

RWANDA SOCIAL SECURITY BOARD (RSSB)



Our Health
Our Future

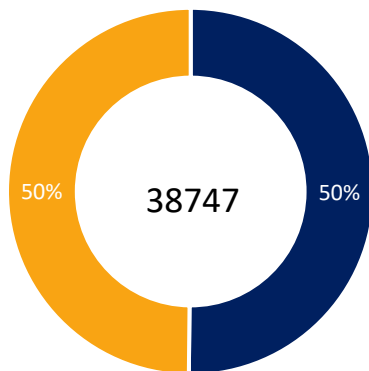


Analysing Medical Claims Data for Cost Reduction Opportunities

~ Patrick Manzi

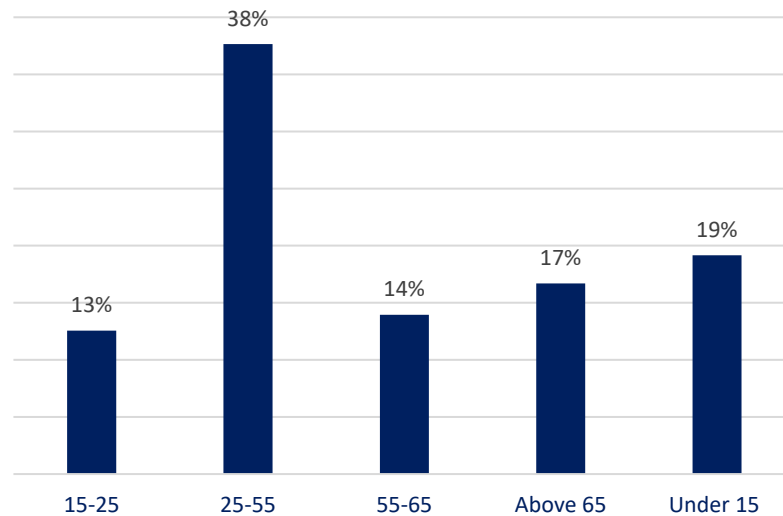
Demographic information

Members by gender



■ Female ■ Male

Members age distribution



Medical claims at a glance

1937436

Total claims

Total claims reported

1937350

Complete claims

Claims reported with
complete information

86

Incomplete claims

Total claims reported with
missing member identity

Billed amount: 489.431B RWF

Verified amount: 244.672B RWF

Paid amount: 244.759B RWF

Billed amount: 489.410B RWF

Verified amount: 244.661B RWF

Paid amount: 244.749B RWF

Billed amount: 21.387M RWF

Verified amount: 107.880M RWF

Paid amount: 105.997B RWF



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Summary statistics

1937350
Claims

Total claims
reported

38747
Members

Total member of all
RSSB insurance
schemes

100
Stakeholders

Healthcare
facilities working
with RSSB.

