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Geriatric medicine content in national clinical guidance, WHO African Region

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Medicines for treatment of older people in guidelines and essential medicines lists, WHO African Region

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Abstract

Objective To assess the geriatric medicine content in national standard treatment guidelines and essential medicines lists across the 47 countries of the World Health Organization (WHO) African Region.

Methods Until 28 June 2025, we searched for national guidelines and lists in the Global Essential Medicines database and the WHO Repository of National Essential Medicines Lists. We examined each document for a geriatric medicine chapter and guidance on the management of frailty, falls, palliative care, osteoporosis, parkinsonism, incontinence, delirium, dementia and polypharmacy. We obtained country-level data from the World Bank and WHO. Using χ^2 -tests, we determined associations between country-level metrics and geriatric medicine content.

Findings We obtained a standard treatment guideline or essential medicines list from all 47 countries. Six (13%) documents contained a geriatric medicine chapter (five in English, one in French). Guidance on parkinsonism was the most common (42 documents; 89%), while guidance on frailty was the least common (three documents; 6%). Guidance on dementia was associated with current and predicted percentage population aged 65 years or older (P -value: 0.05), while guidance on palliative care was associated with healthy life expectancy both at birth and at age 60 years (P -value: 0.02 and P -value: 0.02, respectively).

Conclusion Countries in the African Region with a higher proportion of people older than 65 years were more likely to include geriatric medicine content in their standard treatment guidelines and essential medicines lists. There is considerable potential for expanding guidance on management of common geriatric conditions, such as frailty, incontinence and polypharmacy.

Introduction

The United Nations projects that the number of adults older than 65 years in Africa will rise from 41 million in 2025 to 103 million by 2050, making African populations the fastest

ageing in the world.^{1–3} Ageing, especially rapid ageing, poses a challenge to health and social care, as the coexistence of multiple long-term conditions (multimorbidity), the prescription of multiple medications (polypharmacy) and disability all increase with age. Together, these factors introduce complexity into the care of older people that requires multidisciplinary input with specialist knowledge and skills. In the initiative *Decade of healthy ageing 2021–2030*,⁴ the World Health Organization (WHO) has proposed a person-centred approach towards multidimensional assessment and management of the intrinsic capacities of older people within the environment in which they reside. This approach emphasizes the promotion and maintenance of health to prevent long-term loss of functional ability.⁵ Despite this initiative, care of older people remains a nascent field in Africa. More than a decade since the adoption of the African Union's *AU policy framework and plan of action on ageing* in 2010, the care of older people remains variable and often deprioritized.⁶

Geriatric medicine is a branch of general medicine focusing on optimizing the health of older people through patient-centred, multidisciplinary comprehensive geriatric assessment.⁷ Geriatric teams provide specialist management for common geriatric conditions such as falls, frailty, bone health, movement disorders, delirium, dementia, incontinence, polypharmacy and end-of-life care.⁸ While the African framework and plan of action recognized a need for geriatric medicine to be included in health-care training, most African countries lack formal undergraduate and postgraduate training programmes, and many have no practising geriatricians.^{9–11}

Country-level standard treatment guidelines and essential medicines lists, often developed based on the *WHO Model list of essential medicines*, are frequently used in all health-care settings across the Africa Region.^{12,13} They are intended as a guide to support national and regional authorities in choosing essential medicines that are effective, safe and cost-effective, and that reflect disease prevalence and clinical need. As such, they provide information about national health-care priorities. The minimum guidance is an essential medicines list: a list of recommended and available medications in the country. Increasingly, these documents have evolved into standard treatment guidelines, providing guidance on the diagnosis, investigation and management of conditions, often divided into chapters based on single organs or diseases. In our experience, where these detailed standard treatment guidelines exist, they are frequently employed as a reference text in clinical teaching and practice. The guidelines therefore offer a mechanism for upskilling entire workforces, regardless of specialty.

In the absence of specific content on geriatric medicine, siloed guidance often fails to support the care of older people, whose multimorbidity and complex needs require a more holistic, interdisciplinary approach. To map these gaps in guidance and identify areas for improvement, we reviewed the geriatric medicine content in standard treatment guidelines and essential medicines lists across the WHO African Region.

