



Academic community pharmacy: A pilot Delphi study aimed at establishing a future common definition at the international level

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ABSTRACT

Introduction: The Granada statements promote the consistent use of appropriate terminology in pharmacy practice research. This pilot study aims to define the term *Academic Community Pharmacy* (ACP), providing a foundation for a forthcoming international study aimed at establishing a globally accepted definition.

Methodology: A Delphi study was conducted in 2023 among academic entities from all five Swiss universities involved in pharmacy practice research and education. The first definition comprised four key elements: place of practice, clinical and academic activities and links with universities. Anonymous survey rounds were conducted where panellists assessed agreement with and clarity of the statements using a Likert scale. Additionally, free comments and proposals for changes were allowed. Consensus for each statement was defined as $\geq 66\%$ agreement.

Results: The panel consisted of nine members. Two Delphi rounds were needed to reach consensus for the final definition: "An ACP is a facility providing professional pharmacy services (according to a commonly accepted definition in the location of the considered ACP) to the community, conducting research and education on such services, and that has formal links (e.g., financial or contractual) with a university".

Conclusion: Establishing a clear and consistent definition of ACPs will support their characterization and further development.

1. Introduction

Pharmacy practice has been defined as the "discipline that studies the different aspects of the practice of pharmacy and its impact on healthcare systems, medicine use, and patient care".¹ Within this domain,

community pharmacy – akin to other healthcare professions such as general medical practice and nursing – requires a robust academic foundation to support the education and integration of pharmacists within the healthcare system. Research and education in community pharmacies are essential for the training of pharmacists and pharmacy

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technicians, addressing context-specific research challenges (e.g., patient recruitment), and clarifying the evolving roles and responsibilities of pharmacists in healthcare systems.

Universities, research institutions, and professional associations play vital and complementary roles in advancing pharmacy practice. They are supported by community pharmacies that serve as pivotal interfaces between education/research and practice, offering training environments at both undergraduate and postgraduate levels, facilitating the transfer of innovations from theory to practice, and contributing to the generation of empirical data for research purposes.

The concept of “academic medical centres” or “academic health centres” refers to facilities that fulfil a triple mission encompassing patient care, education, and research.² They typically comprise a medical school or other health professional schools and a clinical enterprise,³ and are often associated with university hospitals. While certain community pharmacies are settings where the triple mission of patient care, education, and research is fulfilled, a standardized and widely accepted definition of “academic community pharmacy” (ACP) remain absent. As stated in the Granada Statements, which advocate for enhanced quality in clinical and social pharmacy practice research,^{4–17} researchers should establish a commonly accepted glossary and use terms consistently. In alignment with this recommendation, this study aims to define the concept of ACP through a pilot consensus-building process involving academy experts. This effort aims to establish a clear first future definition and a unified vision to enhance their roles and support the development of community pharmacy practice.

2. Methodology

2.1. Problem area and study design

A Delphi study was selected as the appropriate methodological approach for this investigation as “knowledge was uncertain and incomplete and human expert judgment is better than individual opinions”.¹⁸ Prior to initiating the Delphi process, a scoping literature search was conducted to identify existing definitions of the term ACP, as well as related concepts as “academic medical centres” and “academic health centres”. The Delphi study was carried out between April and December of 2023. The reporting of results adhered to the CREDES guidelines to ensure transparency and rigor.¹⁹

2.2. Panel members

The study was initiated by the Community Pharmacy Lab team at the University Center for Primary Care and Public Health, Lausanne, Switzerland (Unisanté). As a preliminary step toward developing a consensus definition of ACP, the initial phase was conducted within Switzerland, to facilitate a future Delphi study at an international level. For this purpose, the promoters contacted five academic entities engaged in pharmacy practice research across the five Swiss universities involved in pharmacy practice research and education: the Universities of Basel, Bern, Geneva, Lausanne, and the Swiss Federal Institute of Technology Zurich (ETH). Each entity was invited via email to nominate two representatives, aiming to form a panel of ten experts. Invitees were given the option to either complete the questionnaire themselves and involve a colleague, or to forward the invitation to two colleagues. This recruitment strategy was designed to ensure the creation of a homogeneous panel of experts, recommended for defining a specialized concept such as ACP.¹⁸

2.3. Delphi rounds

Anonymous survey rounds were conducted to mitigate potential biases such as groupthink (including dominance and group conformity).¹⁸ In the first round of the Delphi process, the proposed definition was based on existing literature on related concepts of “academic

medical centre” (“different types of organizations including three core functions of: patient care, education/teaching activities and research with different balance between these core tasks”)²⁰ and “academic health science centre” (“tripartite mission of providing high quality research, medical education and clinical care”).²¹ This initial definition included four key statements describing the essential components of an ACP:

- 1. **Place of practice** – a facility
- 2. **Clinical activities** - to describe “what” an academic community pharmacy does in terms of patients' related activities (i.e. clinical)
- 3. **Academic activities** - to describe “which” academic activities are conducted
- 4. **Links with a university** - to describe how ACP activities are financed and/or linked to a university.

