



Hospital Management System

Metabase Integration

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Introduction

This Hospital Dashboard System (MediCare) provides a seamless analytics solution which enables healthcare managerial staff to track essential metrics in hospitals. Through its web-based system the application functions with Metabase to show patients-related data visualizations and appointment levels alongside financial summaries and inventory details.

Key Features

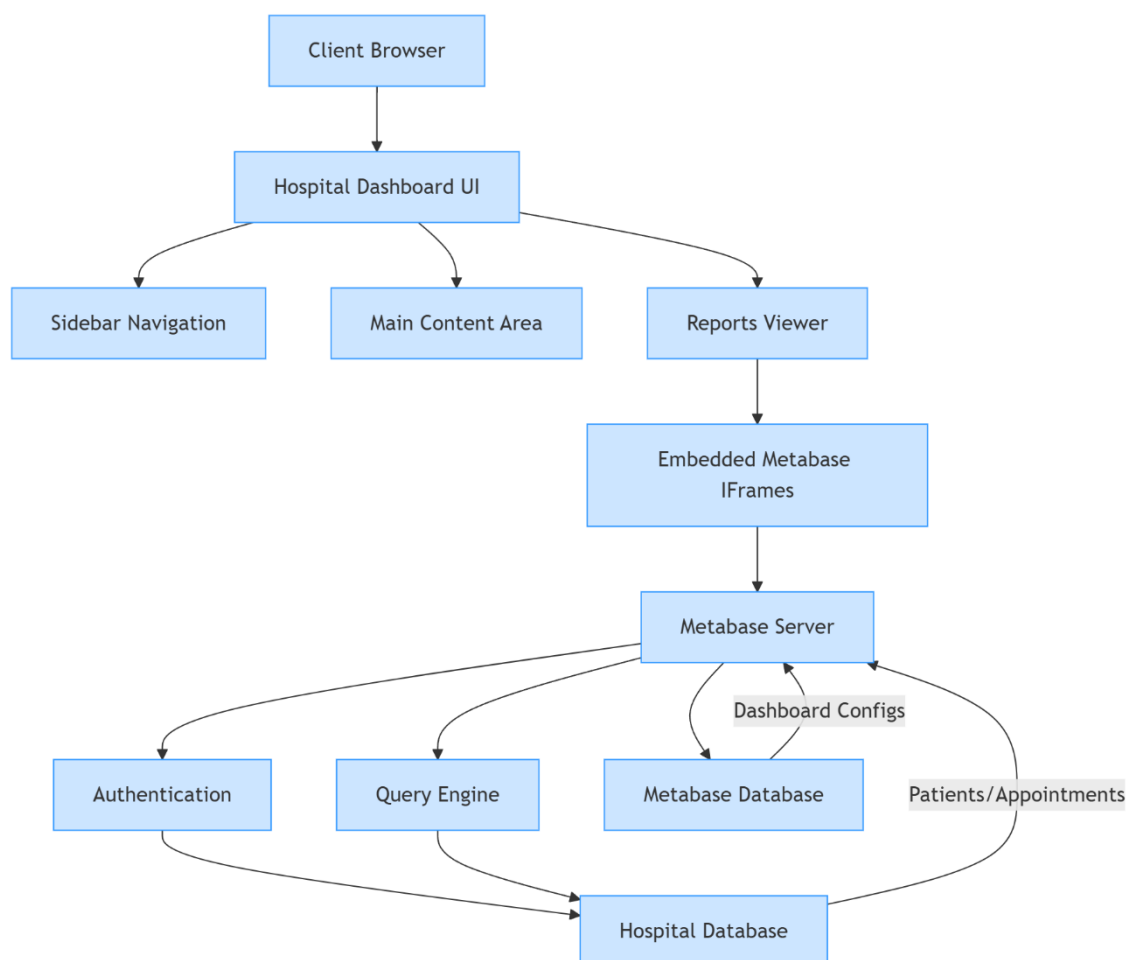
- Interactive sidebar navigation with collapsible menus
- Embedded Metabase dashboards and reports
- Responsive design for desktop use
- User-friendly interface with clear visual hierarchy

Normalization Structure

The system is currently using the Third Normal Form (3NF). Ensuring that there were no duplicate columns (1NF) and assigning unique identifiers (primary key). We also made sure there were no partial dependencies (2NF). To achieve (3NF), we remove transitive dependencies and make sure non-key attributes only depend on the primary key. This improves the system's stability by eliminating redundancy, increasing data integrity by showing consistency across different tables, easy retrieval of data, and having a better scalability for future upgrade to the system



