

Competitive Intelligence Approach on Implementation of Electronic Medical Records (EMR) in a Neuropsychiatric Hospital, Lagos State

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Abstract: *The paper looked at Competitive Intelligence Approach on Implementation of Electronic Medical Records (EMR) in a Neuropsychiatric Hospital in Lagos State. Competitive Intelligence Approach on Implementation of Electronic Medical Record (EMR) is a compelling opinion paper that delves into the intricate landscape of adopting electronic medical records in healthcare settings. The paper offers valuable insights and perspectives on the challenges and opportunities associated with EMR implementation, employing a competitive intelligence framework. The role of stakeholders in the implementation process, emphasizing the importance of collaboration, communication, and change management. By highlighting the interplay between stakeholders including clinicians, IT professionals, administrators, and patients, the author underline the need for a holistic and inclusive approach to EMR implementation. The paper provides valuable insights and recommendations, it could benefit from a deeper exploration of certain aspects, such as the ethical implications of EMR adoption, data privacy concerns, and the impact on healthcare disparities. Additionally, incorporating more diverse perspectives, including those from patients and frontline healthcare workers, could enrich the discourse and offer a more comprehensive understanding of the subject matter.*

Keywords: Intelligence, Approach, Implementation, Electronic Medical

Records (EMR), Neuropsychiatric and Hospital

Introduction

Competitive Intelligence Approach on Implementation of Electronic Medical Record (EMR) is a compelling opinion paper that delves into the intricate landscape of adopting electronic medical records in healthcare settings. The article offers valuable insights and perspectives on the challenges and opportunities associated with EMR implementation, employing a competitive intelligence framework. The significance of electronic medical records in modern healthcare systems such as neuropsychiatric Hospital in Lagos state, highlighting their potential to streamline workflows, enhance patient care, and improve overall efficiency. However, it's swift transition into an exploration of the complexities surrounding EMR implementation, thereby emphasizing the multifaceted nature of the process. One of the key strengths of the paper lies in its adoption of a competitive intelligence approach. By leveraging competitive intelligence methodologies, the authors effectively analyse the strategies, technologies, and best practices employed by industry leaders in the realm of EMR implementation.

This approach not only facilitates a comprehensive understanding of the competitive landscape but also provides actionable insights for organizations embarking on their own EMR initiatives. Moreover, the paper offers discussion of the various factors influencing successful EMR implementation, ranging from technological considerations to organizational culture and stakeholder engagement. Through real-world case studies and examples, the author clarifies the challenges encountered by healthcare providers and offer pragmatic recommendations for navigating these hurdles.

Furthermore, the paper critically evaluates the role of stakeholders in the implementation process, emphasizing the importance of collaboration, communication, and change management. By highlighting the interplay between stakeholders including clinicians, IT professionals, administrators, and patients, the author underline the need for a holistic and inclusive approach to EMR implementation. However, valuable insights and recommendations, it could benefit from a deeper exploration of certain aspects, such as the ethical implications of EMR adoption, data privacy concerns, and the impact on healthcare disparities. Additionally, incorporating more diverse perspectives, including those from patients and frontline healthcare workers, could enrich the discourse and offer a more comprehensive understanding of the subject matter.

According to the University of South Florida (USF) Health (2020), EMR stands for electronic medical records, which are the digital equivalent of paper records, or charts at a clinician's office. EMR typically contains general information such as a patient's treatment and medical history as collected by the individual medical personnel.

Brief History of Federal Neuropsychiatric Hospital (FNPH)

The Neuropsychiatric Hospital, Yaba specifically, is the study centre. This hospital is a government owned hospital established in 1907. It is located in the Mainland Local Government Area of Lagos. It is the major mental health service centre in the state. It serves both the residents of Lagos state and its environs. The hospital can boast of "in-patients" with about 500 bed facilities. It also has "outpatients" and an average of 900 clients visiting the outpatient's clinic per week. The clinic operates every day of the week except Wednesdays but all other hospital activities however still run. The staff capacity of the hospital is about 1600 among which the clinical staff constitutes about 60 percent which includes;- Doctors, Nurses, Psychologists, Pharmacists, Social workers, Record officers, Administrative officers, Occupational therapists, Librarians, Gardeners and others.

