

Doctor's Cloud

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Abstract: As we know, appointments with doctor's is really a very big deal these days. Also keeping the track of all the appointments along with all the prescriptions, tests, reports is again a big issue. By moving towards the new technology, we are making a web portal, which will help to keep the track of all these records safely, in the Doctor's Cloud. Doctors and patients both will have an open interface between them which will give the information regarding the patient and his/her disease. Clinical data describing the phenotypes and treatment of patients represents an underused data source that has much greater research potential than is currently realized. Mining of Electronic Health Records (EHRs) has the potential for establishing new patient stratification principles and for revealing unknown disease correlations. Information technology has transformed the way health care is carried out and documented. Presently, the practice of health care generates, exchanges and stores huge amounts of patient-specific information. In addition to the traditional clinical narrative, databases in modern health centres automatically capture structured data relating to all aspects of care, including diagnosis, medication, laboratory test results and radiological imaging data.

Keywords: Cloud storage, Electronic Health Records (EHRs), file formats, imaging techniques

I. INTRODUCTION

Doctor's Cloud is a web portal that will keep a record of the patients, digitally in the cloud, allowing the doctor's to access it anytime required. A patient database consists of name, address disease, prescriptions, appointments, etc. All the above information these days is stored in paper format, which eventually gets torn, wet, or is misplaced. If any of such things happen, it's very difficult for the doctor as well as the patient to continue the treatment. Also if a doctor refer us to any other doctor, in very rare cases the other doctor gets about the actual condition of the patient. If we use Doctor's Cloud here, it'll be more easy for the doctor and the patient as well, to continue the treatment. There are various such problems regarding the manual work, the solution of mentioned above is Doctor's cloud. The doctor's will have to create their own account, as soon as the account is created, they can attend the patients and maintain their record.

CLOUD COMPUTING is shared pools of configurable computer system resources that can be rapidly provisioned with minimal management effort, on sharing of resources. Third party clouds enable organizations to focus on their core business instead of expending resources on computer infrastructure and maintenance. Amazon EC2 is a private cloud provided by amazon to the public in the year 2006, the availability of high capacity networks, low cost computers and storage devices as well, has led to a growth in cloud computing. Cloud technology will help the project to store all the information, along with this IMAGE COMPRESSION plays an important role, there will be a lot of medical images, with various reports, which will consume a lot of cloud space if stored without compression.

Also these images will take time to traverse if stored without compression. Image compression may be lossy or lossless. Lossless compression is preferred for archival purpose and also for MEDICAL IMAGING.

Methods used for image compression are:

- Run-length encoding – used in a default method in PCX (a graphic file format for running graphic programs on computer) and as one possible in BMP, TGA etc
- Area image compression
- DPCM (Differential Pulse Code Modulation) and Predictive coding.
- DPCM is used for image compression as well as video signal compression.

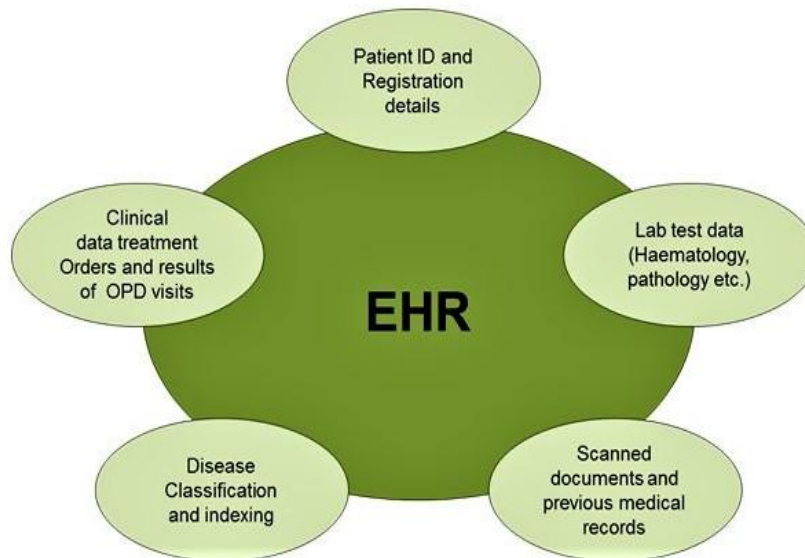


Figure 1: Image source: Electronic Health Records: Manual for Developing Countries by WHO.

