



7. Knowledge Management in the Health Sector

Knowledge Management in the Health Sector

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Knowledge

We are moving from an industrial based economy to an information/knowledge one and to be competitive in this area we have to do new things in a new way with new strategies or processes. In the industrially-based economy the competitive factor was, labour, land, or financial capital, but now knowledge promises to be the most powerful source of wealth in the 21st Century, and for that its necessary to set a knowledge management system and to have/build learning capacities. The greatest challenge of the knowledge-based economy is innovation.

But before discussing this subject, (knowledge management) it's necessary to clarify the concepts *data, information, knowledge and wisdom*, often used as similar but effectively representing different steps of the same process. The definition of the concepts data, information and knowledge is presented in the following text and summarized in figure 1.

“Data – an item of data (a datum) consists of a label and a value. A Thus, pulse = 80, systolic blood pressure = 120 are data. They convey facts, but tell you little unless you know their context”. (Barham, 2004: 409).

“Information – is the data organized in a meaningful way. If the above data are known to be from an adult ASA 1 patient, this provides information. Clearly the information would be different if the data were from a neonate”. (Barham, 2004: 409).

“Knowledge- can be defined as the information one has acquired through learning or experience. This implies conscious awareness and is the result of processing information and assimilating it with other information from the environment.

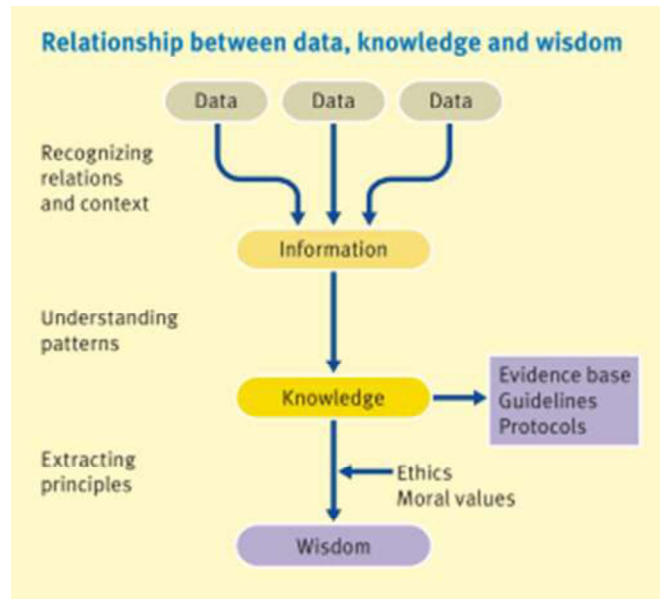


Figure 1

For example, the doctor may de-

cide to treat hypertension based on information on the patient, the likely pathology, the pharmacology of antihypertensive drugs and many other factors. All these integrate to produce knowledge. That which enlightens decisions and action” (Barham, 2004: 409).

Understanding- is the process by which one can synthesize new knowledge from previously held knowledge. Understanding answers the ‘why’ questions. (Cooper, 2007: 516)

Wisdom- is an extrapolative process, which includes knowledge in an ethical or moral framework. Wisdom is the process by which we also discern between right and wrong, good and bad. (Cooper, 2007: 516). This is also the ability to make wise decisions based on one’s knowledge, experience, prudence and common sense.

Knowledge acquisition – the main sources are the spoken word, asking colleagues, congress, books, lectures, multimedia, surveys, guidelines, journals and the Internet. The journal combines the accessibility of a textbook with currency of information. (Barham, 2004: 409). The new sources of knowledge are, the mail, mail list, discussion forum web pages, and distributed multimedia (Cooper, 2007: 517).

Problem-based learning – using a problem-based approach to learning influences the recall and application of knowledge. The method is based on using a problem (real or simulated) and access to the knowledge required for its solution. Context is also important. (Barham, 2004: 409).

Kinds of Knowledge and the Transformation Process

Knowledge is intangible, dynamic, and difficult to measure, but without it no organization can survive. Knowledge supports the decision-making process, and we can assume that through understanding knowledge ingredients, better decisions can be made. The KM process may result in improved decision-making and better results. At the organizational level knowledge is the main source for decision-making and core activities organization, being divided in two types: *tacit* and *explicit*.

Tacit knowledge: can be found in people, so it is personal, experiential, context specific; generally in the heads of individuals and teams. (e.g. experience, intuition). It's difficult to be codified, to become explicit.

Explicit knowledge: Its knowledge organized and codified, which can be used in producing guidelines and protocols. Can easily be written down (e.g. guidelines, protocols, evidence base), (Gerami 2010: 235)

These two types of knowledge interact with each other to create new knowledge or new competencies in professionals or “knowledge workers”. Figure 2 presents the knowledge transformation process. As it can be seen it results from the combination of possibilities of the explicit and tacit, leading to four basic process, socialization, externalization, internalization and combination.