Review of Literature

Information is critical to modern health care, especially mental health care, and health records are vital tools for documenting, organizing, and using information Feeney, (2007), Myllärniemi, (2012). When health care professionals provide care to service users, they undertake a range of information practices, including seeking, using, documenting, and sharing information Fourie, (2009) Health records play a critical role in such practices. Coiera, (2015), outlined that a health record has many functions, including enabling communication among staff through the information in the record, providing a central source of information for care, acting as an informal works pace for capturing ideas, and being a historical archive that can inform future care. Mental health records are especially complex because many entries can be included in the record Lawn, (2018). Information sharing relies on a range of information behaviours and practices by clinicians and service users Wibe, (2015), Reddy, (2008). Information behaviour has been used to capture the range of human behaviours related to seeking and using information French, (2016), in comparison, information practice considers how information behaviours are embedded and shaped by organizational contexts and interactions. French, (2016), defined information practice as "a socially constructed practice that determines how information is produced, organised, disseminated, distributed, reproduced and circulated in the community, and which specific types of information are legitimized."

Here are some reviewed articles that discussed the implementation of electronic medical records (EMRs) in healthcare settings, including neuropsychiatric hospitals, from a competitive intelligence perspective: "Competitive intelligence in healthcare is an integrative review and research agenda" by Carlos Costa and Pedro Simões. "The impact of electronic health records on healthcare quality: A systematic review and meta-analysis" by Aziz Sheikh et al. (2010) examine the impact of EMRs on healthcare quality, including patient outcomes and clinical processes, which can inform competitive intelligence strategies for EMR implementation in neuropsychiatric hospitals. While not specific to neuropsychiatric hospitals, the review examines EMR implementation in developing countries, offering insights into challenges and strategies that may be relevant to implementing EMRs in resource-constrained settings. These articles provide a comprehensive overview of the competitive intelligence approach to implementing EMRs in healthcare settings, including neuropsychiatric hospitals. Adequate patient case records are maintained for all [patients, patients, and emergency patients.] All significant clinical information pertaining to the patient is incorporated into the patient's medical records. The content of the medical records must be sufficiently detailed and organized to enable the medical care team responsible for the patient to provide continuity of care, to determine at any time the status of the patient, and to review the diagnostic and therapeutic procedures performed and the patient's responses to treatment. The patients' health record must contain sufficient information to identify the patient, support the diagnosis, and the justification of the treatment and end results.

The content of health records is developed as a result of the interaction of the members of the health care "team" who use it as a communication tool. The team is an interdisciplinary group composed of physicians, nurses and numerous allied health personnel. They inform and advise each other through their entries in the record about their findings. It is necessary that there should be prompt recording of observations, treatment and care by all who contribute to the care of the patient. Therefore, a good health record in a hospital or any other health institution is not a coincidence. The health records staff must always be trying to get cooperation from doctors, nurses and other members of the health team towards the prompt completion of patient's records.

Planning and Implementation of EMR at Neuropsychiatric Hospital Transition from Paper-Based to EMR systems, witnessed conversion of all the information in paper medical records to electronic medical records providing significant clinical and operational benefits to a successful transition from paper based to electronic medical records (EMRs) in the healthcare organizations. This however, requires careful supervision and coordination of many aspects with drawbacks and big decisions made, beginning from selection of units involved in the implementation, training of man power to handle it and maintenance of the software. The transition

involves not only the process of changes but also the using of a new tool technically and procedural training leading to changes in the roles of healthcare professionals within the office was effectively done in the neuropsychiatric hospital in Lagos state. (College of Physicians and Surgeons of Alberta Guideline, 2005)

According to the University of South Florida (USF) Health Morsani College of Medicine, as cited in Bizdey, 2022 ... EMR implementation would refer to the process of planning and carrying out the integration of EMR software and components in a healthcare organization. Here are seven things that can help make the path to a successful implementation smoother.

