# Case Study about Aetna

# Aetna is an insurance company that applies data analysis to the field of medical innovation. Company leaders set up laboratories to build models using customer data held by the company to improve the health of clients, and correspondingly reduce the company's insurance payments for client treatment. One of the most important studies in using big data is metabolic syndrome. They try to change clients' small living habits to reduce their metabolic syndrome.

# There are mainly two models in this research, as described in the article: "a claims-based-only model to predict the probability of each of the five metabolic syndrome factors occurring for each study subject; and a second model based on both claims and biometric data to predict whether each study subject was likely to get worse, improve or stay the same for each metabolic syndrome factor. " [1] Both analytical models can predict the future risk of population and individual metabolic syndrome. Researchers are able to develop detailed risk profiles for individual participants so that they can gain insight into which combinations of the five metabolic syndrome factors exhibited by each subject and are at risk of development. For each Aetna client who used data in the study, the researchers used a scale to measure the percentage of risk that individuals exhibited each of the five metabolic syndrome factors. Aetna also uses natural language processing to incorporate notes written by doctors into the data analysis.

# The results of this study can analyze who is at high risk of metabolic syndrome among clients, and which specific factors will be the driving force behind it. Aetna can issue personalized prediction results for clients, and provide personalized care recommendations and body management plans to alleviate the expected risks. In the United States, metabolic syndrome is a problem that causes about 300 billion US dollars in costs each year. Through this data analysis research, Aetna expects to reduce the medical expenses it pays for clients.

# Reference:

# [1] <https://www.hcinnovationgroup.com/clinical-it/article/13023746/how-aetna-is-using-big-data-to-give-patients-personalized-care>

# <https://gigaom.com/2012/11/20/how-aetna-is-using-big-data-to-improve-patient-health/>