Medical Country of Origin Information

January 2024

EUROPEAN UNION AGENCY FOR ASYLUM

Ghana
Neurology

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The report has been reviewed by International SOS and EUAA.

Content

Disclaimer

This report was written according to the EUAA COI Report Methodology (2023). The report is based on publicly available sources of information, as well as oral anonymised sources who are based in Ghana. All sources used are referenced.

The information contained in this report has been researched, evaluated and analysed with utmost care. However, this document does not claim to be exhaustive. If a particular event, person or organisation is not mentioned in the report, this does not mean that the event has not taken place or that the person or organisation does not exist.

Furthermore, this report is not conclusive as to the determination or merit of any particular application for international protection. Terminology used should not be regarded as indicative of a particular legal position.

'Refugee', 'risk' and similar terminology are used as generic terminology and not in the legal sense as applied in the EU Asylum Acquis, the 1951 Refugee Convention and the 1967 Protocol relating to the Status of Refugees.

Neither the EUAA, nor any person acting on its behalf, may be held responsible for the use which may be made of the information contained in this report.

On 19 January 2022 the European Asylum Support Office (EASO) became the European Union Agency for Asylum (EUAA). All references to EASO, EASO products and bodies should be understood as references to the EUAA.

The drafting of this report was finalised on 31 October 2023. Any event taking place after this date is not included in this report. More information on the reference period for this report can be found in the methodology section of the Introduction.

Glossary and abbreviations

Term	Definition
AFAN	African Federation of Neurological Associations
CHPS	Community-Based Health Planning Services
CT	Computed Tomography
EEG	ElectroEncephalogram
FDA	Food and Drugs Authority
GFAEI	Ghana Fights Against Epilepsy Initiative
GHS	Ghanaian Cedi
GMA	Ghana Medical Association
IBE	International Bureau for Epilepsy
ILAE	International League Against Epilepsy
IM	Intramuscular
IV	Intravenous
MDS	Movement Disorder Society
MhGAP	Mental Health Gap Action Program
MRI	Magnetic Resonance Imaging

Term	Definition
NGO	Non-Governmental Organisation
NHIS	National Health Insurance Scheme
NSG	Neurology Society of Ghana
PD	Parkinson's Disease
PCH	Primary Healthcare
WFN	World Federation of Neurology
WHO	World Health Organization

Introduction

Methodology

The purpose of the report is to provide information on access to neurology treatment in Ghana. This information is relevant to the application of international protection status determination (refugee status and subsidiary protection) and migration legislation in EU+ countries.

Terms of reference

The terms of reference for this Medical Country of Origin Information Report were developed by EUAA.

The terms of reference for this Medical Country of Origin Information Report can be found in Annex 2: Terms of Reference (ToR). The initial drafting period was finalised on 8 September 2023, peer review occurred between 9 - 29 September 2023, and additional information was added to the report as a result of the quality review process during the review implementation up until 31 October. The report was internally reviewed subsequently.

Collecting information

EUAA contracted International SOS (Intl.SOS) to manage the report delivery including data collection. Intl.SOS recruited and managed a local consultant to write the report and a public health expert to edit the report. These were selected from Intl.SOS' existing pool of consultants. The consultant was selected based on their experience in leading comparable projects and their experience of working on public health issues in Ghana.

This report is based on publicly available information in electronic and paper-based sources gathered through desk-based research. This report also contains information from multiple oral sources with ground-level knowledge of the healthcare situation in Ghana who were interviewed specifically for this report. For security reasons, all oral sources are anonymised.

Quality control

This report was written by Intl.SOS in line with the European Union Agency for Asylum (EUAA) COI Report Methodology (2023),[1] the EUAA Country of Origin Information (COI) Reports Writing and Referencing Guide (2023)[2] and the EUAA Writing Guide (2022).[3] Quality control of the report was carried out both on content and form. Form and content were reviewed by Intl.SOS and EUAA.

[1] EUAA, Country of Origin Information (COI) Report Methodology, February 2023, url
[2] EUAA, Country of Origin Information (COI) Reports Writing and Referencing Guide, February 2023, url
[3] EUAA, The EUAA Writing Guide, April 2022, url

The accuracy of information included in the report was reviewed, to the extent possible, based on the quality of the sources and citations provided by the consultants. All the comments from reviewers were reviewed and were implemented to the extent possible, under time constraints.

