

Application of medical informatics in online medical database system and international medical card using Single Windows Information Service System IMC-SWISS- A case study of architecture of online medical database

JITENDER SOLANKI

Abstract-The medical informatics is a combination of information technology and health care. It deals with the resources, devices, and methods to optimize the acquisition, storage, retrieval and use of information in medical science. It is also known as health informatics. The online medical database system is such a database where all type of health facilities will be stored in online database and this can be access by card. In this paper it proposes the how this card uses for access medical related activities. It is just like ATM card but it deals only health issue. The name of the card is International Medical Card (IMC). It is a application of medical informatics in which all detail of health are stored in the online database and can access by International Medical Card (IMC)

Key words- International medical card, online medical database, Patients, Doctors, Pathology laboratory, Primary key, Foreign key,

I Introduction

In this paper it proposed application of medical informatics in online medical database and how International Medical Card (IMC) can access all medical facilities using Single Windows Information Service System (SWISS). We also can say IMC-SWISS. There are major components of this

- (1) IMC Card
- (2) Online Medical Database
- (3) SWISS
- (4) IMC Machine

The International Medical Card (IMC) is one of the most important part of. Single Windows Information Service System (SWISS). In this all information are store in Online Medical Database (OMD) of every person, regarding health activities. This card has electromagnetic strip like ATM card of bank and can access all information regarding the health related issue. This Online Medical Database (OMD) is connecting by a interface. This combine know as Single Windows Information Service System (SWISS).

Author JITENDER SOLANKI

Country INDIA

The International Medical Card (IMC) machine is like ATM card of bank and it connected from online medical database where database of all patients, doctors, path laboratories Pharmacist, and Insurance companies store.

It integrates all components of health industry like patients, doctors, diagnostic laboratories, Pharmacists, and government, insurance. It is big advantage that no any information needs to use the paper. Entire work will be will be store in the online database. Any person can access all information about his or her health any time around the world. This information can access by International medical card. Each person has individual card. Every person has health account and it will assign a unique numbers. This number is called as International medical number. It is application of medical informatics. The are main components of health field.

- (1) Patients
- (2) Doctors
- (3) Pharmacist
- (4) Pathology laboratory
- (5) Government
- (6) Insurance

Online Medical Database

Online Medical Database is the group of the five tables which name are Patients, Doctors, Pathology laboratories, Pharmacist, and Insurance companies. These tables keep records according their relevant information for example if patients related detail it keeps stores in patient table same in other. The all table are logically connected from the patient no or P.no which treat as primary key for patient table but treat as foreign key for all other four table Doctors, Pathology laboratories, Pharmacist, and insurance companies tables. The path laboratories is use for the pathologists and insurance companies mean insurance agents.

All information is saved in these tables. The information are save in the table by Single Windows Information Service System (SWISS) which is interface on show on International Medical Card (IMC) machine or terminal as patient swipe the card login after doctor login give prescribe. Doctors need not

write only use by terminal for select test or medicine enter touch screen which already are stored in database. The online database work as backhand which is logical connects from this Single Windows Information Service System (SWISS) which

is interface and show on International Medical Card (IMC) machine.

(4) Due to this work one global medical database will be created which is useful for patients, doctors, Path laboratories, Pharmacist and insurance.

(5) Every person must register by fill online medical form which available on the Single Windows Information Service System (SWISS). It is only in once a time in entire life. As well as when patients registered first there is one account is open which is known International Medical Account within some minutes new numbers will issue for him. It does not matter person has what age sex and locality .Once a time when he or she registered get new number generated by system.

(6) This number gets after registration which is unique for every person. It is called International Medical Numbers (IMN).

(7) International Medical Card (IMC) machine not possible at home of every patient so there is login and password provide to every patients so he or she can check any time, any where health status on line by using Single Windows Information Service System (SWISS).

(8) The International Medical Card (IMC) need when a patients go to hospital, doctors, path laboratories, Pharmacist, insurance swipe the card in International medical card machine or terminal which is just like ATM machine and connect from online medical database.

