

Define problem/problem understanding

Social and Business Impact

On a social level, early detection and prediction of CKD can lead to improved patient outcomes and quality of life. By identifying individuals at risk for CKD, healthcare providers can intervene early and slow the progression of the disease through lifestyle changes, medication management, and other treatments. This can help prevent the need for dialysis or kidney transplantation, which can be costly and life-altering for patients. Additionally, early prediction can also help reduce the overall burden of CKD on the healthcare system by reducing the number of hospitalizations and emergency room visits

kidney disease (CKD) remains a concern to the health of 37 million adults. Prevention is key to combatting this disease before it is able to progress into its advanced stages or end-stage renal disease (ESRD).

Chronic kidney disease is a type of kidney disease in which a gradual loss of kidney function occurs over a period of months to years. Initially generally no symptoms are seen, but later symptoms may include leg swelling, feeling tired, vomiting, loss of appetite, and confusion. Complications can relate to hormonal dysfunction of the kidneys and include high blood pressure, bone disease, and anemia. Additionally CKD patients have markedly increased cardiovascular complications with increased risks of death and hospitalization

The two main causes of kidney disease in the US are type 2 diabetes and high blood pressure. If these conditions are diagnosed in time and treated properly, kidney disease can be slowed down, or even prevented. The third main cause of kidney disease is glomerulonephritis, which is a disease that damages the filtering units of the kidneys. Other causes of kidney disease may include frequent urinary infections, kidney stones, various inherited diseases like polycystic kidney disease, overuse of painkillers and other over-the counter medications, and the abuse of certain substances.