

An Empirical Case Analysis on Electronic Health Records on Global Perspectives

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Abstract - The maintenance and logging in the health records is always required so that the overall predictive mining can be done on the patient records. In addition, the recording and maintenance of electronic health records is quite mandatory whereby the digital repository related to the patient is very important so that the future based predictions and the analytics can be retained. In addition to this, the patient records are providing the medical practitioners the higher degree of accuracy in the predictions and the aspects related to the knowledge discovery about that particular patient to have the effectiveness. By this way, the overall medical records can be maintained. In this research manuscript, the enormous tools and the vendors are presented usable for the electronic health records. The presented work is having the cavernous analytics on the vendor products associated with the electronic health records whereby the global perspectives and data analytics are cited.

Keywords - Electronic Health Records; HER; EMR; Electronic Medical Records.

1. Introduction

Electronic Health Records (EHR) as well as Electronic Medical Records (EMR) are especially important for the integration of records associated with the patients so that the overall records can be maintained about the specific set of patients [1, 2]. There are assorted suites and libraries for the electronic health and medical records thereby the medical records are logged for the future usage [3, 4, 5].

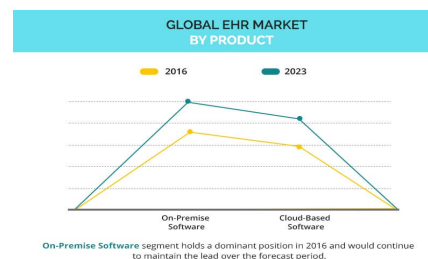
Following are the libraries and the suites for the medical records with the corresponding taxonomy [6, 7]. Suites and Libraries for Electronic Health and Medical Records include Name, Open-eObs, CottageMed, WorldVista, OpenElectronic Health Records, PopHealth, Vista, OSElectronic Health RecordsAVista, OpenMRS, GaiaElectronic Health Records, HospitalRun, OSCAR McMaster, OpenEBoth, Hospital OS, SMART Pediatric Growth Chart, ERPNext, THIRRA, OpenClinic, Medkey, ClearHealth, ZEPHS Zcore, Spinnaker, FreeMED, Ripple, FreeMedForms Electronic Health Records, GNU Health, GNUmed, MedinTux, OpenHospital, Odoo Medical, HOSxP, openMAXIMS, Open Dental and many others.

Electronic Health Records Market Key Segments [8, 9, 10] include On the Base of Product, On the Base of Type, On

the Base of Application, On the Base of End User, On the Base of Region and assorted others.

Case Analytics and Performance of EHR Vendor Products

As showed up by a KLAS report, just three of these agents expanded their bit of the pie in 2013 - Epic, Cerner and MEDITECH. The report found Epic and Cerner experienced the best gains in both the broad and little office markets. At the fulfillment of 2013, 10 EHR merchants tended to around 90 percent of within EHR communicate, in light of enormous use certification data from CMS. Those 10 shippers join Epic, MEDITECH, CPSI, Cerner, McKesson, Healthland, Siemens, Healthcare Management Systems, Allscripts and NextGen Healthcare. The EHR hoist is depended on to reach \$9.3 billion dependably before the fulfillment of 2015 [11, 12, 13].



On-Premise Software segment holds a dominant position in 2016 and would continue to maintain the lead over the forecast period.

Fig 1. Global Market of HER



Reporting in Healthcare System is projected as one of the most lucrative segments.

Fig 2. Global Market of HER by Application

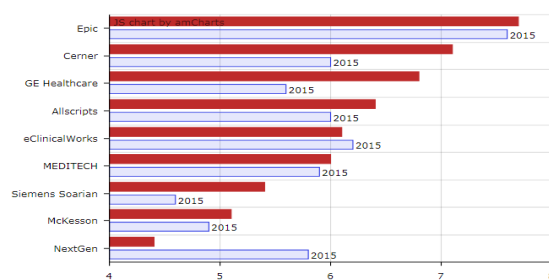
Allscripts, Epic, Cerner, McKesson and Quadramed are the most standard EHR structures among educational healing centers, appearing and workplaces with more than 300 beds, as demonstrated by a report from KLAS [14, 15, 16]. Among little and nation helpful concentrations under 100 beds and fundamental access crisis workplaces, the best shippers are CPSI, Cerner, Healthland, Healthcare Management Systems and Razor Insights. Allscripts Professional is an EHR solution aimed at medium to large healthcare organizations.

