

CHAPTER 2

SYSTEM ANALYSIS

I. SYSTEM NAME AND BACKGROUND

Admitting and Discharge System of GABMMC

The existing system of GABMMC in terms of admitting and discharging patient is entirely in manual operation. Although there are documents involved that are made in Wordsheet and Spreadsheet Applications, it is managed by nine personnel and an OIC from the Admitting and Discharge Section. Due to lack of personnel managing the manual system, errors are inevitable. Therefore, it decreases the reliability of the ADS in terms of handling Admission Records. The existing Admitting and Discharge System of GABMMC has the following capabilities.

Admitting is the most commonly used existing process inside the system. Along with the pre-requisite forms and documents, the system will appoint the patient to its respective designation. This is done by the ADS Personnel at their helpdesk. The admitting also generates documents (made by Wordsheet Applications) to be filledup along the process by the patient or the companion. Because of its nature, either the patient, companion or even a personnel got confused in terms filing, and monitoring of this forms, even more during peak hours.

As in admitting, the next important process is the discharging. This section is mainly focusing on the security of the clearance of a patient before leaving the hospital. It is connected to different section and divisions inside the hospital, there are some problems sprouted coming from the other problems caused by the manual operation of the system. Also, due to lack of working personnel at ADS, it also affects in minimizing the reliability due to errors. There are difficulty between the personnel, patient and respective departments that is liable in securing patients clearance because of its manual process. In terms of holding

records when the patient is discharged, there is a difficulty in storing and preserving because of numerous documents involved.

The system is also capable in searching a patient that is admitted in the hospital. When the patient is currently admitted, it is easy to retrieve the data needed. But when the patient to be searched is admitted last few weeks or months, it is difficult for the personnel to gather information because of their number and their capability to get enough rest. Also, ADS System has also difficulty in monitoring the census and quantifications that is happening inside their system.

The current Admitting and Discharging System faces different problems due to its current capabilities. We plan to propose for the automation of their current system to enhance it and resolve issues they encountered these times. The automation of the system also fits the problem of the ADS to its limited personnel. It can help in monitoring, storing records and generate reports to simplify the works and minimize time, costs and efforts.

II. SYSTEM ANALYSIS TOOLS

System Outline

I. Admission

1. Patient/Companion proceeds to Admitting and Discharge Section after issuance of Notice of Admission from Emergency Room for an interview and personal verification.
2. Admitting Clerk will interview the patient/companion for the completion of Patient's Data Sheet.
3. Patient/Companion accomplishes Consent of Admission and other forms needed for admission.
4. Admitting Clerk will check if all required forms are filled up by the patient/companion properly and accordingly.
5. PhilHealth Patient/Companion proceeds to Billing and PhilHealth Section for Membership Verification.
6. Admitting Clerk will advise the patient/companion to secure approval from Billing and PhilHealth Section.
7. Patient/Companion returns to Emergency Room. ER Nurse to accompany patient to ward.
8. Nurse Ward will submit accomplished Patient's Medical Chart to the Billing Section for clearance.