Socialization. Individuals share tacit Knowledge. Includes apprenticeships and learning by doing.

Externalization. Individuals link tacit Knowledge with explicit knowledge

Internalisation. Individuals extract knowledge from newly created organizational tacit and explicit knowledge through “learning by doing”.

Combination. Combine different explicit ideas to create new knowledge

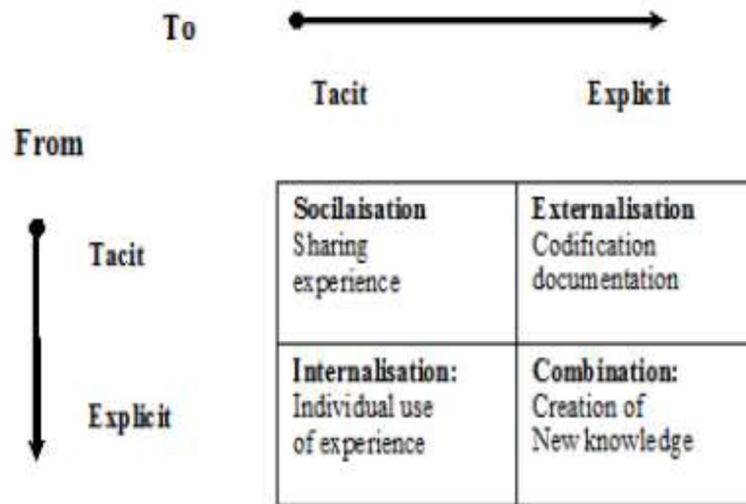


Figure 2 - Knowledge process Gerami, 2010: 235

What is Knowledge Management?

“Knowledge management is a systematic process for acquiring, organizing, sustaining, applying, sharing, and renewing both tacit and explicit knowledge to enhance the organizational performance, increase organizational adaptability, increase values of existing products and services, and/or create new knowledge-intensive products, processes and services” (Davenport, T.H., DeLong D.W., & Beers, M.C. (1998) in Gerami, Mohsen, 2010: 234). It is the process of making accessible to those who work the information useful and relevant [NASA Agency, 2000, in Gerami, Mohsen, 2010: 234].

It can be represented in different schems, as presented in figures 3 and 4.

Figure 3 – Knowledge management Process (source: Gerami 2010: 235)

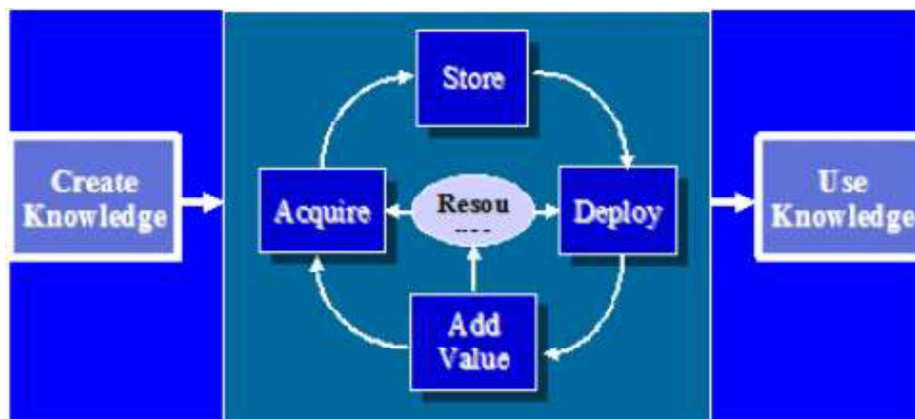
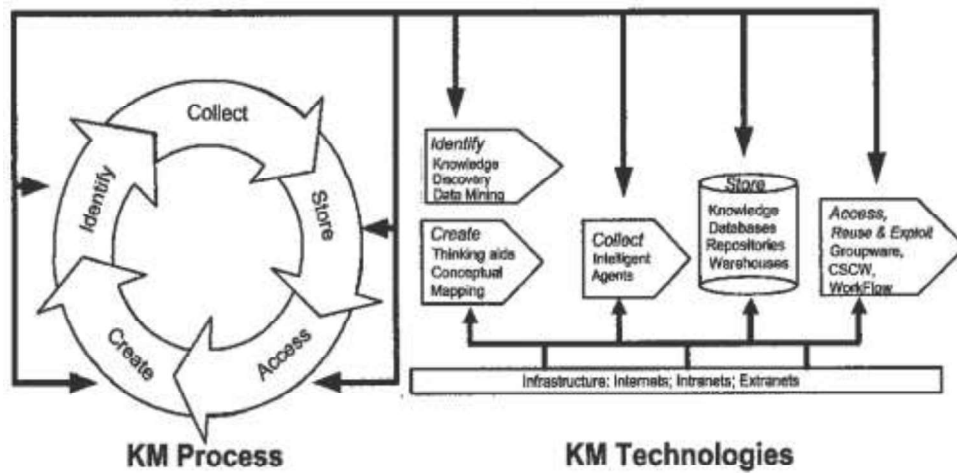


Figure 4 – The knowledge management process modified from Skyme (Dwivedi, Bali and Naguib, 2007: 6).



