

## Crime and De(tech)tion

### *Fraud in Medical Insurance*

An "extra" claim for insurance. A little excess claimed by the small consumer, or the doctor against the large insurance company is not unusual. In fact, it is a common perception that fraud - in the world of medical insurance - is not a significant portion of the overall pie, and that it is not worth controlling this cost; it is better to spend the money elsewhere. But the figures tell another story.

Health care and government officials in the US estimate that fraud schemes and other abusive billings account for ten per cent of health care costs in the US. Considering that the health care pie is over a trillion dollars, it is estimated that more than ten billion dollars of public money is wasted because of fraud. In the US, the Coalition Against Insurance Fraud estimates the annual cost to be more than \$85 billion per year. And this is said to be on the increase.

#### **The modus operandi**

As many insurance companies have found to their dismay, there are many ways to deceive. Let us look at a few of them. The easiest - and perhaps the commonest - is duplication. Some claims are filed multiple times, and are simply paid out many times. It may seem incredible, but there have been cases of the same death claim having been paid out more than once! Other common ways of duplication are billing multiple insurance companies - and the national health service (such as Medicare) - for the same service.

Some claimants try to avoid the pay-out limits imposed by the policy by separating the claim into multiple small claims. It is quite common to have a disability limit for claims for the policy which cuts across all claims sent by the same policy-holder - across multiple visits to doctors, across treatments by different doctors or hospitals, across treatments over several months.

And then, there's upcoding. This means claiming for services with a higher reimbursement than the service actually performed. Upcoding goes on for a long time before it is noticed. A physician visits a nursing home, walks through the facility and bills for 25 nursing home visits without providing any services. This is called "gang visit" billing.

In a managed care world, it is not rare to find providers unbundling. In this, providers have a contract that has a bundled service, say, a set of blood tests. The provider charges for the services unbundled, e.g. the provider sends separate bills for each blood test.

And finally, there is collusion for a non-existent service. Doctors, hospitals, patients and clinics collude in billing for services and goods not provided, such as creating non-existing medication or surgeries.

### **IT plays the detective**

To fight fraud, many governments are now creating new laws, new departments and new programmes. In August 1996, the US brought in a new law - Health Insurance Portability and Accountability Act (HIPAA). This has created a special account, which provides a stable source of funding for fraud control activities. The money spent is proving to be more than useful. Operation Restore Trust in the US has been identifying \$23 in "waste, fraud and abuse" for every \$1 invested. The Medical Integrity program is saving \$14 for every \$1 spent.

Much of the funds are directed towards the use of IT. California has built a case management system that allows all activities of complaint registration, investigation, audit and persecution. Other states such as Nebraska and Pennsylvania are following with buying new software, and databases. Illinois is spending over \$28 million to build a data warehouse. Michigan and Minnesota already have similar databases. In Australia, the Health Insurance Commission (HIC) has one of the largest collections of data in the world - a data store of many terabytes.

The other victims, insurance companies, have joined in the fight. FCCI, a leading worker compensation carrier has installed a software system that will help review medical bills. Blue Cross and Blue Shield have launched a system to help detect Medicare fraud. Through its world wide web site, Blue Cross and Blue Shield inform consumers of their efforts and advances in fraud-fighting. Suspected fraud can be reported at the site directly to the US Attorney General's office, which also provides information about fraud at the same site.

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### **Highlights**

- In the US, the Coalition Against Insurance Fraud estimates the annual cost of health care insurance fraud to be more than \$85 billion per year. And this is said to be on the increase.
- To fight fraud, many governments are now creating new laws, new departments and new programmes. Much of the funds are spent on IT.
- One of the leading providers of predictive software in insurance and health-care offers a mix of bill re-pricing software, case management, claim and provider contract management, which can be combined with the fraud detection systems.
- Data mining is being used to identify previously undiscovered patterns; often, providing new insight into fraud prevention and disease management.
- In the future lies the use of the databases on the internet to check across insurance companies to trace and identify the fraudulent claims.
- Typically, information on blacklisted members, clients, providers will be shared across the internet.

### **Early detection**

A significant part of the effort has gone into automatic bill review and re-pricing, also called auto-adjudication. Due to the growing complexity of rules, and contracts, as well as the large volumes of claims, it is not possible to check the claims manually for all cases. Rule-based systems for early warning are emerging.

