

# 8

## THE CHANCES FOR PHARMACEUTICAL CARE

In community pharmacy around the world there is a role for the pharmaceutical care although there are some barriers for its implementation, as described in previous chapters of this dissertation. Especially the community pharmacy section of the International Pharmaceutical Federation (FIP) has advocated pharmaceutical care as a new role for pharmacist. In 1996 FIP itself secured that role in its joint statement on Good Pharmacy Practice (GPP) in community and hospital practice settings, together with the World Health Organisation (WHO)<sup>1</sup>. Currently that new role is more obvious in some countries than in others. How do different aspects of pharmacy practice enable or hinder the introduction of pharmaceutical care in a country and how much is actually happening? Do the barriers, found in the previous chapter, really inhibit the implementation of pharmaceutical care?

In this chapter it is analysed if some practice aspects, probable preconditions to the provision of pharmaceutical care in community pharmacy, are present in various countries around the world.

### 8.1 INTRODUCTION

This analysis is a result of the data obtained from an international survey conducted together with the community pharmacy section of FIP. The survey was performed to investigate the international differences in pharmacy practice, possibly affecting the chances for the implementation of pharmaceutical care. Countries with a good chance of introducing and promoting pharmaceutical care into daily community pharmacy practice are identified in this chapter.

In 1997 a questionnaire was sent out to the national boards of community pharmacist organisations in co-operation with the community pharmacy section of the International Pharmacy Federation (FIP) on different aspects of pharmacy practice<sup>\*</sup>. The responses resulted in the FIP-database. For this part of the dissertation, information from the FIP-database is used together with information obtained from published literature.

Developments of pharmacy practice in most countries, especially in the developed world, follow roughly the same line as the one described in Chapter 2. However, it is not always clear yet if the paradigm shift in other countries has now recognised the patients' role in the work of the pharmacist. According to the results of our international questionnaire, the definition used in several countries is the one from Hepler and Strand, in which the main attention is on improving the medical outcomes of pharmacotherapy and quality of life<sup>2</sup>. But looking at literature the interpretation of the definition shows variations. This is not

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<sup>\*</sup>The research team greatly appreciated the help of Mrs. Bente Frøkjær and Mrs. Helle Scheibel in piloting and processing the questionnaires

unusual since even in the USA, the cradle of the term pharmaceutical care, it is being interpreted in different ways, either as a practice form of clinical pharmacy<sup>3</sup>, as a process of improving the drug use process<sup>4</sup> or as a pharmacy practice philosophy<sup>5</sup> (see also Chapter 1). However, the latter interpretation where, apart from outcomes, commitment and words of comfort also play an important role, has only recently received attention.

From the previous chapters it will be clear that there is a Dutch concept of pharmaceutical care (Farmaceutische Patiëntenzorg, FPZ), being: 'The care for the individual patient by the pharmacy team in the field of pharmacotherapy, aimed at improving the patients' quality of life'<sup>†</sup>. The core issues describing the Dutch pharmaceutical care are: avoiding drug related morbidity, continuity of care or 'monitoring', shared responsibility with patient and general practitioner, continuous documenting, the individual patient at the centre of attention and a clear starting point for the patient (intake). Since giving patient information and medication surveillance were already in place, these aspects do not receive much attention in the Dutch definition. This definition was the basis for the project described in Chapter 7, and the analysis in this chapter.

One can question if pharmacists in different countries can provide this form of pharmaceutical care or if there are major structural barriers in pharmacy systems, education or legislation limiting their possibilities.

Based upon the barriers found in the previous chapter, certain requirements for the process and especially the structure for the provision of pharmaceutical care can be formulated for the pharmacist, the pharmacy team and the pharmacy itself. Some major requirements are (in random order): up to date knowledge about diseases and drugs, continuity of involvement in the patients care and commitment to the patients' situation, communicative skills, the trias time-space-money, a structure in planning and/or protocols, a professional attitude and the use of (automated) medication surveillance or medication review.

