KNOWLEDGE MANAGEMENT A VERITABLE TOOL FOR EFFECTIVE HEALTH CARE IN NIGERIA

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Abstract

Amidst an ever changing health care knowledge, patients die most times for inadequate health care knowledge on the side of the medical personnel. To address Nigeria's poor ranking in effective health care delivery, knowledge management - a tool that makes tacit knowledge (experience) available for use at the right time and when it is needed – has become imperative. This study proposed a knowledge management system which allows health personnel share their vital experiences which can be accessed by other health personnel at the point of care.

Keywords: *Knowledge management, Healthcare, Organisation*

Introduction

Many experts mistakenly assume that knowledge management is about capturing all the best practices and knowledge that people possess and storing it in a computer system in the hope that one day it will be useful. This is a good example of what knowledge management is not about! Consider this: how often has information or knowledge been pushed at you when you do not need it, i.e. paper, emails, training, and other irrelevant meeting? Then later, when you do need it, you vaguely remember seeing something relevant but can't find it. Some surveys suggest that professional workers spend ten per cent of their time looking for information they know is somewhere. If what you want is in people's heads, and they're not always around, how can you access it when you need it? What if you don't know whose head it's in, or if they'd be willing to share it with you? In a nutshell, good knowledge management is all about getting the right knowledge, in the right place, at the right time.

The right knowledge are what you need in order to be able to do your job to the best of your ability, whether that means diagnosing a patient, making a decision, booking a referral, answering a patient's question, administering a treatment, training a new colleague, interpreting a piece of research, using a computer system, managing a project, dealing with suppliers etc. Information and knowledge can usually be found in a whole variety of places – research papers, reports and manuals, databases etc. Often it will be in people's heads – yours and other people's. The right place, however, is the point of action or decision – the meeting, the patient helpline, hospital bedside, behind the reception desk and so on. The right time is when you (the person or the team doing the work) need it. (DeBrún, 2005)

Knowledge management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include databases, documents, policies, procedures, and previously un-

captured expertise and experience in individual workers (Obotor et.al, 2013).

Broadly, knowledge management involves four key steps of creating/ generating knowledge, representing / storing knowledge, accessing/using/re-using knowledge, and disseminating or transferring knowledge (Gibson et. al 2010; Dalkir, 2005)

Knowledge in organisations is often classified into two types: explicit and tacit (DeBrún 2005; Chen 2013; Dalkir 2005; Uriarte 2008).

Explicit knowledge is information that is easy to capture, structure, and share with individuals. For example, explicit knowledge can be the documentations like hospital policies and procedures and clinic diagnostic methodologies. Alternatively, tacit knowledge is comprised of experience and skills that an individual can acquire overtime and apply to problems. The exposure to events over time can evolve a person's thought process. Tacit knowledge is difficulty to capture, structure, and transfer to other individuals. Tacit knowledge is the understanding of how and why with regard to a particular subject area. Due to the degree of complexity, objectivity, and subjectivity, tacit knowledge is difficult to capture and transfer without dedicating significant resources to codify the knowledge into an explicit form that can be utilized by others.

Organizational knowledge is not static; rather it changes and evolves during the lifetime of an organization. What is more, it is possible to transform one form of knowledge into another; i.e., transform tacit knowledge into explicit and vice versa. This process of transforming one form of knowledge into another is known as the knowledge spiral (Gibson et.al 2010) naturally, this does not imply one form of knowledge is necessarily transformed 100% into another form of knowledge. In (Gibson et.al 2010), (1) Socailsation or tacit to tacit knowledge transformation usually occurs through apprenticeship type relations where the teacher or master passes on the skill to the apprentice. (2) Combination or explicit to explicit knowledge

transformation usually occurs via formal learning of facts. (3) Externalization or tacit to explicit knowledge transformation usually occurs when there is an articulation of nuances; for example, if an expert surgeon is questioned as to why he performs a particular surgical procedure in a certain manner, by his articulation of the steps the tacit knowledge becomes explicit. (4) Internalisation or explicit to tacit knowledge transformation usually occurs when explicit knowledge is internalized and can then be used to broaden, reframe and extend one's tacit knowledge. Integral to these transformations of knowledge through the knowledge spiral is that new knowledge is being continuously created (ibid) and this can potentially bring many benefits to organizations. What becomes important than for any organization in today's knowledge economy is to maximize the full potential of all its knowledge assets and successfully make all germane knowledge explicit so it can be used effectively and efficiently by all people within the organization as required

In healthcare, having the right information at the right time can become a very difficult challenge due to the sheer amount of ever-expanding knowledge. The volume of medical knowledge doubles itself every 17 years. (Stroetmann & Aisenbrey, 2012).

