**Predicting Heart Attacks**

**Literature survey**

A. Medical Facts

Researched data points show that almost 50% of the deaths related to heart and blood vessel diseases are on account of coronary heart disease, which includes heart attack. A whooping 325,000 people are estimated to die every year due to coronary attack before hospitalization or getting emergency medical support. An estimated 260,000 deaths occur every year due to major chronic disease of Congestive heart failure in case of older adults.

The manifestations of a cardiac disease can be a stroke or heart attack and is a growing problem. It contributes

significantly to the number of deaths as stated by World Health Organization that 1 out of every 5-individual aged over 40 is susceptible to heart diseases. The introduction is concerned with an in-depth assessment of heart failure risk aimed at establishing the prevention opportunities. A recent study by the Indian Council of Medical Research (ICMR) and the Registrar General of India (RGI) mentions, about 25% of deaths between age band of 30-70 years occur because of different heart related problems.

B. Data Mining and Analysis

Machine learning comes under the umbrella of artificial intelligence (AI). It enables the computers to learn without programming it explicitly. Machine learning aims at developing computer programs that can change whenever

exposed to new sets of data. The machine learning algorithms are classified as Supervised or Unsupervised. It is an evolution from Pattern Recognition study and theory of Computational learning.

Data Mining is the art and science of searching data for patterns and establishing relationship among them. It is concerned with extraction of data for human comprehension. Data science and machine learning algorithms were used in this research work to do a supervised learning in order to build a binary classifier for prediction of susceptibility of an individual to heart attack in the form of a risk factor.