

**HEALTH INSURANCE DATABASE**

**GROUP NAME: PATS DB**

**GROUP NUMBER: 6**

**DATE: 28 APRIL 2017**

**GROUP MEMBERS:**

|  |  |  |  |
| --- | --- | --- | --- |
| **First Name** | **Last Name** | **NUID** | **Email\_ID (@husky.neu.edu)** |
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**TABLE OF CONTENTS**

1. **Member…………………...…………………………………………………………..4**
2. **Provider………………….……………………………………………………………10**
3. **Facility..………………….…………………………………………………………….13**
4. **Plans..…………………….…………………………………………………………….16**
5. **Claims …………………..……………………………………………………………..19**
6. **Relationship table...……..………..…………………………………………….22**
7. **Revision History...………………………………………………………………….23**

**Introduction**

This is a database model for a health insurance company that includes information about the members, facilities, providers, plans, schemes, etc. A health insurance company holds exhaustive yet essential data for best managing their monetary transactions with members and provide for healthcare when needed by their members, as dictated by the respective insurance plan. The aim of the project lies in being able to successfully create meaningful relationships between these multiple entities and extract data with ease.

**Overview**

This document includes five major constituents (Member, Provider, Plan, Facility,Claims) with their relationships, descriptions, sample data and business rules. All health-related information of the member is included in the member\_information table including ethnicity, SSN and marital status, etc to enable various classifications. A health history table contains entities to include all previous noteworthy healthcare activities of the member, such as surgeries, pregnancies and injuries- the information that will aid in choosing a right plan for the member. If the member is a minor or an employee who is sponsored health insurance by his guardian or employer, we have a subscriber table that allows such cases. The provider segment of the model contains a doctors’ and nurses’ table with a many-to-many relationship between them. The facilities section has a diagnosis\_center table as a facility where a member gets a medical prescription for his injury/ailment. A laboratory table where medical tests are taken is also part of facilities that forms part of a medical department with dept\_ID as foreign key. The plans table holds all information that pertains to a member’s health insurance plan. A visualization of this entire database is provided as a Toad model for easy understanding.

**Member:**

An insurance member is an individual who is covered by a health insurance plan. A member could be a student, an employee or a minor. He is the eligible beneficiary. It may refer to person that pays for insurance or whose employment makes him eligible for insurance.

**Business rules:**

|  |  |
| --- | --- |
| **Scope** | **Rule** |
| IS01 | Each member has a unique Member\_ID |
| IS02 | A member has one address |
| IS03 | A member’s veteran status must be tracked |
| IS04 | A member’s marital status must be tracked |
| IS05 | A member may receive services from a provider or a facility |
| IS06 | A member’s ethnicity must be tracked |
| IS07 | A member may have multiple health records |
| IS08 | A member must have an emergency contact |
| IS09 | A member becomes his own subscriber if he is a primary holder |
| IS10 | A member can be individual or dependent or from a certain group (corporate, community) |
| IS11 | Subscriber can be a guardian/parent/company |
| IS12 | A member has a single subscriber |
| IS13 | A subscriber must have an SSN |
| IS14 | A member has at least one health insurance policy |
| IS15 | Every health record has a diagnosis date and a condition status |
| IS16 | Every subscriber has a issued date |
| OS01 | Mode of payment may be included |

