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 advance architecture of online medical database

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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.**

Keywords- **International medical card, Online Database, Patients, Doctors, Pathology laboratory, Medical tourism, Air ambulance,**

Introduction

The online medical database system is such a database where all type of health activities 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 example of medical informatics in which all detail of health are stored in the online database and can access by International Medical Card (IMC).In this paper it proposed application of medical informatics in online medical database and how International Medical Card (IMC) can access all medical facility using Single Windows Information Service System (SWISS). We also can say IMC- SWISS. We can search any hospital anywhere in the world.

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 agent give service according to requirement.
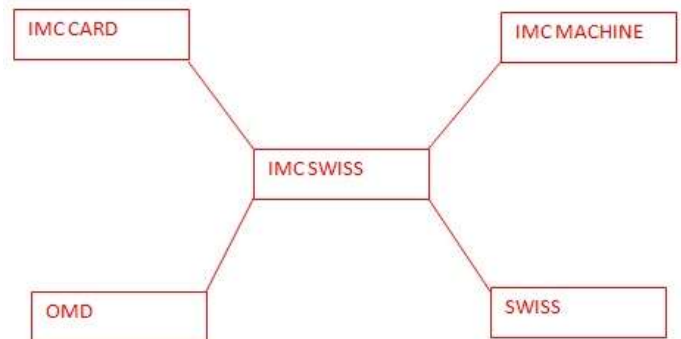
Online Medical Database

Online Medical Database is the group of the tables like patients, Doctors, Pathology laboratories, Pharmacist and Insurance companies.

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These tables keep records of data according their relevant information for example if patients related detail it keeps stores in patient table same in other tables. 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.

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.

Academic and treatment –
This table contain data of manufactures all type of medical products which use in academic, path lab, stationery, research and development in medical field for example slide, specimen, chart, dummy, model, lab apparatus, chemical, solid liquid, gas normal or hi-tech, apparatus, device, instrument, equipment, tools, hardware, software etc.

Academic and treatment

P.code
Name
Product code
Product name
Manufacture
Detail
Country
Address

Medicine- Unprescribed medicine, test kit, tools, and equipments-

There are some medicines, test kit, and medical equipments which patients can directly buy from market without any medical prescription for example health drink, cotton, antiseptic solution etc. So that patients can direct purchase from market. These details are mention in this table.

Unprescribed medicine

P.code
Company code
name of company
Address
Name
e code
Product
Product no.
Photo 3d image
Manufacture
Type govt./ private
Target male/female
Target customer child/adult
Customer care line

Medicine bank-There is a hospital must start a medicine bank in which collection of all type of medicine which is left after treatment, authorized and not expire till yet. So hospital can free medicine to patients according to their requirement from this medicine bank.

NOTE-Time and date are mention on every activities of health. Address is including city, country, phone and e.mail.
UG under graduate and PG Post Graduate
Field of tables can increase or decrease, or change according to requirement.

Specialized medicine-There specialized medicines are those medicines which use in specialized situation.

Aviation medicine –This type of medicine are use for treatment of patients, pilots and aircrews**.** It is also known as **Flight medicine or Aerospace medicine**. It helps to fast transport of patients or in critical condition of pilot and aircrews in airplane or return on earth.

Space Medicine- This medicine are use for astronaut keep fitness in space craft or International space station in high altitude or fast recover when they come on the earth environment.

Telemedicine- It is the combination of the Information Technology, telecommunication and medicine. It help to provide medical facilities and in rural area or where medical facilities cannot reach. It provides fastest care to patient.

Cyber medicine- In this medical service is providing by internet like consultation and drug prescription. Doctors would consult and treat patients by internet. It is like online consultation.

Cyber doctor cyber physician- The cyber doctors who give medical consultation to patients by Internet. The doctors give online guide to patients.

Diving medicine-This medicine Treat and prevention to diver which health disordering create in under water. It is also known as **Undersea and Hyperbaric medicine (UHB)**.

Nuclear medicine-The radioactive medicines are those medicine which use radioactive substance in medicine for diagnostic and treatment of patients.

