

RESEARCH ARTICLE

Pharmaceutical Care – the PCNE definition 2013

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Abstract *Background:* Twenty-three years after Hepler and Strand published their well-known definition of pharmaceutical care (PhC), confusion remains about what the term includes and how to differentiate it from other terms. The board of the Pharmaceutical Care Network Europe felt the need to redefine PhC and to answer the question: “What is Pharmaceutical Care in 2013”. *Objective:* The aims of this paper were to review existing definitions of PhC and to describe the process of developing a redefined definition. *Methods:* A literature search was conducted in the MEDLINE database (1964 - January 2013). Keywords included “Pharmaceutical Care”, “Medication (Therapy) Management”, “Medicine Management”, and “Pharmacist Care” in the title or abstract together with the term “defin*”. To ease comparison between definitions, we developed a standardised syntax to paraphrase the definitions. During a dedicated meeting, a moderated discussion about the definition of PhC was organised. *Results:* The initial literature search produced 186 hits, with 8 unique PhC definitions. Hand searching identified a further 11 unique definitions. These 19 definitions were paraphrased using the standardised syntax (provider, recipient, subject, outcome, activities). Fourteen members of PCNE and 10 additional experts attended the moderated discussion. Working groups of increasing size developed intermediate definitions, which had similarities and differences to those retrieved in the literature search. At the end of the session, participants reached a consensus on a “PCNE definition

of Pharmaceutical Care” reading: “Pharmaceutical Care is the pharmacist’s contribution to the care of individuals in order to optimize medicines use and improve health outcomes.” *Conclusions:* It was possible to paraphrase definitions of PhC using a standardised syntax focusing on the provider, recipient, subject, outcomes, and activities included in PhC practice. During a one-day workshop, experts in PhC research agreed on a definition, intended to be applicable for the present time, representative for various work settings, and valid for countries inside and outside of Europe.

Keywords Definition, Drug-related problems, Europe, Medication safety, Pharmaceutical care, Pharmacist

Impact of findings on practice

- The aim of PCNE is to help to develop pharmacy along the lines of pharmaceutical care (PhC) in the involved European countries.
- We hope to harmonise the use of a single definition amongst European researchers and, ultimately, practitioners.
- This new PCNE definition of PhC directly derives from previous definitions and is intended to unite the current understanding of PhC with respect to the evolution of this practice philosophy during the last 35 years.

Introduction

The term “Pharmaceutical Care” (PhC) is frequently used as a keyword in health care literature, as an activity in patient care, or as a module within a teaching curriculum. In most cases, people refer to the definition given by Hepler and Strand in 1990[1]: “Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient’s quality of life.” A more patient-centred approach was endorsed by Linda Strand et al., who stated in 1997 that PhC is not only a theory but also a philosophy of practice[2].

Since then, new terms and concepts of medicines-related patient care have evolved, such as Medicines Management[3], Disease Management[4], and Medication Therapy Management (MTM)[5]. Twenty-three years after the definition was published by Hepler

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and Strand, substantial confusion still remains about what PhC includes and how to differentiate it from such other terms. According to McGivney et al.[6], for example, MTM integrates both the philosophy and practice of PhC and elements of Disease Management. Some authors and authorities see PhC as a responsibility shared by all health professionals, while others restrict it to the pharmacy profession (see Table 1). These difficulties with definitions were also recently addressed in a joint editorial from the International Journal of Clinical Pharmacy and the journal Pharmacy Practice[7]. The board of the Pharmaceutical Care Network Europe (PCNE), a European network of researchers in the field of pharmaceutical care, therefore, felt the need to redefine PhC and to answer the question: "What is Pharmaceutical Care in 2013"[7].

The aims of this paper are (a) to review existing definitions in literature in order to better understand their development and (b) to describe the process of achieving a redefined definition, during a one-day consensus meeting of experts.

Methods

Literature search

A literature search was conducted in the MEDLINE database from 1964 to January 2013. The search was restricted to publications in English, German, or French. Keywords included "Pharmaceutical Care", "Medication (Therapy) Management", "Medicine Management", and "Pharmacist Care" in the title or abstract together with the term "defin*" to identify existing definitions of PhC. The exact string is shown in Figure 1. Each source was scanned for explicit definitions of PhC and cross-references. Co-authors of this paper provided additional sources for definitions not identified previously, usually from the grey literature.

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((pharmaceutical care[Title/Abstract]) or  
(medication management[Title/Abstract]) or  
(medication therapy  
management[Title/Abstract]) or (medicine  
management[Title/Abstract]) or (pharmacist  
care[Title/Abstract])) AND  
(defin*[Title/Abstract])
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Figure 1: String used for literature search

The retrieved definitions were grouped by the year of publication and publisher. To ease comparison between definitions, we paraphrased the definitions using a

standardised syntax developed by the authors, as shown in Fig. 2. For this standardised transcription, we considered both the definition itself and the additional published information. Similar terms with the same meaning were subsumed under one term (e.g. "drug therapy" was considered equivalent to "pharmacotherapy"). For this paraphrase, we only considered activities explicitly described in the publication, such as the examples given in Fig. 2.

