



# Primary care drug therapy pharmacists in South Africa: Practice settings and conditions treated

Maxine Tromp<sup>a</sup>, Ilse Truter<sup>b,\*</sup>, Jan du Toit<sup>c,1</sup>

<sup>a</sup> Department of Pharmacy, Nelson Mandela University, PO Box 77000, Port Elizabeth (Gqeberha) 6031, South Africa

<sup>b</sup> Drug Utilization Research Unit (DURU), Department of Pharmacy, Nelson Mandela University, PO Box 77000, Port Elizabeth (Gqeberha) 6031, South Africa

<sup>c</sup> Kaone Pharmaceutical Solutions (Pty) Ltd, South Africa

## ARTICLE INFO

### Keywords:

Education  
Pharmacy  
Continuing  
Pharmacy education  
Primary Care Drug Therapy (PCDT)  
Primary health care  
South Africa  
Supplementary training

## ABSTRACT

**Background:** Primary Care Drug Therapy (PCDT) is a supplementary training course for South African pharmacists. The qualification affords pharmacists an expanded scope of practice to treat specific primary health care conditions.

**Objective:** To describe the practice settings and conditions being treated by PCDT pharmacists in South Africa, with specific focus on differences between services delivered in urban versus rural areas.

**Methods:** An online questionnaire survey was conducted under all PCDT trained pharmacists in 2021.

**Results:** Less than half (45.3%;  $n = 34$ ) of the 75 respondents had received their Section 22 A(15) permit and were practicing as PCDT pharmacists. Of these respondents, only 41.2% were practicing in a rural setting. Overall, respondents indicated that ear, nose and throat conditions, and family planning, were the most often consulted conditions. Differences were, however, observed between provinces, and between urban and rural areas. Family planning, urological conditions and sexually transmitted infections were most frequently consulted in urban areas, whilst gastrointestinal conditions, and ear, nose and throat conditions, were more common in rural areas.

**Conclusions:** Conditions treated in the different settings in South Africa provided a unique insight into the epidemiological profile of the area, as well as the primary health care needs.

## 1. Introduction

South Africa is, like many other countries, facing a shortage of health care providers in the public sector in general, and in rural and underserved areas in particular.<sup>1</sup> With National Health Insurance (NHI) in the foreseeable future, changes may need to be made within the health care field in order to ensure the delivery of quality health care to the South African population.

There are nine higher education institutions in South Africa training pharmacists. These nine institutions are located in six of the nine provinces (two institutions in the Eastern Cape, three in Gauteng, and one each in KwaZulu-Natal, Limpopo, North West and the Western Cape). Pharmacists in South Africa have limited access to prescription-only medicine when treating patients and providing pharmacist-initiated-therapy. Only basic and selected diagnostic skills are taught during undergraduate pharmacy training. Screening tests taught

include, for example, blood pressure monitoring, ear, nose and throat investigations, urine testing and cholesterol screening. Pharmacists, however, have the option to complete additional (supplementary) training to upskill themselves. One such supplementary training course which is accredited by the statutory body for pharmacy, the South African Pharmacy Council (SAPC), and which affords pharmacists an expanded scope of practice, is the Primary Care Drug Therapy (PCDT) qualification. This supplementary training is offered as a series of three short courses, and is funded by the participants themselves. It is not sponsored the South African government. The PCDT qualification is currently only offered by one of the nine training institutions, which is located in the North West province.<sup>2</sup>

The PCDT postgraduate supplementary training course has been offered since the 1990s in South Africa.<sup>3</sup> This qualification allows a pharmacist to provide advanced primary health care services to patients. The acts and services can include consultations<sup>4</sup> with patients,

\* Corresponding author.

E-mail address: [ilse.truter@mandela.ac.za](mailto:ilse.truter@mandela.ac.za) (I. Truter).

<sup>1</sup> At the time of the study: A contract appointment in the Department of Pharmacy, Nelson Mandela University, PO Box 77000, Port Elizabeth (Gqeberha), South Africa, 6031

<https://doi.org/10.1016/j.rcsop.2023.100352>

Received 15 July 2023; Received in revised form 11 October 2023; Accepted 13 October 2023

Available online 14 October 2023

2667-2766/© 2023 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

prescribing of medication and screening services in an approved primary health care setting, which includes<sup>5</sup>:

- comprehensive patient history taking;
- physical examination (excluding internal and external genitourinary examination);
- assessment of diagnosed and undiagnosed conditions listed in the Primary Health Care Standard Treatment Guidelines (STGs) and Essential Medicines List (EML);
- ordering, conducting and interpretation of applicable diagnostic and laboratory tests for the purposes of the previous point above;
- interpretation of the assessment/diagnosis;
- decision on safe and appropriate therapy;
- prescribing of medicines for the conditions identified for the purposes of PCDT as per Primary Health Care STGs and EML List published by the National Department of Health (NDoH) from time to time;
- monitoring of the outcomes of therapy; and
- referral to another health care provider where necessary.