System Architecture



Components

- Frontend: HTML, CSS, & JavaScript
- Visualization: Metabase via embedded IFrame
- Backend: MySQL

Table includes

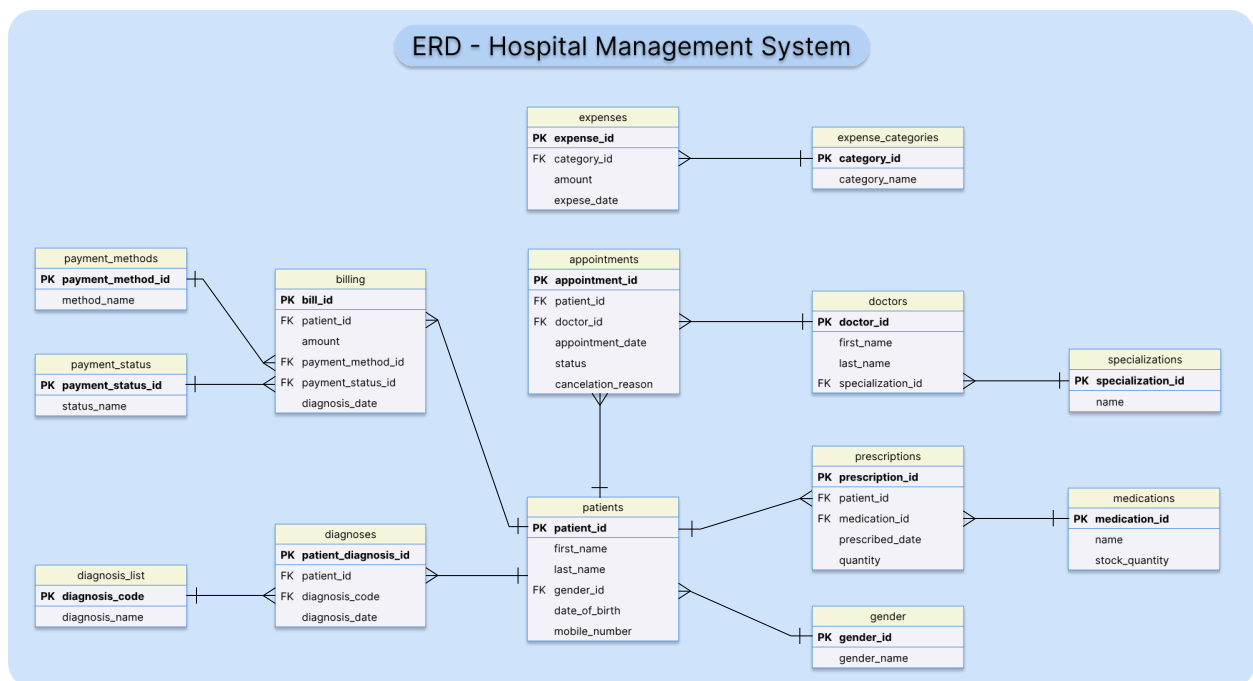
- patients: This table keeps the information of the patient.
- genders: Stores gender options for patients
- specializations: Stores doctors' medical specialization.
- doctors: Stores information regarding the doctors and their areas of specialty.

- appointments: Monitors the patient and doctor interactions with time indicators.
- diagnoses: Contains details of the patient's diagnosis and treatment.
- diagnosis_list: Contains list of all diagnose name.
- medication: List of all available medications and stocks.
- prescription: This records all prescription issue to patients
- payment_methods & status: Stores accepted payment options and tracks payment status.

Each attribute is designed with primary keys and foreign keys to ensure that relational integrity is preserved amongst them.