For each component, panellists were asked to: 1) assess the clarity of the statement using a Likert scale; 2) indicate their level of agreement with the statement, also via a Likert scale; and 3) provide free-text comments and suggestions for modifications. In addition, they were invited to share general comments at the end of the survey. The initial definition of ACP proposed was: “a facility providing professional pharmacy services (according to J. Moullin et al., 2013) to the community, conducting research and education on such services and affiliated and/or (partly) funded by an academic institution”.

Iterative Delphi rounds were carried out after controlled feedback from the promoters to enable panellists to reconsider their positions on the four key statements. The subsequent rounds allowed for the development of revised versions of the definition, informed by levels of agreement and qualitative comments, with the aim of fostering consensus.

2.4. Closing criteria

Consensus agreement on each of the four statements was considered when at least two-thirds (66 %) of the panellists expressed agreement regarding both the clarity and relevance of the statement.²²

3. Results

Nine out of ten invited academics participated in each round of the Delphi study. Two experts were recruited from each university, except for the ETH, where one expert was involved (Table 1). The composition of the panel varied between the first and second rounds. Panellists' professional activities spanned clinical practice, education, research, and other domains, with some involved in a single area and others across multiple. Their academic positions included professor, (senior) lecturer, postdoctoral researcher, PhD student, and other.

Two Delphi rounds were needed to reach consensus among the participating panellists. Following the first round, the majority of

Table 1
Characteristics of the experts.

	Round 1 (n = 9)	Round 2 (n = 9)
Activities^a		
Clinical/practice	7	5
Education	8	7
Research	5	6
Other ^b	1	1
Position^a		
Professor	3	2
(Senior) lecturer	4	3
Post-doc	3	2
Phd student	1	1
Other ^c	1	1

^a Several answers were possible.
^b Management.
^c Deputy head pharmacist, responsible of a research unit.

panellists strongly agreed with two of the four statements included in the proposed definition (Table 2).

Controlled feedback from the promotor, including the agreement percentages and comments from round 1, provided new statements to the panellists. Statements for which consensus had already been reached in the first round were retained without modification. For statement which concerned the definition of professional pharmacy services, three alternative formulations were proposed to the panellists for evaluation (Table 3). Furthermore, the idea of supplementing the definition with an illustrative figure emerged during the analysis of round 1, and this was proposed for consensus agreement in round 2.

4. Discussion

The preliminary classification developed through the Delphi study defined an ACP as “a facility providing professional pharmacy services (according to a commonly accepted definition in the location of the considered academic community pharmacy) to the community, conducting research and education on such services and that has formal links (e.g., financial or contractual) with a university”. In alignment with the recommendations of the Granada Statements,^{4–17} this definition will serve as the basis for a future international Delphi study aimed at establishing a globally accepted definition of ACP.

Academics from all Swiss universities involved in pharmacy practice research and education were invited to participate in the pilot study, ensuring representation from at least one academic per institution. The inclusion criteria for panel members in the forthcoming international Delphi study will need to be reviewed and refined in light of the recommendations.¹⁸

In the pilot, two Delphi rounds were sufficient to reach consensus among the panellists. Of the four statements comprising the initial definition of an ACP, two were approved during the first round. Disagreements primarily arose around the definition of professional pharmacy services. Initially, the study used the definition proposed by Moullin et al., which describes such service as “an action or set of actions undertaken in or organised by a pharmacy, delivered by a pharmacist or other health practitioner, who applies their specialized health knowledge personally or via an intermediary, with a patient/client, population or other health professional, to optimise the process of care, with the aim to improve health outcomes and the value of healthcare”.²³ Feedback from panellists informed the development of alternative formulations for the second round, during which consensus was ultimately achieved. The final definition remains intentionally flexible, allowing for context-specific adaptations of professional pharmacy services. For the forthcoming international Delphi study, an alternative definition under consideration is that provided by the National Library of Medicine's MeSH (Medical Subject Headings), which defines pharmaceutical services as “the total

Table 2
Consensus agreement for the first Delphi round.

Statement	Agreement (n = 9)	Clarity (n = 9)	Consensus
A facility	67 % (n = 6) of panellists strongly agreed with the statement	67 % (n = 6) found it very clear	Approved
providing professional pharmacy services (according to J. Moullin et al., 2013) to the community	56 % (n = 5) strongly agreed	56 % (n = 5) found it very clear	Lack of consensus
conducting research and education on such services	78 % (n = 7) strongly agreed	78 % (n = 7) found it very clear	Approved
and affiliated and/or (partly) funded by an academic institution	44 % (n = 4) strongly agreed	78 % (n = 7) found it very clear	Lack of consensus

Table 3
Consensus agreement for the second Delphi round.

