

INFORMATION FOR PHARMACEUTICAL CARE

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1. Introduction

Pharmaceutical Care is recognised as a prominent activity within a healthcare system. It is a structured, systematic and documented type of pharmacy practice. The aim is to achieve rational and evidence-based pharmacotherapy which is beneficial for each patient and for the society. The European Commission (EC) has started with two important projects "Health Online" and "Health and Consumer Protection" which will change the patients' role in health systems. EC is planning to develop a comprehensive and authoritative information system which will provide reliable and up-to-date information on key health-related topics which can be disseminated using the Internet. The system will provide data not only for health professionals and health authorities, but it will also produce specific information for patients and the public as a whole to help make informed choices about their health. It is expected that well-informed patient will still need a lot of professional advice for making a proper decision. "Declaration on the promotion of patients' rights in Europe" is also a document that develops, and supports new thinking in the health care process where everyone has a right to receive such a health care as is appropriate to his or to her health needs.

The paper discusses the importance of high quality and unbiased information sources for pharmacotherapists who provide pharmaceutical care as well as the importance of Drug Information Centre (DIC) which is a platform for knowledge sharing on rational and evidence-based pharmacotherapy.

2. Pharmaceutical Care - future role of pharmacists

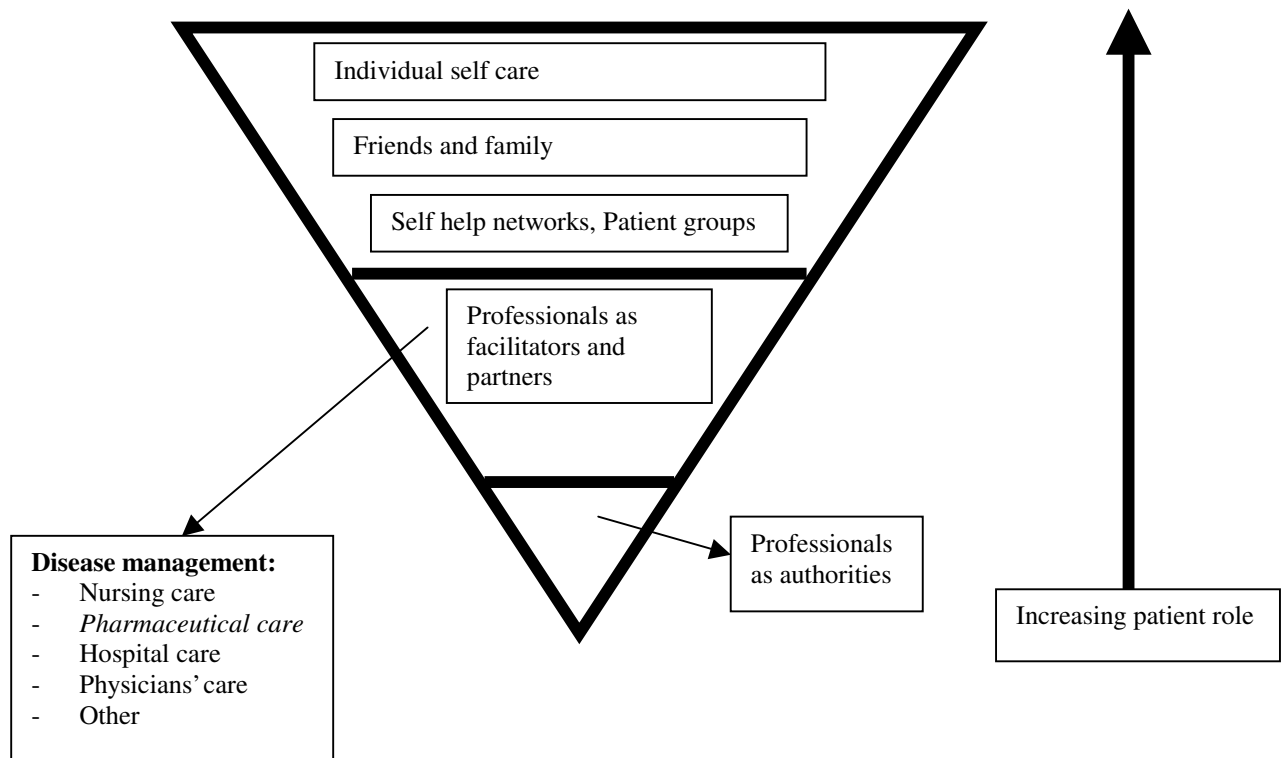
Pharmaceutical Care is defined as the responsible provision of drug therapy to achieve definite outcomes to improve a patient's quality of life. Pharmaceutical Care is a health care need associated with any drug therapy and is a shared responsibility for professions in contact with drug therapy. Thus, Pharmaceutical Care is a responsibility for pharmacists and a key area in developing the professional role based on health care needs. This definition is given in a statement of Pharmaceutical Care Network Europe (PCNE) where 17 European countries (including Slovenia) are members.