Methods

We performed an ecological study of standard treatment guidelines and essential medicines lists published by health authorities in the 47 Member States of the WHO African Region.

Data sources and collection

Until 28 June 2025, we searched for standard treatment guidelines and essential medicines lists in two freely available and searchable online repositories: the Global Essential Medicines database and WHO's Repository of National Essential Medicines Lists.^{14,15} Where multiple versions of a country's standard treatment guideline and essential medicines list were available, we used the most recently published. Where both a standard treatment guideline and an essential medicines list were available as separate documents, we used standard treatment guidelines as they offered more detail. Identified guidelines and lists published in English or French were examined by a native English or French speaker, respectively. Documents in other languages were translated into English using ChatGPT (OpenAI, San Francisco, United States of America) and then analysed by a native English speaker.

Country characteristics

Until 17 December 2024, we obtained country-level data for the 47 countries from the World Bank open database.¹⁶ These included population variables relevant to older people including percentage of population aged 65 years or older and old-age dependency ratio (defined as the ratio of older dependants, aged older than 64 years, to the working-age population, aged 15–64 years, expressed as the proportion of older dependants per 100 working-age population). We also included economic variables such as the United Nation's classification of least developed countries and health expenditure as percentage of gross domestic product (GDP). We obtained data on healthy life expectancy from WHO's Maternal, Newborn, Child and Adolescent Health and Ageing data portal on 13 October 2025.¹⁷ From these online databases, we used the latest available data, with reference year varying across countries.

Outcome data

One author examined each document to identify whether it contained a geriatric medicine chapter and/or guidance on the management of nine geriatric conditions: (i) frailty; (ii) falls; (iii) palliative care; (iv) osteoporosis; (v) parkinsonism; (vi) incontinence; (vii) delirium; (viii) dementia; and (ix) polypharmacy.

These nine geriatric conditions reflect topics most commonly covered in educational content on ageing and geriatrics.¹⁸ We defined management as any content on diagnosis, investigation, and/or treatment for the aforementioned geriatric conditions, therefore management did not require an entire, dedicated chapter. In some cases, the available guidance was only a list of medications that can be used to treat the condition, for example, antiparkinsonian medicines listed in an essential medicines list, and was not tailored specifically to the care of older people. However, such guidance was still considered relevant if the prespecified geriatric condition was explicitly mentioned and if it met the definition of management above. Examples of excluded content, as not specific to the care of older people include: guidance on delirium tremens, acquired immunodeficiency syndrome (AIDS) dementia complex and falls, where guidance frequently addressed injuries by any mechanism. Furthermore, we did not include a mentioned condition without any guidance provided on its management. For example, where incontinence was listed as a symptom of a seizure, or where osteoporosis was listed as a side effect of an antiretroviral drug. These parameters were prespecified with all authors before data extraction.

Statistical analyses

We determined associations between country-level metrics and the geriatric medicine content in each country's standard treatment guideline or essential medicines list, by dividing countries into reference and comparison groups based on the median value of each continuous metric. We used χ^2 -tests to compare the outcomes in each group. Following current best practices,¹⁹ we interpreted smaller *P*-values as indicating stronger evidence against the null hypothesis, rather than applying a fixed *P*-value threshold.

Results

We obtained standard treatment guidelines or essential medicines lists for all 47 Member States of the WHO African Region.^{20–66} Of these, 22 (47%) documents were published in English,^{23,35–37,39,42–44,46,49,51,53,54,57–61,63–66} 19 (40%) in French,^{20,22,24,25,27–33,38,40,45,47,48,52,56,62} five (11%) in Portuguese^{21,26,41,50,55} and one (2%) in Spanish.³⁴ Only six (13%) documents

contained a geriatric medicine chapter, which was more likely to be published in English (five documents in English,^{39,44,51,53,66} one document in French;⁵⁶ *P*-value: 0.06; Fig. 1). Table 1 summarizes the associations between country-level metrics and the presence of a geriatric medicine chapter. An old-age dependency ratio of 5.6% or higher, a current population aged 65 years or older of 3.2% or higher, and a predicted population aged 65 years or older of 3.4% or higher tended to be associated with the presence of a geriatric medicine chapter, but statistical testing did not rule out the possibility that this association was due to chance.

