Analyzing complaint data for healthcare

Introduction

The provision of high-quality healthcare service is an increasingly difficult challenge, on the other hand the effective governance is increasingly recognized as pivotal to improvements in healthcare quality[ref]. The Australian Health Practitioner Regulation Agency (AHPRA) plays a crucial role in this aspect; it works with 14 National Health Practitioner Boards in implementing the National Registration and Accreditation Scheme. AHPRA also accept consumers or patients’ complaints, the AHPRA categorize the complaints based on the nature of the practice and then distribute them to the corresponding board. The board members will review the complaints in regular meeting to identify the issues and make suggestions; set new standards to improve the quality of service. Previous study[ref] shows the effectiveness of the boards is effected by insufficient resource and inadequate information received. Manually processing and analyzing this type of data is time consuming and inefficient. Moreover, even highly professional people could put subjective thinking into analyzes. Modern data mining technology already been employed in many area. For example market database system will analyze customers, categorize them in different groups and forecast their behavior. There is a huge potential to introduce data mining system into healthcare service. Not only reducing the labor required to process the massive amount of data, also tend to produce more accurate and objective result. Forecast the possibility of complaint against a medical practitioner based on historical data is a very valuable indicator for board members when they making the decision.

Although data mining techniques for marketing, manufacturing, security etc. is ripe for deployment, to apply data mining techniques to healthcare data is not a simple matter of switching content due to the complexity and sensitive of the data. It is not suitable to develop a single data mining package for AHPRA, the variables and attributes are different from board to board. There won’t be sufficient time and resource to develop algorithms to cover all 14 boards, however we are trying to find a generic data mining package to analyze the common variables among 14 boards, and develop an in depth analyze against one or two boards, the similar method can be adapt to other boards with minimum amount of work.

This thesis also poses and attempts to answer the following questions:

Literature Review

Project Plan

Evaluation

[References]