

# The Danish Pharmacy Practice Network

Subjects: Health Care Sciences & Services

Contributor: Alaa Burghle, Rikke Nørgaard Hansen, Lotte Stig Nørgaard, Charlotte Verner Rossing

The Danish Network for Pharmacy Practice Research and Development (NUAP) is a network of Danish pharmacy owners and employees and Danish pharmacy practice researchers. The overall aim of the network is to strengthen pharmacy practice and pharmacy practice research in Denmark by providing a forum where researchers and representatives of community pharmacies meet to share knowledge and support evidence-based community pharmacy practice.

Keywords: pharmacy practice ; network ; pharmacy practice research ; research network

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## 1. Introduction

For the last couple of decades, pharmacy practice has moved from being primarily product-focused to being much more patient-focused <sup>[1]</sup>. Simultaneously, pharmacy practice research has become an increasingly accepted research field, which has been instrumental in generating evidence for the development of pharmacy health services <sup>[2][3][4][5][6][7]</sup>.

The use of practice-based research networks to collect data and implementation of research results is common, and has been reported in the United States, United Kingdom, Europe, and Canada <sup>[8][9][10][11]</sup>.

The community pharmacy has a number of attributes that makes it a unique and excellent setting for conducting research and development projects. Community pharmacies are highly accessible to patients <sup>[12]</sup>, and are staffed by pharmacists and pharmacy technicians; two groups highly trained in many areas e.g., pharmacology, pharmacotherapy, and communication. Furthermore, the big turnover in customers in the community pharmacy setting <sup>[13]</sup> makes it possible to collect a large amount of data in a short time <sup>[14]</sup>, and provides a healthcare setting where people in different states of health and illness come to pick up medication and seek medication-related counselling.

However, conducting nationwide research and development projects can be a resource-intensive and time-consuming process for the individual community pharmacy. Collaboration with other pharmacies and researchers might thus be necessary to ensure strong research results and more efficient implementation. Thus, the Danish Network for Community Pharmacy Practice Research and Development (NUAP) was established in Denmark by a number of highly committed community pharmacy owners and researchers in Denmark. NUAP is the abbreviation of Netværk for Udvikling af Apotekspraksis, the Danish name for the network.

## 2. Community Pharmacies in Denmark

All Danish residents who have been granted a residence permit have access to free healthcare, including visits to a general practitioner, hospital, emergency room, out-of-hour service, and so on. Denmark is divided into 5 regions and 98 municipalities <sup>[15]</sup>. Managing the hospital system is one of the regions' main tasks as well as organizing health care services by private practitioners <sup>[16]</sup>, while the municipalities are responsible for the management of health care services at a local level <sup>[17]</sup>.

By October 2020, a total of 506 community pharmacies (including pharmacy branches) exist in Denmark, divided between 201 pharmacy owners <sup>[18]</sup>. Danish community pharmacies are privately owned and have a monopoly on pharmacy practice, though some over-the-counter (OTC) medications are also sold in retail <sup>[18]</sup>. The Danish community pharmacy sector is regulated by the state, and is inspected by the Danish Patient Safety Authority and the Danish Medicines Agency along with other health care institutions <sup>[15]</sup>. On a yearly basis, community pharmacy staff meets the majority of the Danish population—94% of the population visited a community pharmacy in 2017 <sup>[19]</sup>. Thus, the Danish community pharmacies are responsible for distributing medications and counselling of patients about prescription medication and OTC medication. Additionally, community pharmacies support health promotion and implementation of correct medication use. Danish community pharmacies also deliver other pharmaceutical services for patients <sup>[7]</sup> e.g., The Inhaler Technique Assessment Service, New Medicines Service, and Re-prescribing Service. Danish community pharmacy staff consist of

pharmacists holding a five-year MSc degree in pharmacy, pharmacy technicians holding a three-year academy profession degree, pharmacy technician students, and pharmacy internship students. Owning a community pharmacy is a right reserved for pharmacists in Denmark. An average community pharmacy consists of 12 staff members, while the average number of citizen per pharmacy is 12,000 citizens <sup>[13]</sup>.

A total of 102 pharmacy owners are currently members of NUAP.

### **3. Establishment and Structure of the Network**

Denmark has a long tradition for research and development in community pharmacy practice. For decades, a variety of community pharmacy research and development projects have been conducted both locally and nationally <sup>[7][20]</sup>. However, sharing knowledge and providing support in a structured manner and with full transparency toward stakeholders, researchers, and pharmacy practitioners has proven to be challenging and time-consuming. For this reason, NUAP was established in September 2016 as a network for Danish community pharmacies that are interested in research and development and established Danish researchers in pharmacy practice.

The formal members in the network are the pharmacy owners, but pharmacists or pharmacy technicians from their community pharmacy can represent them in the network. This structure is chosen, as research has found better results in implementation of new initiatives in the community pharmacy when this is supported by a strong leadership of the pharmacy owner <sup>[21]</sup>. Community pharmacy owners in all five Danish regions can join NUAP. Any community pharmacy owner interested in joining NUAP is required to send an e-mail with a request to join the network to the network secretariat. As a member, you commit yourself to participate in meetings, share knowledge and ideas, and to contribute whichever way you can in projects and dissemination of results.

The network is led by a steering committee that acts as a review board for project ideas submitted to the network by its current and future members. The steering committee consists of up to seven members. Four seats belong to representatives from member community pharmacies, while the remaining three seats belong to representatives from research institutions in the pharmacy practice field. The three research institutions represented are the University of Copenhagen, the University of Southern Denmark, and the Danish College of Pharmacy Practice (Pharmakon). The researchers on the board are appointed by their respective institutions.

