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Parkinson disease medicines, WHO African Region

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Parkinson disease treatments on national essential medicines lists, African Region

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Abstract

The prevalence of Parkinson disease is increasing globally. Despite the existence of effective and affordable medicines for Parkinson disease, access to these medicines is limited in the World Health Organization (WHO) African Region. Several factors influence accessibility, including lack of prioritization of Parkinson disease, shortage of a trained health workforce, barriers to health financing and lack of inclusion of medicines in national essential medicines lists. We determined alignment of the most recent national essential medicines lists of 47 countries in the WHO African Region with the 23rd edition of the *WHO Model list of essential medicines* for Parkinson disease medicines. Overall, of any formulation or strength, 81% (38/47) of countries included levodopa + carbidopa or levodopa + benserazide as a therapeutic alternative on their national lists and 79% (37/47) included biperiden or trihexyphenidyl as a therapeutic alternative. Inclusion of specific formulations for medicines was lower; for example, 45% (21/47) of countries included levodopa + carbidopa or levodopa + benserazide in a 4:1 ratio. Furthermore, 11% (5/47) of national essential medicines lists included none of the four medicines. While inclusion of medicines for Parkinson disease in national essential medicines lists provides no guarantee of immediate access, it can encourage procurement, prescribing and use, and can help lower costs, raise awareness of and create political will for Parkinson disease treatment. This analysis provides further evidence of the need for action to improve the accessibility of medicines for Parkinson disease in the WHO African Region.

Introduction

Parkinson disease is a progressive neurodegenerative condition with an estimated worldwide prevalence of 12 million people. The disease is a leading cause of disability among neurological disorders.¹ The true burden of Parkinson disease, however, is difficult to estimate due to low rates of diagnosis and limited epidemiological evidence across the world.^{2–4} The main risk factor for Parkinson disease is increasing age, although the condition also has strong environmental and genetic links.⁵ These factors, particularly the environmental factors, are increasingly putting both urban and rural populations in low- and middle-income countries, such as those countries in the World Health Organization (WHO) African Region, at greater risk of developing Parkinson disease.^{6,7}

Despite the ageing global population and evidence of increasing Parkinson disease prevalence,⁸ health systems in low- and middle-income countries are not prepared to diagnose and manage the disease. This situation is in part due to a lack of specialist neurological services in many low- and middle-income countries, leading to underdiagnosis and an underestimation of the disease burden.^{9,10} Lack of awareness and stigma associated with Parkinson disease^{11–14} can further delay diagnosis and therefore access to effective and appropriate treatment. Combined, these factors limit policy prioritization in low- and middle-income countries and the burden of disease remains unrecognized. As a result, large proportions of the population in these countries are without access to treatment.

Medication for Parkinson disease can be life changing. Levodopa + dopa decarboxylase inhibitor (that is, carbidopa or benserazide) is the most effective medicine for improving symptoms, functioning and quality of life.^{15,16} Anticholinergics (that is, biperiden or trihexyphenidyl), which act via a different therapeutic mechanism, are also beneficial in Parkinson disease treatment, particularly for tremor. Despite their proven efficacy, poor accessibility of these medicines in low- and middle-income countries is common and a key contributor to the treatment gap. Where medicines are available, they are often unaffordable,¹⁰ especially in the WHO African Region. For example, levodopa + carbidopa is unaffordable in Ghana,¹⁷ Kenya¹⁸ and Nigeria,¹⁹ with availability in pharmacies ranging from 11% (13/121) in Ghana to 50% (24/48) in Kenya. According to WHO, only 34% (37/110) of countries report availability of levodopa + carbidopa at all times at the primary care level.¹⁰

Many different factors affect access to medicines, for example: shortage of a trained health workforce able to diagnose and prescribe medicines; lack of access to universal health coverage (UHC); and inefficiency of supply chains.²⁰ A key component that negatively

affects access to medicines for Parkinson disease is the poor prioritization or selection of essential medicines,²⁰ which are not included on national essential medicines lists.