Sources

In accordance with EUAA COI methodology, a range of different published sources have been consulted on relevant topics for this report. These include governmental publications, academic publications, reports by non-governmental organisations and international organisations. All sources that are used in this report are outlined in the Bibliography section.

Key informant interviews were carried out in July 2023. Interviews were conducted mainly with officers who work within organisations of Ghana's healthcare system. A complete anonymised list of interviewees can be found in the bibliography.

1. Neurology

Neurology is a branch of medicine that deals with the diagnosis and treatment of disorders and diseases of the nervous system, which includes the brain, spinal cord, and peripheral nerves. This report looks at the situation of care for epilepsy, cerebral vascular accident (CVA)/ "stroke" and Parkinson's disease in Ghana.

1.1. General information

Ghana faces a burden of neurological disorders; however, as in many developing countries, there is a lack of comprehensive data on the clinical spectrum of these disorders.[4] There is no data on the prevalence or incidence of stroke and Parkinson's disease (PD) across society, but studies using hospital data indicate the common neurological disorders. A review of neurological outpatient visits at Korle Bu Teaching Hospital, the national referral centre, lists the top five neurological disorders as:

- epilepsy (23.0 %)
- peripheral neuropathies (19.6 %)
- movement disorders (14.7 %)
- cerebrovascular diseases (11.1 %)
- headache disorders (7.7 %)[5]

A review in Kumasi showed similar results.[6] Of the movement disorders, idiopathic PD was predominant.[7]

In a multicentre, hospital-based, prospective cohort study, the incidence rate of stroke overall, over an 18-month period, was 14.19 events per 1 000 person-years. The incidence rate among individuals aged < 40 years was 3.48, 40-49 years was 9.50, 50-59 years was 15.57, 60-69 years was 21.41, 70-79 years was 12.82 and 80+ years was 16 per 1 000 person-years.[8]

Epilepsy prevalence is 1 % of the population with a treatment gap of 85 %. It is estimated that only 15 % of the estimated 270 000 people living with epilepsy receive treatment and care.[9]

[4] Sarfo, F. S., et al., Profile of neurological disorders in an adult neurology clinic in Kumasi, Ghana, June 2016, url, p. 69
[5] Akpalu, A., et al., Neurological disorders encountered at an out-patient clinic in Ghana's largest medical center: A 16-year review, July 2021, url, p. 2
[6] Sarfo, F. S., et al., Incident stroke among Ghanaians with hypertension and diabetes: A multicenter, prospective cohort study, Journal of the Neurological Sciences, September 2018, url, p. 17
[7] Akpalu, A., et al., Neurological disorders encountered at an out-patient clinic in Ghana's largest medical center: A 16-year review, July 2021, url, p. 5
[8] Sarfo, F. S., et al., Incident stroke among Ghanaians with hypertension and diabetes: A multicenter, prospective cohort study, September 2018, url, p. 19
[9] WHO, Africa, Ghana, "Fight against Epilepsy" Initiative in Ghana, WHO Programme on reducing the epilepsy treatment gap 2012–2016, 2018, url, p. 19

1.2. Overview of the health sector

Ghana has a pluralistic health sector in terms of ownership (public and private), and in terms of healthcare models (orthodox, traditional and alternative medicine).[10] Healthcare services are provided by the public sector, as well as by private sector service providers made up of for-profit providers and non-profit faith-based health facilities.[11] The health system is organised in three levels: the primary level, with a focus on primary healthcare (PHC) services, starts with the community-based health planning services (CHPS) compound, followed by the sub-district health centre/clinic and lastly the district hospital. The secondary and tertiary levels have regional, and teaching hospitals respectively.[12]

Public and private facilities, at all levels of the health system, can provide care within limits set by the Standard Treatment Guidelines 2017.[13] The primary level of care has the capacity to identify and make differential diagnoses of some neurological conditions. This capacity is found mostly at the district hospital level where medical staff can make more definitive diagnosis, commence basic care and also refer the client to the appropriate secondary or tertiary facility for definitive case management.[14]

Regional hospitals have specialists who are trained to manage simple neurological disorders, e.g. stroke, paraparesis and facial nerve palsy, among others.[15] In addition, secondary care at regional level can manage headaches, tremors and peripheral neuropathies but they need to refer to higher levels of care.[16] Tertiary care at the Teaching Hospital level, which houses specialist neurology departments where most of the neurologists are situated, has the expertise to appropriately manage the majority of neurological presentation seen in Ghana.[17]

