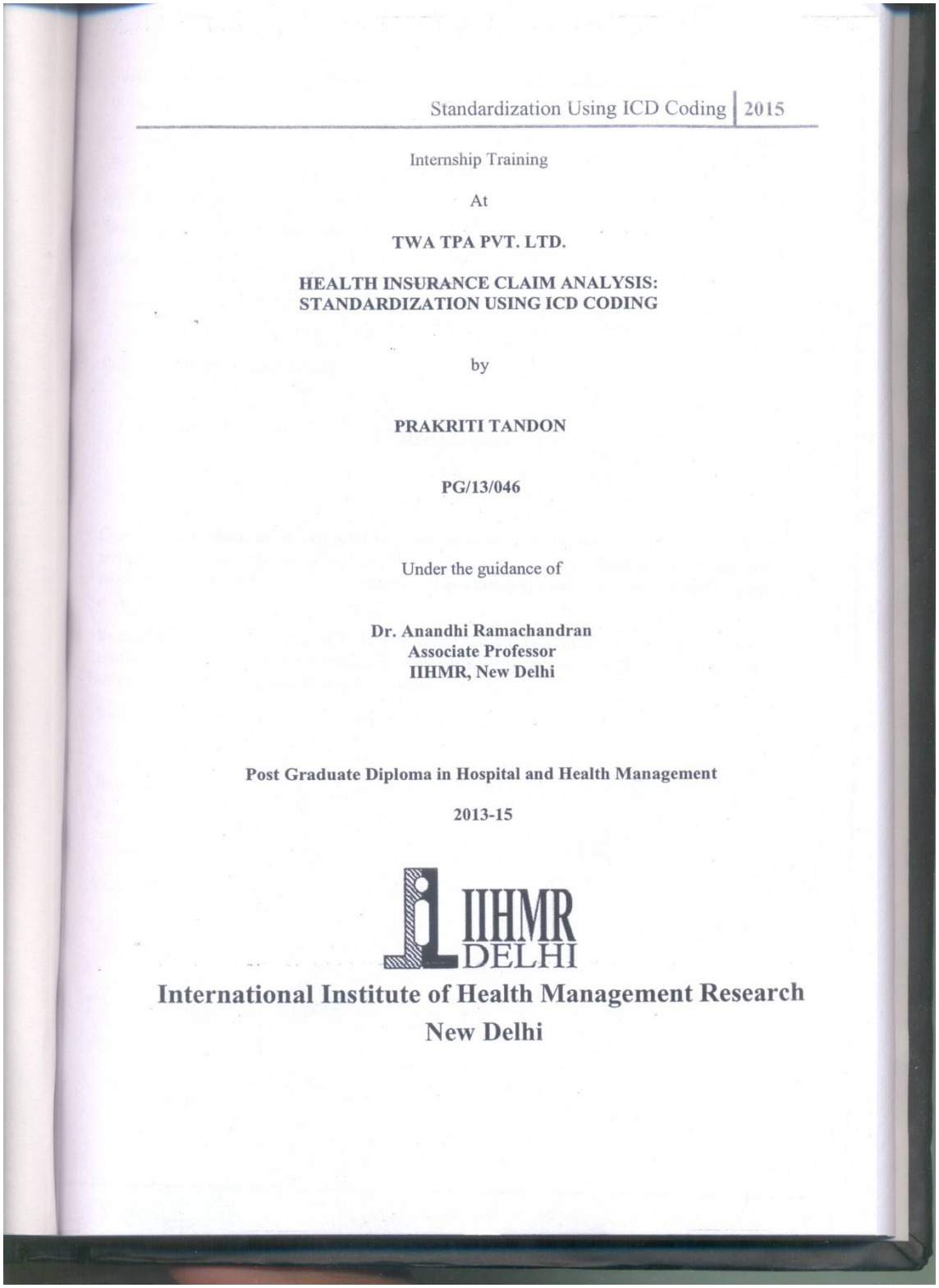


Standardization Using ICD Coding | 2015

Internship Training

At

TWA TPA PVT. LTD.

HEALTH INSURANCE CLAIM ANALYSIS: STANDARDIZATION USING ICD CODING

by

PRAKRITI TANDON

PG/13/046

Under the guidance of

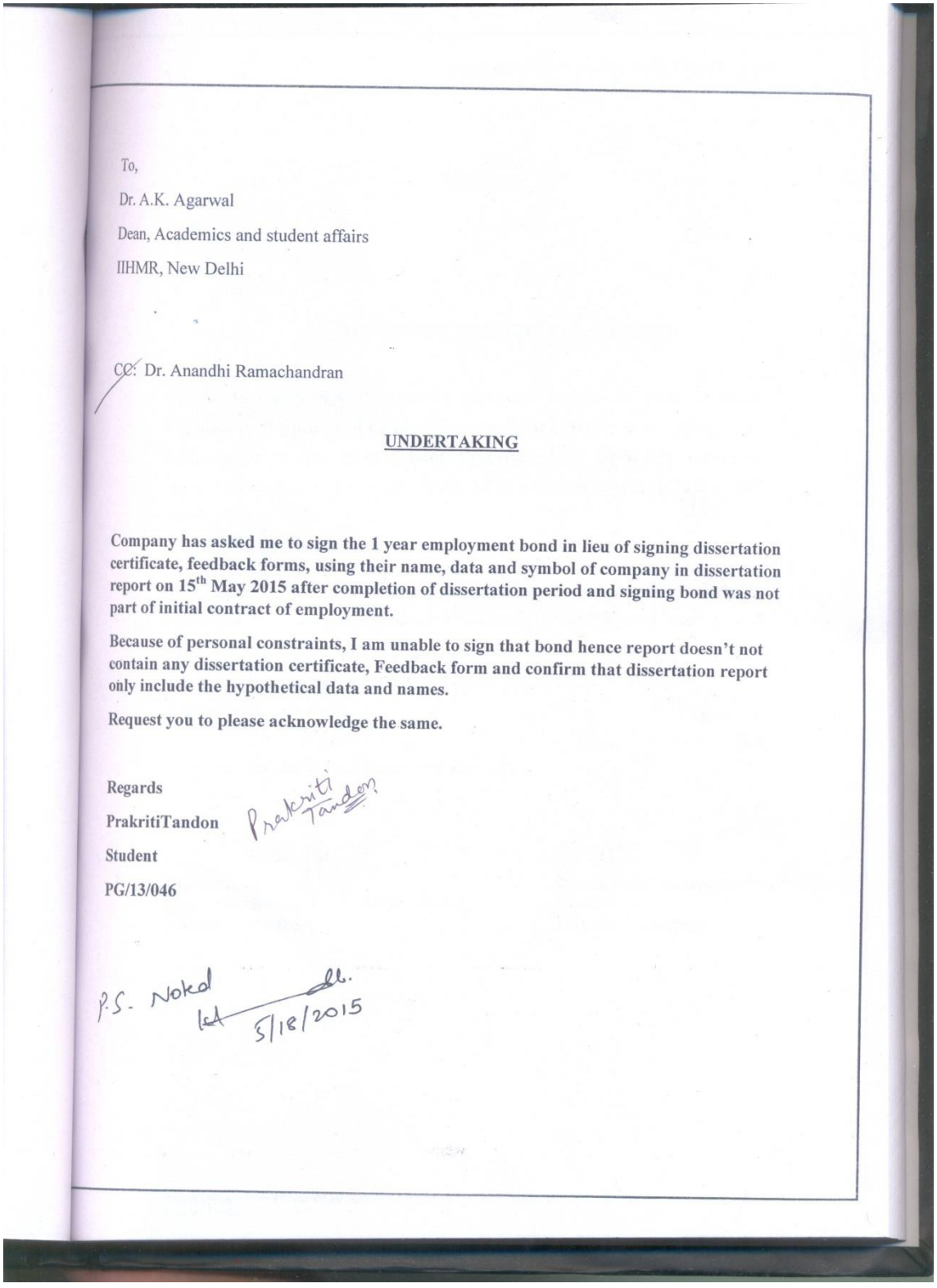
Dr. Anandhi Ramachandran
Associate Professor
IIHMR, New Delhi

Post Graduate Diploma in Hospital and Health Management

2013-15

IIHMR DELHI

International Institute of Health Management Research
New Delhi



To,

Dr. A.K. Agarwal

Dean, Academics and student affairs

IIHMR, New Delhi

CC: Dr. Anandhi Ramachandran

UNDERTAKING

Company has asked me to sign the 1 year employment bond in lieu of signing dissertation certificate, feedback forms, using their name, data and symbol of company in dissertation report on 15th May 2015 after completion of dissertation period and signing bond was not part of initial contract of employment.

Because of personal constraints, I am unable to sign that bond hence report doesn't not contain any dissertation certificate, Feedback form and confirm that dissertation report only include the hypothetical data and names.

Request you to please acknowledge the same.

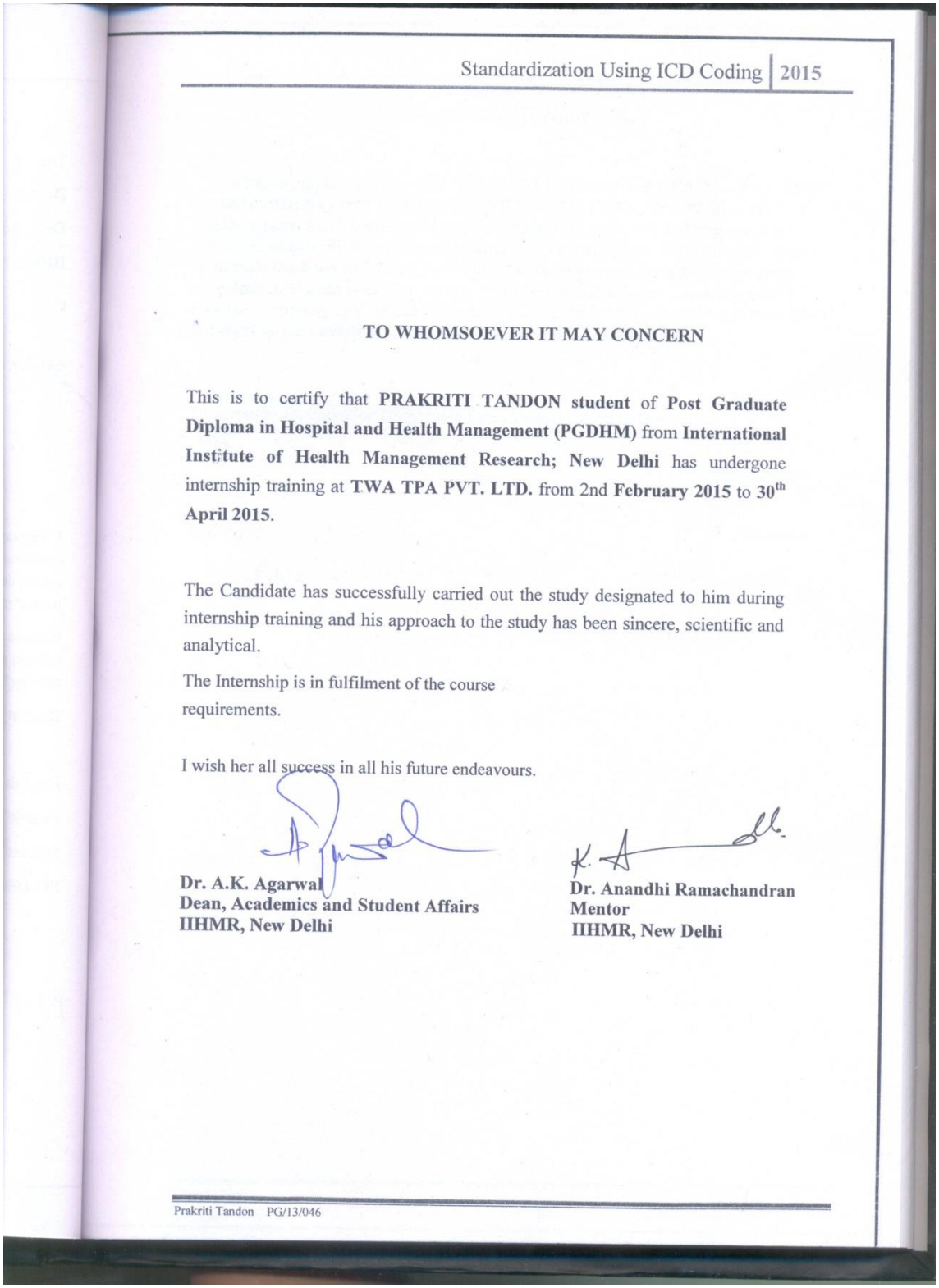
Regards

PrakritiTandon Prakriti Tandon

Student

PG/13/046

P.S. Nokal 5/18/2015



Standardization Using ICD Coding | 2015

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **PRAKRITI TANDON student** of **Post Graduate Diploma in Hospital and Health Management (PGDHM)** from **International Institute of Health Management Research; New Delhi** has undergone internship training at **TWA TPA PVT. LTD.** from 2nd **February 2015** to **30th April 2015**.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

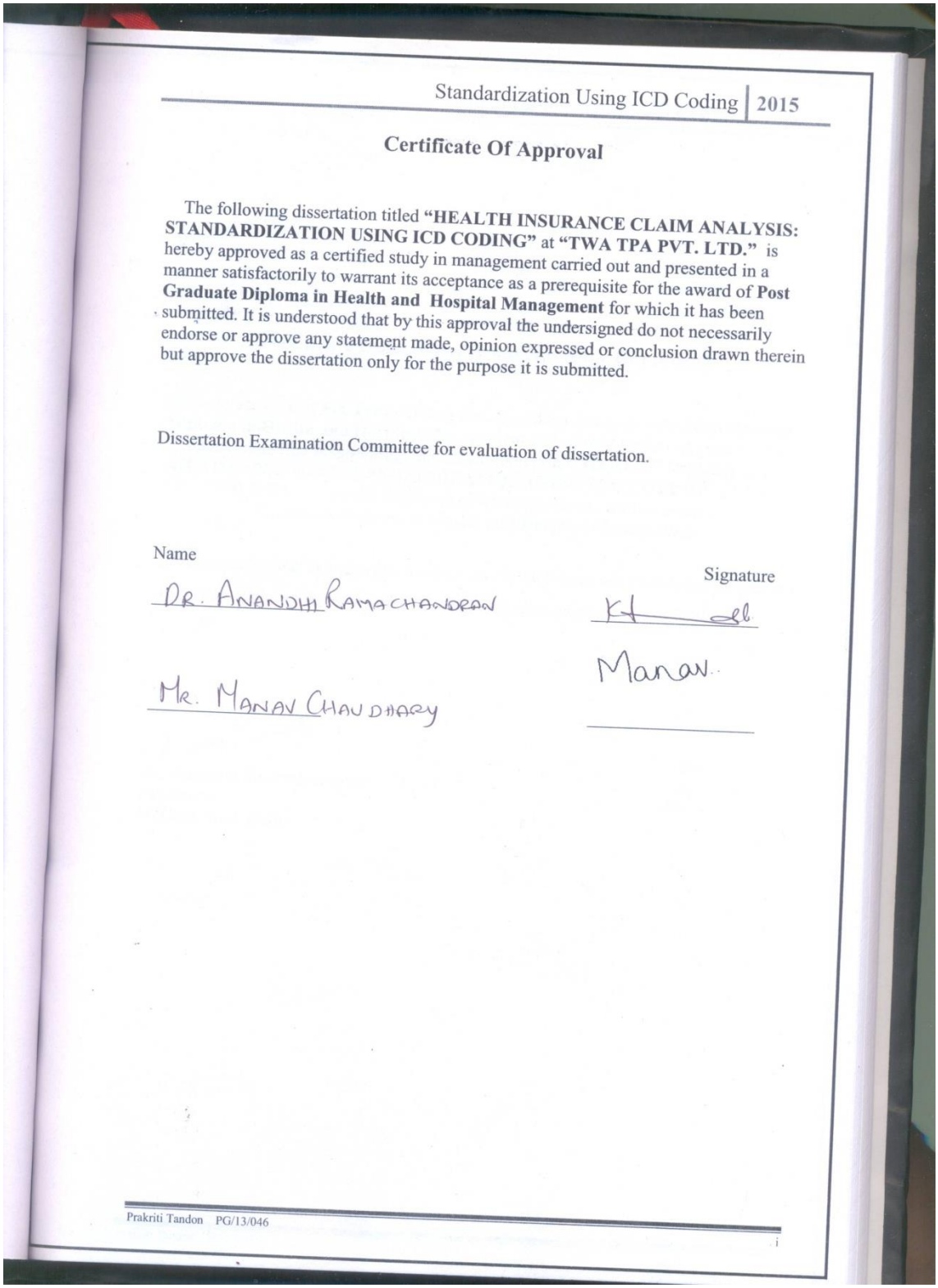
The Internship is in fulfilment of the course requirements.