The *WHO Model list of essential medicines*²¹ includes a selection of medicines that satisfy the priority health-care needs of a population. Essential medicines should be available within the context of functioning health systems at all times, in adequate amounts and appropriate dosage forms, with assured quality, and at an affordable price.²² The WHO model list is updated every two years and acts as a guide for countries or regional authorities to develop or revise their own national essential medicines lists based on local health priorities and treatment guidelines. Selecting a limited number of essential medicines that reflect the national disease burden and clinical need can improve access by streamlining procurement and distribution of quality-assured medicines. This selection also encourages more rational prescribing, enhances appropriate use, and helps reduce costs for health-care systems and patients.²³ National essential medicines lists have also been successful in raising awareness and political will in resource-constrained countries.²³ However, due to the many different factors influencing access to medicines, inclusion on national essential medicines lists does not automatically mean these medicines will be available or affordable.²⁰

The disease burden due to neurological disorders such as Parkinson disease cannot be reduced without reliable and equitable access to essential medicines. The imperative to increase access to essential medicines was highlighted in the United Nations sustainable development goals (goals 3.4 and 3.8) and in the *Intersectoral global action plan on epilepsy and other neurological disorders 2022–2031*.²⁴

As the accessibility of medicines is determined by several factors, different methods have been used to evaluate access, for example, direct availability and pricing through facility-based surveys,^{18,19} stakeholder interviews^{25–27} or direct government reporting.^{10,28} Analysing national essential medicines lists offers insights into key barriers to access. Therefore, the aim of this analysis was to determine the alignment of Parkinson disease medicines listed in national essential medicines lists of countries in the WHO African Region with those medicines in the 23rd list of the *WHO Model list of essential medicines*.²¹

Methods

We obtained digital versions of national essential medicines lists for 47 countries (Fig. 1) in June 2024 through: (i) web-based internet searches of Google (search terms included country name + essential medicine* list (in English, French, Portuguese and Spanish)) or (ii) directly

through local representatives via WHO. We downloaded the national lists and securely stored them in a shared folder for analysis. All the latest versions of national essential medicines lists for the WHO African Region (including PDF files) are now available on a WHO repository.²⁹ On re-searching the repository in May 2025, we found updated national essential medicines lists for six countries.

To ensure accuracy of data extraction, two people independently recorded in Excel (Microsoft, Redmond, United States of America) all medicines for Parkinson disease listed on the WHO essential medicines list and national essential medicines lists, including specific formulations and strengths. For all national list documents, including in other languages (i.e. French, Portuguese and Spanish), we used the term “parkinson” to identify the required sections (e.g. “medicines for parkinsonism,” “antiparkinsonicos,” “antiparkinsoniens”). We also made manual searches. We determined the proportion of essential medicines and individual formulations included on national essential medicines lists compared with the WHO essential medicines list. We used the square box listings in the WHO essential medicines list, which indicates that medicines within a pharmacological class can be considered therapeutically equivalent in terms of efficacy and safety.³⁰ Selecting a single medicine from within a pharmacological class of therapeutically equivalent medicines can result in better value procurement, improved access and more rational prescribing.²³

The medicines for Parkinson disease listed on the 2023 WHO essential medicines list are: (i) biperiden (2 mg; 5 mg/1 mL) or trihexyphenidyl as a therapeutic alternative; and (ii) levodopa + carbidopa (100 mg + 10 mg; 100 mg + 25 mg; 250 mg + 25 mg) or levodopa + benserazide as a therapeutic alternative.

We also report medicines for Parkinson disease that are included on national essential medicines lists, but not on the WHO list.

Results

We analysed data from the national essential medicines lists of 47 countries in WHO’s African Region. Fig. 1 shows the year of publication of the latest national list for each country and which medicines for Parkinson disease were included. Of note, the WHO essential medicines list does not include specific formulations for therapeutic alternatives (i.e. levodopa + benserazide and trihexyphenidyl). However, all national essential medicines lists did include specific formulations and we therefore report on these formulations.

Of the 47 countries, four (9%) had not updated their national essential medicines lists since before 2015, 16 (34%) most recently updated their lists between 2015 and 2019, while 27 (57%) countries last updated their lists between 2020 and 2023.

Only the national essential medicines lists of Cameroon and Mauritius included all four medicines in WHO's essential medicines list. In contrast, the national lists of Côte d'Ivoire, Madagascar, Mauritania, Niger and Zambia did not include any of the four Parkinson disease medicines. Given the square box concept, 81% (38/47) of countries included levodopa + carbidopa or levodopa + benserazide as a therapeutic alternative (of any formulation or strength) on their national lists (Table 1). Similarly, 79% (37/47) of countries included biperiden or trihexyphenidyl as a therapeutic alternative (of any formulation or strength) on their national lists.