In Chapter 7 it was found that pharmacists conceived money as the major barrier for delivering pharmaceutical care in practice. Since time, space and money are interrelated, these three primary factors, which are actually common barriers for any new project in an organisation apart from the individual willingness to change, can be translated into following, more practical indicators:

- the workload of pharmacists and staff;
- the available space in the pharmacy;
- the financial situation of pharmacies.

However, there are some other factors that obviously influenced the possibility of delivering pharmaceutical care. Such secondary factors, more specific to pharmaceutical care, are:

- the education of pharmacists (and their staff);
- the proportion of patients visiting the same pharmacy as a factor indicating the possibility of continuity of care;
- the presence of computerised medication surveillance, which makes the necessary continuous drug use review easier;

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<sup>†</sup> Definition WINAp, Dutch Scientific Institute for Pharmacy Practice

- the quality of the relationships with physicians to enable exchange of information and change of therapy;
- communication skills being part of the (university) curriculum, since communication is essential for pharmaceutical care.

Less important and not mentioned in Chapter 7, but perhaps significant, are the following tertiary factors:

- the possibility to perform clinical laboratory tests in the pharmacy;
- customised labelling, which is almost a demand for correct use of the drug by the patient<sup>‡</sup>;
- the possibility of delivering patient information leaflets to strengthen the counselling;
- the possibility of opening packages and dispensing only the appropriate amount of drug which tailors pharmacotherapy to individual circumstances.

## 8.2 METHOD

To get an impression of the mentioned practice aspects in different countries, a questionnaire was prepared in co-operation with the community pharmacy section of FIP. (see Appendix 4 to this dissertation). The questionnaire was piloted in December 1996 in 7 countries, adapted and then distributed in September 1997 to the national pharmacist association of 44 member countries of the FIP community pharmacy section. The data obtained were entered into a SPSS, Version 7.5 database.

The major aspects per country were compared as a means of identifying countries where the development of pharmaceutical care has a good chance of succeeding.

To help compare the means of the total available data with data from individual countries, a number of scatterplots were prepared. Bivariate linear regression was performed and 5% limit around the means using SPSS. Points outside the 5% limits were considered to be outliers, i.e. countries that are significantly different from the majority of other countries in that aspect. The Pearson's correlation coefficient ( $r_p$ ) was calculated. Other data were compared to the mean.

In order to obtain an estimate of the approximate population per pharmacy, the population of the country was divided by the number of pharmacies. This figure was then corrected by the appropriate percentage of the turnover through others (dispensing physicians, hospitals, and nurses). For each relevant item a simple scoring-method was used.

## 8.3 RESULTS, THE CHANCES FOR PHARMACEUTICAL CARE

The centre received questionnaires back from 30 countries (Table 8-1). The response rate was 68%. Most countries in Asia and Eastern Europe did not reply. The returned questionnaires contained information on the local circumstances of pharmacy practice in the different countries, but the data have not been validated. In some cases remarkably simple but crucial data were not provided, especially in the field of economics. Nevertheless the results of the questionnaire give a reasonable insight into the situation in Western Europe and North America. In South America there are currently no institutional FIP members.

<sup>‡</sup> An inventory on customised labelling in pharmacies around the world is under way, initiated by the International Pharmaceutical Federation

The low number of African countries who are members of FIP limits the view on pharmacy practice on that continent.

Table 8-1 Responding countries to RUG/FIP questionnaire and identified projects

Country	Continent	Country	Continent
Austria	Europe	Poland	
Croatia		Portugal	
Denmark		Spain	
Finland		Sweden	
France		Switzerland	
Germany		Japan	
United Kingdom		Korea	
Greece		Canada	
Hungary		United States	Africa
Iceland		Eritrea	
Ireland		Ghana	
Italy		Kenya	
Luxembourg		Nigeria	
Netherlands		Zimbabwe	
Norway			Australia

