

A Review of Pharmaceutical Care in Community Pharmacy in Europe

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Although a number of articles about pharmacy practices in European countries have been published, few reviews compare pharmacy and pharmaceutical care practices throughout Europe.^{1,2} In 2000 the status of pharmaceutical care in Europe was discussed in a Spanish journal,³ and in 2004 two other reviews were published.^{4,5} A series of articles on the development of pharmaceutical care and pharmacy practice in a number of countries is now being published in the *Annals of Pharmacotherapy*.⁶ But these articles describe one country at a time, and the series will only cover a limited number of European countries.^{7,8,9,10}

There are several reasons why it is difficult to get a clear picture of pharmacy and pharmaceutical care practices in Europe. Although the European Union (EU) has now existed for many years, there has yet to be any harmonization in the field of primary health care even

though a number of recommendations have been made.¹¹ As a result, there still are major differences in health care policies and practices among European countries. Furthermore, it is not very common to describe current practices or professional developments in pharmacy; most articles focus on commercial and professional threats to pharmacy or future challenges. It is somewhat easier to find articles describing research into small elements of pharmacy practice; but in most European countries even this research is not yet normal practice. There are many different pharmacy journals in Europe, but they are published in over forty different languages and many are not indexed in major international databases like Medline/Pubmed.

In this literature review, we aim to describe contemporary European developments regarding the implementation of and research into pharmaceutical care, focusing on the community pharmacy. We will identify the major

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movements in the pharmacy profession and give some indication of future developments. This review is based upon information from articles that are written in major European languages (French, German, English, Dutch and Spanish) and articles written in other languages with English abstracts. Letters to the editors are not included in the review, but commentaries are.

Definition of Pharmaceutical Care

In 1990 Hepler and Strand published the first useful definition of pharmaceutical care. They wrote, “pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient’s quality of life.” Most European countries rely on this definition in their approach to pharmaceutical care, and many have just translated Hepler and Strand’s terminology. But even the act of translation has introduced notable discrepancies, for the meaning of the word “care” differs across languages.

Some Europeans have tried to clarify the definition of pharmaceutical care. During a symposium in the Netherlands in 2003, pharmaceutical care was regarded more or less as “pharmacists being nice to the patient.” It was even suggested that grocers provided pharmaceutical care when being kind to drug-using patients. Although perhaps it is not necessary that pharmaceutical care is always provided by a pharmacist per se, just being nice is certainly not enough.¹² Some have tried to clarify that pharmaceutical care in Europe basically is “the care of the pharmacist around pharmaceuticals for the benefit of the patient.” Even such a simple concept may lead to political confusion. By this definition, does pharmaceutical

care include pharmacovigilance or health promotion activities?¹³ It seems that there simply cannot be a uniform definition of pharmaceutical care across Europe because of the different countries, languages and health care systems involved.

The different terms used in Europe, such as “farmaceutische zorg” in Belgium, “farmaceutische patiëntenzorg” in the Netherlands, “Pharmazeutische Betreuung” in German-speaking regions, “farmaceutisk/Farmacøytisk omsorg” in most Scandinavian languages or “soin pharmaceutique” in francophone regions, basically refer to pharmaceutical care in terms of Hepler and Strand’s definition. Additionally, there exist seemingly disparate concepts with similar implications, like “seguimento farmacoterapéutico” with the strange translation of “pharmacotherapy follow-up” in Spain and Portugal and “medicines management” in parts of the United Kingdom (UK).¹⁴ The term “cognitive pharmacy services,” which is often used in social pharmacy circles, also points in the direction of pharmaceutical care.¹⁵ Apart from this confusion, there also can be a difference in the interpretation of the term pharmaceutical care within one country or between and within settings (like community or hospital pharmacy).¹⁶

Not dissimilar from Hepler and Strand’s original American definition, pharmaceutical care is often regarded in Europe as the process of optimizing the outcome of a patient’s drug therapy—nothing more and nothing less. The goal of that process is to improve the patient’s quality of life (QOL).¹⁷ An optimized set of drugs is not a goal in itself, but the improved clinical, economic and/or humanistic outcomes are. The question “who does it?” is relevant when it comes to defending the professionalism of pharmacists, but it is not necessarily important from the patient’s perspective.