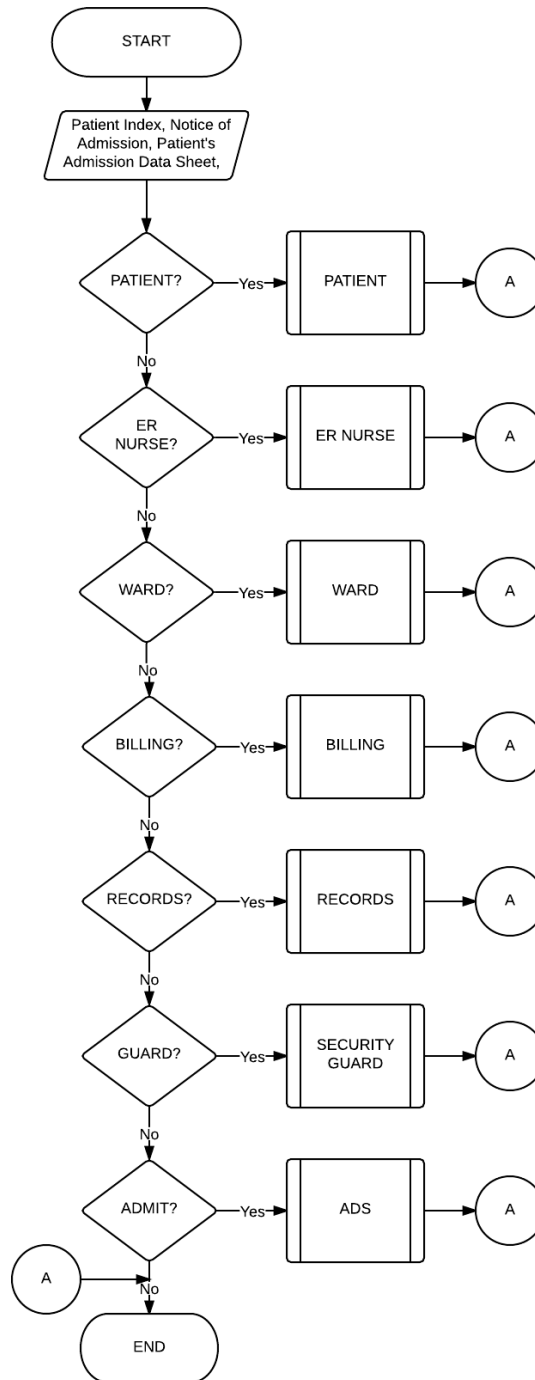
II. Discharge

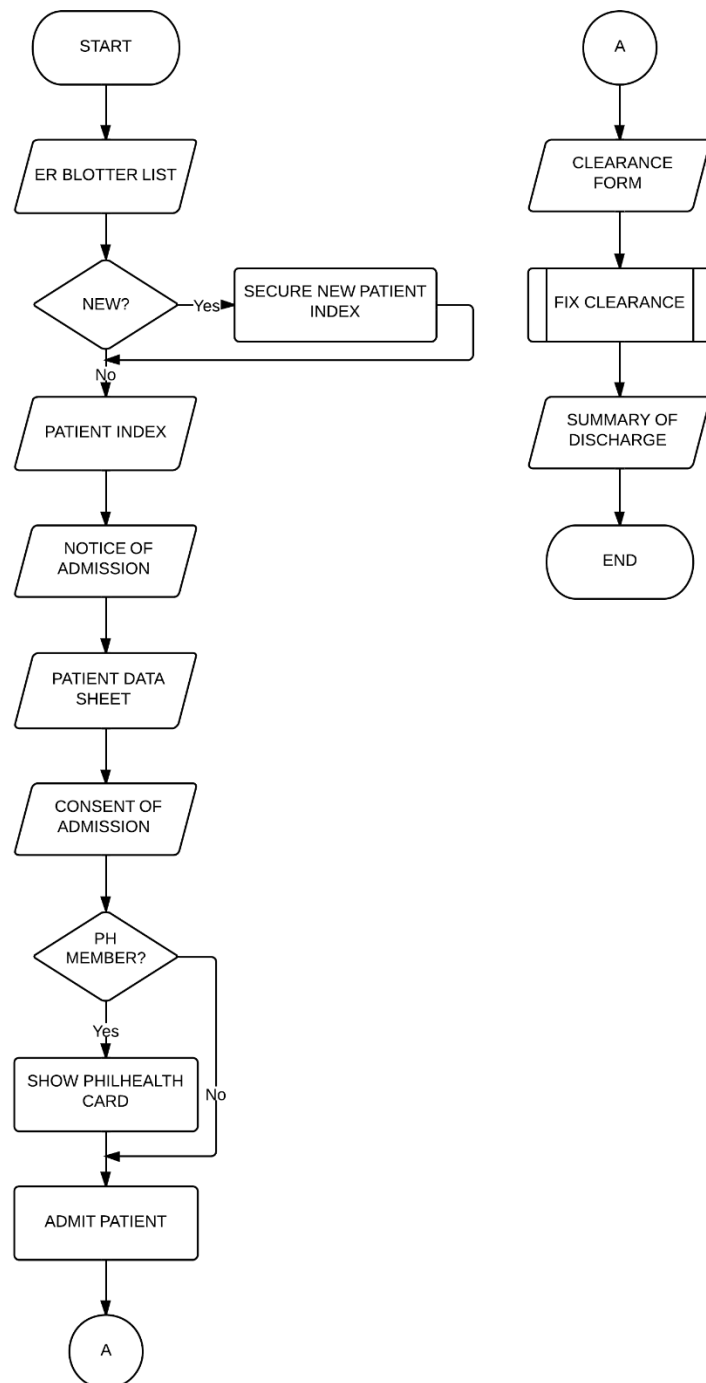
1. Patient/Companion secures Discharge Clearance Form from Ward.
2. The Nurse will advise the patient/companion to complete all signatories.
3. Patient/Companion proceeds to Pharmacy, Medical Records, CSSD, Laboratory, Radiology, MSS, Billing, and Blood Bank to secure clearance.
4. Staffs from different sections will affix all signatures.
5. Patient/Companion submits accomplished Discharge Clearance to Admitting and Discharge Section.

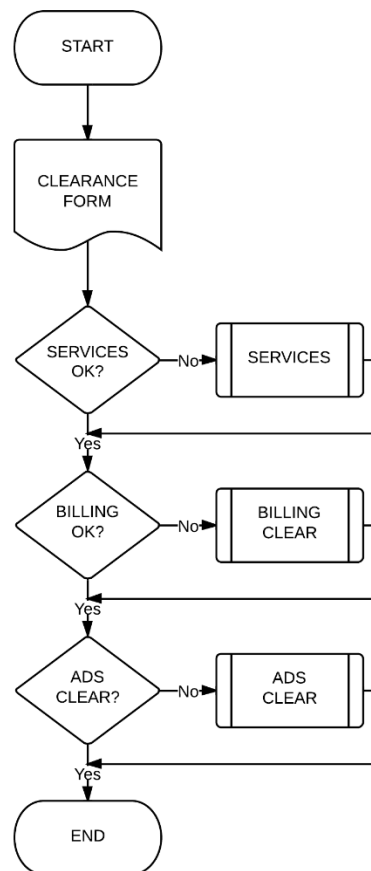
6. Admitting Clerk records and collects the Discharge Clearance Form and issues a Discharge Slip and Patient Copy of Summary of Discharge.
7. Patient/Companion shows Discharge Slip and Patient Copy of Summary of Discharge to Security Guard.
8. Security Guard collects the Discharge Slip and submit Patient Copy of Summary of Discharge to the patient/companion.