The knowledge management models presented in the previous figures represent all the spectrum of knowledge activities (Knowledge creation, identification, codification and dissemination). The goal of every knowledge management process is to ensure that all the staff easily accesses the best available knowledge according to the needs to perform each task in every moment, as this is the key point for every organization’s success. To achieve this goal knowledge must be created, captured, shared, and leveraged, in a continuous, virtuous cycle process.

According to Watson (2007: 27) Knowledge management introduced some new concepts, in particular the need:

- to surface ‘tacit’ knowledge held by individuals in the workforce to benefit the organisation as a whole;
- to manage ‘explicit knowledge’ codified in procedures, policies, documentation and other materials across the organization;
- to share ‘best practices’ across the organization”.

knowledge management is a contemporary business philosophy that represents the logical extension of three basic trends:

- The increasing amount of digital available information—text, pictures, audio, video—and Internet’s ubiquitous presence that conveys this information;

- The globalization of business such that production can occur anywhere in the world and it is the knowledge of how to make products “better, cheaper, faster” that is the true source of competitive advantage; and
- The growing complexity of modern business that require new business processes to deliver “the right information at the right time” in order to ensure accountability and reduce the risk of mistakes. (Guptill, 2005, p.10).

Knowledge management is synergic with the ‘learning organisation’ and other quality improvement approaches, being a strategic approach to knowledge creation, sharing and use, clearly linked to organisational objectives, and also to quality management and change management.

Knowledge Management in Health Care

The culture of healthcare and health care delivery must become more cost-effective, error-averse, and accountable public resource, and professionals must work in a more collaborative, more transparent, and more proactive manner (Guptill, 2005). This goal can be achieved through the implementation of a Knowledge management system. In health care a knowledge management, “Is about creation and utilization of healthcare knowledge to improve patient care...., it needs to support and coincide with the temporal evolution of the patient and the corresponding care process” (Abidi, 2007: 68). In health care this is a more complex process than in other sectors because there are:

- Heterogeneous knowledge modalities;
- Variety of knowledge resources;
- Range of healthcare process and environments;
- Range of stakeholders;
- Dispersion of knowledge across individuals, departments and institutions;
- Diverse and unique clinical situations (Abidi, 2007: 68).

Health care specificity justified the need for a paradigm that purposes to integrate all the spectrum of knowledge activities (knowledge creation, identification, codification and dissemination) in healthcare, like the one proposed by Wickramasinghe (2003, in Dwivedi, Bali, and Naguib, 2007: 5). “KM is the discipline that promotes an integrated approach to identifying, managing, and sharing all of an enterprise’s information assets,

including data bases, documents, policies and procedures, as well as unarticulated expertise and experience resident in individual workers”.

Knowledge management in health care can be seen as the drive towards evidence-based practice, and is a crucial partner in learning organization approaches (Watson, 2007).

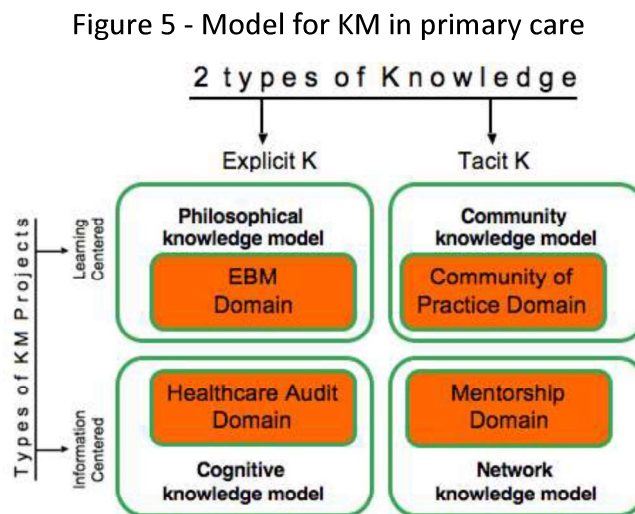
“Among the most important functions of knowledge management programs for health professionals are raising awareness of relevant research evidence, increasing knowledge, shaping attitudes, and persuading them to adapt and use new guidance to improve the quality and reach of health services.(...) For example, clinical guidelines outlining evidenced-based practice are used in the training of health care providers to improve service delivery. At the same time, knowledge management products and services also reach health professionals who do not receive other direct technical assistance but nonetheless can benefit from up-to-date information. For those who do not have the time or resources to search extensively and synthesize the latest research, these products and services organize and format information in readily accessible and useful ways, such as job aides. Without these resources, the average health professional cannot easily keep pace with the advances in relevant scientific research.”(Sullivan, Ohkuboa, Rinehart and Storey, 2010: 54).

