

Analysis of Effects and Causes of Diseases of Different country to provide a Globalized Solution by e-health System

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Abstract — The geo informatics is the technology which deals with spatial data, collects and analyzes the geographical data to provide the globalized solution for the identified problems. The main focus of the geo informatics is to collect, process, analyze and providing useful information which provides a solution for the globalized problems. This paper proposes the e-health system combines with integrated environment called health geo informatics. This health geo informatics provides a solution to plan and provide a globalized solution for the diseases of different countries with integrated e-health system.

Keywords—m-health, e-health, spatial data, HIE, WAN, telemedicine, m-health sensors

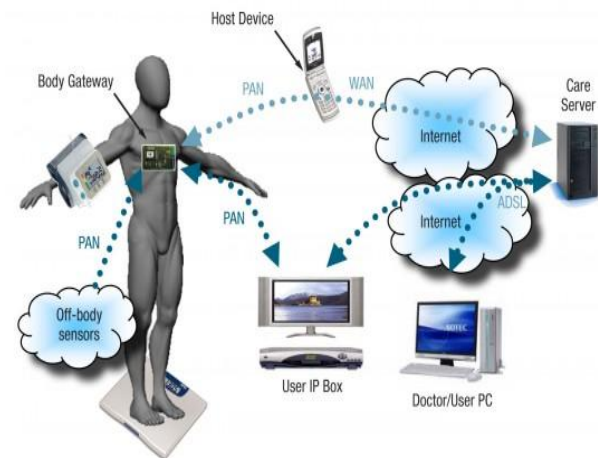
I.INTRODUCTION

The geo informatics system is a technology which is defined as the collecting the geographic data, analyzing the data and process those data to address the globalized problems and also to provide some knowledgeable information. The spatial data are collected remotely by the GIS. The geographical information system is designed to collect, store, process, retrieving, managing and analyze the geographical data. This technology is used for collecting the global data of medical which is called health geo informatics system. There is an increase of diseases on all the countries and some peoples are go to other countries for their treatment. To simplify the medical solutions, reduce the causes and effect of the diseases we go for globalized medical solution by integrating all the e-health system of each country. This method can provide a better understanding of different diseases and solution which is provided by the different medical specialists of different country. The remaining portion of this paper will describes about the m-health and e-health systems, telemedicine, the devices used for gathering the medical information and overview of the system.

II. M-HEALTH SYSTEM

The m-health means mobile health system which is main component of e-health system which provides the support of health activities in mobile devices such as mobile phones, PDA's, patient monitoring system etc. The m-health system is mostly used in hospitals to monitor the patients activities such as heart beat monitoring, blood pressure monitoring, movement monitoring, ECG etc. This information is monitored by the medical specialist through the gateways. The devices are held on with the patient's body and controlled by the database admin.

Fig.1 Architecture of M-health



The health monitoring devices are held on the patients, the devices are always in active mode. The communication is established between the doctors and patients through the PAN (Personal Area Network) and WAN (Wide Area Network).

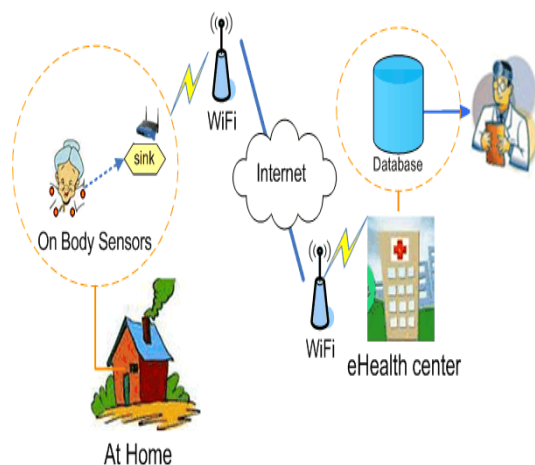
II. E-HEALTH SYSTEM

E-health is a technology which is used to transfer the medical information securely and quickly by electronically. The medical information is shared among the patients and medical specialists via electronic media throughout the world. The telemedicine is categorized as follows

- Consumer health informatics
- Electronic health records
- E-Prescribing
- M-health
- Healthcare information system

The e-health system will reduce the cost of consulting the doctors and provide comfort to the doctors and patient. For example the patient has a wound and the patient takes a photo of the wound and sends this photo to the family doctor via e-mail. The doctor can analyze the injury and prescribe the medicines to the patient via e-mail. There are many benefits by using the e-health such as reducing the cost of medical consulting, faster data transfer, and faster action taken by the medical, improve patient's safety, and reduce travel time, more privacy of data, provide better access to the patient's record to the physician, improved public health information delivery and allowing the care to be at home. Some of the disadvantages of the e-health system are privacy protection, expensive cost, and legal issues and synchronization of medical records of the patients.