Nonetheless, in most European countries pharmacists are the only health care professionals who have the knowledge and skills required to provide pharmaceutical care. Additionally, they are usually the professionals who are most easily accessible.

Community Pharmacy Systems and Their History

Before we can describe pharmaceutical care in Europe, it is necessary to recognize that pharmacy practices in European countries are quite diverse because of the different languages and legal, political and healthcare systems in the nations involved and because practices have developed in different ways and at different paces in different countries.

Roughly four different pharmacy systems can be recognized. The Scandinavian type of pharmacy has relatively large pharmacies, serving 10,000–18,000 people and focused mainly on medicines. Southern Europe, France, and Belgium have very small pharmacies that serve approximately 2,000–2,500 clients and that also sell parapharmaceuticals and cosmetics. In the UK and Ireland are Anglo-Saxon type pharmacies (resembling those in the United States [US] and Australia), which sell many non-medical items in addition to medicines and which serve approximately 3,500 people. Lastly, there are the pharmacies in Central and Eastern Europe (Germany, Switzerland, Austria and farther east), which focus on all kinds of healthcare amenities and serve 3,000–5,000 people. In Europe, the drug-store concept is hardly known outside of Great Britain.

As elsewhere, the profession in Europe developed from compounding (in the 1910s and 1920s) to dispensing (around the 1950s) and finally towards the provision of clinical

pharmacy and pharmaceutical care. This last development has had to compete with some commercial issues that emerged around 2000, when different European governments, recognizing that the costs of health care were starting to grow uncontrollably, tried to deregulate the health care system—including the pharmacy system. Pharmacies lost their monopoly over a limited number of medicines in some European countries, like Denmark, Portugal, Ireland, and the UK, in an effort to increase competition and reduce prices. In many countries like Iceland and Norway, these discussions caused a temporary stop in the development of pharmaceutical care and other patient-oriented services.^{18,19,20}

Other major developments in Europe were system changes around 1991 and 1992 that occurred in (now former) Communist states and newly independent countries. Despite the efforts of the World Health Organization (WHO), among others, the pharmaceutical industry and wholesalers stormed this new terra incognita and thoroughly disturbed local production, markets, and formularies.²¹ Some industries provided expensive medicines for free to push other cheaper drugs from the market. Given these problems, the first priority in those states was (and still is) to focus on proper drug use and prescribing and dispensing practices. There seems to be very little pharmaceutical care going on in this region of Europe, apart from the Czech Republic, Croatia, Poland, Slovenia and perhaps Hungary.

From Clinical Pharmacy to Pharmaceutical Care

As in the US, clinical pharmacy was the foundation for the development of pharmaceutical care in most European countries.²² Al-

though there is little written evidence in international journals about this, clinical pharmacy started to play a role in community pharmacies in Scandinavia and the Netherlands in the early 1980s, when the European Society of Clinical Pharmacy (ESCP) was founded. In 1991, Doug Hepler, shortly after the publication of his cornerstone publication with Strand,¹⁷ was invited to the Danish pharmaceutical association in Copenhagen. This began a momentous chain of events in Europe. Pharmacists' organizations in other countries slowly became aware of the new professional development known as pharmaceutical care, especially after the community pharmacy section of International Pharmaceutical Federation (FIP) started discussing its importance in 1993 and subsequently issued a Statement of Professional Standards about it in 1998. Thus in the 1990s most community pharmacists' organizations in Europe started looking at pharmaceutical care as the (strategic) future for the profession. The following paragraphs describe developments in different European countries.

In Sweden, the first publication about pharmaceutical care programs came out in 1993,²³ but the national pharmacy organization, Apoteket, focused initially on health promotion, counseling and over-the-counter (OTC) advice. In 2004 a national database for drug-related problems was founded,²⁴ and this hastened the implementation of drug review. A national register of patients' dispensed drugs became available in 2006, facilitating more integrated forms of pharmaceutical care in which the identification and resolution of drug-related problems play central roles.