Database Schema

Entity Relation Diagram





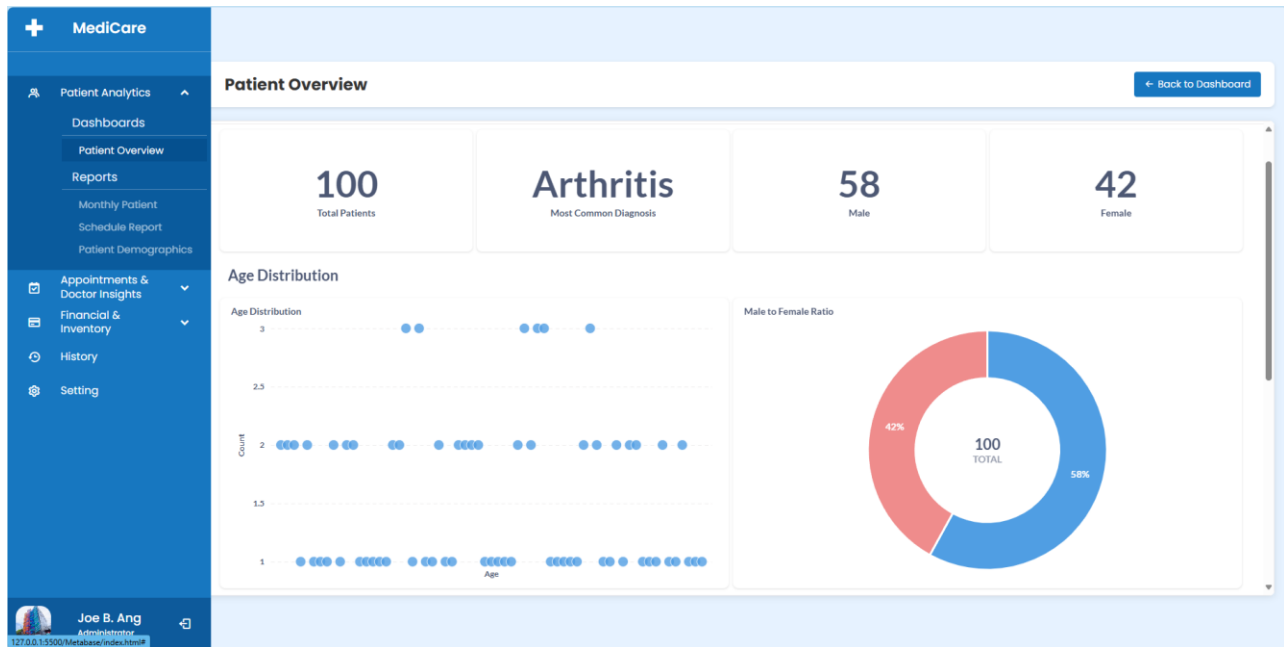
Parent Table	Child Table	Relationship
genders	patients	one is to many
patients	appointments	one is to many
patients	diagnoses	one is to many
patients	prescriptions	one is to many
patients	billing	one is to many
doctors	appointments	one is to many
specializations	doctors	one is to many
diagnosis_list	diagnoses	one is to many
medications	prescriptions	one is to many
payment_methods	billing	one is to many
payment_status	billing	one is to many
expense_categories	expenses	one is to many