Sports medicine- These medicine uses for treatment and prevention player from injuries during exercise or plying.It keep fitness and health. It is also known as **Sport and Exercise medicine (SEM).**

Robotic surgery-It mean the surgery perform by robot. It is also known computer-assisted surgery. There are one computer from this two arm are connected. First arm camera attached. The camera is high definition 3-D views camera for view or surgical site. Second arm surgical instrument attached .Both is connecting by computer. Today almost types of surgery can perform by robotic surgery. The arm has 360 degree flexible to move and work likes a human hand. Doctors give direction on computer according to view

received by camera to. Second arm surgical instrument attached work according to direction of doctors . The robotic surgery is the one of the latest example of application of Information Technology in which a robotic arm do all surgical operation by a robot. The Robotic is use to minimum surgery in human body.

Advantage- The advantages of robotic surgery.

Accuracy
Time save
Less chance of infection
Minimum blood loss during operation
Less in incise
Less pain
Fast recovery

Video Conference-It is live visual and audio connection by computer and telephone between two or more than two people from different location. In this user can share image, audio, and text to each other.

Application of video conference in medical field-The video conferencing is the best option for the fastest treatment in this doctor and patients can live conversation and see each other and doctors can give fastest treatment to patients and treatment.

Fastest care
Less expensive
Time saving

There are some main fields of information technology which use in medical field-These
field for help in academic, research and development, work and trading in medical field-
Simulation-very broad term – methods and applications to imitate or mimic.
Real Time System-The provide of require service in within certain time.
Multimedia-Animation-The multimedia the combination of video, audio, text, graphic in and image in movies way how to store and transmitted.
Biomedical Engineering-This deal with application of engineering in medical field.
E-Commerce- It is the trading of medical product and service by internet.

Paramedical
Medical transcription- It is paramedic who deal work transcription voice-recorded reports as dictated by doctors into text format.

Medical translation-In this translation of rules technical, marketing, data, report, software or training syllabus for the pharmaceutical, medical device or healthcare fields.

Hospital-In this there are some special type of hospital mention.

Hospital ship -The hospital ship has all medical facilities like surgery on the ship. It provided medical service near an island or where no any hospital near society. It is a floating hospital. It provided fastest medical care to patients.

Flying hospital-The is hospital in aircraft in which all medical facilities including medical and para medical staff in the aircraft it provide medical facilities in all over the world and in disaster relief situation.

Ambulances There are some special type of ambulance which use in special situation. These are fully equipped with all medical support system.

Water ambulance- The boat converts inside as ambulance which carries patients from island to city or in flood situation.

Flying ambulance- - The air plane or helicopter convert inside as ambulance which carry patients from island to or disaster situation to city. There is one big advantage in helicopter ambulance that it need not the long run way like as air ambulance. Air craft ambulance use for long distance while helicopter use for short distance.

> Flying ambulance is the fastest way of transport to patients in hospital and relief,

Medical tourism

The medical tourism mean when a person travel from the home country to foreign country for medical treatment is called medical tourism. It is also known as health tourism. The India is the oldest medical tourism destination in all over the world people come from all over world for a yoga and Ayurveda.
Ayurveda- The Ayurveda is the one of the oldest therapy of treatment. Allopathy-It modern medical science.

Reason of the medical tourism

Money saving
High quality
Latest technology

Foreign tour
Best facilities in the world.

Effect of the medical tourism

Social- When a person travel another country for medical treatment it make person to person contact and know the culture of each other country which make a friendly relation.
 Economic- When a person travel another country for medical treatment the person pays medical expenses which increase the economics of the country where he or she receive the treatment.
Medical- it the one of the best way to spread latest medical technology in all over world.

The medical tourism is the one of the emerging field in the medical field and it is gradually popular in this field for best option of treatment in foreign. It is one of the high revenue fields in medical field.

Application-The application of online medical database

(1) The patient knows that which medicine, test kit and health equipment they can purchase without doctors prescriptions.
(2) The patient can know that every fake medicine and become aware not to use it.
(3) It help to stop illegal trading of products and service of medical like drugs and equipment and stop unauthorized medical and paramedical professional.
(4) It help to stop illegal selling and buying human organ, human traffing, drugs, duplicate equipments, unauthorised health professional.
(5) The help to population control.
(6) It helps to research in medical industry.
(7) The all type of medical products which use in academic, path lab, research and development in medical field for example slide, stationery, specimen, chart, dummy, model, lab apparatus, chemical solid liquid, gas normal or hi-tech, apparatus, device, instrument, equipment, tools, hardware, software etc are online so a person can get original product, authorized shopkeeper detail and compare price.
(8) The know about special type of medicine.
(9) The all basic detail about paramedic Medical transcription Medical translation.
(10) The know about all type of hospital and ambulance.
(11) Toll free help line for medical assistance complains.
(12)It saves time, money and environment.

