



Healthcare Self-Insurance and Consulting Group

"We help you Self-Insure"

REPRICING CLAIMS

RAJITH JAYADEVAN

GROUP 6 – CRITICAL ANALYZERS

MENTOR – JANAK KHILNANI

MEETINGS – 2:30 PM to 4:00 PM, Tuesday, Bird Library





CONTEXT

Repricing is the negotiated fee that a network provider has agreed to accept as the amount charged for the service. Repricing helps patients get more value for the pre-defined claim amount. Implementing this solution as part of our service will enable more clients interested in our service. This will in-turn increase hospitals, pharmacies and labs in our provider network. Hence, our organization has decided to implement reprice claims by introducing a repricing department.

In-order to implement Repricing department, analysts have already acquired information to come up with SWIM LANE and data dependency diagram for this department. After analyzing these diagrams, we have decided to go ahead with Entity Relationship Diagram explaining the database required to automate repricing using IT systems.

In this document, we have explained the ERD, entities, attributes and the purpose of each entity. This will suffice developers to develop appropriate system.

Repricing Department will perform following functions:

- 1) **Data Verification** – This stage will verify data received from claims department of the original claim. This department will check whether necessary data are received. It will check necessary provider networks.
- 2) **Discount Verification** – This stage will verify network provider, verify claim source, contract verification and checks discount types.
- 3) **Compliance Auditing** – This stage performs auditing in various levels including Employee, Department, and IT System. The final report is then published in a common website accessible to auditors and employees.
- 4) **Repricing Claims** – This stage applies discounts. It checks whether any discounts are also available while applying discounts. Creates a new repriced claim. Adds loyalty points to patients account.
- 5) **Report Generation** – This stage generates various reports including Repriced claims report and Customer Savings report. This system notifies claims department and relevant end user.

Once the IT system has been established, Claims department will send the original claims to repricing department. Repricing claims department will have an IT application developed. This application will initially perform data verification. In the next stage, application will make use of database to verify the details. Compliance and Auditing team will perform auditing monthly, quarterly or yearly based on regulations of our group. They will perform the auditing and the final report will be uploaded into the database. Employees and necessary stake holders can view these reports. Repricing claims will be done by the application using appropriate details from table and repriced claims will be uploaded back into the database. Group will also analyze the repriced claims and generate reports which will be stored in database.



ENTITIES	ATTRIBUTES
INSURANCE_CONSULTING_GROUP – This entity stores the details specific to Healthcare Self-Insurance and Consulting Group	GROUP_ID – Stores identification number specific to our group
	GROUP_NAME – Stores name of our organization
	GROUP_ADDRESS – Stores address of the organization
	GROUP_CUSTOMER_CARE_NUMBER – Stores customer care number used by clients to contact our group
PROVIDER_NETWORK – This entity stores all provider network details in group	PROVIDER_NETWORK_ID – Stores unique identification number for each provider network
	PROVIDER_NETWORK_TYPE – Stores the type of provider network
	PROVIDER_NETWORK_DETAILS – Stores provider network description
	GROUP_ID – Stores the organization group id as foreign key
REPRICING_CONTRACT – This entity stores all contracts organization has with all hospitals, labs and pharmacies spread across provider networks	CONTRACT_ID – Unique identification number for each contract
	CONTRACT_START_DATE – Start date from when contract is valid
	CONTRACT_END_DATE – End date on which contract ends
	CONTRACT_DISCOUNT – Discount amount of the contract
	CONTRACT_DISCOUNT_TYPE – Absolute or Percentage type of discount
	GROUP_ID – Multiple contracts for one group id
PROVIDER_HOSPITALS – This entity stores all the hospitals which our group serves	HOSPITAL_ID – Unique identification number to identify each hospital
	HOSPITAL_NAME – Name of each hospital
	HOSPITAL_ADDRESS – Address of each hospital
	HOSPITAL_PHONE_NUMBER – Contact number of each hospital
	HOSPITAL_EMERGENCY_NUMBER – Emergency number for hospital
	CONTRACT_ID – Contract associated with this hospital
	PROVIDER_NETWORK_ID – Hospital associated with which provider network
PROVIDER_LABS – This entity stores all the labs which are associated with our group	LAB_ID – Unique identification number for each lab
	LAB_NAME – Name of each lab
	LAB_ADDRESS – Address of each lab
	LAB_PHONE_NUMBER – Contact phone number of each lab