MediCare Landing Page

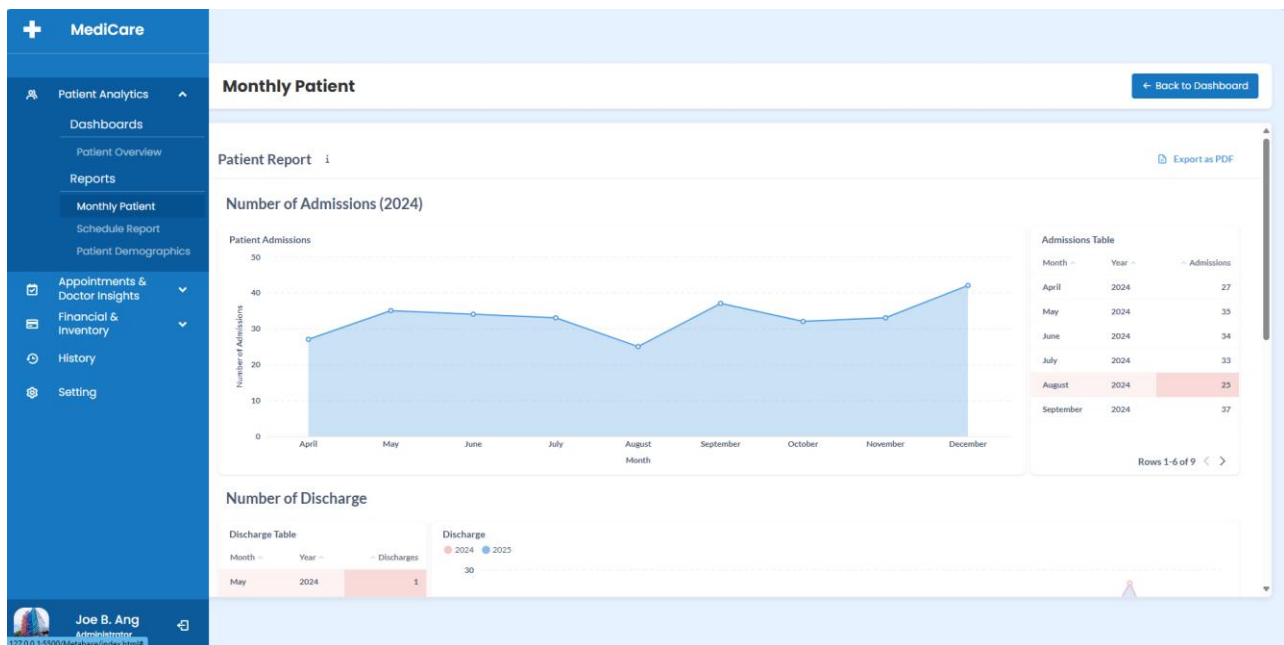




Patient Overview



Monthly Patient





Schedule Report

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MediCare

Patient Analytics

Dashboards

Patient Overview

Reports

Monthly Patient

Schedule Report

Patient Demographics

Appointments & Doctor Insights

Financial & Inventory

History

Setting

Patient Demographics

← Back to Dashboard

Patient List

Export as PDF

Summary

Patient	Gender	Date of Birth	Contact Number
Maria Torres	Female	November 7, 1973	+63 924 626 1062
Ana Lopez	Female	September 21, 1955	+63 924 520 2962
Antonio Cruz	Male	February 18, 1965	+63 918 712 3290
Andrea Bautista	Female	September 23, 2017	+63 925 394 5212
Juan Rivera	Male	August 14, 2001	+63 921 234 7425
Patricio Mendoza	Male	January 14, 1986	+63 921 750 6346
Julio Morales	Male	March 29, 2017	+63 918 760 2748
Petra Rivera	Female	November 10, 1945	+63 921 971 1945
Rosa Torres	Female	June 26, 2022	+63 919 335 3730
Carmen Garcia	Female	January 30, 1964	+63 922 102 1324
Andres Cruz	Male	December 26, 1958	+63 920 337 5833
Luz Mendoza	Female	December 31, 1944	+63 923 426 5443
Pedro Torres	Male	June 3, 1979	+63 923 802 5298