Workshop for definition development

The workshop was organised on February 5, 2013 in Berlin. The board of PCNE had announced this workshop to all members. In addition, 44 experts in the field of pharmaceutical care were invited personally. A total of 24 individuals (all pharmacists, 14 members of PCNE) attended this one-day meeting, representing 11 different European countries, plus the USA and Australia. The meeting was facilitated by all authors, including a certified moderator, who led the workshop and the discussion, and was audio-recorded, with consent.

Two weeks in advance, workshop participants were given the standardised syntax from Fig. 2, together with a draft of Table 1 with PhC definitions and standardised paraphrases, to ensure that all started from a minimum position of knowledge.

In order to achieve a consensus of all invited experts, we chose a method in accordance with the "Consensus-Oriented Decision-Making model" developed by Tim Hartnett[8]. This method assured active participation of every individual and created a commonly shared understanding at the same time. It had been used successfully by the moderator in other contexts several times. The procedure was divided into two steps. First, the participant suggested a range of ideas about what PhC meant for them, in order to create a clear definition. Then, the participants analysed this shared understanding in order to support the redefined definition and to represent the opinion of as many participants as possible. In the first step, small working groups of three participants from different countries had to agree on a definition that covered similarities between their ideas about PhC. In order to reach agreement, participants were asked to switch to a meta-level ("chunk up") and find the virtual meaning behind their definitions. "Chunking" means to reorganise or break down experiences into bigger or smaller pieces. "Chunking up" involves moving to a larger, more general or abstract level of information. A greater vision of ideas made it possible to reach consensus. Each group documented their results on flip charts and presented them to the other groups. Three consecutive rounds of two working groups

merging and undertaking the same process led to the formation of a single large working group. At this point, we aimed to reach a first broad but consolidated definition.

In the next step, questions regarding provider, recipient, subject, and outcome of PhC helped to substantiate the broad definition. The aim was to fine-tune the definition ("chunk down"). "Chunking down" means moving to a more specific and concrete level of information. To ensure the consideration and discussion of all arguments for and against issues and to make decisions that accounted for all perspectives, it was necessary to continue working with all participants in one group in a plenary session. Step by step, all conflicting details were discussed and finally led to a precise definition of PhC. The audio-recorded statements were summarised and topics addressed were identified.

Results

Literature search

The initial MEDLINE search produced 186 hits. After review of the search results based on the title, 37 publications were excluded. The abstracts of the remaining 149 publications were reviewed and 95 full-text publications were examined. From these, eight original definitions of PhC were identified. Most papers cited the definition developed by Hepler and Strand in 1990[1]. Additional sources from references cited in the bibliographies and from co-authors' inputs generated a total of 19 unique PhC definitions. Table 1 shows the definitions, with their authors and year of publication, and the relevant standardised paraphrase.

From the paraphrased versions of the definitions, it is apparent that the provider of PhC remained unspecified in the majority of definitions (9/19, 47%). Five of the first 8 definitions published before 1997 did not attribute a profession to the role of the provider while, in contrast, only 4 of the 10 definitions after 1997 did not define a provider. In 1997, Linda Strand introduced the generic term "practitioner", which was used in 4 definitions (21%) after 1997. However, 5 definitions regarded "the pharmacist" (26%) or "the pharmacist and his team" (5%) as the provider of PhC.

Fifteen (79%) definitions focussed on the individual patient, and 3 (16%) defined the collective of patients as the recipients of PhC. The recipient remained unclear in one (5%) definition. Nine (47%) definitions named "pharmacotherapy" as the subject, while 8 (42%) stated "drug-related needs" and one (5%) named "drug-use". In one (5%) of the definitions, no subject was mentioned.

"Optimal outcomes of therapy" and "optimal quality of life" account for half of the mentioned outcomes in 5 (26%) of the definitions each. Interestingly, the term "optimal quality of life" only appeared during the years 1990 to 1996. "Optimal pharmacotherapy" was defined as the outcome in 2 (11%) of the existing definitions. In 7 of the 19 definitions, other outcomes (2/19, 11%) or no outcomes (5/19, 26%) of PhC were specified.

Most definitions did not include specific activities to be performed in the PhC process (14/19, 75%). "Detecting, preventing, and resolving drug-related problems", "doing counselling, medication review, and evaluation of outcomes", "continuously monitoring its clinical and psychosocial effects", "monitoring their pharmacotherapy", and "establishing and administering a pharmaceutical care plan" were mentioned in one definition each (5%).

Workshop for definition development

Morning session: "Chunk up"

The aim of the morning session was to find an intermediate definition for PhC as a basis for discussion. The intermediate definitions were then harmonised in the afternoon plenary session. The results of the process are displayed in Fig. 3.