The term "Pharmaceutical Care" is defined differently in each country because of different linguistic and cultural influences. After more than twenty years of evolution of pharmaceutical care, it is clear that pharmaceutical care is a form of professional care,

like nursing care or medical care, and therefore the core roles of the patient and the provider are vital (1). The safe and effective use of medicines is ensured by mutual co-operation between patient and pharmacist. Dialogue between them is carried out in good faith and patient is compliant to pharmacotherapy. Empowering the pharmacist's role is one way that the pharmaceutical profession will add value to the healthcare system. In some countries pharmacists have already developed evidence-based treatment guidelines, deliver patient care through clinic programmes, as well as managing and measuring outcomes in disease management programmes (18). Professional communication among pharmacists and physicians is vital in a process of pharmaceutical care.

The information society is going to change the role of pharmacists. There is a scenario where an "Information age health care" will invert the traditional pyramid of "industrial age health care" where people have a minor role in comparison to healthcare professionals. In the "Information age health care" professional care will be viewed as the support to a system that will be led by self-care awareness of consumers. (Fig 1) Healthcare providers will progress in the information age from managing diseases to promoting health, and they will do this through lifetime plans that are built on intimate and detailed knowledge of consumers (19). Declaration on the promotion of patients' rights in Europe (20) leads to this direction. European movement promotes and protects the rights of patients and their professional providers and advisers. Pharmaceutical care fulfils this process because it is the structured, intensive care by the pharmacists for an optimal pharmacotherapy in which the patient and his/her condition are the primary concerns. The aim is to obtain optimal health related quality of life (Dutch definition of Pharmaceutical Care) (1). The implementation of pharmaceutical care demands compilation of pharmaceutical knowledge with drug information skills. Pharmacists have to learn philosophies of drug information practice and to improve their skills to define patient's drug information question, to define high quality information sources, carefully formulate a recommendation and effectively communicate with a patient. Good Drug Information Practice has to be applied by pharmacists who provide pharmaceutical care. The term "pharmaceutical care practitioner" or "pharmacotherapist" is used for these pharmacists. It is assumed that pharmacotherapists will have a leading role in pharmaceutical profession in future.

Fig 1: **Information age health care** (BMJ, 29 May 1997, p.1496)
 (Author of this article makes additional comments)



3. Pharmacotherapists versus dispensing pharmacists

Dispensing pharmacists, who now spend nearly the 73% of their working time for processing orders and prescriptions, will have to change their field of work and put a lot of effort to become independent consultants for rational and evidence-based pharmacotherapy (2).

Pharmacotherapists, not pharmacies, provide pharmaceutical care. In other words, independent pharmacies dispense drugs while independent pharmacotherapists provide pharmaceutical care; they are patient oriented. Ideally, these two activities should coexist compatibly. Perhaps, in future, we need pharmacies to dispense fewer medications and pharmacotherapists to provide more pharmaceutical care (2).

At present pharmacists may not be enough recognised as medication therapy experts. But there is a slow increase in pharmacists - who work as pharmacotherapists and charge separate fees for providing pharmaceutical care. Under the business of pharmaceutical care, the pharmacists should focus on the selling of services that may even preclude the sale of a medicine. It is expected that pharmacotherapists will become patient advocates in future and patients will benefit from the best medication management. Pharmacotherapists should also work together with patients and the society in controlling medicines costs.