Guidance on parkinsonism was found in most documents (42; 89%),^{20–31,33,35–51,53–56,58–60,62–66} while guidance on frailty was the least common (three documents; 6%).^{46,53,66} Table 2 summarizes the distribution of specialty chapters in which guidance on the various geriatric conditions was found; neurology and psychiatry showed the greatest overlap with geriatrics. Fig. 2 illustrates the countries that had a standard treatment guideline or essential medicines list containing guidance on each of the nine geriatric conditions.

Table 3 outlines the associations between country-level metrics and the presence of guidance on the pre-specified geriatric conditions. A current percentage population aged 65 years or older of 3.2% or more was associated with having guidance on dementia (14 documents; 30% versus seven documents; 15%; *P*-value: 0.05) as was a predicted population aged 65 years or older of 3.4% or more (15 documents; 32% versus six documents; 13%; *P*-value: 0.05). Similarly, guidance on palliative care was more likely in documents from countries where the healthy life expectancy at birth was less than 54.8 years (18 documents; 38% versus 11 documents; 23%; *P*-value: 0.02) and healthy life expectancy at age 60 years was less than 12.3 years (17 documents; 36% versus 12 documents; 26%; *P*-value: 0.04).

Standard treatment guideline and essential medicines lists published in or after the year 2020 were more likely to contain guidance on parkinsonism (26 documents; 55% versus 16 documents; 34%; *P*-value: 0.07; Table 3). Only five documents lacked guidance on parkinsonism, all from countries where health expenditure as a percentage of GDP was < 4.5% (*P*-value: 0.03; Table 3). Publication in a language other than English was associated with the absence of guidance on multiple geriatric conditions (Table 3). Guidance available only in English-language documents included frailty (three documents), polypharmacy (seven documents), falls (11 documents) and delirium (16 documents). Guidance available almost exclusively in English-language documents included dementia (19 in English, one in French

and one in Portuguese), osteoporosis (12 in English and one in Portuguese) and incontinence (nine in English and one in Portuguese).

Discussion

We found that only six of 47 analysed standard treatment guidelines and essential medicines lists had a chapter on geriatric medicine, and that the presence of such a chapter tended to occur in countries with a higher proportion of older people in their populations, although an association due to chance could not be excluded. Similarly, the presence of guidance on dementia was associated with the proportions of current and predicted population of people aged 65 years or older, and the presence of guidance on palliative care was associated with healthy life expectancy. These findings suggest that health authorities recognize the challenges posed by ageing populations and have adapted some national strategies and priorities to address them.^{4,67} Similarly, the association between the presence of guidance on palliative and dementia care and country-level metrics likely reflects the proportionately greater burden or, more likely, greater recognition of these age-related conditions and associated specialist health-care needs. In contrast, conditions such as frailty, incontinence and polypharmacy were rarely represented. When developing future standard treatment guidelines and essential medicines lists, lessons learnt from palliative and dementia care should be considered to improve awareness and knowledge of other important geriatric conditions. The recently published WHO framework for continence assessment may also help raise awareness of this need.⁵

For the 42 countries that did not have a chapter on geriatric medicine in their standard treatment guideline or essential medicines list, we hypothesize that the reason for exclusion is multifactorial: (i) many countries lack geriatrics expertise;^{9–11} (ii) the perceived low prestige of geriatric medicine may lead to conscious or unconscious exclusion of geriatricians from the development of these documents;^{68–70} (iii) geriatric care is often deprioritized in settings where constrained resources must be allocated across multiple competing demands;⁷¹ and (iv) ageism is widespread, making it acceptable to overlook the needs of older people.⁷²

While we were reassured to find that all geriatric conditions were covered in English-language documents, this coverage occurred to varying extents. Guidance on parkinsonism was the most common, while guidance on frailty was the least covered. This difference likely reflects the fact that neurology is a more widely established discipline than geriatric medicine in African countries. The finding also reflects the greater level of funding available for