### 8.3.1 Primary factors

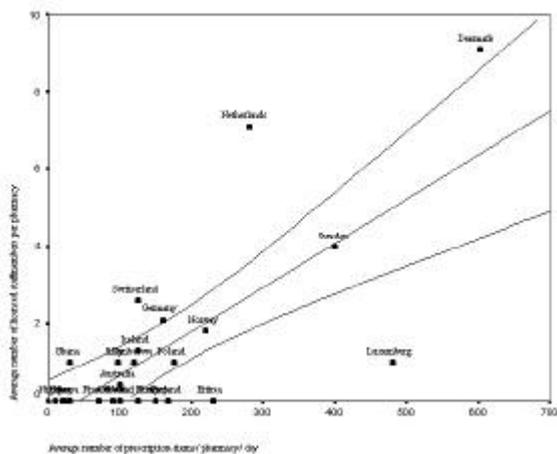
#### *Workload of pharmacists and staff*

To obtain some information about the differences in workload in the pharmacy, as a measure for time, we calculated from the available data the average number of prescriptions per day per licensed staff-member and the number of patients served per pharmacy per staff-member per day. For both parameters the regression line was calculated and we identified the outliers outside the 95% confidence interval around the regression line. From our data ( $r_p = 0,78$ , see Figure 8-2) it is clear that Luxembourg, Eritrea, and Finland dispense relatively higher number of prescription items per licensed team-member than average. Denmark, Ghana, The Netherlands and Switzerland, and dispense a relatively lower number<sup>§</sup>.

The number of patients served per day per pharmacy staff-member (licensed and unlicensed) has also been analysed. The data ( $r_p=0,62$ ) show that Eritrea, Sweden and Hungary have relatively high number of customers per staff-member than average while Kenya, Nigeria, The Netherlands and Australia have a relatively low number<sup>\*\*</sup>.

<sup>§</sup> No data available from Austria, Greece, Ireland and Portugal

<sup>\*\*</sup> No data available from Austria, Canada, Denmark, Greece, Ireland, Norway and Poland



Graph 8-2 Number of prescription items versus licensed team members per country

### Available space in the pharmacy

To get an impression on the use of the space in the pharmacy, the average space per pharmacy per country was plotted (in a similar way as the previous paragraph) in relation to the average number of daily customers ( $r_p = 0,68$ ). Pharmacies with less space on average per customer can be found in Eritrea, Ghana, Italy, Korea and Kenya. In Australia, Germany, Iceland, The Netherlands and Switzerland there is more space per customer than average, but the correlation is somewhat weak<sup>††</sup>.

### Financial situation of pharmacies

In the questionnaire the average annual turnover in US\$ per pharmacy per country was asked and from this data a very rough impression can be obtained of the cost level, if the average turnover against the total staff is plotted. This technique has not been applied for African countries because of large differences in standards of living. The remaining countries show a very close relationship between those parameters ( $r_p = 0,89$ )<sup>‡‡</sup>.

Pharmacies in Iceland, Norway and the USA have a much smaller team in relation to their turnover (and probably lower costs) when compared to for instance to Australia, Sweden and Poland, that have a relative large team compared to the turnover.

## 8.3.2 Secondary factors

### Education of pharmacists (and their staff)

The mean duration of university education for pharmacists in the studied countries was 4.6 years, but a university education of less than 4 years can be found in Zimbabwe and Australia

<sup>††</sup> No data available from Austria, Canada, Denmark, Great Britain, Greece, Ireland, Norway, Poland and the United States.

<sup>‡‡</sup> No data available from Austria, Canada and Great Britain.

(both 3 years). A university education of more than 5 years can be found in Finland, the USA (both 5.5 years) and France (6 years).

The average age for graduation is 23.7, but in Great Britain, Japan, Korea, Nigeria, Zimbabwe and Australia pharmacists are relatively young (<23) when they graduate from university (see Table 8-3).

*Table 8-3 Countries with the lowest ages of graduation*

Country	Age of graduation
Australia	22
Great Britain	22
Japan	22
Korea	22
Nigeria	22
Zimbabwe	21

In Austria, Finland and Iceland, pharmacists are relatively older (26) when they graduate.