**Member\_Info:**

Member table holds all secondary information of the member such as marital status, veteran status and race. Emergency contact information is an important aspect of the table which also states its relationship to the member. the attributes Sub\_Parent and Sub\_Guardian recognize the type of subscriber a member has. The primary\_holder attributes distinguishes whether the member has a unique subscriber or not.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Member\_ID | Int | PK | NN | 1,2,3…...9999 | Each member’s unique identification number |
| Primary\_Holder | Char(1) |  | NN | Y/N | Is the member paying for himself? |
| Marital\_Status | Varchar (10) |  | NN | Single/ Married/Divorced | Member’s marital status |
| Veteran\_ Status | Varchar (10) |  | NN | AFSM Vets, AFSM Vets and disabled | Member’s veteran status |
| Race/Ethnicity | Varchar (10) |  | NN | South American, Asian, etc | Member’s Race/Ethnicity |
| Occupation | Varchar (50) |  | NN | Student, Data Analyst | Occupation of the member |
| Emergency\_ Contact\_Name | Varchar (50) |  | NN | Robert, Linda | Name of the emergency contact |
| Emergency\_ Contact\_Phone\_ Number | Varchar (10) |  | NN | 1876543298 | Phone number of the emergency contact |
| Emergency\_ Contact\_Address | Varchar (50) |  | NN | Huntington Avenue | Address of the emergency contact |
| Emergency\_ Contact\_ Relationship | Varchar (50) |  | NN | Father, Employer, Brother | Relationship of emergency contact with member |
| Sub\_Parent | Char(1) |  | NN | Y/N | Is the subscriber, the member’s parent? |
| Sub\_Guardian | Char(1) |  | NN | Y/N | Is the subscriber, the member’s guardian? |
| Subscriber\_ID | Int | FK |  | 1,2,3...999 | A Subscriber’s unique identification number |

**Group\_Name:**

Companies provide insurance plans to their employees in a group. Group\_Name table describes the details of a subscriber that is of group type with a unique group\_ID.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Group\_ID | Int | PK | NN | 1,2,3...999 | Unique Identification Group Number |
| Name | Varchar (100) |  | NN | ABC Group, Amazon, NEU | Name of the group |
| Contact\_ Number | Varchar (10) |  | NN | 1234567890, 1235678943 | Contact Number to communicate with the group’s authority |
| Address | Varchar (15) |  | NN | 75 St. Alphonsus street, Park Street | Address of the group |
| City | Varchar (20) |  | NN | Boston,LA | City where the group’s administration is located |
| State | Varchar (2) |  | NN | MA,CA,TX | State |
| Zip | Varchar (5) |  | NN | 02120,02125 | Zip code of the State |

**Group\_Sub:**

Group\_Sub is the bridge table between Group\_Name table and Subscriber table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Group\_ID | Int | PFK | NN | 1,2,3...999 | Unique Identification Number of Group |
| Subscriber\_ID | Int | PFK | NN | 1,2,3...999 | Unique Identification Number of Subscriber |

**Subscriber**

This table contains the information of the guardian/parent of the underage member (i.e. below 18 years of age). The subscribers could be guardian/parent/company

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Subscriber\_ID | Int | PK | NN | 1,2,3...9999 | Subscriber’s unique identification number |
| Group\_ Sponsored | Char(1) |  | NN | Y/N | Whether it’s sponsored by group or not |
| Issued\_Date | Date |  | NN | 2015-11-23 | Date of payment |
| SSN | Varchar (9) |  | NN | 123456789 | Social Security Number |

**Health History**

The table contains the major details of all diagnosed health conditions of the member. Each condition is identified by its name in Condition\_Name and has a unique Record\_ID. The table holds information of the date of diagnosis. The nature of condition being diagnosed is classified under different categories such as Nervous, Respiratory, Muscular, etc through a Yes/No entry.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Record\_ID | Int |  | NN | 1,2...999 | Unique Record\_ID of the member |
| Condition\_Name | Varchar (max) |  | NN | Hepatitis, Arthritis, HIV | Name of the diagnosed health condition |
| Cardiovascular | Char(1) |  |  | Y/N | Is it a condition related to the heart? |
| Nervous | Char(1) |  |  | Y/N | Is it a condition related to the nervous system? |
| Respiratory | Char(1) |  |  | Y/N | Is it a condition related to the respiratory system? |
| Endocrinal | Char(1) |  |  | Y/N | Is it a condition related to the endocrinal system ? |
| Muscular | Char(1) |  |  | Y/N | Is it a condition related to the muscular system ? |
| Skeletal | Char(1) |  |  | Y/N | Is it a condition related to the skeletal system ? |
| Diagnosis\_Date | Date |  | NN | 2015-12-10 | Date when the condition was diagnosed |
| Condition\_Status | Varchar (50) |  | NN | Cured/ On medication | Describes whether the member’s condition is cured or if he is still on medication |
| Member\_ID | Int | PFK | NN | 1,2,3...999 | Member’s unique identification number |

