## Telematics in community pharmacies to support responsible self-medication. The TESEMED project \*

Sanz FO, Loza MIO<sup>•</sup>, Ahlgrimm EDO, Baetens PO, Cuypers JO, Cranz HO, Coronel MO, Fernández-López JLO, De Mora AO, Sosa-Iudicissa MO

IMIM. UAB. C/ Dr. Aiguader 80, E-08003 Barcelona
PGEU. Sq. Ambiorix 13, B-1040 Brussels
AESGP. Av. Tervuren, B-1040 Brussels
SEMA Group sae. C/ Albarracín 25. E-28037 Madrid
European Commission - DG XIII. Av. de Beaulieu 29, 3/50. B-1160 Brussels

Abstract. A project devoted to the development and testing of telematic applications to be used in community pharmacies to provide information and education on the relevant use of OTC (non-prescription) drugs is presented. Two user types are envisaged (community pharmacy professionals and customers) and, consequently, two types of systems will be considered. A comprehensive bibliographic review of the state of the art is included.

Over the past years there has been a growing recognition of the importance of self-care and selfmedication within the most developed healthcare systems. This movement has been particularly influenced by the growing desire of the population to take more responsibility for issues related to health [1].

This trend has been recognised by the World Health Organisation (WHO) [2,3,4] which has stated that:

"For a number of years there has been increasing interest in a positive reassessment of the role self-medication in health care. Following a long and historical period during which the evolution of professional medical services sometimes appeared to be rendering self-medication superfluous, at least in developed countries, it has become widely accepted that there is indeed a valid and continuing place for self-medication in the health-care system. Recognition of the responsibility of the individual for his own health and of the fact that recourse to professional care is for minor aliments often unnecessary and/or sometimes undesirable, has contributed to this development."[2]

Trends towards self-medication should be accompanied by the strengthening of information measures. Community pharmacies (there are more than 106,000 in the European Union), have a key role to play in providing assistance, advise and information to the public about

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<sup>\*</sup> Work address: Departamento de Farmacología. Facultad de Farmacia. Universidad de Santiago. E-15706 Santiago de Compostela

responsible self-medication products and the circumstances in which a doctor should be consulted.

The European Commission discussed the value of self-medication in its proposal for an *European* Parliament and Council decision adopting a programme of Community action on health promotion, information, education and training within the framework of public health. This document, which was adopted by the European Commission on 1 June 1994, stated in particular that:

"Pharmacists have a key role to play in providing assistance, advice and information to the public about self-medication products and the circumstances in which a doctor should be consulted. To help them to perform this role they will require specially-tailored information material and appropriate training.

... Providing sufficient information to consumers can also contribute to a more sensible use of medicines".

Likewise, many European national Ministries of Health have recognised the importance of responsible self-medication, launching information campaigns and publishing materials intended to assist the citizens in a correct utilisation of over-the-counter (OTC) medicines.

Many other documents have been published on the role of community pharmacists and self-medication in healthcare, i.e.:

- Promotion and improvement of self-care [5,6,7,8,9].
- Description of the most used drugs, as well as their inadequate use, their interactions and contraindications [10,11,12,13,14].

- Protocols for self-medication [15] in different situations: fever [16], dermatologic ailments [17], phytotherapeutics [18], diabetes [19], elderly patients [5], etc.

- Education in the community pharmacy [20,21,22].
- Sociologic studies [23].
- Marketing strategies on over the counter medicines [24].

On the eve of the Information Society, benefit can be taken from the information highways, facilitating also by electronic means, citizens' and professionals' access to relevant information and advice on medicines.

Several documents have reported and discussed the use of the most advanced telematics technology to enhance operating efficiency in pharmacy [25,26,27,28,29,30]. Despite many pharmacists rely in computers in daily practice [31], surveys carried out in USA [32,33] showed that many of the common uses of computers by pharmacists are related with administrative or economic tasks. In the European countries, the use of computers in the pharmacies is also widespread [34,35,36,37,38]. The OBRA 90 mandate of patient counselling [39] compelled most USA pharmacy informatics suppliers to release innovative applications that could enhance the performance of clinical functions in the community setting [25,26,27,28,29,40,41,42].

The innovative use of computers offers a wide range of possibilities for the promotion of the healthcare role of the pharmacy professionals and the advancement of the responsible self-medication, i.e.:

- Computer-assisted education and training for the pharmacy professionals [22,43,44,45,46,47], as well as for the pharmacy students [48,49,50,51,52,53].

- Drug information [54].
- Electronic bulletin board for pharmacists [44,45].
- Computer-assisted patient information and education [55].
- Applications to improve patient care [56,57,58].

On the other hand, a special comment merits to be done on the WWW servers addressed to the pharmacy professionals. Two relevant examples are PharmWeb (http://www.mcc.ac.uk/pharmacy/) and PharmInfoNet (http://pharminfo.com/).

In order to promote the use of telematics applications in the European community pharmacies to support responsible self-medication, the TESEMED project has been elaborated and recently funded by the European Commission within its Telematics Applications Programme. An outline of TESEMED is presented in Fig. 1. A WWW server is been developed on the TESEMED project (http://www.sema.es/projects/TESEMED)

TESEMED CHARACTERISTICS
• Partners:
<ul> <li>Institut Municipal d'Investigació Mèdica. Barcelona (Spain).</li> </ul>
• Pharmaceutical Group of the European Union (PGEU).
• European Proprietary Medicines Manufacturer's Association (AESGP).
• SEMA Group sae. Madrid (Spain).
Technologies and approaches used:
Multimedia applications running in stand alone personal computers and information kiosks. Touch screen in applications for community pharmacy users. Dissemination and update using Internet facilities, including open and restricted World-Wide-Web services.
• Expected benefits for the citizens:
Better information and education on responsible self-medication by means of information delivery platforms quality-proofed by professional, governmental and industrial authorities. All the above resulting in a better, quicker, and effective alleviation of minor ailments that affect the quality of life and performance of people.
• Expected benefits for the pharmacists:
Enhancement of their information and training to act as self-medication advisors. Reinforcement of their role as health-agents, overcoming his shortage of available time.
Expected benefits for the European industries:
The OTC European Industries have a prominent role in international economy that must be preserve and reinforced, maintaining and creating new jobs and wealth. There are 106,000 community pharmacies in the European Union, which constitutes an important market for multimedia kiosks and telematics services.
Contribution to EU-policies:
The project has the potential to contribute to EU policies in all of the following domains: single market and industrial policies in the pharma sector and in the information technologies and telecommunications sector; health protection and promotion (health education); consumers rights and consumers protection.

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