Well-Life

STRATEGIC HEALTH INSIGHTS REPORT

Patient Admissions and Diagnosis Analysis (2021–2024)

PREPARED BY

Anietie Etuk
Senior Data Analyst

DATE

July 2025

TABLE OF CONTENTS

INTRODUCTION

This report presents a detailed analysis of hospital patient data from 2021 to 2024, using Power BI to uncover patterns and trends in admissions, diagnoses, gender, age ranges, and seasonal peaks. Each insight was carefully developed based on real business questions that support data-driven decisions by hospital leadership.

Expected Deliverables (What the Client Gets):

- Clear understanding of the major health burdens across different demographics (age, gender).
- Actionable recommendations for improving services and allocating resources.
- Strategic guidance on shifting focus from acute to chronic disease management.
- Planning tools for predicting seasonal peaks and patient growth.
- Suggestions for gender-sensitive and age-specific healthcare programs.

Expected Results (What Happens if Actions Are Taken):

- Increased efficiency in patient care delivery.
- Better management of chronic diseases and elderly care.
- Reduction in emergency cases and treatment delays.
- Improved community trust and patient satisfaction.
- Stronger positioning of the hospital as a data-driven, future-ready healthcare provider in Nigeria.

This report is not only a data review—it is a strategic roadmap for transforming the hospital into a smarter, more responsive healthcare institution.

EXECUTIVE SUMMARY

Problem Statement

The hospital has experienced consistent growth in patient admissions between 2021 and 2024. However, it lacks the data-driven structure to identify and act on trends in disease types, demographic patterns, seasonal spikes, and shifting healthcare burdens. As a result, resources are overstretched in some areas and underutilized in others, while preventable conditions continue to rise.

Objectives

- To analyze the top diagnoses and understand disease patterns across time.
- To identify the most vulnerable patient groups by gender and age.
- To detect seasonal trends for improved resource planning.
- To measure changes in overall patient volume and needs.
- To provide strategic recommendations for improvement and transformation.

Value Proposition

This Power BI-driven report delivers:

- Data-backed insights that highlight where to reduce waste and increase impact.
- Gender- and age-based patient segmentation for targeted interventions.
- Seasonal illness patterns to guide inventory, staffing, and outreach programs.
- A roadmap to evolve from general care to specialized chronic disease management.
- Custom recommendations that are locally relevant yet globally applicable.

Through the FIRE (Facts, Findings, Insights, Recommendations, Expected Outcome) method, this report makes complex analysis accessible, useful, and actionable for hospital owners and medical directors.
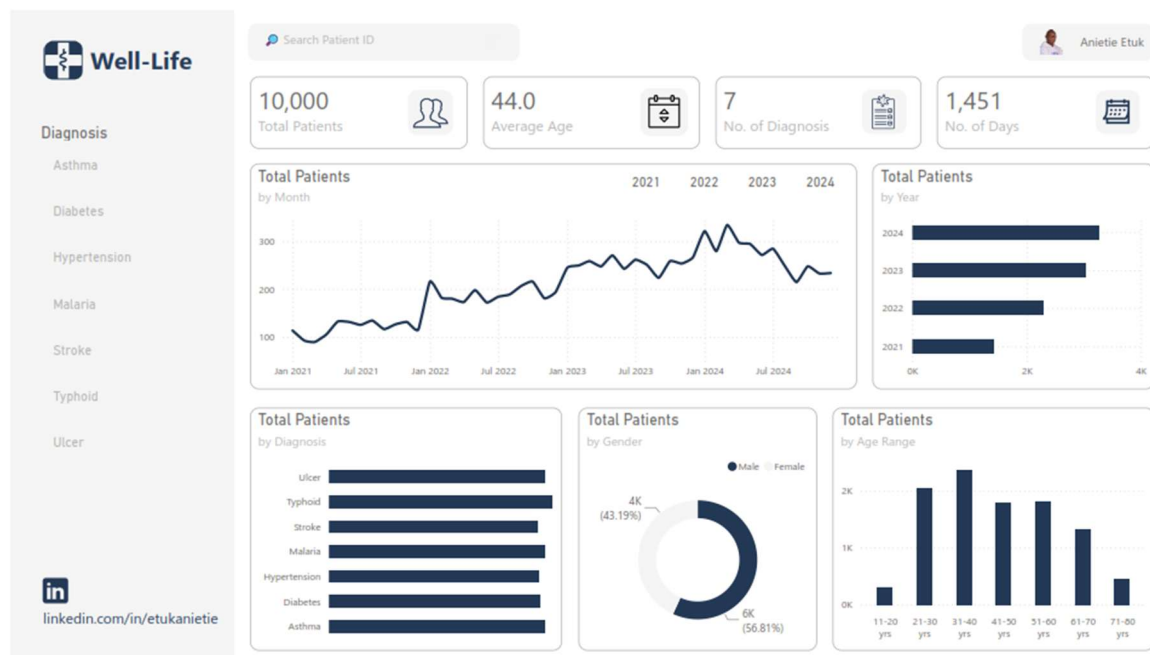
Patient Admissions and Diagnosis Analysis Dashboard

TASKS

TASK 1: Which Diagnosis Has the Highest Number of Patients?