The course is completed over a minimum period of two years after the initial undergraduate pharmacy qualification and allows the pharmacist to have access to an amended, wider scope of practice,<sup>6</sup> with the aim of providing primary health care services to a wider population. The course is assessed through work assignments, a portfolio of evidence, a formal examination at the end of the course, as well as a practical assessment in the form of an objective structured clinical examination or OSCE. The compilation of the portfolio (containing at least 200 patient examinations on a primary health care level) is an integral part of the practical component. The 200 patient examinations must include all the conditions listed in the South African Primary Health Care STGs and EML<sup>7</sup> in line with the scope of practice of a PCDT pharmacist.

Once a pharmacist has completed the PCDT training, the supplementary qualification must be registered with the SAPC. Pharmacists are thereafter issued with a permit in terms of Section 22A(15) of the Medicines and Related Substances Control Act, 1965 (Act No. 101 of 1965), as amended.<sup>5</sup> The permit is issued by the NDoH in South Africa. The permit authorises a pharmacist to diagnose, prescribe and administer medicine for selected conditions in line with the South African Primary Health Care STGs and EML.<sup>7</sup> The PCDT course enables pharmacists to develop their clinical skills and professional capabilities to provide more comprehensive pharmacist-initiated therapy at a primary health care level.<sup>8</sup>

These pharmacists, colloquially known as “PCDT pharmacists” (or “prescribing pharmacists”), who have received a Section 22(A)15 permit, have an expanded scope of practice, allowing them to diagnose conditions according to a list of primary health care conditions published by the NDoH from time to time. PCDT pharmacists can also prescribe medicine from a limited list of prescription-only medicines for these specific conditions. The main goal of extending prescribing to pharmacists is to improve patient care without compromising patient safety, increase access to health care services, increase patient choice, make better use of the skills of health professionals and contribute to the introduction of a more flexible health care team working in primary health care settings.<sup>5</sup>

Nurses can be employed in pharmacies in South Africa to provide primary health care services. However, not all pharmacies are in the position to employ a nurse. The Good Pharmacy Practice (GPP)<sup>9</sup> guideline published by the South African Pharmacy Council requires certain minimum requirements for pharmacy clinics. Due to the cost of a professional nurse, as well as the cost of suitably equipping a clinic in line with the minimum GPP requirements,<sup>9</sup> a clinic may not always be affordable.

To date, only a small percentage of pharmacists in South Africa have completed and are practicing PCDT pharmacists. There is a paucity of published literature on PCDT pharmacists, and not many studies have

been conducted on their impact on health care in South Africa. The primary aim of this study was to describe the practice settings and conditions being treated by PCDT pharmacists in South Africa, with specific focus on differences between services delivered in urban versus rural areas.

## 2. Methods

**Study design:** A descriptive survey design utilizing a structured questionnaire.

**Study population and setting:** A list with the names and contact details of all pharmacists in South Africa who have successfully completed the supplementary PCDT training course and who have recorded their training with the SAPC, was obtained from the SAPC.

**Data collection:** The questionnaire was developed based on an in-depth literature study and was pilot tested. The questionnaire consisted of the following sections: demographic information, the PCDT qualification, clinical aspects (such as conditions treated), and the scope and opportunities for PCDT pharmacists in South Africa. The link to the online questionnaire in Google Forms was emailed during January and February 2021 to the 363 pharmacists in South African whose PCDT training was recorded by the SAPC.

**Statistical analysis:** Data were analysed using Microsoft Excel®. Descriptive statistics were calculated.

**Ethical approval:** Ethical approval for the study was obtained from the Research Ethics Committee (Human) (registration number: H20-HEA-PHA-003).

## 3. Results

A total of 363 pharmacists have registered their training with the SAPC, however, not all pharmacists had received their Section 22(A)15 permits from the NDoH. The response rate to the survey was 20.7% ( $n = 75$ ). Of the 75 pharmacists who responded to the questionnaire survey, only 34 had received a Section 22(A)15 permit from the NDoH and indicated that they were practicing as a PCDT pharmacist. They formed the target group for the study.

