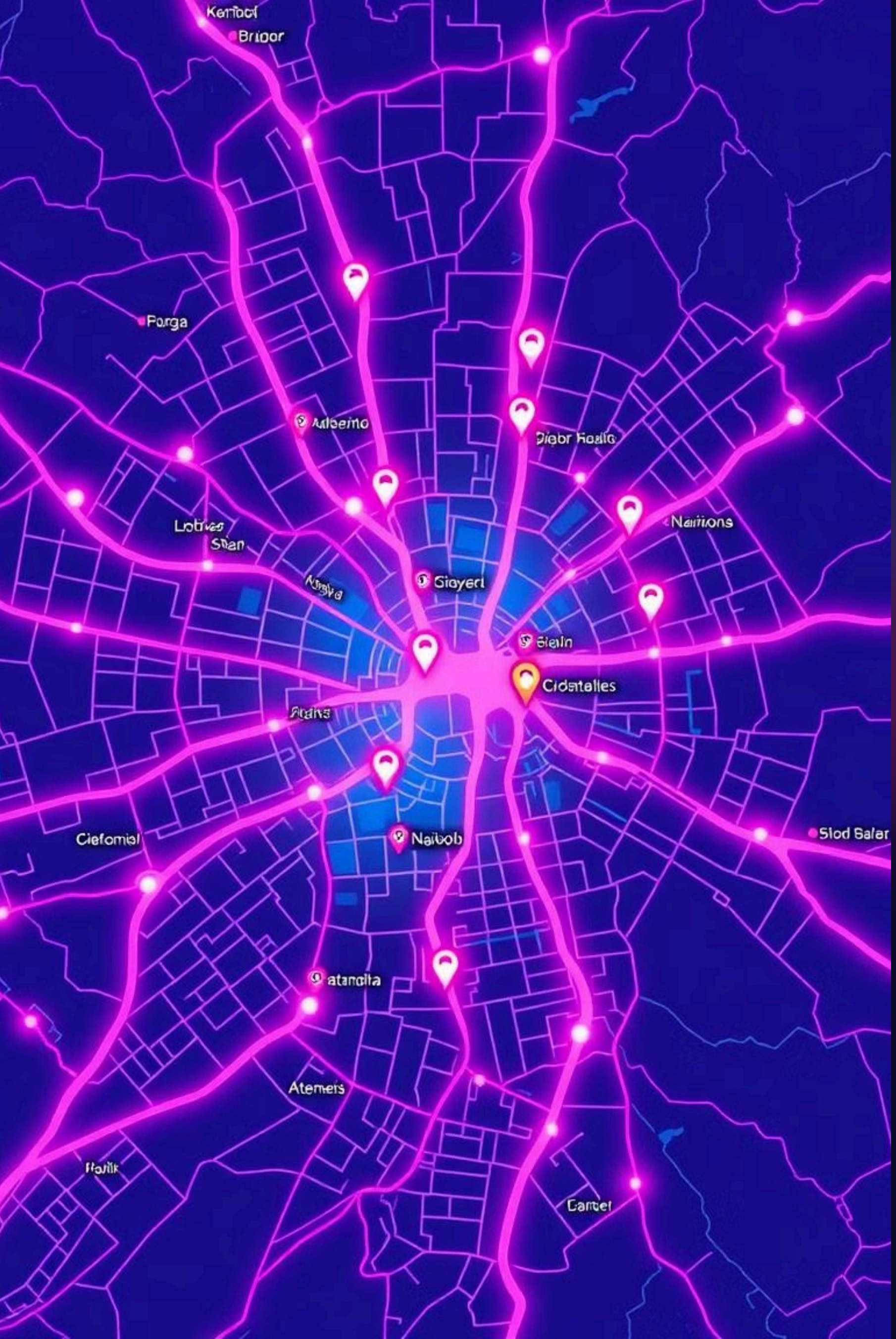

Tackling Cholera, Malaria, and Typhoid with Data-Driven Solutions

This presentation explores a data-driven solution to combat cholera, malaria, and typhoid in Nairobi, Kenya.

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The Health Burden of Cholera, Malaria, and Typhoid in Nairobi

1

Disease Burden

Cholera, malaria, and typhoid are major health concerns in Nairobi, causing significant morbidity and mortality, particularly in underprivileged communities.

2

Disease Spread

Cholera outbreaks occur during the rainy season due to poor sanitation, while malaria is prevalent due to inconsistent access to mosquito nets and medication.

3

Impact on Healthcare

These diseases place a heavy burden on healthcare systems and families, with patients facing high out-of-pocket medical expenses.

4

Data Point

In Nairobi, approximately 5,000 cases of cholera, 45,000 cases of malaria, and 30,000 cases of typhoid were reported in the past year.

A Data-Driven Solution for Better Disease Management

Objective

To implement a data-driven solution that enables health officials and hospitals to track, analyze, and respond to cholera, malaria, and typhoid outbreaks efficiently.

Solution Approach

The solution leverages hospital data, patient information, and healthcare expenditure to provide real-time insights into disease trends, risk areas, and resource needs.