Facts
- The most diagnosed conditions were:
    - **Typhoid**: 1,487 patients
    - **Asthma**: 1,440
    - **Ulcer**: 1,439
    - **Malaria**: 1,436
    - **Diabetes**: 1,407
    - **Hypertension**: 1,401
    - **Stroke**: 1,390

Diagnosis	Total Patients
Typhoid	1,487
Asthma	1,440
Ulcer	1,439
Malaria	1,436
Diabetes	1,407
Hypertension	1,401
Stroke	1,390
Total	**10,000**

Findings
- **Gender**:
    - Typhoid and malaria were more common in **females**.
    - Chronic illnesses like asthma, ulcer, diabetes, hypertension, and stroke were more common in **males**.
- **Average Age by Diagnosis**:
    - Malaria: 27
    - Typhoid: 30
    - Asthma: 35
    - Ulcer: 43
    - Diabetes: 53
    - Hypertension: 58
    - Stroke: 65
- **Trends Over the Years**:
    - Typhoid and malaria **increased in 2021–2022** but then **declined** in 2023 and 2024.

- o Chronic diseases **increased steadily** from 2021 to 2024.

Insights

1. **Health Needs Shift With Age**
   - o Young adults (20s–30s) suffer more from infectious diseases like typhoid and malaria.
   - o Middle-aged and older patients face long-term illnesses like diabetes, stroke, and hypertension.
2. **Chronic Conditions Are Rising**
   - o The steady rise in diabetes, hypertension, and stroke suggests changing diets, stress levels, and less active lifestyles in Nigeria.
   - o These conditions require regular monitoring, medication, and specialist care.
3. **Hospital Services Are Changing**
   - o The hospital is becoming more of a **chronic care centre**.
   - o This shift in patient needs demands better long-term care planning.
4. **Infectious Diseases Are Declining**
   - o Malaria and typhoid cases are reducing, possibly due to:
     - ▪ Improved sanitation or mosquito control
     - ▪ Better community health awareness
     - ▪ Patients choosing other hospitals for acute illnesses

---

Recommendations

1. **Build More Chronic Care Services**
   - o Expand facilities for diabetes, hypertension, and stroke treatment.
   - o Train more staff in managing long-term illnesses.
2. **Introduce Age-Based Care Plans**
   - o For ages 20–40: Focus on preventing typhoid, malaria, and stress-related illness.
   - o For ages 40+: Offer regular screening and health education for chronic diseases.
3. **Strengthen Health Campaigns by Gender**
   - o Target females with hygiene and nutrition education to reduce typhoid/malaria.
   - o Encourage men to check for chronic illnesses early, especially stroke and diabetes.
4. **Review Internal Systems**
   - o Use dashboards (like Power BI) to track which patients are moving from acute to chronic illness. This helps with referrals and follow-ups.
5. **Review Why Typhoid and Malaria Are Dropping**
   - o Is it due to success in treatment, or are patients going elsewhere? The hospital needs a clear answer through internal surveys or SWOT analysis.

Expected Outcomes

- 30% increase in chronic care capacity through more space, staff, and supplies.
- 10% reduction in emergency visits by preventing late-stage complications.
- Better resource use—less money wasted on underused malaria/typhoid units.
- More satisfied patients due to tailored care plans by age and gender.
- Stronger hospital reputation as a leader in long-term care management.

TASK 2: What Is the Gender Distribution of Patients?

Facts

- Male patients: 5,681
- Female patients: 4,319

Gender	Total Patients
Female	4,319
Male	5,681
Total	**10,000**

Findings

- **Diagnosis by Gender**:
  - Female patients were more frequently diagnosed with typhoid, malaria, asthma, and hypertension.
  - Male patients had more cases of stroke, ulcer, and diabetes.
- **Age**:
  - Average age of female patients is 42.
  - Average age of male patients is 45.
- **Admission Trend**:
  - Patient admissions for both genders increased steadily from 2021 to 2024.

