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WEB 2.0 to Share Medical Knowledge and Improve Care:

Introduction

In 2010, the community of Madrid launched an e-health innovation project through the creation of a Scientific Social Network for professionals. The project was initially implemented at the University General Hospital Gregorio Marañón (HGUGM), starting as a tool to support the tumour committee.

For the implementation of the Scientific Social Network, the Community of Madrid decided to use MEDTING Enterprise. MEDTING is a collaborative web platform for the sharing of clinical cases that allows professionals to exchange knowledge, research and presentation of the organisation's relevant clinical cases to different medical committees. Madrid created its own private and enterprise MEDTING space.

The Scientific Social Network facilitates consistency in the information for presentation of clinical cases to the Tumour committee; anticipates and documents the views of specialists and keeps a record of tumours and statistical analysis of cancer epidemiology; it also standardises communications between hospitals and enhances scientific and research activities, as it enables the recording of cases treated in this committee as a source of teaching and research material.

The tumour committee is composed of specialists who provide multidisciplinary cancer care: medical oncologists, radiation therapists, surgeons, radiologists, etc., who make collective decisions about clinical cases evaluated to provide the best possible care to patients individually.

Characteristics of the MEDTING Scientific Social Network of the Hospital

Some of the main features of the Scientific Social Network:

- The contents stored are managed by the user community, privately;
- It is a Web 2.0 platform that enables sharing clinical cases (share, generate, comment ... information);
- Allows sharing private clinical cases (restricted access) or public (for all the community);
- Enables the creation of work groups;
- User profiles by specialty.
- Indexing and categorisation of content through SNOMED CT;
- Integration with PACS; and
- Carries out the identification of each clinical case and the possible interaction with the medical record.

One of the most valued features of MEDTING is its web viewer capable to display any type of multimedia information (image, video, documents, DICOM, ECGs, pathology, etc.) in a single web viewer.

Proof of Concept in the Community of Madrid

The proof of concept (PoC) involves a large number of clinical departments and units of the hospital: surgery and surgical specialties, internal medicine, medical specialties of gastroenterology and pneumology, oncology (medical, radiation, palliative care), obstetrics and gynecology and central services (pathology, haematology and nuclear medicine and radiology).

With the use of this platform, an organisation of cases and a clinical repository, for teaching and research purposes for the medical community (doctors, students, residents, etc) has been created. This has brought about an improvement in medical education and quality of care focused on clinical cases.

The PoC at the HGUGM was planned for six months, fulfilling the targets set at four months since its initiation. The hospital has managed to establish MEDTING as the basic tool for the tumour committee, creating and dynamising a medical social network that covers diagnostic and treatment units that work with clinical cases / images / multimedia elements. In turn, a reference library and customised opinion with great value for clinical decision have been created, and also work groups based on functional units of oncology (breast, gastrointestinal, lung, genitourinary, etc.).

The project has integrated images captured from medical devices through the tool MIO (Medical Images Organiser), which enables the integration of cameras, endoscopes, retinography, microscopes, ultrasound, CT and any other medical devices digitally and automated. Furthermore, MCA (Mobile Clinical Assistant) has been integrated into mobile environments, allowing the capture to occur during medical rounds.

In preliminary plans, an addition of 50 clinical cases was expected. After the PoC, the Scientific Social Network accommodated 90 clinical cases that have been treated in the various Tumour Committees. By the end of 2010, the platform involved 80 percent of patients going through the Tumour committee.

The use of the Scientific Social Network has favoured the transformation of care, management and transfer of knowledge through the use of social networking and has been a tool of innovation in the medical community that has optimised professional relationships within the organisation.

Project Objectives

The project objectives have been:

- Improved communication and exchange of clinical knowledge;
- Sharing of clinical cases, opinions and comments via the Internet;
- Facilitate research and education by providing the medical community a tool that can store a large volume of images and video;
- Motivation and empowerment of clinicians, and
- Helping patients and family to have a better understanding of the diseases affecting them.

Results at the University General Hospital Gregorio Marañón

Some remarks concerning results:

- Improving multidisciplinary communication among professionals;
- Capacity to collect any type of multimedia information associated with the case of any department or specialty, and
- Full use by diagnostic and treatment units, creating an early diagnosis through an interdisciplinary assessment.

We have created a registry of tumours that can be used for statistical analysis: Evaluation of cancer epidemiology, evolutionary oncology development and measurement of social and health impact of all phases of a tumour. The platform is also valuable to the medical education and for online collaboration in any specialty and has become a basis of motivation for professional clinicians.

The project has involved a change in the traditional manner of executing the tumour committee. Furthermore, in parallel to the clinical discussion, a repository of clinical knowledge relevant to the clinical community (residents) and continuing education is being created in parallel to an automated clinical pathway to procedure tasks.

An internal assessment process has been launched to measure the following results and impact:

- The organisation of tumour committees with Medting, described in the comprehensive cancer plan of the community of Madrid, helps manage 100% of patients;
- Avoids repetition of laboratory tests on patients referred from other departments or other hospitals;
- Helps to reduce waiting times. More focused on early treatment by sharing information on the same patient in real time;
- Facilitates the selection of patients for inclusion in clinical trials, saving costs for the hospital;
- Improves and encourages collaboration with industry (clinical research): It is the most powerful tool to promote clinical research in the hospital; and
- Improvement in management of workflows. Helps the tumour committee manage itself.

Expansion of the Social Scientific Network

The project initially defined constitutes the Scientific Social Network of the whole of the community of Madrid, which consists of 32 hospitals. The PoC and validation performed at the HGUGM not only reached the set goals and confirmed expectations, but the success among professionals has accelerated the expansion of the initiative (six hospitals in the next phase).

In addition to extending to other centres, the social network is being extended to other clinical settings in the HGUGM:

- Extension of the platform to all tumour committees of the oncology referral hospitals on HGUGM;
- Study and implementation of proposals for other services, outside of the field of oncology, who have detected opportunities for teaching, document repository, improved patient care, etc;
- Automatic transmission of studies and images from PACS to MEDTING;
- Development of application for mobile settings;
- Integration in areas of clinical decision support, and
- Assessment of the platform as a second opinion setting.
- Integration with EHR settings through semantic web.

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