24633
Locations

RSSB stakeholder
regions

RAMA claims

Number: 50%

Value: 245.111B Rwf

MUTUELLE claims

Number: 50%

Value: 244.298B

MALE claims

Number: 49.84%

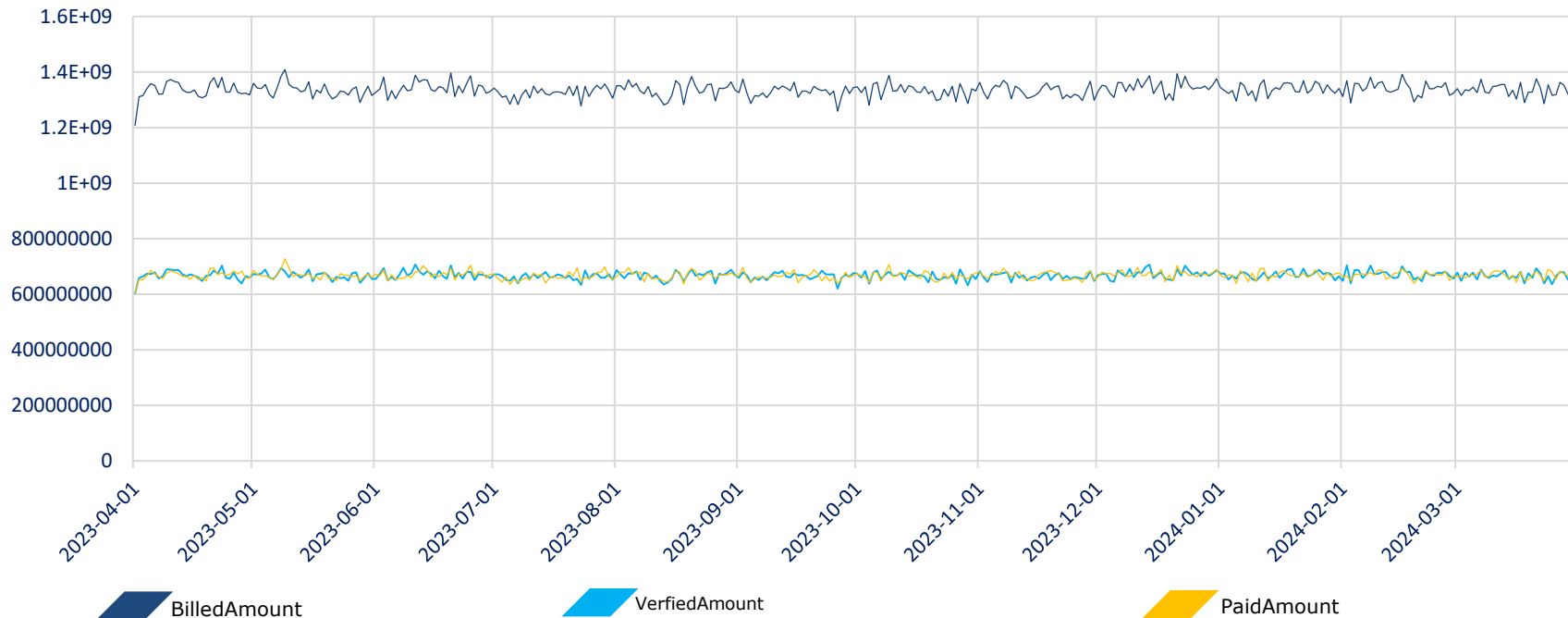
Value: 243.921B RWF

FEMALE claims

Number: 50.16%

Value: 245.488B RWF

Medical claims timeseries



Interpretation: The analysis of the claims time series graph indicates a strong relationship between the verifiedAmount and paidAmount variables, as they closely track each other over time, suggesting efficient processing and payment of verified claims despite fluctuations in billed amounts. Additionally, the consistently higher billed amounts compared to verified and paid amounts imply potential challenges or inefficiencies in cost containment and claim verification processes.

Top 5 diagnoses and procedures driving a high proportion of healthcare costs

Diagnosis Code	Billed Amount(RWF)
ICD-J06AA01002	5111752850
ICD-J04BA02002	5096369155
ICD-J05AG03002	5093472260
ICD-J07BC01002	5089160145
ICD-J05AR02001	5088210710

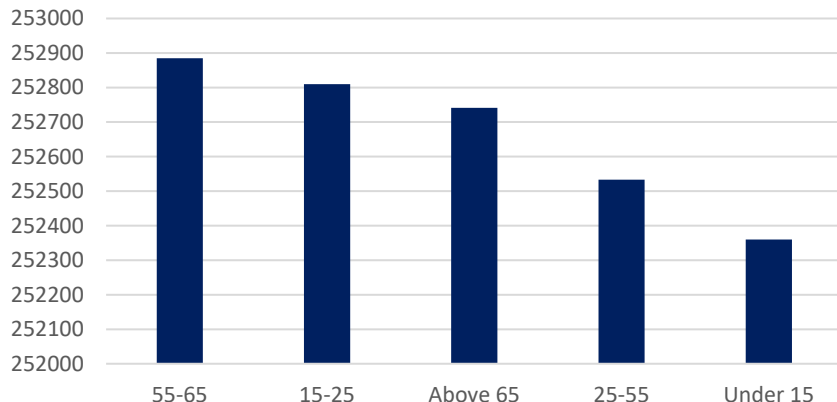
Interpretation: Analysis of claims data reveals that pneumonia, COPD, and Sepsis diagnoses are the top drivers of healthcare costs.

