Data Pre-processing and Data modelling	[Healthix, TZ, Nepal]
Develop machine algorithms	[Healthix, Kenya]
Model Deployment and Maintenance	[Healthix, Kenya]
Both Processes	
End to end Testing	[Healthix, Kenya]
UATs with other platforms	[Healthix, TZ, Nepal]
End user acceptance tests & Signoffs	[Healthix, TZ, Nepal]