Fig.2 Architecture of e-health system



III. TELEMEDICINE

Tele means distance providing the medical information and service from different locations is

called telemedicine. Telemedicine is the process of providing the medical services to the inaccessible remote areas with the help of telecommunication system. For example if you are getting heart pain then the sensor placed on your chest will send a message or signal to the health care specialist, then the immediate action will be taken by the doctors and you are rescued from the heart attack, this is the whole process of the telemedicine. The services provided by the telemedicine are as follows

- Remote patient monitoring
- Consumer medical and health information service
- Primary care and medical specialist consulting services

The primary care of health specialist may offer the primary health care consultation by the health specialist; this is done through the video interaction between the doctor and patients. The video interaction may be live or standby broadcasting. Remote patient monitoring includes home health care service through the sensor devices and networks, the sensors can gather the information of patients such as ECG, blood pressure, movement of patients etc and stored in the local database and this information is accessed by the health specialists. The consumer health medical health information provides general medical information such as disease prevention methods, general viral infection prevention methods this information is stored in the common database the people can access that information via internet. Some of the benefits of the telemedicine are as follows

- Cost efficiency
- Improved access
- Patient demand
- Improved quality

The important advantage of the telemedicine is improved accessibility which means the patients can consult their medical problems with their medical specialist via video conferencing and already recorded video. Using telemedicine reducing the travel time and stress of the patient by consulting the doctors through online.

IV. MEDICAL INFORMATION SYSTEM

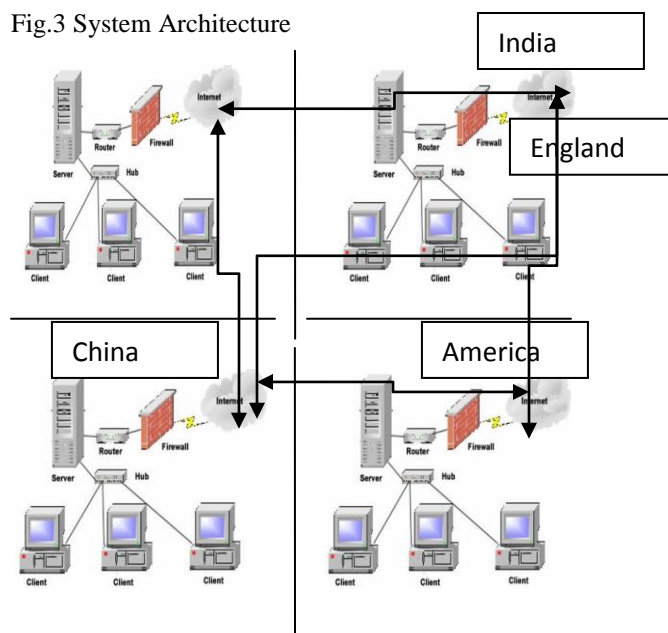
The medical information system provides a centralized data store for the globalized medical data. All the clinical information is maintained as a data

base in a clinical centre and it is utilized by doctors, nurses and patients. This system helps to improve the health care and also strengthen the relationship between the patients.

V.SYSTEM OVERVIEW

The variety of diseases are increased day by day of human life, the solutions for the diseases are not identified that much. To provide globalized solutions and reviews against the diseases we need a globalized information system. The solution for this need of global information system is health informatics with e-health system. The combination of geo informatics technology with community information system to identify the relationship among the health care's and to derive the planning, solution and decision making with this globalized information. The e-health system provides a way to shore the medical information through the electronic medium. The integrated e-health system throughout the world will provide globalized solutions and also reduce the variety of new devices. For example the information collects from all over the world by integrating the e-health system of each countries and each country itself having a medical information database management centre. All the medical information systems of all the countries are connected through the satellite communication system to share the globalized information among them. This information are referred and different suggestions for different diseases are reviewed to get a globalized solution.

Fig.3 System Architecture



VI. CONCLUSION

The varieties of diseases are increased gradually and there is no globalized solution for those kinds of diseases. To provides a better solution and reduce the cause of those kinds of diseases we need a globalized medical information. This system introduces an integrated medical information system of countries around all over the world. This will provides a globalized solution for several diseases.

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