### 3.1. Demographic characteristics of respondents practicing as PCDT pharmacists in South Africa

South Africa had a total of 17,181 registered pharmacists on 11 July 2021.<sup>10</sup> Only 363 pharmacists in South African had registered their completed PCDT training with the SAPC in 2021, which equates to 2.1% of all registered pharmacists.

Only 45.3% ( $n = 34$ ) of the 75 respondents had received their Section 22(A)15 permits from the NDoH. Fifty percent of them ( $n = 17$ ) were female. The majority of practicing PCDT pharmacists (41.2%) were 60 years or older, with only two respondents younger than 30 years.

Respondents were mainly practicing in two of the nine provinces of South Africa, namely the Western Cape and Gauteng. Furthermore, 16 of these PCDT pharmacists were practicing in urban areas and 14 in rural areas. Most practicing PCDT pharmacists in urban areas worked in Gauteng, the Western Cape and North West provinces, whereas PCDT pharmacists working in rural areas were distributed across seven of the nine provinces. There were no PCDT pharmacists in the Northern Cape province.

Pharmacies in South Africa can employ a nurse to assist with primary health care services as well as vaccination in the clinic of their pharmacy. Some of these primary health care services overlap with the PCDT pharmacist's scope of practice. Respondents were asked whether a nurse was employed in the pharmacy where they provide PCDT services. A third (32.4%;  $n = 11$ ) of respondents indicated that a nurse was employed in the pharmacy where they practice. The Western Cape is the province that employed the most nurses. There were no difference between the number of PCDT consultations performed in the pharmacy

clinics, and whether a nurse was employed in the pharmacy or not.

### 3.2. Conditions consulted and treated by practicing PCDT pharmacists

The primary health care conditions that PCDT pharmacists may treat are classified according to the chapters of the South African Primary Health Care STGs and EML.<sup>7</sup> The EML consists of 21 chapters that cover the most important primary health care conditions in the country.<sup>7</sup> Respondents were asked to indicate the five most common conditions listed as chapters in the South African Primary Health Care EML & STGs. Table 1 illustrates the EML chapters (disease states) that were consulted on by practicing PCDT pharmacists in (a) urban areas and (b) rural areas, in the nine provinces in South Africa. A narrower spectrum of conditions were treated in urban areas. In both rural and urban areas, ear, nose and throat conditions (Chapter 19) (especially otitis externa, otitis media, sinusitis, tonsillitis and pharyngitis) were the most commonly mentioned by respondents, followed by family planning (Chapter 7) (especially contraception – both injectable and oral contraceptives). Gastrointestinal conditions, ear conditions, skin conditions and wounds were prevalent in rural areas, whilst skin conditions and wounds were also commonly treated in urban areas. No obstetrics and gynaecological conditions were mentioned in rural areas, and no central nervous system and mental health conditions were treated in urban areas.

### 4. Discussion

Despite the fact that the PCDT qualification has been in existence since the 1990s, little has been published about the qualification. Seventy-five of the 363 pharmacists who completed PCDT training completed the survey, of which less than half (45.3%; N = 34) had received their Section 22 A(15) permit and were practicing as PCDT pharmacists. From this, it can be estimated that only 1 % of registered pharmacists have successfully completed PCDT training and have a permit to practice as a PCDT pharmacist. There is only one accredited provider for the PCDT qualification in the country, with a limited annual intake. However, other higher education institutions may in the near future also offer the qualification which may lead to an increase the number of PCDT pharmacists in the country. The question can be asked whether this is not a missed opportunity in a country in desperate need of primary health care services and where an accredited and highly regarded supplementary training course approved by its statutory body, the SAPC, exists.

Half of the practicing PCDT pharmacists (n = 17) in this study were females, and many were older pharmacists (41.2% were 60 years or older). In 1992, the initial group of PCDT pharmacists in South Africa had completed their training and had received their permit. The PCDT qualification was not widely used after that for a few years with minimal new permits being issued due to changes to the systems of the Board of Healthcare Funders in South Africa as well as annual medical scheme amendments.<sup>11</sup> This can possibly explain why 41.2% of participants were over the age of 60 years. Many of them may have completed their training in the earlier years when the qualification was introduced.