Though there is no institute specialised in the treatment of neurological disease, the Korle Bu and Komfo Anokye Teaching Hospitals in Accra and Kumasi, respectively, have the most neurological expertise; and both have a neurology unit that runs a general neurology and subspeciality clinic including a stroke clinic.[18] There are no private specialist neurological centres/facilities but there are a few private health facilities, which provide specialist neurological consultations as part of their service package. Most of these facilities are in Accra and Kumasi where neurologists working in the respective teaching hospitals can provide part-time services in the private sector.[19]

[10] Ghana, MOH, National Health Policy: Ensuring healthy lives for all (revised edition), January 2020, url, p.23
[11] Ghana, MOH, Health Sector Medium Term Development Plan, 2022-2025, 1 December, 2021, url, p. 11
[12] Ghana, MOH, Health Sector Medium Term Development Plan, 2022-2025, 1 December 2021, url, p. 11
[13] Ghana, MOH, GNDP, Standard Treatment Guidelines, 2017, url, pp. 129, 205
[14] CNKII01, consultant neurologist, interview, July 2023, Accra
[15] CNKII01, consultant neurologist, interview, July 2023, Accra
[16] CNKII01, consultant neurologist, interview, July 2023, Accra
[17] CNKII01, consultant neurologist, interview, July 2023, Accra
[18] CNKII01, consultant neurologist, interview, July 2023, Accra
[19] CNKII01, consultant neurologist, interview, July 2023, Accra

Neurology care, at the specialist level, is provided by both physician specialist (internists) and sub-speciality neurologists. There are few sub-specialists in the field of neurology, and it is estimated that there are currently only 12 neurologists serving the population of 32 million.[20] With respect to stroke care, the required infrastructure and diagnostic technology are not readily available and there is a human resource capacity gap of cadres of health workers to meet care needs.[21] The available services for neurological care is generally considered inadequate.[22]

2. Access to treatment

Treatment is available at all levels of the health system, within the prescribed limits of the Standard Treatment Guidelines 2017.[23] All patients can access care at the nearest point of service to them at any level of the health system. Based on the severity of the condition and the capacity of the point of service to manage the condition, the patient will be referred to the next higher level of care for further appropriate case management. A referral to the teaching hospitals to see a specialist, from a primary/secondary facility, has a usual waiting time (apart from an emergency) of 2-6 weeks.[24] Other rehabilitation services, such as physiotherapy, speech therapy and occupational therapy, as part of care for persons with cerebral vascular accident (CVA), are available at the tertiary level. Physiotherapy is also readily available at the secondary level and at some district hospitals. To support patients with both acute and chronic conditions, there are an increasing number of private home care service providers who are able to provide the needed care.[25]

Treatment is geographically accessible in all the regions. However, urban towns have better access to neurological services than rural areas, primarily because of the presence there of secondary and/or tertiary facilities. There are no restrictions to patients' access to treatment; everyone has access to all services that are available at all levels of the health system.[26] There are barriers to access though: in particular for epilepsy, stigma and discrimination are major obstacles to early identification, treatment and social integration.[27] In general, the most significant barriers to treatment access for all the conditions include the inability to pay for the care available. Patients who have registered with the National Health Insurance Scheme (NHIS) or private medical insurance schemes will have their cost of care (either inpatient or outpatient) covered, as determined by their insurance package, while those without any form of insurance will have to pay out of pocket for these services. Private health insurance

[20] CNKII01, consultant neurologist, interview, July 2023, Accra
[21] Baatiema, L., et al., Towards best practice in acute stroke care in Ghana: a survey of hospital services, February 2017, url, p. 7
[22] CNKII01, consultant neurologist, interview, July 2023, Accra
[23] Ghana, MOH, GNDP, Standard Treatment Guidelines, 2017, url
[24] CNKII01, consultant neurologist, interview, July 2023, Accra
[25] CNKII01, consultant neurologist, interview, July 2023, Accra
[26] CNKII01, consultant neurologist, interview, July 2023, Accra
[27] WHO, Africa, Ghana, "Fight against Epilepsy" Initiative in Ghana, WHO Programme on reducing the epilepsy treatment gap 2012–2016, 2018, url, p. 24

schemes cover more types of services and are able to pay higher economic tariffs for services covered than what the NHIS offers.[28]