System Flowchart

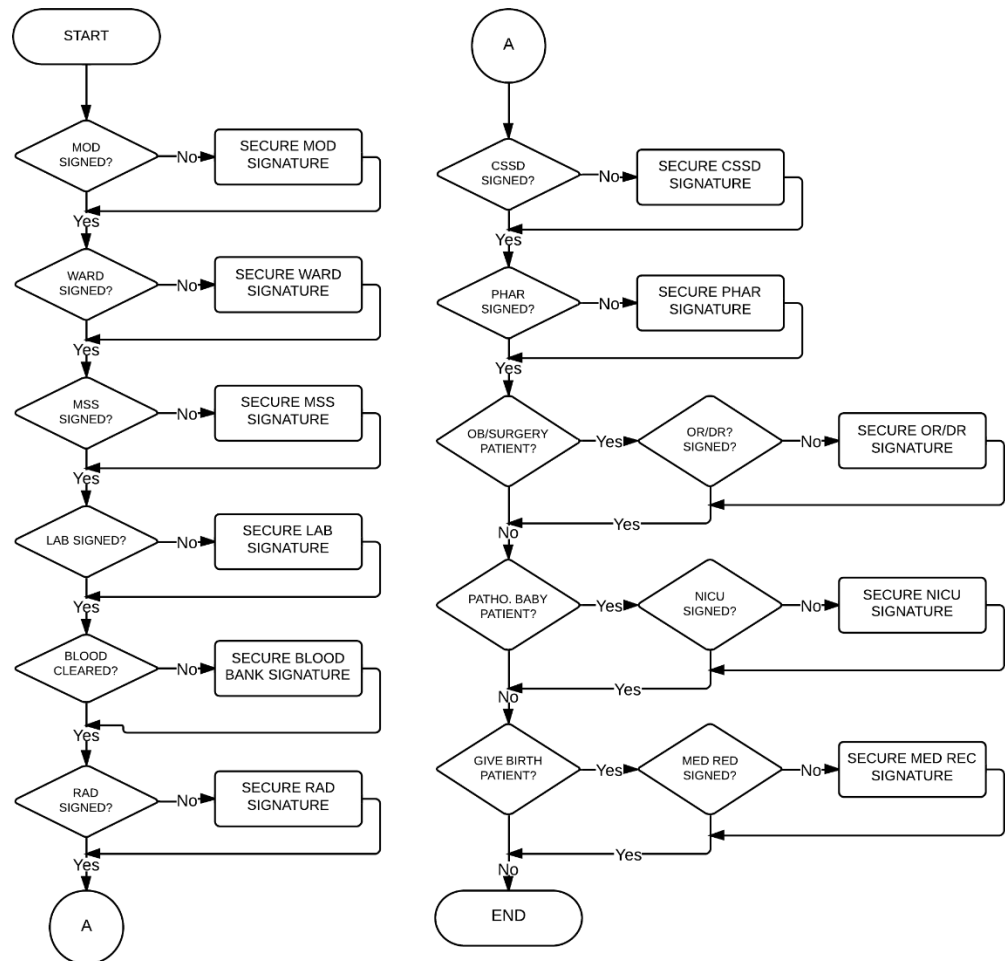
Main Flow

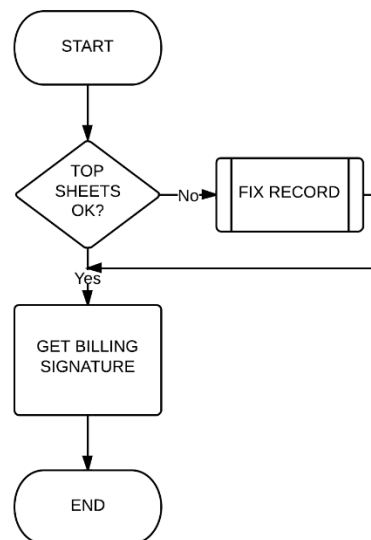


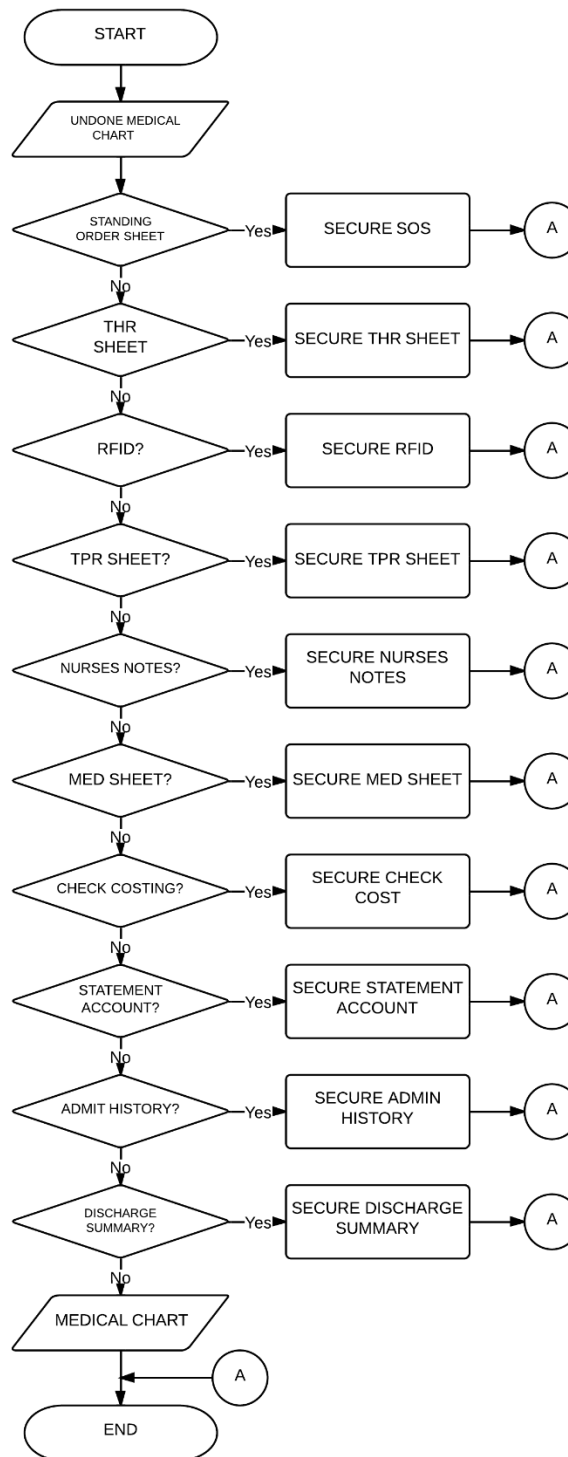
Patient Flow

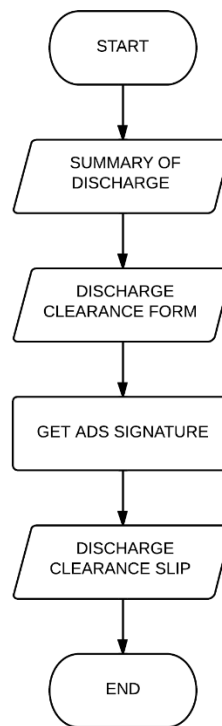
Fix Clearance Flow

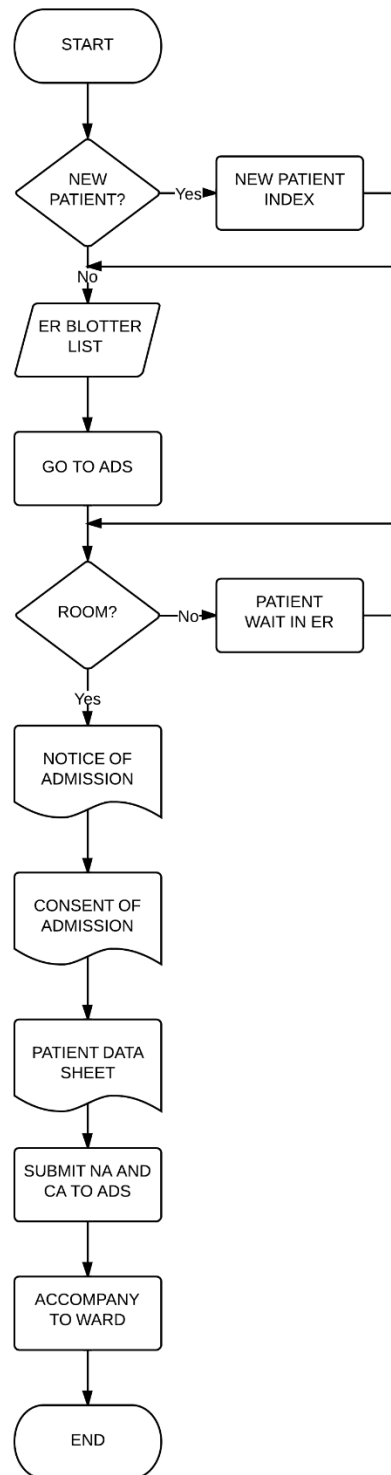
Services Flow

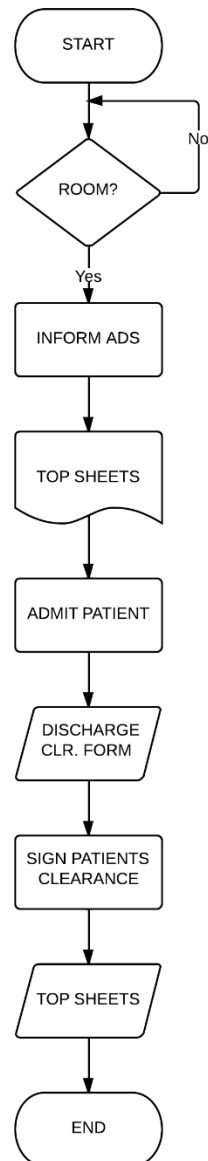


Billing Clear Flow