Of the respondents with permits, 46.1% (n = 16) were practicing in only two of the nine provinces of South Africa, namely the Western Cape and Gauteng. Gauteng is the most populous province in South Africa, followed by KwaZulu-Natal and the Western Cape.<sup>12</sup> Different to what was expected, most practicing PCDT pharmacists did not practise in the provinces traditionally known for their primary health care needs (and with deep rural areas) but rather in economically strong provinces. None of the respondents were from the Northern Cape, a province known for its sparse health care services.

Another observation was that 16 of the 34 PCDT pharmacists were practicing in urban areas, and 14 in rural areas (4 did not indicate if the pharmacy was located in a rural or urban area). Again, contrary to what was expected, most practicing PCDT pharmacists did not practise in

**Table 1** Conditions most commonly consulted on and treated by practicing PCDT pharmacists in the different provinces of South Africa (N = 34)\*

EML Chap-ter	Description	Eastern Cape		Free state		Gauteng		KwaZulu-Natal		Limpopo		Mpumalanga		North West		Western Cape	
		Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
1	Dental and oral conditions	0	0	0	0	4	1	0	0	0	0	1	0	0	1	1	3
2	Gastrointestinal conditions	1	2	0	1	3	1	1	0	1	0	1	0	0	1	0	2
3	Nutrition and anaemia	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
4	Cardiac conditions	1	0	0	0	3	1	0	0	0	0	1	0	2	1	0	1
5	Skin and wounds	1	2	0	1	3	1	1	0	0	0	1	1	2	0	2	2
6	Obstetrics and gynaecology	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7	Family planning	0	1	0	1	5	1	1	0	0	1	1	1	1	1	2	2
8	Kidney and urological conditions	0	0	0	0	5	1	1	0	0	0	0	1	0	1	0	3
9	Endocrine conditions	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
10	Infections and related conditions	0	1	0	0	3	1	1	0	0	0	1	0	1	0	1	2
11	Human immunodeficiency Virus (HIV) and AIDS	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2
12	Sexually transmitted diseases (STDs)	0	1	0	0	3	1	1	0	0	0	1	0	1	0	1	1
13	Immunisations	0	0	0	1	4	1	0	0	0	0	0	0	1	0	1	1
14	Musculoskeletal conditions	0	0	0	0	3	1	1	0	0	1	0	0	0	0	0	1
15	Central nervous system conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Mental health conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17	Respiratory conditions	1	0	0	0	3	1	1	0	0	0	1	1	1	0	1	3
18	Eye conditions	0	1	0	1	4	1	1	0	0	1	0	1	2	1	1	1
19	Ear, nose and throat conditions	0	1	0	1	5	1	1	0	0	0	1	1	2	1	2	3
20	Pain	0	0	0	0	2	1	1	0	0	1	0	0	1	0	1	2

\* Note that there were no respondents from the Northern province, hence only eight of the nine provinces are included in the table.

areas that are considered to have the highest demand for these services.

With respect to the conditions most commonly treated by PCDT pharmacists, gastrointestinal conditions were more commonly treated in rural areas. It could be due to sanitation issues as well as the quality of drinking water available in rural areas.<sup>13</sup> Conditions mostly treated in urban areas included conditions linked to the reproductive tract and infections. This may be due to lifestyle factors in the bigger cities and towns. It must be noted that is not within the scope of practice of PCDT pharmacists to treat sexually transmitted diseases (STDs), these cases must be referred.

The study had several limitations. Firstly, the study had a low response rate. Only a small percentage of pharmacists (estimated at 2.1%) have completed the PCDT supplementary training course, and as stated earlier, less than 1 % have obtained a permit to practice as a PCDT pharmacist. This will hopefully change with the renewed focus on the needs of the health care system in South Africa, as well as the revised accredited PCDT supplementary training course. Another limitation was the fact that a non-validated questionnaire was used. There is a paucity of published studies on PCDT pharmacists in South Africa, and for that reason, the questionnaire was developed based on an extensive literature study on similar categories of pharmacies in other countries.

## 5. Conclusions

The practice settings in which PCDT pharmacists work were different to what was expected. It was assumed that most PCDT pharmacists would work in rural South Africa, and in areas where health care services are perceived to be lacking. This was not the case. Both Gauteng and the Western Cape provinces have well-developed health care structures and are economically strong provinces. The conditions that were identified as the most treated by PCDT pharmacists were, however, the conditions expected. Lack of sanitation and clean water lead to gastrointestinal conditions and this is commonly found in rural areas. As more people are migrating to urban areas in South Africa, where there are more job opportunities, and because of the still high HIV/AIDS burden in the country, coupled to a rapid population growth, reproductive conditions could have been predicted in urban South Africa.