Swipe card by patients International Medical Card (IMC) machine and then, doctors, pathology lab, Pharmacist, insurance according to requirement.

NOTE-International Medical Card (IMC) patients get his or her card after registration with their password.

The International Medical Card (IMC) machine is like ATM card machine of bank and it connected from online medical database where database of all Patients, Doctors, pathology lab, Pharmacist, and Insurance companies store. It is touch screen based. But International Medical Numbers (IMN) helps to check the health status at home.

(9) When he or she is going for register from the medical database first he or she must fill his or her basic information which almost fix. .

(11) Basics detail like name, date of birth, address, education, health detail like any disease, blood group, Rh factors etc.

(13) In any case any patient want to change name, address or incorrect entry the he or she can change detail by update

profile which available on the Single Windows Information Service System (SWISS).

(14) It is database in which all type of health information stored. It stores all type of information about patients, doctors, path laboratories, Pharmacists, and insurance companies.

(15) All data are online store.

(16) The similar doctors, pathlab lab, Pharmacist, insurance must register with some basic information and work information according to their job.

NOTE- The doctors, diagnostic lab, Pharmacist, insurance must register two times first as in patients table because doctors, diagnostic lab, Pharmacist, insurance any body can be seek in his or her life. Second time according to their category which mean if doctors he or she registered as doctors and if pathologist registered as pathology laboratory similar if insurance agent registered in insurance table. So only registered can check.

(17) Field level- In this validation rule are only for filed level for example for certain time period every person must renew his or her International Medical Account.

(18) There are biometric data save or every patient, doctor, path laboratories, Pharmacist, and insurance in the table like finger print etc.

Special case

(1) In any case a child or patients not able to fill online medical form due to any reason he or she can fill by his or her relative or from registered center

(2)In any case if a person forgot his or her International Medical Numbers (IMN) he or she can get by e.mail or SMS by telling some securities questions.

Documents need for registration

When a first time registered patients, doctors, path laboratories, Pharmacist, and insurance companies following documents need it.

Passport size photo
Scanned copy signature
ID proofs
Address proof
Thumb impression
Fee

Advantages

(1) The patient can be update his or her profile when patients need for it like name and address etc.

(2) The database allow add, delete, modify of data of patients, doctors, path laboratories, Pharmacist and insurance agents.

(3) Sorting- there are the sorting facilities available in the data base. The all tables can be sort ascending or descending order.

(4) There are every patient, doctors, path laboratories, Pharmacist, are insurance agents registered. So only

authorized person can use the database which reduce the unauthorized person

(5) There registered test and medicine are use for patients so it helps reduce unauthorized tests and medicines in any case test or medicines which need but not listed doctor can write by terminal which is touch screen .

(6) There are photo and biometric detail of each patient, doctors, path laboratories, Pharmacist and insurance agent store in the table.

(7) It online medical database use case study, survey and report generate.

(8) There is nobody can see detail of patient his or her without permission because it is protected from password and similar this apply doctors, path laboratories, Pharmacist and insurance agent

There are three number are issue for individual patients.

- (1) Patients No
- (2) International Medical Number
- (3) International Medical Card (IMC) No

Patient No. (P.No)-There is patient no use for the internal process. The patient no (P.no) use primary key while all other four table it treat as foreign key doctors, diagnostic laboratories, Pharmacist, and insurance. It is unique number. Patients table is individual linked from every table doctors, diagnostic laboratories, Pharmacist, government, and insurance.

International Medical Account (IMA) - The International Medical Number from which patients can only check his or her health status at any time any where in the world on computer. It is always unique. The patient gets login and password for check account. There is no need for IMC card here. There are some main points of international medical number is the numbers.

- (1) It is the unique number of each patient.
- (2) It use for all the medical related activities.
- (3) It is always numeric never alphabets or special characters.
- (4) There is also the login id and password provide to each patient so that no body can the open his or her detail.
- (5) The patients can change his or her password in any time any numbers.
- (6) The are twenty number in International Medical Number five groups in and in each group four digit.
- (7) It can access all detail on the screen.
- (8) It is secure by the password.