I wish her all success in all his future endeavours.

Dr. A.K. Agarwal
Dean, Academics and Student Affairs
IIHMR, New Delhi

Dr. Anandhi Ramachandran
Mentor
IIHMR, New Delhi

Prakriti Tandon PG/13/046

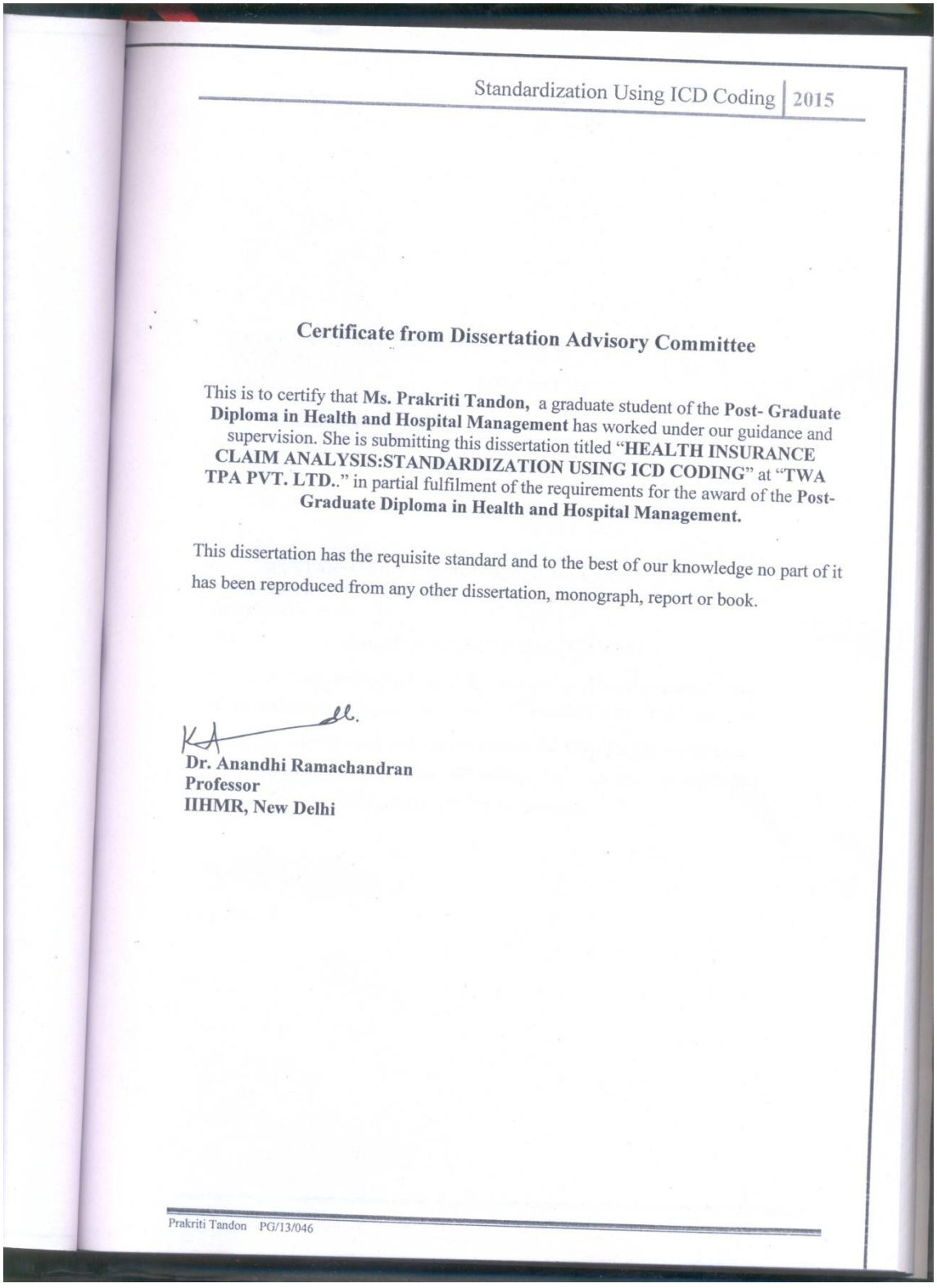


Certificate Of Approval

The following dissertation titled **"HEALTH INSURANCE CLAIM ANALYSIS: STANDARDIZATION USING ICD CODING"** at **"TWA TPA PVT. LTD."** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
DR. ANANDHI RAMACHANDRAN	
MR. MANAV CHAUDHARY	Manav



Standardization Using ICD Coding | 2015

Certificate from Dissertation Advisory Committee

This is to certify that **Ms. Prakriti Tandon,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. She is submitting this dissertation titled "**HEALTH INSURANCE CLAIM ANALYSIS:STANDARDIZATION USING ICD CODING**" at "**TWA TPA PVT. LTD.**." in partial fulfilment of the requirements for the award of the **Post-Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Dr. Anandhi Ramachandran
Professor
IIHMR, New Delhi

Prakriti Tandon PG/13/046

Standardization Using ICD Coding | 2015

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,

NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled HEALTH INSURANCE CLAIM ANALYSIS:STANDARDIZATION USING ICD CODING
and submitted by PRAKRITI TANDON
Enrollment No. PG/13/046

under the supervision of Dr. ANANDHI RAMACHANDRAN

for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 2nd February 2015 to 30th April 2015

embody my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Prakriti Tandon

Signature

ACKNOWLEDGEMENT

The Dissertation opportunity I had with TWA TPA PVT. LTD. was a great chance for learning and professional development. Therefore, I consider myself as a very lucky individual as I was provided with an opportunity to be a part of it. I am also grateful for having a chance to meet so many wonderful people and professionals who led me though this internship period.

Bearing in mind previous I am using this opportunity to express my deepest gratitude and special thanks to the MD of TWA TPA PVT. LTD., who in spite of being extraordinarily busy with his duties, took time out to hear, guide and keep me on the correct path and allowing me to carry out my project at their esteemed organization and extending during the training.

I express my deepest thanks to Manager, MMG for taking part in useful decision & giving necessary advices and guidance and arranged all facilities to make life easier. I choose this moment to acknowledge her contribution gratefully.

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude to my mentor, Dr. Anandhi Ramachandran for her careful and precious guidance which was extremely valuable for my study both theoretically and practically.

I hereby convey my thankfulness and obligation to all those who have rendered their valuable time, help, support and guidance to meet this project completion. A special thanks to the Almighty, My Parents and My husband Mr. Abhishek Tandon for the completion of my project. I perceive as this opportunity as a big milestone in my career

development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to attain desired career objectives. Hope to continue cooperation with all of you in the future,

Prakriti Tandon

PG/13/046

Gurgaon

30th April, 2015

ABSTRACT

Health Insurance Claim Analysis-Standardization Using ICD Coding

Prakriti Tandon

Background behind the Study: Health insurance in India is emerging as a booming field in today's world where health is at stake for the accomplishment of the busy life schedules we lead. TPA has a major role in the health insurance industry, helping to settle the claims which are raised against the services being provided to the insurers by the health care service providers. TPA analyses its financial year data to check on what business is it achieving as well as what strategies are to be taken to increase the market share. Data analysis becomes difficult as the data is not standardized as per the ICD coding for the disease, which is used throughout the world.

Objectives of the study: The specific objective of this study is **to standardize the data in terms of synchronized ICD Codes with the disease names and disease groups and thus, the performed procedures.**

Research design/Methodology: The dissertation study is purely based on the quantitative data.

Sample size: The health insurance claim dump has been analyzed for two financial years, 2013-2014 and 2014-2015. The number of claims for the year 2013-2014 is 43110 and for the subsequent year are 79149.

Sampling technique used: Complete Sampling Method

Secondary data sources: Hypothetical data prepared with the help of the claim dump of the organization.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF SYMBOLS AND ABBREVIATIONS

CEO: Chief Executive Officer

CM: Content Management

CMS : Content Management System

COO: Chief Operating Officer

DNFB: Discharged Not Final Billed

F&U: File & Use

GEMs: General Equivalence Mappings

GIC: General Insurance Corporation

GIPSA: General Insurers Public Sector Association

ICD: International Classification of Diseases

ID: Identity

IRDA: Insurance Regulatory and Development Authority

IT: Information Technology

IVR: Interactive Voice Response

PSP: Preferred Service Provider

Ltd.: Limited

MD: Medical Director

MLC: Medico-Legal Case

MMG: Medical Management Group

MOU: Memorandum of Understanding

NCR: National Capital Region

OCR: Optical Character Recognition

PAN: Permanent Account Number

PCS : Personal Communications Services

PPN: Preferred Provider Network

Pvt.: Private

SLA: Service Level Agreements

SOC: Schedule of Charges

TPA: Third Party Administrator

WHO: World Health Organization

w.r.t.: with respect to

LIST OF ANNEXURES

PART-1

INTERNSHIP REPORT

1.1 ORGANIZATION PROFILE

1.1.1 Introduction

TWA TPA PVT. LTD., is a company promoted by **TWA group** is engaged in the managed healthcare facilitation & has obtained a license from IRDA for TPA activities (Health) and offers its clients a wide array of services and products in the following areas:

- Third Party Administration (Health) Services (TPA)
- Claims Handling, Management & Back Office Operations
- Health Care Assistance Services
- Outpatient Health Care Facilitation & Management
- Second Medical Opinion
- Cost Containment Services
- Preferred Service Provider (PSP) Networks

1.1.2 Promoters

TWA TPA PVT. LTD. has been promoted by TWA Group. TWA Group (consisting of TWA Motor Ltd., TWA Infrastructure Developers Ltd) is promoted by Mr. XYZ and Mr. DEF.

1.1.3 Management

The Company has appointed, Mr. PSW, a Management graduate and a qualified Insurance professional, as its CEO. He has wide experience in the TPA Industry and is assisted by qualified professionals from the field of Insurance and Healthcare.

1.1.4 Vision

- To increase medical care capacity
- To augment the existing Product/Service
- To provide the client with 24 hrs. service
- To provide one stop shopping for all medical needs
- To resolve the medical problem in a fast, efficient and convenient manner (improve employee productivity).
- To render cost containment services to our clients on their medical claims
- To offer total Health & Intermediary Insurance & administrative solutions.

1.1.5 Mission

To provide excellent services to its clients

1.1.6 Technology Platform

TWA TPA PVT. LTD. has an online portal as well. It is accessible for public as well as for Employee and Clients, too. Tailor-made software developed in-house with full web-based access for Claims Tracking, On-Line Access and Querying**.**

Each claim file has its unique code, which is alphanumeric, contains financial year, policy type-cashless/ reimbursement, serial number, location of the claim coming from and the initials of the insurance company from which the claim has been raised.

Card Converter facility is to convert the present alpha-numeric number to digit card number.

Benefits to convert Card Number :

- No queue for phone accessing the claim records.
- IVR Support for real-time access.

- Claim intimation on phone through IVR.

Card Retrieve facility is to retrieve the new digit card number based on the alpha-numeric Card Number.

1.1.7 Network

TWA TPA PVT. LTD. is currently having 6000+ Providers in its network, which is one of the largest amongst existing TPAs.

Cashless services will be given at over 200 cities all over India. TWA TPA PVT. LTD. TPA is in the process of empanelling over 2000+ Medical Providers in its network, which would be the largest amongst TPAs.

1.1.8 Location

Headquartered in Gurgaon with branch offices in New Delhi, Noida, Faridabad ,Brindavan, Jaipur, Mumbai, Kolkata, Bangalore, Chennai & Cochin.

At the marked places, TWA TPA PVT. LTD. TPA / TWA Group have offices / facilities that are fully geared up to provide TPA services. Apart from above all leading cities like Chandigarh, Lucknow, Pune, Ahmedabad, Hyderabad and Chennai will have resident representative / doctor retainer for servicing the insured.

Figure #1 Location map

.Currently, they are capturing Northern, Southern, Western and Central part of India by placing offices in strategic locations. They do have an opportunity to take over Eastern part of India.

1.1.9 Competitive and Strategic Advantages

- Country-wide network
- Integrated web-based software
- Expertise in Claim Processing
- All India Infrastructure
- Ability to obtain Healthcare in India at discounted rates
- Cashless facilitation at over 6000 Hospitals/ Nursing Homes.
- Web enabling/Mobile Application for claims tracking and on-line access
- Medical team of over 100 Doctors

1.1.10 Services

TWA TPA PVT. LTD. offers the clients with the following service:

- Cashless medical service facilitation at network hospital up to the limit authorized by Medi-claim/hospitalization Insurance
- Claim processing & reimbursement, for non-network hospitals
- Computerized Medical History records
- Online assistance to Insured during hospitalization & filing of claim documents
- Hospitals/ nursing Homes all over India

1.1.10.1 Service Level Agreements:

At TWA TPA PVT. LTD. TPA, there are a group of professionals dedicated to our mission of providing excellent services to our clients (Corporate as well as Retail). For deliverance of services the SLA (Service Level Agreements) are in place, which would be signed with various Insurance companies and the corporate groups.

1.1.11 Claim Procedure and Process

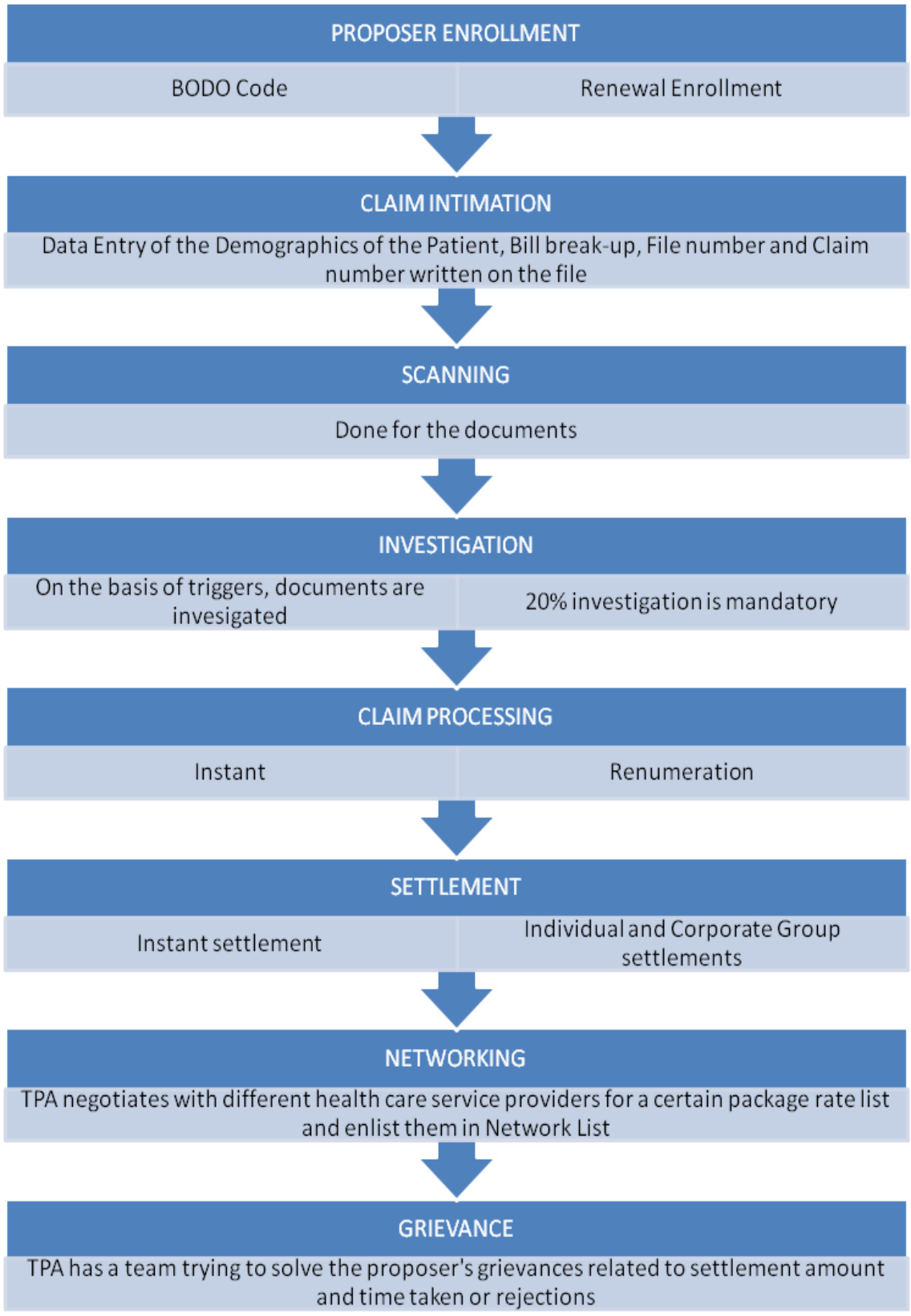


Figure #2 Workflow

1.1.11.1 Organisational Workflow

1.1.11.1.1 Enrolment Process

Enrolment is the first step in the policy process.

