VOLUME-7, ISSUE-10, OCTOBER-2018 • PRINT ISSN No 2277 - 8160

Original Research Paper

Management

PATIENT CENTRIC CARE: HOW TECHNOLOGY WILL HELP PAVE THE WAY

Dr Nithin M — Resident In Orthopaedics, Baby Memorial Hospital, Calicut, Kerala

Aparna Muraleedharan* — Trainee In Department Of Management Studies, Indian Institute Of Technology, Roorke *Corresponding Author

Dipit Khokhawat — Trainee In Department Of Management Studies, Indian Institute Of Technology, Roorke

ABSTRACT Adopting a consumer centric approach has become crucial for industries to deliver quality service and reduce cost. Making a transition into such a culture is very challenging in healthcare industry. Patient centric care delivery can be made possible only if the organization is ready to adopt the latest technology. Digital hospitals comes with facilities that makes sure of patient comfort during the period of stay. Data analytics in healthcare industries is a great tool supporting preventive healthcare system. It should be noted that for effective use of all such tools, changes in the management strategy and collective effort of all stakeholders is imperative.

KEYWORDS : patient centered care, digital hospitals, Electronic Medical Records, data analytics.

INTRODUCTION

Healthcare in India follows an ailing system when it comes to providing treatment to the patients. It is high time organizations made a transition towards the patient-centered care system, which can not only improve care but also reduce cost. The current system works by providing care which is based strictly on the clinical assessment of patient condition without considering the needs of the patient. In contrast, a patient-centered care system works by focusing on the patient experience, ensuring that all the clinical decisions are made considering patient values. The path to achieving such a transition is adopting the latest technology which requires the combined effort of all the stakeholders.

DISCUSSION

While developing a patient-centric approach of care delivery, there are several essential elements to be included such as (i) Informing and educating patients on their condition (ii) Providing patients with emotional support (iii) Ensuring continuity of care after discharge of patients (iv) Coordination and integration among all the stakeholders of care delivery system. Such a care system requires primary care providers to build a relationship with the patients and later on encourage patients to be more responsible for their health. The role that technology plays in this aspect is enormous and if leveraged properly, can provide solutions to the problems of patient experience. For real transformation to happen, it is necessary for organizations to adopt the latest technology as well as strategies for improving the process.

Digital hospitals have the capability to improve the quality of patient experience tremendously. They work with an aim to unite all the stakeholders of the organization by streamlining processes to create automated digital workflows. Electronic Medical Records Adoption Model (EMRAM) categorizes digital hospitals into eight stages (stage 0-7). As hospitals move up the stages of EMRAM, they show improvement in productivity and quality. Hospitals are assessed on the basis of the level of adoption and utilization of electronic medical records function. A stage 0 hospital means that the hospital has not installed all the three key ancillary departments (laboratory, pharmacy, and radiology). Radiology and cardiology PACS system and digital non DICOM imaging along with the three ancillaries would comprise a stage 1 hospital. Stage 2 hospitals have their ancillary departments enabled with internal interoperability, feeding data to a clinical data repository (CDR). This repository provides access to clinicians from a single user interface and comes with all basic security features. When nursing/allied health professional documentation is integrated with CDR and Electronic Medical Record application (eMAR) is implemented, a stage 3 hospital is formed. They also comprise a role-based security system. Stage 4 hospitals require all the medical orders to be placed by a licensed clinician via Computerized Practitioner Order Entry (CPOE) that comes with a CDS rules engine for rudimentary conflict checking. In a stage 5 hospital, full physician documentation using structured templates is implemented along with intrusion prevention system to detect and prevent intrusions into the network. When hospitals implement technology-enabled medication and administration of blood products/human milk, the hospital will qualify stage 6. This stage requires advanced CDS and security practices; finally, a stage 7 hospital no longer uses paper charts for patient care. Here data warehousing is used to improve the quality of care and the clinical information can be shared with all the entities that are authorized to treat patient via standardized electronic transactions.