(9) This number use at all health channels Patients, Doctors, path lab laboratories, Pharmacist, Government, and Insurance companies etc.

How can check health status at home

The International Medical Number help to see current and past history since from starting day of registration to till current time like how many time meet from doctor, name of test, name of medicine and insurance status. First login and password then patients can see his or her health status. This login Id and password is given when patients registered.

The patients can change his or her password. In this patient get login and password in seal envelop.

It is known as **Internet Medical or Online Medical**

Internet Medical help to patient to check his or her data on computer any time any where in the world.

As black data box keep track record of every activities of the flight similar the International medical account or health inbox keep record every activities of health of patient.

International medical account or health inbox is black data box of patient's health.

International Medical Card (IMC) - It is card which is like same as ATM card of bank in size and look. There is International Medical Card (IMC) number mention on the card which is unique the password is given with this card .It swipe from International medical card (IMC) machine then doctor, path laboratories, Pharmacist, and Insurance according to requirement.

Font's details- The size and type on font in the online medical database.

Language English

Font size 12

Font type Times New Roman

Colors Black

How to work

- (1) Every person has only one International account.
- (2) Patients can change password if he or she wants to change it.
- (3) In any case patients are not satisfy from doctors, path lab Pharmacist, and Insurance in that situation he or she can change without inform.
- (4) The patients also change type of treatment in his or life for example patients can change Allopathy doctor to Ayurved doctor if he or she need for it. There is one field therapy in doctor table which shows from which therapy doctor belong. like allopathy or Ayurved etc. Similarly this is also apply for the path lab and Pharmacist. Even that patients can change his or her health insurance plane if he or she is not satisfy in before completion of time use for

The patients is the hero of health industry

Patients

Whenever any patient goes to hospital this step will follow.

- (1) First swipe IMC card
- (2) Enter login and password.
- (3) Enter login and password of doctors.
- (4) NOTE- (Like bank locker first customer open his or her key and then manager open)
- (5) Main information display on screen left hand side of patients like Name, Address, DOB, Blood group, Rh factor
- (6) Doctors check patients.
- (7) Select tests or medicine according to situation of patients from listed left side of terminals.
- (8) In any case test or medicine is not listed doctor has authority add any new test or medicine.
- (9) Print slip with time and date.
- (10) This slip can also get on e.mail of patients by enter e.mail of patients.
- (11) The terminal are all time connect from online medical database so all information will be store
- (12) All detail as mention in the table of patients will print on slip.
- (13) So it is easy to find whom particular doctors check particular patients. Each doctor has one terminal in which detail of doctors. Every terminal has unique number.
- (14) The every patient, doctor, diagnostic laboratories, Pharmacist and insurance agent use Single Windows Information Service System by using International medical cards.

Mobile medical- The patients can also see his or her health status on mobile phone. There one login and password given to patients with international medical account so he or she can check health status on mobile phone. In this patient get login and password in seal envelop. This login Id and password is given when patients registered. The patients can change his or her password.

Patients Doctors

P.No
IMA No.
IMC No.
Name
Blood group
Rh factors
Address
DOB
Age
Sex
Date
Disease
Prescribe
Medicine
Test

P.No
Diagnostics lab no
Name of Doctor
Doctor code no
Therapy
Name of test
Test code
Test name
Name
Age
Sex
Date
Time
Lab

Query - The query helps to get data according to requirement and prepare report requirement from online medical database.

Relationship in table

There is many to many relation between patient and doctor Which mean a doctors can have two or more patients and similarly a patients can have two doctor or more. For example patients can treatment with physician and dentist. This applies on all other doctors, diagnostic laboratories, Pharmacist, government, and insurance agents. The field can be increase in tables according to requirement.

Patients

P.No
IMA No.
IMC No.
Name
Blood group
Rh factors
Address
DOB
Age
Sex
Date
Disease
Prescribe
Medicine
Test

Test

P.No
Test Code no.
Gender
Name of Doctor
Name of path laboratory
Name of test
Prescribe by name of doctor
Body part involve in test
Time
Address
Telephone no

NOTE- There are some test are only for female so gender mention. Body part show which particular body part where test take place.

