PGEU Working Paper

Pharmacists Contribution to Improve patient's adherence to therapies

Introduction

The Pharmaceutical Group of the European Union (PGEU) is the association representing community pharmacists in 32 European countries. In Europe over 400.000 community pharmacists provide services throughout a network of more than 160.000 pharmacies, to an estimated 46 million European citizens daily.

Community pharmacists are in an excellent position in the healthcare system to impact patient medication adherence. They are not only experts on medicines but also among the most accessible and most consulted health professionals. By having direct access to patients, they can identify poor adherence, help remove barriers and facilitate the incorporation of adherence interventions into the care of their patients. Having the right training and knowledge they help improving patient outcomes and overall reducing health care costs.

The Pharmaceutical Group of the European Union (PGEU) has already drawn attention to specific issues concerning medication and older people in its policy statements on Targeting Adherence[1] and ensuring rational and safe use of medicines by older people[2]; the topic continues to be a priority for PGEU members. Aim of this working document is to show the potential of pharmacists to improve rates of patients' adherence to therapies in general and most importantly to long-term therapies commonly used in treating chronic conditions and their risk factors in elderly. Concrete examples on how this is already happening throughout Europe will be provided with recognised barriers for further implementation.

Pharmacists' contribution to active and healthy ageing

Pharmacists can certainly play an important role in promoting healthy ageing and encouraging older people to adhere to healthy lifestyles by reinforcing healthy eating and adequate physical exercise, aspects also relevant to mental health and wellbeing. It is also worth noting that older people often see pharmacists simply as someone to talk to helping them to fight the feeling of loneliness and isolation.

However, the area where pharmacists' interventions have proven to be most effective in relation to older people's care is adherence to medication.

Failure to adhere to medication among older people is a widespread and costly problem. Evidence shows[3] that 65% of people who are 60 and more years of age have two or more chronic conditions, but also that frequent adherence rates in this age group are 60% or less. In addition, up to 50% of cardiovascular disease admissions may be due to poor adherence. This suggests that, although an intensive pharmacist-led approach could imply a higher cost, the end result when solving the problem of adherence will be a total lower healthcare cost.

Older patients are subject to specific risk factors for non-adherence. Because they often suffer from more than one chronic condition and have a higher prevalence of certain diseases such as Alzheimer, Parkinson, glaucoma, osteoarthritis, and congestive heart failure they tend to take more medicines than their younger counterparts. Moreover, older patients are more likely to face problems of memory and of understanding regimens and instructions. Finally, problems with visual acuity (e.g., reading the information leaflet or the mode of use on the label) and dexterity (e.g., opening the vial of a bottle or pushing a pill out of a blister) may hinder their ability to take their medication properly[4,5,6].

Furthermore, older patients are very sensitive to adverse effects of psychotropic medicines, e.g. cardiac toxicity, confusion and unwanted sedation.[7]

Pharmacist contribution

[1] Targeting Adherene: improving patient outcomes in Europe through Community Pharmacists' intervention, PGEU, May 2008 http://www.pgeu.eu/Portals/6/documents/2008/Publications/08.05.13E%20Targeting%20adherence.pdf

[2] Community Pharmacists' contribution to ensuring rational and safe use of medicines by older people http://www.pgeu.eu/Portals/6/documents/2009/Position%20Papers/09.02.13E%20PGEU%20Statement%20on%20Medicines&Elderly-Approved%20GA%2010%20March%202009.pdf

[3] Lee JK, Grace KA, Taylor AJ. Effect of a Pharmacy Care Program on Medication Adherence and Persistence, Blood Pressure, and Low-Density Lipoprotein Cholesterol. A Randomized Controlled Trial. JAMA. 2006;296:2563-2571. Published online November 13, 2006 (doi:10.1001/jama.296.21.joc60162). http://jama.ama-assn.org/cgi/reprint/296/21/2563

[4] Coons S, Sheahan S, Martin S, et al. Predictors of medication noncompliance in a sample of older adults. Clin Ther. 1994;16:110-7.

[5] Larrat E, Taubman A, Willey C. Compliance-related problems in the ambulatory population. Am Pharm. 1990;NS30:82-7.

[6] Murray M, Darnell J, Weinberger M, Martz B. Factors contributing to medication noncompliance in elderly public housing tenants. DICP. 1986;20:146-52.

[7] Drug use in the elderly. Prescribing practice review. Sydney, National Prescribing Service Ltd; 2004.