Make patient care the primary goal

EMR implementations are all about the quality of patients care and how the system will benefit patients should be at the forefront of all decisions.

Have a strategic plan

Having a detailed implementation plan in place from the beginning is essential and should be overtly detailed, form a team with members from every department, assign specific duties and responsibilities to team members, have regular meetings and have backup plans for things that can go wrong.

Communicate with consultants and vendors

Implementation is a collaborative effort and requires all parties to work together. Communicate your needs and expected outcomes from the beginning with your vendors, consultants, and IT staff. That will go far in keeping your project on time, on budget, and positioning it for success.

Ensure strong leadership

Have people on your implementation team that have experience with deploying new systems and who approach the project proactively and with positivity. Having a team that includes a representative from every department of the practice will also help with successful implementation.

Set realistic timelines

Implementation of EMR systems should not be rushed; you need a realistic timeline but also want to reduce any extensions to the timeline that can increase your costs. Having a detailed plan that takes into account all aspects of the process will help reduce any unnecessary slips to your timeline that can be costly.

Plan ahead for training

Begin training as soon as possible! The purpose of EMR implementations is to improve processes and efficiency as well as staying compliant. The sooner you start the process the less stress for management and staff. Be creative with getting staff to participate in training.

Work with experts

Working with people who have in-depth knowledge of the implementation process project managers, workflow development, data migration, and the overall EMR system will ultimately save you time and money.

How should you begin?

- Develop your team of staff and experts. Include at least one person from every department.
- Prepare a list of must-haves, wants, and desires. Be realistic in knowing that you most likely will not get everything you want.

- Plan for every aspect of the process, from choosing an EMR system to training, migration, validation, testing of interfaces, and even something as simple as printing.
- It is better to “break the system” during the testing phases than it is to have a major problem on Go-Live day that affects patient’s care.
- Have a backup plan in case things do not go as planned.

Keep your staff and implementation team informed. It’s going to impact their workflow and the more they know the more motivated and positive about the change they will be.

Electronic Health Records Use and Service Delivery

The relationship between electronic health records use and service delivery in healthcare facilities cannot be overemphasized. Many authors including Shortliffe and Cimino (2014). In Washington D. C. have studied how electronic health records use impacts service delivery in healthcare facilities. It was found that application of electronic health records can assist in the organization of patient’s medical information and record keeping. It provides timely access to patient clinical information. Use of electronic health records provides decision supports and also helps to manage the information that healthcare professionals require to perform task effectively and efficiently. Also in the US, a study was conducted by Nasrim, Farhnaz and Maryam (2013) on health information system to improve elderly health. The study found that through EHR use, patient information could be easily shared among many authorized users and that documentation errors will reduce significantly. In another study conducted on health information system in the US to set up standard for developing countries, O’melley, Grossman, Cohen, Kemper and Pham, (2010) and Nasrim, Farahnez and Maryam (2013) found that the availability of significant medical information at the point of healthcare service delivery with clinical decision support systems like those for drug order entry reduced drug adverse effects and medical errors. They also found that through a secured electronic health records, patient information could be shared among many authorized users in the healthcare settings. Similarly, in a study conducted by Martas and Hasmer (2013), it was discovered that electronic health record use facilitates communication, integration of information and patient care documentation among many healthcare professionals such as health information managers, doctors, nurses, pharmacists, laboratory scientists, just to mention a few. Shortliffe and Cimino

(2014), and O’melley, Grossman, Hohen, Kemper and Pham (2010) in their studies on electronic health records use concluded that the use of a digital based reminder system for the patient as well as the clinicians will increase compliance with preventive protocols. Thus, the entire outcome in these studies conducted by various authors points to the fact there exist a positive relationship between electronic health record use and service delivery in healthcare facilities. However, in a study in England conducted by Greenhalgh, Potts, Wong, Bark and Swinglehurst (2009), a contrary outcome was discovered. The study found that electronic health records (EHR) use did not improve the quality of care.