Impact

This solution would enable a 30% reduction in disease-related fatalities, a 20% reduction in hospital costs, and a 40% increase in resource availability for disease prevention.

Workflow: Data Collection to Disease Insights

1

Data Collection

Hospitals such as Kenyatta National Hospital and four others in Nairobi will report cases of cholera, malaria, and typhoid.

2

Database Storage

This data is stored in a centralized relational database.

3

Data Analysis

SQL queries are used to analyze the data for disease patterns, identify high-risk areas, and predict where resources are needed most.

4

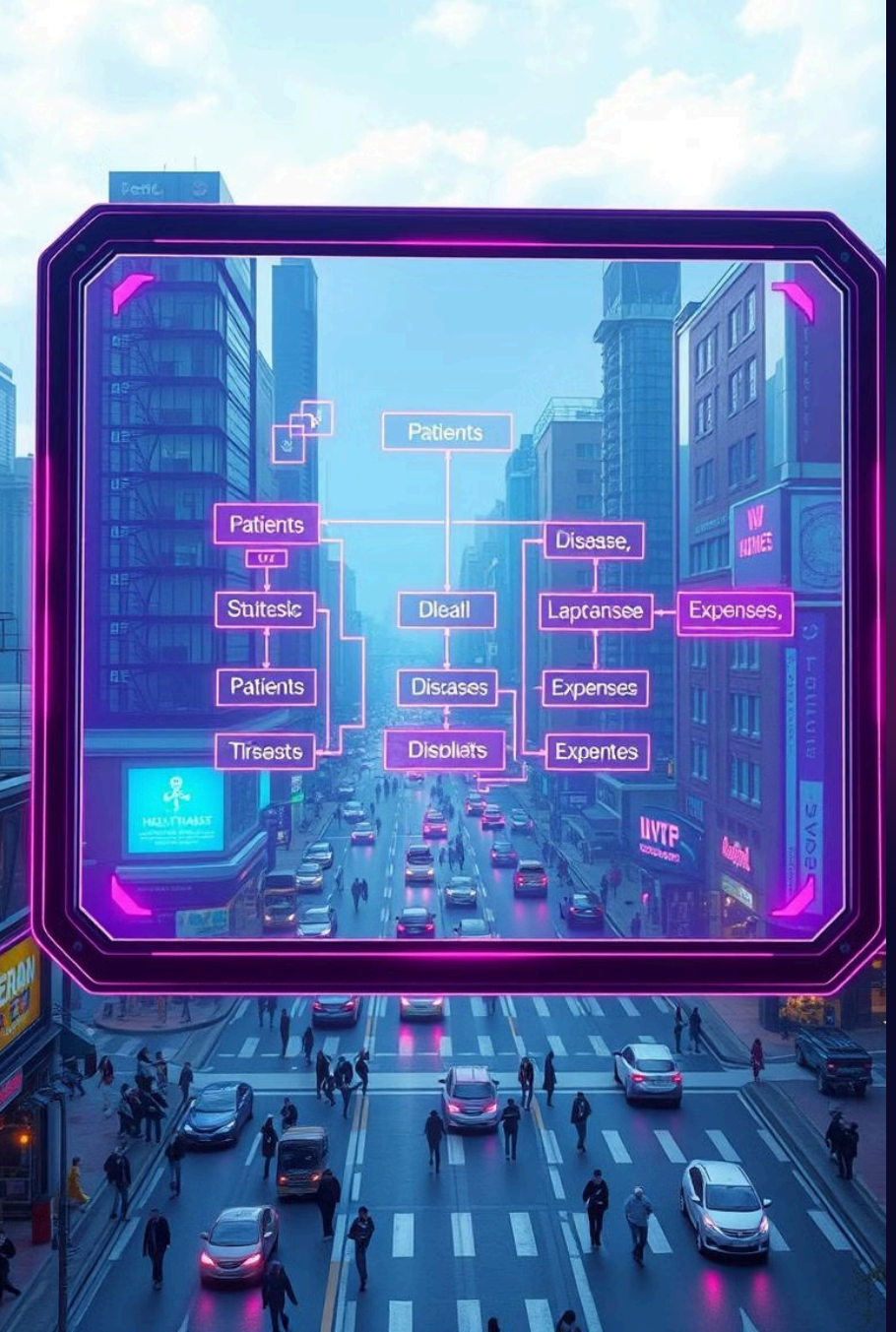
Visualization

The analyzed data is visualized in interactive dashboards that provide health officials with actionable insights.

5

Actions

Health workers use the dashboard to deploy emergency resources, improve disease tracking, and allocate funding where necessary.



Database Design for Disease Tracking

Patients	Diseases	Hospitals	Expenses
PatientID, Name, Age, Gender, HospitalID	DiseaseID, DiseaseName, PatientID	HospitalID, HospitalName, Location	ExpenseID, ExpenseAmount, DiseaseID, HospitalID

Key Insights from the Data

Cholera Analysis

Between June and September, cholera cases spike in the slums of Nairobi due to poor sanitation.

Malaria Prevalence

Highest between February and April due to increased mosquito activity, disproportionately affecting younger males.