At a community pharmacy level several initiatives and actions have been taken in order to improve medication adherence and achieve optimal patient outcomes in the past decades. They range from less to more systematic approaches, some of them already recognised by national governments and made part of national strategies to improve patient outcomes and lead to health cost savings. However, we would suggest that the best examples of successful and effective pharmacists' intervention targeting adherence is pharmacist-conducted medication reviews targeting older people to reduce and prevent drug-related problems as well as enable to reduce the number of medicines taken as well as the number of daily doses. These reviews are helpful to encourage good prescribing practices as they allow identifying misuse or abuse of certain medicines, particularly sleeping pills and tranquilisers in elderly. The aim of the medication review service is 'to improve patient knowledge, concordance and use of medicines' when establishing use and understanding, resolving ineffective medicine use, identifying side effects/drug interactions, improving clinical and cost effectiveness, and reducing waste.

Patients reported overall satisfaction with medicines use review (MUR) by pharmacists in UK. MURs improved patients' knowledge of medicines in areas such as side-effects, how to take it, etc, but may put off some of patients by the unexpected nature of the service, the time requirement and uncertainty about links between the MUR and the services provided by the GP[8].

UK

A new contractual framework for community pharmacy was introduced in 2005 with three tiers of services – essential, advanced and local enhanced. The Medicines Use Review (MUR) and Prescription Intervention Service is currently the only nationally agreed advanced service. The purpose of the MUR service is to improve patients' knowledge and use of drugs eg supporting appropriate medicines use, reducing waste, identifying side effects and drug interactions. Pharmacists receive a payment of £28 per MUR and each pharmacy can undertake a maximum of 400 reviews per year. In England the potential annual NHS investment in the service is about £112 million. In 07-08, 73% of pharmacies were providing MURs and, in total, just under 1 million reviews were conducted.

To provide MURs, pharmacists are required to undertake a competence assessment and have an appropriate consultation area. The service can be offered annually to any regular patients on multiple medicines and those with long term conditions. The service may also be offered at any time if the pharmacist identifies a significant problem (a prescription intervention) when dispensing a prescription.

SWEDEN

The Government has directed money for medication review in order to optimise patient outcomes of medicine use. In these cases the pharmacist is working very closely with doctors and nurses. The pharmacist motivates and gives recommendations to change the medication for one reason or another.

Additionally, medication reviews have been performed in Swedish nursing homes for a long time. They have also been introduced in hospital wards during the past few years, as well as in some health care centres, where the pharmacist meets with the patient before or after the visit to the doctor to review all of the patient's drugs in order to detect and resolve drug-related problems (DRPs).

FINLAND

In Finland, a pharmacist-conducted medication review was introduced in community pharmacies in 2005 targeting older patients. The medication review model is very comprehensive, starting with an interview with the patient, preferably in the patient's home, assessing the medication through discussion with the patient, the physician and homecare nurse and researching laboratory results. Finally a report is created as a tool for the physician's decision making process.

BELGIUM

A few studies have reported use of the Asthma Control Test (ACT) to determine the effectiveness of pharmacist medication review. In Belgium, a randomized controlled trial (n=201) showed that an intervention to improve inhalation technique and adherence improved the ACT test at 6 months in patients who were insufficiently controlled at base line[9]. Night time wakening due to asthma and use of reliever medicine was reduced in the whole study group.

THE NETHERLANDS

Research (the HARM-study) shows that each year 19.000 patients end up in Dutch Hospitals as a result of potentially avoidable medication

[8] Portlock J, et al. A community pharmacy asthma MUR project in Hampshire and the Isle of Wight. Pharm J 2009;282:109-12

[9] Mehuys E et al. Effectiveness of pharmacist intervention for asthma control improvement. Eur Resp J 2008;31:790-9.

related problems. Older patients using multiple medications were especially vulnerable.

Pharmaceutical Home Counselling and Clinical Medication review are new approaches that are in a developing and researching phase in the Netherlands. Pharmacists together with doctors review the medication of a patient and discuss therapy plan with a patient later on.

In addition, one Community Pharmacy has been contracted by a health insurer to perform medication reviews of older patients in the city of The Hague in 2008. The pharmacist is paid 150 euros per consultation. It includes exploring medication related problems and exploring medication taking skills based on the patient's actual use and experiences.

The Royal Dutch Pharmacists Association (KNMP) is developing a project to support similar service to the patients nationwide by their community pharmacies.

