

MED+YOU: Encyclopedia of Your Health History

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Abstract - In today's world of ever increasing amounts of information, hospitals and medical groups must continually find ways to manage the myriad information that is gathered on patients. MED+YOU not only helps to manage this myriad patient information, but it also educates patients about health information technologies so that they are in a better position to monitor their health, attain desired health goals and manage their health services. MED+YOU also possesses several facets which include self-management of health, patient doctor communication, improvement of health awareness and outcomes, patient satisfaction with their healthcare provider and assessment of accessibility and usability factors of the personal health records. Subsequently, the MED+YOU improve sustainability and efficiency of patient-centered care to be provided among healthcare networks and clinic partners throughout the globe.

MED+YOU would function as a universal portal where a person would have his or her own profile with a login ID and a password. It will also contain a home page where information about health and related issues keep getting updated. We also get to form groups and follow health related pages and people with similar problems.

Keywords: MED+YOU, Health Records, Health Portal, Medical Groups.

1. INTRODUCTION

Do you know the medical problems that you've encountered 10yrs back? OR do you at least have the reports related to it? OR even if you have them, are they in a proper condition or legible enough to read?

The data that forms part of an interaction between clinician and patient is generally stored in a medical chart or medical record. This idea of a medical chart stems from the times of the ancient Greeks. The Greeks used to record all information about the interaction between doctor and patient. They however had to chisel this information onto stone slabs. This as you can imagine was cumbersome and involved lots of effort. It became much easier to record patient information with the advent of paper by the Chinese.

This all leads to the question why it is important for clinicians to record medical information. Some reasons are : to recall observations, to inform others, to instruct students, to gain knowledge, to monitor performance, to justify interventions etc. Also there is a dire need for Patient connectivity to state-of-the-art hospitals, and these requirements necessitate the need of a social platform for Medical usage – like MED+YOU.

Your one stop answer to all these requirements is MED+YOU (a web based health services portal). MED, the word, pretty much signifies that it is related to the medical world and add YOU to it, it signifies your medical history or a collection of pages related to your medical history.

In short MED+YOU is about your health life. It is a complete and accurate medical history record that ensures the best care possible for patients.

2. WHAT IS MED+YOU?

A fundamental part of consumer empowerment through e-health is the implementation of personal health records (PHR) systems. By 2014, most Americans will have access to a PHR if present Federal goals are accomplished [1]. PHR adoption presents a somewhat unusual avenue of inquiry in that much of the grounding framework of the traditional Technology Acceptance Model is difficult to apply [2]. One reason for this state of affairs is that PHR represents a novel task to nearly all users. Using a triangulation approach combining qualitative and quantitative methods, research has been done to probe some of the potential PHR user's most basic motivating factors: privacy, security, portability, and interoperability [3].

With the research indicating requirement of a user friendly and social media driven, MED+YOU was conceived. MED+YOU is a collection of your MEDICAL HISTORY which will be a part of this rapidly evolving health care industry with technologies involving health record and online health services. MED+YOU also acts as a medium through which various patients get to interact with each other and also with doctors, this medium not only allows patients to discuss their problems but also allows them to sympathize with the fact that there have been people who have gone through various health problems and there are solutions for them as well.

MED+YOU will also replace paper prescriptions and allow doctors and physicians to access patient Information, such as patient's profile, medical history and laboratory results, without scrambling to find paper records, or even consult patients long hours for their past health history. This will also aid the physically challenged patients to communicate their symptoms effectively to their doctors.

The MED+YOU allows medical service providers to document interactions with patients, view medical history and insurance information, order tests and see test results and make referrals. Doctors enter orders in MED+YOU

using computerized doctor order entry, which has been shown to increase patient safety and improve quality of care. The system also provides clinical guidelines for doctors, printed summaries of visits for patients and other services.

MED+YOU is a UNIVERSAL PORTAL using which the patient or the doctor can access the patient's health history from anywhere across the GLOBE. MED+YOU will drive to increase patient safety and improve quality of health care.

3. SALIENT FEATURES OF MED+YOU

The MED+YOU is a universal portal, using which we get to access our medical records from anywhere across the world. MED+YOU apart functioning as a destination for our medical records also functions as social media which allow its users to interact with doctors and other patients with similar problems from all across the globe.

3.1 The prime components of MED+YOU include:

- Landing page
- MH page(Medical History page)
 - Edit profile
 - Patient history
 - Send link to pharmacies
- Doctor chat
- Ad columns
- Notification bar
- MED+YOU also allows us to form GROUPS and FOLLOW
- Patients can also avail online health services as they get to communicate with doctors through their PROFILE.
- The portal will also contain a HOME PAGE which will contain information and articles regarding various diseases or solutions or precautions for diseases which are trending at the moment.
- The patient also gets to FOLLOW the disease, he or she is suffering from, by doing so the patient would remain updated on various solutions for this disease and the up gradation in treatment for this problem.
- MED+YOU allows the patients to form GROUPS, by doing so it would help them to sympathise with each other's problems and get networked.
- Communicating through MED+YOU would save health service providers and patients, their precious time while providing valuable access to personalized health information.
- MED+YOU functionalities can also be extended for sending electronic prescription requests to pharmacies and for door delivery of drugs.

This can function as NEW MODEL FOR HOSPITALS and PATIENTS WITH THE SAME DISEASE CAN STAY CONNECTED.

MED+YOU works on similar architecture as FaceYOU.