**Contact\_Info:**

The table stores personal contact information of all members, subscribers and providers with Contact\_ID as the primary key along with non nullable attributes such as Name, Gender, phone number and other nullable attributes**.** The data types are mainly variable characters.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Contact\_ID | Int | PK | NN | 1,2,3...999 | Unique Contact ID |
| First\_Name | Char (20) |  | NN | John, Jacob | First name of the person |
| Middle\_Name | Char (20) |  |  | Carl, Von | Middle name of the person |
| Last\_Name | Char (20) |  | NN | Brown, | Last name of the person |
| Gender | Char (2) |  | NN | M,F | Gender of the person |
| DOB | Date |  | NN | 1993-103-03 | Date Of Birth |
| Mobile\_Phone | Varchar (10) |  | NN | 1235678320 | Mobile Number |
| Home\_Phone | Varchar (10) |  |  | 123567832 | Home phone number, if any |
| Work\_Phone | Varchar (10) |  |  | 576894738 | Phone number which the person uses exclusively for work purposes. |
| Email\_ID | Varchar (30) |  | NN | abc@ 123.com | Email ID of the person to send policy updates, billing statements, promotional mails, etc. |
| Address\_Line1 | Varchar (20) |  | NN | Ward St., Smith St. | Street address, apartment number of the person’s residence |
| Address\_Line2 | Varchar (20) |  |  | #411, #567 | Address of the person’s residence |
| City | Varchar (20) |  | NN | Cambridge | City where the person lives |
| State | Char(2) |  | NN | MA,CA | State where the person lives |
| Zip\_Code | Varchar (5) |  | NN | 02120 | Zip code of the state where the person lives |
| Subscriber\_ ID | Int | FK | NN | 1,2,3...999 | Subscriber’s unique identification number |
| Member\_ID | Int | FK | NN | 1,2,3...999 | Member’s unique identification number |
| Provider\_ID | Int | FK | NN | 1,2,3...999 | Provider’s unique identification number |

**PROVIDER**

A health care provider is a professional (an individual practitioner/ hospital/ clinic/ laboratory etc) that provides health care service to a member and his/her dependents.

**Business rules**

|  |  |
| --- | --- |
| **Scope** | **Rule** |
| IS01 | A provider can be a facility or a doctor |
| IS02 | 2. A provider can serve any number of members |
| IS03 | A provider can have multiple Specializations |
| IS04 | A provider has one address |
| IS05 | A A provider’s visiting hours must be recorded |
| IS06 | A A provider needs to check the background and authentication of the member |
| IS07 | 6 A provider charges appropriately for the service provided |
| IS08 | 7 A provider needs to check the scope of treatment |
| IS09 | A A provider’s visiting days in a week must be recorded |
| IS10 | A provider maybe in or out of the insurance company’s network of providers |
| IS11 | A provider’s start date of practice must be recorded |
| IS12 | A provider is identified by a unique NPI |
| IS13 | A provider’s alma mater must be recorded |
| OS01 | 3. Mode of payment for receiving payment maybe be included |

**Provider**

A doctor can be defined as a certified health care practitioner who is either employed at a hospital or owns a clinic. A doctor is a type of provider.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| NPI | Int | PK | NN | 1234567890, etc | Each doctor’s unique identification number |
| Visit\_Days | Varchar (10) |  | NN | 9:00am - 9:00pm, etc | Working days of the Provider |
| Visit\_Hours | Varchar (50) |  | NN | 8:00-5:00, 12:00-6:00 | Working hours of the provider |
| In\_Network | Char(1) |  | NN | Y,N | Is provider in the insurance company’s network? |

**Specialization:**

Doctors are categorized into different types according to their specialization. There are doctors for heart problems, mental problems and for bone and muscle problems to name a few. Having a proper knowledge of these different specialty areas of doctors will be quite useful when you need to make a visit to the doctor for an illness. Certain designations for doctors are common. These include general practitioner who is a neighborhood doctor and provides medicines for almost any ailment, and trauma doctors who offer medical aid in emergency rooms.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Spec\_ID | Int(10) | PK | NN | 1234, etc. | Unique specification number |
| Spec\_name | Varchar (30) |  | NN | Neurosurgeon | Name of the specialisation |
| Spec\_Description | Varchar (100) |  |  |  | Description of the specialisation |

