وزارة الصحة
Ministry of Health

Problem Solving with Python

Predict the heart failure

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Introduction

Cardiovascular Disease

- **According to last meta-analysis published 2018 that Cardiovascular disease (CVD) is associated with significant morbidity and mortality.1 In order to reduce the burden of CVD, there is great interest in identifying risk factors in the general population so that those deemed to be at high risk for future cardiovascular events can be targeted for interven tion. While 80% of the risk for future CVD can be predicted from known cardiovascular risk factors such as old age, male sex, hypertension, smoking and diabetes mellitus, the determinants for the remaining 20% risk remain unclear**

The project goal

Help in plans capacity and servers

- Burden and severity of CVD risk factors and control of these risk factors.
- Presence of risk-enhancing conditions. It is difficult to determine how much a risk-enhancing factor may change a patient's 10-year risk estimate quantitatively and therefore, clinician judgment is also crucial to determine whether factors are significant enough to reclassify an individual's risk category.
- Adherence to healthy lifestyle recommendations. For all patients, appropriate lifestyle modification should be recommended. In patients at higher absolute predicted risk for Arteriosclerotic cardiovascular disease (typically, a 10-year estimated risk) more intensive lifestyle efforts are recommended.
- Potential for Arteriosclerotic cardiovascular disease risk-reduction benefits
- CVD is an increasing public health concern in the Middle East and the Gulf Council Countries (GCC). It is estimated that the overall deaths from CVD in the GCC countries, including Saudi Arabia, represent over 45% of all deaths

About data

What is the framing question of your analysis?

- The data will help to know about the risk of cardiovascular disease
- Predicat the case of heart failure for enough time to management and planning

what is the framing question of your analysis?

- Analysis the risk factor cause heart diseases

Who benefits from exploring this question or building this model/system

- Ministry of health for planning and capacity building and prevention programmed
- Patient to know their own risk for heart sick and start prevention

What dataset(s) do you plan to use, and how will you obtain the data from ministry of health record

Variable	Total
Age (N) (%)	
18–44 years	
45–64 years	
$65 years	
Gender	
Systolic blood pressure (mmHg)	
Diastolic blood pressure (mmHg)	
BMI (kg/m2)	
Total cholesterol (mg/dL)	
LDL-C (mg/dL)	
HDL-C (mg/dL)	
Fasting plasma glucose (mmol/L)	

What is an individual sample/unit of analysis in this project

- The people over 18 years old and have one of risk factors

what will you predict as your target?

- Predict heart failure
- Cardiovascular risk score