1. Overview
2. A specialist clinic receptionist
3. A specialist doctor
4. An accountant
5. Summary

Audience: senior user management of SRH

Hello everyone. I am xxx from WhiteStar Computing company. To develop specialist clinic management information systems to support and manage the provision of health care to patients of the clinics, we had interviewed some of our users. Based on the interview we had( with the receptionist, the doctor as well as the accountant), we have gathered some requirement about the system. So today, we are going to talk you about the major features of the requirements and how our system can do this.

So my presentation is divided into 4 main sections: Overview, the requirement of receptionist, the requirement of doctors, and the requirement of accountant.

1. **Overview**

So let’s give an overview to our SCMIS.

The basic users are our doctors, receptionist and accountant. So our system initially would solve some their current problems and optimize their work, to help them work more efficiently and let them feel convenient to use our system.

1. **A specialist clinic receptionist**

Work scope of receptionist:

1. Administrational duty(not related to new system): check equipment for each doctor

2. Coordinate appointment:

(1) receptionist and doctors all have own diary. Check diary to fill in the slots with patients who made appointment

(2) Handle with appointment cancellation.

(3) Call patients 1 day before their appointments

3. Registration of patients:

First visit: get patient’s personal info

Queue patients under appointment list

Prior appointment will have queuing priority

4. File medical records and etc.: handle with medical records and test reports

Have to keep ready the next day patients medical record .

Have to retrieve the medical records from the store room and warehouse.

if the patient has not visited the clinic in a long time otherwise have to fill a new form.

Time consuming.

Space constraint.

5. Booking Ward bed /Surgery:

(1) Not able to view the ward and operation theatre availability.

1)Conflict in Appointments:

i) Misunderstandings occur when the doctor books an appointment and doesn’t inform the receptionist

as they both have separate diaries.

2) Hard Copy

Medical records are stored as hardcopy in 3 locations

1) Cabinet

2) Store room

3) Ware house

ii) As the patients details are stored in a hard copy it is hard to find the details about them and sometimes the patients are required fill in the registration form again.

iii) Going through pile loads of the patients info for finding a particular patient info is hectic.

3) Inconvenient Workflow

i) XXXXXX

1) Online Appointment System

Accessible by both the doctor and the receptionists.

Both of them will be able to book the appointment slots.

Appointment slots availability and non-availability will be visible to both of them.

2) Warding System

Receptionist and doctors will be able to see the availability of the wards and the Operation theatres.

The doctors will be able to block the ward or operation theatre and pass the details to the receptionists.

The receptionist will get the info and directs the patient to the respective receptionists.

3) Online Documentation

we'll be able to do Create , Update , Modify and Delete patient information

Patient test results ,Doctor prescription, ward booked, OT booked all those details will be displayed.

Graphical representation of patients data test wise will be displayed

1. **A specialist doctor**

Consultation

Warding system

Appointment

Other things

Well. Hello everyone. I am xxx from WhiteStar Computing company. Based on my partner’s introduction, now my presentation will state doctors’ requirements and the problems they met in their daily work. And I will also list some possible solutions we can offer to them.

According to doctor’s explanation, I summarized chiefly 3 parts about his working scope: Consultation, visiting wards and handling patients’ appointment, and also there are some other things we need to consider, we will specify them in the following phases.

The first part is About consultation. There are 3 kinds of patients doctors will meet. The doctor would like to know not only the current situation of the patient, but also their history records. Doctors regard patient’s medical as a extremely confidential information, so the memory chip card would be owned by each patient who has registered in our system. The card would help doctor access to patient’s historical medical records. At this time, he would like to see all integrated information about the patient in one screen, showing some important information, so the doctors don’t need to scroll all document in his personal computer and integrate the information by himself. And for patient’s privacy, the medical records will be cleared from doctor’s personal computer.

When he is consulting a patient, he needs to record the diagnosis. We can set a template to do it and also store it as patient’s medical record in the system. The template will avoid the misunderstanding because of bad handwriting.

After the consulting, he may need to make prescription and send to the pharmacy. As far as we known, the current system do this well. We can keep most features of the original system and optimize it into a more automated version, like giving it electronic template to record the prescription and send it to the pharmacy automatically after confirmation.

And with regard to the patients need to do lab test, doctors need to schedule it with the lab. But it is annoying to call the lab and check the availability and etc. So he wants to have the access to check the availability online and send the application to pharmacy.

When the test result report is ready, it will be stored in our system. For non-emergency patients, the doctor can access to these reports with patient’s authority within a certain duration. As for emergency patients, the doctor can access to them when reports are ready.

As for emergency patients, we would keep the original system features, which is to stored the information about the patient in A&E department first.

With regard to the warding system, booking and canceling a ward would all be done by receptionists. But the doctor can send an introduction to receptionist to book a ward.

But the doctor needs to visit the patients in wards. It is tedious for them to take patients’ medical records in hard copy. So a portable device would be a better choice. It will have a dashboard with graphs and charts which shows the current and historical condition of the patient. And interns would also be able to take notes dictated by the doctor, so the doctor can check the notes later.

As for the appointment making and canceling, these would be done by receptionist. But the doctor needs a communication service to send notification when he needs to make a next time appointment with his regular patient, or he needs to cancel an appointment with a patient. And he also needs to be notified by receptionist with the appointment booking and cancellation from patients. He can confirm the appointment when he receives the notification.

As for other things, doctors also need to maintain his personal doctor diary. He would like to have the system to help his record and backup it. And the doctor would also like to arrange a surgery with the lab. He can send the surgery application and let the lab to arrange.

As for the foreign patients, it is difficult to access his historical medical. So doctor can only know the historical info from the foreigner themselves.

