Centralised medical management system.

A social media of medical management systems.

**The problem**

The problem that I am trying to solve has a couple of different parts.

i) The first part that I’m trying to tackle is that current medical management software is outdated, insecure and dysfunctional. The interface is often clunky and unergonomic. Many of the features are based on an old way of thinking – such as emailing patients and some features simply don’t work.

ii) The second part is the issue of transparency. Current medical management systems rely on the doctor accurately entering all of the patient’s information correctly. Not only is that time consuming, but it leaves the doctor prone to mistakes, as they have to manage hundreds if not thousands of patients at a time.

iii) The third part is about inefficiency. Current medical management systems are decentralized and isolated. What that means is that often there are dozens of copies of the same report in the same hospital. How this happens is that, for example, the radiology department generated a report about an X-RAY. It is then sent to the doctor that ordered the report. They forward it onto the patient, GP and any other relevant doctors. This is incredibly inefficient in terms of man hours required to send all of these emails, but also in terms of wasting resources storing and cataloging the documents.

**The solution**

i) The way I’m hoping to tackle the first issue is by redesigning the dashboard and UI so that it is more user friendly and aesthetically pleasing. I plan on using AI and automation to streamline the processes that doctors have to go through every day, such as scanning, sending letters, contacting patients and doctors, creating patient charts (charts are virtual files that store information such as appointments, letters, reports and invoices) and creating appointments. Scanning will be automated and only documents that generate an error will be manually reviewed. Creating appointments will be streamlined and my new system will remove the need to create new patient charts all together.

ii) The system that I’m going to implement is one where the patient is given a login portal to access their medical information and reports. They will be notified when reports are generated in their account. They will be notified whenever an appointment is created, and reminders will be given autonomously. They can notify a doctor whenever information is incorrectly handled. Any information on their account such as previous procedures, social history, history of mental health and any other sensitive information is only given to the doctor for a period of time. The patient chooses which information to disclose. This protects the privacy of the patient. Exceptions are made in the case of legal proceedings.

iii) The way I will tackle inefficiency is by using a “tagging” or “pinging” system. Whenever an action is taken, the patient or doctor can choose to “ping” any other relevant party, whether that be a GP, patient or another doctor. There is only one copy of the file and it exists in the creators account; however other people can be given access to it. This reduces the amount of wasted time emailing documents as now a notification is sent to the user’s account to notify them that they have been tagged in a post and they can review it. Recipients can still email and download the file or letter; however, the ideal situation is that all doctors use my service and can simply “ping” each other rather than emailing documents. This could also be automated using OCR (optical character recognition) and automatically tagging relevant parties.

Appointments will also be drastically changed. In the current system, a GP emails or posts a “referral” (referral is a letter from the GP to a doctor asking the doctor to treat the patient) to the doctor that they think could fix their patient’s problem. The doctor then calls the patient and organizes an appointment. It is then manually typed into the calendar. A chart is created for the patient and all of the information about the patient such as address, email, etc. is typed into their chart. Each referral is then reviewed by the doctor.

The system that I think could replace this is one where the patient creates their own account, removing the need for secretaries and doctors creating new charts for patients. Their GP then pings the doctor with the patient’s referral and the doctor then reviews the urgency of the referral. Once they have decided how urgent it is, they will then enter the urgency rating into the patient’s profile. An appointment date will automatically be calculated based on the availability of the doctor’s calendar and the urgency and once the doctor approves, the patient will be “pinged” with the appointment. If they approve, the appointment will be inserted into the patient’s calendar and the doctor’s calendar.

**Potential workflow for patient**

Create an account:

**Enter details:**

* Name
* Date of birth
* Address
* Phone
* Email
* GP
* Referring doctor
* Past medical history
* Past procedures
* Insurance
* Biometrics (weight, steps, height, etc.)

After account creation:

Search for user:

* GP
* Hospital
* Doctor
* Physio
* Insurance company

Upload Document:

* X-Ray
* Report
* Letter
* Referral
* Blood results

**Grant access** to your profile/documents

Dashboard:

**Important items:**

* Appointments
* Calendar
* Payments
* Messaging
* Viewing documents

Reports:

Notify

Tag all relevant doctors

Fill out form

Upload

Error

Success

Automatically

Take photo

Manually

Scan

Calendar:

* View upcoming appointments
* Reminders about appointments
* Confirming appointments

Payment:

* Notify patient when due
* Pay doctor through the app
* Invoice pinged to insurance company or patient automatically

Create appointment:

Reminder

Query

Cancel

Accept

Details automatically uploaded to calendar

Manual review by doctor

Fill out form

Message hospital

Queries:

Query not answered

Query answered

Human

Automated

AI determines whether or not to answer with an automated response or human repsonsive

Qs on doctor’s profile

Message

Email

FAQs

**Potential Workflow for Doctor**

Create an account:

**Enter details:**

* Email
* Type of practice
* Phone Number
* Address
* Number of patients per annum
* Biography of practice
* Website link
* Services
* FAQs

After account creation:

Ping:

* Doctor to patient
* Patient to doctor

Sending documents:

* Grant access to file
* Message

Uploading reports:

\*Same as above

Calendar:

* Reminders
* View upcoming
* Confirm appointments
* View related appointments – eg if patient gets an X-Ray

Payment:

* Remind patient when due
* Flag unpaid invoices
* Receive payment through app

Create appointment

* Manual entry
* Patient sends request in using form
* Message patient directly