Allscripts, MEDHOST, Cerner and CPSI all have accommodating center clients that have stood up concerning essential use sort out Athena health has most by a long shot of power fundamental use attestors of the 485 qualified bosses who have gave revelation with respect to noteworthy utilize organize so far this recognizing year, 59.2 percent use Athena health. Three of the present considerations on the Department of Defenses' EHR modernization contract have been major EHR merchants banding together with association with duty in liberal scale government contracts [17, 18, 19]. Epic and IBM were among the first to pronounce their plan to offer on the assention. Their proposal combines using Epic's electronic achievement record programming joined with IBM's systems coordination, tries and change the experts pro to oust the present DoD structure. Allscripts, CSC and HP have besides revealed a relationship to offer on the assention. Under the offer, Allscripts' EHR improvement would be joined with CSC's and HP's sweeping scale achievement IT bent to structure and comprehend the system. Cerner, Accenture Federal Services and Leidos in like way bare essential a similar relationship to unite Cerner's improvement with Accenture's and Leidos' transcendence [20, 21].

Following are the case analytics and the key features associated with the assorted HR records and medical records management. In E-Clinic Works there are E&M coding advice, Appointment management, Voice Recognition, NC-ATCB Certified, E-prescribing, Patient Portal. In case of McKesson, the features include Meaningful Use Stage 1 and 2, E-prescribing, E&M coding advice, Voice Recognition, Appointment management, NC-ATCB Certified and Patient Portal. In PracticeFusion, the key features include E-prescribing, NC-ATCB Certified, Charting, Meaningful Use Stage 1 and 2, Voice Recognition, Patient Portal, Appointment management. CureMD is having E&M coding advice, Charting, E-prescribing, Appointment management, Voice Recognition, NC-ATCB Certified, Meaningful Use Stage 1 and 2, Patient Portal. AllScripts is having Patient Portal, Patient Portal, NC-ATCB Certified, Appointment management, E-prescribing, E&M coding advice, Voice Recognition. Cerner includes Charting, Meaningful Use Certified, E-Prescribing, NC-ATCB Certified, E/M Coding, HIPAA Compliant, Appointment Managing, Voice Recognition, Patient Portal. PrimeSuite is having HIPAA Compliant, Patient Portal, E/M Coding, Appointment Managing, Voice Recognition. iPatientCare is having E/M Coding, Charting, Appointment Managing, Meaningful Use Certified, E-Prescribing, HIPAA Compliant, Voice Recognition, Handwriting Recognition, NC-ATCB Certified, Patient Portal. The Epic is having Voice Recognition, Patient Portal, Appointment Management,

HIPAA Compliant. AthenaHealth is available with the integration of E/M Coding, Appointment Management, Patient Portal, HIPAA Compliant, E-Prescribing, NC-ATCB Certified

Following is the table of comparison and case analytics from assorted resources whereby the evaluations is done on the performance factors including Allergy and immunology, Android app, Anesthesiology, Appointment management, Bariatrics, Billing management, Cardiology, Chiropractic, Clinical workflow, Cloud based, Community health centers, Correctional health, Cpt, Dentistry, Dermatology, Dialysis clinic, Document management, E-prescription, Em coding, Endocrinology, Family medicine, Gastroenterology, General practitioner, Hipaa, HI7, Icd-, Infectious diseases, Insurance and claims, Internal medicine, Ios app, Lab integration, Medical templates, Mental and behavioral health, Multi-office, Micromd emr, Nephrology, Neurology and neurosurgery, Obstetrics and gynecology, Occupational medicine, On-premise, Onc-atcb, Oncology and hematology, Ophthalmology, Orthopedics and sports medicine, Other specialties, Otolaryngology, Over physicians, Pain management, Patient demographics, Patient history, Patient portal, Pediatrics, Physical therapy and rehabilitation, Physical therapy and rehabilitation, Plastic surgery, Podiatry, Practices, Proctology, Product name, Pulmonology, Radiology, Referrals, Reporting and analytics, Rheumatology, Scheduling, Sleep medicine and centers, Solo practice, Speech therapy, Surgery, Urgent care, Urology, Users, Vascular diseases and phlebology, Voice recognition and Web app.