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| --- | --- | --- | --- |
| No. | Requirement & problems | solution | note |
| 1 | * Review patient’s historical medical records and document (including those from other clinics and hospitals) * Maintain patient's medical records | * Use patient’s memory chip card * A dashboard to show integrated information in one screen with graphs or charts. * At the end of the session, the system will clear the patient’s medical records in doctor’s personal computer and update new records in their medical chip card. | The dashboard can be more visual, so the doctors don’t need to scroll all document in his personal computer and integrate the important information by himself |
| 2 | Record the diagnosis results | * Give a template to record the diagnosis * store it in the system |  |
| 3 | Make the prescription and send the list to pharmacy | * Give a template to make prescription * submit it to pharmacy   --- keep the current system feature | Won’t cause misunderstanding because of bad handwriting.  The process is well satisfied and the improvement is not needed. |
| 4 | Schedule medical lab test with lab department | ~~Make an online booking according to available machine and lab staff's available time~~  Submit the application with doctor's introduction and the pharmacy will schedule the test with the patient | No more calling to the lab to check availability. |
| 5 | View patient’s medical test results | * ~~Electronic result reports can be stored in patient’s medical chip card, and also within the system.~~ * ~~Doctors can view the results and reports with patient’s [authorization](http://www.youdao.com/w/authorization/" \l "keyfrom=E2Ctranslation).~~ * Store electronic result reports. * Doctors can view the results in a dashboard with patient’s authority or within certain period. | (current situation) The results of blood tests is sent by fax to the receptionist.  The receptionist will send results into a folder and send it to the doctor. |
| 6 | Triage and treat emergency patients | The emergency patient's condition are recorded in A&E department, and the doctor can access these records when he is going to consult and treat the patient |  |

About warding

|  |  |  |  |
| --- | --- | --- | --- |
| 7 | * Give introduction to the receptionist to book a ward for the patient * Cancellation is also be done by receptionist | * Done by receptionist. * Doctors would just send his introduction in an electronic version to the receptionist by the system. | (current situation) If the requested wards are not available, receptionist will call the patient back to check if they can make it on other dates; the receptionist also checks if a doctor is available to attend to the patient. This process continues until a ward is booked. |
| 8 | Visit the ward  (it is tedious to take all patients records in hard copy.) | * A portable device with a dashboard showing patient’s medical records and current conditions * Interns will make notes dictated by the doctor within the system and the doctor will check later | Electronic notes with template. Doctor would be easier to check the record with a formal format. |

About appointment

|  |  |  |  |
| --- | --- | --- | --- |
| 9 | Notify receptionist to   * schedule next appointment with regular patients * cancel the appointment with the patients | * Notification system * Confirmation by the doctor |  |
| 10 | To be notified about appointments (booking & cancellation)with patients by the receptionist |  |

About other things

|  |  |  |  |
| --- | --- | --- | --- |
| 11 | Surgery arrangement | Doctor will inform lab system about surgery using communication services and arrange surgery date in clinic system | Need to call up the surgery department and provide patients’ ideal dates for bookings of surgery. |
| 12 | Maintain doctor’s diary | The system will set a section to help doctors make their doctor diary and backup it in the system | It is in doctor’s personal computer |
| 13  ?? | ??what to do with foreign patients | --as a new patient  Only can ask them their medical history | Cannot be solved by the system. It needs to connect with other countries or hospitals medical system, which is difficult to be done. |

1. **An accountant**

*Work scope of Accountant*

-Process Billing (inpatient & outpatient)

* Use excel spreadsheet for calculating bill and keep
* Determine Payment type
  + Cash
  + Cheque
  + Credit card
* make sure that customer to fill up financial detail form

-Reports include for each clinic & wards are:

* EOD report
* Weekly report
* Monthly report
* Revenue report

-Bill History

* Responsible for Hardcopy & put in the GL and keep 5 years

**Bill** includes

* Special Treatment such as X-ray, Ultrasound, operation, …
* Service Charges
* Cost of drugs
* GST

**Pain points**

Billing System

* Difficulties to read doctor handwriting (eg. Wrong medicine in wrong quantities can be wrongly prescribed)
* Wrong type or modify of amount in spreadsheet

Payment System

* Delay or inconvenience in validation of bank card/ cheque or the Payee Name on cheque can be misspelled by customer
* Time consuming for traditional payment

Report System

* Collect the records end of the day and tally the bills
* Uses spreadsheet to do reporting

Billing record

* Search manually for 5 years recorded billing history

**Solution** for pain point

Billing System

* Auto billing system help the accountant to generate the accurate bill

Payment System

* Need e-payment system to save time consuming and make more convenience with all modern payment type

Report System

* Auto generated report system will help the accountant in reducing stress & get the daily accurate report

Billing Record

* Billing Record Database able to see the whole record of the patient with ease rather than flipping through pages of physical papers and record

1. **Summary**

Booking system

Centralized electronic booking system

Customizable to notify patients or send reminder automatedly by SMS

- Physical diaries – separated for receptionist and doctors

Registration

Patient information to be stored in database with incorporation of medical records

Queue system which will notify patient by SMS when the queue number is to be called in advanced

Medical Consultation

Electronic patient records will include integration of history medical records

Dashboard feature for doctor’s case note

Medical Test

Patient records customized to integrate test results from other clinics

Ward booking

Proposed system interfaces with existing warding system

Assigned ward will be stored in patient records for doctor’s reference during ward visit

Billing process

Billing system will include features such as automated calculation of bill and report generation

Proposed billing system to be interfaced with proposed patient records system and existing pharmacy system

Disputes such as the patient claims that he/she didn’t go for certain test

Billing records include consultation fees, medical test fees, medication dispensed