Lack of time and lack of money are major barriers for the implementation of pharmaceutical care in European countries (11); important barriers have also been

identified in the educational domain. More and/or better education of European pharmacists in the field of clinical pharmacy, communication skills, documenting skills and management skills are therefore necessary. Co-operation between countries in trying to eliminate the barriers for pharmaceutical care could provide a way forward and pharmacotherapists' role will be well recognised in the society.

4. Pharmaceutical information - a key subject of the pharmaceutical care

Knowledge on drug information can solve many therapeutic problems and make the best decisions about the pharmacotherapy of patients; the knowledge and skills that are required for pharmacotherapist are listed as follows:

- Medication use evaluation and awareness of complexity of pharmacotherapy (consultations with physicians, pharmacologists, clinical pharmacists etc.)
- Permanent education in pharmaceutical science and new developments on pharmacotherapy (using various kinds of scientific literature).
- Critical evaluation of medical literature and interpretation.
- Pharmaceutical care practice with evidence of the whole process or service that means to create databases on own experiences.
- Use of modern information and communication technology (ICT) for storage, retrieval, analysis, and distribution of information
- Skills on verbal and written communication.

Pharmacotherapist has to be an expert on pharmaceutical information management to achieve Best Practice in rational drug therapy .

5. Drug Information Centre as the primary information source for health care professionals

Pharmacotherapist should have an access to information sources of the nearest Drug Information Centre - DIC (21) and it also includes an access to databases that are produced in DIC upon own experiences.

Clinical practice guidelines provide authoritative information about the use of medications. But each patient should have a possibility to ask for advice for his specific case on pharmacotherapy.

Drug information centre forms a platform for exchanging own experiences about pharmacotherapy and knowledge on medicines. Pharmacologists, clinical and hospital pharmacists ensure the high quality of professional work in DICs. Special databases are created and knowledge sharing is promoted within each community and within a network of Drug information centres in each country.

DICs can help redress the imbalances between the availability of new effective, but inevitably expensive, drugs and the increasing financial pressures on the health care system. There is a gap between the existing knowledge that could be usefully applied to daily life and that knowledge which is actually applied. This statement is very true also for a rational drug usage and successful drug therapy.

In Europe DICs have good working results in the field of rational and evidence based pharmacotherapy and we can summarise the following items:

- European DICs started in eighties.
- Professionals in DICs develop and promote the rational and appropriate use of medicines by the individual and by the society.
- DICs are usually located in a separate room near hospital pharmacy
- Good Information Practice is fundamental for DICs and it includes adequate information sources, evidence-based working procedures or standard operating procedures – SOPs, continuing education of professionals, creating own databases, exchanging information within a professional network etc. (15).
- A network of local Drug Information Units (co-ordinated by the national DIC).
- Other activities: good communication with other professionals (e.g. in medical departments in pharmaceutical industry): publishing a journal, making a good internet homepage etc.

Knowledge on drug information should be shared among professionals because only through own experiences best practice on pharmacotherapy can be provided and medical errors can be avoided (17). An international list of Drug information services can be found on various internet sites e.g.: www.umt.edu/druginfo/linklist.htm, www.shpa.org.au/druginfo/irdis.htm

6. Medical and health libraries

Pharmacotheapist has to search and evaluate various information sources and compare the contents (13). He/she has to search databases (online, on disc, web) and study special, independent literature - published by medical and pharmaceutical professionals as well as scientific information from pharmaceutical industry. Factors such as clinical trial evidence and improved drug characteristics were said to be the most influential in reaching decisions to prescribe new medicine (9). Pharmacotheapist has to study drug monographs and scientific literature sponsored by pharmaceutical industry as well as other results from practice published in medical journals (8). The cost of various high quality information sources is too high and pharmacotheapist has to be in contact with a medical or health library that has to pay attention on information sources for clinical pharmacy and pharmaceutical care, too