Healthcare enterprises can be regarded as 'data rich' as they generate massive amounts of data, such as electronic medical records, clinical trial data, hospitals records, administrative reports, benchmarking findings and so on. But, in the same breath we can say that healthcare enterprises are 'knowledge poor' because the healthcare data is rarely transformed into a strategic decision-support resource (Abidi, 2001).

Healthcare delivery processes are knowledge-intensive nature; there has been a call for implementation of knowledge management in the context of hospital management. Once knowledge creation and sharing are embedded in the management practice and the daily operational routines, the resultant proprietary knowledge can establish a solid foundation for a truly sustainable competitive advantage

The success of healthcare depends critically on the collection, analysis, and exchange of clinical, billing, and utilization information or knowledge within and across organizational boundaries

The Institute of Medicine called for reform of the health care delivery system by drawing attention to the alarming rate of medical errors in hospitals, where mistakes are made because of inadequate processing of critical knowledge at the point of care (Guptill 2005). Nigeria as a developing nation is considered one of the highest child mortality rate as a result of lack of adequate information at the point of care. Oral investigation of citizenry confirmed that most death of a loved one is as a result of lack of information required from the medical personnel on how to tackle a particular ailment

The purpose of this is paper to reduce the rate of medical error among health personnel as a result of lack of medical knowledge at the point of care. The unavailability of required health care knowledge adversely increase mortality rate thus knowledge management system is developed as a tool to improve health care delivery where health personnel can share tacit medical knowledge.

In DeBrún (2005) there are six(6) approach to identifying and sharing best practices. The overall approach is aimed at documenting the essential features of a best practice, giving pointers to relevant experts in that practice, deducing general guidelines, diffusing basic knowledge, and using subject matter experts to apply and adapt the practices in a new context. However our proposed knowledge management system is a combination of case management system, group decision support system in (Gibson et al, 2010) and the six (6) approaches to identifying and sharing best practices

Case management system evolved recently as a result of a growing trend of integrating health service delivery both vertically (coordinating clinical care across providers i.e., between surgeons and physical therapy) and horizontally (linking institution providing the same types of treatments) Another feature of these systems is that they enable case mix applications and thus provide the capability and

flexibility of integrating financial and clinical data. The benefits of this cannot be understated. Group decision support system Involve the use of interactive, computer based systems that facilitate the search for solutions to semi-structure and unstructured problems shared by groups. Once again these systems will benefit the quality of the patient treatment by supporting decision making processes regarding patient treatments

The six (6) approaches are:

1. Identify users' requirements: Starts by considering where you can really add value. Look at what areas of the organisation need attention because of poor performance or difficult challenges

2. Discover good practices: look at who is producing excellent results and is therefore likely to be using good practices.

3. Document good practices: Best practice descriptions are usually kept in a database in a standard format

4. Validate best practices: is to have a panel of reviewers compromising internal and external subject experts and peers, who evaluate a potential best practice against their knowledge of existing practice.

5. Disseminate and apply: This is where the real value is added. Not only does it help the recipient dig beneath the explicit knowledge and gain more in depth insights, but it can also provide a two-benefit in that dialogue between the conveyor of best practice knowledge and the recipient can enrich the knowledge of both.

6. Develop a supporting infrastructure: involves the people to facilitate and drive the process through its initial stages, until it

becomes embedded in the organisation's ways of working. The technical infrastructure for document sharing and databases. The content management infrastructure to ensure that best practices are documented and classified electronically in a way that makes them easy to find.