Six groups (1 – 6) of three participants each formulated an initial definition of PhC. These definitions were already quite specific but differed in most aspects (provider, recipient, subject, outcome, activities) between the groups.

After the merging of pairs of groups into larger groups of six participants, four refined definitions were generated:

Groups **1/2** described PhC as "patient/health care which is delivered through pharmacy practice". The service is provided by pharmacy practitioners, not only to patients but to consumers as well. Pharmaceutical expertise is needed and PhC can be provided by the pharmacist or somebody else with that expertise.

For the participants of **Group 3/4** it was important that PhC was a practice philosophy. The provider does not have to be a pharmacist but a "competent practitioner that takes responsibility". The recipient of PhC is the individual patient. The listing of all PhC activities such as "detecting, resolving and monitoring actual and potential drug related problems" was replaced by "to resolve drug related needs". In this intermediate definition, the aim of PhC was "to assure optimal outcomes".

Table 1: Pharmaceutical Care definitions sorted by year

Year	Author/Context	Definition	Standardised Paraphrase
1975	<p>Mikeal, R. L.; Brown, T. R.; Lazarus, H. L.; Vinson, M. C.</p> <p>Place published USA</p> <p>Publisher School of Pharmacy</p> <p>Type of Work Interviews in short-term hospitals</p>	<p>The care that a given patient requires and receives which assures safe and rational drug usage[9].</p>	<p>Pharmaceutical Care is the care from anyone for their patient in order to assure safe and rational drug usage.</p>
1980	<p>Brodie, D. C.; Parish, P. A.; Poston, J. W.</p> <p>Place published Wales/USA</p> <p>Publisher School of Pharmacy</p> <p>Type of Work Statement</p>	<p>Pharmaceutical care includes the determination of the drug needs for a given individual and the provision not only of the drugs required but also of the necessary services (before, during or after treatment) to assure optimally safe and effective therapy. It includes a feedback mechanism as a means of facilitating continuity of care by those who provide it[10].</p>	<p>Pharmaceutical Care is the care from anyone for their patient in the field of drug-related needs in order to assure optimally safe and effective pharmacotherapy.</p>
1987	<p>Hepler, C. D.</p> <p>Place published USA</p> <p>Publisher N/A</p> <p>Type of Work NA/A</p>	<p>A covenantal relationship between a patient and a pharmacist in which the pharmacist performs drug-use-control functions (with appropriate knowledge and skill) governed by awareness of and commitment to the patients' interest[11].</p>	<p>Pharmaceutical Care is the care from the pharmacist for their patient in the field of drug use in order to serve the interests of the patient.</p>
1990	<p>Hepler, C. D.; Strand, L. M.</p> <p>Place published USA</p> <p>Publisher N/A</p> <p>Type of Work NA/A</p>	<p>Pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient's Quality of Life[1].</p>	<p>Pharmaceutical Care is the care from anyone for a patient in the field of pharmacotherapy in order to assure (optimal) quality of life.</p>
1992	<p>Strand, Linda M.</p> <p>Place published Michigan, USA</p> <p>Publisher Upjohn</p> <p>Type of Work Commentary</p>	<p>Pharmaceutical Care is that component of pharmacy practice which entails the direct interaction of the pharmacist with the patient for the purpose of caring for that patient's drug-related needs[12].</p>	<p>Pharmaceutical Care is the care from the pharmacist for their patient in the field of drug-related needs.</p>

Year	Author/Context	Definition	Standardised Paraphrase
1993	American Society of Hospital Pharmacists Place published USA Publisher American Society of Hospital Pharmacists Type of Work Political Statement	Pharmaceutical care is the direct, responsible provision of medication-related care for the purpose of the achieving definite outcomes that improve a patient's quality of life[13].	Pharmaceutical Care is the care from anyone for their patient in the field of pharmacotherapy in order to assure (optimal) quality of life.
1993	Van Mil, J. W. F. Place published The Netherlands Publisher N/A Type of Work N/A	Pharmaceutical patient care (Farmaceutische Patiëntenzorg, FPZ) is the structured, intensive care of the pharmacist for an optimal pharmacotherapy in which the patient and his condition are the primary concern. The aim is to obtain optimal Health Related Quality of Life[14].	Pharmaceutical Care is the care from the pharmacist for their patients in the field of pharmacotherapy in order to assure (optimal) quality of life.
1996	Hepler, C. D. Place published Florida, USA Publisher Department of Pharmacy Health Care Administration Type of Work NA/A	The purpose of pharmaceutical care (in all practice settings) is to provide drug therapy intended to achieve definite outcomes that will improve a patient's quality of life[15].	Pharmaceutical Care is the care from anyone for their patients in the field of pharmacotherapy in order to assure (optimal) quality of life.
1997	Strand, L. M. Place published USA Publisher N/A Type of Work Remington Lecture	A practice for which the practitioner takes responsibility for a patient's drug therapy needs and is held accountable for this commitment[2].	Pharmaceutical Care is the care from a practitioner for a patient in the field of drug related needs.
1998	Munroe, WP; Dalmady-Israel, C. Place published N/A Publisher N/A Type of Work NA/A	Pharmaceutical care as a service which systematically and continuously monitors the clinical and psychosocial effects of drug therapy on a patient[16].	Pharmaceutical Care is the care from anyone for a patient in the field of pharmacotherapy by continuously monitoring its clinical and psychosocial effects.