Policies can be claimed:

1. By Executives
2. Through E-mails
3. Through courier

BODO Code: Each office has a unique code with respect to the insurance company under which the policies will be documented.

Cards are been provided to the insurers. The card numbers have different codes for each insurance company and each claim is been initialized with different codes, specified for the insurance company and the relation with the proposer.

The docket and the enrolled policy date are searched in the system.

Renewal enrolment s done with the purpose of renewing the policy before the expiry date of the policy and is extended to 15 days.

1.1.11.1.2 Claim Intimation

Documents are received from the hospital, in case of Instant and from the proposer, in case of Remuneration. Data entry is done which includes demographics, bill break-up where individual bills are entered in system.

Instant- Payment is directly done to the hospital.

Remuneration- Payment is done to the insured person.

1.1.11.1.3 Scanning

After the intimation, documents are scanned.

Documents to be scanned:

1. Discharge Summary
2. Claim Form- for what the proposer is claiming
3. Scanned Bills
4. Payment receipt

1.1.11.1.4 Investigation

Usually, in Instant cases TPA are directly in contact with the health care service providers, forging is almost impossible but in the case of Remuneration cases, fraudulent cases are common.

Tariff rates in each hospital are different for insured people.

There are two types of fraudulent cases:

1. Soft- Patient is admitted and hiding his history or inflation done.
2. Hard- Patient is not admitted.

If health care service provider is non-cooperative, then it is given as non-compliance.

But there is a clause that anything, anytime documents can be asked from the health care service providers by TPA.

In case of Red flag hospitals, investigation is done at the time of inflation.

Remarks are written and discussed.

Instant Claims: Photo ID, Age, Diagnosis, Payable or not are checked. If any document is missing, then query is sent. Approval is given to the hospitals and non-payable is paid by patients.

All documents that are actually payable are sent to TPA. Payment is released.

1.1.11.1.5 Intimation Submission

Cashless cases are immediately intimated.

Intimation number is generated.

- **Arbitration Clause**- If your opinion is considered wrong by the insured person, and then he will go to the Grievance Department.
- **Reasonable and Customary Expenses**-
    - With new technologies round the world, healthcare has also enhanced. If a claim comes for a robotic surgery, the claim amount is payable or not depends on the reason for the procedure to have taken place.
- **Pre-authorization Form**- Request form from hospital which has to be duly filled by the insured person with his/her details.
- **MLC form has** to be filled by the insurer in cases of drunken accidents.
- **Intentional Self Injury** involves cases with drunken drivers known to the insurer.
- **Claim Form** is filled in Remuneration cases, which has two parts-Parts A, to be filled by insurer for their details and Part B, to be filled by health care service provider with the billing details and others.
- **Doctor Noting-** If disease not diagnosed earlier, but in present, then it has to be mentioned.
- **GIPSA Approval-** Claims have to be payable according to the rates the TPA has negotiated with the health care service providers, i.e., according to the package.
- **Conditional Approval-** If the health care service provider is not able to justify the increased package rate, and then the patient is given the *conditional approval* to get discharged.

1.1.11.1.6 Networking

There are 7000 hospitals in TWA TPA PVT. LTD. TPA Pvt. Ltd. network.

Process of empanelment is taken in control by Networking Team.

Criteria for empanelment:

- MOU- Memorandum Of Understanding
    - Health care service provider name (with 12 articles)
- PSP Form- Preferred Service Provider Form
- Parameter Form- includes details like number of beds, type of rooms, etc.
- SOC-Schedule Of Charges , also known as Tariff or Rate List
- PAN Card copy-required for transaction
- Cancelled Cheque Copy-required for transaction

Health care service providers come with a request and they are asked for their profiles along with their registration certificates, bank details, biomedical waste and PAN card of the organization. Data is physically verified, Parameter form is sent and auditing is done physically and checked for its standard by a field visit. Organization is asked to remove all the lacunae and then, organization is applied for empanelment.

Request goes at the Branch level and then to the Head Office, Gurgaon, where the empanelment is done and approved.

- ✓ PPN (Preferred Provider Network)

    TWA TPA PVT. LTD. TPA Pvt. Ltd. has 11 cities of India in this list, nodal regions being Chandigarh, Indore and Jaipur.

    Rates of PPN hospitals are increased every 2 years w.r.t the market rates and those procedures which do not come under PPN rates are discounted.

    Concept of PPN came into existence to maintain the claim ratio, which is claim value to claim premium.

1.1.11.1.7 Grievance

Grievances come to the Networking team and are further settled by COO.

1.1.11.1.8 Data Analysis

Data is analyzed on the disease prevalence in the age groups, regions, gender, etc., which helps in cost containment.

1.1.11.2 Cashless Facilitation Procedure

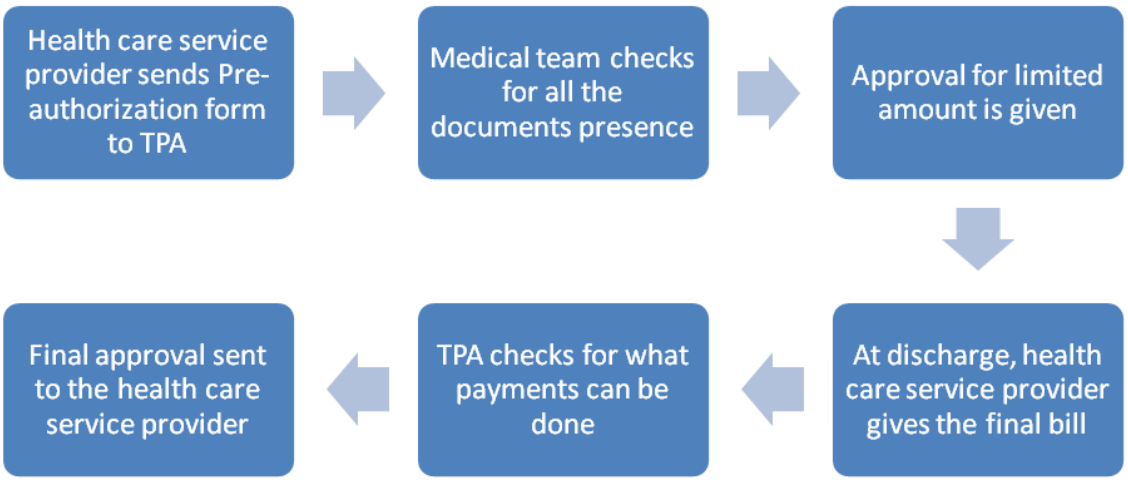


Figure #3 Cashless Facilitation Process

- Receipt & Record of Data & Member Enrolment (Issuance of Photo ID Card)
- Pre-Admission Authorisation after checking Doctor Prescription, Admission Form, Hospital Information
- Claim form is submitted with Original bills along with Doctor Prescription, Diagnostic Reports & Discharge summary

1.1.11.3 Claim Reimbursement

When Cash Less Facility is not accorded or Insured goes to a Non Network Hospital then following documents are required:

- Claim Forms
- Original bills with Diagnostic reports
- Doctor's First prescription
- Discharge summary/certificate

1.1.11.4 Control Check List

- Original Bills are verified & scrutinised against Standard Discounted Tariff
- Cost Containment by Medical procedure audit & Bill scrutiny
- 2nd Medical opinion taken for complicated cases
- Repricing done on case to case basis.

Cash Less medical services lead to:

- Bill Scrutiny before release of payment
- Discounted Rates
- Eliminates Reimbursement Frauds
- Medical Procedure Audit / Elimination of unnecessary prescriptions
- Case Management

All the above leads to Cost Containment and lowers the Claims/Premium Ratio.

1.2 AREA OF ENGAGEMENT

The area of engagement during the internship period was in Data analysis sub-department under the Operations department. The job assigned was to keep track of overall data records of financial years 2013-2014 and 2014-2015 for the region Delhi-NCR and then analyse them on basis of each insurance company, relatively with different factors. The internship phase was divided in to two phases-

1.2.1 Undergoing training for the complete workflow: For the organization to settle All the claims on time and without disturbing the good relations with the clients, There is a workflow which has to be followed by the organization employees. In The first week of the joining, training was held to get the knowledge of the Complete workflow (as explained in Figure#2) which is as follow:

a. PROPOSER ENROLLMENT
b. CLAIM INTIMATION
c. SCANNING
d. INVESTIGATION
e. CLAIM PROCESSING
f. SETTLEMENT
g. NETWORKING
h. GRIEVANCE

1.2.2 **Involvement in the Project**: After undergoing training of the complete workflow of the claim processing, there was involvement in the project which required the task of analyzing the data on basis of various headers like hospital name, proposer names, disease names, procedures performed, age and gender, settled amount, and then find the gaps which make the analysis difficult to be analysed, which was found to be standardization of data as data entry was made wrong.

1.3 REFLECTIVE LEARNINGS

TWA TPA PVT. LTD. as an organization provides an individual with the platform to learn in the tasks they are involved with. During the entire duration of internship, there has been a lot of individual learning's from the organization. Also the experience of the mentor has been very useful for knowledge transfer.

Some of the learning's during the internship are as follows:

- Ground issues faced by the data analyst when the data is not standardized.
- Proper knowledge been given to the data entry operators about the ICD Coding.
- Creating a common platform for all the employees where the ICD codes are enlisted for their references.
- Automation and synchronization of the system w.r.t. the disease names and ICD Codes to protect wrong entries.

PART-2

DISSERTATION

REPORT

CHAPTER 1

DISSERTATION OVERVIEW

Dissertation Overview

The dissertation was conducted in TWA TPA PVT. LTD. TPA Pvt. Ltd. situated in Gurgaon. Currently they are using ICD-10 coding older version, which needs to be updated to version 2015. The following dissertation report focuses on the current issues faced by the data analyst and the Operations team regarding standardization of data and what all can be done to curbate these issues.

1.1 PROBLEM STATEMENT

The issue starts at the very basic level of the database recording, i.e., at DATA ENTRY level when the Intimation for the Claim is done.

Human beings, having a network of many systems are highly prone to many diseases for each body system as well as for each organ. Sometimes, there are various names for a single disease.

Though the data entry operators at the time of joining are trained how to and what to enter for what disease and how to operate system, being from a non-medical background they sometimes make wrong entries.

Operating system has the code detecting system. For a claim, the data-entry operator enters a code which is in the system itself been detected and the disease name, disease group are auto-filled, with the ICD coding been entered.

When the data-entry operator is not clear of the disease code, he enters wrong code and thus, the wrong entry for the disease name and disease group which sometimes do not match the procedure been performed, which is manually entered. Also, it doe s not match the case study which is entered by the doctor from the medical team.

ICD Coding plays a major role in the standardisation and synchronization of the data, which has to be analyzed and mapping of existing codes need to be done with International Codes.

For each disease, ICD coding has been prepared by WHO which has latest version 2013, not yet applied anywhere in the world.

India has many hospitals running on ICD-09 version, on whom government is working to change it in ICD-10 Coding systems.

TWA TPA PVT. LTD. TPA Pvt. Ltd. Works on ICD-10 coding version 2015, but only the broader categories are been applied, i.e. decimal versions are not been used to avoid any further discrepancies in the data entry.

1.2 OBJECTIVES OF THE STUDY

1.2.1 SPECIFIC OBJECTIVE

- To standardize the data in terms of synchronized ICD Codes with the disease names and disease groups and thus, the performed procedures.

1.2.2 GENERAL OBJECTIVES

- To analyze the claims database for the most prevalent disease in age groups and gender.
- To analyze the claims database for the highest paid procedures.
- To analyze the claims database for the highest footfall in health care service providers.
- To analyze the claims database for the corporate groups claims on all the factors.

1.3 SCOPE OF STUDY

The data analyzed will help the TPA Organization to negotiate on rates of the procedures being performed on the patients accordingly. It will help them get more clients and satisfied customers.

1.4 NEED OF STUDY

Even though health insurance claims have been increasing day-by-day, keeping a record of all the data in terms of the number of claims and settled amount w.r.t. the hospitals, corporate groups, disease names and the procedures performed has been a tedious task to accomplish. The standardization of data in terms of the disease name and the ICD coding is absent. Even if the automation system has been applied, there is absence of synchronization in the disease name and the ICD codes to that of the procedure performed.

So, to have a deeper knowledge of the ICD coding system to be synchronized with the data of the health insurance claims, this study was conducted.

1.5 ASSUMPTIONS

- Training for the data entry has been provided to each and every new hires.
- Data entry operators do not undergo the case study already mentioned in the file to enter the disease name and the procedure performed correctly.
- The data entry operators do not have much knowledge about the disease names and under which disease group they fall into. Also they do not have any idea about which procedures can be performed for what disease.

- ICD Code list has not been assembled and placed in a single file for the data entry operator's reference.
- The drop-down menu allows the data entry operators to select whatever disease name they select as per their understanding.
- The automation in the system as far as ICD coding is considered, is on the basis of the disease name first, ICD Code later.

1.6 DATA SOURCES

Secondary data source:

Data of the claims of the region Delhi-NCR of the financial years 2013-2014 and 2014-2015 have been taken up as reference from the organization's database.

1.7 TIME FRAME

The claim data is of all the major insurance companies being catered for services by the TPA Organization in the given financial year 2013-2014 and 2014-2015, starting from 1st April and ending at 31st March for the region DELHI & NCR.

The number of claims for the year 2013-2014 is 43110 and for the subsequent year are 79149.

Hypothetical data has been prepared with the help of the claim dump of the organization.

1.8 WORK PLAN

It includes the Activity Table and the Gantt chart for the complete project.

Activity	Estimated Time Taken	Expected Outcome
Joining in the organization	0 day	Internship started
Defining the problem	4 days	Problem defined
Literature survey	19 days	Proposal ready
Methodology applied	4 days	Finalization of tool to collect data.
Synopsis writing	5 days	Proposal documented
Synopsis submission	0 day	Approval of the proposal
Data collection	31 days	Claim data gathered
Data compilation and analysis	14 days	Bar graphs, pie charts, tables, etc.
Documentation	8 days	Preparation of the report
Submission of first draft to the advisor	0 day	Approval of the report
Presentation on the project	0 day	Final approval by the dissertation team

Table #1 Activity table for project plan

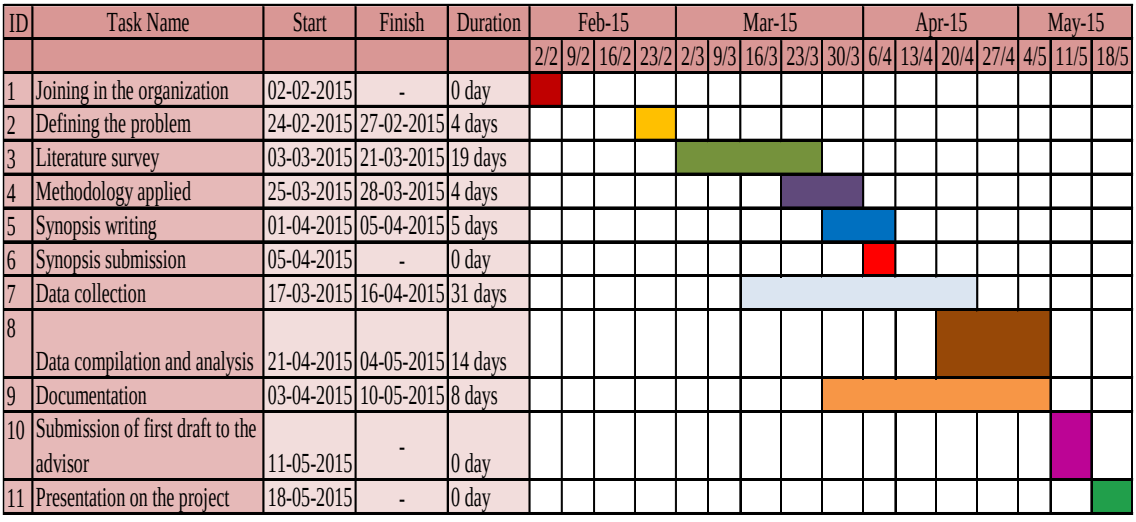


Figure #4 Gantt chart for Dissertation Project

1.9 CHALLENGES OF THE STUDY

Research use of insurance claims presents unique challenges and requires a series of value judgments which are intended to improve the data quality.