	PROVIDER_NETWORK_ID – Lab associated with which provider network
	CONTRACT_ID – Contract associated with this lab
PROVIDER_PHARMACY – This entity stores details regarding pharmacies associated with our group	PHARMACY_ID – Unique identification for each pharmacy
	PHARMACY_NAME – Name of each pharmacy
	PHARMACY_ADDRESS – Address of each pharmacy
	PHARMACY_PHONE_NUMBER – Contact number of each pharmacy
	PROVIDER_NETWORK_ID – Pharmacy associated with which provider network
	CONTRACT_ID – Contract id to which pharmacy is associated
CLAIMS – This stores all the original claims	CLAIM_ID – Unique identification for each claim
	CLAIM_AMOUNT – Amount for which claim has received
	CLAIM_PROCESSED_DATE – Claim processed date
	CLAIM_DUE_DATE – When the claim should be settled
	CLAIM_PATIENT_NAME – Name of the patient
	CLAIM_SELF_INSURED – Indicates whether the patient is self-insured
	CLAIM_SELF_INSURED_EMPLOYER – Indicates the self-insurer
	CLAIM_PROVIDER_NETWORK – Provider network from which the claim was received
	CLAIM_SOURCE – Indicates which hospital/lab/pharmacy
	CLAIM_VALID_DATE – When will the claim expire
	GROUP_ID – Claim is associated with which group
REPRICED_CLAIM - This stores the final repriced claim	REPRICE_CLAIM_ID – Unique identification for each repriced claim
	REPRICE_AMOUNT – Final repriced amount
	RPRICE_PROCESSED_DATE – Date when original claim was repriced
	REPRICE_DUE_DATE – Date when repriced claim has to be settled
	RPRICE_PATIENT_NAME – Name of the patient for which claim has been developed
	REPRICE_SELF_INSURED – Indicates whether self-insured
	REPRICE_SELF_INSURED_EMPLOYER – Indicates the self-insurer
	REPRICE_PROVIDER_NETWORK – Indicates provider network
	REPRICE_SOURCE – Indicates the source, whether hospital/lab/pharmacy



	REPRICE_VALID_DATE – Validity of reprice claim
	CLAIM_ID – Indicates the original claim ID
	GROUP_ID – Associates the repriced claim with our self-insurance group
EMPLOYEE – This entity stores employee details of the group	EMPLOYEE_ID – Unique identification for each employee in the group
	EMPLOYEE_NAME – Name of the employee
	EMPLOYEE_PHONE_NUMBER – Contact number of employee
	EMPLOYEE_EMAIL_ID – Email address of employee
	GROUP_ID – Associates with our group
CLIENTS – This stores all the client details	CLIENT_ID – Unique identification number for clients
	CLIENT_NAME – Name of each client
	CLIENT_START_DATE – Date on which client joined the group
	CLIENT_INSURED_TYPE – Whether client is self-insured or fully insured
	CLIENT_ADDRESS – Address of each client
	CLIENT_PHONE_NUMBER – Contact number for each client
	CLIENT_EMAIL_ADDRESS – Email address of each client
	CLIENT_SELF_INSURED_AMOUNT – Stop loss amount of each client
	GROUP_ID – Client association with group
GENERAL_REPORT – Stores general report generated by the system	REPORT_START_DATE – Report generated for from date
	REPORT_END_DATE – Report generated to end date
	REPORT_TYPE – Type of report
	REPORT – PDF report stored in database
	GROUP_ID – Associate with particular group
	REPORT_ID – Unique identification for each report
AUDIT_REPORTS – Stores details regarding auditing reports	AUDIT_REPORT_ID – Unique identification number for each audit report
	AUDITED_DATE – Date on which audit was conducted
	AUDITOR – Auditor's name who performed the auditing
	AUDIT_FROM_DATE – Audit conducted for from date
	AUDIT_END_DATE – Audit to end date
	AUDIT_REPORT – Report stored in database
	GROUP_ID – Associated with our group
	CLAIM_ID – Original claim identification number
	REPRICE_CLAIM_ID – Repriced claim identification number
	AUDIT_TITLE – The title of the audit performed





	PRIORITY – Priority for attending to failure audited claim status
	COMMENTS – Comments from auditor for each claim
	REPRICE_CLAIM_AUDIT_STATUS – Status of repriced claim whether failure or success