Procedure Code	Billed Amount(RWF)
CPT-42242000FQZ435	5020133075
CPT-42242000FQZ380	5016557745
CPT-42242000FQZ406	5002706570
CPT-42242000FQZ445	4990459705
CPT-42242000FQZ398	4989801765

Interpretation: The data reveals a concentration of healthcare costs within a limited number of medical procedures. The top five procedure codes all incur very high billed charges compared to the mean procedure cost, suggesting they warrant further investigation for potential cost-saving opportunities.

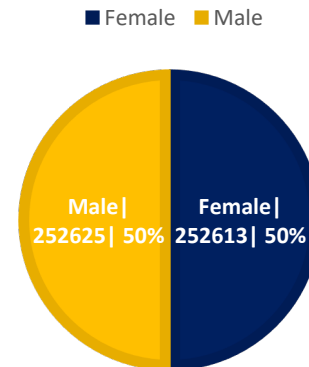
Healthcare costs variation based on age group demographic and gender

Mean billed amount(RWF) by age group



Interpretation: The analysis of mean billed amounts by age group demographic shows a relatively consistent pattern across different age categories. Despite minor variations, ranging from 252,360.0 for the "Under 15" age group to 252,885.0 for the "55-65" age group, the differences in billed amounts appear to be minimal. This suggests that age group demographics may not be a prominent factor influencing healthcare costs within the dataset, emphasizing the need to explore other variables for targeted cost reduction strategies.

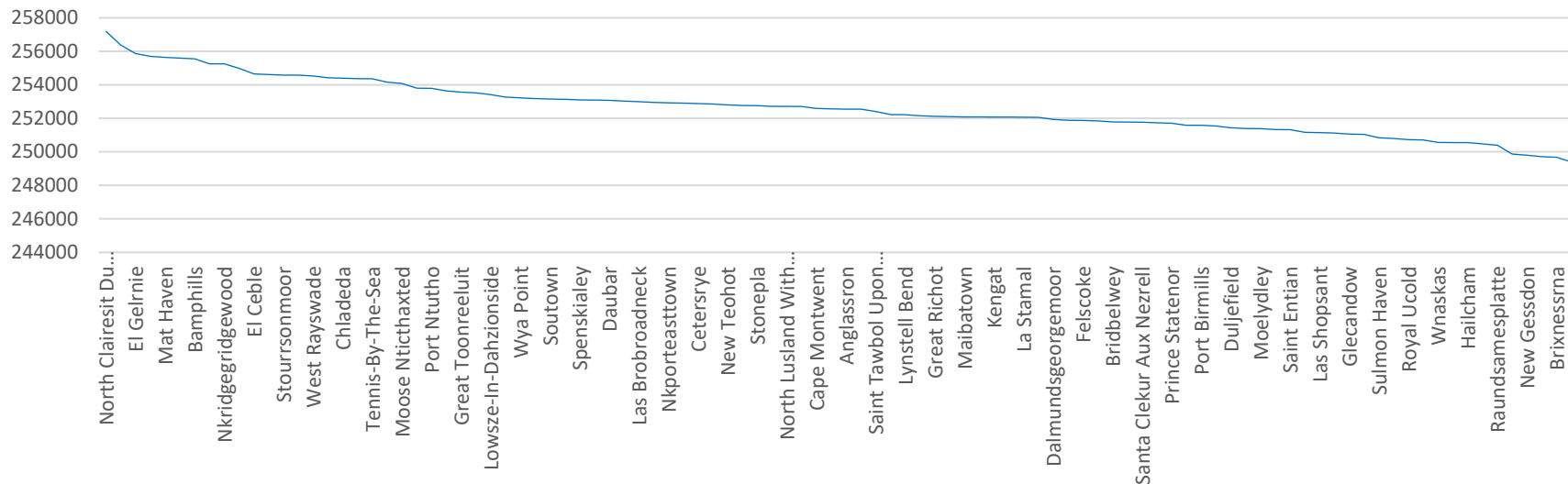
MEAN BILLED AMOUNT(RWF) BY GENDER



Interpretation: The analysis indicates minimal variation in healthcare costs between genders, suggesting that gender-based distinctions may not significantly influence overall cost reduction strategies within the medical claims dataset. Notably, the slightly higher average billing for men could be attributed to potentially higher-cost medications or treatments, despite women's more frequent healthcare facility visits. This insight underscores the complexity of cost determinants and highlights the need for comprehensive analysis beyond gender demographics to effectively target cost-saving initiatives.