The representatives from the community pharmacies serve in the steering committee for a two-year period and are elected by the members at the network's spring meeting. The four community pharmacy representatives must at least include one pharmacy owner, one pharmacist, and one pharmacy technician.

All projects that aspire to be accepted in the network must be submitted in writing in a defined template project description form for the steering committee to review. The template allows for a maximum of 450 words and covers the following topics: project title, background, aim, methods, timeline, dissemination plan, funding, project manager, and contact information for the project manager and his/her organization.

At present, 10 research and development projects are finalized, and 17 are ongoing.

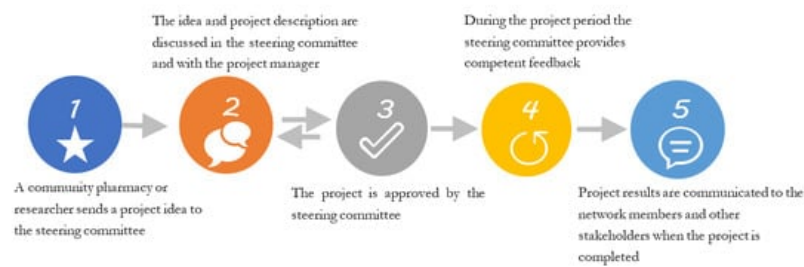
### **4. The Vision**

The overall aim of the network is to strengthen pharmacy practice and pharmacy practice research in Denmark by providing a forum where researchers and representatives of community pharmacies meet to share knowledge and support evidence-based community pharmacy practice. By meeting and working together, the aim of the network is to connect researchers and pharmacy practitioners in Denmark. This is done by creating and cultivating collaborative relationships between community pharmacies and researchers, inspiring new research and development projects, particularly projects rooted in the community pharmacies. Furthermore, the network aims to support transparency in projects and investigations performed in a Danish community pharmacy setting, enhancing project ideas that concern pharmacy practice and emphasize the role of the community pharmacy in relation to the rest of the Danish healthcare system. Additionally, the network aims to carry out projects that are relevant and applicable to future community pharmacy practice. Thus, the collaborative approach between researchers and practitioners enhances both the relevance for practice and the scientific quality of the results gained in the network. The network acts as a facilitator and a platform through which community pharmacies can participate in smaller or larger projects through collaboration with each other.

Finally, the network aims to create and disseminate results from research projects that can emphasize the value of community pharmacy to individual citizens and whole communities.

## 5. How Does the Network Support its Members?

The steering committee of the network is ready to provide help and support in projects and project ideas created by the members. Each project is assigned one member of the steering committee to provide support and feedback to the project managers from the community pharmacies ([Figure 1](#)).



**Figure 1.** A project's journey from idea to result dissemination in the Danish Network for Community Pharmacy Practice (NUAP).

Further, the steering committee invites all members to a network meeting biannually to discuss new project ideas, developments in ongoing projects, and results from completed projects in the network in addition to other subjects related to pharmacy practice. The biannual network meetings also serve as a forum where members from different community pharmacies from all over Denmark meet, exchange knowledge and experiences, and establish collaborations. The network meetings are conducted either online or as physical meetings. Future meetings will, hopefully, be conducted as a combination of both.

Network members are able to discuss a project idea or a project description with the steering committee at a monthly, open online meeting. Additionally, supporting tools for conducting projects are available on the network's website e.g., video tutorials about how to carry out a project in a community pharmacy and how to disseminate results.

Participating in the network provides the community pharmacy members with a number of opportunities for inspiration and learning. First, members are, at network meetings and in newsletters, presented with experiences of other members working on different projects. Second, members can share ideas on new pharmaceutical services and other research and development projects that stem from their practice at the community pharmacy. Third, members can participate in a review of practice in the Danish community pharmacies, for which researchers or other project managers ask for input from the practitioners in the network e.g., on how patients with low health literacy or patients who have a poor hearing are supported at the pharmacy. Fourth, the link and collaboration between pharmacy staff and researchers at the universities can contribute to retaining talented and skilled pharmacists and pharmacy technicians in the community pharmacy sector. Last, through participating in the network, community pharmacies have an opportunity to contribute to research and development of pharmacy practice in Denmark and take ownership of the development of their sector along with other community pharmacies and researchers in the field.

Furthermore, members receive help with data processing and dealing with ethical approvals and GDPR regulations from members who are experienced in obtaining such approvals and with working with GDPR (mainly researchers). All projects that involve sensitive personal data are to be approved by either the Regional or National Committee on Health Research Ethics or by the GDPR supervisors in the Danish region in which the project is registered or at one of the universities participating in the project. Both the Committees on Health Research Ethics and GDPR supervisors can waive approval of the project, if they deem such approvals unnecessary. All data collected in research and development projects under NUAP are stored and processed securely, either in secured digital databases or physically in a secure place at the community pharmacies involved in the project in compliance with GDPR regulations.

Some community pharmacies complete and implement projects at their pharmacy all the time, but they seek collaborators for their projects, while other community pharmacies find the network a great opportunity to participate in others' projects. The network thus creates a win-win situation for both parties.

Community pharmacies and researchers ask for support and competent feedback in different phases of their projects. Thus, the network provides a platform for practitioners and researchers to learn from each other and optimize their research and development projects. The network provides the participating community pharmacies a platform of communicating their results on the network website <sup>[22]</sup>, at network meetings, and in newsletters.

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