ENTITIES, KEYS & RELATIONSHIPS

1) INSURANCE_CONSULTING_GROUP

KEYS	RELATIONSHIPS
PRIMARY KEY – GROUP_ID	One – To – Many relationship 1) CLAIMS 2) REPRICED_CLAIM 3) EMPLOYEE 4) CLIENTS 5) PROVIDER_NETWORK 6) REPRICING_CONTRACT 7) AUDIT_REPORTS 8) GENERAL_REPORT

2) REPRICING_CONTRACT

KEYS	RELATIONSHIPS
PRIMARY KEY – CONTRACT_ID FOREIGN_KEY – GROUP_ID	One – To – One relationship 1) PROVIDER_LABS 2) PROVIDER_PHARMACY 3) PROVIDER_HOSPITAL

3) PROVIDER_LABS

KEYS	RELATIONSHIPS
PRIMARY KEY – LAB_ID FOREIGN_KEY – PROVIDER_NETWORK_ID CONTRACT_ID	Many – To – One relationship 1) PROVIDER_NETWORK One – To – One relationship 1) REPRICING_CONTRACT





4) PROVIDER_PHARMACY

KEYS	RELATIONSHIPS
PRIMARY KEY – PHARMACY_ID FOREIGN KEY – PROVIDER_NETWORK_ID CONTRACT_ID	Many – To – One relationship 1) PROVIDER_NETWORK One – To – One relationship 1) REPRICING_CONTRACT

5) PROVIDER_HOSPITALS

KEYS	RELATIONSHIPS
PRIMARY KEY – HOSPITAL_ID FOREIGN KEY – PROVIDER_NETWORK_ID CONTRACT_ID	Many – To – One relationship 1) PROVIDER_NETWORK One – To – One relationship 1) REPRICING_CONTRACT

6) PROVIDER_NETWORK

KEYS	RELATIONSHIPS
PRIMARY KEY – PROVIDER_NETWORK_ID FOREIGN KEY – GROUP_ID	One – To – Many relationship 1) PROVIDER_LABS 2) PROVIDER_PHARMACY 3) PROVIDER_HOSPITALS

7) CLAIMS

KEYS	RELATIONSHIPS
PRIMARY KEY – CLAIM_ID FOREIGN KEY – GROUP_ID	Many – To – One relationship 1) INSURANCE_CONSULTING_GROUP One – To – One relationship 1) REPRICED_CLAIM 2) AUDIT_REPORTS



8) REPRICED_CLAIM

KEYS	RELATIONSHIPS
PRIMARY KEY – REPRICE_CLAIM_ID	Many – To – One relationship 1) INSURANCE_CONSULTING_GROUP One – To – One relationship 1) CLAIMS 2) AUDIT_REPORTS

9) EMPLOYEE

KEYS	RELATIONSHIPS
PRIMARY KEY – EMPLOYEE_ID FOREIGN KEY – GROUP_ID	Many – To – One relationship 1) INSURANCE_CONSULTING_GROUP

10) CLIENTS

KEYS	RELATIONSHIPS
PRIMARY KEY – CLIENT_ID FOREIGN KEY – GROUP_ID	Many – To – One relationship 1) INSURANCE_CONSULTING_GROUP