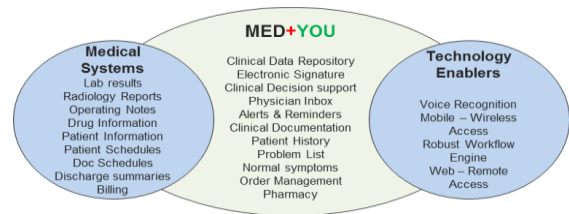


Figure 1. Components of MED+YOU

3.2 Landing Page of MED+YOU

MED+YOU has been planned to function as a social media platform for your medical history. The idea is to get the same feel of any other social media tool. Typical Landing page conceived for MED+YOU is shown below:



Figure 2. Landing Page of MED+YOU

3.3 Data types of MED+YOU

MED+YOU will handle all types of medical data. This tool is not limited and provision has been made to take in any type of medical data.

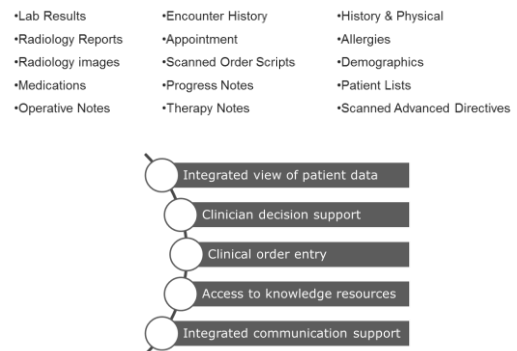


Figure 3. Typical data types of MED+YOU

3.4 Technology Intake

Technology Intake includes a database system to manage the data. This has ensured that the retrieval of information is more efficient, quicker and robust way. Even if one asks for obscure information, the database can easily retrieve such information using SQL or other database mining languages.

The clinicians can simply scan text documents and store these images in the database. This may be a fast way to put

data into the system but this unstructured method has the major disadvantage of not being able to mine or query this data easily. There are some image processing techniques that may be used to gain information from these saved images, but these require time and complex computations. The second type storage is structured data by means of direct entry via keyboard into the database. This type of structured data is much easier to process and analyze.

The use of databases also has the advantage that backups are made much more easily. These backups may be set to happen automatically and there will be little or no human intervention. These backups may be set to happen at a particular time at particular days, and may be even automatically transferred to the backup location.

The data may enter in a semi or automatic way: Voice, handwriting recognition, direct entry via keyboard using templates.

The data communication channels will be set up for online interaction between various stakeholders (Patients, Doctors, Researchers, Pharmacy, Clinical staff, Medical fraternity etc). Security and access permissions will be worked out. The idea is to provide an improved, world class quality of care for patients.

3.5 Hardware & Software Options

The hardware is to be researched extensively and planned. Plan is to use the following software / languages for building up the tool

- PHP (Hypertext PreProcessor)
- CSS
- C++, JavaScript
- Erlang, Ocaml & Haskell

PHP forms the crux of web designing. PHP code are executed on the server, and the result is returned to the browser as plain HTML. With PHP you are not limited to output HTML. You can output images, PDF files, and even Flash movies. You can also output any text, such as XHTML and XML.

CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content.

C++ is a programming language that is general purpose, statically typed, free-form, multi-paradigm and compiled. It is regarded as an intermediate-level language, as it comprises both high-level and low-level language features.

Erlang is a programming language used to build massively scalable soft real-time systems with requirements on high availability. Some of its uses are in telecoms, banking, e-commerce, computer telephony and instant messaging. Erlang's runtime system has built-in support for concurrency and fault tolerance.

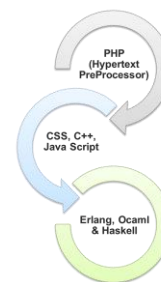


Figure. 7 Software / Languages

4. CONCLUSIONS

MED+YOU would be a versatile platform for all medical stakeholders. There would be enormous benefits of this tool. Few of them are:

- Staff to physician ratio decreased
- Low Practice overhead costs - low
- Improved Patient perception of practice
- Better patient coverage during off hours since information was more consistent, complete and accessible
- Participation in clinical trials
- Aggregated health records of entire nations
- Increased operational efficiency
- Decreased operational cost
- Increased physician ability to serve more patients more efficiently
- Increased physician quality of life
- Increased quality of care for patients
- Increased practice ability to document and analyze clinical data with respect to outcome trends
- Health care records available, anytime, anywhere.

What it means to have a MED+YOU account?

1. Motivation and Awareness of Health - These patients tend to lack the motivation and awareness of their own health conditions to properly take care of their needs.

a. Patients who use the MED+YOU system will improve their feeling of control over their own health.

b. Patients who use the MED+YOU System will report higher levels of perceived health status.

2. Patients who use the MED+YOU system will show reductions in unnecessary emergency department, inpatient and specialty care services.

3. Satisfaction of Health Services – In order for MED+YOU to be successful within this population it is essential that the information be consumable and effective in addressing their needs.

a. Patient who use the MED+YOU system will report increased satisfaction with their healthcare system.

b. Patients who use the MED+YOU system will have increased health literacy scores.

Moving forward the plan is to develop this tool.

Various steps include :

- Competitor Analysis
- Business Case
- Project Plan
- Resource Plan
- Hardware and Software Assessment
- Risk Planning and Mitigation
- Project Execution
- Popularize on Social Media and Implement & Monitor

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