6.1. The core literature

- Drug information monographs: Martindale, Drugdex-Micromedex , Physician Desk reference, Mosby's Drug consult, Gelbe liste, Vidal, Drug Facts and Comparisons, USP DI - United States Pharmacopeia - Drug Information, Drug Interaction facts, AHFS - American Hospital Formulary Services, British National Formulary – BNF, etc.
- Databases: Medline, Embase, Inpharma, Reactions, Adverse drug interactions program, IDIS (Iowa Drug Information Service), MD Consult, Cochrane Library and very important Micromedex Healthcare Series databases such as Diseasedex. There are integrated information about evidence-based, current disease information written by clinicians and information about drugs, pharmacotherapy, toxicology, dosing, about interactions among drugs as well as with food, patient education, etc. Another Micromedex database is Alternative Medicine that covers medicines for self-

medication as well as herbal medicines. Micromedex databases are of valuable assistance but the prices are high. It is hard to understand that for such an amount of money nothing can be purchased. When subscription stops users remain without any back file.

- Scientific documentation from pharmaceutical companies: Summary of product characteristics - SmPCs, Patients leaflets, promotion material on drugs and other medical and pharmaceutical information.
- Journals (e.g.: The Annals of Pharmacotherapy, Pharmacist's letter - printed by Therapeutic Research Centre, USA, Prescrire - France, Bandolier - UK, Adverse Drug reaction bulletin, INRUD (International Network for Rational Use of Drugs also available on Internet: www.msh.org/inrud/), The Medical Letter, etc.

6.2. International Society of Drugs Bulletins (ISDB) (8)

ISDB supports national journals that bring out health professionals' own experiences on drug. There are some titles of ISDB journals: Bandolier and MeReC in UK, Farmakon in Slovenia, Prescrire in France etc.

The International Society of Drug Bulletins promotes the publication of good quality independent information about drugs and therapeutics to health professionals and the public in all countries. It is the independent association and patients and the public rely on the professionals who ensure that their best interests are upheld. The ISDB Declaration puts the needs of patients and professionals first, and aims to define "therapeutic advance" in terms of "comparative advantage". Patients' needs include both individual and collective needs of population. Besides efficacy and safety, convenience of medicines is also important. Convenience includes ease of use of medication and related devices, as well as reliability of packaging.

Honest information on new drug interventions depends on the balance of power between the parties involved: the public, health professionals and their information providers, health policy makers and regulatory authorities, organisations paying for medicines, and the pharmaceutical industry.

The use of sources of independent comparative drug information should be widely promoted. Initial and continuing medical education on medicines should be carried out independently of the pharmaceutical industry.

Journalists, editors and publishers should be encouraged to check their sources with impartial and informed experts, to avoid being unwitting agents of commercial campaigns related to health. This has become topical with current pressure for the relaxation of the ban on DTCA.

ISDB cooperates also with professionals in Drug Information Centres in each country and with producers of Formularies in hospitals. ISDB always tries to access always high quality information.

There are 10 countries that are active members of ISDB (Slovenia is also among them). Independent bulletins (ISDB) are well known journals among the professionals of each country. These journals are not international journals but they bring together all relevant international health information on drugs and own experiences.

7. Internet - a key information source for everyday practice

There are huge amounts of health information sources on internet; more than 70,000 Web sites contain health information, which creates problems for patients who may be faced with equal amounts of good information and misinformation. (3)

Use of Internet should be considered a standard feature of every pharmacy practice.

Pharmacotheapist must know the criteria about a high quality of Internet sources. E.g.: sites with a sigh HON (Health On Net) are among the best quality sites. Medically trained and qualified professionals give any medical or health advice provided and hosted on this site. At http://www.hon.ch/070_wrapin.htm there is a description of a project WRAPIN - Worldwide online Reliable Advice to Patients and Individuals. The Medline is the most essential source (PubMed) and HON plans to connect specialised databases from all over the world (HON will evaluate databases of medical professional organisations and national registries and it will put them into full production world-wide)

Pharmacotheapist can usually rely on a few well known free of charge Internet health information sources like <http://www.lib.uiowa.edu/gov/>, DIZone <http://www.druginfozone.org/>. From those sites there are many links to others sources (16).