Year	Author/Context	Definition	Standardised Paraphrase
1998	FIP Statement Place published The Hague, The Netherlands Type of Work Statement	Pharmaceutical care is the responsible provision of pharmaco-therapy for the purpose of achieving definite outcomes that improve or maintain a patient's quality of life[17].	Pharmaceutical Care is the care from anyone for a patient in the field of pharmacotherapy in order to assure (optimal) quality of life.
1998	Cipolle, R. J.; Strand, L.; Morley, P. Place published New York Publisher MacGraw Hill Type of Work Book	Pharmaceutical care is a patient-centered practice in which the practitioner assumes responsibility for a patient's drug-related needs and is held accountable for this commitment. In the course of this practice, responsible drug therapy is provided for the purpose of achieving positive patient outcomes[18].	Pharmaceutical Care is the care from a practitioner for a patient in the field of drug-related needs in order to assure (optimal) outcomes of therapy.
1999	Granada Consensus Place published Granada, Esp Type of Work Consensus Paper	The detection, prevention and resolution of drug-related problems[19].	Pharmaceutical Care is the care from anyone in the field of drug-related needs by detecting, preventing and resolving drug related problems.
2004	van Mil, J. W.; Schulz, M.; Tromp, T. F. Place published Europe Type of Work Review Type of Work NA/A	Pharmaceutical care is a practice philosophy for pharmacy. It is the way of pharmacists to coach the individual patients with their medication. The concept deals with the way a patient should receive and use medication and should receive education on the use of medicines. The concept also deals with responsibilities, medication surveillance, counseling and the evaluation of all the outcomes of care[20].	Pharmaceutical Care is the care from the pharmacist for their patient in the field of pharmacotherapy in order to assure (optimal) outcomes of therapy by doing counseling, medication review and evaluation of outcomes.
2004	Berenguer, B.; La Casa, C.; de la Matta, M. J.; Martin-Calero, M. J. Place published Sevilla, Esp Publisher University Department of Pharmacology Type of Work Review	The pharmacists' compromise to obtain the maximum benefit from the pharmacological treatments of the patients, being therefore responsible of monitoring their pharmacotherapy[21].	Pharmaceutical Care is the care from the pharmacist for patients in the field of pharmacotherapy in order to assure (optimal) outcomes of therapy by monitoring their pharmacotherapy.

Year	Author/Context	Definition	Standardised Paraphrase
2005	Franklin, B. D.; van Mil, J. W. Type of Work Editorial Publisher N/A Type of Work NA/A	The person-focused care relating to medication, which is provided by a pharmacist and the pharmacy team with the aim of improving the outcomes of therapy[22].	Pharmaceutical Care is the care from the pharmacist and their team for their patient in the field of pharmacotherapy in order to assure (optimal) outcomes of therapy .
2011	Sanchez, A. M. Place published Madrid, Spain Type of Work Commentary Type of Work NA/A	Pharmaceutical care addresses the patient's drug-related needs comprehensively through a scheduled outline of tasks, in which the practitioner makes sure that the drug therapy is appropriately indicated, effective, safe, and convenient[23].	Pharmaceutical Care is the care from a practitioner for their patient in the field of drug-related needs in order to assure optimal pharmacotherapy .
2012	Blackburn, D. F.; Yakiwchuk, E. M.; Jorgenson, D. J.; Mansell, K. D. Place published Canada Publisher College of Pharmacy and Nutrition Type of Work Commentary	A patient-centered practice in which the practitioner would be accountable for the drug-related needs of specific individuals as well as groups of patients within a defined practice setting who are at high risk for drug- or disease-induced morbidity[24].	Pharmaceutical Care is the care from a practitioner for patients in the field of drug-related needs .
2012	Carollo, A.; Rieutord, A.; Launay-Vacher, V. Place published Europe Publisher ESCP Type of Work Guideline	The pharmaceutical contribution to patient care in identifying pharmaceutical care issues (medications-related issues) and establishing and administering a pharmaceutical care plan[25].	Pharmaceutical Care is the care from anyone for patients in the field of drug-related needs in order assure (optimal) outcomes of therapy by establishing and administering a pharmaceutical care plan .