PORTUGAL

Portuguese Pharmacy Association (ANF) has also developed a model and tools for a national pharmacy-based brown bag campaign targeted to patients aged 65 and higher, in response to the health problems around a growing aged population, which was launched in March 2007. Pharmacists conducted the therapeutic review and documented intervention provided. 1.487 pharmacies (55,4% Portuguese pharmacies) participated in the campaign and 597 (33,6%) sent data to ANF. Data from those 597 pharmacies showed that the average number of medicines per patient was 7,3; 23,4% of patients were on four to five medicines; 51,6% patients were on six to nine medicines and 25% of patients on ten or more medicines. Pharmacists referred 933 patients (21,3%) to the prescriber for further evaluation.

SPAIN

The General Council of Pharmacists has carried out a pilot programme of home care for elder people, where the medication review was very exhaustive, including interviews with the patient, with the carer, and revision of the medicines kit at home. Results of the pilot show that in 53% of the cases there was no compliance with the treatment and in 29,4% of cases, there was error in administration. The most frequent negative result associated was a no quantitative effectiveness. Interventions required were mainly provide information (53%), health education (53%), personalized pharmacotherapeutic follow up (47%) and personalized dosage system (47%).

Barriers for implementation

Access to patient data

Clinical medication review has been shown to be effective in optimising therapy, improving health outcomes, reducing the likelihood of drug-related problems and reducing waste[10,11]. However, such studies frequently include clinical medication review by pharmacists with full access to patients' medical records, so may not be directly comparable with the present medication review services available in different countries. Moreover, it minimizes potential of pharmacists' intervention to improve adherence and resolve medication related problems.

In order to remove this barrier and release full professional potential to improve patient outcomes and ensure patient safety the French Council of pharmacists (*Ordre national des pharmaciens*) took the initiative to put in place medication records ("*Dossier Pharmaceutique*"). The medication record has been a reality since 2007 and records in a central database are created for patients who agree and all medicines dispensed to him/her in any French pharmacy in past 4 months are recorded. 31st March 2011, 12.9 mln pharmaceutical dossiers were created and 19.300 French pharmacies were connected to the system. Twenty nine per cent of patients above 60 years old have accepted to create pharmaceutical dossier.

Through the medication record the French pharmacist can monitor all medication the patient is taking allowing for the identification and avoidance of potential drug-induced diseases (iatrogenic diseases) and redundant treatments. The pharmacist can therefore inform physicians of their patients' current medication (including prescription and non-prescription medicines) and implement review of the medication services.

In order to understand potential of pharmacists' access to patient's record, a two months study was conducted during the implementation phase of *Dossier Pharmaceutique*, involving 160 pharmacies located in six distant regions where 20% of pharmacies were connected to the pharmaceutical dossier network. During the course of two months 577 adverse drug reactions were identified and reported, of which 35

[10] Zermansky et al. Randomised controlled trial of clinical medication review by a pharmacist of elderly patients receiving repeat prescriptions in general practice. BMJ 2001;323:1340–3.

[11] Mackie et al. A randomised controlled trial of medication review in patients receiving polypharmacy in general practice. The Pharmaceutical Journal 1999;263(Suppl):R7.

redundancy cases and 482 drug interactions. In 77% of the interaction cases, the pharmacist decided to dispense the medicine initially prescribed, providing the appropriate advice to the patient. In 16% of the identified interactions, the pharmacist contacted the prescriber, leading to a change in the prescription in at least one out of ten contact situations. The actions taken for the remaining interaction cases are diverse. Furthermore, the system allowed the detection of 60 cases concerning an oral anticoagulant treatment, these medicines being responsible for most of the hospital admissions caused by adverse drug reactions.

In Spain the medication review is made within the pharmaceutical care services, facilitated by the integration of an IT tool within the pharmacy support decision system developed by the General Council of Pharmacists of Spain (Bot Plus). The medication review is being favoured also by the implementation of the electronic prescription in several regions, where pharmacists can have access to medication records (prescription only medicines), but although there is a agreement with physicians to develop a common patient record adding to the clinical information, the information on prescription and not prescription medicines, the medication review it is not yet a nationwide established service as such, as there is a lack of a specific national regulatory framework.

Remuneration for service

To provide medication review in some countries pharmacists are required to undertake a competence assessment and have an appropriate consultation area in the pharmacy. Comprehensive medication review lasts approximately 20 min. Therefore implementation of this service in the pharmacy is costly and time consuming. In particular in smaller pharmacies and in rural areas it may be difficult to implement it without financial support. One cannot expect that community pharmacies will be in a position to provide medication reviews without financial incentives from governments especially because very often they rely on pure margin based remuneration systems and margins on medicines are cut as part of austerity measures tackling budget deficiencies. In many European countries medication review was piloted and has showed positive improvement in patient adherence and empowered patients to better self-manage their condition. However, if not supported by external funding in many cases it was dropped as it proved to be costly for individual pharmacies and required additional workforce to undertake this service and to maintain dispensing practice, which still remains main income for the community pharmacy.