Typhoid Trends

Highest in areas with limited access to clean water. The data shows that Kenyatta National Hospital handles 60% of typhoid cases in Nairobi.

Real-Time Disease Tracking Dashboard

Disease Overview

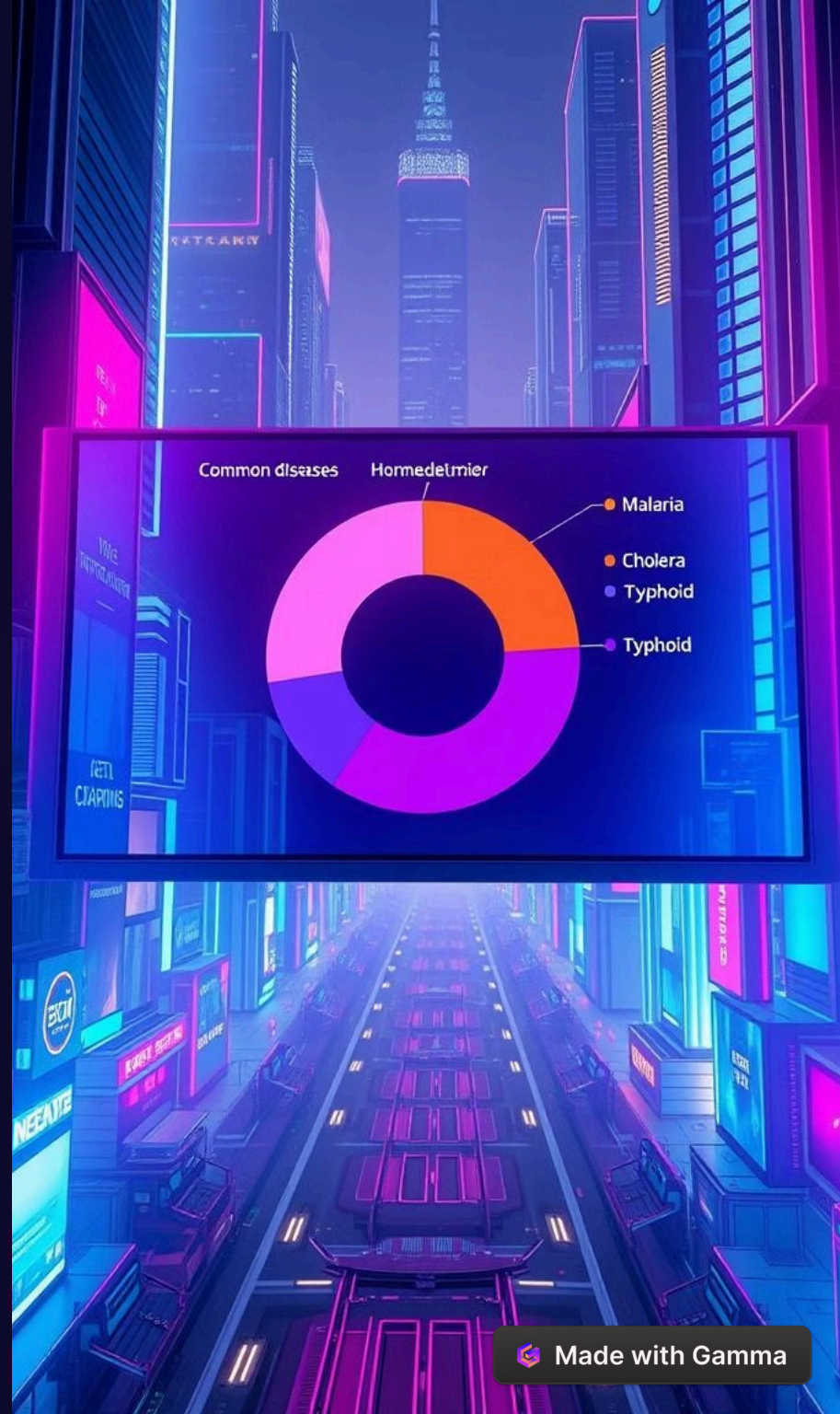
Filters for cholera, malaria, and typhoid. Shows total cases, hospital burden, and expenses.

Demographic Insights

Age and gender breakdown for each disease.

Resource Allocation

Heat maps showing high-risk areas for disease outbreaks.



Social and Economic Benefits

1

Cost Savings

By optimizing resource allocation, hospitals could reduce the average cost of treating malaria, cholera, and typhoid by 20%.

2

Improved Patient Outcomes

Early detection and resource deployment will lead to a reduction in mortality rates by at least 30%, especially for cholera.

3

Equity

This system ensures that resources reach the most vulnerable, low-income communities, who face the highest disease burden.

Insights and What-If Analysis

1 Insight

Cholera outbreaks are most severe in informal settlements like Kibera, which could benefit from increased sanitation resources.

2 What-If Scenarios

If the number of mosquito nets was increased by 50% in high-risk areas, malaria cases would drop by 25%.

3 Actionable Intelligence

These insights could guide policy changes, leading to more effective use of healthcare resources.

Future Roadmap and Call to Action

Together, we can save lives, reduce healthcare costs, and ensure healthier futures for the most vulnerable populations.