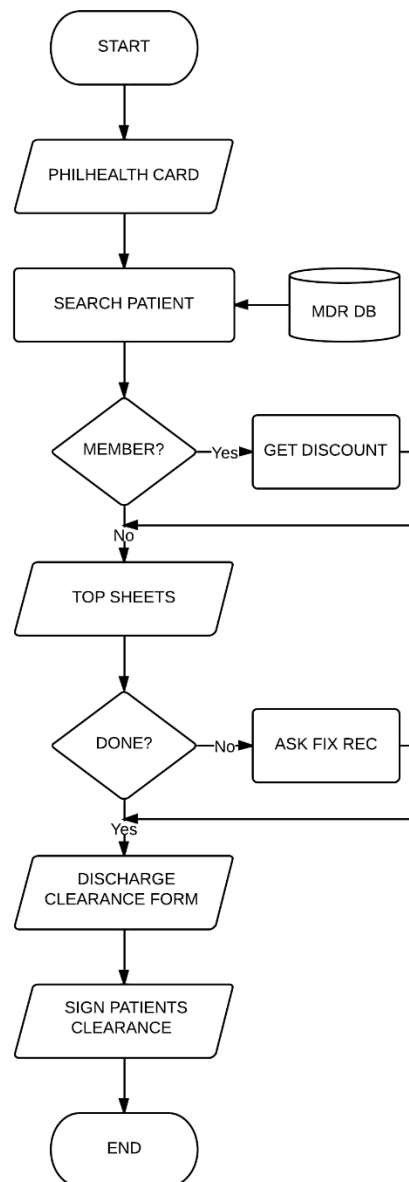
Fix Record Flow

ADS Clear Flow

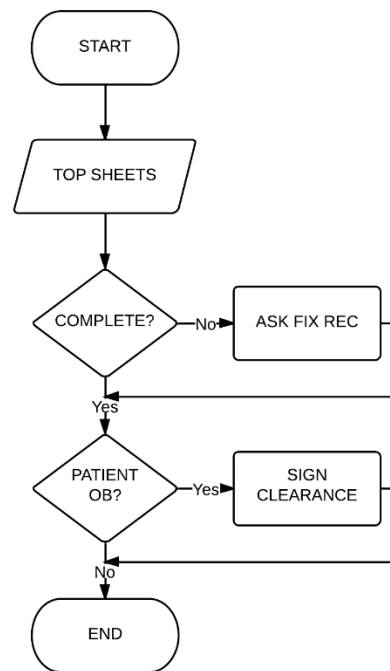
ER Nurse Flow

Ward Flow

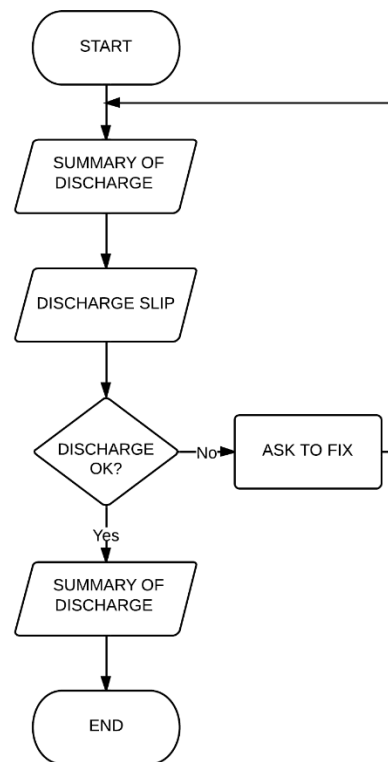
Billing Flow

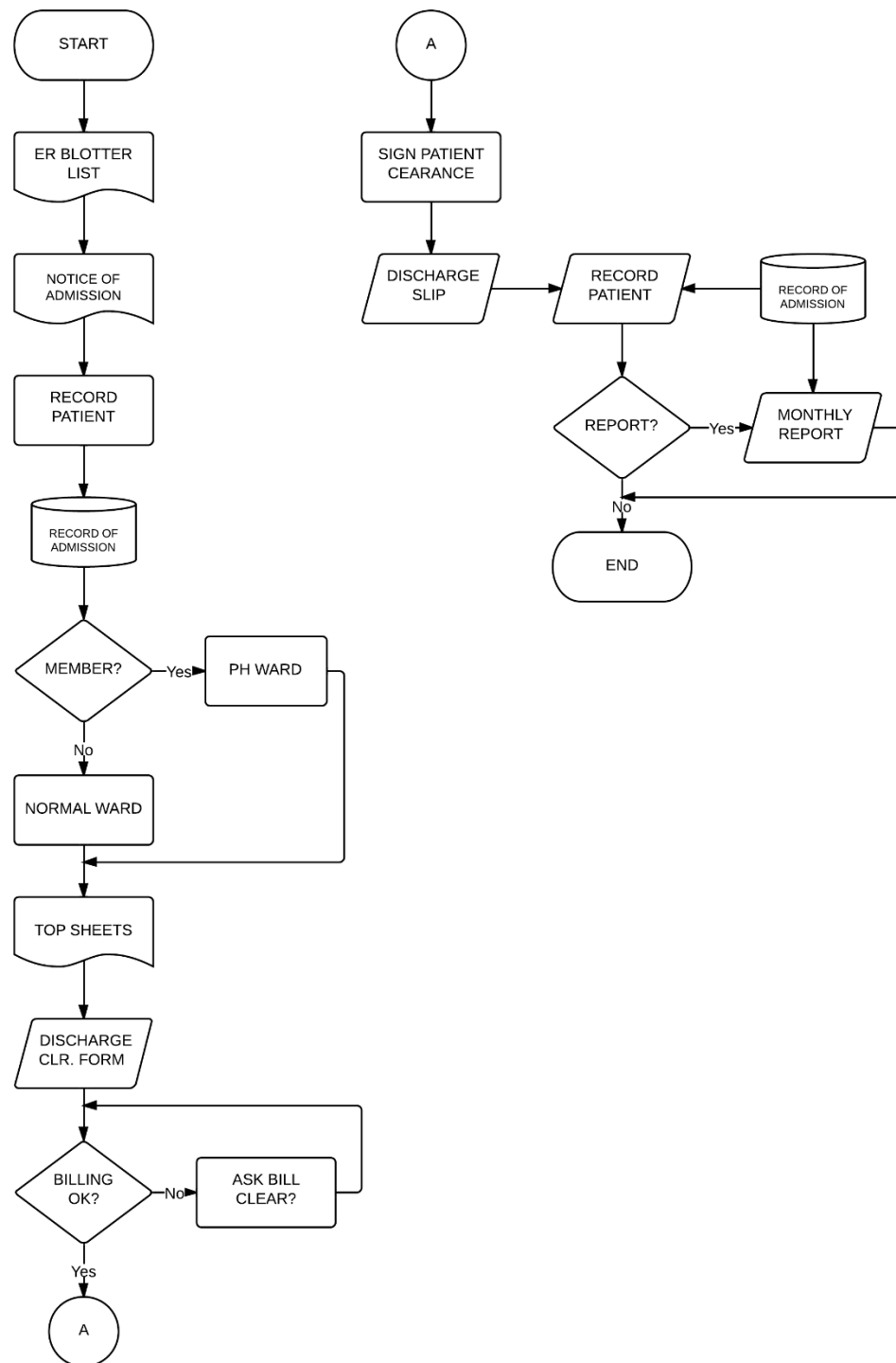


Records Flow



Security Guard Flow



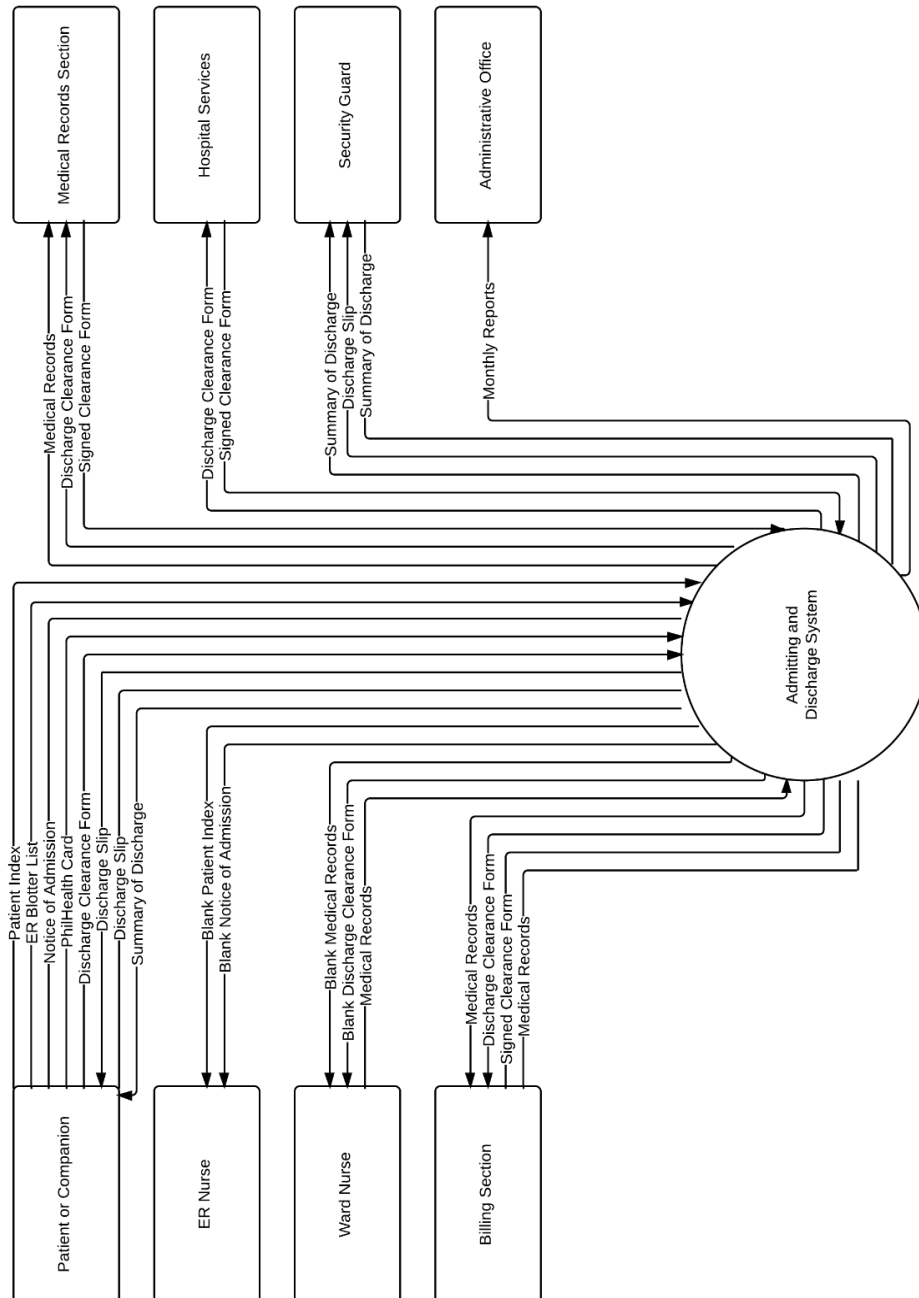
Admit Flow

Grid Chart