The main sources of financing for the majority of people living with neurological conditions is the National Health Insurance. However, this often only covers the cost of inpatient (bed and feeding) and outpatient care (consultation), as well as in both services, some laboratory investigations and categories of medicines. Anything not covered by insurance will have to be paid for out of pocket at the point of service.[29]

Patients pay for all services received at outpatient, as well as inpatient points of care. These include the cost of consultation, diagnostic services, medicines and inpatient accommodation fees, as necessary. If insured, payment is done by the patient through their NHIS card and the facility is reimbursed at a later stage. If uninsured, then payment is being done out of pocket, and it is expected to be made before services are provided. Payment is on-site and pay per service.[30]

With the exception of the NHIS, there is no government financial support for patients with neurological conditions. The NHIS coverage for neurological diseases is considered inadequate as it does not fully cover the cost of diagnostics and medicines.[31] The access to treatment, as described, is the same for those returning home. There is no discrimination to access to treatment for any of the conditions but there is a high level of stigma related to epilepsy (which does not translate into discrimination). This situation, with respect to access to treatment, is the same for citizens returning to Ghana.[32]

3. Insurance and national programmes

The public NHIS and private health schemes cover both inpatient and outpatient cost of care to different degrees, with the private schemes generally providing more cover than the NHIS.[33]

International donor programmes that are supporting the care of neurological conditions in Ghana are few and include the free medication programme for PD sponsored by the Movement Disorder Society (MDS) and the Grigori Foundation in Milan, which supports access to Madopar® (levodopa + benserazide) free of charge to registered patients. There are also the World Health Organization (WHO) and the Ghana Fights Against Epilepsy Initiative (GFAEI), which aim at reducing the treatment gap in epilepsy care (currently at 85 %).[34]

[28] CNKII01, consultant neurologist, interview, July 2023, Accra
[29] CNKII01, consultant neurologist, interview, July 2023, Accra
[30] CNKII01, consultant neurologist, interview, July 2023, Accra
[31] CNKII01, consultant neurologist, interview, July 2023, Accra
[32] CNKII01, consultant neurologist, interview, July 2023, Accra
[33] CNKII01, consultant neurologist, interview, July 2023, Accra
[34] WHO, Africa, Ghana, "Fight against Epilepsy" Initiative in Ghana, WHO Programme on reducing the epilepsy treatment gap 2012–2016, 2018, url, p. 24

4. Non-governmental organisations (NGOs)

There are a number of NGOs that have interest in and provide support for people affected by these neurological conditions. Those organisations are:

1. The Ghana Epilepsy Society - an affiliate of the International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE).[35]
2. The Neurology Society of Ghana (NSG) - an affiliate of the African Federation of Neurological Associations (AFAN) and the World Federation of Neurology (WFN).[36]
3. MDS African Section - offers support for patients and provides education and advocacy, as well as facilitates access to free medication (access to Madopar) for patients suffering from Parkinson's disease.[37]
4. BasicNeeds-Ghana, an NGO - is involved in improving livelihoods of patients living with epilepsy.[38]

Services provided by these NGOs are free of charge and unrestricted to patients and service providers who need these.[39]

5. Cost of treatment

The cost of treatment in the public sector is regulated by the NHIS. The NHIS tariffs are expected to be the official fees and charges in public facilities. This is often not adhered to because the insurance tariffs are lower than the market prices and do not cover the current cost of the services. Facilities, mainly the teaching hospitals, will obtain parliamentary approval for higher rates for fees and charges that the NHIS tariffs are unable to fully cover. These additional fees and charges are paid out of pocket by patients. Other public facilities will have instances where staff request unofficial fees and charges for services rendered.[40]

The cost of treatment is generally higher in private than in public facilities and also increases from primary to tertiary level of care.[41] The cost of treatment in the private sector is not regulated and different service providers set different fees and charges that enable them to, at least, fully recover their costs. These fees and charges may be revised at any time, and the