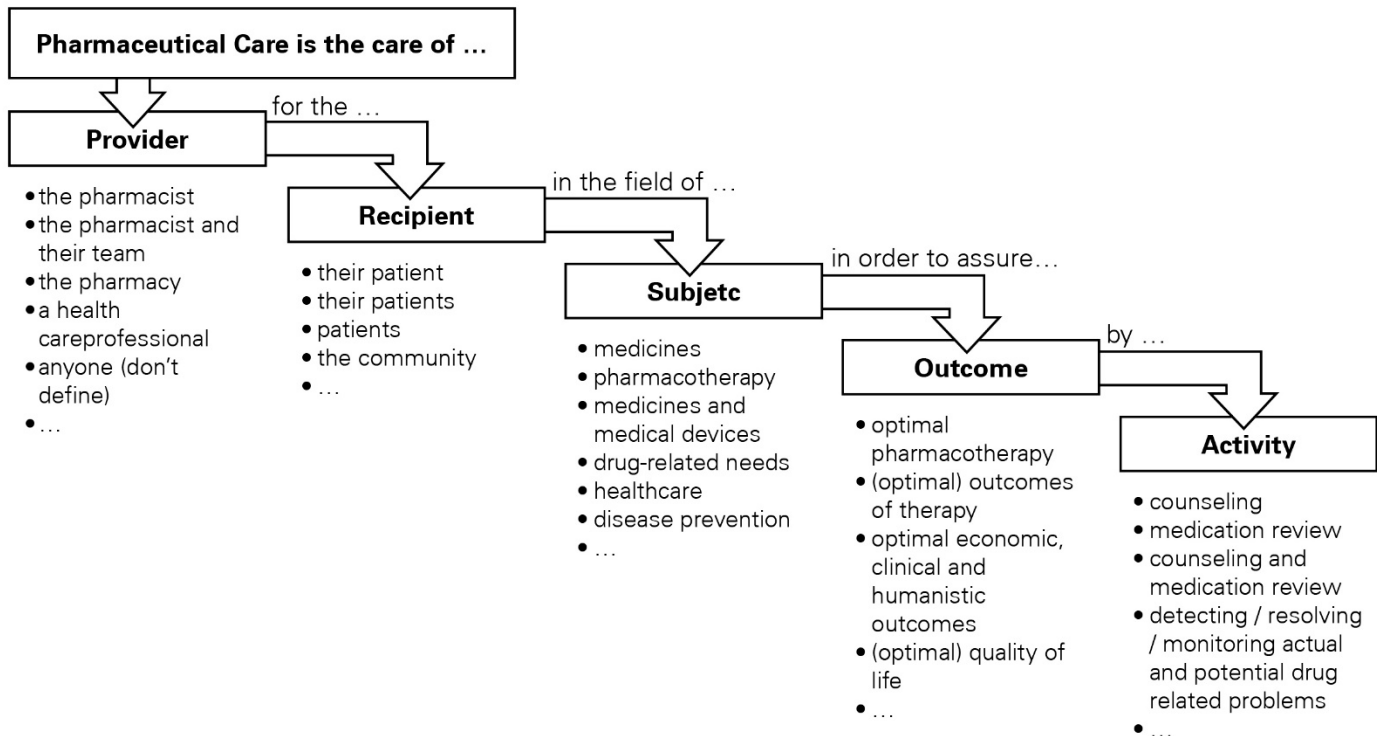


Fig. 2: Standardised syntax for Pharmaceutical Care definitions, with examples to illustrate each domain (provider, recipient, subject, outcome, and activity)

Group 5/6 had a strong emphasis on the “outcome” of PhC in their definition, which was to “optimise the use of medicines and therapy”. The activities were specified as “the provision of care, care programs and services”. For this group it was important that the recipient was not only the individual patient but also society more broadly.

The definition of **group 7/8** described PhC as the “contribution of the pharmacist in the care for individuals”; hence, the recipient was not only the patient but also every individual. This group was the only group that named the pharmacotherapy as the subject of PhC. They saw the aim of PhC as “to assure the responsible use of medicine”. The “responsible use of medicine” is based on the WHO-definition[26] meaning the effectiveness, including quality of life, efficiency and safety of medicines. The activities are not explicitly mentioned, as they are tools used to perform PhC.

In the next step, before reaching consensus on the final harmonised definition, pairs of groups were merged again. The two groups, each of twelve participants, then agreed on one intermediate definition each.

The first group debated whether to disregard the concept that PhC was defined by “taking responsibility by providing care”, with some participants arguing that it was not possible for the competent practitioner to take

responsibility alone for the patient. The joined group defined the activities of PhC as “detecting, resolving and monitoring actual and potential drug-related problems”.

In the other group, there was a debate on the phrasing of the outcome of PhC. A participant stated that it is not possible “to assure the responsible use of medicine” but rather “enhance both the responsible use of medicine and to improve health outcomes”. In addition, the group agreed on a more general definition and to remove the subject “pharmacotherapy”.