Patients per Last Name

Last Name	Count
Bautista	11
Cruz	11
Garcia	9

Rows 1-3 of 10

Age & Gender Breakdown

Gender	Age	Count
Male	1	1
Male	3	1
Male	4	1
Male	5	1
Male	6	1
Male	8	2

Patient Demographics

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MediCare

Patient Analytics

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Schedule Report

← Back to Dashboard

Overview

Status

Count

Scheduled

Completed Status

Canceled

500 Appointments

342 complete

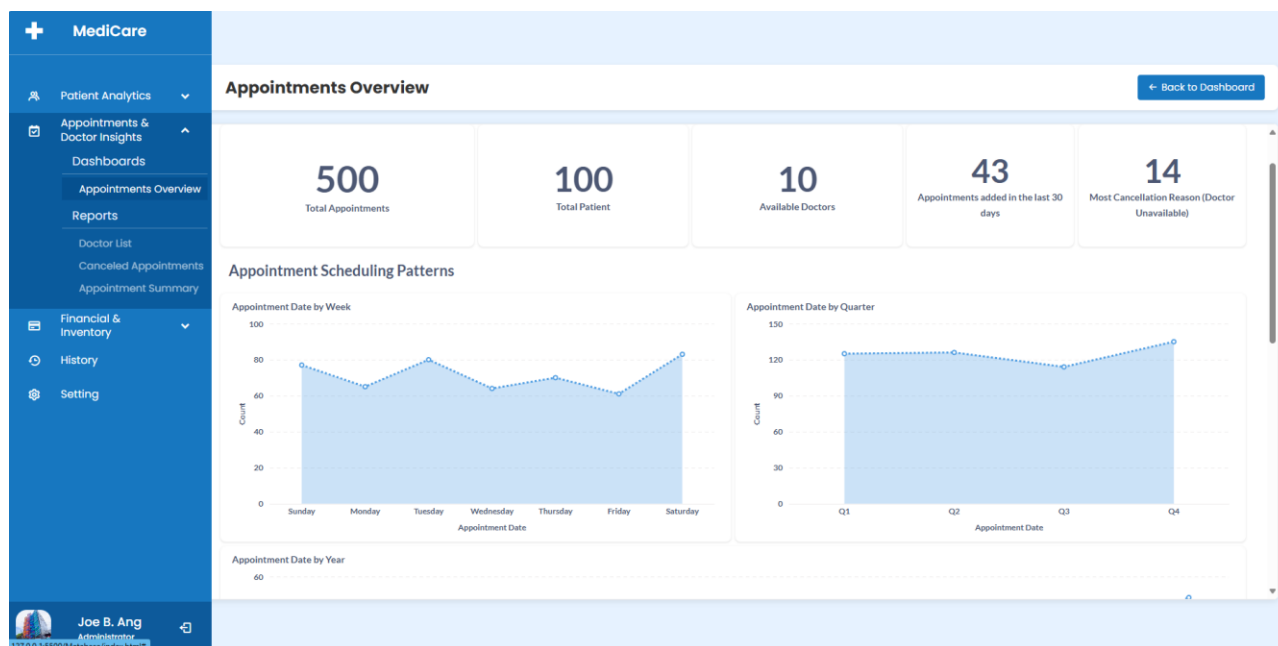
10 no show

Status Distribution

Status by Patient

Status by Date

Appointments Overview



Doctor List

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MediCare

Patient Analytics

Appointments & Doctor Insights

Dashboards

Appointments Overview

Reports

Doctor List

Canceled Appointments

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History

Setting

Joe B. Ang

Admin/Doctor

127.0.0.1:5500/Metabase/index.html

Doctor List

← Back to Dashboard

Summary

Export as PDF

Resident Doctors

Full Name	Specialization
John Pena	Gastroenterology
María Santos	Neurology
Carlos García	Pediatrics
Ella Ramos	Neurology
Miguel Flores	Oncology
Lily Cruz	Psychiatry
Jose Villanueva	Pediatrics
Angela Reyes	Oncology

Doctor Appointment

Full Name	Specialization	Total Appointments
Carla Bautista	Ophthalmology	38
Mark Dela Rosa	Neurology	36
John Pena	Gastroenterology	33
Lily Cruz	Psychiatry	33
Angela Reyes	Oncology	34
Carlos García	Pediatrics	32
María Santos	Neurology	31
Miguel Flores	Oncology	42

Doctors per Specialization

Specialization	Count
Gastroenterology	1
Neurology	3
Oncology	2
Ophthalmology	1
Pediatrics	2
Psychiatry	1

Rows 1-8 of 10

Rows 1-8 of 10

Powered by Metabase

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MediCARE



Canceled Appointments

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MediCare

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Setting

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Admin@ciit.edu.ph

127.0.0.1:5500/Metabase/index.html#

Canceled Appointments

← Back to Dashboard

All Appointments

Export as PDF

Canceled Appointment

Patient Name	Doctor Name	Reason for cancellation	Appointment Date
Carmen Garcia	John Pena	Emergency	September 28, 2024, 2:22 PM
Carla Cruz	John Pena	Patient no-show	March 2, 2025, 2:22 PM
Pedro Cruz	John Pena	Patient rescheduled	March 4, 2025, 2:22 PM
Anadeto Morales	John Pena	Patient rescheduled	November 25, 2024, 2:22 PM
Andres Bautista	John Pena	Doctor unavailable	November 23, 2024, 2:22 PM
Jose Rivera	John Pena	Doctor unavailable	September 7, 2024, 2:22 PM
Carmen Garcia	John Pena	Doctor unavailable	September 9, 2024, 2:22 PM
Rosa Rivera	John Pena	Patient rescheduled	January 3, 2025, 2:22 PM

Rows 1-8 of 50

Powered by

Metabase

Appointment Summary

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MediCare

Patient Analytics

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Setting

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Appointment Summary

← Back to Dashboard

Total Appointments

● 2,024 ● 2,025

Total Appointments

Status Breakdown Per Month

Date	Status	Count
April 5, 2024, 2:22 PM	Completed	1
April 6, 2024, 2:22 PM	Completed	1
April 7, 2024, 2:22 PM	Scheduled	1
April 7, 2024, 2:22 PM	Completed	1
April 9, 2024, 2:22 PM	Completed	1