7.1. Internet - an excellent media for Patient groups

Internet is an excellent tool for "Patient groups" who come together on a specific site and exchange experiences in various diseases and pharmacotherapies; e.g.: in the UK there can be found a directory of organisations which provide information, guidance and support for patients or a wide variety of diseases and conditions (7). Users learn how to assess the credibility of a site and they look for the high quality of drug information, a professional design, and a variety of other criteria (10,12).

Pharmacotheapists can learn about medicines from the Patient groups' web sites, too. Health professionals are no longer seen as infallible. Patients are keen to be involved in their health, a distinct change from system where the medical professional was treated as omniscient. Empowered patients are emerging in the technology-rich environment. They also know why they have to take medicines and are more likely to be compliant. They learn a lot about medicines from information sources but because of difficult subject they ask physicians and pharmacists for additional advice, explanation and recommendation. It is expected that a demand for a professional advice will increase and pharmacotherapists within a pharmaceutical care process will be recognised as a profession who will offer the new service and the likely financial return should be estimated.

8. Pharmaceutical industry and its high quality information on medicines

8.1. Scientific literature

Pharmacists are trained to examine the data and make evidence-based recommendation. This professional activity becomes more and more important because

of overload of health information. Evidence based health care involves deriving focused questions from clinical problems, searching and appraising the evidence, and applying the knowledge in practice. This also includes in-depth study of scientific literature - provided by pharmaceutical companies.

Pharmaceutical companies provide regulatory agencies of each country with huge amount of scientific information. A lot of this information is public available e.g.: Summary of Products Characteristics (SmPCs) and patient information leaflets (PILs). In Slovenia this kind of information is available on www.zdravil.net (password is needed). Pharmaceutical companies also have high quality Internet sites - special sites for health professionals and special sites for public. Clinical and hospital pharmacists as well as pharmacotherapists have to communicate with Drug Information Officers in pharmaceutical companies on specific scientific information on drugs.

8.2. Direct-to-Consumer Advertising (DTCA)

DTCA of prescribed medicines is another kind of drug information that has to be evaluated by pharmacotherapist. DTCA means a provision of high quality information of brand medicines via TV, Internet and printed media (4). People are targeted with brand names of medicines and they ask their doctors and pharmacists about the advertised medicines. Patients become more and more educated but sometimes they are confused and they like to ask professionals about medicines.

DTCA is going to target healthy people and patients more and more (3, 6). The USA and New Zealand have experiences in DTCA and EUR 2.9 bn were spent on DTCA in the U.S.A. last year (5). Americans on average see nine prescription drug advertisements a day on television. At present in Europe DTCA is allowed for three diseases areas: AIDS/HIV, diabetes, and asthma - for a 5-year period followed by a review. It is expected a relaxation of DTCA in Europe, too (3).

There are some negative and positive opinions about that.

The negative opinions are the following:

- There is a fear for medicalisation of normal conditions like ageing, childbirth, unhappiness, pregnancy, loneliness, etc. (5).
- People will perhaps be confused with abundance of drug information.
- There is a kind of fear that unbiased information can not be provided by physicians who are involved in clinical trials - sponsored by pharmaceutical industry .
- Marketing studies are made which advice pharmaceutical industry how to reach patients via DTCA and how patients can influence their physicians asking for an advertised drug - more or less adequate for their illness.

The positive opinions are the following:

- DTCA is a possibility of public health education - especially for high incidence diseases (HIV/AIDS, hypertension, asthma etc) which are underdiagnosed and undertreated.
- DTCA information can offer patients to learn about diseases and brand name medicines; it is good for patient's compliance to pharmacotherapy.

However, DTCA enables people to be well informed about medicines via public media. In Europe guidelines are prepared for medicine promotion (3), which will protect the interests of European citizens. It is expected that pharmaceutical companies will submit the information they wish to distribute to a special agency. The main point is that

pharmaceutical companies will be able to offer information about their products only if they receive a request from a patient or patient groups.