Benefits of EMR in Neuropsychiatric Hospital

According to Ramadhani (2019), one of the benefits of EMR in healthcare facilities is that it enhances and improves the efficiency and quality healthcare services on patient’s care. Moreover, the EMR can be seen by all health care providers taking care of a patient because it is easy to access and update. From an academic point of view, the EMR is a great instrument for research and planning through the massive data collection available. The EMR is safe, accurate, effective and easy to access by healthcare personnel. Ohuabunwa (2016) also emphasized that one of the benefits of EMR is that it influences health impact clinical interventions and minimizes medical mistakes. EMR also helps to boost the revenue of the hospital, removes cost of unnecessary tests and prescriptions.

It also helps the hospital to be less exposed to legal actions. At the neuropsychiatric hospital Lagos, the implementation of EMR has been consistent with Ramadhani’s (2019) findings. EMR has significantly improved the quality of healthcare services in a neuropsychiatric hospital in Lagos state when compared to manual methods. Economic Benefits: The economic benefits of the application of Electronic Medical Records are the positive impact felt by the institution; in this case neuropsychiatric hospital Lagos. The application of Electronic Medical Records in terms of economic benefits as related to the financial condition of the institution. The economic benefit of implementing Electronic Medical Records includes cost savings, cost efficiency, and costeffectiveness. Fourie, (2009), Lawn, (2018), Patel, (2000) the application of Electronic Medical Records has reduce the use of paper that is usually used in Conventional Medical Records. Fourie, (2009) Furthermore, the use of EMR is a reduction in the cost of services or maintenance that is not needed. Patel, (2000)

The implementation of EMR has also improved the accuracy of billing service fees with its ability to record all service requests, medicines, and resources used. Wrenn, (2010) In addition, the application of Electronic Medical Records in neuropsychiatric hospital, Lagos state has provided benefits to hospital management by facilitating, monitoring and evaluation activities, thereby increasing organizational efficiency. Patel, (2000) Benefit to Clinics: The clinical benefits of applying Electronic Medical Records are the impact felt by institutions (hospitals), users of Electronic Medical Records, and patients on the application of Electronic Medical Records in terms of health observations as related to the quality of health services of the hospital. Some of the benefits of implementing Electronic Medical Records, is that they can reduce medical errors. Electronic Medical Records has reduced medical errors by up to 50%, due to drug allergy warnings, appropriate dosages or interactions, suggested treatments for certain conditions, or recommended preventive treatments done via computerization. French (2016),

When the application of Electronic Medical Records has reduced medical errors, it now improves patient's safety. Kämpf, (2009) and the application of Electronic Medical Records in terms of documentation can now improve the readability of data. Patel et al, (2000), Campanella et al, (2016) When documentation activities are carried out using a computer or when done digitally, it will minimize data reading errors or data loss. This has an impact on improving the continuity of care and reporting, accuracy, patient evaluation processes, medical research, and policy analysis including the clinical decision-making process. And then, the completeness and accuracy of the data, made it easier for professionals to provide care in monitoring, evaluating, and improving services like; Optimize work flow, Reminder, Supports Research and Link to other health information.

For Patients:

- Fewer errors compared to paper records.
- Better and quicker care.
- Track results and data over time.
- Improve treatment and diagnosis.
- Identify patients who require screenings and preventive care.
- Better patient health data security and privacy.
- Supports data-based decisions.
- Receive follow-up support like reminders, web links and self-care suggestions.
- Patients can access their records, view prescriptions and follow recommended lifestyle changes.

