Chest pain as an indicator of heart disease: Project Proposal

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Context, Motivation, Problem: Cardiovascular Disease is the number one cause of death worldwide, per the World Health Organization (1). As with many medical conditinons, early detection and treatment can improve patient outcomes. With that in mind, a model which can take a small sample of basic health information from a patient, namely chest pain type, and rapidly assess their likelihood of having heart disease could be invaluable to strained healthcare systems around the world.

Data: The dataset which will be used to develop this model comes from the University of California, Irvine Machine Learning Repository. UC Irvine credits the Hungarian Institute of Cardiology. Budapest: Andras Janosi, M.D., the University Hospital, Zurich, Switzerland: William Steinbrunn, M.D., the University Hospital, Basel, Switzerland: Matthias Pfisterer, M.D., and the V.A. Medical Center, Long Beach and Cleveland Clinic Foundation: Robert Detrano, M.D., Ph.D. for the collection of the data. The dataset consists of 14 health attributes of 303 patients presenting with heart disease, with some missing values (2).

Deliverables: The final goal of this project is to design and train a logistic regression model for categorizing patients by their heart disease status and then verify the performance of this model with evaluation against a test dataset. Once these goals have been accomplished, insights and visualizations will be presented on crucial and interesting aspects of the dataset and their effects on the models performance.

Sources:

1. World Health Organization. (2020, December 9). *The top 10 causes of death*. https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death
2. University of California, Irvine. (1988, June 8). *Heart Disease.* https://archive.ics.uci.edu/dataset/45/heart+disease