This study is one of the first studies reporting on the conditions treated by practising PCDT pharmacists (with permits) in South Africa. PCDT pharmacists can, together with nurses and other health care professionals, play an essential role in ensuring that adequate primary health care delivery takes place to all population groups in all areas of the country. Further studies are required on the role of the PCDT pharmacist in South Africa to provide evidence-based data on the impact these pharmacists have on the health of the South African population.

## Ethical approval

Ethical approval for the study was obtained from the Nelson Mandela University Research Ethics Committee (Human) (registration number: H20-HEA-PHA-003).

## Funding

This research did not receive any specific grant from funding

agencies in the public, commercial, or not-for-profit sectors.

## CRedit authorship contribution statement

**Maxine Tromp:** Conceptualization, Investigation, Writing – original draft, Data curation, Data analysis. **Ilse Truter:** Conceptualization, Supervision, Writing – review & editing. **Jan du Toit:** Conceptualization, Supervision.

## Declaration of Competing Interest

The authors declare no competing interests.

## Acknowledgements

The pharmacists who participated in the survey.

## References

- Rispel LC, Blaauw D, Ditlopo P, White J. Human resources for health and universal health coverage: Progress, complexities and contestations. *South African Health Rev.* 2018;1:13–21.
- South African pharmacy council: list of approved providers and courses. *Pharmaciae.* December 2021;8:2 [Accessed 24 September 2023].
- Brand-Jonker N. Pharmacists still awaiting permits. News24. <https://www.fin24.com/Companies/Health/Pharmacists-still-awaiting-permits-20121007>; 2012. Accessed 12 July 2023.
- South African Pharmacy council: Rules relating to the services for which a pharmacist may levy a fee and guidelines for levying such a fee or fees. Board Notice 35 of 2019. 29 March 2019 (No. 42337): 789. Pretoria: Government Gazette. Services for which a pharmacist can levy a Fee. 2019.pdf ([pharmcouncil.co.za](http://pharmcouncil.co.za)). Accessed 24 September 2023.
- South African Pharmacy Council: Primary Care Drug Therapy Pharmacist (PCDT). Board Notice 102 of 2021. Pretoria: Government Gazette; 13 August 2021:276 (No. 44981). [https://www.pharmcouncil.co.za/Media/Default/Documents/BN102\\_PCDT.pdf](https://www.pharmcouncil.co.za/Media/Default/Documents/BN102_PCDT.pdf); Accessed 29 June 2023.
- Hamman H. *Our Primary Care Drug Therapy Program Is Unique*. North West University; 2023. <http://www.nwu.ac.za/sites/www.nwu.ac.za/files/files/i-media/nwu&uENG042018/pharmacy.html> [Accessed 24 September 2023].
- Department of Health Republic of South Africa. *Standard Treatment Guidelines and Essential Medicines List for South Africa: Primary Healthcare Level*. South African Department of Health: Pretoria; 2020.
- Naidoo V, Suleman F, Bangalee V. Roles and reimbursement of pharmacists as South Africa transitions towards universal health coverage (UHC): an online survey-based study. *PLoS One.* 2021;16, e0257348. <https://doi.org/10.1371/journal.pone.0257348>.
- Good Pharmacy Practice. South African Pharmacy Council. <https://pharmcouncil.co.za/Media/Default/Documents/Rules%20published%20in%20terms%20of%20section%2035A%20of%20the%20Pharmacy%20Act%2053%20of%201974.pdf>; 2023. Accessed 24 September 2023.
- Statistics: Pharmacists by Province. South African Pharmacy Council. <https://interns.pharma.mm3.co.za/Statistics/PersonsByPharmacistRoleProvince?class= btn%20btn-primary>. 2021. Accessed 28 March 2021.
- Du Toit J. Advertising of PCDT services. *South African Pharmaceut J.* 2016;83:50–51.
- Statistical Release P0302. Mid-year population estimates 2019. Stats SA. <https://www.statssa.gov.za/publications/P0302/P03022019.pdf>; 2019.
- Gizaw Z, Addisu A, Guadie D. Common gastrointestinal symptoms and associated factors among under-5 children in rural Dembiya, Northwest Ethiopia: a community-based cross-sectional study. *Environ Health Insights.* 2020;14. <https://doi.org/10.1177/1178630220927361>, 1178630220927361.