EMR record information and leverage it to help clinics meet their business goals. For example, they check prescribed medications for conflicts with health conditions and other medications. Unlike paper records, they can also identify and help prevent operational issues. Beyond providing better care and improved systems, using these systems, the benefits of EMR software extend to financial improvement. They reduce overtime expenses and operational expenses over time, reducing the financial burden on medical facilities. Better patient care and efficient billing processes also add to the bottom line.

Challenges of EMR in Hospital Libraries

Hospital librarians are often the only source of access to medical information and up to- date research. Much of the librarian's time includes researching and submitting articles, searching for URLs for relevant websites, monitoring when department staff have more requests than others, and so on. Theoretically, the Electronic Medical Record could make the librarian's task of providing information directly to the healthcare hub relatively easy. Although the Electronic Medical Record smooth and coordinates the patient care cycle, the lack of communication between the file's software still poses problems for the hospital librarian, specifically: No protocol has been defined to specify the data to be entered after the patient has been examined. The Electronic Medical Record is impossible to eliminate or reduce the chances of human error. With the installation of a new computer system, it is often necessary to enter data from medical staff that makes sense to increase the working hours required to meet work needs(Semertzidou,2020) Furthermore, other challenges are Prone to Hacking: While digital records are safer and more secure than maintaining physical papers, data breaches have become common. Certified systems have built-in security measures that protect patient's data, but the clinic's staffs need training to maintain basic security measures. For example, leaving workstations unattended may leave them open to unauthorized access. Require Updates: Other supporting medical professionals like pharmacists and personal trainers may use the same health record system, and it becomes imperative to update records after every appointment. If records are not updated

frequently, they may adversely affect treatment due to inaccurate data. Poor Device Management: Not being able to access devices because of location, power cuts or no internet may disrupt patient's care, diagnosis and treatment. Physicians may even forget to carry their devices during rounds, creating gaps in records. It is hard to ignore the shortcomings of these platforms.

However, you can overcome them by implementing proper workflow for training providers and support staff. However, owing to the complex array of services that support service users, the fragmentation of care and limited information sharing are common in the mental health context Kariotis et al, (2019). Limited information sharing among health care services, affects the planning and provisioning of appropriate care, such as medication management and reconciliation. Feeney & Moran (2007), Kariotis & Harris (2019) It can also negatively affect service users' experience of mental health care, especially when it leads to them having to retell their stories multiple times Jones et al, (2009). However, information sharing also comes with risks for service users, such as the stigma associated with mental health conditions Knaak et al, (2017). Thus, mental health information tends to be considered highly sensitive information, requiring extra protection Shen et al, (2019) A recent scoping review on the effective implementation of electronic medical records (EMRs) in mental health settings also identified limited research on this topic Zurynski et al, (2021). Apart from the barriers faced by all health settings in adopting EHRs, such as interoperability, time impacts, and workflow changes, there may be particular issues in the mental health context that require investigation Kruse et al, (2016).

High cost of implementation

This is the biggest hurdle for a lot of practices, especially smaller ones. Studies show that the cost to purchase and installing an EMR system can range from \$15,000 to \$70,000 per provider. EMR implementation can come with unplanned expenses as well, such as interfaces, updating / upgrading equipment, and hardware.

Lack of planning

This causes more failures in implementing EMR systems than any other single factor. Planning must be detailed and should take into account every aspect of the process.

Insufficient technical resources

Not all practices, especially small and private practices, do not have an in-house technical team buying hardware that meets the specifications required by the software is often a major obstacle as well. That is why having an experienced

EMR partner can make a world of difference.

Time-consuming data migration and validation

Regardless of whether you are moving from a paper-based system or another EMR, your implementation process will include some types of data migration and validation. This can be a very time-consuming and expensive process. That said, ensuring data integrity is essential.

Incompatible with other systems

EMR systems need the ability to exchange data and interface with other providers and systems, this is well practiced with the hospital's information Technology unit on ground to attend to exchange of information back and forth and ensure data is accurate.