11) GENERAL_REPORT

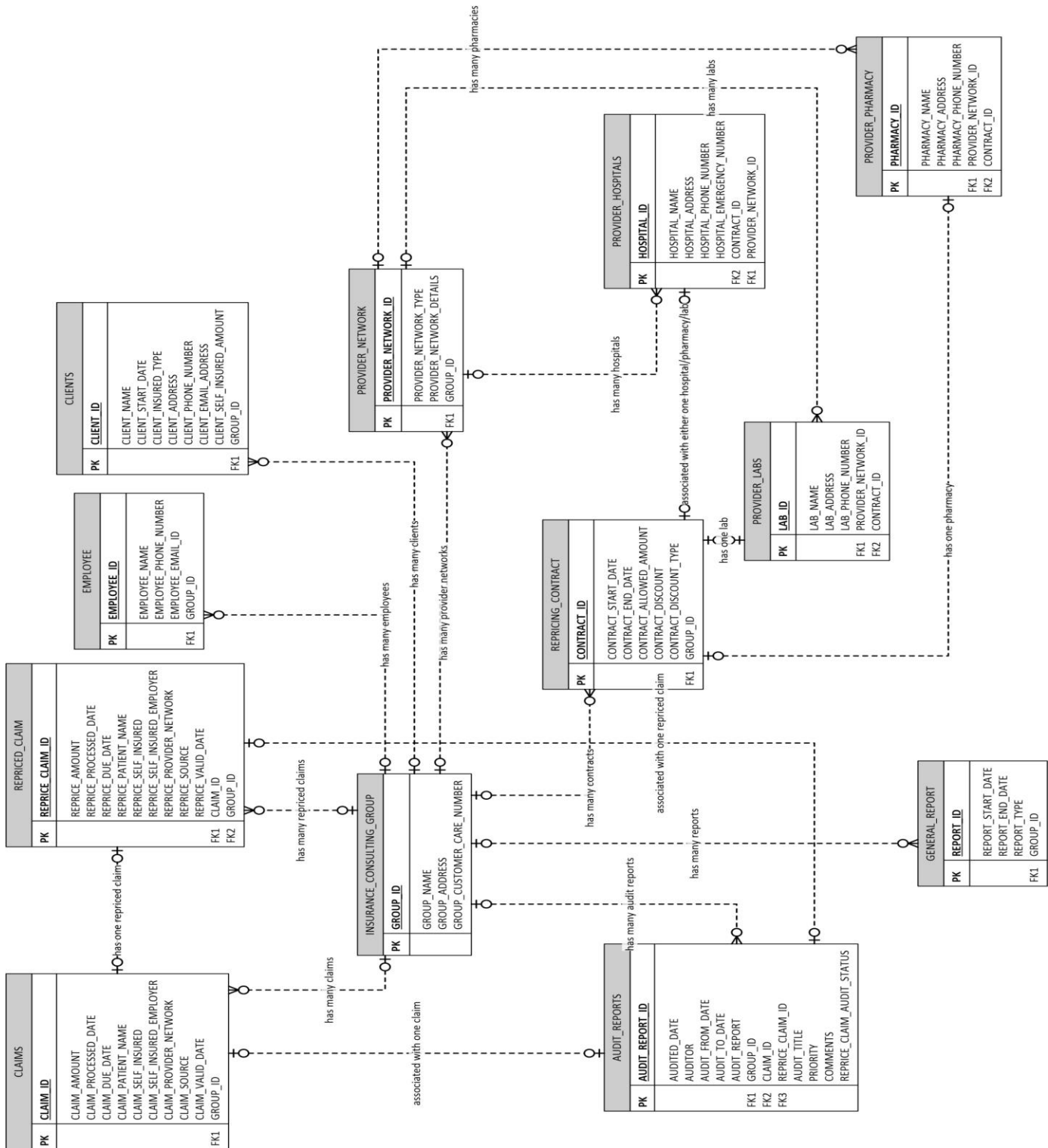
KEYS	RELATIONSHIPS
PRIMARY KEY – REPORT_ID FOREIGN KEY – GROUP_ID	Many – To – One relationship 1) INSURANCE_CONSULTING_GROUP

12) AUDIT_REPORTS

KEYS	RELATIONSHIPS
PRIMARY KEY – AUDIT_REPORT_ID FOREIGN KEY – GROUP_ID CLAIM_ID REPRICE_CLAIM_ID	Many – To – One relationship 1) INSURANCE_CONSULTING_GROUP 2) CLAIMS 3) REPRICE_CLAIMS



ENTITY RELATIONSHIPPP DIAGRAM





BUSINESS RULES

The following business rules have been established for above ERD diagram:

- 1) Insurance Group has many provider networks
- 2) Each provider network has many hospitals, pharmacies and labs
- 3) Contracts are established at hospital/lab/pharmacy level
- 4) Insurance Group has many contracts
- 5) General and Audit reports are generated and stored in database for future use
- 6) For every original claim there is associated only one repriced claim
- 7) Insurance Group receives multiple claims
- 8) Every contract has a start and end date
- 9) Claims have a validity date
- 10) Each hospital/lab/pharmacy are associated with only one contract id
- 11) Insurance Group has multiple clients
- 12) Insurance Group has multiple employees
- 13) Each particular is audit has only one occurrence of claim and repriced claim
- 14) Once a claim and repriced claim is considered for auditing, it is not considered again for auditing