- Hypothetical data has been used to protect the customer profile as per the organizations' norms and rules. Lack of trust by TPA and insurance companies in the research partners do not allow them to use proprietary data as they fear the remote chance of inappropriate release.
- Secondary data has been used for the confidentiality norm.
- The data used has been restricted to a single region-Delhi NCR and 2 financial years, 2013-2014 and 2014-2015, only due to data release confidentiality.
- Insurance companies are subject to frequent mergers and acquisitions, thus we find the opportunity for incomplete data is substantial and must be investigated. Most of these represented missing utilization data instead of bona fide instances of low insurance use
- Although complete data is desirable, there is no single source for this information at the insurance companies. Source of the data can't be used as per prior confidentiality norm of the organization and also because of the disconnect between enrolment and claims information storage at the insurance companies, the enrolment data may be present in the file but the claims data may not have been assimilated in
- Claims data are dependent on professional ICD coding. In the clinical setting, some diagnoses may be missed, different professional types may have different coding patterns, and not all coding may be accurate. When using a multi-

company combined claims database, variations in benefit structures between insurance companies may affect utilization analysis.

- the inability to assess outcomes-
    - First, outcomes are not explicitly included in claims data, so outcomes information must be inferred from existing information. However, claims information lack data on severity and duration of illness prior to the diagnosed event. This limits the ability to compare patients with like illness. In addition, while we believe that information on claims such as ICD codes are generally accurate; they function best when evaluating large numbers of clients with similar conditions rather than in evaluating individual outcomes. Finally, our ability to do substantial error checks was very limited.

CHAPTER 2

PROJECT OVERVIEW

2.1 INTRODUCTION

The Insurance industry in India has experienced a sea change since emergence of private participation. Health insurance is a mechanism to FINANCE the health care needs of the people. To manage the problems arising out of increasing health care costs, the health insurance industry had assumed a new dimension of professionalism with TPA. The core service of a TPA is to ensure better services to policyholders. Their basic function is to act as an intermediary between the insurer and the insured and facilitate cash less service at the time of hospitalization. Introduction of TPA benefits both the insured and the insurer in the healthcare industry. While the insured benefits from the 24 x 7 service, the insurer is benefited by reduction in administration cost.

Policy holders welcome introduction of TPA since they receive enhanced facilities at same cost. Once the policy has been issued:

From the perspective of the insurance companies, the TPA benefits them by:

- Bringing down their claim ratio by reducing false claims as well as standardizing treatment cost.
- Playing a role in availing data for actuarial calculations, because they are the recipients of morbidity data that are linked with individual characteristics such as age.
- One of the **disadvantages** of cashless facility is that it increases the capacity of insured to incur higher costs at the time of illness, and therefore there is a tendency to inflate the cost of treatment. This has been limited to a certain extent with the presence of co-payments in which 10 percent of the expenses are paid by insured and 90 percent are paid by the insurance company.

To monitor, mitigate and control the risk of fraudulent claims and higher cost, it is very important to have the standardization of disease through coding and have the implementation of same coding globally across hospitals, clinics, Insurance companies and third party administrators.

WHO has introduced the concept of International Classification of Diseases (ICD) it is the standard diagnostic tool for epidemiology, health management and clinical purposes.

ICD is used by physicians, nurses, other providers, researchers, health information managers and coders, health information technology workers, policy-makers, insurers and patient organizations to classify diseases and other health problems recorded on many types of health and vital records, including death certificates and health records. **ICD is used for reimbursement and resource allocation decision-making by countries.**

All Member States use the ICD which has been translated into 43 languages. Most countries (117) use the system to report mortality data, a primary indicator of health status.

Currently ICD 10 is released by the WHO and with the intent of continuous improvement ICD 11 will be released in 2017.

ICD -10 has been implemented but the quality of capturing the data is not adequate to support the claims or the data which has been entered to support the ICD codes is wrong.

This lead to further investigation of claims, delay in processing the claims or may impact adversely to companies if not being investigated properly.

2.2 BACKGROUND

Since health care services are very expensive in India and abroad, health insurance policies are Risk-management tools to cover the adhock expenses coming on account of health issues.

Figure #5 Benefits of Health Insurance

2.2.1 Third-Party Administrator (TPA)

A firm that handles various types of administrative responsibilities, on a fee-for-services basis, for organizations involved in cash flow programs. These responsibilities typically include claims administration, loss control, risk management information systems, and risk management consulting.

2.2.2 Medi-Claim

Offered by the four GIC Subsidiaries, Medi-claim is a Health Insurance Product. After the introduction of the TPA (Third Party Administration) scheme this product has gained a strong edge over all the products in the category due to Cash Less Services and speedier settlement of claims. Keeping in view the current insurance scenario in the country Medi-claim is the only comprehensive medical assurance product offered by the risk underwriters.

Medi-claim Insurance is a cover, which takes care of the hospitalization expenses subject to maximum sum insured of the Insured in respect of the following situations:

A. In case of a sudden illness.
B. In case of an accident.
C. In case of any surgery, this is required in respect of any disease which has arisen during the policy period.

2.2.2.1 Salient features of Medi-claim

A. Reimbursement for Hospitalization due to disease/ surgery.
B. Reimbursement for Domiciliary Hospitalization expenses in lieu of Hospitalization.
C. Pre-hospitalization expenses up to 30 days.
D. Post-hospitalization expenses up to 60 days.

E. Age limit: 5 years to 80 years. Children between the ages of 3 months to 5 years can be covered provided one or both parents are covered concurrently. Key aspects of health insurance.

2.2.3 Key Aspects of Health Insurance

2.2.3.1 Payment Options

- **Direct Payment or Cashless Facility**: Under this facility, the person does not need to pay the hospital as the insurer pays directly to the hospital. Under the cashless scheme, the policyholder and all those who are mentioned in the policy can undertake treatment from those hospitals approved by the insurer.
- **Reimbursement at the end of the hospital stay**: After staying for the duration of the treatment, the patient can take a reimbursement from the insurer for the treatment that is covered under the policy undertaken.

2.2.3.2 Cost and Duration

- **Policy price range**: Insurance companies offer health insurance from a sum insured of Rs. 5000 for micro-insurance policies to a higher sum insured of Rs. 50 lakhs and above. The common insurance policies for health insurance are usually available from Rs. 1 lakh to Rs. 5 lakhs.
- **Duration**: Health insurance policies offered by non-life insurance companies usually last for a period of one year. Life insurance companies offer policies for a period of several years.

2.2.4 Role Of TPA

The TPA and the Insurance Companies are linked in such a way that the TPA agencies provide services to the Insurance companies, checking and verifying the claims been aroused by the proposers.

Although, verification and first-stage approval is carried on by TPA Agency, the final approval is done by the insurance company only.

As a whole, we can say that the TPA Agencies are the mediators between the Insurance Companies and Proposers.

In the scenarios of Health Insurance claims, there is involvement of one-more party, i.e., Health care service providers, which may include hospitals, clinics, nursing homes and clinics, diagnostic laboratories and maternity homes.

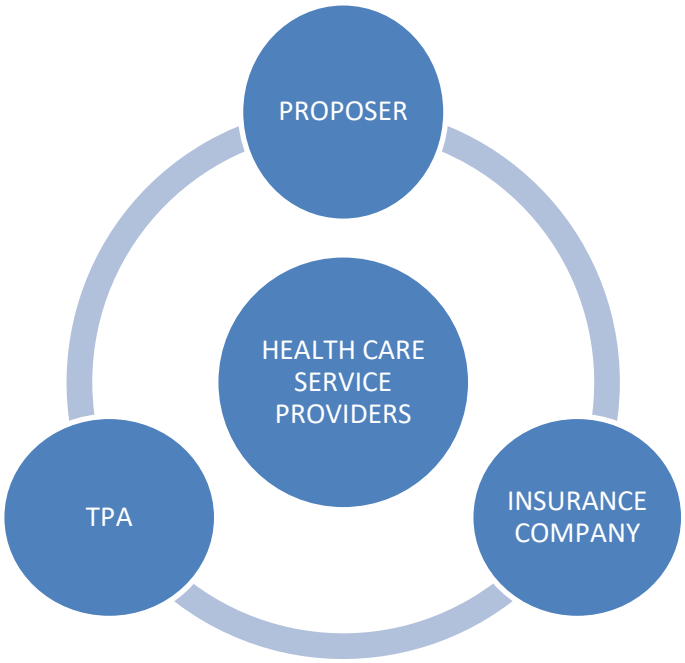


Figure #6 Roles of Parties involved in Insurance Claim Process

The Insurance Companies hire TPA Agencies; provide them with the details of all the insurers of their company. All the claims which come to Insurance Companies are directly forwarded to the TPA for the verification of the claims, whether the claim amount is genuine, according to the stay in hospital for the particular disease and the amount being asked for the medicines and the performed procedure, or forge.

Also, the insurance companies sell their insurance to the insurers as **individual** and **corporate** insurance.

1. Individual Insurance Holder- The people who buy health insurance from the insurance company on self and propose for the claim.
2. Corporate Insurance Holder- The people who are insured under corporate group policies intimate the insurance company routing through corporate group.

2.2.5 Health Care Cost Data Analysis/ Interpretation

From the employer's perspective, increased medical expenditures ultimately translate into higher health insurance premiums for employees and the employer. Therefore, one goal of a workplace health program is to improve employee health, which may result in lower health care expenditures and cost savings for the company.

A review and analysis of health care cost data can be a helpful tool for employers to understand the most common and expensive health conditions where claims have been made; examine trends in costs over time; and compare utilization rates to local, state or national norms. However, not all employers offer medical care insurance to employees or have the time, resources, or expertise to review and analyze this type of information internally or with external assistance. This may be particularly true for small and medium sized employers. For example, 98% of businesses with 200 or more employees offer health benefits, but only 59% of businesses with less than 200 employees offer

these benefits.[10] For those employers where a review of health care and pharmaceutical claims data is not feasible or practical, other forms of workplace health assessment such as employee health surveys, environmental assessments or a review of time and attendance data can provide some indication of the health needs, issues, and barriers of employees. This information can provide a foundation from which to plan and implement the workplace health program.

For those who are able to use health care expenditure data, it can be helpful in the development and evaluation of a workplace health program in several ways:

1. Analysis of current health care expenditures will inform the company management of the costs of various diseases and conditions. By identifying disease areas that contribute significantly to the total health care costs, results of the analysis can be used to identify areas that should be targeted by an intervention (e.g., diabetes, heart disease). The claims data can also serve as a companion piece to employee self-report data, correlating the reported health needs and behaviours of the workforce
2. Analysis of trends in health care expenditures (specifically, pre and post-intervention; changes in the rate of growth over time) will assist with assessing the effects of the health promotion program(s) on employee health and their health expenditures
3. Analysis of health care and pharmaceutical claims data can be used for benchmarking to see a) whether the health claims in one worksite are comparable to or differ from claims from other worksites within the same organization; b) how the organization's health claims compare with other employers doing comparable work; and c) whether there is a pattern of claims that might identify areas of concern in the specific work environment

2.2.6 Guidelines on Standardization in Health Insurance

Health insurance addresses a major area o f public concern. Although it is rapidly growing, access to health insurance still remains limited and add to it complaints especially due to variable interpretations o f key policy terms are enormous. In order to address the expectation of public more effectively, the Authority propose to stipulate the following in respect o fall health insurance policies issued by life and general insurers in the country.

1. Standard Definition for 46 commonly used terms in health insurance policies:

Standard terms would reduce ambiguity, enable all stakeholders to provide better services and enable customers to interact more effectively with insurers, TPAs and providers. All insurers shall adhere to the stipulated definitions.

2. Standard Nomenclature and Procedures for Critical Illnesses:

In view of resolving the differences in the definitions o f terms on Critical Illnesses adopted by the different insurers which are creating confusion in the minds o f consumers and the industry especially at the time when insurers and re-insurers have to arrive at a point where lump sum payment is made, 11 Critical Illness terms have been standardized to be adopted uniformly across industry, if offered under the product. All products offering the 11 critical illness coverage shall ensure that definitions o f the stated 11 terms are in line with the stipulated definitions.

3. Standard Pre-authorization and Claim form:

A common industry wide pre-authorization and claim form will significantly streamline Process at all stages. This will enhance the ability o f providers to obtain a timely prior authorization. By implementing it in an optical character recognition (OCR) format, the ability to transfer data from a handwritten paper based form to IT systems has been enhanced thus reducing the data entry issues for TPAs and insurers. Every company

shall attach set of claim forms along with policy terms and conditions to the policyholder.

4. Standard List o f Excluded Expenses in Hospitalization Indemnity policies:

Hospitalization indemnity products are the commonest products in the Indian market and account for most o f the health insurance sold in the country. The standard listing of 199 excluded items, an area which has otherwise been fairly variable in its interpretation and implementation, has been finalized. However, Insurers may include these exclusions, if the product design allows for, or if the insurer wants to include these as part o f hospitalization expenses.

5. Standard File and Use Application Form, Database Sheet and Customer Information Sheet:

The existing F&U form used by the non-life insurers is designed keeping in view largely the characteristics o f Non Life products other than Health. With this, the essential information like the sum insured, the minimum and maximum age, term o f the product etc that gets captured in the F&U form is very minimal. In order to capture the relevant product design information, the modified File and Use Application form along with the Database sheet and Customer information sheet shall be submitted under File and Use procedure by the insurers. This circular supersedes all the existing circulars /guidelines on File and Use Procedure for health insurance products offered by life insurers/non-life insurers/health insurers. All the insurers shall comply with the File and Use procedure specified in this circular.

6. Standard agreement between TPA & Insurer and Provider (Hospital) & Insurer:

The insurers enter into agreements with the TPAs for health services under health insurance contracts and with the Providers (Hospitals) for health care services under

health insurance contracts. The Service Level Agreement shall include the minimum standard clauses.

This is issued under section 14(2) o f IRDA Act, 1999 and shall be effective from 1st July 2013 for group products and 1st October 2013 for other products.

2.3 RESEARCH QUESTIONS

The following are the research questions this dissertation study would be dealing with:

- How can we prevent the wrong data entries?
- How can be the disease names standardized?
- Will it be possible to automatically synchronize the system for disease names with ICD codes and procedure?

CHAPTER 3

RESEARCH METHODOLOGY

Research Methodology

The study was conducted in TWA TPA PVT. Ltd.

TPA and health insurance companies work in a very close proximity when it comes to dealing with the clients.

The study has been conducted on the insurers, which include both the corporate groups and the individual insurers.

Delhi/NCR region, being the capital of the country India has been always in the eyes of all the industries, from media to the health care service providers. Also, the region has people coming from all over the country, residing and earning to live.

In a TPA, the claims data in a financial year have a very vital role in planning for the next financial year in terms of increasing the network, the commission amount and also the wellness programs being carried on by the TPA organization, for better bonding with the corporate groups and the health care service providers.

3.1 RESEARCH DESIGN: The dissertation study involves analysis of secondary data. It is a Quantitative data

3.1.1 Pre-Requisite of the Study: For this study, complete study of the workflow and process of claim processing has been done so as to know the gaps and loopholes of the system which results in issues with data analysis.

3.2 TYPE OF DATA:

Secondary Data Collection: Secondary data is the data that has been already collected by someone else for a different purpose. The required data is extracted from the available resources.

The data has been used for two continuous financial years 1st April 2013-31st March 2014 and 1st April 2014-31st March 2015 for the region Delhi/NCR for better

knowledge of the claims w.r.t. the settled amounts, prevalence of diseases and the number of claims for each group and hospital

3.3 SAMPLE

3.3.1 Sample Size: The number of claims for the year 2013-2014 is 43110 and for the subsequent year are 79149.

3.3.2 Sampling Technique Used: The data for the study has been hypothetically created from the base level database of the TPA organization, thus being a secondary data which has been analyzed. . The study has been quantitatively conducted using the Sampling method.

3.3.3 Tools Used For the Study

Microsoft Office Excel 2007

3.3.4 Challenges of the Study

Research use of insurance claims presents unique challenges and requires a series of value judgments which are intended to improve the data quality.

- Hypothetical data has been used to protect the customer profile as per the organizations' norms and rules. Lack of trust by TPA and insurance companies in the research partners do not allow them to use proprietary data as they fear the remote chance of inappropriate release.
- Secondary data has been used for the confidentiality norm.
- The data used has been restricted to a single region-Delhi NCR and 2 financial years, 2013-2014 and 2014-2015, only due to data release confidentiality.
- Insurance companies are subject to frequent mergers and acquisitions, thus we find the opportunity for incomplete data is substantial and must be investigated. Most of these represented missing utilization data instead of bona fide instances of low insurance use

- Although complete data is desirable, there is no single source for this information at the insurance companies. Source of the data can't be used as per prior confidentiality norm of the organization and also because of the disconnect between enrolment and claims information storage at the insurance companies, the enrolment data may be present in the file but the claims data may not have been assimilated in
- Claims data are dependent on professional ICD coding. In the clinical setting, some diagnoses may be missed, different professional types may have different coding patterns, and not all coding may be accurate. When using a multi-company combined claims database, variations in benefit structures between insurance companies may affect utilization analysis.
- the inability to assess outcomes-
    - First, outcomes are not explicitly included in claims data, so outcomes information must be inferred from existing information. However, claims information lack data on severity and duration of illness prior to the diagnosed event. This limits the ability to compare patients with like illness. In addition, while we believe that information on claims such as ICD codes are generally accurate; they function best when evaluating large numbers of clients with similar conditions rather than in evaluating individual outcomes. Finally, our ability to do substantial error checks was very limited.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

Analysis and Interpretation:

The quantitative data collected was as in Secondary mode.