[35] ILAE-Africa, Ghana Epilepsy Society, 2023, url
[36] CNKII01, consultant neurologist, interview, July 2023, Accra
[37] International Parkinson and Movement Disorder Society (MDS)-African Section, n.d., url
[38] BasicNeeds Ghana, 2020, url
[39] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[40] CNKII01, consultant neurologist, interview, July 2023, Accra
[41] CNKII01, consultant neurologist, interview, July 2023, Accra

revisions are primarily influenced by foreign exchange rates.[42] The cost of treatment is generally higher in private compared to public facilities and increases from primary to tertiary level of care.[43]

In Table 1 and Table 2, the public outpatient and inpatient treatment prices are based on NHIS prices,[44] and the private outpatient and inpatient treatment prices, as well as reimbursement and insurance information are provided by interviewee CNKII02.[45]

Concerning the coverage and reimbursement of the treatment prices in the tables 1 and 2 below, the following principles apply to all listed treatments:

1. Public and some private sector facility treatment prices are covered by NHIS and sometimes private insurance.
2. If insured, on presentation of one's insurance card, whether NHIS or private, no payment is made by the patient, as the insurance company re-imburses the facility at a later date on submission of claims.
3. In public facilities, any price difference between the listed NHIS tariffs and the price asked by the facility is borne by the patient (some facilities obtain parliamentary approval to increase their prices). In private facilities where NHIS coverage is accepted, the price difference between the NHIS tariffs and the private price is borne by the patient.
4. Uninsured patients pay out of pocket for all services at public and private facilities.

Table 1: Cost of treatment for adults in public tertiary and private health facilities

Specialist	Public outpatient treatment price in GHS	Public inpatient treatment price in GHS**	Private outpatient treatment price in GHS	Private inpatient treatment price in GHS**
Neurologist*	80.70	128.59	400 - 1 000	400 - 600
Neurosurgeon*	80.70	128.59	400 - 1 000	400 - 600
Internist*	80.70	128.59	300 - 600	400 - 600
Rehabilitation specialist*	80.70	128.59	300 - 600	400 - 600

[42] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[43] CNKII01, consultant neurologist, interview, July 2023, Accra
[44] Ghana, NHIS, Tariffs for Tertiary Hospitals, February 2023
[45] CNKII02, administrator at a private hospital, interview, July 2023, Accra

* Rates quoted are per consultation excluding medication, investigations and procedures that may be needed.

** Inpatient prices are calculated per day.

Table 2: Laboratory investigation prices for public and private institutions

	Public treatment price in GHS	Private treatment price in GHS
Laboratory research: Medication level in the blood (e.g. for antipsychotics/ for antiepileptics and/ or for lithium carbonate)	Information not found	100 - 200
Laboratory research of blood; INR, e.g. in case of acenocoumarol anticlotting	60	100
Diagnostic imaging by means of EEG (electroencephalogram)	350	450
Diagnostic imaging by computed tomography (CT) scan	423.44	800
Diagnostic imaging by magnetic resonance imaging (MRI) scan	611.79	1 400
Diagnostic imaging: Angiography (=arteriography) of cerebral arteries	275.20	1 700 - 2 000
Lumbar puncture	400	600
Clinical admittance in neurology department (daily rates)	127	400 - 600
Clinical admittance in (neuro) rehabilitation department/ clinic (daily rates)	127	210
Outpatient treatment by physical therapist (one session)	85.56	200 - 300

6. Cost of medication

The cost of medication in the public sector is regulated by the NHIS medicines list.[46] The NHIS medicines list is expected to include the official charges for medicines in public facilities. This is often not adhered to because the insurance tariffs are lower than the market prices. Facilities, mainly the teaching hospitals, will go on secure parliamentary approval for higher rates for fees and charges that the NHIS tariffs are unable to fully cover. These additional fees and charges are paid out of pocket by patients. Other public facilities will have instances where staff request unofficial fees and charges for services rendered.[47]

The cost of medicines in the private sector is not regulated and different service providers set different fees and charges that enable them to, at least, fully recover their costs. These fees and charges may be revised at any time and the revisions are primarily influenced by foreign exchange rates.[48]

Most of the medicines are available in the whole country. The private sector pharmacies maintain a more complete stock of medicines than public facilities, and medicines are more readily available in urban than in rural communities.[49]

As far as possible, medicines found in the country are registered by the Food and Drugs Authority (FDA) for use. The implication of this is that the quality of the medicines can be assured, to a large extent. For a product to be registered it means that it has gone through and passed the rigorous testing and product source verification processes carried out by the FDA of Ghana. However, non-registered as well as fake medicines are also found in the country.[50]