Results from research in Sweden pointed out that medication reviews performed for older people reduced the average number of medicines used by the patient from 12.4 to 10.7. In addition, the average patients' medication costs were also reduced of 1488 SEK per patient per year (approx. €160 per patient per year)[12]. In Denmark, other research showed that systematic medication reviews for older people would result in savings of €50 million per annum[13]. Therefore we would argue that medication use review which can seem to be costly in the longer term will bring savings to the healthcare system.

It is important to ensure that pharmacists receive remuneration for the service and that it does not imply additional costs to pharmacy for undertaking these services. If governments wish to successfully tackle non-adherence and reduce medicines related problems in elderly and other patient groups at risk via pharmacists-led interventions it is important to move away from distribution margins and introduce a pharmacist remuneration system that is neutral or that favors implementation of services such as medication review.

Lack of support from GPs

It is important to note that medication review aims to identify medication related problems and report them to the physician, so that he/she may, in turn, adjust medication therapy at an early stage, contributing, in the long run, to optimize patient outcomes in the geriatric population.

Research in UK demonstrated that GPs in general favoured the concept of community pharmacists helping patients understand their medicines, but have subsequently been disappointed with the MUR service. Major problems include inappropriate clinical recommendations, provision to less suitable patients (eg patients with few medicines and no clear medicines related problems) and the MUR service not being integrated with other healthcare provision. However, where therapy changes are

[12] Jonsson J, Renberg-Lindholm E, Ohlen K, Hjertsen E. Drug utilization reviews by a pharmacist of elderly people living at home – an open trial in two Primary Health Care Centres in Sweden. Presented at the World Congress of Pharmacy and Pharmaceutical Sciences. September 2007. Beijing.

[13] Brug medicinen bedre – Perspektiver I klinisk farmaci (better use of medicines – perspectives in clinical pharmacy). Danish Medicines Agency. 2004

recommended to prescribers following MURs, at least half appear to be implemented[14,15].

French study on pharmaceutical dossier described above points to similar results where when the pharmacist contacted the prescriber in relation to identified problem, it lead to a change in the prescription in at least one out of ten contact situations.

These contradictory attitudes of GPs highlights existing tension between GPs and community pharmacists in what regards professional relationships, leave patient needs unmet and the professions involved vulnerable. Very often GPs come in contact with community pharmacists only when community pharmacist identifies problem with a prescription or recommended therapy. This surely doesn't help to establish strong professional relationship. And community pharmacists very often feel that their professional competence is underestimated by their medical colleagues. Community pharmacists and doctors very often lack opportunities to meet in person and discuss various aspects of care and public health.

In order to support collaborative patient care at local level GPs and community pharmacists require changes in the ways in which the two professions perceive their roles and capabilities and the competency with which they conduct their interpersonal exchanges. Collaborative care of elderly patients in order to maximize patient outcomes and improve adherence demands not only organisational changes relating to factors like places of practice, ICT support, but also appropriate financial incentives.

Collaboration between community pharmacists, GPs and other health professionals should be supported by a range of interventions, from integrated remuneration systems to personal contacts and eHealth solutions that promote greater mutual respect and professional trust.

Conclusions

PGEU is aware that there is no single solution to improve adherence which can be used universally as national realities may differ considerably. But learning about successful examples from other countries can be very helpful and enriching. Hence, we have explained different approaches of medication review service from different countries ranging from reimbursed service to projects, and/or initiatives.

Community pharmacists are well positioned in healthcare systems and have adequate knowledge to contribute to improved adherence and patient outcomes when resolving medication related problems and helping patients to better understand medicines they take. However pharmacists cannot do it alone. In order to successfully tackle non-adherence via pharmacists-led intervention development and implementation of this service should:

- Ensure pharmacists have adequate information about health of the patient and medication he/she is taking, preferably when accessing electronic patient record.
- Ensure that pharmacists receive remuneration for the service and that it does not imply additional costs to pharmacy for undertaking this services,
- Support collaboration between community pharmacists, GPs and other health professionals should by a range of interventions, from integrated remuneration systems to personal contacts and eHealth solutions that promote greater mutual respect and professional trust.

[14] Wilcock M & Harding G. What do pharmacists think of MURs and do they change prescribed medication? Pharm J 2008;281:163-7

[15] Choudhury A. Do we know how many of our MUR recommendations are followed? Pharm J 2009;282:715-6