Insights

1. **Gender Gap in Hospital Usage**

   Males represent a higher number of hospital admissions. This could reflect:
   - Higher risk or exposure to chronic illnesses among men.
   - Possible underreporting or delayed health-seeking among women in older age groups.
2. **Disease Differences by Gender**
   - Women are more affected by infectious diseases and stress-related conditions (e.g., malaria, typhoid, asthma, hypertension).

- Men tend to present with chronic, lifestyle-related illnesses (e.g., diabetes, ulcer, stroke), possibly due to delayed care or habits like smoking, alcohol, or poor diet.

3. **Care-Seeking Behaviour by Gender**
    - Women may seek medical care earlier (average age 42), while men often wait until symptoms worsen (average age 45).

Recommendations

1. **Design Gender-Specific Campaigns**
    - **For women**: Focus on infectious disease prevention, stress management, and family health.
    - **For men**: Emphasize regular checkups and chronic illness prevention (e.g., diabetes and stroke).
2. **Create Targeted Community Programs**
    - Partner with local religious and social groups for **Men's Health Days** and **Women's Health Outreach** focusing on their key health risks.
3. **Encourage Early Detection in Men**
    - Set up fast-track screening centres in markets, business parks, and transport hubs to reach men who delay care.
4. **Offer Women-Friendly Wellness Packages**
    - Provide subsidized checkups and maternal wellness education, especially for working-class and rural women.
5. **Remove Gender-Neutral Messaging**
    - Adjust patient education to reflect male and female realities. Use simple language and relevant channels (e.g., WhatsApp, local radio).

Expected Outcomes

- 20% increase in male checkups for chronic conditions like stroke and diabetes.
- 30% rise in female attendance for outpatient and preventive services.
- Reduction in critical emergencies due to earlier diagnoses.
- Better gender balance in hospital planning, leading to more efficient care.
- Stronger community relationships built through relatable and respectful communication.

TASK 3: What Is the Most Common Age Range?

Facts

- The **most common age group** is **31–40 years** with **2,353 patients**.
- Age group distribution:
    - 11–20 years: 287

- 21–30 years: 2,023
- 31–40 years: 2,353
- 41–50 years: 1,789
- 51–60 years: 1,796
- 61–70 years: 1,302
- 71–80 years: 450

Age Range	Total Patients
11-20 yrs	287
21-30 yrs	2,023
31-40 yrs	2,353
41-50 yrs	1,789
51-60 yrs	1,796
61-70 yrs	1,302
71-80 yrs	450
Total	**10,000**

Findings

- **Diagnosis by Age**:
  - Younger age groups (11–30) mostly had **malaria, typhoid, and asthma**.
  - Ages 31–60 faced **ulcer, diabetes, hypertension, and stroke**.
  - Ages 61+ mostly had **stroke, hypertension, and diabetes**.
- **Diagnosis Diversity**:
  - Ages 21–60 had 4–6 health conditions on average.
  - Ages 11–20 and 61–80 had fewer diagnoses (1–3), showing either fewer problems or limited testing.
- **Gender**:
  - More **females** than males in the 11–20 group.
  - **Males** dominated all other age groups.
- **Yearly Admissions**:
  - Ages 11–40 increased steadily from 2021 to 2023 but dropped in 2024.
  - Ages 41–80 steadily increased every year.

Insights

1. **Working-Age Adults Are the Largest Patient Group**
   - Ages 21–40 make up most hospital visits, especially 31–40. These are mostly employed adults managing both infectious and chronic diseases.
2. **High Health Burden Among Middle Age (21–60)**
   - These patients often face 4 or more illnesses, showing high pressure from lifestyle and work-related stress.

3. **Chronic Illnesses Begin Early**
   - Conditions like diabetes and hypertension are appearing from age 31—too early. This points to poor diet, low exercise, and stress.
4. **Youth Admission Drop in 2024 Is a Red Flag**
   - The decline in 2024 for the 11–40 group may signal affordability issues, preference for self-medication, or migration. This needs further analysis.
5. **Gender Gaps May Hide Deeper Issues**
   - Women may not be accessing care after age 20. This could be due to cost, cultural reasons, or poor health education.

Recommendations
1. **Target 21–40 Age Group With Preventive Packages**
   - Introduce workplace check-ups and wellness programs that cover blood pressure, glucose, ulcers, and mental health.
2. **Bundle Chronic Disease Services for Ages 31–60**
   - Create health packages that treat multiple conditions in one visit—saves time and money.
3. **Launch Women's Health Outreach for Ages 30+**
   - Offer free consultation or low-cost clinics for reproductive and chronic health issues. Partner with churches, markets, and schools.
4. **Profile Patients by Age Using Dashboards**
   - Use Power BI to sort patients by age and diagnosis. Helps in planning, reducing wait time, and better tracking.
5. **Investigate 2024 Drop in Younger Patients**
   - Carry out a short survey to understand why fewer young adults are visiting. Could help in designing affordable or mobile health services.