Generally, the TPA organization caters its services to various insurance companies.

Here, the analysis and interpretation has been done on the data of the health insurance claims of the financial year 2013-2014 and 2014-2015.

- All numbers are hypothetical and represent the market behaviour.

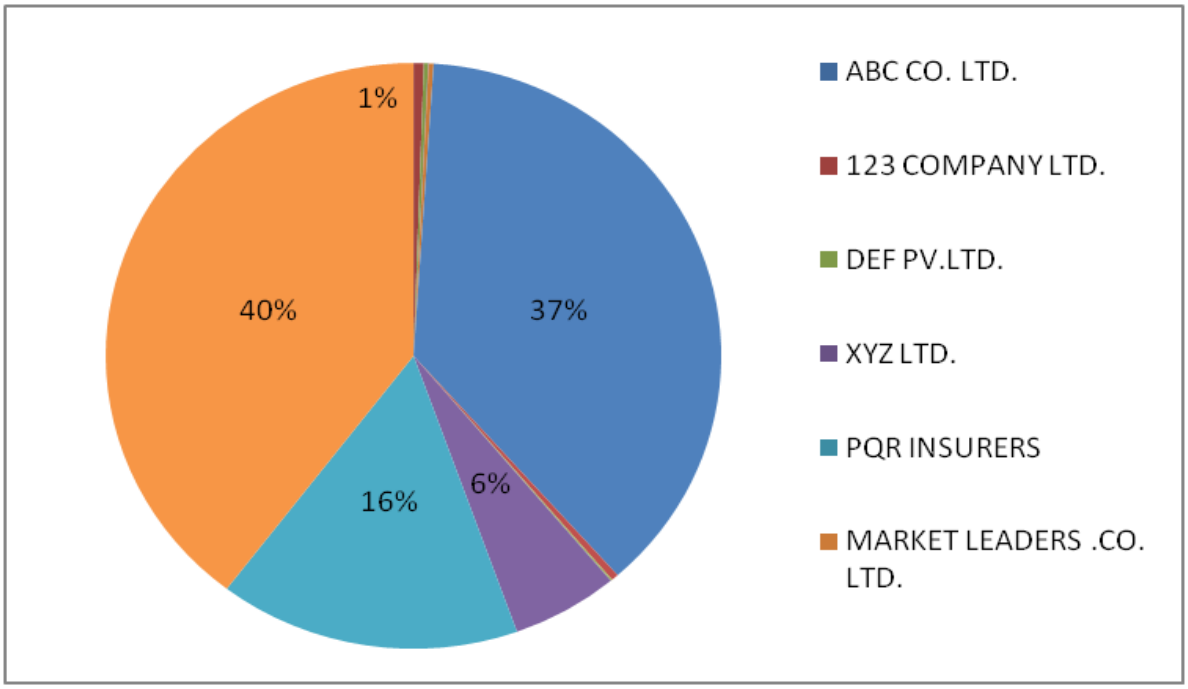


Figure #7 Graph depicting Top 6 Insurance Companies health claims

Even though the insurance companies are having their own percentage of market share, TPA has its own share for the insurance companies for the number of claims which come over for the settlement.

The maximum number of claims for both the years collectively, has come for the insurance Company MARKET LEADERS CO. LTD., which is about 40% of the total number of claims. This indicates that the TPA organization gets a very great business from this insurance company. With such insurance companies which contribute in major business of TPA, there are certain short players as well, who do not have more than even about 1% in the TPA's business.

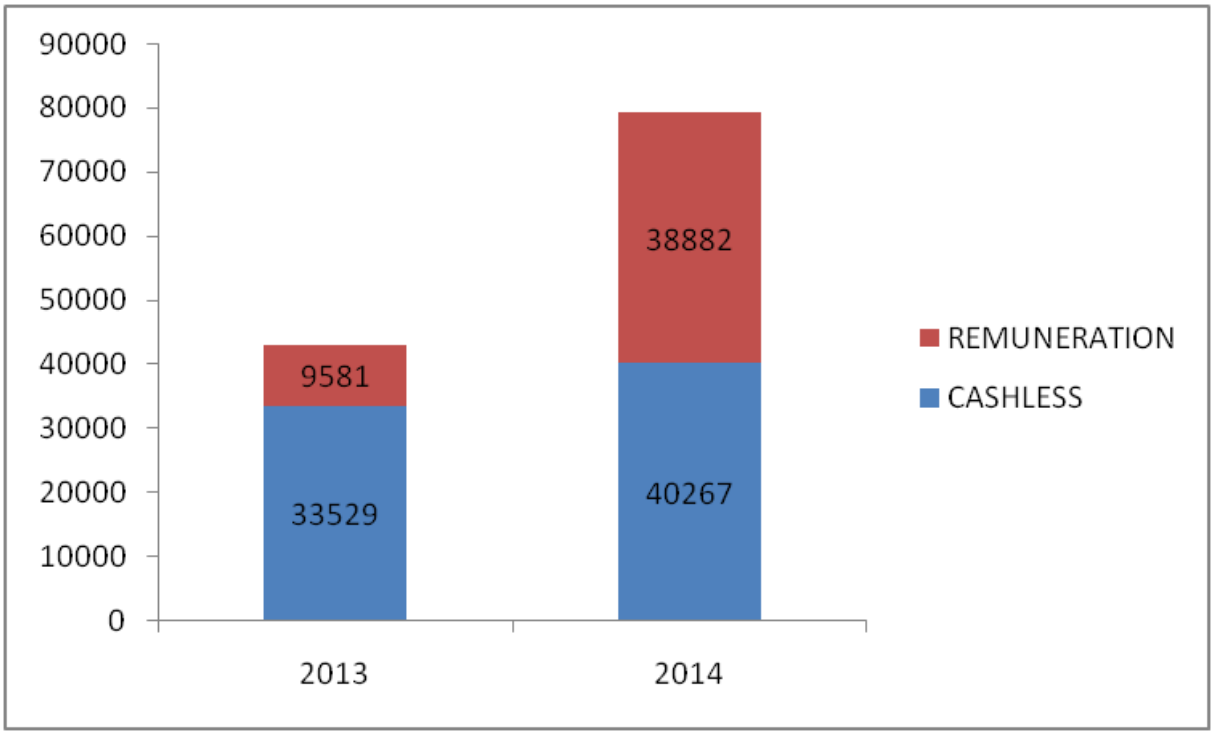


Figure #8 Time series Graph representing split of cashless and remuneration.

For each claim, there is a type, either cashless or remuneration.

For the financial year 2013-2014, the number of cashless claims was more than remuneration as well as in the year 2014-2015, which also states that the claim settlement processing has been a speedy process in TPA. As we can observe from the graph, the number of claims has increased from the year 2013 to the year 2014. If compared, the ratio of remuneration to cashless claims is higher in 2014 than in 2013, i.e. in the year 2014 the remuneration cases are almost similar in count to that of cashless claims while in the year 2013, the count of remuneration claims are way less than cashless claims.

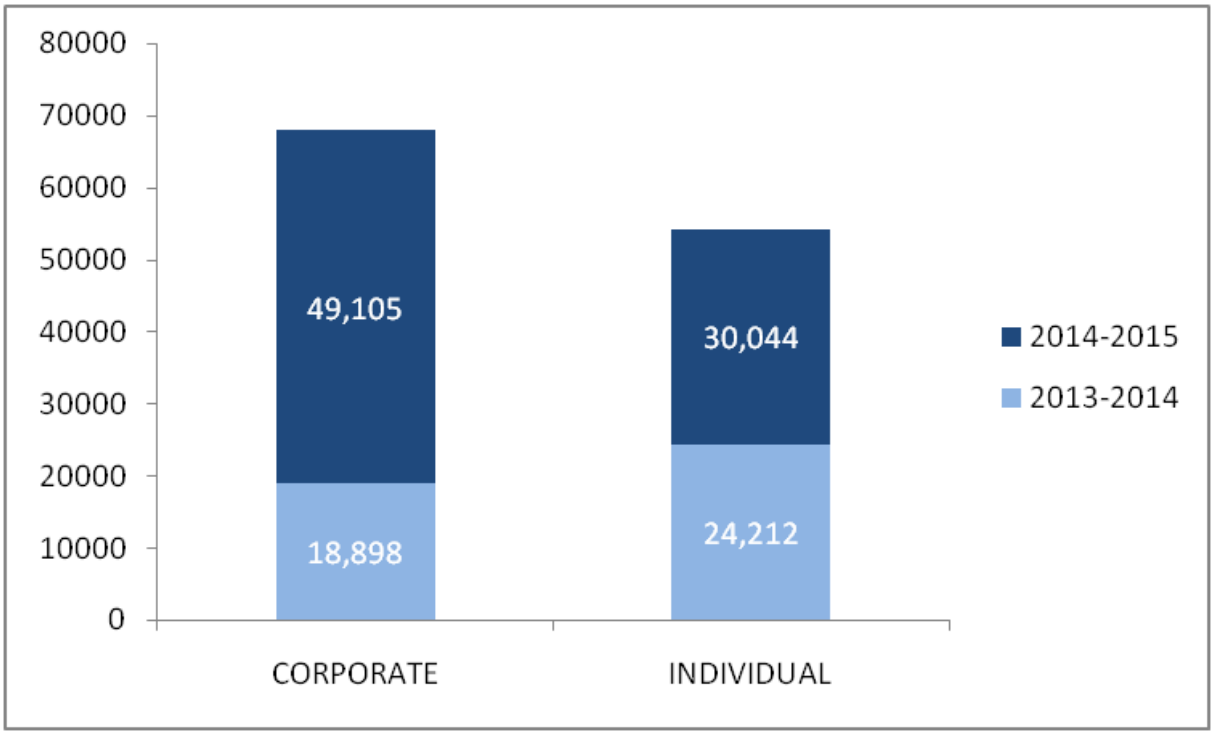


Figure #9 Time series graph representing split of group policies over individual policies claims.

As seen in the graph, there is a rapid growth in the group insurance policies from the year 2013-2014 to the year 2014-2015, from the claim count. The insurance companies are targeting more corporate groups to have insurance policies for their employees, majorly foster policies which include the parents, spouse and children. With this policy coming up n the corporate groups, the individuals too tend to move towards group insurance than the roster ones.

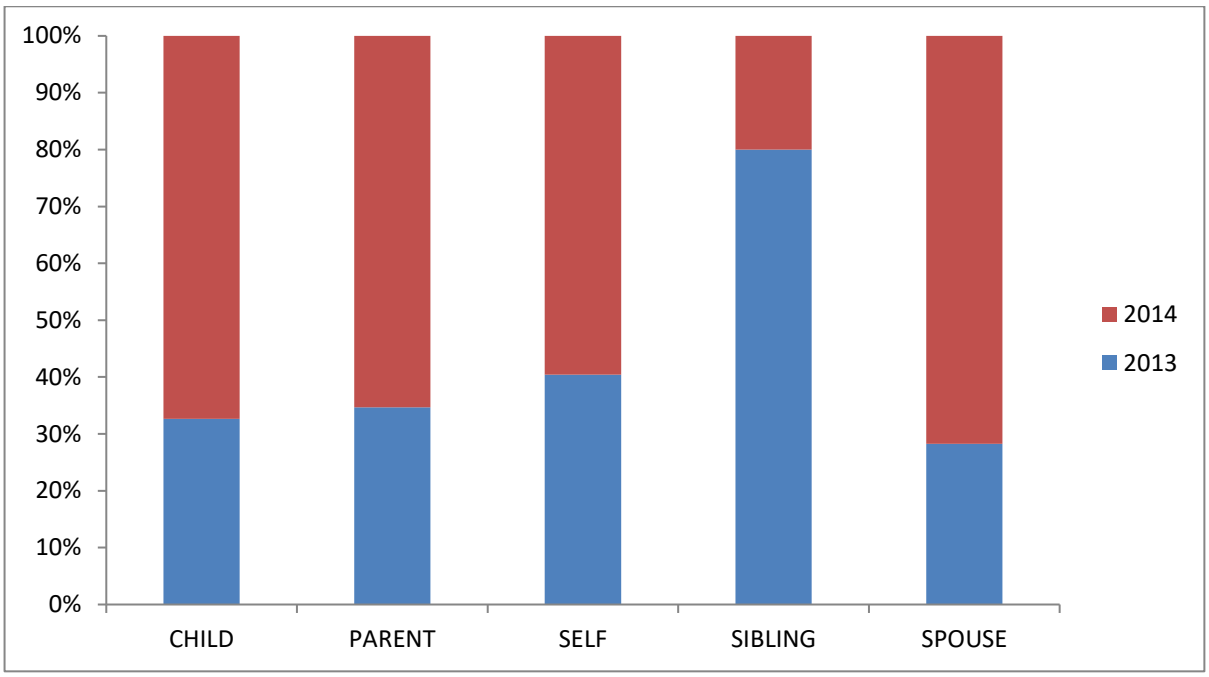


Figure #10 Time series graph represent trend change of claims coming for various relationships.

In the graph, it is clearly observed that there has been a significant increase in the number of claims from the year 2013 to year 2014. The major increase has been observed in the relations of the spouse, children and parents, which clearly indicates that people have been focusing more on the foster policies, which include both the parents and spouse and children. This also indicates that people may be now shifting towards corporate groups insurance policies to insure their families. Sibling's claims have decreased drastically which shows that most of the insurance companies do not have sibling's coverage in their policies.

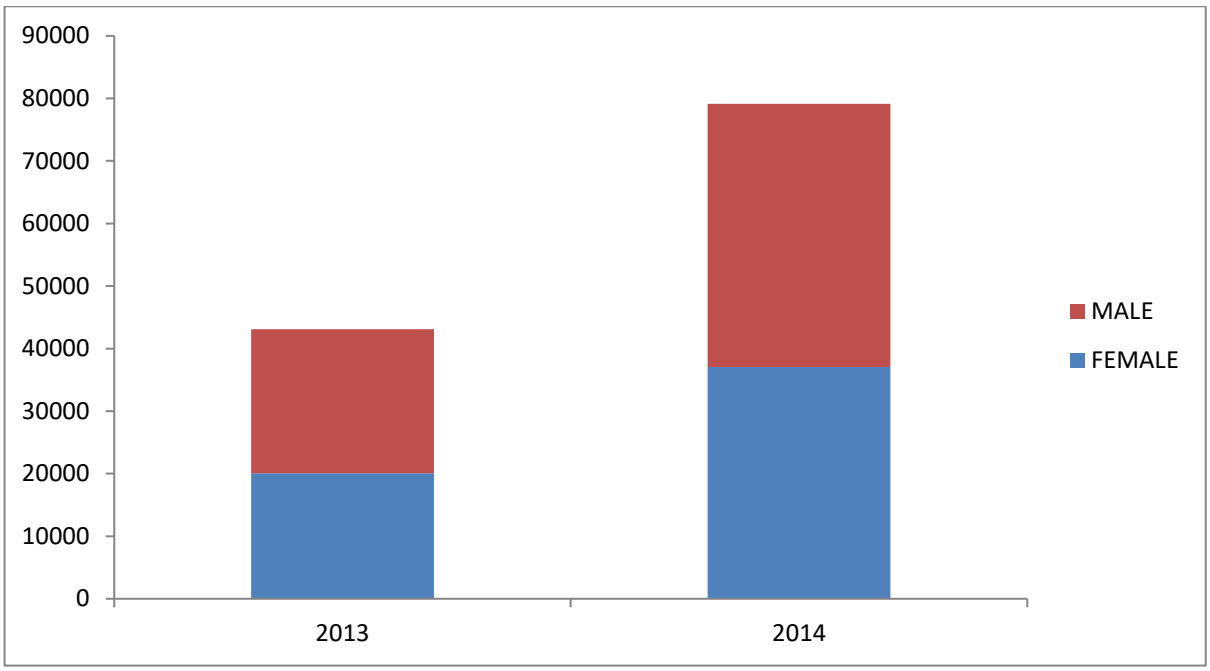


Figure #11 Time series graph representing ratio of claim between male and female.