In Norway, the first ESCP workshop about pharmaceutical care was held in 1993,²⁵ but there seem to have been few subsequent developments in practice.

In Denmark, pharmaceutical care has been

included in professional standards of practice for community pharmacy since 1995.²⁶ As in Sweden, however, its implementation has long been hampered by privacy issues surrounding patients' drug data. Many research and implementation projects have been carried out (in particular in the fields of asthma and migraine),²⁷ but only half of the pharmacies today try to detect drug-related problems in a systematic way.²⁸

In the Netherlands, where pharmacies are relatively big and 95% of patients always visit the same pharmacy, medication surveillance (automated drug use review or DUR) developed as early as the 1980s, and pharmacists and general practitioners (GPs) in the region discuss pharmacotherapy almost monthly.²⁹ Pharmaceutical care per se was first described in 1993.³⁰ Pharmaceutical care standards were first established in 1996, and the scientific institute of the professional pharmacist organization (WINAP) chose pharmaceutical care as its focus for further professional development around 1997.³¹ In general, the comprehensive pharmaceutical care model is followed,³² although a number of disease-oriented projects addressing asthma and diabetes have also been implemented. Today, the delivery of pharmaceutical care is often included in contracts between pharmacies and health insurance companies, but remuneration is only very limited.

In the UK, pharmaceutical care has been linked to professional development and the quality control of medication use since 1991.^{33,34} Because the National Health Service (NHS) was interested in possible new roles for pharmacists, many studies have been carried out as to the opinions and needs of pharmacists and patients. Different practice options have been chosen, and, in addition to hospital and community pharmacy, consultant pharmacists (also called primary care pharmacists) are now

performing medication review in health practices.³⁵ Meanwhile, practitioners like pharmacists and nurses have been trained to do supplementary prescribing.^{35,36} Full-blown pharmaceutical care in normal pharmacy practice has been studied but hardly implemented.

Cognitive pharmaceutical services have developed in Germany since the early 1990s, mainly by the national pharmacist organization, the Federal Union of German Associations of Pharmacists (ABDA). The first paper on the topic was published in 1993,³⁷ and the first pharmaceutical care conference was held in Germany in 1994.³⁸ Several studies and programs have shown that pharmaceutical care and other pharmaceutical services are feasible in German community pharmacy practice, and that patients benefit from these services.⁷ A number of studies and implementation projects have taken place in Germany's separate federal states, coached by both the ABDA and Humboldt University in Berlin. In 2003, a nationwide contract was established between representatives of community pharmacy owners and Germany's largest health insurance fund. In this so-called family pharmacy contract, remuneration of pharmacists for the provision of pharmaceutical care services was successfully negotiated for the first time. In 2004 a trilateral integrated care contract was signed that added GPs and thus combined the family pharmacy with the family physician. Within a few months, the vast majority of community pharmacies (over 80%) signed up to participate in this program, but the real impact on practice is not yet clear. Limiting the opportunities for pharmaceutical care is the relatively old-fashioned education available to pharmacists; clinical pharmacy has only recently been introduced into the curriculum. Nevertheless, several other pharmaceutical care programs are ongoing, such as a certified diabetes counseling

program since 2002.³⁹

In some countries like Spain, the obligation of community pharmacists to provide pharmaceutical care has been laid down in legislation. This resulted from the activities of a foundation with its own pharmaceutical care journal and from a consensus (known as the Granada Consensus) about the essence of pharmaceutical care that was reached by the different organizations and people that were active in the field of pharmaceutical care.⁴⁰ This consensus has also led to a system of medication review and classification of drug-related problems.⁴¹ Although Spain has many community pharmacies, there is little pharmacy practice research. Some advanced cognitive services existed in 2005, but few were being remunerated.⁹