In some countries additional training is required before a licence to practice can be obtained. Usually this training lasts 1 year after graduation from university but there are differences (see table 8-4).

*Table 8-4 Length (years) of post university training required to obtain pharmacist license*

Country	Yrs	Country	Yrs
Australia	1	Kenya	1
Austria	1	Netherlands	2
Croatia	1	Nigeria	1
Great Britain	1	Poland	1
Greece	0,5	Spain	0,5
Hungary	4	Switzerland	2
Israel	0,5	Zimbabwe	1

*Proportion of patients visiting the same pharmacy*

Since continuity is one of the requirements for pharmaceutical care, and medication surveillance will be only effective if all information on drug use is available on one spot, the percentage of patients visiting the same pharmacy is important. From 9 countries out of 32 these data were not available. It seems that providing pharmaceutical care in general is not very logical if 30% or fewer patients repeatedly visit the same pharmacy. This was the case for Croatia (30%), Eritrea (30%), Ghana (5%), Kenya (5%), Nigeria (10%), Zimbabwe (4%) and Australia (10%)<sup>§§</sup>.

<sup>§§</sup> No data available from Austria, Canada, Denmark, Finland, Ireland, Italy, Japan, Portugal and Spain

### *Computerised medication surveillance*

If a pharmacy keeps computerised medication records and routinely performs medication surveillance, the possibilities for a justified and standardised intervention in medication are strongly enhanced. Only in 6 of the responding countries all pharmacies, and in 6 other countries most pharmacies, keep computerised medication records. This, however, does not necessarily mean that they also perform medication surveillance routinely (see Table 8-5).

*Table 8-5 Medication records in pharmacy*

<b>Computerised medication records in all pharmacies</b>	<b>Routine Surveillance</b>	<b>Computerised medication records in most pharmacies</b>	<b>Routine Surveillance</b>
Australia	All pharmacies	Great Britain	Most pharmacies
Canada	All pharmacies	Ireland	Most pharmacies
Denmark	Most pharmacies	Japan	Most pharmacies
Iceland	Some pharmacies	USA	Most pharmacies
Luxembourg	Some pharmacies	Switzerland	Some pharmacies
Netherlands	All pharmacies	Zimbabwe	Some pharmacies

### *Quality of the Relationships with physicians*

In 60% of the responding countries, relationships between physicians and pharmacists are reported to be good or very good. The other countries report relationships as being not so good, loose or very loose.

### *Communication skills as part of the (university) curriculum*

Communication is essential for pharmaceutical care provision. Only 11 countries (34%) reported that communication skills were taught in the university curriculum. In many more countries (20, 63%) communication is a subject in postgraduate education. In Croatia, Eritrea, Greece, Italy, Luxembourg, Poland and Spain communication is no subject addressed in either form of education.

## **8.3.3 Tertiary factors**

### *Possibility to perform clinical laboratory tests in the pharmacy*

If and what tests and analysis may be performed in a pharmacy, differs largely over the responding countries. Only in three countries (Eritrea, Germany, Switzerland) all pharmacies perform blood-pressure tests and in one country (Germany) all pharmacies perform urine-tests, according to the responses to the questionnaire. Invasive tests (e.g. blood tests) are only performed in six countries in some or special pharmacies only (Australia, Great Britain, Kenya, The Netherlands, Switzerland, United States).

### *Customised labelling*

In 72% of the responding countries, all drugs are labelled (customised label) when they are dispensed, mentioning at least the name of the patient and sometimes the daily dosage. Pharmacies in Austria, Denmark, France, Germany<sup>\*\*\*</sup>, Greece, Korea, Nigeria, Poland, Portugal and Switzerland do not label drugs when dispensing.

### *Delivering patient information leaflets*

In many countries the pharmaceutical industry is obliged to include a product information leaflet in the drug-package. In 56% of the responding countries special patient information leaflets are also dispensed with the drug, sometimes even individual patient-tailored. Such leaflets may be prepared either by the pharmaceutical industry or the pharmacists.

### *Opening packages*

Opening original packages is always or sometimes performed in 50% of the responding countries. In the other countries opening a package is exceptional or never done.