The number of claims has duly increased from 2013 to 2014. But the ratio of the male and female claims remains the same and almost equal, which indicates the equal awareness about the claims among both the gender.

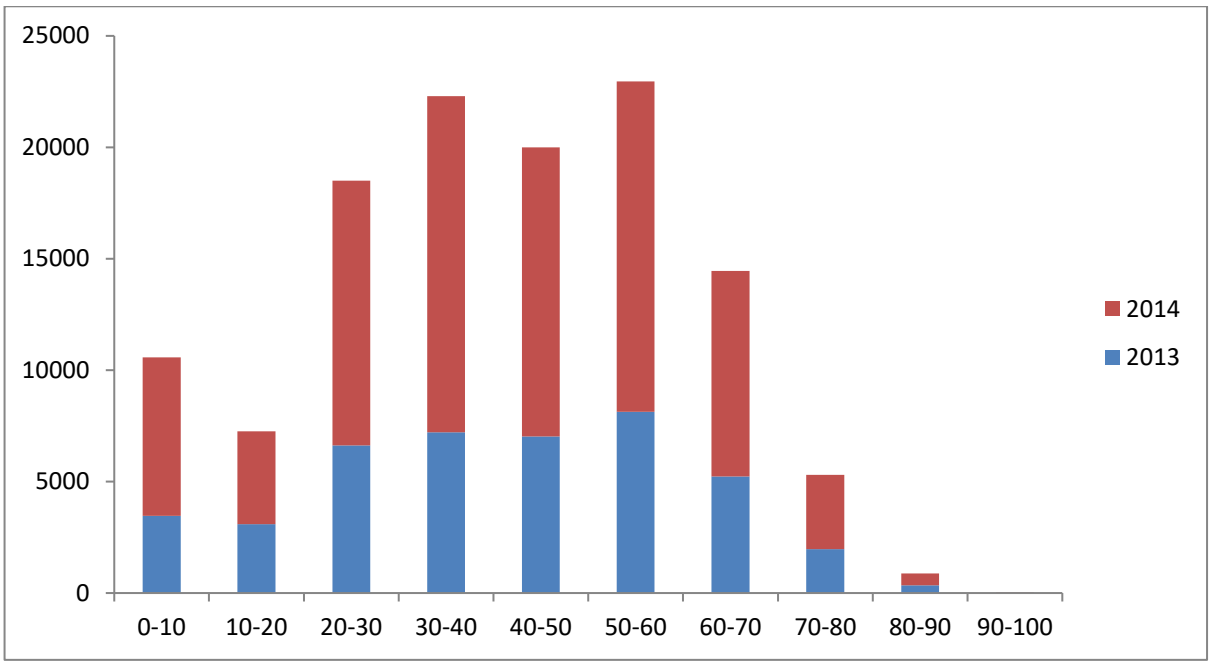


Figure #12 Time series graph representing claims between different age group.

The graph shows the maximum number of the claims in the age groups 50-60 and 30-40, with significant increase in the claims in year 2014 in both the age groups simultaneously. This may direct that the people are more into the lifestyle disorders, claiming to be having a shorter life span in the long run.

Also, the young population group 20-30 years of age has seen a significant increase from 2013 to 2014 while n the other hand, the age group 60-70 and 70-80 have increase from the year 2013 to 2014, but again they are way less in number from the other age groups.

In the age group 0-10, the claims have increased in 2014 than in 2013, which have more of new born babies claim, w.r.t foster policies.

A large population do not reach the age group of 80-90 and 90-100, which can be observed as there are a very less number of claims for these age groups.

Middle age population 40-50 is more stable as in terms of the number of claims.

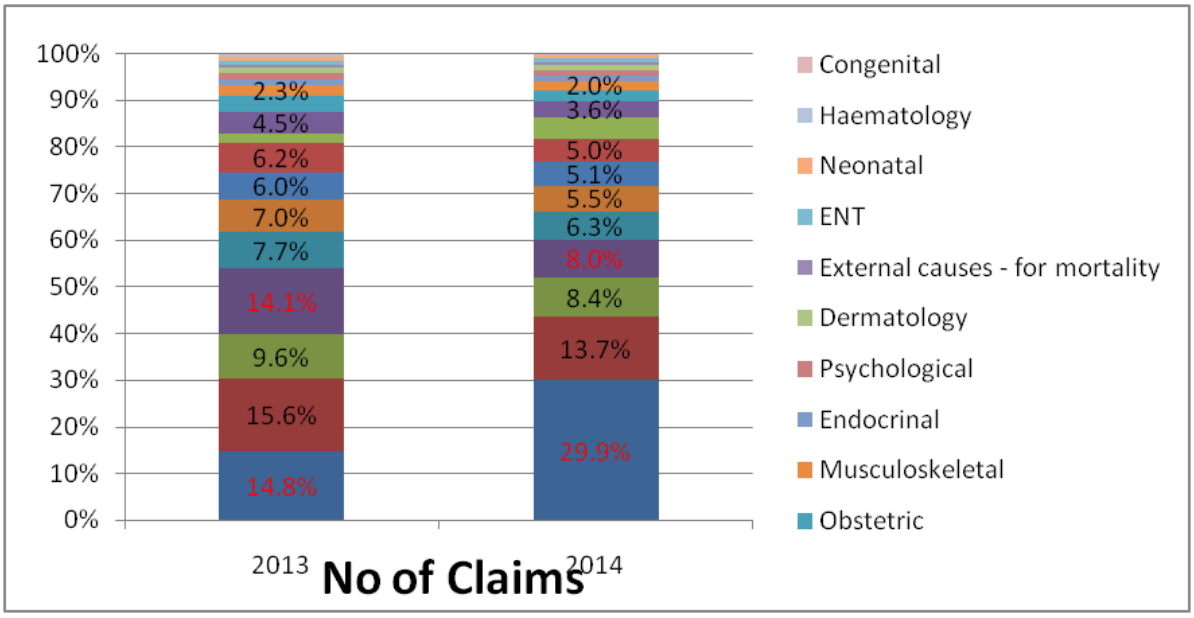


Figure #13 Time series graph representing claims between different diseases.

This graph shows the number of claims in both the financial years on the basis of the disease groups the insurers claim for.

From the year 2013 to year 2014, it is clearly seen that the obstetric cases have significantly increased from 14.8% to 29.9%, which means the insurers claiming are mostly female or are those who claim for their spouse-female counterparts. Other than this, the psychological claims have decreased in 2014 from 15.6% to 13.7%

In fact, all the other disease groups' percentage has decreased from the year 2013 to the year 2014, which is the result of the increase of percentage in obstetric cases.

There are many other almost negligible disease groups like congenital disorders, haematology disorders, and neonatal disorders etc. which do not even count up to 1%.

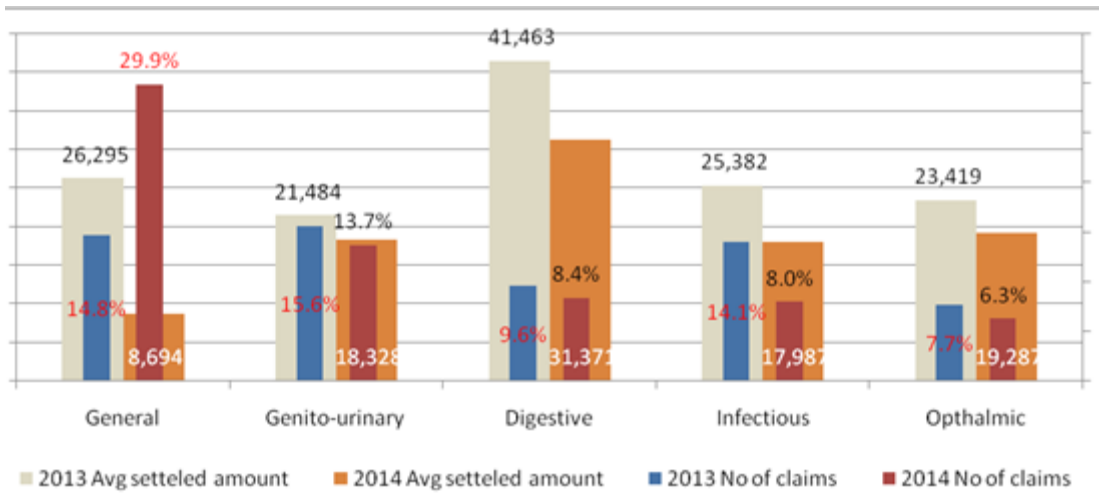


Figure #14 Time series graph represent average settled amount of a claim and total percentage of claims.

In this graph, top 5 disease groups have been covered which are as follows:

- General Signs and Symptoms
- Genital-urinary disorders
- Digestive disorders
- Infectious disorders
- Ophthalmic disorders

Taking each disorder one at a time,

- **General Signs and Symptoms**: The percentage of claims has increased from 14.8% to 29.9% in the year 2014. On the other hand, the average settled amount for this disease group has decreased from 26,295 rupees to 8,694 rupees.
- **Genital-urinary disorders**: Percentage of claims has decreased from 15.6% to 13.7% with the settled amount, also decreasing from 21,484 rupees to 18,328 rupees.
- **Digestive disorders**: Percentage of claims for this disorder has decreased from 9.6% to 8.4%, whereas the settled amount has significantly decreased from 41,463 rupees to 31,375.

- **Infectious disorders**: Percentage took a very high backdrop from 14.1% to 8.0%, also decreasing the average settled amount to 17,982 rupees from 25,382 rupees.
- **Ophthalmic diseases**: Even though the eye related disorders are very high in older age groups, and a bit expensive procedures, the percentage of the number of claims has decreased from 7.7% to 6.3%. Also, the average settled amount for a claim has decreased from 23,419 rupees to 19,282 rupees.

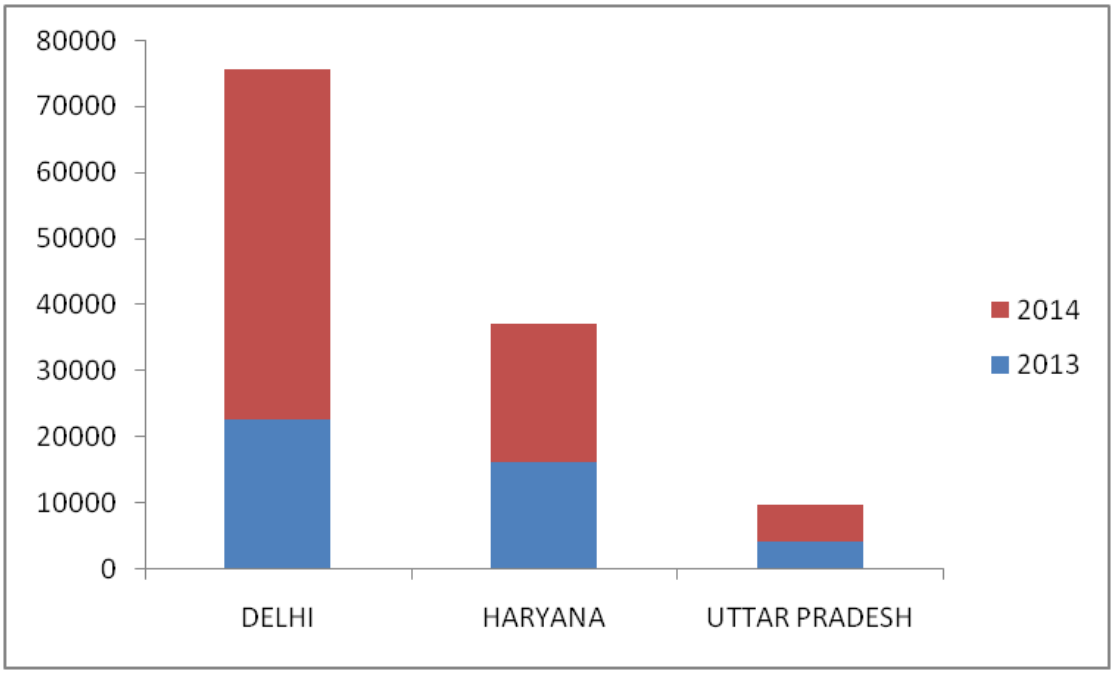


Figure #15 Time series graph represent claims of Delhi/ NCR

The health insurance claims of the Delhi/NCR region have to be observed for various health care service providers. For the NCR region, two states Uttar Pradesh and Haryana are also been taken.

The maximum number of claim comes from the hospitals based in Delhi, which have also significantly increased in the year 2014-2015. The second highest number of claims comes from the state Haryana, which covers under its two main cities, Gurgaon and Faridabad. The least number of cases come from Uttar Pradesh, also having almost nil change from the year 2013 in the year 2014.

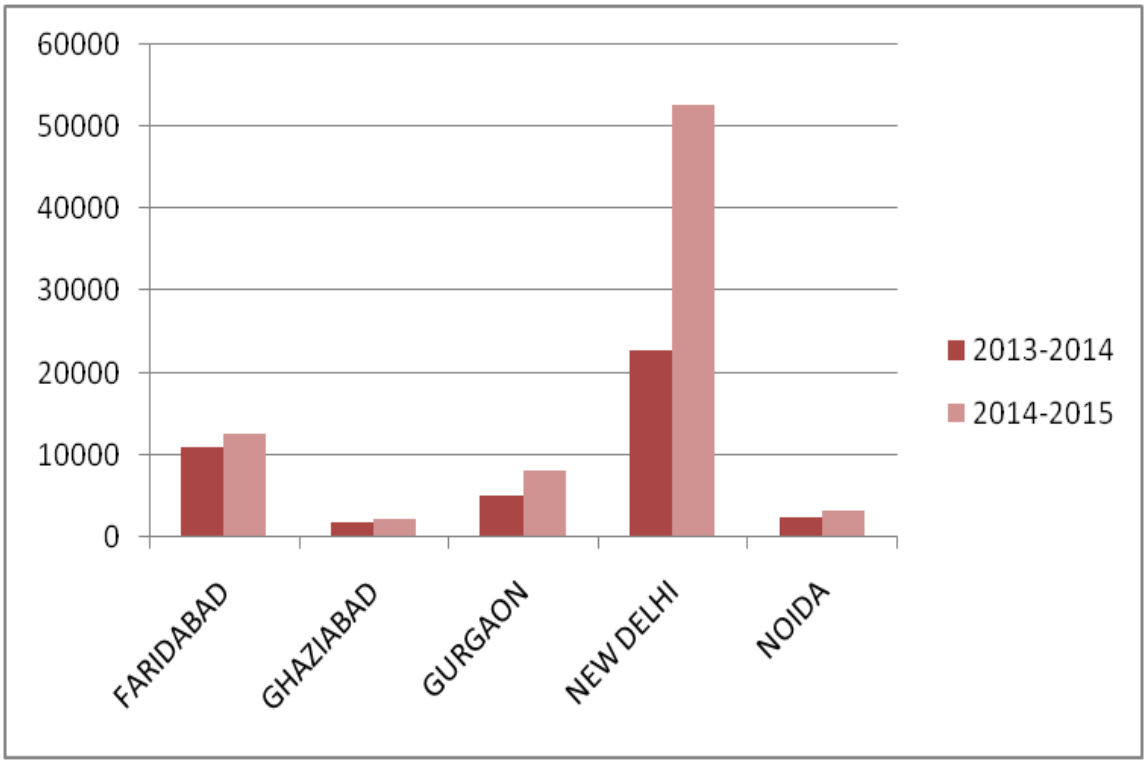


Figure #16 Time series graph represent claims of Delhi/ NCR contd.

If taken the claims, for which city maximum claims come from, it is clearly seen in the year 2014-2015, the count has even crossed 50,000, shooing up from the previous year's count of about 21,000 only.

The other most targeted regions are Faridabad and Gurgaon, both under state Haryana, which a more or less same number of claims in both years. On the contrary, Ghaziabad and Noida have very less number of claims and also they have not increased much from the year 2013-2014.