This is particularly relevant due to the explosion and overload of information and technologies currently available and difficult to manage by the individual professional. There is a strong need to support the individual professionals and organizations to access and integrate the available knowledge into their practice. So professionals must be addressed as the starting point of the knowledge management process, as these actors cannot be seen as passive recipients of knowledge, but as active partners in the definition of the knowledge management process. KM can be linked with individual’s continuous professional development and the strategic aims of the organization. The KM process in health programs aims to improve the quality of healthcare and health outcomes by providing professionals with the access to KM products and services that they would not otherwise have access, to by “collecting, organizing, and analyzing research and program evidence for use by health professionals, who, in turn, influence professional processes in which they are involved” (Sullivan et al. , 2010: 53).

Knowledge Management Models for Health Care

This model is based on the explicit tacit knowledge dichotomy and the idea that the projects can be divided into information and learner centred activities. The information centred activities focus on existing knowledge dissemination. Learner centred activities focus on learning acceleration. Evidence based Medicine is the most known instance of KM that is in the crossing information activities with explicit knowledge.

This model is based on the balance of explicit and tacit knowledge and the need for both and also the learner and information styles. This model focus the need for each professional to have a portfolio of information management tools and to participate in learning activities, of tacit and explicit knowledge. These activities, presented in the schematic definition in figure n.º 5, are only examples of possible ones.



Source: Lusignan & Robison, 2007: 23

Knowledge Management Tools

There are a lot of processes and tools involved in knowledge management, partly through the increased availability of improved information technologies, which enabled them. The tools usually referred as KM depend on the author. According to Cooper (2007) the traditional ones: books, journals, asking colleagues, knowledge audits' and new ones: mailing lists, web mails, discussion forums and distributed multimedia.

<p>Knowledge management tools</p>
<ul style="list-style-type: none"> • Intranets are well-established in many organisations, although in many cases ‘putting information on the intranet’ is seen as a means to an end, rather than as a crucial means of keeping staff informed and communicating with them • Extranets are intranets shared among several organisations, enabling the organisations to share information across their individual workforces – particularly relevant for integrated care with staff from diverse professional backgrounds working in different organisations • Communities of interest are groups of people in an organisation or range of organisations with a shared area of interest. Health and social care have historically seen the importance of ‘networking’ with sub-groups of professional associations, trade unions and other networks offering individuals the opportunity to belong to a group with shared interests within and beyond organisational boundaries • Communities of practice differ from communities of interest in that they are typically a group of people brought together for a specific short-term task-orientated focus. The community of practice will address the task in hand by electronic and face-to-face communication, with increased collaboration across the workforce bringing benefits to the organisation • Yellow pages are online and searchable directories of staff and their expertise, publications and projects, enabling these otherwise ‘hidden’ assets to be made more visible in the organisation. They have been very popular in the private sector, in particular in international organisations with staff on many sites in different countries, as they enable staff to identify expertise quickly within their organisation • Blogging (‘web logging’) is essentially an online diary, updated regularly, in which an individual can share knowledge, comment and other broadcast information. Software makes it very straightforward to establish and update blogs, which offer a much more informal and speedier means of disseminating knowledge than, for example, publishing in a peer-reviewed academic journal • Wikis – Wikipedia (en.wikipedia.org) has been hugely successful in putting into the hands of users the capacity to build a structured knowledge resource. Many organisations have established internal or web-accessible wikis which enable their staff instantly to update internal publications, avoiding a bottleneck created by the need to draft, share, publish and review/update publications in a traditional manner <p>(Source: Watson 2007^a p. 28)</p>
<p>Other tools</p>
<p>“Knowledge harvesting At the other end of the spectrum, and with shades of Soylent Green, is ‘knowledge harvesting’. It is often used as part of an exit interview to gather useful knowledge before the worker leaves the organisation or moves across the organisation into another role. This highlights the major challenge with sharing any knowledge held by an individual: that in many organisations the possession of such knowledge, built up over many years, will quite naturally be seen by the individual as something to be protected, rather than shared. The Knowledge Management Library of the NHS National Library for Health has a useful summary of this technique, and there is now a licensed technology available!” (Watson 2007b,p.42)</p> <p>“Storytelling A much ‘softer’ approach to surfacing the expertise and knowledge that staff possess is ‘storytelling’, a technique commonly used in change management processes. In knowledge management it is a dynamic process by which individuals can contribute through narratives on successful projects, highlighting their skills and expertise in a verbal manner rather than having to commit to paper, and doing so in a group forum, enabling that knowledge to be explored and shared. An example is that of ‘anecdote circles’ as developed in Australia, which describe how ‘story spines’ can be used to encourage staff to reflect on work practice. However, those whose preference is for the</p>

traditional research hierarchy, who will bear in mind the criticism that ‘the plural of anecdotes is not data’, will doubtless have reservations about such techniques.” (Watson 2007b,p.42]