Provided options in round 1	Provided options in round 2	Agreement (n = 9)	Consensus
A facility	Free comments and propositions	All comments available in the supplementary material	Not applicable, already approved in round 1
providing professional pharmacy services (according to J. Moullin et al., 2013) to the community	Q1- Do you agree with the decision of keeping the term “professional pharmacy services” without define it (⇔ to delete “according to J. Moullin et al., 2013”) Q2 - Do you agree with the statement “providing professional pharmacy services (according to a commonly accepted definition in the location of the considered academic community pharmacy)”? Q3 - Do you prefer deleting or keeping the term “to the community” in the definition? [If you prefer to keep the term, specify the recipients] ^a	89 % (n = 8) of panellists strongly agreed => the precision is deleted 78 % (n = 7) strongly agreed with the modified statement 78 % (n = 7) strongly agreed to keep it	Approved Approved
conducting research and education on such services	Free comments and propositions	All comments available in the supplementary material	Not applicable, already approved in round 1
and affiliated and/or (partly) funded by an academic institution	Do you agree with the statement “that has formal links (e.g. financial or contractual) with a university”	67 % (n = 6) strongly agreed	Approved
Figure (Fig. 1)	Free comments and propositions	All comments available in the supplementary material	Not applicable, already approved in round 1

^a Patients: n = 3 (43 %); Population: n = 3 (43 %); Healthcare providers: n = 4 (57 %); Nursing homes: n = 1 (14 %); Institutions: n = 2 (29 %); In primary care settings: n = 1 (14 %).

pharmaceutical services provided by qualified pharmacists. In addition to the preparation and distribution of medical products, they may include consultative services provided to agencies and institutions which do not have a qualified pharmacist”.²⁴

The final component of the definition, concerning formal links with universities, was approved during the second round after clarification that such links need not be financial but may include any form of contractual relationship. As observed in analogous institutions such as academic medical centres, the nature of these affiliations can vary considerably depending on the facility and country context.²⁰

Future research, following the establishment of an internationally accepted definition of ACPs, should focus on characterizing ACP activities and governance structures. These efforts will support the development of collaborative networks, strengthen pharmacy practice through



Fig. 1. Illustration of the definition of ACP validated in the Swiss context.

ACP = Academic Community Pharmacy.

¹ according to a commonly accepted definition in the location of the considered academic community pharmacy.

² e.g., financial or contractual.

continuing education for undergraduate and postgraduate students, and improve the quality of research conducted in community pharmacy settings.

During the Swiss pilot phase, two ACPs were identified in Switzerland: Pharma24, Living Lab and Academic Community Pharmacy in Geneva^k and the Pharmacy of the University Center for Primary Care and Public Health, Lausanne, Switzerland (Unisanté).^l Consequently, among the five academic entities involved in pharmacy practice research across the five Swiss universities, only two met the criteria of the proposed ACP definition. Other entities, while engaged in clinical activities, did not fully align with the definition. A preliminary list of characteristics was developed to describe these ACPs, focusing on the following dimensions: 1) Size-based on staff full-time equivalents (FTEs), weekly opening hours, and the nature of formal links with universities; 2) Services provided - including patient- and population-oriented services selected from a list of 21 services identified across 34 European countries and categorized as core, basic, or advanced services²⁵; services provided to healthcare professionals and institutions were also recorded; 3) Educational activities including the annual number of hours dedicated to undergraduate, postgraduate, and continuing education programs; 4) research activities - characterised by their three main funded current research projects. This list of characteristics will serve as a foundation for discussions in the international phase of the study, aimed at identifying and characterizing ACPs globally.

5. Limitations of the study

The main limitation of the study lies in the variation of panellists across the two Delphi rounds, although the majority participated in both. Additionally, conducting more than two rounds could have provided further insights into the stability of responses over time. These limitations offer valuable guidance for refining and strengthening in future efforts to develop an international consensus of the definition of ACPs.

6. Conclusion

Structures meeting the definition of ACPs play a crucial role in enhancing higher education outcomes for pharmacy students and serve as valuable research environments for evaluating interventions and services aimed at reshaping the pharmacist's role. Establishing a clear and consistent definition of ACPs is essential to support their identification, characterization, and further development. This pilot study represents a foundational step toward an international Delphi study, as

no formal definition currently exists. It serves as a national-scale Delphi pre-test, designed to prepare for the collection of international data. The process of validating the definition and identifying ACPs worldwide will also enable the creation of an international network to foster the sharing of research experiences, practices and potentially data.

CRedit authorship contribution statement

Clémence Perraudin: Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft. **Noelia Amador-Fernandez:** Conceptualization, Methodology, Project administration, Visualization, Writing – original draft. **Marie Paule Schneider:** Investigation, Writing – review & editing, Methodology. **Florent Macé:** Investigation, Writing – review & editing. **Ralitz Gauthier:** Investigation, Methodology, Writing – review & editing. **Alice Panchaud:** Investigation, Writing – review & editing. **Samuel Allemann:** Investigation, Writing – review & editing. **Stefan Erni:** Investigation, Writing – review & editing. **Jérôme Berger:** Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used Microsoft MyCopilot in order to support the verification of clear and accurate scientific English. After using this tool, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.sapharm.2025.10.011>.

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^k <https://pharma24.swiss/>.

^l <https://www.unisanté.ch/fr/consultations-medicales/sites-medicaux/pharmacie>.

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