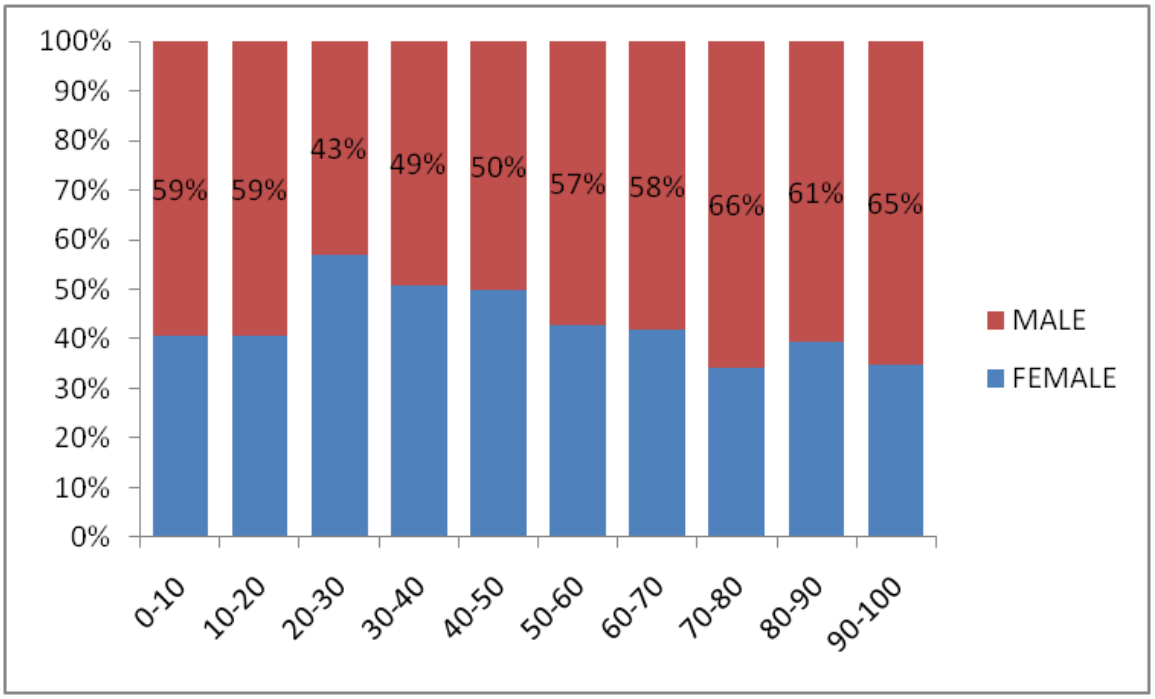


Figure #17 Association Graph showing number of claims as in terms of Age and Gender

This association graph shows that from the age 20 to the age 50, the maximum number of claims are coming from the females and after crossing the figure of 50, number of claims by the males are more in number.

This may have an indication that females do not have a very high life span.

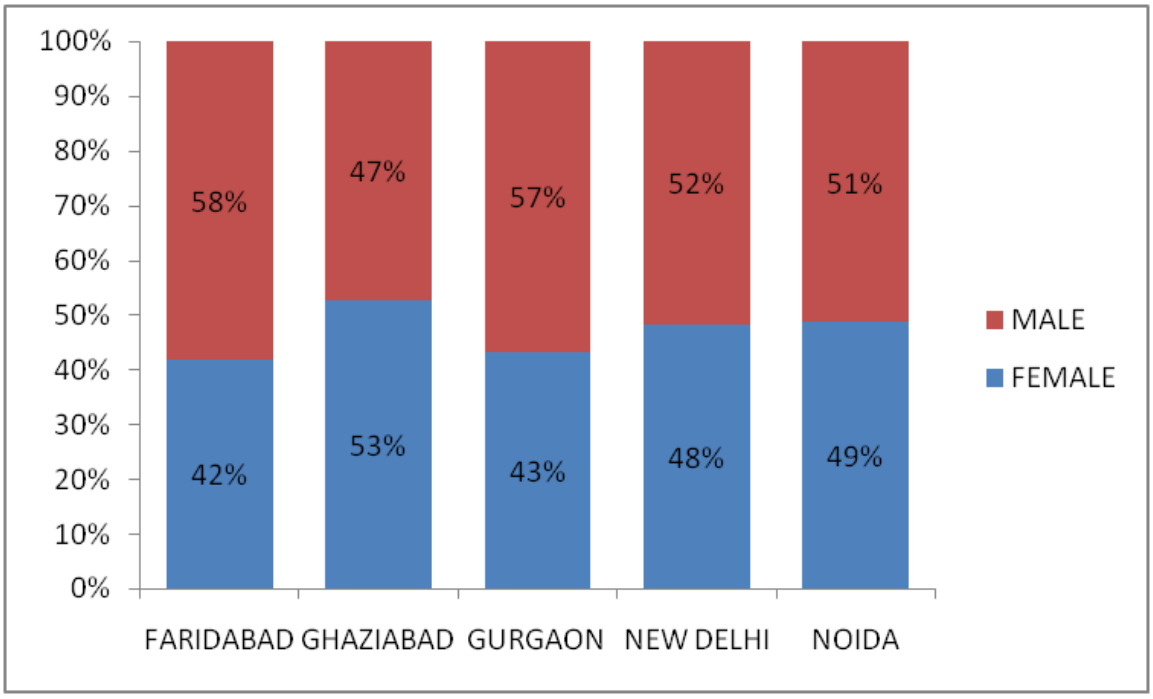


Figure #18 Association Graph showing relation between Location and Gender

This graph depicts that the number of claims from females are maximum from Ghaziabad while the leas are from Faridabad.

On the contrary, in New Delhi, only 48% of claims are coming from the females.

Even though the percentage of claims from all the cities for both the gender are almost same, but even a slight difference maters to the marketing schemes by the company to target the population.

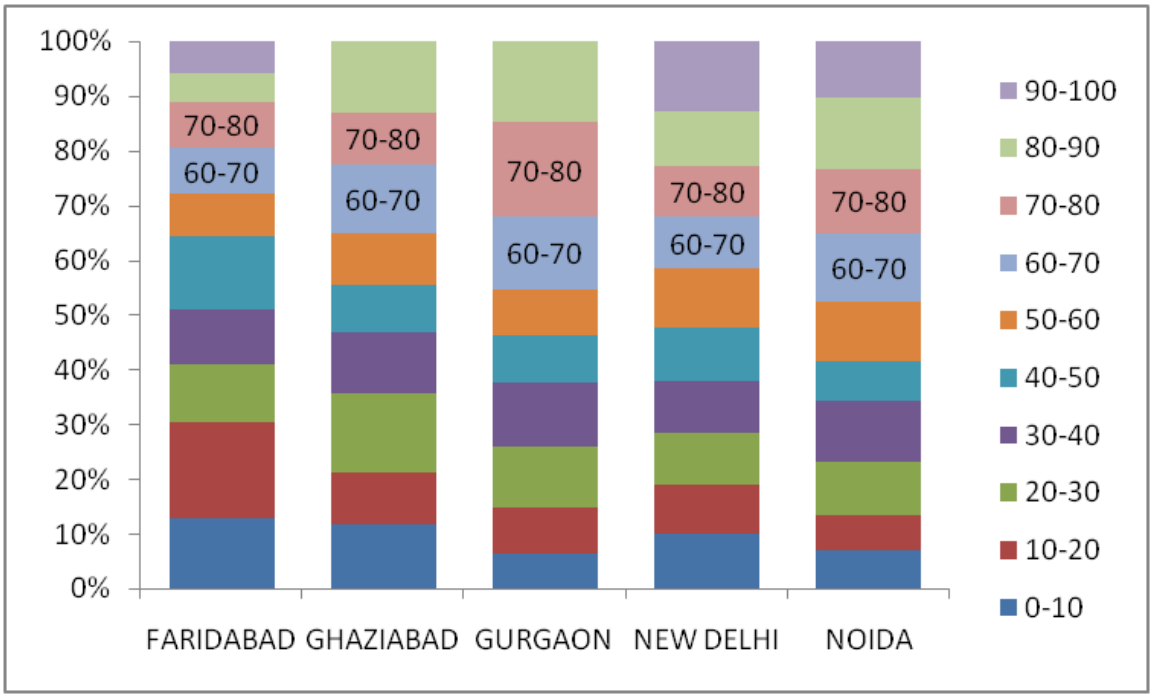


Figure #19 Association Graph showing relation between Location and Age

This graph shows how in each city the number of claims has been distributed on the basis of the age groups.

In New Delhi, the number of claims is maximum from the age group 90-100, which also indicates that the population in the city do have older generation of people too.

On the contrary, the same age group claims are not coming from the cities Ghaziabad and Gurgaon.

The NCR cities have more number of claims from the people of age more than 50, whereas in New Delhi, he number of claims is approximately equally divided in each age group.

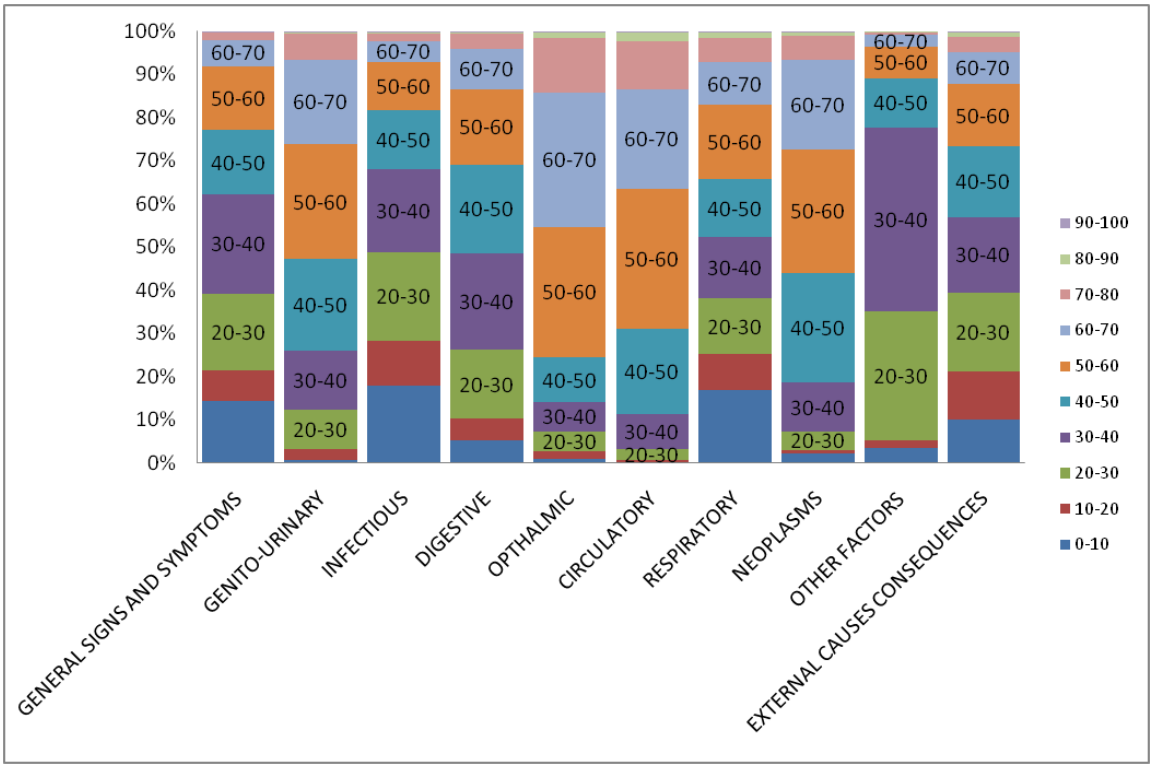


Figure #20 Association Graph showing relation between Diseases and Age

In this graph, top 10 disease groups have been covered which are as follows:

- General Signs and Symptoms
- Genital-urinary disorders
- Infectious disorders
- Digestive disorders
- Ophthalmic disorders
- Circulatory disorders
- Respiratory disorders
- Neoplasms
- Other Factors affecting Health
- External Causes Consequences

Analysing diseases according to the age groups have led to the outcome as follows:

- **General Signs and Symptoms:** The age group 20-50 shows the maximum number of claims for this group of diseases while the age group beyond 80 sees no such claim. Also, the age group 0-10 have more claims as children are more prone to this disorder.
- **Genito-urinary disorders:** The people in the age group 40-70 have more f this disorder. Age group above 70 not having any such claims, also indicates that this disorder can be lifestyle based disorder.
- **Infectious disorders:** This disorders' claims have been observed in each age group, indicating that infection can be carried from anywhere despite of age factor.
- **Digestive disorders:** The maximum number of claims is in the age group 30-50, may be due to the eating lifestyle in the professional lives that people lead. The age groups 20-30 and 50-60 are also having claims for this disorder group but they are still less.
- **Ophthalmic disorders:** The claims for ophthalmic disorders are observed maximum in the age group 50-80, which are mostly Cataract cases, which are generally a problem in the certain age group.
- **Circulatory disorders:** Circulatory disorders are majorly seen in the age group 40-80, which is actually the age in which the body systems start deteriorating if the health is not taken care of.
- **Respiratory disorders:** The respiratory diseases can occur in any age group but by the graph, we can exclaim that the population of the age group 0-30 have the maximum number of cases for this disorder as they are more prone as well as the immune system of the new generation has decreased a lot.

- **Neoplasms:** Neoplasms, means Tumors. Either benign or malignant, have no age to showcase their effects. By the claim analysis, we can depict that Neoplasms have been observed in every age group, but the maximum number of claims have been seen in the age group 50-60, which may be due to the low immunity that is followed by chemotherapy, and also because reoccurrence of camcer is quite common for the people in this age group.
- **Other Factors affecting Health:** There are many factors other than infections that affect health. This group of disorders is most prevalent in the age group 20-40.
- **External Causes Consequences:** The claims for this group has been seen for each age group, irrespective of other diseases.

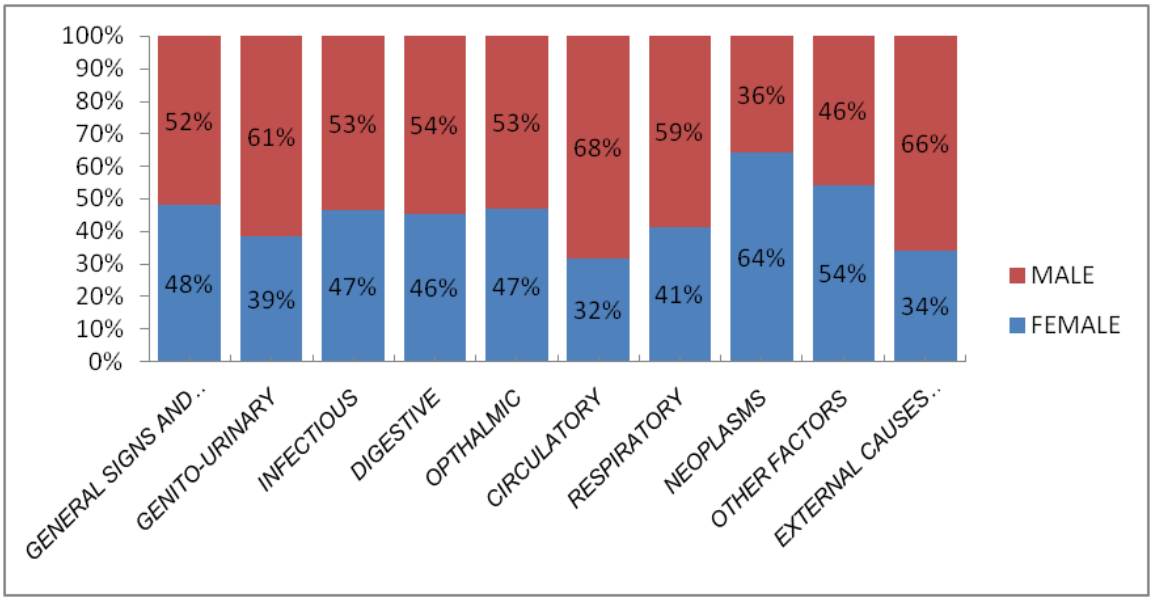


Figure #21 Association Graph showing relation between Diseases and Gender

This graph depicts the association of the gender with diseases.

All the diseases show almost the same distribution for both the gender, except for Neoplasms, genito-urinary disorders, circulatory disorders and external causes consequences.

Neoplasms show more number of claims by females than males.

Genito-urinary disorders and circulatory disorders have been more suffered by males than females.

External causes' consequences are more observed in males than in females.