Patients

P.No
IMA No.
IMC No.
Name
Blood group
Rh factors
Address
DOB
Age
Sex
Date
Disease

Pharmacist

P.No
Pharmacist name
Pharmacist code no
Sex
Address
Telephone no
Date
Time
Total
Drug code
Drug name
Substance
Manufacture date
Expire date
Side effect
Type of medicine
Medicine device
Medical device code no
Target disease

NOTE-(1) Type of medicine (tablets, capsule, injection, drip)
 (2) Medicine device (for example in some case doctors prescribe to patients to use devise like BP machine)

Patient

P.No
IMA No.
IMC No.
Name
Blood group
Rh factors
Address
DOB
Age
Sex
Date
Disease
Prescribe
Medicine
Test

Insurance

P.No
Agent code
Name of Agent
Name of insurance Company
Name of Plan
Plan code
Disease
Time period
Fund total amount
Address
Telephone no
Date
Time

Government

The government gets following advantage from the online medical database

- (1) Only registered patients, doctors, pathology laboratory, Pharmacist, insurance allocated a number. It reduce the fake Patients, Doctors, Diagnostic lab, Pharmacist, Health Insurance Company
- (2) Help to find out total number of patients, doctors, Diagnostic lab, and Pharmacist, insurance.
- (3) Help in find number of disease
- (4) Help in find type of disease
- (5) Reduce the survey time
- (6) Reduce money
- (7) Easy to survey time and save men power.
- (8) Increase accuracy

Scope

It use for further medical research. When all store in single database then it is very easy to study about research in medical science. in this there are no or very manual work so because all information are store in database and so information about any doctors, patients , tests and medicine are store in the database so it easy access, fast and accurate. It saves time, paper and money because all information is store in online database. If paper will save it reduce the tree cutting which save environment. In future the space which use for keep lager number of medical records also can save. It is very user friendly. It helps to doctors about information of new disease, tests and medicines.

Summary- There is one reason about this database. save money, save time and save paper. It helps to reduce unauthorized doctors, path laboratories Pharmacist and insurance agent. So we can save environment. In this gradually ever thing is going to online so it is one of the steps taken toward this paperless medical.

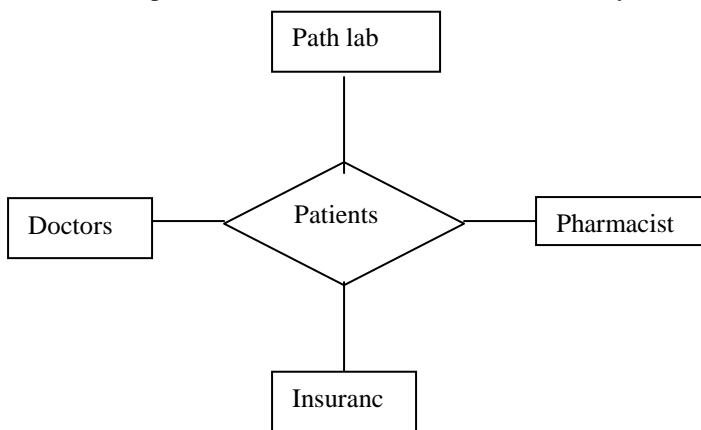
Acknowledgement

Author JITENDER SOLANKI
 Country INDIA

Author photo



There are total five table Patients, Doctors, Diagnostic laboratories, Pharmacist, Government, and Insurance companies. Which are given in the four pair patients-doctors, patients-path laboratory, patients-Pharmacist and patients-insurance agents. But in online database only one patient table present. It only for explain about online medical database. It shows that patients table is individual linked from every table.



According to diagram it diagram which show that the patients table connected from all tables by the patients no.

Advantage-

The online database helping in following fields.

- (1) Research
- (2) Case study
- (3) Rare disease
- (4) Drug design
- (5) Survey
- (6) Heath Policy
- (7) Feasibility
- (8) User friendly
- (9) Easy access in all over world
- (10) Save money
- (11) Save paper
- (12) Save time

Reduce fake doctors medicine Pharmacist and insurance