“Content Management: Core to a knowledge management strategy is to develop a centralized knowledge “library” with various “layers” of information, such as corporate policies and procedures; organizational resources, such as directories, performance reports, or HR tools and forms; and community specific resources, such as membership lists, work process templates, or project management tools. Developing a valuable content repository to facilitate knowledge exchange requires a thoughtful plan for determining the types of content to be published, levels of security access, publishing formats, and processes for ensuring that the content posted is accurate, up-to-date, and consistent”. (Guptill, 2005, p.12)

“Knowledge and Capability Transfer: Knowledge management can be distinguished from information management in that it is actionable and should result in changed behavior as a result of knowledge sharing. Knowledge transfer should spark innovation, operational process improvement, and enhanced patient care. The act of transferring knowledge in a manner that results in new behavior can be compared to the process of diffusion of innovation within or across organizations.” (Guptill, 2005, p.12)

“Performance Results Tracking: Classically there are three types of measures that are tracked as a result of an on-going knowledge management program:

- Outcomes measures that reflect attainment of financial, clinical, or operational performance targets;
- Process measures that track activity that is expected to yield results, such as the number of participants in communities of practice, the quantity and quality of knowledge sharing activities, and the depth of organizational involvement in knowledge sharing processes; and
- Satisfaction measures that track improvements in employee attitude, physician engagement, and consumer satisfaction with the care process. (Guptill, 2005, p.13)

Technology and Support Infrastructure: Web-based technology is a tremendous enabler of knowledge management, in that it simplifies the collaborative process, makes knowledge instantly available on a global basis, and provides the structure for publishing content in a searchable form for knowledge capture and re-use.” (Guptill, 2005, p.13)

To Watson (2007: 27) the tools are: knowledge harvesting; use of narrative and story-telling; communities of practice; communities of interest; knowledge directories; intranets; yellow pages; extranets; document management systems and, more recently, ‘blogging’ and ‘wikis’.

To Guptill (2005, p.11) there are five major components of knowledge management as this discipline is applied to health care: 1. Communities of practice; 2. Content management; 3. Knowledge and capability transfer; 4. Performance results tracking; and 5. Technology and support infrastructure.

Found in research as strategies used in real places Kothari (2011) found as KM tools, training sessions, communication technologies, process mapping and communities of practice.

This variety of strategies and tools found in the literature is enough to explain the richness of possibilities in this subject. In the next paragraphs each of the tools mentioned above its presented according to the authors.

The next topic develops knowledge sharing as an important process to practitioner's continuous development, and good practices.

Health Care Knowledge Sharing

According to Abidi (2007,p.67), "knowledge sharing can be regarded as a systematically planned and managed activity involving a group of like-minded individuals engaged in sharing their knowledge resources, insights, and experiences for a defined objective" and can have a variety of objectives from organizational learning, peer support, capacity building or collaborative problem solving. This sharing activity must satisfy the needs of an evolving clinical situation and also satisfy some constraints like: operational protocols; proliferation of new knowledge; diversity of sources and access mediums; trust and applicability in the share knowledge and knowledge sharing culture. (Abidi, 2007:. 69). Knowledge sharing is important to support clinical decision, patient education; empowerment programs; practitioner education; translation of knowledge to practice; policy making, guideline formulation; support to patients and dissemination of clinical research findings among others. (Abidi, 2007:69). The aim of Knowledge sharing can be characterized as:

- Provide focused access to evidence-based knowledge sources;
- Share the unpublished intrinsic experiential know-how;
- Establish a culture of collaboration between stakeholders.

Types of knowledge Sharing

The type of knowledge sharing methodology applied in each situation depends on the subjects that mediates the sharing activities and are:

