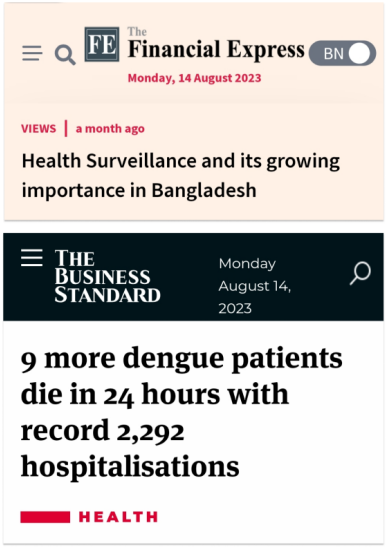
BDeHR

Access | Sync | Surveillance | Precaution

Background

Due to lack of digital documentation, thousands of patients in Bangladesh do not get proper medical care on time which sometimes leads to unavoidable deaths. Our conventional paper based medical records are fragmented, unorganized, not easily portable & frustrating for both clinicians and patients. Although the patients repeatedly undergo many tests to diagnose their diseases, neither they nor the medical staff keep the records. Furthermore, they frequently forget or lose the previous papers. As a result, treatments are delayed, and poor patients are burdened with repeated tests.

Last year, a patient was rushed into the emergency room of Chittagong Medical College & Hospital with multi-organ failure. The doctors ran multiple tests to diagnose his condition. This delayed the treatment and eventually led to his death.



Moreover, lack of documentation hinders proper health surveillance. During early 2020, IEDCR could only locate 30,909 out of a known total 94,481 COVID cases. Even after 9 months into the pandemic, we lacked sufficient data, resulting in a stagnant treatment protocol and a significant number of deaths. A similar problem was encountered when an attempt was made to study why men accounted for over 75% of the total Covid-19 deaths in Bangladesh. Very limited patient specific data could be found relating to comorbidities or behavioral patterns to support this observation.

Introduction

Here we are introducing **BDeHR**, a system that will maintain a patient's health records and support systematic patient data compilation, namely his/her complaints and medical history, findings of physical examinations, laboratory tests and results, medications etc. It will allow faster and complete access to a person's medical records that will significantly save time in critical situations. People won't have to go through the same tests over and over again. Moreover, it will capacitate data interoperability between hospitals, medical personnel and registered organizations. This will enhance health surveillance, preventative healthcare, epidemiological disease control, long term illness management etc.

Scope

The scope of this project is huge as it will be widely beneficial to everyone. Anyone can register himself with help of NID (or Birth Certificate) and start managing his/her healthcare data. Beyond serving the general population, this project would benefit hospitals, healthcare organizations, research facilities, drug manufacturing organizations and what not! There will be a controlled flow of information between individuals and these organizations. All together, this system aims for ensuring better healthcare.

Modules

We have 6 modules:

1. **Central Administration**:
   It will be governed by a central authoritative figure. It will register hospitals and validate end-user registration. Also it'll help in surveillance & predictions-making by generating proper statistics. It will take proper actions and provide necessary data to research organizations.

2. **Hospitals**:
   It will act as a semi authoritative figure. It will register individuals to access and edit patient medical records. Also it will keep track of local statistics (patient admission, diseases' frequency etc)

3. **Doctors**:
   Based on the patient's past medical records and recents diagnostics, doctors will provide necessary medication & treatment.

4. **Laboratories**:
   It will include test results in patients' medical records.

5. **Patients:**
   It will let individuals manage their medical records, test reports, medication history etc.

6. **Research Facilities:**
   It will take necessary data from the central organization and conduct research like observing disease patterns, effectiveness of a vaccine, predictions and so on..

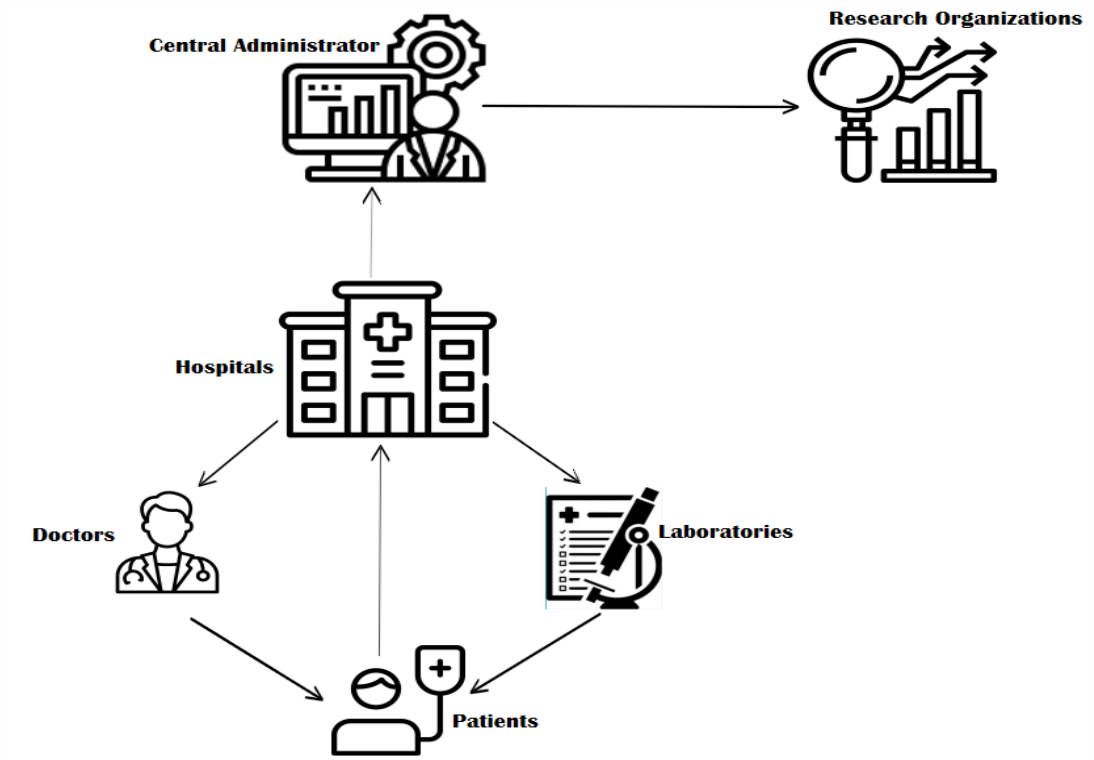


Fig-1: Modules

Use Cases

Central Administration:

-> Hospitals Management portal
-> Patient Registration validation (by verifying NID or Birth Certificate) portal
-> Statistics & predictions making portal
-> Research Institutes communication portal

Hospitals:

-> Patient Admission portal
-> Doctors management portal
-> Laboratory management portal
-> Hospital information portal

Doctors:

-> Current patients' status portal
-> Patient's Record update portal
-> Doctor's credentials portal

Laboratory:

-> Patients' Record update portal
-> Lab personnel credentials portal

Patients:

-> Medication status portal
-> Test Reports portal
-> Vaccination status portal
-> Patient's profile portal

Research Organizations:

-> Research proposal portal
-> Request status & data collection portal

Proposed Technology Stack

Frontend:

Svelte JS + TailwindCSS

Backend:

JAVA SpringBoot

Database:

PostgreSQL

Team Members

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