Parkinson care, as we found that the only countries without guidance on parkinsonism in their standard treatment guidelines or essential medicines lists had health expenditures of less than 4.5% of GDP. Although we identified geriatric content, some guidance was not appropriate or tailored to the care of older people. For example, pharmacological sedation for delirium was recommended under neurology, despite this practice not being the recommended standard of care for more than 20 years.⁷³ Parkinsonian disorders remain the remit of neurologists in the low- and middle-income countries, while in high-income countries, care models have moved towards shared care between neurology and geriatrics. Geriatricians therefore have the opportunity to take ownership of existing geriatric content by developing a dedicated chapter or by collaborating to improve content within existing chapters. However, due diligence is needed to ensure that country-level guidance is implementable within existing health-care contexts, with consideration given to the availability of resources and workforce structures. For example, in many countries, nurses provide front-line health care to older people and need to be enabled to prescribe medication in this role.

Moreover, we found an underrepresentation of osteoporosis and polypharmacy, despite both being associated with human immunodeficiency virus (HIV) infection. This finding demonstrates a disconnect between management of a highly prevalent communicable disease and its longer-term sequelae. This mismatch may worsen in the current climate of defunding HIV/AIDS programmes.⁷⁴ One way to improve care could be to incorporate guidance on these topics into existing HIV chapters. Another notable finding was the association between the presence of parkinsonism guidance and publication or update after 2020. This association may be explained by the coronavirus disease 2019 pandemic, which changed health-care practice worldwide. This association may also be linked to the publication of the WHO report *Parkinson disease: a public health approach* in 2022.^{75,76} Again, lessons can be learnt from the rapid adaptations in health-care delivery to a pandemic, which can inform efforts to improve health-care services and guidance in geriatric medicine.

Frailty is a core clinical condition in geriatric medicine. For many years, however, a consensus definition was lacking. The condition is now generally understood as the age-related accumulation of deficits in physiological reserve and function, which confers increased vulnerability to adverse health outcomes when exposed to relatively minor stressors.⁷⁷ The prevalence of frailty in people older than 50 years in Africa has been estimated to be 5–60%, showing a high level of health- and social-care need, despite difficulties in detecting frailty.^{78,79} Older people living with frailty present with atypical and

nonspecific signs and symptoms of disease, which complicates diagnosis, investigation and management.⁷⁷ Frailty has been associated with substantial morbidity and mortality,^{77,79} highlighting the importance of correct diagnosis and management. This challenge includes the sharing of specialist expertise in standard treatment guidelines and essential medicines lists.

To improve care for older people in the African Region, we must improve the transfer of knowledge from regions with a high level of geriatrics expertise and experience of geriatric care to health authorities and health workers in the African Region. Indeed, education and training, two of the priority areas of the *AU policy framework and plan of action on ageing*,⁶ can be achieved through collaboration and equitable partnerships in the development of standard treatment guidelines and essential medicines lists. For instance, when recently updating the standard treatment guideline in Zimbabwe, geriatricians trained in high-income countries collaborated with general physicians trained in low- and middle-income countries to improve and expand the chapter on geriatric medicine in a clinically and culturally relevant manner (National Medicine and Therapeutics Policy Advisory Committee, Ministry of Health and Child Care, Zimbabwe, unpublished report, November 2025). To improve the care of older people, standard treatment guidelines must be complemented with undergraduate and postgraduate training of health workers, improved access to health-care facilities and medicines, proactive clinical assessments (for example, as proposed by WHO)⁵ and implementation of long-term care models.

This study has several limitations. First, we did not examine content for visual and hearing impairments, malnutrition and depression. These are areas identified by WHO as core to the comprehensive assessment of older people, but for the purposes of our study, were too broad to include.⁵ Second, we only mapped the presence of written material and did not analyse the quality and accuracy of the content. Our focus was on medicines and did not consider guidance on access to assistive technologies which are also important to support independence and well-being of ageing populations.

