**NHANES Survey by CDC/Health.gov**

Individual Food Item Intake

Total Nutrients Intake

ACR measures for participants

Kidney Conditions

**USRDS Data on CKD and ESRD Patients**

Age Group Based Mortality

Age Group and Treatment based Remaining Life

Age group based mortality

Food Items

Albumin Creatinine Ratio (ACR) Data

Food Group Intake

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Food Subgroups Intake

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Nutrients Intake

Nutrients Intake

**Source**: Food group intake and recommended amount

**Target**: ACR

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**Source**: Food subgroups Intake

**Target**: ACR

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**Source**: Nutrients Intake

**Target**: ACR

USDA data to map Food Items to Food Groups and Subgroups

Mortality Rates for each Age

Age

PCA: identify important groups in the dataset

ACR Predictability in the test dataset

Mortality Predictability

Apply ML Approaches

Regression, Bayesian

Insert mortality rates as the target variable

Regression to check correlation with ACR

Apply ML Approaches

Regression, Bayesian, Random Forest Regression

PCA

Shift from Recommendation by Health.gov

Derive USRDS age group based intake

Recommended Intake Amounts By Health.gov

**Source 1**: Age Group Based Intake – Food Groups

**Source 2**: Age Group Based Intake - Food Sub Groups

**Target**: Age Group based Mortality

PCA: identify important groups in the dataset

Regression to check correlation with Mortality

Regression to Check Correlation with Mortality