



COntinuous MOonitoring of Medication Overuse Headache in Europe and Latin America:

Development and STAndardization of an Alert and decision support System



Editorial

ICT impact in the management of chronic diseases



Health services are organized around the treatment of acute episodes: inpatients or outpatients are treated due to a specific problem, and their contact with said services is lost until some other need or problem arises. Nevertheless, patients with chronic pathologies require continuous care in order to maintain or improve their quality of life. They need rapid access to professional advice when facing psycho-physical changes or new vital circumstances that may arise. Besides, they seek to participate actively in the decisions taken upon their treatment, after gathering information

regarding their condition.

Nowadays, as a consequence of the fragmentation of health systems, one same patient is seen by various physicians, according to his/her health condition. These professionals do not share information regarding the patient, nor do they have access to a shared case history, and this may lead to the requirement of unnecessary and repeated tests, an increase in unfavourable effect risks, incompatible prescriptions, and contradictory recommendations regarding different habits, such as dietary ones.

Within this context, the use of information and communication technologies (ICT), will improve the uncoordinated and fragmented manner in which health services are nowadays provided, thus allowing, by means of tools and electronic integrated services, a better health care: more rapid and precise diagnosis, less medical errors and unnecessary tests, optimization of waiting time to receive care and access to test results, and the reduction of administrative expenses.

Amongst the most relevant ICT applications within the healthcare system, the following stand out:

□ **Shared electronic case history:** It allows the various professionals and healthcare centers a patient attends all along his/her life, to collect, record and have access to the patient's medical information in electronic format. Prevention, diagnosis, treatment and rehabilitation services data is shared by all the professionals involved, in order to grant care plans consistency, minimization of



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redundancies, unfavourable effects and incompatibilities, and the suppression of errors resulting from hand-written notes or prescriptions.

Communication systems and devices between patients and physicians: They allow the rapid, comfortable and inexpensive interchange between patients and physicians, through different mechanisms and channels, such as e-mails, SMS and telephone. These devices facilitate the early detection of complications or relapses, and the personalized monitoring, which strengthens the patients' ability to manage their own health.

Medical decision support informatic systems: They are used to apply healthcare knowledge in the particular needs of each patient, by means of interactive software which integrate the patient's case history with updated vademecum data, epidemiological information, clinical guidelines, parameter control automatic systems, care plans, and preventive action reminders. The introduction of alerts for physicians and patients, regarding the compliance of care plans, favours appropriate and timely decision taking, quality improvement and healthcare security.

Patient-oriented information systems: Through health portals, contact centers, interactive forums, 'wikis', they improve patients and community information, for the maintenance and optimization of their health and quality of life. They favour the access to trustworthy information and the interchange of advice and opinions regarding self-management. They also allow interaction between patients associations and health-centered community organizations.

Medical knowledge management systems: They facilitate the access to updated scientific information (magazines, research articles, professional practice findings reviews), and introduce continuous on-line training programs (e-learning). They also promote the constant improvement of evidence-supported healthcare delivery quality.

Communication systems and devices among professionals: They favour the acquirement of a second opinion, the collaborative work among professionals from the first healthcare level, and the specialists from the second and third ones. The different mechanisms and channels used strengthen the creation of virtual collaborative nets among professionals.



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□ **Telemedicine:** It favours distance healthcare services delivery, by means of information interchange via telephone, internet, or satellite connections, among others. It allows patients from distant places to have access to specialized care, preventing, thus, their referral to urban centers, where high-complexity medical institutions are found. Peripheral devices attached to the computer, allow, not only the performance of interactive tests but also of remote surgeries.

□ **Telemonitoring:** It favours, through cordless devices, the continuous monitoring, in real time, of both inpatients and housebound patients' vital parameters. Besides, it improves patients' intervention opportunities and quality of life, mainly that of the elderly, increasing their independence and security when articulated with ambient intelligence devices.

□ **Management information systems:** They improve service access, patients' security, and healthcare centers management. They allow the electronic management of appointments, medical agenda, diagnosis/assessment tests appointments, personnel management, invoicing, and other administrative tasks which support healthcare activities. These may include applications for the automatic management of medicine prescriptions or the electronic management of the medicine dispensing.

In this way, it is shown how ICTs progressive integration into the healthcare sector allows a continuous care and better results in the treatment of chronic pathologies, according to the patients' changing needs. Besides, these tools strengthen the communication between patients and professionals, and self-management abilities. Paradoxically, one of the sectors which less invests in information technologies is the healthcare one.

ICTs integration into the healthcare systems requires the compliance of standards and protocols which regulate the collection, recording and transmission of personal data, in order to guaranty the security and privacy of the information stored and consulted. The COMOESTAS Project complies both with national regulations and the European Parliament and Commission Directive 95/46/EC.