Portugal is an example of an integrated approach. Since 1999, the Portuguese pharmacist association (ANF) has developed a strategy, methods and tools (documentation forms, software applications, pharmacist's intervention protocols, etc.) for pharmacy-based disease management programs. While they are labeled "disease management," these programs are in fact counseling-oriented pharmaceutical care. Currently programs have been established for patients with asthma, diabetes and hypertension. Remuneration of the diabetes program was successfully negotiated with the government in 2004. All newer developments have been guided by extensive research efforts and many of the results were published in 2004 and 2005.⁴²

In Belgium, the Flemish pharmacist association made a priority of pharmaceutical care in 1994, and Haems published on pharmaceutical care in the Flemish pharmacist journal in 1995.⁴³ Even so, full development started relatively late. In 2005, the provision of pharmaceutical care became a legal duty for the community pharmacist.⁴⁴ Implementation

remains difficult in this country, because usually there is only one pharmacist per relatively small pharmacy.

Little information can be found about developments in France, as most French journals are not accessible in Internet databases and sometimes cannot be traced in libraries. In 2004, Dupin-Spriet and Wierre considered the possibilities for medication management review in France but concluded that there were very few initiatives at the time. The French *Ordre des Pharmaciens*, however, is doing its best to stimulate pharmacists to enhance continuity of care and implement more medication surveillance in their practices.⁴⁵

In Italy, where clinical pharmacy has been important since the 1990s, pharmaceutical care seems to be the domain of hospital pharmacy and does not have the same meaning as it does elsewhere in Europe. Little is known about the development of community pharmacy practice.

Polish pharmacists displayed their interest in the topic during their first pharmaceutical care conference in 2001, but members of Polish pharmacist organizations had been present at international conferences devoted to pharmaceutical care since 1997. The authors of this paper presented at another pharmaceutical care conference in 2005. The audience consisted mainly of academics, and it seems that the concept of pharmaceutical care has not yet penetrated practice.

It is difficult to get an overview of pharmacy practices in Switzerland due to the federal structure of the country and the four different languages spoken in it. Early activities developed in 1996, but they were aimed at reforming professional practice and creating opportunities for activities like pharmaceutical care. Although some form of remuneration has existed since 2001 (“Leistungsorientierte Abgeltung” or

LOA), it seems that only lately has implementation been enacted in both the German and French speaking parts. But the limited and regional implementation still seems to be largely associated with research efforts (as in diabetes, improving adherence, and quality circles).¹⁰

Pharmacist Education

In European practice, people who have received training in clinical pharmacy (usually pharmacists and sometimes clinical pharmacologists) have most of the knowledge and skills necessary to carry out pharmaceutical care—to analyze a given patient’s drug use; to prevent, detect or correct drug-related problems; and to improve therapeutic outcomes and hopefully QOL. In several European countries, however, having a pharmacy degree is not enough and a special qualification is required for the provision of pharmaceutical care. For instance, in Spain and Portugal, much emphasis is placed on post-graduate education.⁴⁶ In the UK, it has recently been recognized that participation in post-graduate education has a positive impact on the practice activities of community pharmacists⁴⁷ and so continuing education is bound to become obligatory.

In 2000, Bonal argued that changes in the pharmacist education were still necessary.⁴⁸ The European Association of Faculties of Pharmacy published several reports on how the curricula for basic education in Europe should be restructured to enable the provision of pharmaceutical care by pharmacists. In most European countries, clinical pharmacy is now part of the curriculum (Germany, for one, introduced the topic only in 2001).⁴⁹ In general pharmacists now receive a four-year education leading to the equivalent of the American MS, but the end terms are not the same. In other coun-

tries there is a requirement to do an additional two years, which then leads to a PharmD or equivalent title. In countries like Portugal and the Netherlands, mandatory registration (with or without an exam) leads to professional accreditation, and continuing education is compulsory.⁵⁰

Although journal publications about pharmacy education suggest that there is increased attention to patient communication and other pharmaceutical care skills, only a few international publications can be found about adaptation of the curricula. Van de Werf et al. have published on the reforms in the Netherlands.⁵¹ Sramkova et al. analyzed the necessary changes in the Czech pharmacy education.⁵² In Basle, Switzerland, pharmaceutical care became part of the official pharmacy curriculum in 2003.