As individual medicines, levodopa + carbidopa (any formulation or strength) was included in 79% (37/47) of national essential medicines lists. Levodopa + benserazide had the lowest overall inclusion at 17% (8/47), followed by trihexyphenidyl at 38% (18/47) and biperiden at 62% (29/47; Table 2 and Table 3). In terms of strength, only 32% (15/47) of countries included levodopa + carbidopa 100 mg + 25 mg on their national essential medicine lists (Table 2). Levodopa + benserazide 100 mg + 25 mg was the most common strength of this medicine included on the national lists of countries (15%; 7/47), although only 17% (8/47) of national lists included this medicine at all (Table 2). Biperiden 2 mg tablets and 5 mg/mL injection were included on 51% (24/47) and 45% (21/47) of national essential medicines lists respectively (Table 3). Trihexyphenidyl 2 mg tablets were included in 28% (13/47) of national essential medicines lists and 5 mg tablets were included in 34% (16/47; Table 3).

Twenty-three medicines for Parkinson disease (individual medicines, including tablets and injections and varying strengths) were listed on the countries' national essential medicines lists that were not listed on the WHO list. The reasons why these medicines were not included on the WHO list are shown in Table 4. Overall, 66% (31/47) of countries had at least one medicine on their national essential medicines list that is not included on the WHO list. The most notable was bromocriptine, which was included on 19% (9/47) of national essential medicines lists, followed by tropatepine on 11% (5/47) and benztropine on 9% (4/47).

Discussion

We explored the inclusion of medicines for Parkinson disease on national essential medicines lists in countries of the WHO African Region as absence from the list is a potential barrier to access. Levodopa + dopa decarboxylase inhibitor (carbidopa or benserazide) is still the mainstay of treatment worldwide, although several other classes of medicines are also available.³¹ The anticholinergics biperiden and trihexyphenidyl are rarely used in high-income countries due to their side-effects, but they are available in the WHO African Region at relatively low cost.^{18,19}

Overall, when considering the WHO square box listing, alignment looks optimistic for any strength and formulation: 38 national essential medicines lists included levodopa + carbidopa or levodopa + benserazide, while 37 national essential medicines lists included biperiden or trihexyphenidyl. However, when considering individual strengths and formulations for specific medicines, alignment with the WHO essential medicines list is lower. For example, less than half of countries include levodopa + carbidopa or levodopa + benserazide in a 4:1 ratio (100 mg + 25 mg for carbidopa, or 50 mg + 12.5 mg, 200 + 50 mg for benserazide). While the WHO essential medicines list highlights the formulations, strengths and indications, it does not provide clinical guidance on how to use the medicines (i.e. prescribing practice, such as titration, dosing and dealing with side-effects). However, use of these formulations is recommended because they have a higher ratio of levodopa to dopa decarboxylase inhibitor, which results in fewer side-effects compared to 10:1 ratio (i.e. 100 mg + 10 mg or 250 mg + 25 mg).³² The 4:1 formulation was also the least available in Kenya¹⁸ and Nigeria.¹⁹ Only two countries had all four recommended medicine groups included in their essential medicines lists, although this issue is not as concerning given the square box listing. Five countries had no medicines for Parkinson disease on their national essential medicine lists.

Although the inclusion of medicines for Parkinson disease in national essential medicines lists in the African Region is encouraging overall, gaps exist in alignment with the WHO list, which could be due to several reasons. First, some countries had not updated their national lists for several years, meaning they have not been reviewed in line with epidemiological shifts and the increasing burden of noncommunicable diseases and neurological disorders.¹ The lower inclusion of some medicines (e.g. levodopa + benserazide) may also be explained by their more recent addition to the WHO essential medicines list (in 2021) and the lag in updating national lists. This situation could also result from a lack of resources in countries to conduct a comprehensive review of their national essential

medicines lists across all diseases.²³ Second, full awareness about Parkinson disease is lacking, even among policy-makers, including misconceptions that Parkinson disease is not common or that it is part of so-called normal ageing.^{3,11} Third, the shortage in a trained health workforce able to diagnose and manage Parkinson disease leads to a large diagnostic gap, making it seem as though Parkinson disease is rare. For example, in a community-based prevalence study in the United Republic of Tanzania, 78% (25/32) of people identified with Parkinson disease were previously undiagnosed.³³ Fourth, limited data are available on the burden of Parkinson disease in the WHO African Region, which again makes it seem as though the disease is a rare disorder. These factors lead to a lack of prioritization of Parkinson disease and, consequently, suboptimal inclusion of medicines on national essential medicines lists.

