

Electronic Clinical Data Wizard(eCDW)

P r o p o s a l

For the development of Web based Application - eCDW

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Executive Summary

eCDW helps summarize patient Medical records to generate a Discharge Summary of a patient by a Technician with very little need for intervention of a Medical Professional. We will use the eCDW knowledge base to intelligently query the technician and generate the summary. The proposed solution can be developed at a **cost of \$5500** in a time frame of **8 to 10 weeks**.

We are visualizing a Web based application in Ruby on Rails frame work with MySQL database. The application shall run on a server on the Internet and hospitals can connect to the application over the Internet. Hospitals may customize their part of the software with their logo and Hospital name.

We are looking at a service oriented architecture where hospitals may purchase eCDW license as required. Depending on the number of users (Technicians and Doctors), they can purchase additional license.

Rails(<http://rubyonrails.org/>) follow the Model View Controller (MVC) architecture and is known for its flexibility and ease of enhancements. The layered architecture enables easy change to interface with out affecting the database and business logic. The frame work also has the flexibility of changing the back end to different database.

Cost, Time Estimate and Support

Cost

Application Development cost \$5500

Annual recurring charges

Annual recurring charges depend on the infrastructure and hosting provider we choose.

The prototype can be setup on a minimal shared web hosting initially at \$100 to \$200 annually.

Additional cost shall be incurred on features like SSL, dedicated IP

Please note that we do not have hosting facility.

But suggest going for Heroku (<http://www.heroku.com/>), Engineyard (<http://www.engineyard.com/>) who are preferred providers for Rails.

Time

8 to 10 Weeks -from Sign off. We would need all the mock ups and interface specifications like HL7, HIE formats before starting the job.

We are estimating 250 hours of work.

Task	Hours
Analysis	40
Design	50
Development	120
Testing	40

Support

We have included the support period of 3 months after installation in the cost, but not additional features.

4 hours per month in 3 months

Specifications

User Roles

Technician
Doctor
Hospital Admin
Super User

Features

User Management

Add User, Ban User

Authentication

Login, Logout, Reset Password, Forgot password

Technician

Search patient (Last Name, SSN, MRN)
Add Patient record
Display Individual Discharge Summary of a patient
Initiate Discharge Summary Generation process (through DSS)
Enter
 Identification,
 demographic data,

 physicals,
 Medication and therapeutics history,
 Lab Summary and
 Diagnostic Summary of patient

Generate Discharge Summary
 and dispatch to specific Doctor's queue
List Discharge summaries
Search Discharge summaries on Date, Patient Name, SSN, MRN
Mail Discharge summary to patients
Submit Discharge Summary data to HIE

Read Patient information from Hospital database.

Assuming this to be HL7 format. The modalities and implementation can be decided later based on the data available from the hospital database. We are expecting a predetermined format that the system can read.

Doctors

View pending Discharge Summaries(Doctors Queue)

Search patient (Last Name, SSN, MRN)

List patient records and

Display individual Patient Discharge Summary

Add comments/suggestions to Discharge summary.

Approve or reject the report (Doctor may reject the report more than once)

List Discharge summaries

Search Discharge summaries on Date, Patient Name, SSN, MRN

Hospital Administrator

Add user, Ban User

Customization

Installed Hospital's Name, Address, Logo can be customized to suite the individual organization

Email reset password link

Backup and Security

User Roles can be defined as Doctor, Technician, Hospital Administrator and Over all Administrator. Depending on the User privileges, access to different areas shall be restricted with user name and pass word.

Application shall have routine database backup/dump or as per requirement. The hospital administrators and users need not be bothered about it.

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