8.3. "Treatment algorithms"

"Treatment algorithms" are highly sophisticated studies that are made specially as a marketing tool for pharmaceutical industry. Such studies give in-depth analysis about disease management in specific countries (e.g.: the U.S.A. and European countries) are made and reported (14). In each country more than 30 physicians' interviews are studied and the reports have the following topics:

Epidemiology of disease, presentation of disease, diagnosis, treatment patterns, treatment outcomes, co-morbidities, cost of treatment, unmet needs and future disease management. These treatment algorithms are studied and experiences on pharmacotherapy are shared among professionals.

Treatment algorithms are useful for pharmaceutical companies as well as for health professionals who study various kinds of medical treatment protocols that are different from country to country.

9. Pharmaceutical care in Slovenia and information sources

(a brief overview)

Pharmacists in Slovenia are very busy with dispensing of medicines. There is a comparison between Slovenia and Europe regarding dispensing of prescriptions:

Slovenia: 1 pharmacist for 22,500 prescriptions

Europe: 1 pharmacist for 10,000 – 15,000 prescriptions

In spite of heavy work with dispensing, Slovenian pharmacists have started with a few Europharm Forum projects on pharmaceutical care:

- Ask about your medicine
- Diabetes care
- Antihypertensive care
- Asthma care

Projects are properly prepared and results are recorded. Till now it has been reported that many diseases were detected with people in the preventive stage. These projects are not finished but yet these results contribute to public health a lot.

There are also projects which will start later: Quit to smoke, Care for elderly and HIV/AIDS.

Various information sources - provided also by international providers - are available in Slovenia through medical libraries and various institutes. Availability of scientific information in Slovenian libraries is on high level. Electronic access to these library sources is ensured by co-operative online catalogue (Co-operative Online Bibliographic System & Services – COBISS)

DIC and a network of local, hospital DICs is a missing chain and because of lack of proper decision on establishing of DIC, there is an obstacle in professional development of clinical pharmacy in practice. The expenses for medicines grow every year (22) and rational prescribing would be essential. The working area of DIC is also cost effective pharmacotherapy - especially in hospitals. Hospital Formularies are recognised as an excellent tool. DIC should also provide a good platform for preventing of medication errors because medication errors can be prevented only by application of pharmacotherapy for each patient - especially for patients in hospitals.

Patients in Slovenia are encouraged to ask pharmacists about medicines via Internet (e.g.: www.e-lekarna.net) or learn from the web pages of pharmacies e.g.: www.lekarna-zalec.si, www.lekarna-lj.si/nasveti.htm etc. Good quality information sources for specific diseases are also on home pages of Slovenian pharmaceutical firms (www.lek.si, www.krka.si) and on the health web site www.jupsline.com. Public Health Institute provides health information on a site www.ivz.gov.si and specific drug information is provided by Agency for Medicinal Products and Medical Devices via internet www.zdravila.net. Above information is available to professionals and it requires subscription. In Slovenia there is a "Centre for Drug Information" within a network of community pharmacies in Ljubljana. A pharmacist - highly specialised in drug information - is responsible for drug information service within community pharmacies.

However, Slovenian pharmacists have started with pharmaceutical care (23) and it is evident that this is the right direction. We can expect the increasing usage of information sources for support of evidence-based pharmacotherapy and increased need for Good Drug Information Practice implementation to pharmaceutical practice.

Summary

Pharmaceutical care is emerging professional area which provides patients with the best practice in pharmacotherapy, that is, drug efficacy, safety, quality, and rational cost. It is a part of health care. Pharmaceutical care is a process that include Good Information Practice. High quality and unbiased drug information sources have to be studied and implemented into practice. Own experiences in pharmacotherapy, and pharmacists/physician professional communication are essential. With growing analytical input of drug information there is an increase in utility to decision-making for pharmacotherapy - adequate for each patient. Promotion of patient's rights in Europe will bring changes in the health care process. Pharmacotherapists - providing Pharmaceutical Care - will be recognised as professional facilitators and partners who have a knowledge to identify medicines use problems, and strategies to improve medication use.

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