In conclusion, there is a mismatch between global population ageing and capacity of health workforces to adequately and appropriately care for older people with complex needs. One way of redressing this imbalance and upskilling health workers is by promoting geriatric medicine content in standard treatment guidelines and essential medicines lists. We found that countries in the WHO African Region with a higher proportion of older people were more likely to include geriatric medicine content in their standard treatment guidelines or

essential medicines lists. Including such content in more guidelines and lists would be an appropriate response to demographic shifts, as populations in the region continue to age. However, only a minority of the examined guidelines and lists contained a dedicated chapter on geriatric medicine, and guidance on geriatric conditions was otherwise distributed across traditionally recognized specialities. Therefore, there remains considerable potential to expand guidance on the management of key geriatric conditions, such as frailty, incontinence and polypharmacy, either by including them into an existing specialty chapters or by introducing new chapters on geriatric medicine.

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Competing interests:

None declared.

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Table 1. Association between country-level metrics and presence of geriatric medicine chapter

Variable	Geriatric medicine chapter		P
	No	Yes	
UN country classification			
Classified as least developed	28	2	0.10
Not classified as least developed	13	4	
Health expenditure as % of GDP^a			
< 4.5%	21	4	0.48
≥ 4.5%	20	2	
Old-age dependency ratio^b			
< 5.6%	20	1	0.14
≥ 5.6%	21	5	
% of population ≥ 65 years in 2023			
< 3.2%	22	1	0.09
≥ 3.2%	19	5	
% of predicted population ≥ 65 years in 2028			
< 3.4%	20	1	0.14
≥ 3.4%	21	5	
Healthy life expectancy at birth^c			
< 54.8 years	20	3	0.96
≥ 54.8 years	21	3	
Healthy life expectancy at 60 years^d			
< 12.3 years	20	2	0.48
≥ 12.3 years	21	4	
Recency of chapter update			
Pre-2020	16	4	0.20
2020 onwards	25	2	
Language			
English	17	5	0.06
French, Portuguese or Spanish	24	1	

GDP: gross domestic product; UN: United Nations.

^a Current level of health expenditure, expressed as percentage of GDP.

^b Old-age dependency ratio is defined as the ratio of older dependants (aged > 64 years) to the working-age population (aged 15–64 years), expressed as the proportion of older dependants per 100 working-age population.

^c Average number of years in full health a person can expect to live from birth, in the year 2021.

^d Average number of years in full health a person can expect to live from 60 years of age based on current rates of ill-health and mortality, in the year 2021.

Notes: We used the United Nation's classification of least developed countries. Exposure variables are divided into reference and comparison groups based on the median value of each continuous metric. We obtained P-values through χ^2 tests.

Table 2. Standard treatment guideline or essential medicines list chapters containing guidance on geriatric conditions, WHO African Region

Specialty chapter	No. of countries having guidance on the condition								
	Parkinsonism	Palliative care	Dementia	Delirium	Osteoporosis	Falls	Incontinence	Polypharmacy	Frailty
Geriatrics	1	—	3	1	1	2	1	3	2
Neurology	37	—	6	3	—	4	2	—	—
Psychiatry	3	—	11	11	—	1	—	1	1
Palliative care	—	20	—	—	—	—	1	—	—
Renal and urology	—	—	—	—	—	—	6	—	—
Oncology	—	8	—	—	—	—	—	—	—
Trauma	—	—	—	—	2	3	—	—	—
Musculoskeletal	—	—	—	—	3	—	—	—	—
Gynaecology	—	—	—	—	3	—	—	—	—
Prescribing	—	—	—	—	—	—	—	3	—
Endocrinology	—	—	—	—	4	—	—	—	—
Hepatology	—	1	—	—	—	—	—	—	—
Ophthalmology	1	—	—	—	—	—	—	—	—
Cardiovascular	—	—	—	—	—	1	—	—	—
Emergencies	—	—	—	1	—	—	—	—	—
Infectious diseases	—	—	1	—	—	—	—	—	—
Total no. of countries (%)	42 (89)	29 (62)	21 (45)	16 (34)	13 (28)	11 (23)	10 (21)	7 (15)	3 (6)

WHO: World Health Organization.

