Case Study: Barangay Luz Health Monitoring and Tracking System

1. Introduction

Barangay Luz, located in Cebu City, seeks to improve its healthcare services through digital transformation. Traditional manual record-keeping systems have resulted in inefficiencies such as misplaced patient records, delayed report generation, and limited data accessibility.

To address these challenges, the **Barangay Luz Health Monitoring and Tracking System** was developed. The system is designed to streamline patient data management, improve communication between healthcare staff and residents, and enhance overall healthcare service delivery within the barangay.

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2. Background of the Study

Barangay health centers typically rely on paper-based documentation for patient records, consultations, and reporting. This manual process presents several issues:

- Difficulty in retrieving historical patient records

- Time-consuming report generation

- Limited transparency for residents regarding their own health records

- Inefficient announcement dissemination

- Lack of centralized analytics for decision-making

The proposed system aims to digitize and centralize all health-related processes.

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3. Objectives of the System

The Barangay Luz Health Monitoring and Tracking System aims to:

1. Digitize resident patient records.

2. Provide residents access to their personal health information.

3. Enable administrators to efficiently manage and archive data.

4. Generate accurate and exportable reports.

5. Improve communication through announcement features.

6. Provide analytics for strategic health planning.

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4. Scope of the System

The system supports three primary user roles:

- Resident (Patient User)

- Admin/Staff

- Super-Admin

Each role has specific access permissions and functionalities.

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5. System Features and Functionalities

5.1 Resident (User-Patient) Features

Residents are registered by the admin and can log in using their assigned credentials.

Login Process

- Residents log in using an account created by the administrator.

- Upon successful authentication, they are redirected to their personal dashboard.

Dashboard Features

Residents can:

- View personal information

- View consultation results

- View medical records (read-only access)

- View posted announcements

Residents do not have permission to edit or modify any medical data.

5.2 Admin/Staff Features

Admin accounts are created by the Super-Admin and are responsible for operational tasks.

Authentication

- Admin logs in using credentials created by the Super-Admin.

- Access to the Admin Dashboard is granted after successful login.

Patient Management

Admins can:

- Manually add patient information

- Update patient records

- Archive inactive patient records

- Restore archived records

Reports and Data Export

Admins can:

- Generate reports for specific patient data

- Export encoded patient data

- Prepare documentation for submission to higher health offices

Announcements Management

Admins can:

- Post announcements on the landing page

- Send announcements to:

    o Specific users

    o All registered users

- Edit announcements

- Delete announcements

This ensures effective communication between the health center and residents.

5.3 Super-Admin Features

The Super-Admin holds the highest level of system authority.

Authentication

- Logs in using administrator credentials.

- Has access to system-wide control.

Account Management

The Super-Admin can:

- Create, update, and deactivate Admin accounts

- Manage resident user accounts

Analytics Dashboard

- Displays health-related analytics data

- Shows trends and summarized reports

- Assists in health planning and decision-making

Data Export

The Super-Admin can export resident patient records in multiple formats:

- Excel (.xlsx)

- PDF (.pdf)

- DOCX (.docx)

These exports support reporting requirements for local government units and health departments.

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6. System Process Flow

Resident Process Flow

1. Account created by Admin.

2. Resident logs in.

3. Redirected to dashboard.

4. Views records and announcements.

Admin Process Flow

1. Account created by Super-Admin.

2. Admin logs in.

3. Manages patient data.

4. Generates reports.

5. Posts announcements.

Super-Admin Process Flow

1. Logs in.

2. Manages user accounts.

3. Monitors analytics.

4. Exports data reports.

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7. Expected Benefits

The system provides the following advantages:

- Faster retrieval of patient records

- Improved data accuracy

- Secure data storage

- Efficient report generation

- Better communication with residents

- Data-driven healthcare decision-making

- Reduced paperwork and administrative workload

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8. Conclusion

The Barangay Luz Health Monitoring and Tracking System serves as a digital solution to modernize healthcare record management in Barangay Luz, Cebu City. By implementing structured user roles and centralized data storage, the system enhances efficiency, transparency, and service quality.

This system demonstrates how local government units can adopt technology-driven solutions to improve community healthcare management and administrative operations.