Some of the medicines are on the Essential Medicines List and the National Health Insurance Medicines List. Their inclusion on the list encourages pharmacies and health facilities to stock them, reducing situations when stocks run out.[51]

In situations where needed medicines are not available in the country, citizens may make arrangements for friends and family living abroad to purchase and send to them these medicines or they may seek the support of pharmacies to order the medicines, these scarce medicines may or may not be registered by the FDA. These medications are often prescription-only medications and often need to be accompanied by the prescription.[52]

In Table 3, '*Pharmacy*' refers to the private sector and '*Hospital*' refers to public sector.

[46] Ghana, NHIS, Medicine List, February 2023, url
[47] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[48] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[49] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[50] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[51] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[52] CNKII02, administrator at a private hospital, interview, July 2023, Accra

Public facilities prices as listed in the NHIS medicines' list.[53] No brand names are covered under the medicines' list.[54] Prices in private facilities and information on insurance and reimbursement are provided by interviewee CNKII02.[55]

Concerning the coverage and reimbursement of the medication prices in the table below, the following principles apply:

1. Both public and private sector prices can be covered by NHIS or/and private insurance.
2. If insured, on presentation of one's insurance card, whether NHIS or private, no payment is made by the patient, as the insurance company re-imburses the facility at a later date on submission of claims.
3. In private facilities, where NHIS coverage is accepted, the price difference between the NHIS tariffs and the private price is borne by the patient.
4. Uninsured patients pay out-of-pocket for all medications at public and private facilities.

Table 3: Medicines prices in public and private facilities

Generic Name	Brand name	Strength of unit	Form	Number of units in the container	Price per box in GHS	Place (pharmacy, hospital, ...)
Carbamazepine	Tegretol® Carbamazepine	200 mg 200 mg	tablet tablet	50 50	130 47	Pharmacy Hospital
Clobazam	Urbanol®	10 mg	tablet	100	627	Pharmacy
Clonazepam	Rivotril®	0.5 mg	tablet	100	452	Pharmacy
Gabapentine	Gabapentil	400 mg	capsule	100	780	Pharmacy
Lamotrigine	Lamotrigine	50 mg	tablet	56	84	Pharmacy
Levetiracetam	Keppra®	250 mg	tablet	50	165	Pharmacy
Phenobarbital	Phenobar™	30 mg	tablet	100	50	Pharmacy

[53] Ghana, NHIS, Medicine List, February 2023, url
[54] CNKII02, administrator at a private hospital, interview, July 2023, Accra
[55] CNKII02, administrator at a private hospital, interview, July 2023, Accra

Generic Name	Brand name	Strength of unit	Form	Number of units in the container	Price per box in GHS	Place (pharmacy, hospital, ...)
	Phenobarbital	30 mg	tablet	100	14	Hospital
Phenytoin	Epanutin® Phenytoin	100 mg 100 mg	tablet tablet	100 100	100 84	Pharmacy Hospital
Pregabaline	Lyrica®	75 mg	capsule	30	175	Pharmacy
Valproic acid OR valproate OR Depakine®	Epilim® Valproate	200 mg/5 ml 200 mg/5 ml	syrup syrup	300 ml 300 ml	97 165	Pharmacy Hospital
Diazepam (i.v. injection for epileptic attacks)	Diazepam	10 mg/ 2 ml	Injection	10	9.13	Hospital
Midazolam (i.m. injection for epileptic attacks)	Midazolam	5 mg/ 5 ml	Injection	1	45.98	Hospital
Midazolam (i.v. injection for epileptic attacks)	Dormicum	15 mg/ 3 ml	Injection	5	622	Hospital
Acetylsalicylic acid (Aspirin®)	Aspar™ Acetylsalicylic acid (Aspirin®)	75 mg 300 mg	tablet tablet	100 100	22 16	Pharmacy Hospital
Apixaban	Eliquis™ Axaban- Denk	2.5 mg 5 mg	tablet tablet	60 60	2 886 1 872	Pharmacy Hospital
Clopidogrel	Plavix™	75 mg	tablet	28	618	Pharmacy

