DAX Functions Used

1. **Total Discharges**

   Total Discharges = COUNTROWS(hospital_discharges)

   - **Purpose**: Counts the total number of hospital discharges in the dataset.

2. **Total Hospitals**

   Total Hospitals = DISTINCTCOUNT(hospital_discharges[facility_id])

   - **Purpose**: Counts the total number of distinct hospitals in the dataset.

3. **Average LOS Days**

   Average LOS Days = AVERAGE(hospital_discharges[length_of_stay])

   - **Purpose**: Calculates the average length of stay (LOS) for all patients across hospitals.

4. **Average Cost per Discharge**

   Average Cost per Discharge = DIVIDE(SUM(hospital_discharges[total_costs]), [Total Discharges])

   - **Purpose**: Computes the average cost per discharge by dividing the total costs by the total number of discharges.

5. **Average Cost per Discharge (Overall State Average)**

   Average Cost per Discharge_ALL = CALCULATE([Average Cost per Discharge], ALL())

- **Purpose**: Calculates the overall state average cost per discharge, ignoring any filters.

6. **Average LOS Days (Overall State Average)**

```
Average LOS Days_ALL = CALCULATE([Average LOS Days], ALL())
```

- **Purpose**: Calculates the overall state average length of stay (LOS), ignoring any filters.

7. **Percentage Variation in Average Cost per Discharge**

```
% Var Average Cost per Discharge =
DIVIDE(
    ([Average Cost per Discharge] - [Average Cost per Discharge_ALL]),
    [Average Cost per Discharge_ALL]
)
```

- **Purpose**: Calculates the percentage difference between a hospital's average cost per discharge and the overall state average.

8. **Percentage Variation in Average LOS Days**

```
% Var Average LOS Days =
DIVIDE(
    ([Average LOS Days] - [Average LOS Days_ALL]),
    [Average LOS Days_ALL]
)
```

- **Purpose**: Calculates the percentage difference between a hospital's average LOS and the overall state average.

9. **Total Surgeons**

```
Total Surgeons = DISTINCTCOUNT(hospital_discharges[operating_provider_id])
```

- **Purpose**: Counts the total number of distinct surgeons performing elective hip replacement surgeries.

10. **Surgical Program Size**

```
Surgical Program Size =
SWITCH(
    TRUE(),
    Surgical_program_size_summary[Total Discharges (bins)] <= 200, "0-19
9",
    Surgical_program_size_summary[Total Discharges (bins)] <= 400, "200
-399",
    Surgical_program_size_summary[Total Discharges (bins)] <= 600, "400
-599",
    "600+"
)
```

- **Purpose**: Groups hospitals into categories based on their total discharges (e.g., 0-199, 200-399, etc.).

11. **Age Bins**

```
Age Bins =
IF(
    OR(
        hospital_discharges[age_group] = "50 to 69",
        hospital_discharges[age_group] = "70 or Older"
    ),
    "Age 50+",
    "Age <50"
)
```

- **Purpose**: Groups patients into two age categories: "Age 50+" and "Age <50".