Expected Outcomes
- 25% increase in visits from the 21–40 age group by offering relevant services.
- 15% fewer emergency cases among working adults due to early detection and lifestyle education.
- Better care for women over 30, improving gender balance and diagnosis accuracy.
- More efficient hospital management through smarter use of age-related data.
- A stronger hospital reputation as a youth- and adult-friendly facility.

TASK 4: Are There Peak Seasons or Months for Certain Illnesses?

Facts
- No general pattern across all illnesses.

- **Typhoid** often peaks in **Q1 (January–March)** and **Q4 (October–December)**, except in 2024.
- Most other illnesses (like stroke, diabetes, hypertension) spike in **Q1** each year.

Year	Asthma	Diabetes	Hypertension	Malaria	Stroke	Typhoid	Ulcer	Total
2021	**139**	**147**	**147**	**281**	**124**	**445**	**126**	**1,409**
Qtr 1	41	46	35		30	110	32	**294**
Qtr 2	35	40	38	76	28	112	39	**368**
Qtr 3	29	34	41	103	31	107	30	**375**
Qtr 4	34	27	33	102	35	116	25	**372**
2022	**301**	**274**	**245**	**450**	**264**	**470**	**288**	**2,292**
Qtr 1	89	54	66	105	72	119	73	**578**
Qtr 2	67	76	63	97	57	115	68	**543**
Qtr 3	77	73	56	123	60	116	75	**580**
Qtr 4	68	71	60	125	75	120	72	**591**
2023	**434**	**411**	**438**	**437**	**416**	**451**	**446**	**3,033**
Qtr 1	105	94	109	116	93	119	118	**754**
Qtr 2	102	114	108	116	100	111	111	**762**
Qtr 3	105	112	115	95	114	94	102	**737**
Qtr 4	122	91	106	110	109	127	115	**780**
2024	**566**	**575**	**571**	**268**	**586**	**121**	**579**	**3,266**
Qtr 1	133	169	131	92	137	121	154	**937**
Qtr 2	131	149	158	130	161		136	**865**
Qtr 3	150	134	123	46	143		153	**749**
Qtr 4	152	123	159		145		136	**715**
Total	**1,440**	**1,407**	**1,401**	**1,436**	**1,390**	**1,487**	**1,439**	**10,000**

Findings

- **Typhoid and Malaria** show some seasonal shifts but are inconsistent.
- All **chronic illnesses** consistently increase in the first quarter (Q1) of every year.
- Typhoid's seasonal trend **disappeared in 2024**, breaking the usual Q1/Q4 pattern.

Insights

1. **First Quarter Spike Suggests Post-Holiday Effects**
   Many illnesses peak after holidays—possibly due to poor diet, stress, or skipping medical checkups during the festive season.
2. **Typhoid Reflects Hygiene and Environmental Risks**
   Its peaks in Q1 and Q4 may relate to water contamination during the rainy season or poor food handling during festive gatherings.
3. **Loss of Pattern in 2024 May Reflect Change or Weakness**
   The absence of typhoid's usual peak in 2024 might be due to:

- o Better sanitation and hygiene.
- o Change in hospital records or testing.
- o Fewer people visiting the hospital (possibly due to cost or competition).
4. **Seasonal Planning Needs to Be Diagnosis-Specific**
   Since each illness behaves differently, hospitals should avoid using a one-plan-fits-all model. Instead, use illness-based planning and response.

Recommendations

1. **Create a Quarterly Illness Tracker in Power BI**
   Build dashboards to monitor which illnesses increase each quarter. Helps staff, pharmacy, and labs to prepare ahead.
2. **Run Community Campaigns Before Peak Seasons**
   Between November and March, run health talks in churches, mosques, and markets to educate the public—especially on typhoid, stroke, and hypertension.
3. **Prepare Resources Before Q1 Begins**
   Buy medications, test kits, and medical supplies in December. Also review rosters to ensure enough staff are available in January–March.
4. **Build a "Risk Alert System" for Staff**
   Create a simple dashboard or alert (e.g., green/yellow/red system) to notify doctors and nurses which illnesses to expect each quarter.
5. **Stop Using Generalized Planning for All Illnesses**
   Use Power BI to break down patient visits by diagnosis and quarter. Allocate space, staff, and supplies based on actual illness patterns.