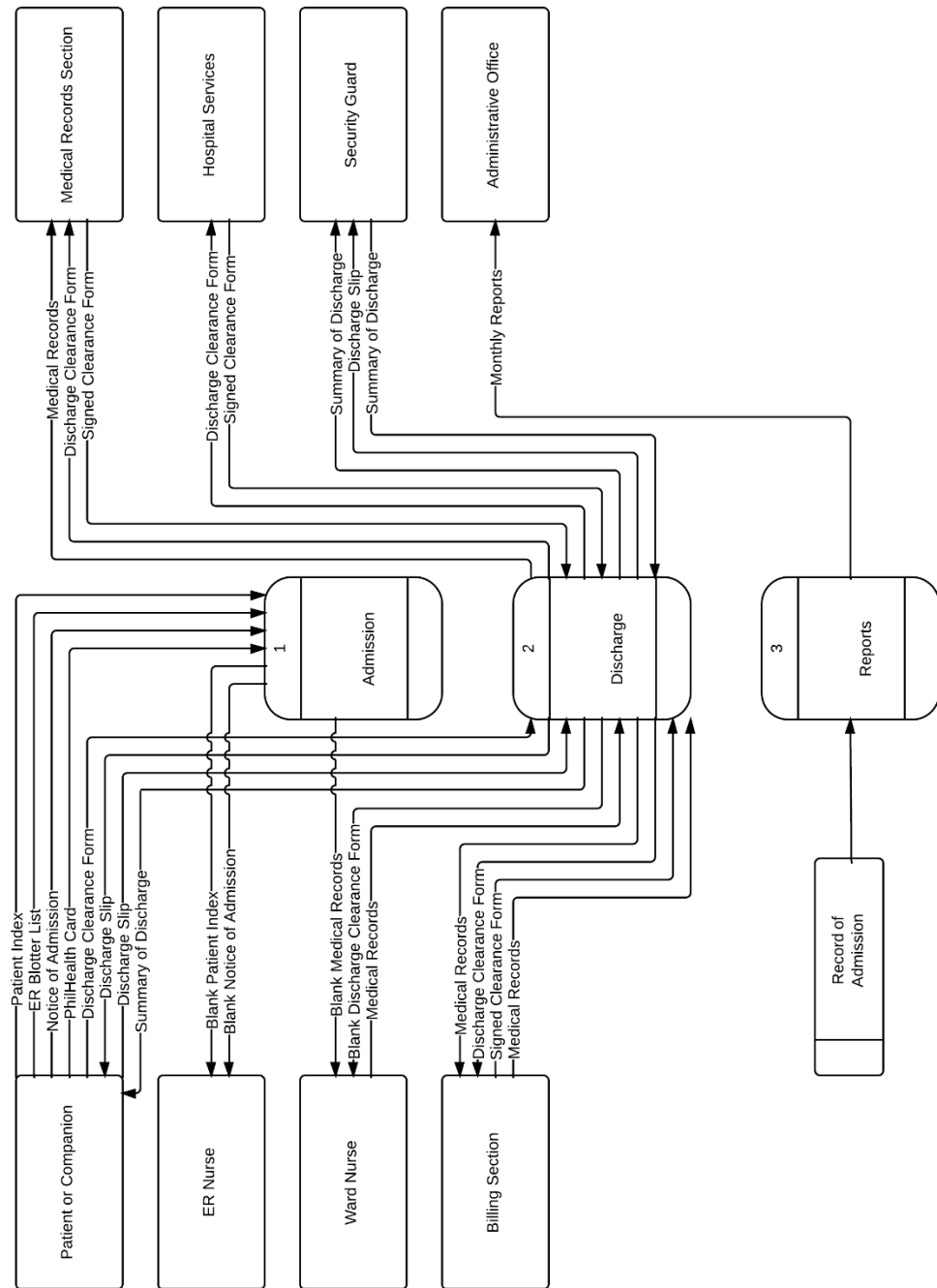
ENTITIES	DOCUMENTS				
	Patient Index	Record of Admission	Blotter Sheets	Notice Of Admission	Consent Form
Admission and Discharge	(1)(3)	(1)	(1)	(1)(4)	(1)(3)
Patient or Comapanion	(2)			(3)	(2)
ER Nurse				(2)	
Ward Nurse					
Billing Section					
Medical Records Section					
Security Guard					