Healthcare costs variation based on health facility

Healthcare facility by mean Billed Amount

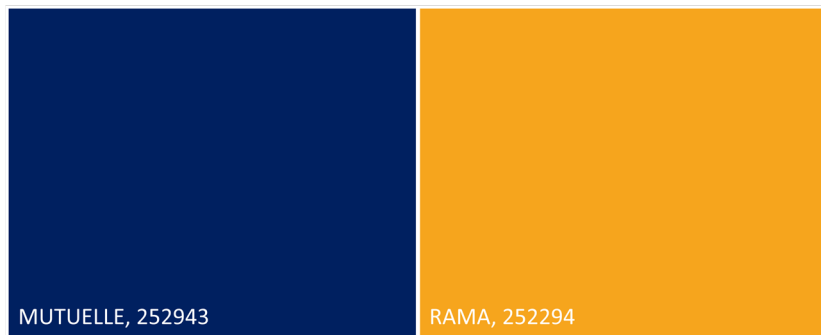


Interpretation: The analysis of mean billed amounts by health facility demographic reveals varying costs across different healthcare facilities. health facilities such as North Claiesit Du Grayscloud and EL Genlrnie and Mat Haven exhibit higher mean billed amounts compared to other facilities like New Gessdon and Brixnessrna. These findings suggest notable differences in healthcare costs based on facility locations within the dataset, highlighting the importance of facility-specific cost management strategies to optimize our costs effectively.

Healthcare costs variation based on plan type and geographic location

Mean Billed Amount(RWF) by plan type/scheme

■ MUTUELLE ■ RAMA




Interpretation: The analysis reveals variations in billed amounts based on member plan types. Specifically, individuals under the MUTUELLE scheme exhibit a slightly higher mean billed amount compared to those under the RAMA scheme, highlighting potential differences in healthcare costs associated with different insurance plans within the dataset. Understanding these variations can inform targeted cost reduction strategies tailored to specific plan types to optimize healthcare expenditure management..

Mean billed Amount by geographic location


Location	Billed Amount(RWF)
New Braxtonton	379238
New Cordellfield	377660
Lucindachester	377595
North Oswaldview	134803
Port Keyonville	129081

Interpretation: The analysis of mean billed amounts by geographic location reveals substantial variations in healthcare costs across different regions. Locations such as New Braxtonton and New Cordellfield exhibit notably higher mean billed amounts compared to other areas like Port Keyonville and North Oswaldview. These findings highlight geographical disparities in healthcare expenditure within the dataset, suggesting the importance of regional-specific cost management strategies to optimize healthcare budgeting and resource allocation effectively.


3. Based on the analysis of our medical claims dataset for RSSB insurance members, I have identified several key areas where cost savings can be achieved through strategic negotiations with healthcare providers and targeted disease management programs:



1. Identifying High-Cost Diagnoses and Procedures: By focusing on negotiating lower costs or implementing efficient treatment protocols for high-cost diagnoses and procedures identified in the dataset (e.g., ICD codes and procedure codes), we can optimize expenditures while maintaining quality care.



2. Geographic Cost Management: Targeting areas with notably high mean billed amounts by geographic location (e.g., New Braxtonton, New Cordellfield) enables us to implement region-specific cost-saving initiatives or negotiate favorable provider contracts, enhancing efficiency and resource allocation.



These insights provide concrete avenues for RSSB to engage in proactive negotiations with healthcare providers and implement targeted disease management initiatives aimed at optimizing healthcare expenditure while upholding the quality of care delivered to the insurance members. By leveraging these strategic opportunities, RSSB can achieve sustainable cost savings and enhance the overall value proposition for its members and stakeholders.



Thank you