Proposed knowledge management system architecture

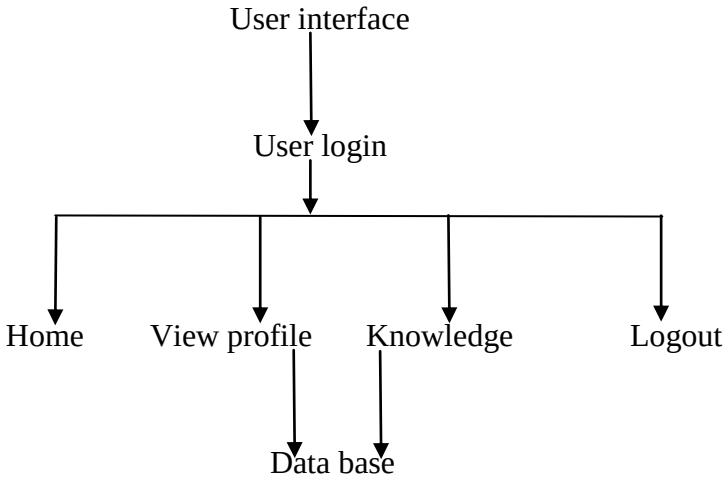

Figure 1: Knowledge management architecture

The knowledge management architecture in figure 1 shows the various stages of processing of the knowledge management system development for health care delivery accessible to registered health personnel.

User interface and login

The Figure 2 is a user interface login that allows doctors access the knowledge management system and share their experiences in an appropriate manner

Figure 2: User interface and login

User Home Page

Figure 3 allows the health personnel view posts (experiences) of other personnel and also to view comments of other personnel.

Figure 3: user home page

Comment interface

This allows other health personnel contribute their experience into the knowledge management system to further support or critic the knowledge already posted as shown in figure 4.

Figure 4: comment interface

Database of knowledge management system

Figure 5 is a view of the Admin end that allows monitoring of activities from the back end.

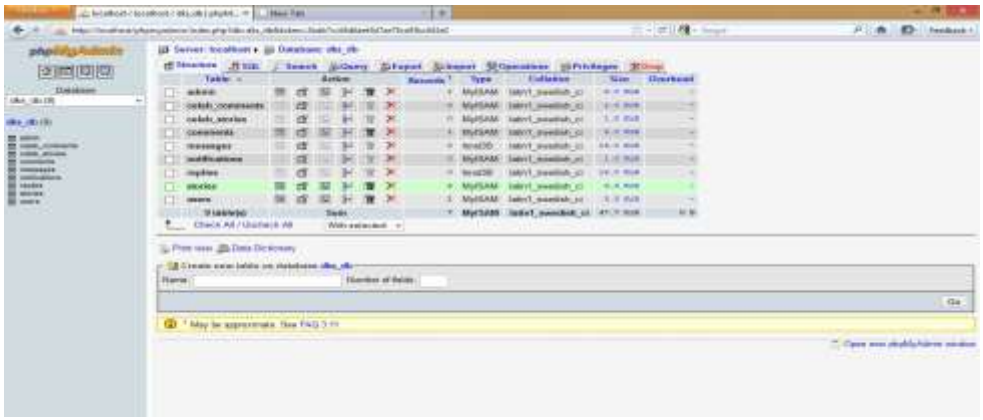

Figure 5: database view of the knowledge management system

The health personnel begin by creating an account establishing him or her as a legitimate user. After creating the account, an experience (healthcare knowledge) can be shared together with a picture of the patient. The experience includes the ailment and how it was tackled so that users (health personnel) can read and learn from other health personnel.

Conclusion

Knowledge management is a vital tool that allows tacit knowledge that resides in experts and experience personnel shared so as to improve efficiency in the work force of any organisation. Health care can benefit from knowledge management because of the ever change state of health knowledge and our discovery is that most patient suffer and die because of the lack of adequate knowledge at the point of care. However our knowledge management system allows personnel share

their experiences. This form a data base of expertise knowledge which can be consulted when needed thereby when the knowledge management system is used at the point of care the required knowledge can be accessed, reducing the risk of death that comes as a result of lack of required knowledge at the point of care.

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