**Provider Specialisation:**

This table is a bridge between Provider table and specialisation table. This table includes the ‘Practising\_Since’ attribute through which the provider’s experience in the field may be ascertained.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Spec\_ID | Int | PFK | NN | 1,2,3...999 | Subscriber’s unique identification number |
| NPI | Varchar (10) | PFK | NN | 1765439870 | National Provider Identifier |
| Practising\_Since | Date |  | NN | 2000-01-01 | Date of starting practice |
| Alma\_Mater | Varchar (50) |  | NN |  | Institution of certification |

**FACILITY:**

A medical care facility is a Health organization or clinic or hospital that provides health services to a member through a provider.

**Business Rules**

|  |  |
| --- | --- |
| **Scope** | **Rule** |
| IS01 | Each facility has a unique Facility\_ID |
| IS02 | Each service provided by the facility has a unique Service\_ID |
| IS03 | A facility can be identified by more than one provider |
| IS04 | A Facility has only one address |
| IS05 | Facilities must be provided regardless of the member’s plan |
| IS06 | A facility provides its services regardless of the ethnicity, gender or nationality of the member |
| IS07 | A facility must specify whether it is in or out of network |
| IS08 | The nature of a service is defined by an ICD\_10 code |
| IS09 | Service\_Amount must be recorded for every service that is rendered |
| IS10 | Treatment\_Start\_Date and Treatment\_End\_Date must be recorded |
| IS11 | An ICD\_10\_CM code must be associated for every diagnosis |
| IS12 | A facility may be a clinic owned by an individual provider |
| OS01 | The education level of the employees at facility |

**Facility:**

A health care facility is a hospital, a clinic or an institution that provides healthcare services to its members.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Facility\_ID | Int | PK | NN | 1,2,3...999 | Facility’s unique identification number |
| Facility\_Name | Varchar (50) |  | NN | MGH, BCH | Name of the hospital |
| Network\_Status | Char (1) |  | NN | Y/N | Is the facility within the insurance company’s network |
| Phone\_Number1 | Varchar (10) |  | NN | 1234567890 | Primary contact number |
| Phone\_Number2 | Varchar (10) |  | NN | 1234321567 | Secondary contact number |
| Phone\_Number3 | Varchar (10) |  |  | 1928374659 | Tertiary contact number |
| Address\_ Line1 | Varchar (30) |  | NN | #345 | Address of the facility |
| Address\_ Line2 | Varchar (30) |  |  | Columbus Ave | Address of the facility |
| City | Varchar (15) |  | NN | Boston | City of the facility |
| State | Char (2) |  | NN | MA | State where the facility is in |
| Zip | Char (5) |  | NN | 02210 | Zip code of the state |

**Services:**

A service is the diagnosis or treatment provided to a member on account of a health complaint. Each service is charged an amount according to the facility or provider where it is provided.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Service\_ID | Int | PK | NN | 1,2,3...9999 | Unique service identification number |
| Diagnosis\_ Date | Date |  | NN | 2005-04-28 | Date of diagnosis |
| Treatment\_ Start\_Date | Date |  | NN | 2005-05-03 | Date of starting treatment |
| Service\_ Amount | Money |  | NN | 1000 | Cost of treatment |
| Treatment\_ End\_Date | Date |  |  | 2005-07-03 | Last date of providing treatment |
| NPI | Int | PFK | NN | 3456789012 | Provider’s unique identification number |
| Facility\_ID | Int | PFK | NN | 1,2,3...999 | Facility’s unique identification number |
| ICD\_10\_CM | Varchar(7) | FK | NN | AA98 | International Classification of Diseases |
| Bill\_ID | Int | PFK | NN | 1,2,3...999 | Unique bill number |

**ICD:**

International Classification of Diseases is a set of codes that identify each health condition. The codes here are used to describe the nature of health condition of the member being serviced.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| ICD\_10\_CM | Varchar (7) | PK | NN | AA01, GA34 | International Classification of Diseases |
| ICD\_10\_CM\_ Desc | Varchar (max) |  | NN |  | Description of the ICD code |

