

# **Project Proposal: Healthcare Data Analysis with NHS Integration for the UK Market**

## **Project Title**

Enhancing Patient Health Insights Using Internal Healthcare Data and NHS (National Health Service.) UK Health Standards

## **Background and Problem Statement**

Healthcare providers in the UK face increasing pressure to deliver high-quality, cost-effective care while aligning with national health standards. Internal patient data, while valuable, often lacks broader context without comparison to NHS benchmarks. This project proposes integrating an internal healthcare dataset with publicly available NHS data to provide a comprehensive view of patient outcomes, treatment efficiency, and regional health patterns.

This integration will enable alignment with NHS care pathways, enhance diagnostic accuracy, and provide policy-relevant insights.

## **Project Objectives**

1. **Data Cleaning and Structuring**
  - Preprocess the internal healthcare dataset.
  - Organize structured healthcare records, including diagnoses, costs and treatments.
2. **SQL-Based Querying and Trend Extraction**
  - Use SQL to identify high-frequency diagnoses treatment, treatment description, and cost trends.
  - Analyze patient outcomes by age group, gender, and regional location
3. **NHS Benchmark Comparison**
  - Compare treatment costs with NHS Tariff Payment System data
4. **Geographic Health Pattern Analysis**
  - Identify trends such as regional prevalence of certain conditions.
5. **Visualization and Reporting**
  - Use Power bi to build dashboards comparing internal and NHS data on diagnoses, treatment cost, and service efficiency

**Two dataset would be use to complete this task:** NHS Tarrif datasets & UK Healthcare Dataset with NHS.

## **How the datasets fulfill the objectives**

### **Data Cleaning & Structuring**

Healthcare data includes all required clinical and cost fields

<b>SQL Querying &amp; Trend Analysis</b>	Rich fields for diagnosis, treatment, cost, outcome, region, gender
<b>NHS Benchmark Comparison</b>	NHS dataset provides standard cost data for real-time comparison
<b>Regional Health Pattern Analysis</b>	<code>Region</code> field in healthcare data supports trend analysis across UK locations
<b>Visualization &amp; Reporting</b>	Use Power BI to link datasets and create a dashboard.