Lack of inclusion of medicines on national essential medicines lists is a barrier to access. Essential medicines have been shown to be more available than other medicines in low- and middle-income countries globally, suggesting that inclusion on national essential medicines lists can influence availability.³⁴ However, many different factors influence access and a comprehensive approach should be taken at the country level to improve accessibility.²⁰ Furthermore, the inclusion of medicines on national essential medicines lists should be aligned with updated national standard treatment guidelines, and medicines should be registered with national regulatory authorities to increase efficiencies in procurement, safety and overall accessibility.

To promote inclusion of Parkinson disease medicines on national essential medicines lists to increase accessibility of these medicines, other factors should be considered. First, the prevalence of Parkinson disease is expected to double in the next 30 years.^{35,36} However, awareness about Parkinson disease in the WHO African Region is low, which contributes to misconceptions that can result in stigma and discrimination.¹¹ Furthermore, specialized neurological health workers are lacking and the few who are available are largely concentrated in cities.^{10,25} These factors are barriers to seeking medical care, leading to misdiagnosis or delayed diagnosis and therefore delayed treatment.

Second, Parkinson disease may not be viewed as a priority due to the few data on its burden and a perceived limited return on investment. This situation may lead to little effort being made to update national essential medicines lists in accordance with the WHO list. However, the number of people living with Parkinson disease in Africa will increase⁸ and updating national essential medicines lists could help with advocating for prioritization.

Third, the WHO essential medicines list serves as a guide for countries to develop and update their own national lists.^{23,37} However, selection should also be based on local epidemiological trends and priorities, which can be challenging when country-level data on burden of disease are lacking. A case study in the United Republic of Tanzania highlighted the different stakeholders and factors that are considered during the selection of medicines for the national essential medicines list in line with WHO's recommendations, including efficacy and safety, availability, affordability and cost-effectiveness.³⁸ The authors noted the lack of expertise in the evidence-based approach needed during the selection process, the use of clinical experience instead of scientific evidence, the strong influence of pharmaceutical representatives in medicine selection and the lack of pharmacoeconomic application, all of which could influence rational selection. Updating national essential medicines lists and standard treatment guidelines is critical to achieving UHC, as countries often use them as guides for priority-setting exercises associated with publicly funded health benefit packages. While many national essential medicines lists that specify where such medicines should be available focus on tertiary and quaternary care, shortages of specialists create barriers to receiving a diagnosis, prescription and renewal of prescriptions. As such, allocating Parkinson disease medicines at primary and secondary levels could address barriers to access.

Fourth, medicines that are not locally registered or authorized in a country do not have the licence for sale and distribution. Therefore, medicine registration and market authorization are key regulatory processes that enable access to medicines. However, regulatory processes for medicine registration can be complicated³⁹ and many countries in the WHO African Region do not have sufficient capacity to provide extensive regulatory oversight, hence delaying access.⁴⁰ The registration of medicines facilitates public procurement, which can enable access through public outlets at lower costs. Therefore, although the inclusion of medicines on national essential medicines lists is a key action to improve access, this step should be followed by registration.

The under-registration of essential medicines for Parkinson disease was determined in 2018.⁴¹ In Kenya and the United Republic of Tanzania four of the five medicines for Parkinson disease on their national essential medicine lists were not registered, while in Uganda, the only medicine for Parkinson disease on the national essential medicines list was not registered. Furthermore, over-registration of non-essential medicines (which results in registering non-priority and sometimes clinically sub-optimal medicines) has been reported.⁴¹

Medicines are unlikely to generate interest to manufacturers if not included on national essential medicines lists and are, therefore, less likely to be registered.