Afternoon session: “Chunk down”

In the afternoon, all participants discussed the two intermediate definitions and their components together, in a plenary session. All aspects of the definitions retrieved in the literature search (provider, recipient, subject, outcome, and activities) emerged during the discussion, and new topics concerning the context of the definition arose as well.

The **scope** of the definition was discussed several times. The moderators proposed limiting the scope of use of the definition to research and professionals working within PCNE. Some participants argued that PCNE should set standards not only for its members, but also for other professionals, practitioners, and policy makers.

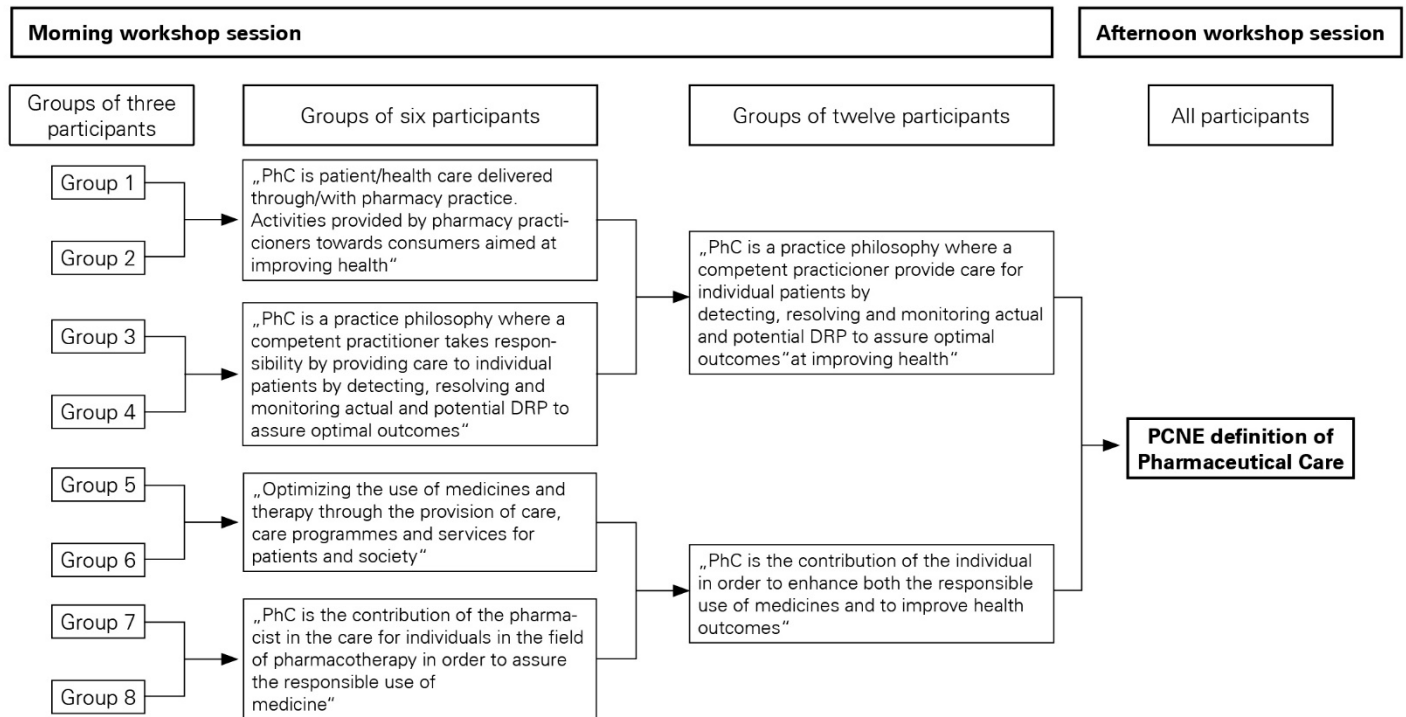


Fig. 3: Process of definition development

However, all members agreed that if researchers used the definition consistently, it would be likely that other professionals, practitioners, and policy makers would adopt the meaning of our definition. Participants also pointed out that it was important to have a short and simple definition to avoid confusion and to promote dissemination.

The **concept of PhC** and its relation to other terms such as “Pharmacist Care”, “Pharmacy Practice”, and “Medication Management” was extensively discussed at an early stage of the chunk down session. Some participants argued, and it was acknowledged by others, that PhC did not need to be redefined at all, but that its relation to other terms needed clarification. All participants agreed that the PCNE definition should depict the evolution of PhC and clarify already existing definitions.

A frequently emerging topic was the **political relevance** of a redefined definition of PhC. Some participants claimed that PCNE should be responsible for communicating the value of PhC to policy makers. According to this, the definition should be used to distinguish the functions of pharmacists and to differentiate types of services and activities in a pharmacy (e.g. compounding, counselling, and provision of PhC). One participant mentioned that in the USA, the term MTM had replaced PhC because “Medication Therapy

Management” was thought to mean the same as “Pharmaceutical Care” to US policy makers. Differences between countries and languages were mentioned as problematic at a policy level. One participant, for example, stated that there is no exact translation of the English word “care” into Danish. These culture and language challenges have been known for some time, but were never properly addressed[27].