The main problem in Europe from a pharmaceutical care perspective seems to be the lack of cooperation between pharmacists, medical doctors and nurses during their education, which leads to different professional cultures that inhibit cooperation during later professional practice. This gap is being addressed in a limited number of faculties now in the UK, Belgium and the Netherlands, which allow medical and pharmacy students to work together on pharmacotherapeutic issues in their final year.^{53,54}

Pharmacy Practice Research

Pharmacy practice research has been increasingly performed in European countries. However, there is still some conflict between sociologically-driven and laboratory-based approaches to the research field of pharmacy practice. This often results in a "living apart together" (LAT) relationship, to the detriment of funding options.⁵⁵ Pharmacy practice re-

search is especially prevalent in the UK, due to the availability of funding from the NHS.

Pharmaceutical care research in Europe focuses on different issues. There have been studies assessing patients' knowledge, needs and opinions about medicines and their attitudes towards pharmacists.^{56,57,58,59,60,61,62} All such studies indicate the limited knowledge of patients and their need for information and understanding. But it is still often found that patients prefer to receive that information from their doctor, and they hardly consider pharmacists care providers because they are unaware of their educational backgrounds. Patients also express privacy concerns.

The actual behavior of pharmacists with regard to pharmaceutical care has been assessed in different countries, using the Behavioral Pharmaceutical Care Scale (BPCS) among other instruments.^{63,64} In Denmark and the Netherlands, pharmacists' opinions about the provision of pharmaceutical care were also assessed.^{65,66} From such studies, it is clear that pharmacists are prepared to provide care and recognize its political necessity, but they still see many barriers in practice. In 2006 and 2007, a similar study will again take place in more European countries, coordinated through the Pharmaceutical Care Network Europe (PCNE).

In many pharmaceutical care intervention studies, pharmacists' opinions have also been assessed. For instance, in the PEER study it was found that most pharmacists liked providing pharmaceutical care but had difficulties finding time for it. In some countries the opinion of GPs proved somewhat reserved but never really negative.⁶⁷

Many studies concerning the outcomes of pharmaceutical care have been conducted, with different kinds of interventions and in different settings. Interventions range from

patient counseling and self-management training to periodic screening of pharmacotherapy for drug-related problems or pharmacotherapeutic discussions with GPs. Such practice studies do not always show positive outcomes because they are extremely difficult to conduct well and because evaluation of the impact on outcomes varies.^{68,69,70} In general, it is wise to be critical about the results of studies that are published in the field of pharmaceutical care. Often such studies are not conducted rigorously enough and the outcomes are poorly defined and assessed.⁷¹ The large range of studied outcomes in diabetes care, for instance, has been described in Storimans' dissertation, and the author concludes that it still is necessary for proper indicators to measure the impact of pharmaceutical care to be defined.⁷² In 2004, Wong et al. tried to design a rigorous and large study in the UK using the MCR framework and a health technology approach, but no results have been published to date.^{73,74}

Implementation Barriers and Facilitators. Of course, there are studies into implementation, its barriers, and its facilitators.^{75,76} Since time is said to be a major barrier, a limited number of work sampling studies were conducted.⁷⁷ Implementation, its barriers, and its (potential) facilitators have also been studied in a major coordinated European study in which several PCNE members took part (Denmark, Spain, and Portugal) along with Australia's University of Sydney. Not all results are published yet.^{78,79} Unlike in the United States, relatively few studies have been conducted concerning the financial aspects of pharmaceutical care implementation.