## **8.4 DISCUSSION**

It seems reasonable to assume that pharmaceutical care has a real chance of succeeding in those countries in which the workload in the pharmacy is not excessive, there is enough space to speak with the client and the financial situation of pharmacies is reasonable. In the preceding sections we have evaluated the available data on these issues. A major problem in this procedure, especially around the paramount issues like time, space and money, was the fact that some countries do not have or did not provide the necessary data for this evaluation and therefore the questions could not be assessed properly. This was the case for many developed countries that answered the questionnaire e.g. Austria, Canada, Denmark, Great Britain, Greece, Ireland, Norway, and Poland. In general it could also not be totally excluded that the returned questionnaires contained some socially desirable answers. Using a structured interview instead of a (pre-tested) questionnaire possibly improves the quality of the responses.

In spite of the fact that Portugal did not provide the number of prescriptions per day and the average floor area of the pharmacies in the USA is unknown, we did include those countries in our final evaluation because other essential data were available.

For the African countries we have not taken the economic parameter into account because in developing countries price levels and the costs of labour are very different from the rest of the responding countries. However, in interpreting the results one must also realise in general that pricing systems, costs of personnel and taxes may show large national variations.

Having a computerised medication surveillance system that is used for medication surveillance in (almost) all pharmacies can be considered as a secondary requirement, together with the repeated use by patients of the same pharmacy. In 12 countries there are indeed (almost) always computerised medication records, but a standardised method of

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<sup>\*\*\*</sup> The answer to the questionnaire was that pharmacists in Germany do provide labels. However, from personal communication with several German pharmacists it was learned that this is not the case.

medication assessment on the basis of these records is only customary in 8 of those countries.

Some other elements of pharmacy practice in the field of dispensing can also contribute to the possibility to perform pharmaceutical care but are probably less important and can be called tertiary requirements. Many of these requirements have a cultural and legal background.

There is a large divergence between the different countries for aspects such as university-education and the average age at which a pharmacist graduates as a pharmacist. Educational systems differ around the world. The level of education is very difficult to assess and therefore has not been included in further evaluations. However, it must be said, that a 3-year university education, like in Zimbabwe or Australia, is rather short for learning all the knowledge and attitudes needed to be a pharmaceutical care pharmacist. If the university-education is relatively short, it is reasonable to assume that pharmacists in those countries graduate relatively young. This was not always the case, probably because of the length of the pre-university training.

Since the university training is relatively short in Australia and Zimbabwe and the graduation age of pharmacists is relatively young, a good post-graduate training should be necessary to further educate the pharmacists. According to the results of the questionnaire in both countries an additional 1 year of post-university training is required before a licence to practice can be obtained. A pharmacist in Japan, Nigeria, Korea or Zimbabwe will be only 22 when he or she is allowed to practice independently.

In 13 countries the relationships with physicians are not optimal. In 8 countries no attention is paid to communication skills, while in 9 countries medicines are not labelled before dispensing. Performing tests is not a common activity of pharmacies in most countries.

In 14 countries no patient information leaflets are issued and in 15 countries packages are never or hardly ever opened. Changing these practices could facilitate the introduction of pharmaceutical care in those countries.

A full table of the results of the assessment can be found in section 8.5 (table 8-6).

## **8.5 CONCLUSION, WHAT ARE THE CHANCES FOR THE IMPLEMENTATION OF PHARMACEUTICAL CARE AROUND THE WORLD**

In order to obtain a good impression of pharmacy practice and the chances for the successful implementation of pharmaceutical care in community pharmacy, the available data from the FIP/RUG questionnaire must be validated and additional data collected for a number of countries. The conclusions drawn here are limited because a number of countries did not have sufficient information available. It must also be realised that most of the available data per country are averages. Within the countries there will always be a variation in pharmacy size, staff size and turnover.