II. SURVEY

Electronic Health Record (EHR) are the modern technology in practice these days. EHR survey 2016 states that doctor’s are not happy with their medical practices. Doctor’s need various changes in the running EHR technology .Mostly physicians switch to EHR's and the reason behind the same is that they need some variations in their ongoing practices or they need to follow the practice unwillingly in their hospitals. Recent Surveys by MEDICAL HEALTH ECONOMICS 2017 has given a update that doctors are slowly adjusting with the newer practices and also they are enjoying working with the EHR technology. EHR vendors also work thoroughly to keep their users satisfied, with their product usage and quality. More the quality decreases even more the pressure on the vendors increases. Vendors are ready to accept the new challenges and fulfill the demands providing a support staff to help and the responders are also happy with the service. Study design offered a stratified random sample, certain type of practices i.e. hospital based practices; large practices; and rural practices are over represented among the survey respondents.

EHR ADOPTION: On a physician level, a total of 45% of physicians in Globe had EHR's. However , only 23% of practices indicated that they had an electronic health record. Among them, more than half reported having EHRs in their practice for than 3 years. Less than 15% of small practice had EHR's . In contrast one third of practices with 4-6 physicians had EHR’s and more than half of practices with 7 or more physicians reported having EHRs. Among practices that included teaching medical students or residents, 40% included having EHR, as compared with 14% of practices that were not included in teaching.

Global EHR market (2015)

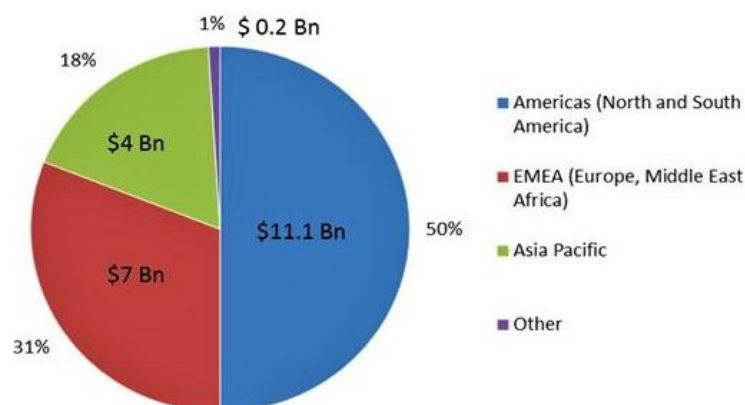


Figure 2: Image source: Accenture Research ,Overview of international EHR Markets.

From the physician perspective, many barriers constrain the adoption or expansion of computer technology in office practice. Most physicians indicated that financial factors, including start up financial start up cost, ongoing financial costs, and loss of productivity as barriers to technology adoption among those physicians whose practices have not adopted EHR technology yet. It is possible that a practices teaching status is a surrogate maker for physicians with a propensity towards technology or quality improvement efforts , for example other dimensions of this study suggest that these factors may also be associated with EHR adoption.



Figure 3: Image source: Global EHR market, Indian Journal of Science and Technology

CONCLUSION

With the technology of EHR, medical organisations can improve quality, outcomes, safety, efficiency, service, productivity, and lower budget. With the large consumer demand her allows health care organisations to treat and care for a patient faster with any health provider. Personal health records are private and should remain private with the appropriate privacy rules of and implementing such rules can reduce legal issues. The EHR made everything very easy and comfortable also entered data and information more accurate and safely. Due to its benefits many physicians have adopted it and also the satisfaction of patients has been increased because the patient now can participate in the process of his situation and he/she with the medical provider take the right decision, the patient also, have a quite awareness about his/her status.

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