Medical tourism is best option for treatment in foreign

Future scope- The future scope of online medical database.

There is international online medical market and e.shop

Where all type of medical products and services sell.
Toll free help line
Purchasing bill on mobile
To latest information about medical fair and exhibition, camp
Feedback from patients
Online test kit and medicine sell
Medical and paramedical book in pdf
Museum human
Registered NGO and volunteer
Drug rehabilitation
Regulatory Bodies
Major events day and week Conference, seminar and workshop
Medical instrument insurance licensing

Suggestion- The suggestion how Information technology for medical field.

(1) There is one day in year must declare as International Medical Informatics day.
(2) Medical informatics subject include in school and university syllabus.
(3) Course, training, workshop start in academic about medical informatics.
(4) Research and development medical informatics.
(5) Infrastructure and career opportunities.
(6) E. bulletin on medical informatics and Medical tourism day.
(7) The every hospital must have its own website.
(8) There is Information Technology branches like Internet, Real time system Database Management System, Simulation, Graphic, Video Conference, E.commerce, Multimedia, Animation, Artificial Intelligence and Expert system must add in medical field for study and research.
 (9) There are main day and week of India and international health must be mention on every.
(10) The vaccination alert and confirmation by SMS on mobile and e.mail.
(11) The first aid practical training must be in school.

Conclusion-

 Social-There is due to fake medicine, medical product and unauthorized medical professional there is negative impact on medical industry so people loss trust from medical industry.

Economical- There is due to fake medicines and other, medical products there is great loss economic. It decrease economic and growth of medical field.

Environmental- There is due to factories which manufacture fake medicine and medical products it is harmful for environment. What every waste release from such factories of fake medicine and medical product, very harmful for plants, animals and human.

The environment is the most important factors due to misbalancing of environment and climate. It increase Green house gasses which is increase global warming
It creates several new diseases not only for human and animals but also plants. It creates negative changes in climate change. The plants and animal are the important factors of the environment. So increase plantation and save wild life which reduce disease, save environment.

> The everyone make clean and green our earth.

> Every person must have maximum plants at his or her home or a if lack of land use flask for plant.

Regulatory bodies- The Regulatory bodies such a those bodies which control and monitoring Manufacture, sale and advertisements of drugs field. There are almost countries has a regulatory bodies. Like India, USA, and Switzerland etc.

Important points

Intellectual Property Right (IPR)- The
intellectual property the creation new product or process from human mind. The Intellectual Property right the right which is given by the government to a person who create some unique and novel invention of any product, service and process it include patent, trademark, copyright, industrial design and geographical indication.

Effect of Patent law health industry- The
are so many unauthorised person who break Intellectual Property right (IPR) and make fake product like medicine and devices. Due to this infringement of (IPR) health industry loss billion of dollars every year and patients who use such a kind of this product negative effect on health.

Cyber law- The cyber crime mean crime through the use
of computer and Internet.

Cyber law and effect medical field-There
are unauthorised person who stolen important information from computer which are working in health industry and change or destroy this information. Due to this infringement of Cyber law health industry loss billion of dollars every year. Cybercrime harmful effect health industry.

> The cyber crime is the one of biggest challenge for information technology industry.

Advertisement- There is some mislead advertisement about product and service of medical field which show on TV, news paper internet radio and magazine etc. Due to it health industry loss billion of dollars every year.

> The plastic waste harmful for environment.

> Increase trees, save water, and save wild life which reduce disease, save environment. Which make clean and green earth.

Summary-

The online medical database system 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 which reduce global warming that is create due to emission of green houses gases such a like methane carbon dioxide and ozone etc and safe from ultraviolet rays which come from sun to earth which harmful for human. So increase trees, save water and save wild life which reduce disease, save environment. So there is no any negative change and climate.

> The IMC SWISS is the first step in world towards in the complete paperless and online health industry in which one IMC card using SWISS software and do all works of patients, doctors, pathologists, paramedics pharmacist, colleges and insurances computerized. There is no need for paper work. It will not only save time, money and environment but also give accurate results. It also reduces fake product service and person in health industry.

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