ENTITIES	DOCUMENTS				
	Patient's Admission Data Sheheet	Top Sheet	Summary of Discharge	Clearance Slip	Discharge Slip
Admission and Discharge	(1)	(1)	(1)	(2)	(1)
Patient or Comapanion			(6)		(2)
ER Nurse		(2)	(2)		
Ward Nurse		(3)	(3)	(1)	
Billing Section		(4)	(4)		
Medical Records Section		(5)	(5)		
Security Guard					(3)

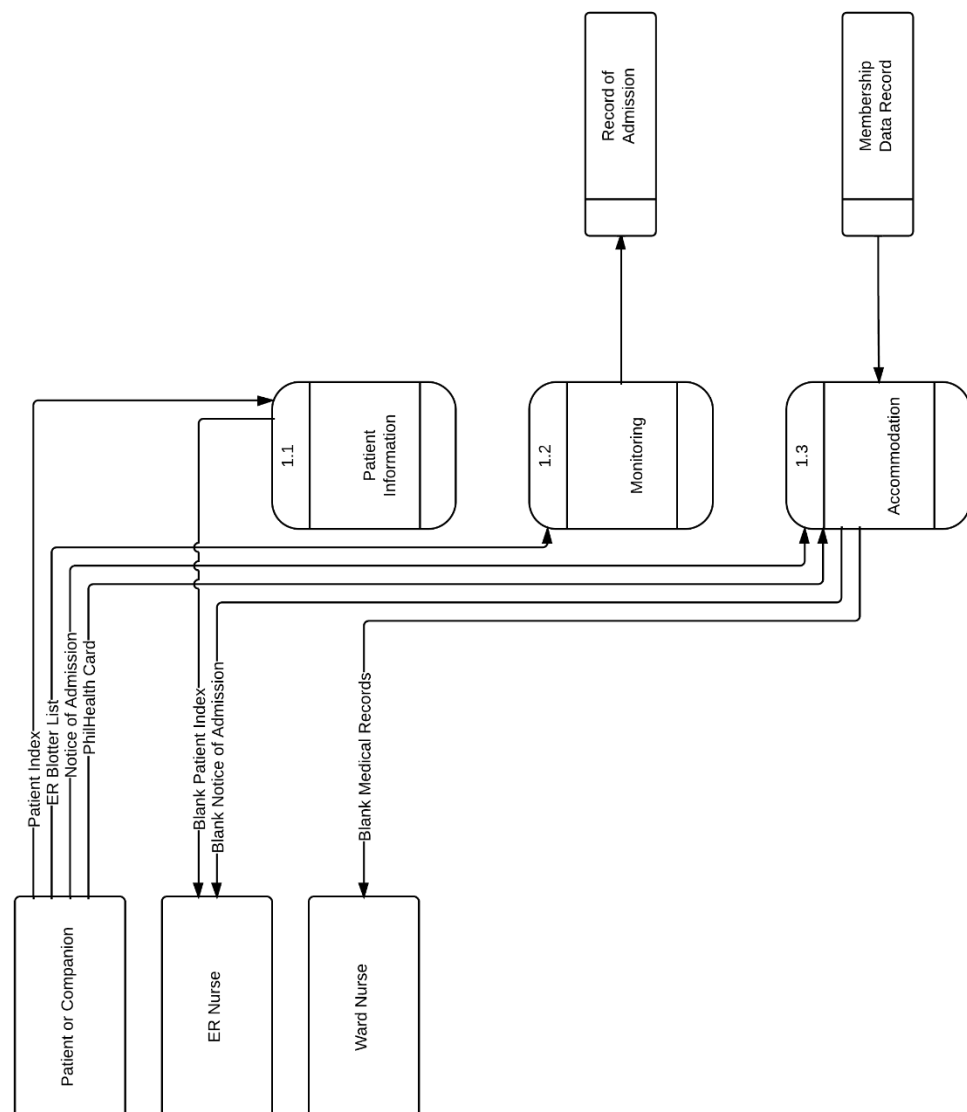
Context Diagram



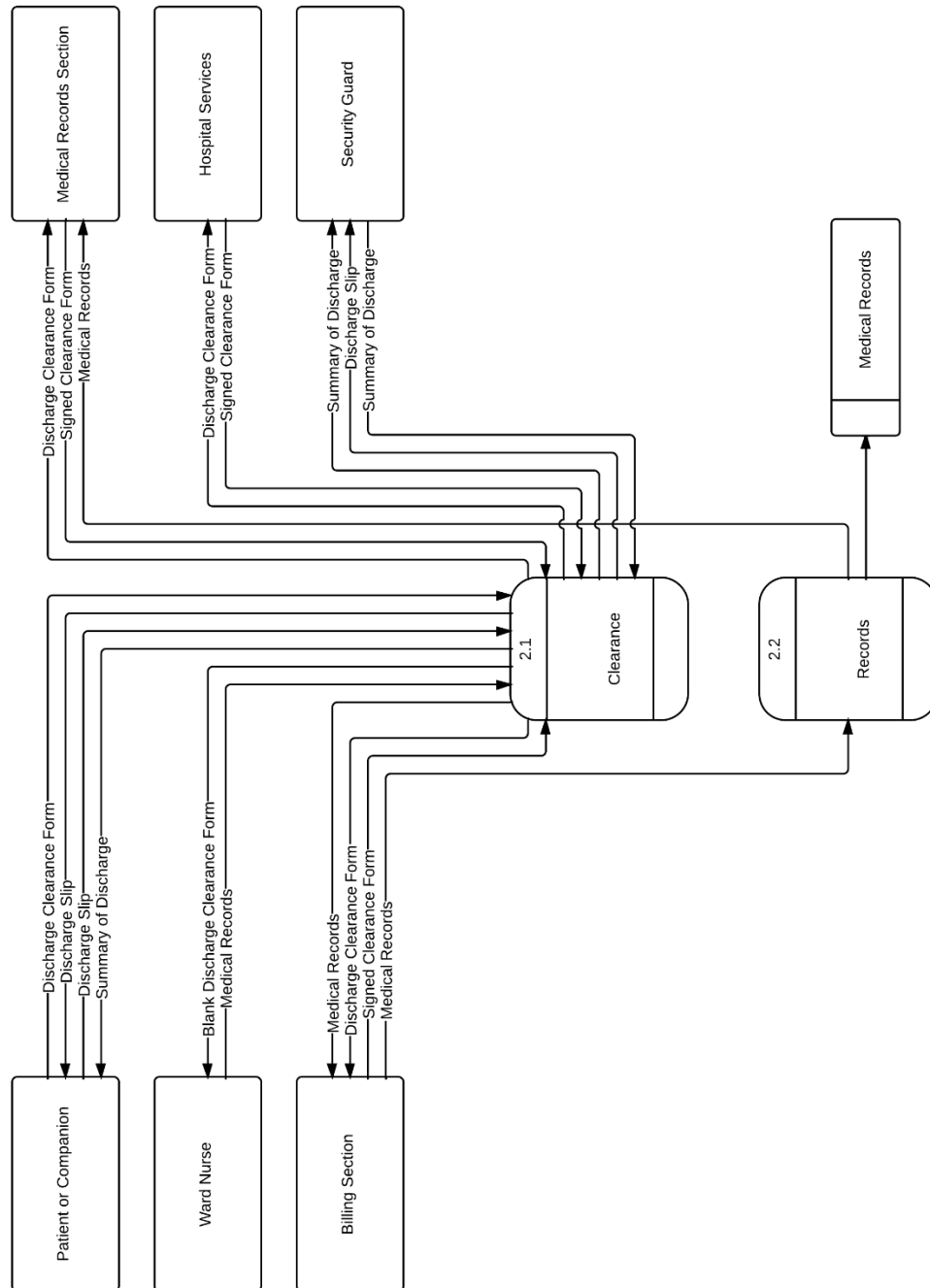
Data Flow Diagram Level 1



Data Flow Diagram Level 2



Data Flow Diagram Level 3



Data Dictionary Patient Index

Field Name	Field Type	Length	Description
Family Name	Alphabetic	10	Patient's Family Name
First Name	Alphabetic	20	Patient's First Name
Middle Name	Alphabetic	10	Patient's Middle Name
Hospital Number	Numeric	8	Patient's Identification
Age	Numeric	2	Patient's Age
Date of Birth	Numeric	10	Patient's Birth Date
Sex	Alphabetic	1	Patient's Gender
Status	Alphabetic	1	Patient's Status
Address	Alphanumeric	50	Patient's Address

Notice of Admission

Field Name	Field Type	Length	Description
Date Admitted	Numeric	10	Date of the Admission
Patient Name	Alphabetic	30	Patient's Name
Sex	Alphabetic	1	Patient's Gender
Date of Birth	Numeric	10	Patient's Birth Date
Age	Numeric	2	Patient's Age
Diagnosis	Alphabetic	30	Findings for the Patient
Medical Officer-OnDuty	Alphabetic	30	Medical Officer's Name in charge
Nurse-OnDuty	Alphabetic	30	Nurse's Name in charge

Relative	Alphabetic	30	Patient's Relative Name
Relation to the Patient	Alphabetic	20	Relation to the Patient

Discharge Slip

Field Name	Field Type	Length	Description
Name	Alphabetic	30	Patient's Name
Hospital Number	Numeric	8	Patient's Identification
Service	Alphabetic	30	Service of the Patient
Date	Numeric	10	Date of Discharge
Time	Numeric	5	Time of Discharge
Nurse On Duty	Alphabetic	30	Nurse's Name in charge
Remarks	Alphabetic	50	Notes and Observations for the Patient
Guard On Duty	Alphabetic	30	Guard's Name
Date	Numeric	10	Date of Leaving
Time	Numeric	5	Time of Leaving

Clearance Slip

Field Name	Field Type	Length	Description
Patient's Name	Alphabetic	30	Patient's Name
Hospital Number	Numeric	8	Patient's Identification
Service	Alphabetic	30	Service of the Patient
Age	Numeric	2	Patient's Age
Room Number	Numeric	3	Number of the Room

Date Admitted	Numeric	10	Date of Admission
Date Discharge	Numeric	10	Date of Discharge
Time	Numeric	5	Time of Discharge
Diagnosis	Alphabetic	30	Finding for the Patient
MOD	Alphanumeric	-	Signature of the Staff in MOD
Ward Nurse On Duty	Alphanumeric	-	Signature of the Nurse in charge
Medical Social Service	Alphanumeric	-	Signature of the Staff in the MSS