Earlier, the rules were to check the conditions of the contract with the claimant. Nowadays, the trend is to add rules to check the provider contracts too. Examples of early rule-based checks are identification of the same tooth extraction having been claimed earlier, or identification of claims by the same member during the same contract. Additional rules such as reminders if the new claim is related to an earlier claim, having the same diagnosis during a relapse period, have become more common of late. In a few cases, systems track the related referrals for the member for the type and quantity of services referred. Automatic matching of pre-existing conditions with diagnosis codes is an emerging area. The presence of standard coding for diagnosis has helped in building these checks.

A decision engine installed by FCCI in the US is able to auto-adjudicate 40 to 60 per cent of the bills entered and automatically redirects the others to appropriate users for verification.

### **The search is on**

Unfortunately, it is not always possible to detect the fraud; some criminals get away. Technology, however, helps trace health-care crimes by finding common patterns. Data mining is being used to identify previously undiscovered patterns; often, providing new insight into fraud prevention and disease management. Researchers and practitioners work in tandem to provide a multi-disciplinary solution to the problem.

To arrive at summaries from which analysis could be done, patients are normally grouped into categories based on a variety of criteria. The summaries have helped arrive at trends and patterns. In Australia, these techniques were used in a state-of-the-art system, using a collection of tools and research algorithms: SAS, Darwin, S-PLUS, Matlab, PRIM, Mars, Gammig, Cbos. Results were delivered using Java and powerful mainframes.

Also, new data mining techniques are making their presence felt. Hot Spots is a methodology for identifying "interesting" areas in a large database, using a combination of segmentation methods and rule induction. In some cases, data warehouses are telling the users the quality and state of health-care in different areas. This enables users to spot under-utilisation and focus on specific areas and providers.

A host of IT companies are searching for solutions. HNC Insurance solutions, one of the leading providers of predictive software in insurance and healthcare, offers a mix of bill re-pricing software, case management, claim and provider contract management, which can be combined with the fraud detection systems. IBM started their research with Medaphis Corporation on the use of a solution for the health-care market for detecting

and preventing errors in medical billing. Using advanced data mining technology, and statistical models, the Fraud and Abuse Management System (FAMS) identifies aberrant patterns in claims data. A specific client's billing pattern is compared with the standard patterns to identify unusual cases. These are highlighted for investigators to follow up.

Perhaps, the largest consolidated effort across companies has been made during the building of the Claimant Index system. This effort started in 1993, when a set of insurance companies started to develop a comprehensive claimant index for assistance in investigation. This database is used by dozens of insurance companies to get instant access to millions of claimants. This can prove useful in identifying deliberate fraud, as well as misrepresentation and pre-existing conditions, and co-ordination of benefits across insurance companies. Historically, usage of the AllClaims index has shown documented savings of over \$600,000 per year.

In February 1999, the National Crime Bureau in the US transferred its claims and related data to Insurance Services Office, Inc. (ISO) so that the data can be merged with the claims databases maintained by the ISO's American Insurance Services Group ( AISG ) into a single US claims database.

### **What next ?**

In the future lies the use of the databases on the internet to check across insurance companies to trace and identify the fraudulent claims. Typically, information on blacklisted members, clients, providers will be shared across the Net.

Integrating provider systems with insurance companies, and insurance company systems with each other, and finally a link with national health-care schemes such as Medicare is a logical step to prevent fraud through co-ordination of benefits across insurance companies. For claims checking, as volumes grow, there will be a growing need for an extendible rule-based claims approval.

Data mining techniques will become widespread in health-care insurance. Some of the standard patterns which will find their way in will be upcoding patterns, and unbundling patterns. Upcoding patterns will compare a provider's billing of complex services with simpler services and identify cases where these ratios exceed the norms. Unbundling patterns will store rules for comparing the bundled service with the unbundled services for each provider; and identifying cases when the provider has billed for some of the unbundled services to earn more.

As Harvard lecturer Malcolm K Sparrow writes in his book, License to steal: Why Fraud Plagues America's Health Care System, there is an "unlimited creativity of men and women determined to steal from the health care complex." The battle between the creativity of the fraudulent and the creativity of the searcher is not likely to be won by either side easily; information technology will play an increasing role, but the triumph will be of human ingenuity.

### **Implication for India**

Insurance fraud is not new to India. But owing to lower awareness and low penetration of personal lines of business, the money siphoned off through medical frauds have not yet reached the alarming proposition. Several developments, viz. entry of private insurers, thrust on personal lines of business, entry of specialized medical service providers in Indian market and greater dependency on IT solutions make it necessary and possible for the insurers to look at plugging this loophole through co-opetition.

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