Research Support. Apart from the national bodies of community pharmacists, two organizations in Europe are especially active in stimulating the implementation of and research into pharmaceutical care. The PCNE (see www.pcne.org)

is a network of researchers in the field of pharmaceutical care that was established in 1995. Its members are researchers from many European countries, and researchers from other continents can participate as observers. Members discuss research methodology during a bi-annual working conference. Some international coordinated studies are carried out, sometimes with EU funding. EuroPharm Forum (see www.europharm.org) is a cooperative structure between European community pharmacy associations and the regional office of the WHO in Europe. EuroPharm focuses especially on the implementation of pharmaceutical care in normal community pharmacy practice. Its members discuss and study the process of and indicators for successful implementation.

Comprehensive Pharmaceutical Care

The effects of comprehensive pharmaceutical care have been studied especially in the elderly and nursing home populations of Europe. A major international study was conducted at the end of the 1990s, and the results were published in two papers.^{67,80} Commentary on economic evaluations was also a result of this study.⁸¹ The positive effects on outcomes were not as significant as expected and differed per country, but patients' satisfaction was high everywhere.

In France, a reference can be found to the implementation of an "opinion pharmaceutique" in community pharmacy practice, but results have not been described.⁸² There also has been a Czech study in community pharmacy.⁸³

In the Netherlands, Sweden, and the UK, some more fundamental research is ongoing

in the fields of drug use evaluation, indicators for inappropriate prescribing, and drug-related problems and their severity.^{84,85,86} Such studies can provide a more general view on the possible impact of comprehensive pharmaceutical care. A major problem in the Netherlands is the incompleteness of patient data in the electronic patient records of community pharmacies, even though most patients there visit the same pharmacy. Not all relevant diseases were always documented.⁸⁷ The Spanish way of detecting and classifying drug-related problems (the Dadér program) has been used for many years now in several countries, including Portugal. However, only preliminary results from Spain in 2002 and results from a small pilot study in a hospital can be found.^{88,89}

Disease-Oriented Pharmaceutical Care

It is considered easier for pharmacists and their staff to provide disease-oriented pharmaceutical care than comprehensive pharmaceutical care, but in Europe there is an ongoing discussion about whether it is ethically permissible to limit the provision of pharmaceutical care to groups of patients with certain characteristics and to not provide pharmaceutical care to others.^{90,91}

HIV/AIDS. Since (almost) full adherence is so important in the use of highly active antiretroviral therapy (HAART),⁹² it would be reasonable to expect that several pharmaceutical care studies would be conducted in this field. However, few can be found. One Italian study was published in 2004, but focused more on HAART provision than on pharmaceutical care.⁹³ There has been some research in Sweden on this topic, but the studies have yet to be published. Other care activities took place in

special dedicated clinics or hospitals, mainly in the US, but not with the involvement of pharmacists.

Hypertension. In general hypertension proves to be a field in which pharmaceutical care is useful. In 2001, Enlund et al. found in Finland that there is room for improvement in hypertension management and that many problems were caused by patients' behavior with medicines.⁹⁴ In Switzerland, adherence has been studied using the electronic medication event monitoring system (MEMS).⁹⁵ From that study, it is clear that "resistant hypertension" is usually caused simply by poor adherence. One study in France showed that patients needed counseling but that frequently community pharmacists themselves needed to update their knowledge.⁹⁶

Under the name "disease management," the Portuguese ANF has implemented a pharmaceutical care program for hypertensive patients. Earlier, Garcao had proved that such a program would benefit Portuguese rural communities. This research program resulted in significantly better blood pressure control.⁹⁷ A pilot study is now under way for sending SMS reminders to hypertensive patients in order to improve their adherence.⁴²

A pilot study in the UK showed that the implementation of a pharmacist-led hypertension clinic in a GP practice improved blood pressure control and appropriate prescribing of anti-platelet agents and statins for primary prevention of coronary heart disease and secondary prevention of atherosclerosis.⁹⁸ The results were not compared to a doctor-led clinic, but the applied interventions certainly resembled pharmaceutical care.