The **provider of PhC** was an area of conflict between participants. Every member of the group agreed that the provision of PhC was not limited to the pharmacy premises, but was independent of the place. Some argued that it should be the pharmacist exclusively, whereas others opted for the use of “healthcare professional” or “competent professional”. However, most participants agreed that it was important to define specifically the role of the pharmacist, without excluding any other professional. Since PhC is a term mostly used by pharmacists, the profession should therefore be named in the definition. As one member highlighted, this was already implied in most previous definitions without explicitly stating it. Furthermore, it was felt that the definition should “energise pharmacists to deliver PhC”. All participants but one agreed with using the term “contribution of the pharmacist”. Thus, other healthcare professionals and the recipient of PhC are not excluded. Some people stated that medication-related care could be provided by other healthcare professionals, but this

would then not be called PhC. The question was raised whether it should be “the pharmacist and the team”, rather than the pharmacist alone. Participants agreed that PhC should be the *responsibility* of the pharmacist because they were the responsible person for pharmaceutical treatment by law. One participant argued that the education level of other pharmacy staff (technicians, assistants) differed between countries, while the pharmacist’s education is similar worldwide. Thus, for example, pharmacy technicians were not able to deliver the same level of care in all countries and should not be part of the definition.

The **recipient of PhC** was less of a controversy. Participants agreed not to use the term “patient”, but were initially undecided whether to use “individual”, “society”, or both “individual and society”. In the end, everyone agreed to the use of “individuals”, because PhC could be delivered to a group of people simultaneously but should be a service tailored to each recipient individually.

The **subject of PhC** was discussed thoroughly. It was clear for all participants that PhC should be dealing with the care around medicines. On the other hand, some participants also wanted to address services that did not include medicines, because individuals often did not only have drug therapy problems when approaching a pharmacist. There was concern about losing such activities currently seen as PhC (e.g. lifestyle-related) and therefore that this would discourage others from using the definition. Other participants felt that almost all existing definitions dealt only with medicine-related needs or medicine use and that other services that are also provided in the pharmacy were not unrecognised. However, non-pharmacological treatment could be the subject of PhC when medicines were involved or were being evaluated in the course of the practice. Another subject of debate was the term “enhance the responsible use of medicines” previously used by the World Health Organisation (WHO)[25]. However, participants felt that this connection to the WHO term would not be self-evident and that, by itself, “responsible use” was rather more system-oriented than patient-centered. Some participants argued for the substitution of “responsible” with “appropriate” or “rational” without agreeing on one or the other. In the end, the whole term was replaced with “optimise medicines use”. Participants agreed that this expression is more patient-centred, conveyed the same meaning as the WHO term, and included interventions not directly related to medicines.

The **outcomes of PhC** were briefly discussed towards the end of the session. Participants agreed to include the term “improve health outcomes”, referring to the scope

of the definition, which aimed at researchers who relied on evidence-based protocols and measurable outcomes. One attendee pointed out that it was not possible for a pharmacist to improve health outcomes, but only to help individuals “to do it themselves”. A term suggested by one participant was “quality of life” (QoL), but others rejected this, arguing that medicine use and health outcomes could be improved without measurably improving QoL.

All participants clearly agreed not to mention **specific activities** as part of PhC into the definition. The main concerns were that there were different activities and services provided in different countries, and because PhC should not be understood as the provision of standalone services, but rather as an integrated process linked to an individual assessment. Some participants also pointed out that not all PhC-related services were clearly defined, which would only add confusion to the definition. The final definition is phrased in Fig. 4.

«Pharmaceutical Care is the pharmacist’s contribution to the care of individuals in order to optimise medicines use and improve health outcomes.»

Fig. 4: The PCNE definition of Pharmaceutical Care 2013

To facilitate **dissemination**, participants agreed to have a position paper[28] created. To clarify choices made, important issues that were discussed at the meeting should be mentioned. They emphasised that acceptance of the agreed definition needs comments and explanation of the context. They also agreed on publication of both the position paper and a scientific article, and they asked the main moderators and initiators of the workshop to assume authorship. Finally, participants discussed and set up some rules on the procedure of publication.

Discussion

This paper proposes a redefined definition for pharmaceutical care. The definition has been created by experts, who felt the need to do so. In the result section, the discussion has been outlined on how the experts have reached the current definition. There is no need to reiterate the discussion here. In this section, we will discuss the process of the literature search and the workshop for the definition development.