**Billing\_Info:**

BIlling\_Info table holds the information of the final amount the member has to pay for the services being offered. The Bill\_Amount is the final amount after the claim\_amount is being subtracted from the total service\_amount.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Bill\_ID | Int | PK | NN | 1,2,3...999 | Bill’s unique identification number |
| Bill\_Amount | Money |  | NN | 300 | Total bill amount |
| Bill\_Date | Date |  | NN | 2016-09-24 | Date when the bill was generated |
| Claim\_ Amount | Money |  | NN | 100 | Amount of claim |
| Payment\_ Date | Date |  | NN | 2016-09-24 | Date of payment |

**PLANS**

A healthcare plan or policy is a coverage that protects a member by providing reimbursement for the expenses incurred due to an illness or injury.

**Business Rules:**

|  |  |
| --- | --- |
| **Scope** | **Rule** |
| ISO1 | A plan is identified by a unique Plan\_ID |
| IS02 | A plan can be associated with more than one facility |
| IS03 | A plan has a finite plan period during which its services are valid |
| IS04 | A company can have multiple plans |
| IS05 | A plan should include general procedure of using policy |
| IS06 | The term price is for duration of 12 months |
| IS07 | The term price depends on the policy period of policy |
| IS08 | Subscription\_Date is the date when payment is made and plan is bought |
| IS09 | There are 3 types of plans- Platinum, Gold and Silver |
| IS10 | Only the Platinum plan provides ESA eligibility for the member |
| OS01 | Facilities provided to member by provider |

**Plans:**

A healthcare plan or policy is a coverage that protects a member by providing reimbursement for the expenses incurred on account of an illness or injury. We have three plans in our database namely: Platinum, Gold and Silver. Each of these plans has a unique set of values for copays, premium, coinsurance, deductible and premium. All members having the Platinum insurance plan are ‘HSA Eligible’ due to the plan’s high deductible among the three.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| PlanID | Int | PK | NN | 01282 | Plan’s identification number |
| Platinum | Char (1) |  | NN | Y/N | Plan type |
| Gold | Char (1) |  | NN | Y/N | Plan type |
| Silver | Char (1) |  | NN | Y/N | Plan type |
| Plan\_ Description | Varchar (max) |  | NN | “Covers dental and vision...” | Description of plan including terms and conditions |
| HSA\_ Eligibility | Char (1) |  | NN | Y/N | Health Savings Account eligibility |
| Premium | Money |  | NN | 70,100 | Amount paid for insurance every month |
| Coverage | Money |  | NN | 5000 | Service amount paid for by the insurance plan |
| Deductible | Money |  | NN | 500 | The amount to be paid for services before plan starts to pay |
| Subscriber\_ ID | Int(10) | PFK | NN | 02435 | Subscriber’s unique identification number |
| Member\_ID | Int(10) | PFK | NN | 01224 | Treated member’s identification number |

**Policy**

Policy information includes the vital information of policy attributes, policy\_num is PK and connection to members table through member ID. The other attributes are the policy types, date, duration and applied deductibles depending on the price package subscriber is opting for the member.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Policy\_ID | int | PK | NN | 1,2,3...999 | Policy unique id |
| Subscription\_Date | Date |  | NN | 2017-06-05 | Date of subscribing for policy |
| End\_Date | Date |  | NN | 2021-06-05 | Date when the policy expires |
| Copay | Money |  | NN | 25,10 | Fixed amount for a general doctor visit |
| Coinsurance | Money |  | NN | 100,250 | Share of payment made against a claim |
| Specialist\_ Vist\_Copay | Money |  |  | 40,60 | Fixed amount for a general doctor visit |
| Generic\_ Prescription\_ Copay | Money |  |  | 20,30 | Fixed amount for obtaining a prescription |
| Emergency\_ Room\_Copay | Money |  |  | 100,120 | Fixed amount for using an emergency room |
| Member\_ID | Int | PFK | NN | 1,2,3...999 | Member’s unique identification number |
| Plan\_ID | Int | PFK | NN | 1,2,3….999 | Subscriber’s unique identification number |