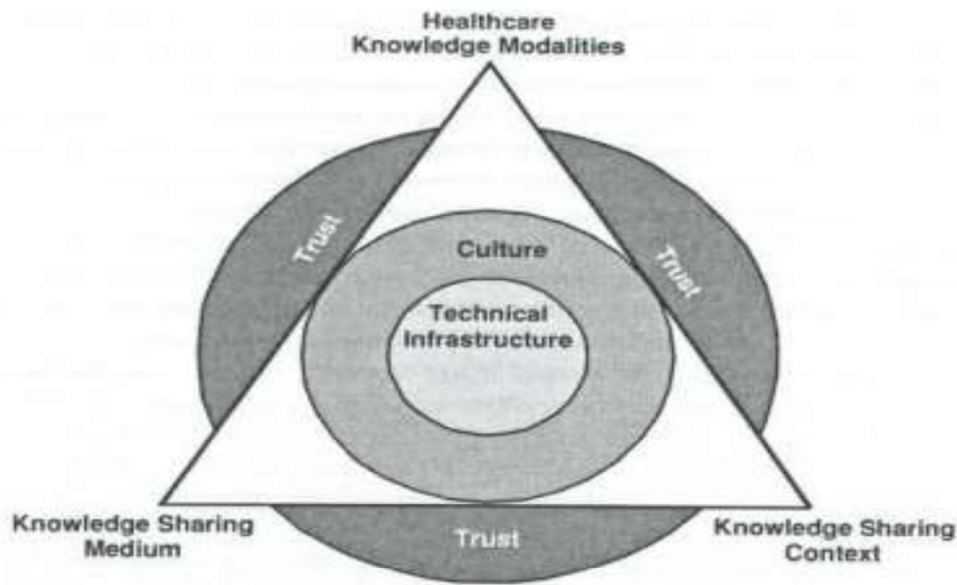
- **Artefact-mediated knowledge sharing.** Using some artefact to mediate the sharing activity. As examples: research article, clinical practice guideline, databases or e-mail. All of these serve the purpose of stimulating discussion and sharing experiences.
- **Experience-mediated knowledge sharing.** It's about sharing clinical operational and psychological experiences, insights and know-how about a health care topic, using a communication medium.
- **Resource-mediated knowledge sharing.** Identification of knowledge sources like experts, websites, forums shared as potential sources for a specific topic.

Note: Knowledge sharing activities occur in routine informal activities like solving conversations about clinical cases, clinical situations, clinical guidelines, appraisal of a research article, published evidence, reviews, therapeutics, health maintenance information to patients. They occur in an informal manner in a limited time, so is not sustained for future sharing activities, the knowledge created and shared is not recorded for the future use, the medium is not maintained in the future, the sharing culture is not promoted and not consolidated. (Abidi, 2007, p. 70)

A model for Knowledge sharing

This model has three levels: conceptual, operational and compliance. The conceptual level defines three elements: health care knowledge modalities, knowledge sharing medium and knowledge sharing context. The operational level is about technical infrastructure and the creation of a culture of collaboration between stakeholders. The compliance level is about the trust in the shared knowledge.

Figure 6 – The Links model for healthcare knowledge sharing (source: Abidi, 2007, p.71)



In the following paragraphs each of the Links model pillars is explained in detail: Health care knowledge modalities; knowledge sharing medium and knowledge sharing context.

Health care knowledge modalities

There is a great diversity of knowledge sharing modalities to be shared between stakeholders, typically in the line of explicit and tacit knowledge. Explicit knowledge is about resistant information, available in validated information resources, most in the written form, on how things must work. Tacit knowledge is the non-formal knowledge of practitioners including their know-how, skills and intuitive judgment about what really works.

In more specific terms of knowledge sharing can be divided into:

- Tacit knowledge of practitioners in terms of, problem solving skills, judgment and intuition;
- Practitioner's clinical experience and lessons learned through practice;
- Collaborative problem solving discussions;
- Published medical literature and clinical practice guidelines;
- Clinical protocols and pathways;
- Medical education content;
- Patient specific educational interventions;

- Psychological support and rehabilitation discussions of patient groups;
- Formal decision-support, decision models;
- Social networks involving members of a community of practice;
- Data-mediated knowledge; clinical observations, diagnostic tests and treatments stored in the clinical records. (Abidi, 2007, p.71-72)

Knowledge sharing medium

A sharing activity is hallways practiced via a medium. It can be most commonly a face-to-face environment or a more technological based one, as virtual meeting environments like Internet point-to-point or multipoint. Broadcast email, recommender systems-to-patient with recommendations (Abidi, 2007, p. 75-76); they can be:

- web-based portal to disseminate static health care knowledge with extensions to a personalized stakeholder profile;
- Online discussion forum;
- Online training environments such web CT;
- Peer to peer networks to sharing Knowledge between a dedicated community of practice;
- Online health care knowledge repositories.