Laboratory	Alphanumeric	-	Signature of the Staff in the Laboratory
Blood Bank	Alphanumeric	-	Signature of the Staff in the Blood Bank
Radiology	Alphanumeric	-	Signature of the Staff in the Radiology
CSSD	Alphanumeric	-	Signature of the Staff in the CSSD
Pharmacy	Alphanumeric	-	Signature of the Staff in the Pharmacy
OR/DR	Alphanumeric	-	Signature of the Staff in the OR/DR
NICU	Alphanumeric	-	Signature of the Staff in the NICU
Medical Records	Alphanumeric	-	Signature of the Staff in the Medical Records
Billing Section	Alphanumeric	-	Signature of the Staff in the Billing Section
Admitting & Discharge	Alphanumeric	-	Signature of the Staff in the ADS

PhilHealth Membership Status	Alphanumeric	15	Patient's PhilHealth Membership Status
Remarks	Alphabetic	50	Notes and Observation for the Patient

Patient's Admission Data Sheet

Field Name	Field Type	Length	Description
PhilHealth: Member	Boolean	1	Checked if the patient is a PhilHealth member
PhilHealth: Dependent	Boolean	1	Checked if the patient has an immediate relative who is a PhilHealth member
Gov't	Boolean	1	Checked if the patient is a GSIS member
Private	Boolean	1	Checked if the patient is a SSS member
Indv. Paying / Self-Employed	Boolean	1	Checked if the patient is selfemployed
Non-NHIP	Boolean	1	Checked if the patient is Non-NHIP
Indigent	Boolean	1	Checked if the patient is poor
OWWA	Boolean	1	Checked if the patient is an OWWA
OFW	Boolean	1	Checked if the patient is an OFW
Pensioner / Retire:			
SSS	Boolean	1	Checked if the patient is a SSS member

GSIS	Boolean	1	Checked if the patient is a GSIS member
Patient's Name	Alphabetic	30	Patient's Name

Service	Alphabetic	30	Service of the Patient
Prev. Admission			
() Yes	Boolean	1	Checked if there was a previous Admission
() No	Boolean	1	Checked if there wasn't a previous Admission
Hospital Number	Numeric	8	Patient's Identification
Address	Alphanumeric	50	Patient's Address
Mlans.	Boolean	1	Checked if the patient is Manila resident
N/Mlans.	Boolean	1	Checked if the patient is not a Manila resident
Tel. No.	Numeric	7	Patient's Telephone Number
District	Numeric	1	District Number
Zone	Numeric	2	Barangay zone Number
Barangay Number	Numeric	4	Barangay Number
Sex	Alphabetic	1	Patient's Gender
Civil Status	Alphabetic	1	Patient's Civil Status
Nationality	Alphabetic	10	Patient's Nationality
Religion	Alphabetic	10	Patient's Religion
Date and Place of Marriage	Alphanumeric	50	Date and Address of the Marriage place

Date of Birth(Month / Day / Year)	Numeric	10	Patient's Birth Date
Age	Numeric	2	Patient's Age
Birth Place	Alphabetic	20	Patient's Birth Place
Occupation	Alphabetic	20	Patient's Occupation