Coronary Heart Disease. Very few studies have been conducted in this important field. An early study of congestive heart failure in Northern Ireland showed that as a result of

pharmaceutical care patients significantly improved in their knowledge of their drug therapy and showed improved outcomes. Furthermore, the intervention group had fewer hospital admissions than the controls.⁹⁹ More research is needed into the exact role for pharmacists and pharmaceutical care in this field.

Diabetes. Studies of the effect of pharmaceutical care on diabetes were carried out in several countries. In Portugal and Germany, a diabetes service has been implemented.^{42,100} Wermeille et al. developed a pharmaceutical care model for Type 2 diabetes in Switzerland.¹⁰¹ Storimans focused on the support for self-management in the Netherlands and found that there was significant variation in the services offered by different pharmacies.⁷² Many pharmacies in the Netherlands now provide support for self-monitoring and check blood-sugar meters regularly.^{102,103} In some countries like Belgium or Switzerland, screening studies have been carried out to detect latent diabetes patients.¹⁰⁴ Diabetes clearly is a field in which pharmaceutical care is valuable.

Lipid Management. Most studies into lipid management in Europe are parts of other pharmaceutical care research into conditions like diabetes or hypertension. But the LipoPharm study in Germany found a positive impact on the lipid level and profile in 60% of patients – 50% more than without the intervention.¹⁰⁵ General implementation of the protocol in Germany is now being advised. In Groningen, reminder letters were used to try to improve adherence to cholesterol or hypertension medication.¹⁰⁶ The intervention was only partially effective, and larger studies are now needed.

Asthma. Many studies into the effect of pharmaceutical care for asthma patients in community pharmacies have been conducted in a number of countries, including Denmark, Finland, Germany, Malta, Northern Ireland,

the Netherlands and Spain. Often the therapeutic outcome monitoring (TOM) approach of Hepler was used. Most studies were successful and showed significant impact on economic, clinical and humanistic outcomes, although all those studies had their weaknesses.^{107,108,109,110,111,112,113,114} Other counseling-based approaches were also successful.¹¹⁵ Like diabetes, asthma thus appears to be a disease to which applying pharmaceutical care can be very successful.

Pharmaceutical Care in the Hospital Setting


Patient-centered clinical pharmacy services are still poorly developed in most of Europe (with the exception of the UK), despite their demonstrated advantages in North America.¹¹⁶ With a few exceptions, most hospital pharmacies and pharmacists focus on managerial issues to prevent medication errors and not on care provision to detect and deal with drug-related problems. Apart from general disease and medicine oriented counseling, the main focus of pharmaceutical care in the hospital setting should be on seamless care issues: patient transfer to and from hospital, clinic or nursing home. Studies on this topic have been published in the UK, Northern Ireland and Sweden.^{117,118,119}

There still proves to be an important communication barrier when patients are being transferred from one setting to the other, resulting in many drug-related problems. Patient education before discharge, as part of comprehensive pharmaceutical care, has been studied in a clinic in the UK.¹²⁰ Counseling was shown to decrease unplanned visits to the doctor and re-admissions. Pharmaceutical care, like clinical pharmacy services, was piloted in a geriatric

team in a Belgian clinic, and many drug-related problems were detected and solved.¹²¹

Future Developments

Throughout Western Europe, many studies have been performed in different fields related to pharmaceutical care. However, implementation on a large scale still appears to be lacking, despite the positive outcomes of most studies. Because many pharmacists' associations seem to have committed themselves to implementing pharmaceutical care and pharmacy faculties also have recognized the importance of the topic, it may be expected that there will be more and more pharmaceutical care in pharmacies in the future. However, in addition to reforming the attitude, knowledge, and skills of pharmacists, there also must be some form of remuneration for their provision of pharmaceutical care.

In the mean time, the pharmacy and pharmacist associations should make sure that pharmaceutical care (or medication management or whatever it is called) does not develop into an empty phrase, merely meaning "being nice to the patient." Someone in the health care chain should detect, prevent, or correct drug-related problems. Pharmacists in Europe seem to be in the best position to do this. Pharmaceutical care should therefore become an integral part of the pharmacy profession and of good pharmacy practice. 

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