Expected Outcomes

- 25% fewer medicine shortages and emergency referrals during busy quarters.
- Faster treatment and shorter hospital stays due to better preparation.
- Increased trust from the community through timely education and services.
- More accurate resource planning—saving costs and boosting care quality.
- A more proactive hospital culture that prepares for what's coming, not just reacting after the fact.

TASK 5: Is There an Increase or Decrease in Patient Admission Over the Years?

Facts

- Patient admissions increased significantly from:
    - o **2021**: 1,409 patients
    - o **2022**: 2,292 patients
    - o **2023**: 3,033 patients
    - o **2024**: 3,266 patients

Year		Total Patients
⊞ 2021	🔴	1,409
⊞ 2022	🔺	2,292
⊞ 2023	🟢	3,033
⊞ 2024	🟢	3,266
Total		**10,000**

Findings

- **Gender:** Male patients consistently outnumber female patients each year.
- **Diagnosis Trends:**
  - 2021–2022: **Typhoid and Malaria** were most common.
  - 2023: **Typhoid** still led, but **Ulcer and Hypertension** increased.
  - 2024: **Stroke** became the top diagnosis, followed by **Ulcer, Diabetes, and Hypertension**. Malaria and Typhoid dropped to the bottom.
- **Age:** The average patient age increased yearly:
  - 2021: 39 years
  - 2022: 42 years
  - 2023: 44 years
  - 2024: 48 years

Insights

1. **Steady Growth in Patient Numbers**
   Admissions more than doubled in four years, showing greater demand for healthcare—possibly due to population growth, chronic disease burden, or better hospital reputation.
2. **Shift from Infectious to Chronic Illnesses**
   There's a clear move from common infectious diseases (like typhoid and malaria) to long-term chronic conditions (like stroke, hypertension, and diabetes).
3. **Aging Population Demands Long-Term Care**
   The rising average age (from 39 to 48 years) means the hospital now serves more middle-aged and older patients who require continuous care.
4. **Male Patients Dominate Admissions**
   Consistent male majority may signal either more male-related health issues or under-utilization of services by women.

Recommendations

1. **Expand Chronic Care and Elderly Services**
   Increase capacity for stroke, diabetes, and hypertension treatment—add more specialized doctors, beds, and outpatient follow-up systems.

2. **Launch Preventive Health Programs for Older Adults**
   Offer wellness check-ups, nutrition education, and medication review programs for patients over 40. Encourage early diagnosis.
3. **Strengthen Public Health for Malaria and Typhoid**
   Since these diseases are declining, partner with local government and NGOs to tackle them through community sanitation and health education.
4. **Build Predictive Dashboards in Power BI**
   Monitor yearly growth trends to plan staff shifts, equipment needs, and patient space ahead of time.
5. **Address the Gender Imbalance**
   Promote women-friendly healthcare environments and affordable services. Conduct surveys to understand barriers preventing women from using hospital services.
6. **Reduce Treatment Delays for Older Patients**
   Create fast-track lanes or geriatric care assistants to speed up diagnosis and care for the elderly, especially during busy seasons.

Expected Outcomes
- 30% improvement in care quality for older and chronically ill patients.
- Reduced pressure on emergency units due to better planning and preventive care.
- Better community image as a hospital that adjusts to Nigeria's health realities.
- Increased patient satisfaction through age- and gender-aware service delivery.
- Improved hospital efficiency and smarter resource use, guided by data.

CONCLUSION

This strategic report has analyzed the hospital's patient data from multiple angles—diagnosis types, gender distribution, age patterns, seasonal trends, and admission growth. From this, we have discovered key challenges and opportunities that can inform smart decisions.

Key Takeaways:

- Chronic conditions like stroke, diabetes, and hypertension are rising and need more attention.
- Middle-aged and elderly men are the largest users of the hospital services.
- Seasonal peaks occur mostly in Q1 and Q4 and must be planned for.
- There is untapped potential in reaching more women and younger patients.
- Typhoid and malaria, though declining, still demand community-level attention.

Final Recommendations for the Hospital:

- Expand chronic care services and invest in elderly medicine.
- Use Power BI dashboards to predict, plan, and respond to trends in real-time.
- Launch age- and gender-sensitive health programs.
- Build a culture of preventive care, not just emergency response.
- Position the hospital as a data-driven leader in Nigeria's healthcare space.

By implementing the strategic recommendations in this report, the hospital will improve service delivery, reduce unnecessary costs, and strengthen its role as a trusted, modern healthcare provider in Nigeria.

Coach Anietie

https://www.linkedin.com/in/etukanietie/