Shortcomings in the user interface

EMR systems are not a one-size-fits-all type of product. Many factors affect the usability of an EMR system. If the EMR system is not a good fit for your practice and existing workflow, your staff and providers will have a difficult time accepting and adapting to the change. This of course definitely played out but it's getting better and interesting compared to the beginning.

Staff resistance

You may find resistance in all departments of your practice, from staff who have little computer experience to providers who feel the system will slow them down and not be efficient.

Maintenance

Maintenance culture According to Suwaibatul et al. (2012), Maintenance culture is the values, way of thinking, behaviour, perception and the underlying assumptions of any person or group or society that considers maintenance as a matter that is important (priority) and practices it in their life. When a person or group has maintenance culture, they would have the attitude to maintain, preserve and protect the public facilities. Maintenance culture is not universal in nature, Florence (2011) postulated. It is usually derived or learns through a person making maintenance a natural daily practice that can be followed and emulated by others. According to Mark et al. (2006), the concept of maintenance culture is the internal environment between management and staff in ensuring effective maintenance through the sharing of ideas, beliefs, and values of each member in an organization. Developing and embracing maintenance culture through effective leadership, sound policy, attitudinal development among others would not only enhance national development but also enlist our country among the comity of developed nations. This is the practice in neuropsychiatric hospital in

Lagos state

Inadequate training

Training can be very time-consuming and difficult to work into the already busy schedule. Physicians and management may fear the loss of business because of staff taking time away from their normal daily duties to spend on training. Some may feel that spending time on training is not necessary. The hospital organized series of training for all the units concerned prior the implementation and updating training still on going as the need arises.

Data privacy concerns / Data Availability

There are very strict federal and state guidelines around the privacy of personal health information. Violation of these guidelines comes with significant financial penalties. Being diligent when selecting an EMR system is only one aspect of protecting your patient data. You also have to account for your internal infrastructure, where your information lives and is accessed from. If you choose a cloud – based system or a hosted system you need assurances that your patient data is secure and your service provider is HIPAA-compliant. Having patient data “live” outside the walls of your practice does not eliminate your responsibility for making sure the data is secure. Data Availability must also be readily available 24/7 for easy flow of work.

Lack of communication

The implementation process needs to have practice-wide communication throughout the process. Not communicating the change with staff can mean they are unprepared and, consequently, uninvest.

Conclusion

In conclusion, Competitive Intelligence Approach on Implementation of Electronic Medical Records (EMR) in a Neuropsychiatric Hospital in Lagos State The importance of EMR cannot be over-emphasized as its generate data from all points of services regularly from which the donors derive satisfaction with services rendered. Competitive intelligence approach on implementation of EMR in neuropsychiatric hospital in Lagos state offers a thought-provoking analysis of the challenges and opportunities associated with EMR implementation. By adopting a competitive intelligence framework and drawing upon real world examples, the paper provides valuable insights and recommendations for healthcare organizations striving to leverage EMR technology effectively.

Despite some areas for improvement, the paper serves as a valuable resource for stakeholders seeking to navigate the complex landscape of EMR implementation in the healthcare industry. The benefits of implementing Electronic Medical

Records, have many benefits, including: Economic benefits: including cost savings, cost efficiency, and cost-effectiveness, Clinical benefits of application, including reducing medical errors, improving data readability, improving the quality of health services, and increasing the productivity of medical personnel, and the benefits of accessing clinical information, including increasing the accessibility of patient history information, improve patient confidentiality, and assist with the decision-making process. According to the explanation of benefits from advance technology of medical record, the hospital can make this article for basic guidelines to optimizing the advance of medical record technology wisely.

The management, can consider to concern of service quality for the patients and the procedural system of hospital, because with the advancement of technology in healthcare it can solve the problem and make the easily to accelerate the process of workflow. Internet facilities with its accessories should be provided to enhance proper documentation, treatment and tracing of defaulters and missing

documents by Health Information Officers. Photocopying machine should also be provided to facilitate duplication of other forms where necessary.

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