Knowledge sharing context

The context entails stakeholder needs, interests, learning/consuming capacity, and to plan an activity of knowledge sharing it's necessary to specify the constituents of context and incorporate them in the plan. The context is defined by the topic, motivation, temporal relevance and stakeholders (Abidi, 2007: 72-75):

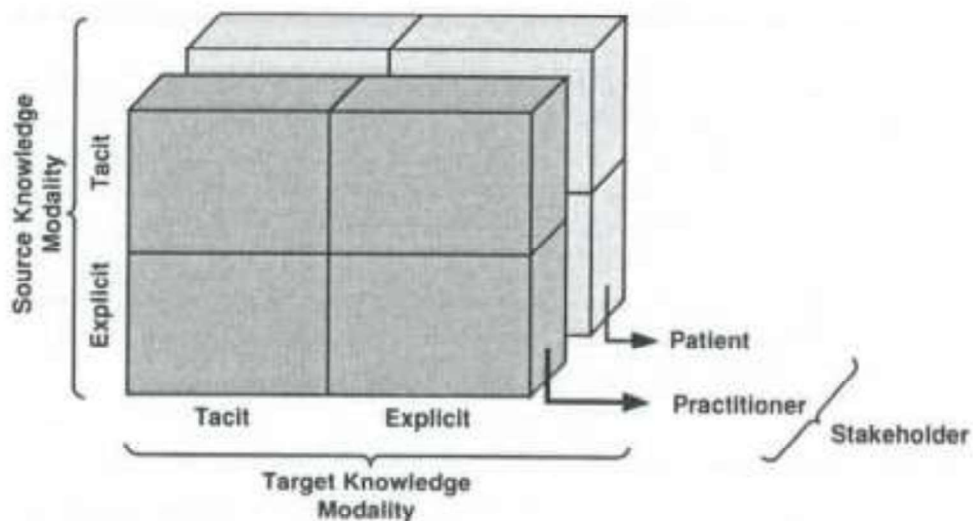
- A- The topic (subject of the shared knowledge), may from quite generic, to extremely specific, depending on the objectives of the stakeholders
- B- The motivation for knowledge sharing, can be diverse: instigate collaborative problem solving; educate peers, to negotiate and validate one's thinking, to build capacity in a specific area, to address knowledge gaps ... each participant may state her motivation to share knowledge

- C- The temporal relevance of the shared knowledge: it as connection with the patients' needs in each moment, depending on the Patient's evolution: ethology, diagnosis, treatment.
- D- The orientation of the multidisciplinary stakeholders engaged on the knowledge sharing exercise. Stakeholders must be characterized, so depending on the stakeholder's orientation influences the KS exercise (patients, practitioners, community). There must be a profile for each stakeholder or stakeholder group

Healthcare Knowledge Sharing - Prevailing Practices

Sharing activities is quit relevant among healthcare stakeholders. A three-dimensional model can explain: the source knowledge modality, the target knowledge modality, and the stakeholders (In these terms we can approach a practitioner perspective or the patient's view). (View figure 7, Adopted from Nonaka's two dimensional knowledge creation model, in Abidi 2007, p.77).

Figure 7 - Adopted from Nonaka's two dimensional knowledge creation model, in Abidi (2007: 77)



In this text we only address the practitioner's perspective, but the patient's perspective is also a very important one. From the practitioner's perspective the objectives are to improve the patient's care and health and it entails:

- Dissemination of published evidence;
- Sharing experiences, insights, know-how;
- Formulating communities of practice around a specific care topic.

In the following text the possibilities of sharing considering the tacit and explicit knowledge as base for exchange are detailed.

Practitioner tacit to tacit sharing

When there is no evidence available, the tacit knowledge is a good alternative. The sharing activity can be by socialization and helps fellow practitioners to know the solution that works in a specific situation. It can be:

- **Collaboration in solving complex problems** in common activities.
- **On line discussion forum.** It begins with the presentation of a case or a problem and anybody with interest or expertise can respond, with discussion including experience viewpoints and theories related to practice and conclude with a peer-validated solution.

This type of knowledge is very valid as it originates in specialized practitioners and it's analysed and validated by peer review. The knowledge sharing process through discussion as two outcomes: the problem-solving aspects and the learning aspects, when they see the problem-solving strategies as a reasoning method used by expert practitioners. (Abidi, 2007, p.77)

Practitioner tacit to explicit

It is a process of *externalization* and *codification* of a practitioner tacit knowledge that is explicated during a problems solving activity or critical analysis of evidence and professional practice. They can be:

- **Online discussions;**
- **Formulation of clinical guidelines and protocols,** resulting from specialist practitioners sharing experiences and viewpoints. Here the tacit knowledge is explicated, captured and codified to realize an explicit knowledge artifact.

- **On line educational programs**, seminars and talk.
- **A social network**. The analysis of a network leads to externalization of implicit social knowledge (Abidi, 2007, p.78)

Practitioner explicit to explicit

It is the process of *combining* explicit knowledge resources. It involves the exchange of relevant and validated knowledge artefacts such as research papers, clinical studies or guidelines. Is the case of systematic review, when the analysis of some articles leads to a new paper (Abidi, 2007: 79).

Practitioner explicit to tacit

It is the process of *internalization* of shared explicit knowledge into mental models behaviours, knowledge construction by practitioners and the translation to the professional practice.

It can achieve by indirect mediums, such as web portals, knowledge artefacts direct emails and on line training (WebCT) (Abidi, 2007: 79).

