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***Abstract*—Fraud is widespread and care insurance system. Fraud involves misrepresentation intended to result in It is shocking because the incidence of keeps increasing every year. In order fraud, data mining techniques are preliminary knowledge of health care behaviors, analysis of the data. Data mining which is divided into viz., supervised and unsupervised is fraudulent claims. But, since each of own set of advantages and disadvantages, by combining the detecting fraudulent claims in health proposed.**

Keyw mining health insura fraud; supervised; unsupervised

I.

Deliberately deceiving the health insurance results in healthcare benefits being paid individual or group is known as health insurance main purpose of fraud is financial benefit. recent survey, it is estimated that the number of the industry is approximately 15 per cent of total Insurance companies in USA incur losses over 30 annually to healthcare insurance frauds. The appalling in developing country like India as well. suggests that the healthcare industry in India is approximately Rs 600-Rs 800 crores incurred on claims annually [1]. Frauds blow a hole in the industry. Health insurance is a bleeding sector claims ratio. So, to make health insurance fraud, it is necessary to focus on elimination or of fake claims arriving through health insurance.

The health insurance fraud claims are broadly under the following headings:

- Billing for services not rendered: Billing company for things that never happened. Forging the signature of those involved in giving bills.
- Upcoding of services: Billing insurance company for services that are costlier than the actual procedure that was done. Example: 45-minute session being billed as 60-minute session
- Upcoding of items: Billing insurance company for medical equipment that is costlier than the actual equipment. Example: Billing for power assisted wheelchair while giving the patient only the manual wheelchair.
- Duplicate claims: Not submitting exactly the same bill, but changing some small portion like the date in order to charge insurance company twice for the same service rendered. Example: An exact copy of the original claim is not filed for the second time, but rather some portion like date is changed to get the benefit twice the original.
- Unnecessary services: Filing claims which in no way apply to the condition of a patient. Example: Patient with no symptoms of diabetes filing claim for daily usage of insulin injections.

II. Data Mining

Nowadays there is huge amount of data stored in real-world databases and this amount continues to grow fast. So, there is a need for semi-automatic methods that discover the hidden knowledg in such database. Data mining automatically filtering through immense amounts of data to find known/unknown patterns, bring out valuable new perceptions and make predictions.

Data mining techniques tend to learn models from data. There are two approaches on learning the data mining models. Those are supervised learning, unsupervised learning; and they are described below:

A. Supervised Learning:

This is the most usual learning technique wherein the model is trained using pre-defined class labels. In the context of health insurance fraud detection the class labels may be the “legitimate” and “fraudulent” claims. The training dataset can

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