Top 5 Performing Doctor

Doctor Name	Total Appointments
Mark Dela Rosa	58
Carla Bautista	58
Lily Cruz	55

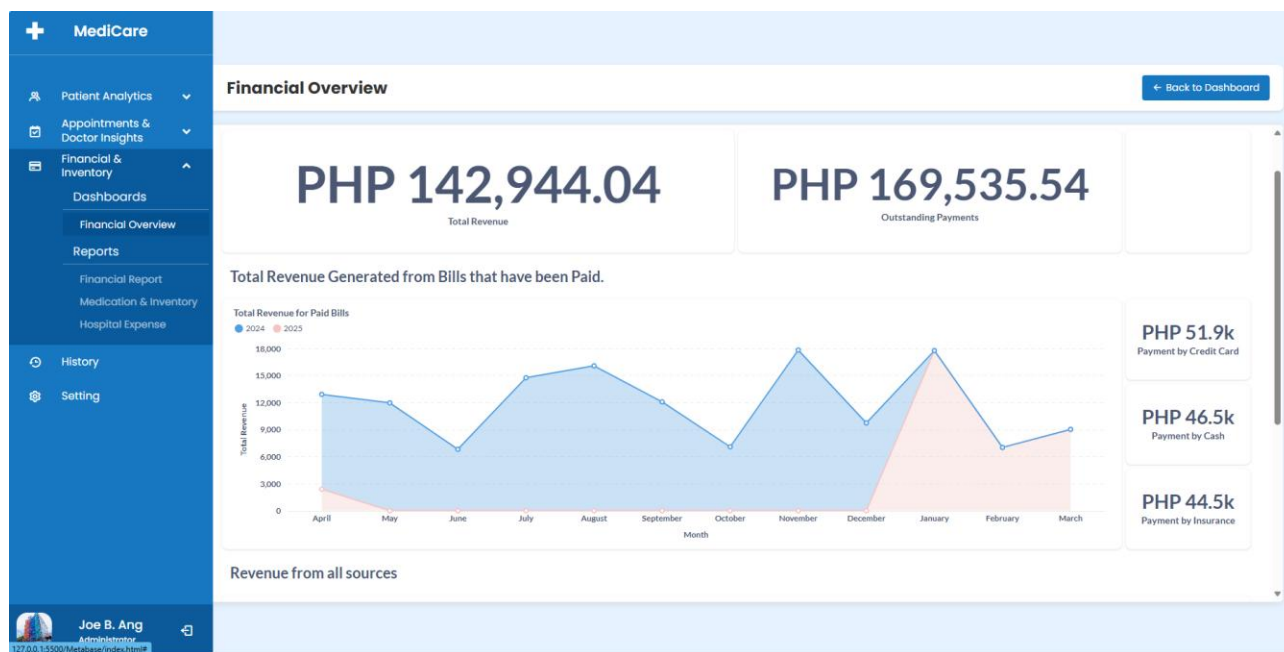
Rows 1-3 of 5

11 | Page

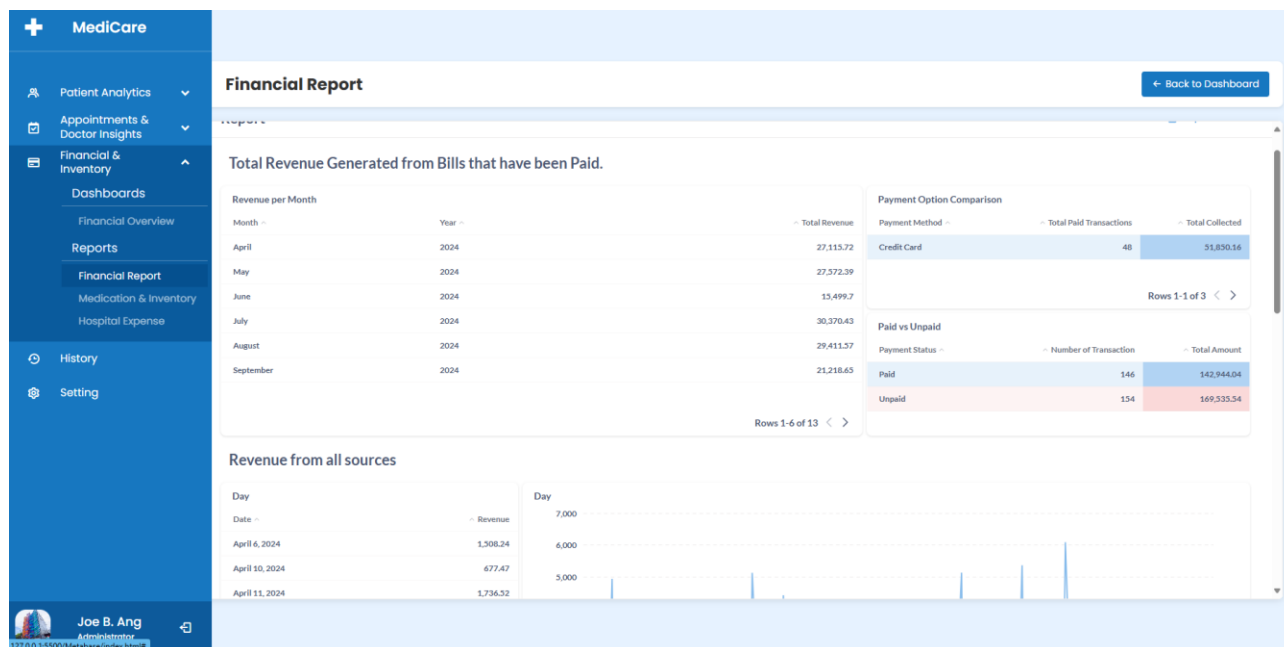
MediCARE+



Financial Overview

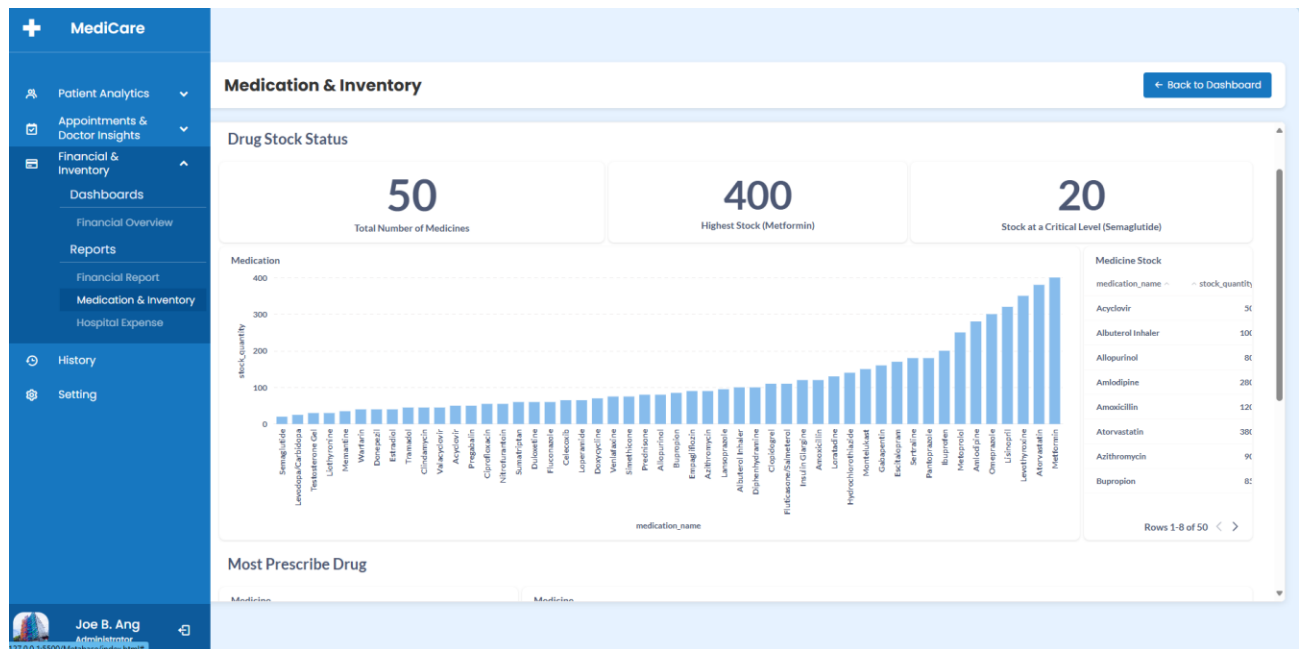


Financial Report

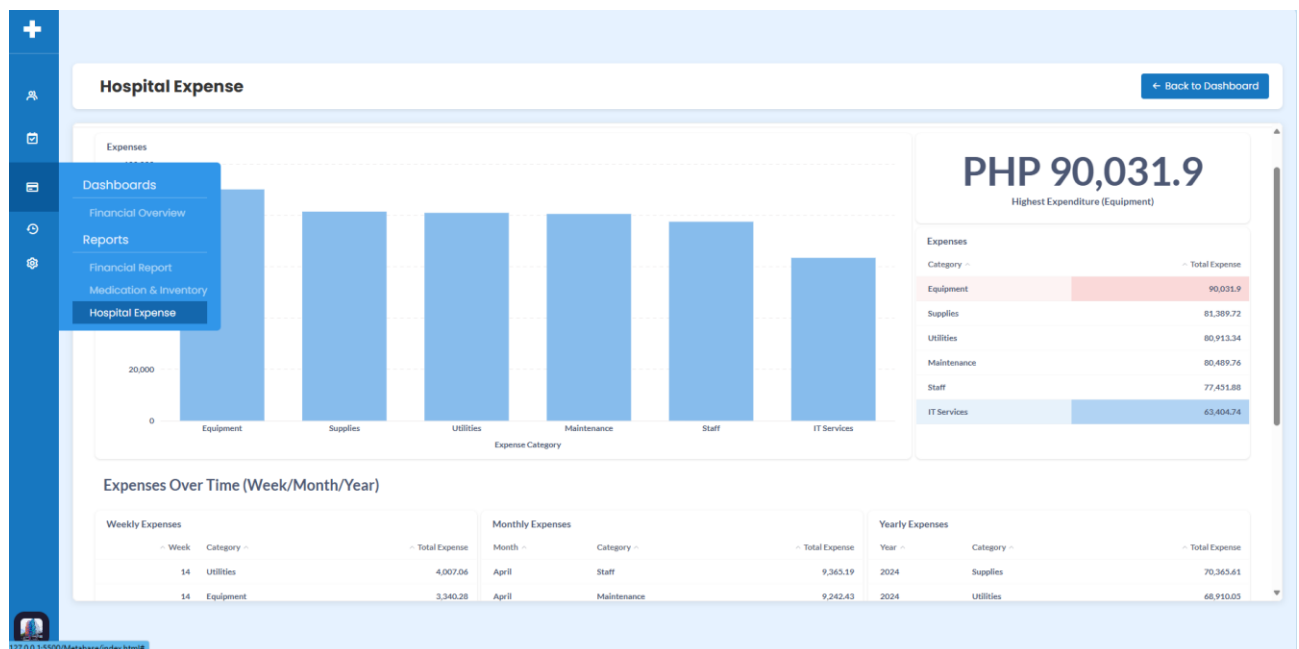




Medication & Inventory



Hospital Expense



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User Guide

Accessing the System

- The index.html file should open in any up-to-date browser for viewing.
- Ensure Metabase is running on localhost:3000

Navigating the Dashboard

Sidebar Navigation

- You can collapse and expand the sidebar by clicking on the hospital icon placed in the top-left section of the screen.
- The system contains three main categories each showing its own dashboard and (3) reports.

Patient Analytics

- Dashboard [[Patients Overview](#)]
- Reports [Monthly Patient], [Schedule Report], [Patient Demographics]

Appointments and Doctor Insight

- Dashboard [[Appointments Overview](#)]
- Reports [Doctor List], [Canceled Appointments], [Appointment Summary]

Financial and Inventory

- Dashboard [[Financial Overview](#)]
- Reports [Financial Report], [Medication & Inventory], [Hospital Expense]

Viewing Reports

- You can obtain reports by clicking on any sidebar entry to populate them throughout the primary display



- All reports exist in two main groups (Dashboards and Reports) based on their organizational structure.
- To navigate back you should use the browser's "Back" button along with the "Back to Dashboard" button.

Using Metabase

Within any report, you can:

- Hover over charts for details
- Use date filters (where available)
- Select the Fullscreen option available through Metabase's user interface to enhance view size

Key Features

- The system stores your recent report when you refresh the active page through persistent sessions.
- The system transforms presentation for different screen sizes through its adaptive design which causes the sidebar to hide on smaller displays.
- Quick Access enables users to find their most recent reports by accessing them from the History section.