Table 3. Associations of mentioning of geriatric conditions in guidelines and essential medicines lists with population ageing, publication timing and language, WHO African Region

Characteristic	Frailty			Falls			Palliative care			Osteoporosis			Parkinsonism			Incontinence			Delirium			Dementia			Polypharmacy		
	No	Yes	P	No	Ye s	P	No	Yes	P	N o s	Ye s	P	No	Yes	P	N o s	Ye s	P	N o s	Ye s	P	N o s	Ye s	P	No	Yes	P
UN country classification																											
Classified as least developed	29	1	0.26	25	5	0.15	11	19	0.76	23	7	0.38	2	28	0.24	23	7	0.65	21	9	0.44	19	11	0.14	26	4	0.69
Not classified as least developed	15	2		11	6		7	10		11	6		3	14		14	3		10	7		7	10		14	3	
Health expenditure as % of GDP																											
< 4.5%	23	2	0.63	20	5	0.56	12	13	0.15	20	5	0.21	5	20	0.03	22	3	0.10	18	7	0.35	16	9	0.20	22	3	0.55
≥ 4.5%	21	1		16	6		6	16		14	8		0	22		15	7		13	9		10	12		18	4	
Old-age dependency ratio^a																											
< 5.6	19	2	0.43	18	3	0.19	7	14	0.53	16	5	0.60	3	18	0.47	17	4	0.74	15	6	0.48	14	7	0.16	18	3	0.92
≥ 5.6	25	1		18	8		11	15		18	8		2	24		20	6		16	10		12	14		22	4	
% of population ≥ 65 years in 2023																											
< 3.2%	21	2	0.53	19	4	0.34	8	15	0.63	18	5	0.37	3	20	0.60	18	5	0.94	17	6	0.26	16	7	0.05	20	3	0.73
≥ 3.2%	23	1		17	7		10	14		16	8		2	22		19	5		14	10		10	14		20	4	
% of predicted population ≥ 65 years in 2028																											
< 3.4%	19	2	0.43	18	3	0.27	7	14	0.53	17	4	0.24	2	19	0.82	17	4	0.74	16	5	0.18	15	6	0.05	19	2	0.35
≥ 3.4%	25	1		18	8		11	15		17	9		3	23		20	6		15	11		11	15		21	5	
Healthy life expectancy at birth																											
< 54.8 years	21	2	0.53	16	7	0.27	5	18	0.02	17	6	0.81	2	21	0.67	17	6	0.43	14	9	0.47	13	10	0.87	18	5	0.20
≥ 54.8 years	23	1		20	4		13	11		17	7		3	21		20	4		17	7		13	11		22	2	
Healthy life expectancy at 60 years																											
< 12.3 years	20	2	0.48	17	5	0.92	5	17	0.04	16	6	0.96	1	21	0.20	17	5	0.82	15	7	0.76	13	9	0.63	19	3	0.82
≥ 12.3 years	24	1		19	6		13	12		18	7		4	21		20	5		16	9		13	12		21	4	
Recency of update																											
Pre-2020	19	1	0.74	14	6	0.36	9	11	0.42	16	4	0.31	4	16	0.07	16	4	0.85	12	8	0.46	11	9	0.97	17	3	0.99
2020 onwards	25	2		22	5		9	18		18	9		1	26		21	6		19	8		15	12		23	4	
Language																											
English	19	3	0.06	11	11	< 0.0	6	16	0.15	10	12	< 0.0	2	20	0.75	13	9	< 0.0	6	16	< 0.0	3	19	< 0.0	15	7	< 0.01
French, Portuguese, Spanish	25	0		25	0		12	13		24	1		3	22		24	1		25	0		23	2		25	0	

GDP: gross domestic product; UN: United Nations; WHO: World Health Organization.

^a Old-age dependency ratio is defined as the ratio of older dependants (aged > 64 years) to the working-age population (aged 15–64 years), expressed as the proportion of older dependants per 100 working-age population.

Fig. 1. Availability of a chapter on geriatric medicine in either standard treatment guidelines or essential medicine lists, WHO African Region, 28 June 2025



WHO: World Health Organization.

Fig. 2. Availability of guidance on nine geriatric conditions, WHO African Region, 28 June 2025



(a) Guidance on **parkinsonism** was found in 42 (88%) countries.

(b) Guidance on **palliative care** was found in 29 (60%) countries.

(c) Guidance on **dementia** was found in 22 (46%) countries.

WHO: World Health Organization.