Allscripts, Cerner, Epic, GE Healthcare, MEDITECH, McKesson and Siemens all garnered a higher ranking in 2016 than they did in 2015 – while eClinicalWorks and NextGen dipped in satisfaction rates.

Fig 3: Ranking Patterns of the EHR Vendors

Besides these parameters, the other parameters can be worked out on the other parameters.

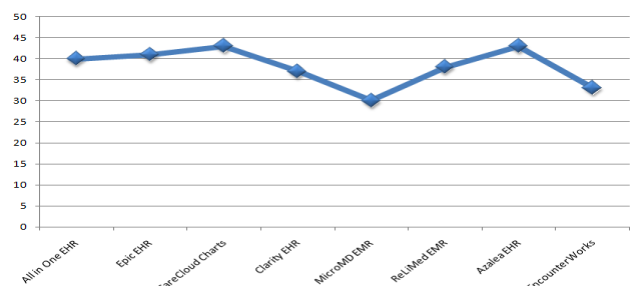


Fig 4: EHR Vendor Products and Comparison

Table 1: Comparison in EHR Vendor Products on Features

	All in One EHR	Epic EHR	CareCloud Charts	Clarity EHR	MicroMD EMR	ReLiMed EMR	Azalea EHR	Encounter Works
Allergy and immunology	1	1	1	1	1	1	0	0
Android app	1	1	1	0	0	0	0	0
Anesthesiology	1	0	1	0	0	0	1	0
Appointment management	1	0	1	0	0	1	1	0
Bariatrics	1	1	1	0	0	1	1	1
Billing management	0	1	1	0	1	1	1	0
Cardiology	1	1	1	0	1	0	1	1
Chiropractic	0	1	0	1	0	0	0	1
Clinical workflow	1	1	1	0	0	1	1	0
Cloud based	0	0	1	1	1	1	1	0
Community health centers	1	0	0	0	0	0	0	0
Correctional health	1	0	0	1	0	0	0	1
Cpt	0	0	0	0	1	0	1	1
Dentistry	0	0	0	1	1	1	0	1
Dermatology	1	0	1	1	0	1	1	0
Dialysis clinic	1	1	1	1	0	0	0	0
Document management	0	0	0	0	0	0	0	0
E-prescription	1	1	0	1	0	1	0	0
Em coding	1	1	1	0	1	0	1	1
Endocrinology	1	0	1	0	0	1	1	0
Family medicine	1	0	1	1	1	0	0	1
Gastroenterology	0	1	0	0	1	1	0	0
General practitioner	1	0	0	0	0	1	1	1
Hipaa	0	1	0	1	0	1	1	1
HL7	1	0	0	0	0	1	0	1
Icd-	0	0	1	1	1	1	0	1
Infectious diseases	1	0	0	0	0	1	1	1
Insurance and claims	1	0	1	0	0	1	0	0
Internal medicine	1	1	1	1	1	1	1	1
Ios app	0	1	0	1	1	1	0	0
Lab integration	0	0	0	0	0	1	1	0
Medical templates	1	1	1	0	1	1	0	0
Mental and behavioral health	1	0	1	0	0	1	1	1
Multi-office	1	1	0	0	0	0	1	0