Finally, the regional or local production of essential medications is also worth considering. About 79% of pharmaceuticals consumed in Africa come from abroad,⁴² which can increase costs. The selection of essential medicines can be influenced by local availability, with the availability of medicines in the local market a criterion for inclusion in national essential medicines lists.⁴³ However, barriers to regional or local production in the WHO African Region exist, including the high costs of raw materials, lack of technical capacity to diversify their medicines manufacturing, lack of enabling policies and challenges with infrastructure (e.g. interruptions to electricity supply).⁴⁴

Despite these barriers, regional manufacturing should be considered. Given the high rate of underdiagnosis of Parkinson disease in the WHO African Region, current demand for medicines does not generate sufficient interest with local and international manufacturers, as costs may outweigh return on investment. Therefore, to increase demand, diagnostic and treatment rates for Parkinson disease should be improved through training health workers. Additionally, mechanisms for pooled procurement and global collaboration, and convergence and reliance mechanisms across regulatory agencies should be explored. These strategies could facilitate better access to medicines for Parkinson disease.

This study has limitations. First, we sourced national essential medicines lists mainly through internet searches or WHO contacts, as some government websites were not available or accessible to obtain the lists from there and so there may be errors in some lists. Cross-referencing with WHO's repository of national essential medicines lists ensured that we used the most up-to-date versions, although the repository may also have errors as it relies on sourcing lists by similar methods. Second, national essential medicines lists were in different formats and not standardized, which increased the risk of errors in data extraction. We minimized this risk by using a search function and having repeated analyses by different people. A next step would be to explore the registration status of medicines for Parkinson disease to understand whether the medicines listed on national essential medicines lists are also registered in the WHO African Region.

In conclusion, this analysis provides further evidence of the need for action to improve the accessibility of medicines for Parkinson disease in the African Region. In that regard, it highlights the important role that national essential medicines lists can play in:

procurement, prescribing and use of these medicines; lowering their costs; and raising awareness and political will for Parkinson disease.

Updating national essential medicines lists in the WHO African Region, through periodic revision following evidence-based methods and based on WHO's essential medicines list and local epidemiological trends and priorities, offers an important step towards improving the accessibility of medicines for Parkinson disease. These medicines can significantly improve quality and length of life. This effort should be part of a comprehensive approach encompassing additional components, for example: registration with regulatory authorities; inclusion in UHC packages; increased awareness of Parkinson disease; and improved data on burden of disease, the social and financial burden of care for Parkinson disease and return on investment.

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Competing interests:

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Table 1. Medicines for Parkinson disease included on countries' national essential medicines lists, WHO African Region

Medicine (any strength) included^a	No. of countries (%) (<i>n</i> = 47)
Levodopa + carbidopa or levodopa + benserazide	
Yes	38 (81)
No	9 (19)
Biperiden or trihexyphenidyl	
Yes	37 (79)
No	10 (21)

^a Based on square box listing.³⁰

Table 2. Strengths of levodopa combinations included on countries' national essential medicines lists, WHO African Region

Medicine	No. of countries (%) (*<i>n</i> = 47)
Levodopa + carbidopa	
Any strength	37 (79)
100 mg + 10 mg	25 (53)
100 mg + 25 mg	15 (32)
250 mg + 25 mg	28 (60)
Levodopa + benserazide^a	
Any strength	8 (17)
50 mg + 12.5 mg	5 (11)
100 mg + 25 mg	7 (15)
200 mg + 50 mg	5 (11)

^a Therapeutic alternative.³⁰

Table 3. Strengths of biperiden and trihexyphenidyl included on countries' national essential medicines lists, WHO African Region

Medicine	No. of countries (%) (<i>n</i> = 47)
Biperiden	
Any strength	29 (62)
2 mg	24 (51)
5 mg/mL	21 (45)
Trihexyphenidyl^a	
Any strength	18 (38)
2 mg	13 (28)
5 mg	16 (34)

^a Therapeutic alternative.³⁰

Table 4. Medicines listed on countries' national essential medicines lists for Parkinson disease not listed on the WHO list for this condition, WHO African Region

