-- 3. Slice: Analysis of high-risk demographics in rainy season

-- Identifies vulnerable populations during peak transmission periods

SELECT

dem.Age\_group,

dem.Socio\_economic\_status,

SUM(f.Diagnosed\_cases) as Cases,

AVG(f.Infection\_rate) as Avg\_Infection\_Rate

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_DEMOGRAPHICS dem ON f.Demographic\_key = dem.Demographic\_key

JOIN DIM\_DATES d ON f.Date\_key = d.Date\_key

WHERE d.Is\_rainy\_season = TRUE

GROUP BY dem.Age\_group, dem.Socio\_economic\_status

ORDER BY Cases DESC;

-- 6. Multi-dimensional analysis: Healthcare capacity vs outbreak severity

-- Assesses healthcare system readiness impact

SELECT

h.Facility\_name,

h.Bed\_capacity,

h.Medical\_staff,

AVG(f.Severe\_cases) as Avg\_Severe\_Cases,

MAX(f.Diagnosed\_cases) as Max\_Cases,

h.Antimalarial\_stock

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_HEALTHCARE h ON f.Healthcare\_key = h.Healthcare\_key

WHERE f.Outbreak\_status = TRUE

GROUP BY h.Facility\_name, h.Bed\_capacity, h.Medical\_staff, h.Antimalarial\_stock

ORDER BY Avg\_Severe\_Cases DESC;

[14:47, 16/01/2025] Akenji: -- 5. Roll-up: Prevention effectiveness analysis

-- Evaluates impact of prevention measures on outbreak reduction

SELECT

p.Control\_method,

d.Year,

AVG(p.Spray\_coverage) as Avg\_Spray\_Coverage,

SUM(p.Nets\_distributed) as Total\_Nets,

COUNT(CASE WHEN f.Outbreak\_status = TRUE THEN 1 END) as Outbreak\_Count

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_PREVENTION p ON f.Prevention\_key = p.Prevention\_key

JOIN DIM\_DATES d ON f.Date\_key = d.Date\_key

GROUP BY p.Control\_method, d.Year

ORDER BY Outbreak\_Count;

-- 3. Slice: Analysis of high-risk demographics in rainy season

-- Identifies vulnerable populations during peak transmission periods

SELECT

dem.Age\_group,

dem.Socio\_economic\_status,

SUM(f.Diagnosed\_cases) as Cases,

AVG(f.Infection\_rate) as Avg\_Infection\_Rate

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_DEMOGRAPHICS dem ON f.Demographic\_key = dem.Demographic\_key

JOIN DIM\_DATES d ON f.Date\_key = d.Date\_key

WHERE d.Is\_rainy\_season = TRUE

GROUP BY dem.Age\_group, dem.Socio\_economic\_status

ORDER BY Cases DESC;

[14:48, 16/01/2025] Akenji: -- 7. DICE: Community Infrastructure Impact

-- Purpose: Helps identify infrastructure improvements needed

-- Analyzes how infrastructure affects malaria cases

SELECT

l.District,

i.Road\_quality,

i.Access\_to\_water,

i.Access\_to\_electricity,

AVG(h.Distance\_to\_communities) as Avg\_Distance\_to\_Healthcare,

SUM(f.Diagnosed\_cases) as Total\_Cases,

SUM(f.Deaths) as Total\_Deaths

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_LOCATION l ON f.Location\_key = l.Location\_key

JOIN DIM\_INFRASTRUCTURE i ON f.Infrastructure\_key = i.Infrastructure\_key

JOIN DIM\_HEALTHCARE h ON f.Healthcare\_key = h.Healthcare\_key

GROUP BY l.District, i.Road\_quality, i.Access\_to\_water, i.Access\_to\_electricity;

-- 6. SLICE: Seasonal Preparation Guide

-- Purpose: Helps communities prepare for high-risk seasons

-- Focuses on specific seasonal patterns

SELECT

d.Month\_name,

AVG(w.Rainfall) as Avg\_Rainfall,

AVG(w.Temperature) as Avg\_Temperature,

SUM(f.Diagnosed\_cases) as Total\_Cases,

COUNT(CASE WHEN f.Outbreak\_status = TRUE THEN 1 END) as Outbreak\_Count

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_DATES d ON f.Date\_key = d.Date\_key

JOIN DIM\_WEATHER w ON f.Weather\_key = w.Weather\_key

WHERE d.Is\_rainy\_season = TRUE

GROUP BY d.Month\_name

ORDER BY Total\_Cases DESC;

-- 2. DRILL-DOWN: Community Level Risk Assessment

-- Purpose: Helps local healthcare workers identify high-risk areas within their district

-- Shows detailed breakdown of cases by specific locations and conditions

SELECT

l.District,

l.Distance\_to\_water,

e.Vegetation\_type,

COUNT(CASE WHEN f.Outbreak\_status = TRUE THEN 1 END) as Outbreak\_Count,

SUM(f.Diagnosed\_cases) as Total\_Cases,

SUM(f.Severe\_cases) as Severe\_Cases

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_LOCATION l ON f.Location\_key = l.Location\_key

JOIN DIM\_ENVIRONMENT e ON f.Environment\_key = e.Environment\_key

GROUP BY l.District, l.Distance\_to\_water, e.Vegetation\_type

ORDER BY Outbreak\_Count DESC;

-- 1. ROLL-UP: Regional Resource Allocation Query

-- Purpose: Helps Ministry of Health allocate resources and budget by region

-- Shows yearly burden of malaria by region to inform resource distribution

SELECT

l.Region\_name,

d.Year,

SUM(f.Diagnosed\_cases) as Total\_Cases,

SUM(f.Deaths) as Total\_Deaths,

SUM(h.Antimalarial\_stock) as Total\_Medicine\_Stock,

AVG(h.Bed\_capacity) as Average\_Bed\_Capacity

FROM FACT\_MALARIA\_CASES f

JOIN DIM\_LOCATION l ON f.Location\_key = l.Location\_key

JOIN DIM\_DATES d ON f.Date\_key = d.Date\_key

JOIN DIM\_HEALTHCARE h ON f.Healthcare\_key = h.Healthcare\_key

GROUP BY l.Region\_name, d.Year

ORDER BY Total\_Cases DESC;