

# PROBLEM STATEMENT

Early Detection of Chronic Kidney  
disease using Machine Learning-  
APPLIED DATA SCIENCE

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# INTRODUCTION

CKD is a condition in which the kidneys are damaged and cannot filter blood as well as they should. Because of this, excess fluid and waste from blood remain in the body and may cause other health problems, such as heart disease and stroke.

Some other health consequences of CKD include:

- Anemia or low number of red blood cells
- Increased occurrence of infections
- Low calcium levels, high potassium levels, and high phosphorus levels in the blood
- Loss of appetite or eating less
- Depression or lower quality of life

CKD has varying levels of seriousness. It usually gets worse over time though treatment has been shown to slow progression. If left untreated, CKD can progress to kidney failure and early cardiovascular disease. When the kidneys stop working, dialysis or kidney transplant is needed for survival. Kidney failure treated with dialysis or kidney transplant is called end-stage renal disease (ESRD).

Not all patients with kidney disease progress to kidney failure. To help prevent CKD and lower the risk for kidney failure, control risk factors for CKD, get tested yearly, make lifestyle changes, take medicine as needed, and see your health care team regularly.

## SYMPTOMS

People with CKD may not feel ill or notice any symptoms. The only way to find out for sure if you have CKD is through specific blood and urine tests. These tests include measurement of both the creatinine level in the blood and protein in the urine.

# PROBLEM STATEMENT

- Noncommunicable illnesses are the leading cause of early death, and CKD is the leading noncommunicable disease.
- Chronic Kidney Disease is a major concern for the global health care system.
- Recent research suggests that some of the negative outcomes can be avoided with early identification and treatment.
- Chronic kidney disease (CKD) is now wreaking havoc on society and is spreading at an alarming rate.
- Various efforts have been undertaken to advance early therapy to prevent the condition from progressing to chronic disease.
- People with CKD must focus on implementing proven, cost-effective therapies to as many people as possible while taking into consideration restricted needs, human and financial resources.