Medicine and formulation	Countries listing the medicine	Details
Benztropine 2 mg tablet	Ethiopia, Ghana	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease
Benztropine mesylate 1 mg/mL injection	Gambia, South Sudan	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease
Biperiden 4 mg tablet	Burkina Faso, Guinea, Guinea-Bissau, Sao Tome and Principe	<ul style="list-style-type: none"> • Medicine included in the WHO list in alternative strength or formulation
Biperiden 0.4 mg/mL oral solution	Angola	<ul style="list-style-type: none"> • Medicine included in the WHO list in alternative strength or formulation
Bromocriptine 2 mg tablet	Côte d'Ivoire	<ul style="list-style-type: none"> • Medicine included in the WHO list in alternative strength or formulation for another indication • Application for inclusion on the WHO list for Parkinson disease rejected in 2015
Bromocriptine 2.5 mg tablet	Botswana, Burkina Faso, Eswatini, Namibia, United Republic of Tanzania, Zambia	<ul style="list-style-type: none"> • Medicine included in the WHO list for another indication • Application for inclusion on the WHO list for Parkinson disease rejected in 2015
Bromocriptine 5 mg tablet	Côte d'Ivoire, Sao Tome and Principe	<ul style="list-style-type: none"> • Medicine included in the WHO list for another indication • Application for inclusion on the WHO list for Parkinson disease rejected in 2015
Bromocriptine 10 mg tablet	Algeria	<ul style="list-style-type: none"> • Medicine included in the WHO list in alternative strength or formulation for another indication • Application for inclusion on the WHO list for Parkinson disease rejected in 2015
Levodopa + benserazide 250 mg + 25 mg tablet	Mauritania	<ul style="list-style-type: none"> • This strength does not exist
Orphenadrine 50 mg tablet	Malawi, Mauritius, Zimbabwe	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Orphenadrine 100 mg tablet	Mauritius	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Pramipexole 180 µg tablet	Kenya	<ul style="list-style-type: none"> • Application for inclusion of alternative strength or formulation on the WHO list for Parkinson disease rejected in 2015
Pramipexole 700 µg tablet	Kenya	<ul style="list-style-type: none"> • Application for inclusion of alternative strength or formulation on the WHO list for Parkinson disease rejected in 2015

Piribedil 50 mg tablet	Benin, Côte d'Ivoire	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Procyclidine 5 mg tablet	Mauritius, Zambia	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Procyclidine 5 mg injection	Mauritius, Zambia	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Ropinirole 1mg tablet	Seychelles	<ul style="list-style-type: none"> • Application for inclusion in the WHO list for Parkinson disease rejected in 2015
Selegiline 5 mg tablet	Congo, Sao Tome and Principe	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Trihexyphenidyl 10 mg injection	Benin, Liberia, Mali, Togo	<ul style="list-style-type: none"> • Medicine included in the WHO list for Parkinson disease in alternative strength or formulation
Tropatepine 10 mg tablet	Benin, Comoros, Côte d'Ivoire	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Tropatepine 10 mg/2 mL injection	Guinea, Guinea-Bissau	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Valbenazine 40 mg tablet	Ethiopia	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication
Valbenazine 80 mg tablet	Ethiopia	<ul style="list-style-type: none"> • No application made to the WHO list for Parkinson disease or any other indication

WHO: World Health Organization.

Fig. 1. Medicines for Parkinson disease on the WHO essential medicines list that are included in national lists, by country, WHO African Region

WHO: World Health Organization.

Country	Publication year of national list	Levodopa + carbidopa			Levodopa + benserazide			Biperiden		Trihexyphenidyl	
		100 mg + 10 mg	100 mg + 25 mg	250 mg + 25 mg	50 mg + 12.5 mg	100 mg + 25 mg	200 mg + 50 mg	2 mg	5 mg/mL	2 mg	5 mg
Algeria	2018										
Angola	2021										
Benin	2018										
Botswana	2016										
Burkina Faso	2023										
Burundi	2022										
Cabo Verde	2018										
Cameroon	2022										
Central African Republic	2017										
Chad	2022										
Comoros	2020										
Congo	2016										
Côte d'Ivoire	2022										
Democratic Republic of the Congo	2020										
Equatorial Guinea	2012										
Eritrea	2010										
Eswatini	2012										
Ethiopia	2020										
Gabon	2019										
Gambia	2019										
Ghana	2017										
Guinea	2021										
Guinea-Bissau	2020										
Kenya	2023										
Lesotho	2005										
Liberia	2023										
Madagascar	2019										

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Malawi	2015										
Mali	2019										
Mauritania	2021										
Mauritius	2022										
Mozambique	2017										
Namibia	2016										
Niger	2018										
Nigeria	2020										
Rwanda	2022										
Sao Tome and Principe	2020										
Senegal	2022										
Seychelles	2022										
Sierra Leone	2021										
South Africa	2023										
South Sudan	2018										
Togo	2021										
Uganda	2023										
United Republic of Tanzania	2021										
Zambia	2020										
Zimbabwe	2022										

	Included
	Not included