Applying a systematic approach to identify unique definitions of PhC proved difficult because of the broad variety of possible terms. We decided to use a semi-structured approach with a focus on cross-references from publications identified with the MEDLINE search and inputs from co-authors. The initial MEDLINE search

produced almost 200 hits, from which we identified 8 original definitions. The careful examination of the reference lists of the identified publications and inputs from co-authors yielded additional 11 sources for definitions, more than the database search itself. The inclusion of these definitions may have caused a selection bias, because new definitions were likely to be influenced by the definitions found in their reference list. This indicates some deficiency of our MEDLINE search. On the one hand, the search strategy itself was deliberately restrictive. On the other hand, some definitions originated from conferences or other grey literature and their sources are not covered by MEDLINE. Since it was not possible to predict the appearance of a definition on the sole basis of keywords in the title or abstract, many articles had to be scanned in full-text. As a result, a broad literature search that would have covered more sources was not feasible. Independent definitions not identified through our literature search, or the search performed by other authors, were thus missed in this work. As a consequence, we cannot assure the completeness of our list. However, we can safely assume that the definitions with the highest impact on research and practice were considered. Remarkably, "Pharmaceutical Care" is not a Mesh term, while "Nursing Care", or "Dental Care" are. Mesh terms significantly improve searching and it would be desirable to add "Pharmaceutical Care" to the MeSH vocabulary.

The use of a standardised syntax to paraphrase the definitions allowed for comparison between the different formulations. In some cases, we had to decide about the equivalence of terms (e.g. "drug therapy" and "pharmacotherapy"). To some extent, these decisions were subject to interpretation and could be discussed in a dedicated article. Additionally, it is clear that some information and intention of the original definition were lost during the process of paraphrasing. We understand that the individual wording and syntax of a definition contribute to its meaning. It was not our intention to replace existing definitions with a standardised version. We believe that our standardised syntax was suitable as a working tool for the experts participating in the workshop, to facilitate ease of comparison, to understand the evolution of the definitions over a period of years, and to create a new definition for future use.

The PCNE definition of PhC directly derives from those previous definitions and is intended to unite the current understanding of PhC with respect to the evolution of this practice philosophy during the last 35 years. Differences between previous definitions and the PCNE definition and further explanations about the wording and scope are discussed thoroughly in the position paper[27].

Participants were invited based on their affiliation to PCNE and as a consequence, the result is only representative for this subgroup of researchers and professionals. PCNE is an organisation with 36 individual and 23 institutional members from 21 European countries. Additionally, it has observers from countries in other parts of the world. During the meeting, people were present from a large number of countries, as outlined in the acknowledgements. Although PCNE is not representative of the whole pharmaceutical care community, it is the only association that purposely unites researchers and health care professionals that deal with pharmaceutical care almost every day. Furthermore, active participants in the workshop included representatives from the European Association of Hospital Pharmacists (EAHP), the European Society of Clinical Pharmacy (ESCP), and international experts from overseas. This selection of participants from different countries and from a broad variety of work settings ensures the generalisability of the PCNE definition within and outside of Europe and for different fields of work. In our opinion, this gives the group legitimacy to create a valid definition of PhC.

The chosen method of consensus by using the Hartnett model made sure that various ideas could be combined and concentrated to a shared understanding that focused on the crucial key points of PhC. The benefit of small working groups growing larger during the process was that participation of each individual was guaranteed and no opinion leader was able to take control of the discussion. This way, the result should be representative for the whole group. In his book "Consensus Oriented Decision Making"[8], Tim Hartnett emphasises the importance of the following unifying principles for the consensus development process:

- inclusive and participatory (all group members included and encouraged to participate)
- agreement seeking (generating as much agreement as possible)
- process oriented (the way in which the decision is made is as important as the resulting decision, all participants are respected and their contributions are welcome)
- collaborative (all group members shape a decision that meets all the concerns as much as possible – participants don't compete and there are no winners and losers)
- relationship building (the resulting shared ownership of decisions and increased group cohesion can promote the implementation of decisions)
- whole group thinking (personal preferences are less important than a broader understanding of how to work together to help the group succeed)

The selected method met these characteristics and cleared the way for a group consensus. The effects of previous agreements and the dominance of opinion leaders were minimised by the changing of group composition and the obligation to find collaborative solutions. Limitations included that there was only limited time in the workshop, which impeded reflection on the inputs and forced participants to make quicker decisions than they might have wished. Due to the intensive program, the concentration of participants may have decreased towards the end. Reaching a consensus might have been driven by the wish to conclude, rather than having reached a shared agreement, although all participants have stated they were happy with the redefined definition at the end of the meeting.

Conclusion

Many definitions of Pharmaceutical Care exist that differ greatly from each other. For comparison, it is possible to paraphrase each definition with a standardised syntax focusing on the provider, recipient, subject, outcomes, and activities included in the PhC practice. During a one-day workshop, experts in PhC research agreed on a definition that should be representative for various work settings and should be valid for countries inside and outside of Europe, and adopted to the current time.

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Conflict s of interest

The authors report no conflicts of interes

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