“one my regard Internalization or Codification as the ultimate objective of health care Knowledge sharing i.e. to improve the practice and the delivery of health care by optimally sharing evidence and in turn, accordingly adjusting clinical practice to achieve better outcomes” (Abidi, 2007, p.79)

Communities of Practice

It is one of the most important modalities of knowledge sharing, and refers to groups of people who share a concern or a problem and who come together to interact, learn and create a sense of identity, and in the process, build and share knowledge and solve problems.

“Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavour: a tribe learning to survive, a band of artists seeking new forms of expression, a group of engineers working on similar prob-

lems, a clique of pupils defining their identity in the school, a network of surgeons exploring novel techniques, a gathering of first-time managers helping each other cope. In a nutshell:" (Wenger 2006: 1)

"Refer to groups of people who share a concern or a problem and who come together to interact, learn and create a sense of identity, and in the process, build and share knowledge and solve problems." (Ranmuthugala, et al, 2010, p.v).

These communities have three characteristics, the domain, the community and the practice:

The domain: It has an identity defined by a shared domain of interest. Membership therefore implies a commitment to the domain, and therefore a shared competence that distinguishes members from other people.

The community: In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other.(...) Nevertheless members of a community of practice do not necessarily work together on a daily basis.

The practice: Members of a community of practice are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared practice.

This takes time and sustained interaction. It is the combination of these three elements that constitutes a community of practice. And it is by developing these three elements in parallel that one cultivates such a community. (Wenger 2006, parag. 2).

Typical Activities of a Community of Practice

A Community of practice can develop its work through a diversity of activities. The following activities are proposed by Wenger (2006, parag. 3)

<i>Problem solving</i>	"Can we work on this design and brainstorm some ideas; I'm stuck."
<i>Requests for information</i>	"Where can I find the code to connect to the server?"

<i>Seeking experience</i>	"Has anyone dealt with a customer in this situation?"
<i>Reusing assets</i>	"I have a proposal for a local area network I wrote for a client last year. I can send it to you and you can easily tweak it for this new client."
<i>Coordination and synergy</i>	"Can we combine our purchases of solvent to achieve bulk discounts?"
<i>Discussing developments</i>	"What do you think of the new CAD system? Does it really help?"
<i>Documentation projects</i>	"We have faced this problem five times now. Let us write it down once and for all."
<i>Visits</i>	"Can we come and see your after-school program? We need to establish one in our city."
<i>Mapping knowledge and identifying gaps</i>	"Who knows what, and what are we missing? What other groups should we connect with?"

In the organizations it is important to develop the concept of collaboration among individuals with a shared common, purpose, or interest when discussing how knowledge is shared, used, and communicated. This can be reached in a community of practice. Nonetheless these communities do not have such a designation in all organizations. They are known under various names, such as learning networks, thematic groups, or tech clubs. In March 2001, Etienne Wenger completed a comprehensive review of software products that support communities of practice, categorizing them into the following types of enabling technology tools:

- Knowledge bases (content management tools such as Documentum);
- Access to expertise (many incorporated into email tools such as AskMe);
- ELearning spaces (ranging from interactive collaboration tools such as Blackboard to learning management systems such as HealthStream);
- Synchronous interactions (online Web meetings such as WebEx or Net-Meeting);
- Discussion groups (ranging from simple listservs to asynchronous discussion boards, products include WebCrossing and Prospero);

- Web site communities (linking people to people as well as to documents, tools like Communispace or, while not mentioned in Wenger's list, NewSof);
- Project spaces (many of which are linked to Outlook email and incorporate shared folders and project management tools); and
- Knowledge workers' desktop tools (customizable Web portals such as Plumtree). (In Guptil, 2005: 13--14).

Other communication tools can also be used in knowledge management processes, like forums, events, libraries, blogs and wikis. E-mail with alerts from community.

Objectives of Communities of Practice

The importance of communities of practice is synthesized by Cambridge, Kaplan and Suter (2005: 1) as:

- **Connect people** who might not otherwise have the opportunity to interact, either as frequently or at all.
- **Provide a shared context** for people to communicate and share information, stories, and personal experiences in a way that builds understanding and insight.
- **Enable dialogue** between people who come together to explore new possibilities, solve challenging problems, and create new, mutually beneficial opportunities.
- **Stimulate learning** by serving as a vehicle for authentic communication, mentoring, coaching, and self-reflection.
- **Capture and diffuse existing knowledge** to help people improve their practice by providing a forum to identify solutions to common problems and a process to collect and evaluate best practices.
- **Introduce collaborative processes** to groups and organizations as well as between organizations to encourage the free flow of ideas and exchange of information.
- **Help people organize** around purposeful actions that deliver tangible results.
- **Generate new knowledge** to help people transform their practice to accommodate changes in needs and technologies (2005: 1).

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