**Claims**

Claims are the utilization of insurance mainly based money reimbursement from insurance provider. The claims can be as many as possible until it reaches the cap limit of insurance policy**.**

**Business Rules:**

|  |  |
| --- | --- |
| **Scope** | **Rule** |
| IS01 | Claims reimbursements are provided by health insurance company |
| IS02 | Facilities can apply for claims to health care company |
| IS03 | Facilities can apply as many times as possible until it reaches the cap limit |
| IS04 | Claims are usually processed in 45 days of time |
| IS05 | Claims are directly paid to provider or facility |
| IS06 | Claim\_Status must be tracked |
| IS07 | Claim\_Status\_Description explains whether a claim has been accepted or rejected by the insurance provider |
| IS08 | The Claim\_Amount is always subtracted from the Service\_Amount |
| OS01 | Service quality provided by the providers to the member |
| OS02 | Duration required by the member to file the claim |

**Claims\_History:**

The Claim\_History table holds a record of all the claims made to the insurance provider for the services received by the member. The Claim\_Status\_ Description holds a detailed information of why a claim was rejected or delayed or why the entire claim amount was not reimbursed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | **Data Type** | **Key** | **Nullability** | **Sample Data** | **Description** |
| Claim\_ID | Int(10) | PK | NN | 1456,2379 | Unique identification Number for each facility |
| Claimed\_Date | Date |  | NN | 3/24/17 | Date when the insurance is claimed |
| Claim\_Amount | Money |  | NN | $200, etc. | Amount, claimed from the insurance |
| Claim\_ Details | varchar (max) |  | NN | X-Ray, MRI | Miscellaneous details regarding insurance claim. |
| Claim\_Status | varchar (max) |  | NN | Accepted, Rejected, In Progress | Step by step description of claim procedure |
| Claim\_Status\_ Description | Date |  |  | 3/24/17, etc. | Date when the insurance is claimed. |
| Member\_ID | Int | FK | NN | 1,2,3...999 | Member’s unique identification number |
| Service\_ID | Int | FK | NN | 1,2,3...999 | Unique service identification number |
| Bill\_ID | Int | FK | NN | 1,2,3…... 999 | Bill’s unique identification number |
| Facility\_ID | Int | FK | NN | 1,2,3...999 | Facility’s unique identification number |

**Relationships:**

|  |  |  |
| --- | --- | --- |
| **Relationship between** | **Type** | **Is this an identifying relationship?** |
| Member - Health\_History | 1:M | YES |
| Member - Claim\_History | 1:M | NO |
| Member - Policy | 1:M | YES |
| Subscriber - Group\_Sub | 1:M | YES |
| Subscriber - Member | 1:M | NO |
| Group\_Name - Group\_Sub | 1:M | YES |
| Provider - Provider\_Specialisation | 1:M | YES |
| Provider - Services | 1:M | YES |
| Contact - Member | 1:1 | NO |
| Contact - Subscriber | 1:1 | NO |
| Contact - Provider | 1:1 | NO |
| Plan - Policy | 1:M | YES |
| Specialisation - Provider\_Specialisation | 1:M | YES |
| Services - ICD | 1:M | NO |
| Services - Billing\_Info | 1:1 | YES |
| Services - Claim\_History | 1:M | NO |
| Facility - Services | 1:M | YES |

**Documents’ Revision History:**

**Member Document:**

Adding a subscriber\_info entity was a major change in the second version of the member document. A subscriber\_ID was also created and a one-to-many relationship with member\_ID was established.

This current version includes the member’s address as attributes in the member table itself and deletes the earlier unique table for the same.

The policy\_info table was renamed as ‘plan’ and made as part of the plan document.

**Provider Document:**

The entity NPI (National Provider Identifier) replaced the doctor\_ID as a more technical identification number in the second version of the provider document.

**Plan Document:**

The second version of plan document excluded the ‘company’ entity and ‘plan\_info’ kept intact.

**Facilities Document:**

This document has only excluded the rehabilitation\_center present in the first version.

**Project Draft Document:**

Made changes to Subscriber’s table and arranged the TDM in more organized way.  Removed the Nurses table and included the Specialization table in first draft.