Electronic Medical Record systems (EMR) are electronic records of information on the health of patients which can be accessed by authorized staffs and clinicians. It helps to store, extract and analyze data in ways which were never possible before. Health records such as chart summaries, medical notes, and prescriptions are available in a legible and structured format. These systems providing remote schedule booking, patient portals and personal health records make patient care delivery more efficient. Putting all the benefits together, the system helps reduce wastage of time and thus use the time effectively for interacting with patients.

Data-driven thinking and analytics-based decision making can play a vital role in the emergence of patient-centric healthcare. Diseases having preventable risk factors or risk indicators are impossible for an individual physician to analyze manually. It requires computing and analytics framework to gather the data, analyze it and discover the patterns about the patient. Personalized healthcare can then be provided based on the analyzed and interpreted data derived from not only personal electronic medical record but also similarities with thousands of other patients.

'Collaborative filtering methodology' is used to know about patient preference and his opinion about service based on the identified preference from several groups of patients. The basic principle behind this methodology is that people who have similar preferences on some items/services are likely to have similar preferences on other items/services as well. This also empowers the patient and allows him to be in touch with other patients with similar conditions and exchange his experiences. For example,

consider patient X and patient Y. Let's say patient X has Diabetes and Hypertension and patient Y has Diabetes, Hypertension, and COPD. Thus for patient X, COPD might be a potential condition to consider.

Predictive analytics is a vital tool for proving patient-centric care. By using predictive analytics patient's data can be used to produce accurate readmission predictions. The readmission prediction models can be built using socioeconomic data (Income, Education, Community resources etc.) and EMR (Electronic medical record) of the patient and it helps hospitals identify patients who are at high risk for readmission after an initial hospital stay. Special personal care plans can be created for these patients thereby reducing readmission rates.

Another milestone achieved in the field of technology which can be a game changer for healthcare is cognitive computing. IBM's Watson is a supercomputer specifically designed to help oncologists for treatment of cancer. It analyses structured and unstructured data contained in digital as well as physical form (documents, Journals, Literature etc.) and suggests personalized treatment for cancer patients. It is impossible for a doctor to keep an eye on hundreds of new studies and researches publishing across the world which Watson can do and translate that data from researches into meaningful information. This will improve efficiency and help clinicians provide patient-centric treatment.

Medical emergencies can also be predicted using Artificial intelligence (AI). It can collect data from sensors, wearable tracking devices which monitor physical activities like sleep, movement, running, walking, calorie consumption etc., phone calls between hospital customer care employee and patient and when it finds out that certain parameters exceed a pre-defined limit an emergency alert can be sent to doctor/nurse who can then reach the patient for treatment.

CONCLUSION

By using disruptive technologies like EMR, Digital hospitals, Predictive analytics, Collaborative filtering and collaborative filtering, a long sought after goal of patient centric healthcare can be achieved. This can completely transform healthcare system across the world. This transition to consumer-centric healthcare, leveraging the latest data-driven analytics along with sophisticated technologies to achieve greater accuracy and insight, will shift the role of the patient from just "a patient" to that of "decision-maker."

REFERENCES:

1. Donna P Manca. Do electronic medical records improve quality of care Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4607324/
2. Health Catalyst. Patient-Centered Healthcare: Why Health Systems Need to Move Beyond Sick Care Retrieved from https://www.healthcatalyst.com/patient-centered-healthcare-moving-beyond-sick-care
3. NCBI. The digital hospital: opportunities and challenges Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/12553219
4. Intel. Predictive Analytics to help large hospital groups reduce readmission rates Retrieved from https://www.intel.in/content/www/in/en/healthcare-it/solutions/documents/ predictive-analytics-reduce-hospital-readmission-rates-white-paper.html
5. NCBI. Bringing Big Data to Personalized healthcare: A patient-Centered Framework Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3744281/