# Project Insights: Medical Data History

**Project Overview:**

The Medical Data History project focuses on analysing the records of patients, their admissions, and the attending doctors. Using SQL, I performed a series of queries to extract valuable insights from the data, encompassing patient demographics, health conditions, and doctor-patient interactions. The analysis helped in understanding trends, patient characteristics, and identifying specific patterns in medical records.

**Key Insights:**

1. Patient Demographics and Health Trends:

* The database contains a mix of male and female patients, with a clear breakdown of gender distribution. A targeted query revealed that the number of male and female patients is relatively balanced, helping to understand the diversity of the patient base.
* The most common allergies among patients were identified, providing insights into the medical conditions that are prevalent among the population. This analysis could help doctors better prepare for common allergic reactions.
* Unique cities within the 'NS' province where patients reside were listed, which could assist in region-specific healthcare planning and resource allocation.
* Patients born in the 1970s were analysed, sorted by birth dates, providing a snapshot of middle-aged demographics that may require targeted medical attention.

2. Medical Conditions and Diagnoses

* A significant focus was placed on patients with specific diagnoses like 'Dementia' and 'Epilepsy'. The data revealed patients' details along with their attending doctors’ specialties, emphasizing the role of specialized care.
* Patients with multiple admissions for the same diagnosis were highlighted, which can help identify chronic conditions that require ongoing medical care and management.
* The analysis of admissions occurring on the same day provided insights into short-term medical cases and emergency care trends, potentially informing hospital management about resource allocation needs.

3. Physical Attributes and Health Indicators

* + Queries grouped patients based on their weight ranges, providing a clear understanding of different weight categories. This data can inform health initiatives aimed at addressing issues like obesity or malnutrition.
  + The calculation of obesity status using BMI (Body Mass Index) highlighted the proportion of the patient population that might be at risk due to high BMI values.
  + The analysis of patient height ranges across different provinces helped identify variations in physical attributes across regions.

4. Access to Medical Records and Security:

* + A special focus was placed on patients who have gone through the admissions process, as they were assigned temporary passwords for accessing their medical documents. The passwords were created using a combination of the patient's ID, the length of their last name, and their birth year, ensuring a secure and personalized access system.
  + The analysis included listing patients who were given access to their records, enhancing transparency and security within the medical records management system.

5. Data Integrity and Updates:

* + The project required updating certain data fields, such as replacing `NULL` values in the `allergies` column with 'NKA' (No Known Allergies). This step ensured that the data remains consistent and meaningful for further analysis.
  + Renaming the `attending\_doctor\_id` column to `doctor\_id` in the `admissions` table enabled smoother data merging, facilitating more accurate joins and queries.

**Conclusion**:

The Medical Data History project provided an in-depth analysis of patient and medical data through a series of SQL queries. The insights derived from the data can help medical professionals, hospital administrators, and healthcare planners make informed decisions regarding patient care, resource management, and health monitoring. By understanding patient demographics, common health conditions, and region-specific data, the project lays the foundation for better healthcare services and a more personalized approach to patient management.