Employer	Alphabetic	30	Patient's Manager
Address of Employer	Alphanumeric	50	Address of the patient's manager
Name of Husband / Wife	Alphabetic	30	Name of the patient's spouse
Birth Place	Alphabetic	20	Birth Place of patient's spouse
Person to Notify In Case of Emergency	Alphabetic	30	Name of person to Inform in case of emergency
Relationship	Alphabetic	10	Relationship to the patient
Address / Contact Number	Alphanumeric	50	Address and the contact number of the relative
Name of Father	Alphabetic	30	Name of the patient's father
Name of Mother / Maiden Name	Alphabetic	30	Name of the patient's mother
Attending Physician / (Dept. Head / MS / MO)	Alphabetic	30	Name of the patient's physicians
Admitting Clerk	Alphabetic	30	Name of the admitting clerk
Date / Time of Admission	Alphanumeric	20	Date and time of the patient's admission

Date / Time of Discharge	Alphanumeric	20	Date and time of the patient's discharge
Length of Hospital Stay	Alphanumeric	10	Patient's length of stay in the hospital
OPD Case No.	Numeric	10	Number of OPD case
Admitting Diagnosis	Alphabetic	50	Admitting Diagnosis of the patient
Final Diagnosis	Alphabetic	50	Final diagnosis of the patient

Operation	Alphabetic	50	Procedure of the patient
For MRS Use Only			
ASY	Boolean	1	Checked by the Medical Record Section
ST1	Boolean	1	Checked by the Medical Record Section
ST2	Boolean	1	Checked by the Medical Record Section
A & C	Boolean	1	Checked by the Medical Record Section
MMHR	Boolean	1	Checked by the Medical Record Section
Improved	Boolean	1	Checked if improved
Unimproved	Boolean	1	Checked if unimproved
Referred	Boolean	1	Checked if referred
HAMA	Boolean	1	Checked if HAMA
Absconded	Boolean	1	Checked if Absconded
Well Baby	Boolean	1	Checked if well baby

Transferred / Reason of Transfer	Alphabetic	50	Reasons of transfer
Expired	Boolean	1	Checked if
Informant	Alphabetic	30	Name of the informant
Relationship	Alphabetic	30	Relationship of the informant to the patient
Address	Alphanumeric	50	Address of the informant
Signature	Alphanumeric	-	Signature of the informant
Rec'd Copy NHIP Form	Alphanumeric	20	Informant Rec'd copy NHIP form
Patient's Badge Received	Alphanumeric	20	Badge received by the patient
Signature and Printed Name	Alphanumeric	-	Signature and name of the informant
Month / Day / Year	Numeric	10	Date of the admission

Summary of Discharge

Field Name	Field Type	Length	Description
Surname	Alphabetic	20	Patient's Surname
Given Name	Alphabetic	20	Patient's Given name
Middle Initial	Alphabetic	10	Patient's Middle Initial
Age	Numeric	2	Patient's Age
Sex	Alphabetic	1	Patient's Gender
Ward	Alphabetic	30	Name of the ward
Hospital Number	Numeric	8	Patient's Identification

Attending Physician	Alphabetic	30	Name of the patient's physician
Department	Alphabetic	30	Name of the department
Date Admitted	Numeric	10	Date of the patient's admission
Date Discharge	Numeric	10	Date of the patient's discharge
Discharge Diagnosis	Alphabetic	50	Discharge analysis
Operation Done: (Date / Surgeon)	Alphanumeric	50	Date of the when the operation is done and name of the surgeon
Vital Signs Upon Discharge:			
BP	Numeric	7	BP of the patient
CR	Alphabetic	30	CR of the patient

RR	Alphanumeric	20	RR of the patient
TEMP.	Alphanumeric	5	Temperature of the patient
Follow-Up On:			
Date / Time	Numeric	15	Date and time of next consultation
Physician	Alphabetic	30	Name of the physician
Place	Alphabetic	50	Place of the next consultation
Department	Alphabetic	30	Name of the department
Medications:			
Generic (Brand) Name	Alphabetic	20	Name of the medicine
Strength	Alphabetic	10	Strength of the medicine
Dose	Alphanumeric	20	Number of dose of the medicine

Frequency	Alphanumeric	20	Number of intake of medicine
Number of Days	Alphanumeric	10	Number of days
Diet	Alphanumeric	30	Patient's diet
Activity	Alphabetic	30	Patient's activity
Other Follow-up Instructions	Alphabetic	30	Other follow-up instruction to the patient
Laboratory Findings	Alphabetic	50	Laboratory findings on the patient
Dispositions:			
Improved	Boolean	1	Checked if improved
Unimproved	Boolean	1	Checked if unimproved
Transferred	Boolean	1	Checked if transferred
Absconded	Boolean	1	Checked if absconded
Well Baby	Boolean	1	Checked if well baby
Referred	Boolean	1	Checked if referred
HAMA	Boolean	1	Checked if HAMA
Expired	Boolean	1	Checked if expired
Patient / Relative Signature and Printed Name	Alphanumeric	-	Signature and name of the patient's relative
Relationship to the Patient	Alphabetic	10	Relationship to the patient
Accomplished By:			
Nurse-InCharge	Alphabetic	30	Name of nurse in charge
Medical Officer-In-Charge	Alphabetic	30	Name of medical officer in charge

ER Blotter Sheet

Field Name	Field Type	Length	Description
Time	Numeric	5	Time of the patient accompanied
Case Number	Numeric	10	Control Number of cases / consultation
Patient's Name	Alphabetic	30	Name of patient
Address	Alphanumeric	50	Address of Patient
Barangay Number	Numeric	5	Barangay Number In Patient's Address
Zone	Numeric	5	Barangay zone number
Service	Alphabetic	30	Service of the patient
Sex	Alphabetic	1	Gender of the patient
Age	Numeric	2	Age of patient
Companion	Alphabetic	30	Name of Companion

Record of Admission

Field Name	Field Type	Length	Description
Hospital Number	Numeric	8	Patient's Identification
Date/Time	Alphanumeric	15	Date and time the patients admitted
Complete Name of Patient	Alphabetic	30	Complete name of Patient
Sex	Alphabetic	1	Gender of the Patients
Age	Numeric	2	Age of the patient
Address	Alphanumeric	30	Address of Patient

Admitting Diagnosis / Physician	Alphabetic	20	Diagnosis of Patient
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Daily Census

Field Name	Field Type	Length	Description
Date of Admission	Numeric	10	Date when the patient admit
Patient's Name	Alphabetic	30	Name of the patient
Remarks	Alphabetic	5	Staff Remarks

User Requirements**A. Log-In Section**

Only those people who can access the login that knows the user and ID password.

B. Searching Section

Admitting Staff or nurses on duty can access the searching section .They can search the Personal Information of respective patients, Medical History, their hospital numbers, the date of admission and the attending physician.

C. Availability of Rooms and Beds

Admitting staff and Nurses on duty can also view the availability of the rooms. If there is an available room, the system will check if the bed is also available.

D. Generating of Reports (Census)

The system must generate and print the report or the census that shows the daily and monthly activity of the respective wards.

E. Centralized System

The system is centralized which connects the admitting office to the Medical Department for a more accurate admitting system and a faster admitting process.