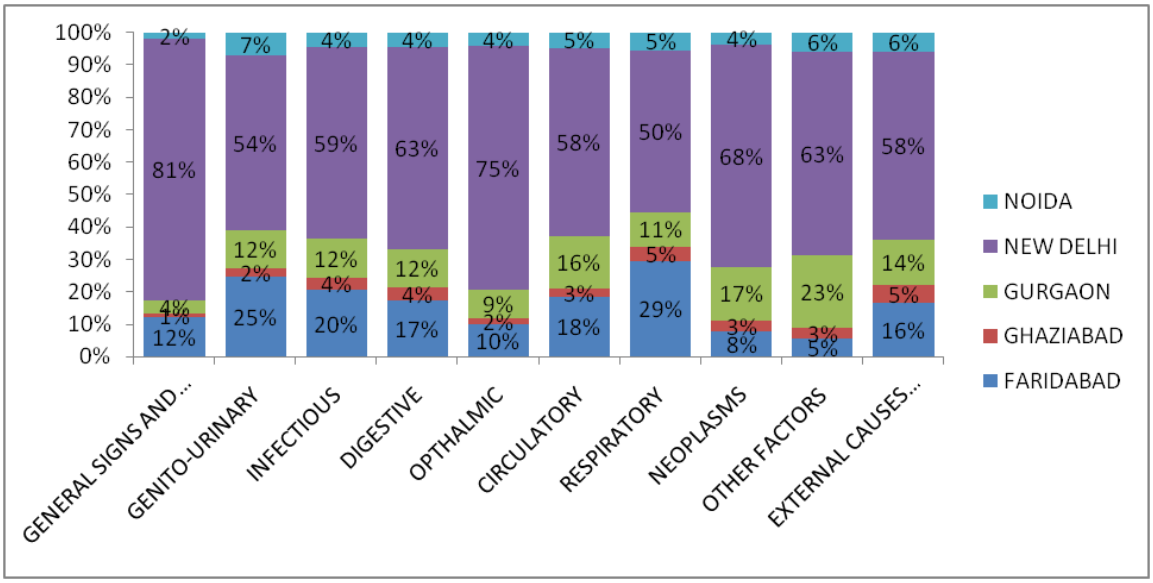


Figure #22 Association Graph showing relation between Diseases and Location

This graph clearly indicates that all the diseases are more prevalent in the city New Delhi. There is quite a high percentage of Genito-urinary and Respiratory disorders' claims seen in Faridabad. Also, Gurgaon observes quite a percentage of all diseases.

The least number of claims come from Noida and the distribution for each disease is also very low in percentage terms.

CHAPTER 5

DISCUSSION

++++++

Discussion:

The data analyzed gave many clear indications:

- The maximum number of claims come from the age group above 50.
- The number of claims from New Delhi is highest, may be because it is the capital of the country and has many health care service providers. So, the treatments are easily accessible to the patient.
- If observed, the number of claims are approximate same for males and females, but when taken location-wise, then Faridabad and Gurgaon are having more claims for male and Ghaziabad, Noida and New Delhi are having more claims for female.
- The most common disease group amongst is the General Signs and Symptoms which include every age group, be it a newborn or an old aged person.
- Opthalmic disorders and Circulatory disorders are more prevalent in age above 50 and the Digestive disorders are prevalent in the working age group, 20-50.
- Higher the age group after 50, number of claims decrease as the life span is limited and also, the policies do not involve people with higher age.
- Females have less number of claims when the age group crosses 60, which may also indicate that either females have strong immunity, hence less diseases or females have a low life span.
- After covering himself in the policy in corporate policies, the employee goes for the maximum number of claims for his Spouse and then, the Children and Parents, respectively.

There are several problems with the classification system ICD 9 including:

- The ICD-9-CM Tabular List is running out of numbers to assign for codes and in some cases, new code proposals could not be adopted er disorders like Digestive because of the limited space.
- The current ICD-9-CM diagnosis codes do not provide sufficient clinical specificity to describe the severity or complexity of the various disease conditions.
- The exchange of meaningful healthcare data with healthcare organizations and professionals around the world is hindered by the fact that many countries are presently using ICD-10 or a clinical modification of it.
- The current ICD-9-CM system is ineffective for effectively monitoring utilization of resources, measuring performance, and analyzing healthcare costs and outcomes.

Historically, ICD-9-CM was developed as a classification system for statistical compilation of data in inpatient settings. Unfortunately, it has proven to be inadequate for use in other healthcare settings and even for reimbursement purposes.

There are many uses of coded data, including:

- Designing payment (reimbursement) systems with emphasis on the processing of claims specifically for reimbursement,
- Measuring the safety, quality, and efficacy of medical care,
- Designing delivery systems and setting healthcare policy,
- Monitoring the utilization of resources while improving financial, clinical, and administrative performance,
- Providing healthcare consumers with data regarding the cost and outcome(s) of various treatment options,
- Identifying, tracking, and managing public health risks and disease processes,

- Recognizing and identifying abusive or fraudulent reimbursement practices and trends, and
- Conducting healthcare research and clinical trials and participating in epidemiological studies.

Keeping all of the above uses in mind, it becomes quite clear that a classification system that provides greater coding accuracy and specificity is greatly needed.

In 1994, WHO developed the tenth revision of the ICD system. The purpose of the revision was to expand the content, purpose, and scope of the system and to include ambulatory care services, increase clinical detail, capture risk factors in primary care, include emergent diseases, and group diagnoses for epidemiological purposes.

5.1 Brief Comparison of ICD-9-CM and ICD-10-CM

ICD-10-CM was designed to offer significant advantages over ICD-9-CM. These changes should result in major improvements in both the quality and uses of data for various healthcare settings.

Significant improvements in both the content and the format of ICD-10-CM include the following:

5.1.2 General Changes and Overall Improvements

- ICD-10-CM codes are alphanumeric and include all letters except "U," thus providing a greater pool of code numbers.
- ICD-9-CM's V and E codes are incorporated into the main classification in ICD-10-CM.
- The length of codes in ICD-10-CM can be a maximum of seven characters (digits and letters) as opposed to ICD-9-CM's five digits.
- ICD-10-CM offers the addition of information relative to ambulatory and managed care encounters.

- Conditions that are new or that were not uniquely identified in ICD-9-CM have been assigned code numbers in ICD-10-CM.
- In ICD-10-CM, some three-character categories are not used in order to allow for revisions and future expansion.
- Instead of grouping by categories of injury or type of wound, ICD-10-CM groups injuries by site of the injury and then the type.
- Excludes notes were expanded in order to provide guidance on the hierarchy of the chapters and to clarify priority of code assignment.
- Some conditions with a new treatment protocol or perhaps a recently discovered or new etiology have been listed in a more appropriate chapter.
- Combination codes are used for both symptom and diagnosis, and etiology and manifestations—for example K50.03 Crohn's disease of small intestine with fistula.
- Codes for postoperative complications have been expanded. Also a distinction has been made between intraoperative complications and post-procedural disorders—for example, K91 Intraoperative and postprocedural complications and disorders of digestive system, NEC.

5.1.2 Major Changes from ICD-9-CM to ICD-10-CM

In general, most of the changes were of the following types:

- Grouping of codes—Conditions have been grouped in a more logical fashion than in ICD-9-CM. This may have been accomplished by means of movement from one chapter to another or one section to another. Many codes have been added to, deleted from, combined, or moved in ICD-10-CM. ICD-10-CM boasts of some chapters that are entirely unique, although these codes were found in other chapters in ICD-9-CM.

- More complete descriptions—In ICD-10-CM, the subcategory titles are usually complete so that the coder does not have to read previous codes to understand the meaning of the code.
- Fifth and sixth characters—Fifth and sixth characters are incorporated into the code listing rather than having common fifth digits listed at the beginning of a chapter, section, or category.
- Laterality—ICD-10-CM incorporates laterality of conditions or injuries at the fifth or sixth character level.
- Increased specificity—ICD-10-CM offers greatly expanded detail for the various conditions. Many categories, which in ICD-9-CM were limited to three or four digits, have fifth, sixth, and even seventh characters/extensions in ICD-10-CM. In some cases, single ICD-9-CM codes were split into several ICD-10-CM codes to provide greater specificity.
- Excludes notes—There are three kinds of excludes notes that are used in ICD-10-CM.
- Use of extensions—Extensions are used in ICD-10-CM to provide additional information. These extensions are most often found in the injury codes but are found in other chapters. 57
- Combination codes—There are numerous codes in ICD-10-CM that group etiology and manifestation. In ICD-9-CM, generally two codes are required to code etiology and manifestation.
- Terminology used—Many of the category code or subcategory code titles have been changed to reflect new technology and more recent medical terminology.
- Postprocedural conditions—There are many more codes added to ICD-10-CM to describe postoperative or postprocedural conditions.

- Trimester specificity—ICD-10-CM codes in the pregnancy, delivery, and puerperium chapter includes codes designating the trimester in which the condition occurs.
- New codes—There are many new codes to ICD-10-CM that were not classified in ICD-9-CM. Notably, codes for blood type and alcohol level are included in ICD-10-CM.

The increased specificity of the ICD-10-CM codes makes complete and accurate documentation increasingly important with the implementation of the new system.

The documented Chapter-wise handy list of ICD code list can be seen in Annexure 1.

CHAPTER 6

CONCLUSION

Conclusion:

In the continuous evolvement and improvement in ICD coding system, it is very important for companies to have the systems which can easily accept the changes in coding, can be easily understand by the end user, focus towards lower training cost, historical reports can be easily migrated. It is also very important for companies to identify the road map to implement the new versions of ICD coding; identify all systems and processes, electronic as well as manual, in which ICD codes is used. Approach practice management software vendors about their plans to address the transition and about their timelines for upgrading that software. Talk to clearinghouses, billing services and payers about when they will be upgrading. Establish a steering committee, with at least one C-level executive as a member that will assess the business processes, clinical workflows and IT systems affected by the conversion, Pinpoint staff training needs.

Historically industry has faced many implementation issues with ICD 9 like Tabular List is running out of numbers; diagnosis codes do not provide sufficient clinical specificity to describe the severity or complexity of the various disease conditions. , Exchange of meaningful healthcare data with healthcare organizations and professionals around the world is hindered by the fact that many countries are presently using ICD-10 or a clinical modification of it (Australia and Canada, for example, have modifications). , ICD-9-CM system is ineffective for effectively monitoring utilization of resources, measuring performance, and analyzing healthcare costs and outcomes.

CHAPTER 7

RECOMMENDATIONS

Recommendations:

- Under different circumstances, an insurance company may choose to protect their proprietary information by not releasing billed and allowed data. In the absence of these expenditures, to standard rates of reimbursement, would be a recommended alternative approach.
- With the idea of synchronization and standardization of ICD codes, disease names and the procedures being performed, the systems can be updated to the software in such a way that whenever a disease code or disease name is entered by the data entry operator, the system automatically picks and give the options to the operator as in drop-down menu so that data entry operator do not enter wrong procedure name to a completely different disease name.
- Dual coding can also be taken in consideration if the system has to be made an enabler for the standardization of data, as most of the health care service providers use different ICD coding version as that used by the TPA organization.

  Dual coding refers to the coding of both ICD-9 CM/PCS and ICD-10 CM/PCS codes on the same patient health record. Despite the obvious initial loss of productivity during implementation of such a process, a properly executed and well-designed dual coding strategy should be a key component of your organization's ICD-10 transition program. If you haven't started already, beginning your planning today for dual coding is a must and will greatly improve your organization's position in regards to the challenges of the switch to ICD-10.

Below are a few reasons implementation of a dual coding strategy is critical:

- **Increased Coder Productivity.** Dual coding will increase coder productivity after the mandatory ICD-10 compliance date – particularly boosting productivity levels during the critical 6 month period following mandatory compliance, which is when the most problems are predicted. This practice in coding both code sets, no matter if it's just a few records a weeks, on actual patient health records, will pay dividends in terms of both coder familiarity with ICD-10 and speed in coding charts.
- **Increased Coder Confidence.** By practicing on real patient charts, dual coding will increase your coder's confidence, eliminating potential the type of deer in the headlights moments that happen to many individuals when facing transitions to new systems and processes.
- **Preparation for Key Transitional Reporting.** Reporting that spans across the ICD-10 compliance date will potentially mean reports with inconsistent code sets (ICD-9 before and ICD-10 after). The GEMSscrosswalk, which serves to link the code sets, lacks the clinical rules necessary to accurately map many diagnoses and procedures. This may not be a problem for some reports, but for other reports problems with the inconsistencies may exist. A well-thought out dual coding strategy can eliminate this headache in critical reporting areas that span the ICD-10 compliance date by allowing reporting in either ICD-9 or ICD-10.
- **Revenue Reimbursement Analysis.** Although CMS has stated they are trying to make ICD-10 revenue neutral, early analysis indicates this will not be the case, meaning your facility should plan and budget for the

impacts accordingly. Dual coding can allow for this type of revenue reimbursement impact analysis by enabling your financial management team to develop strategies tailored to your organization. For example, proper budgeting for your most critical service lines and highest-volume patient stay types.

- **Save On Training Costs.** Dual coding can allow cost savings on any external coder training programs your organization chooses to participate in. For one, dual coding is training – the best kind there is, because its actual patient charts. Secondly, many of the packages offered by training companies have assessment and exam pieces. Coding on real patient charts will provide the same sort of benefits as these assessment pieces. Of course, having an experienced coder or coding director well versed in all areas of ICD-10 on staff will be necessary for to capitalize on this benefit.
- **Coder Readiness Assessment.** Dual coding can allow coding directors to assess their coder's readiness status and make changes as needed, while also keeping other stakeholders apprised of the situation and any additional preparations that may be needed as a result. Determining which of your coders or coder-types need the most help for ICD-10 prior to the transition date will be critical to avoid unnecessary explosions in DNFB.
- **Physician Documentation Assessment.** Probably the most important benefit of dual coding is that it will allow your coders to identify problem areas and shortcomings in physician documentation. Discovering trends in these shortcomings can enable clinical documentation improvement to take place preemptively. Using dual

coding as a key component in a feedback loop on your hospital's actual patient records can also lead to more targeted physician training. Moreover, your dual coding strategy can serve as a powerful method to open up critical communication lines in your larger clinical documentation improvement program, engaging physicians in a culture that stresses the importance of detailed documentation. If properly implemented, these benefits might begin today, providing benefits in addition to better ICD-10 preparedness.

CHAPTER 8

REFERENCES

References:

1. Federal Register 63, no. 8, May 7, 1998; p. 25272–25320. Available at www.access.gpo.gov/su_docs/aces/aces140.html.
2. Federal Register 65, no. 160, August 17, 2000; p. 50311–50372. Available at www.access.gpo.gov/su_docs/aces/aces140.html.
3. .Ingénue Coding Lab: Implementing ICD-10. Ingénue, Inc.: Reston, Virginia. 2002.
4. Innes, Kerry, Peasley, Karen, and Roberts, Rosemary. "Ten Down Under: Implementing ICD-10-CM in Australia." Journal of the American Health Information Management Association 71, no.1 (2000): 52-56.
5. November 20, 2002 letter to members of the National Committee on Vital and Health Statistics, an advisory body to HHS, from the American Hospital Association, Advanced Medical Technology Association, and the Federation of American Hospitals. Available at http://www.healthdatamanagement.com/HDMSearchResultsDetails.cfm?DID=135122.
6. Testimony by Sue Prophet before members of the National Committee on Vital and Health Statistics (NCVHS), Standards and Security Subcommittee. May 29, 2002. Available at http://www.ahima.org/dc/comments.ncvhs.052902.cfm
7. Testimony by Dr. Steven Mirin before members of the National Committee on Vital and Health Statistics (NCVHS), Standards and Security Subcommittee. May 29, 2002. Available at http://www.psych.org/pub_pol_adv/dsmiv_testimonyncvhs52902.cfm
8. http://www.irmi.com/online/insurance-glossary/terms/t/third-party-administrator-tpa.aspx

9. http://www.cdc.gov/workplacehealthpromotion/assessment/claims_assessment/index.html
10. Guidelines-IRDA (Insurance Regulatory And Development Authority) - IRDA/HLT/Cir/03<T/02/2013-20/2/2013-To All The CEOs Of Life-Insurers, Non-Life Insurers, Standalone Health Insurers And TPAs

Annexure #1 ICD 10 Code-Chapter-wise Handy List

CHAPTER NAME	ICD 10 CODES
I Certain infectious and parasitic diseases	A00-A99,B00-B99
II Neoplasms	C00-C97,D00-D48
III Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50-D89
IV Endocrine, nutritional and metabolic diseases	E00-E90
V Mental and behavioural disorders	F00-F99,G00-G99
VII Diseases of the eye and adnexa	H00-H59
VIII Diseases of the ear and mastoid process	H60-H95
IX Diseases of the circulatory system	I00-I99
X Diseases of the respiratory system	J00-J99
XI Diseases of the digestive system	K00-K93
XII Diseases of the skin and subcutaneous tissue	L00-L99
XIII Diseases of the musculoskeletal system and connective tissue	M00-M99
XIV Diseases of the genitourinary system	N00-N99
XV Pregnancy, childbirth and the puerperium	O00-O99
XVI Certain conditions originating in the perinatal period	P00-P96
XVII Congenital malformations, deformations and chromosomal abnormalities	Q00-Q99
XVIII Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	R00-R99
XIX Injury, poisoning and certain other consequences of external causes	S00-S99,T00-T98
XX External causes of morbidity and mortality	V01-V99,W00-W99, X00-X99,Y00-Y98
XXI Factors influencing health status and contact with health services	Z00-Z99
XXII Codes for special purposes	U04,U06,U07,U82, U83,U84,U85