Micromd emr	0	1	0	1	0	0	0	1
Nephrology	0	1	0	1	0	1	0	0
Neurology and neurosurgery	1	0	1	0	1	0	1	0
Obstetrics and gynecology	0	1	0	1	0	0	1	0
Occupational medicine	0	1	0	1	0	0	1	0
On-premise	0	0	1	1	1	0	1	0
Onc-atcb	0	1	0	1	1	1	1	0
Oncology and hematology	0	0	1	1	0	0	0	1
Ophthalmology	1	1	0	1	1	0	1	0
Orthopedics and sports medicine	0	0	1	1	1	0	1	1
Other specialties	0	0	1	1	0	1	0	0
Otolaryngology	1	1	1	1	1	1	1	1
Over physicians	0	1	0	0	0	0	1	0
Pain management	1	0	0	1	1	1	0	0
Patient demographics	1	0	1	0	0	0	1	1
Patient history	1	1	0	1	0	0	1	0
Patient portal	0	1	1	1	0	1	0	0
Pediatrics	1	1	1	0	0	0	1	1
Physical therapy and rehabilitation	0	1	0	0	0	1	0	0
Physical therapy and rehabilitation	1	1	1	0	1	0	1	1
Plastic surgery	0	1	1	0	0	0	1	1
Podiatry	0	0	1	0	0	1	0	0
Practices	1	1	1	0	1	1	1	1
Proctology	0	0	1	1	1	0	0	1
Product name	0	1	1	1	0	1	1	1
Pulmonology	0	1	0	1	0	0	0	0
Radiology	0	0	0	0	0	0	0	1
Referrals	1	1	0	1	1	1	0	0
Reporting and analytics	1	1	0	0	1	1	1	0
Rheumatology	0	0	1	0	1	1	1	0
Scheduling	1	0	1	1	0	0	0	0
Sleep medicine and centers	1	1	1	0	0	0	1	1
Solo practice	1	0	1	1	0	0	1	1
Speech therapy	1	0	0	0	1	1	1	1
Surgery	1	0	1	0	0	0	1	0
Urgent care	0	0	1	1	1	1	1	1
Urology	0	1	0	0	0	0	0	1

Users	0	0	1	0	0	0	1	0
Vascular diseases and phlebology	0	1	0	0	1	0	1	1
Voice recognition	0	1	1	1	0	0	0	0
Web app	1	1	0	1	1	1	0	0

The evaluation analytics is done on the 1 and 0 whereby the 1 represents the usage in positive way and presence of that factor and 0 represents the non presence of that factor in the EHR product.

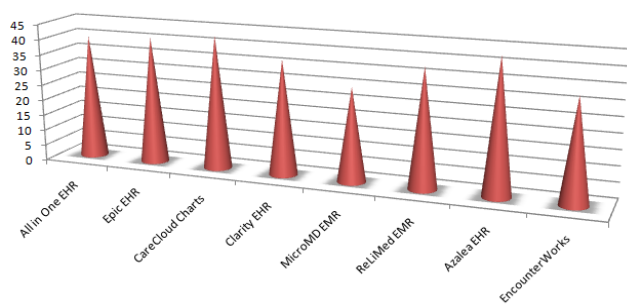


Fig 5. EHR Vendor Products and Comparison

From the evaluation patterns, it is found that the EHR Vendor products are having huge prominence and the performance variables and most of these are competing to enormous ways.

With the usage and integration of the electronic health records, the overall performance in the predictions of the patient's performance in the health aspects can be measured and the relevant medicines can be provided.

Conclusion

The deep evaluation and recording of health records are required that is the main concern in this paper. The account and upkeep of electronic health records is very required whereby the advanced archive identified with the patient is essential so the future based expectations and the investigation can be held. Furthermore, the patient records are giving the restorative specialists the higher level of exactness in the expectations and the angles identified with the learning disclosure about that specific patient to have the adequacy. By along these lines, the general therapeutic records can be kept up. In this examination original copy, the gigantic devices and the merchants are displayed usable for the electronic wellbeing records. Electronic Health Records (EHR) just as Electronic Medical Records (EMR) are critical for the reconciliation of records related with the patients so the general records can be kept up about the particular arrangement of patients. There are different suites and libraries for the electronic wellbeing and medicinal records in this way the restorative records are logged for the future use.

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