*Table 8-6 Concise results regarding optimal opportunities for PhC*

Country	Time /space/ money	Patients visit same pharmacy	Medication surveillance	Basic conditions met?	Remarks
Australia	+	no	yes	NO	
Austria					Incomplete
Canada	□				Incomplete
Croatia	+	no	no	NO	
Denmark	□				Incomplete
Eritrea	no	no	no	NO	
Finland	+	?	no	NO	
France	+	+	no	NO	
Germany	+	+	no	NO	
Ghana	+	no	no	NO	
Great Britain					Incomplete
Greece					Incomplete
Hungary	+	+	no	NO	
Iceland	+	+	no	NO	
Ireland					Incomplete
Italy	+	?	no	NO	
Japan	+	?	+	PERHAPS	
Kenya	+	no	no	NO	
Korea	+	+	no	NO	
Luxembourg	+	+	no	NO	
Netherlands	+	+	+	YES	
Nigeria	+	no	no	NO	
Norway					Incomplete
Poland					Incomplete
Portugal	+	?	no	NO	
Spain	+	?	no	NO	
Sweden	+	+	no	NO	
Switzerland	+	+	no	NO	
USA	+	+	+	YES	
Zimbabwe	+	no	no	NO	

+ relatively good conditions  
no = relatively bad conditions  
□ = data can not be evaluated

On the basis of the first three evaluated items, representing the workload, space and money, one can roughly say that a real chance for the successful implementation of pharmaceutical care exists in most countries. Pharmacies in some countries might have a flaw in one of those items, in Eritrea the low staffing is clear.

Analysing the secondary condition e.g. the possible development of patient relationships, providing pharmaceutical care will be more difficult in Australia, Croatia, Ghana, Kenya, Nigeria, and perhaps in Finland, Italy, Japan and Portugal since 30% or less clients in general visit the same pharmacy. Providing consistent pharmaceutical care then becomes difficult. For the remaining countries no regular medication surveillance or assessment is yet performed in Finland, France, Germany, Hungary, Iceland, Italy, Korea, Portugal and Switzerland, although there are many indications that this is changing.

According to these considerations, providing pharmaceutical care with all basic demands being met, is possible in The Netherlands, the USA and perhaps in Japan and possibly in the 8 countries for which sufficient data for evaluation were not obtained. There are signs that 5 out of those 8 countries are developing pharmaceutical care practices in their community pharmacies (see Chapter 9 and Appendix 5). Pharmaceutical care also seems to develop in countries where, according to our approach, the chances are not optimal but often that development is stimulated by institutions or persons who believe in the concept and stimulate pharmacist to start with the implementation.

In the USA it would be advisable to develop better relations between doctors and pharmacists and that patient information leaflets are provided when dispensing. In Japan and Switzerland the relationships with doctors also need improvement, not only because of pharmaceutical care, but also because of the existence of many dispensing doctors.

The opportunities for providing pharmaceutical care in any country depend very much on local customs, remuneration and legal systems. Small changes in those factors might enable the provision of pharmaceutical care by pharmacies and pharmacists. It is to be hoped that national pharmacist organisations have sufficient power to change the systems if pharmaceutical care is to be the practice philosophy all around the world. The prevailing necessary improvement seems to be the introduction of regular medication surveillance in the pharmacy in all countries.

Another important factor is the strength of clinical pharmacy and computerised medication surveillance. In a number of countries there is a proper clinical pharmacy education, but the national pharmacy system somehow has not yet been targeted at continuous computerised medication surveillance. Those countries are only a small step away from enabling the implementation of pharmaceutical care.

If pharmaceutical care is to be the world-wide practice philosophy of pharmacy in the future, there is still a lot to be done. In this chapter it is shown that only a limited number of countries currently have a very good opportunity to move forward into the standard provision of pharmaceutical care, according to the data obtained from the RUG/FIP questionnaire. In some countries only minor adjustments are necessary to enable community pharmacies to provide pharmaceutical care

If pharmaceutical care is to be implemented world-wide, then pharmacy systems in many countries must be adapted but it is also desirable that more research, with better formulated outcomes and processes, be initiated.

## **8.6 REFERENCES TO CHAPTER 8**

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