Generic Name	Brand name	Strength of unit	Form	Number of units in the container	Price per box in GHS	Place (pharmacy, hospital, ...)
Enoxaparin	Clexane™ Enoxaparin	40mg/0, 4ml 100 mg/ml	injection injection	2 1	100 74.57	Pharmacy Hospital
Heparin	Heparin Heparin	5 000 iu/ 5 ml 5 000 iu/ 5 ml	Injection injection	10 1	811.20 81.12	Pharmacy Hospital
Rivaroxaban	Xarelto™	20 mg	tablet	14	630	Pharmacy
Warfarin	Warfarin	5 mg	tablet	28	23.52	Hospital
Bromocriptine mesilate	Parlodel® Bromocriptine	1.5 mg 2.5 mg	tablet tablet	30 90	90 140.40	Pharmacy Hospital
Levodopa + benserazide	Madopar®	100/ 25 mg	tablet	100	240	Pharmacy
Levodopa + carbidopa	Sinemet®	100/ 10 mg	tablet	100	420	Pharmacy

Annex 1: Bibliography

Oral sources, including anonymous sources

CNKII01, a consultant neurologist, interview, Accra, July 2023. The person wishes to remain anonymous.

CNKII02, an administrator at a private hospital, interview, Accra, July 2023. The person wishes to remain anonymous.

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Annex 2: Terms of Reference (ToR)

Neurology (epilepsy, cerebral vascular accident (CVA)/ "stroke", Parkinson's disease

Note for drafters: These are guidelines on the information to be included. If one aspect is not relevant, e.g., there is no national institute to treat this disease or no international donor programme, there is no need to mention it. Keep the focus on treating medicine – preventive care can be mentioned but is of less interest to the target group.

General information

- Briefly describe prevalence and incidence of diseases Epilepsy, CVA and Parkinson's disease/ types of these diseases (epidemiologic data).
- How is the health care organized for neurological diseases?
- How are the diseases treated – at specific centres, in primary health care centres, secondary care / hospitals, tertiary care etc.?
- Which kinds of facilities can treat the diseases [public, private not for profit (e.g., hospitals run by the church), private for-profit sector]? Include links to facilities' websites if possible.
- How are the resources organized in general to treat patients with neurological diseases? Are there sufficient resources available to treat all patients?
- Is there a particular type of these diseases for which no (or only partial) treatment exists in the country?
- Is there a (national) institute specialised in treating neurological diseases?
- Are there any national or international plans or (donor) programmes for certain diseases; if yes, could you elaborate on such programme(s) and what it entails?

Access to treatment

- Are there specific treatment programmes for neurological diseases? If so, what are the eligibility criteria to gain access to it and what they contain?
- Are there specific government (e.g., insurance or tax) covered programmes for this disease? If so, what are the eligibility criteria to gain access to it?
- Are there any factors limiting the access to healthcare for patients? If so, are they economic, cultural, geographical, etc.? Are there any policies to improve access to healthcare and/or to reduce the cost of treatments and/or medication? What is the number of people having access to treatment? Keep focus on e.g., waiting times rather than the exact number of specialists in the field.
- If different from information provided in the general section; is the treatment geographically accessible in all regions?

- What is the 'typical route' for a patient with this disease (after being diagnosed with the disease)? In other words: for any necessary treatment, where can the patient find help and/or specific information? Where can s/he receive follow-up treatment? Are there waiting times for treatments (e.g., for neurological rehab. clinics etc)?
- What must the patient pay and when?
- Is it the same scenario for a citizen returning to the country after having spent a number of years abroad?
- What financial support can a patient expect from the government, social security or a public or private institution? Is treatment covered by social protection or an additional / communal health insurance? If not, how can the patient gain access to a treatment?
- Any occurrences of healthcare discrimination for people with neurological diseases: (e.g., access is denied because of having this disease)?

Insurance and national programmes

- National coverage (state insurance).
- Programmes funded by international donor programmes.
- Include any insurance information that is specific for patients with neurological diseases.

Cost of treatment

Guidance / methodology on how to complete the tables related to treatments:

- Do not delete any treatments from the tables. Instead state that they could not be found if that is the case.
- In the table, indicate the price for inpatient and outpatient treatment in public and private facility and if the treatments are covered by any insurance or by the state.
- For inpatient, indicate what is included in the cost (bed / daily rate for admittance, investigations, consultations…). For outpatient treatment, indicate follow up or consultation cost.
- Is there a difference in respect to prices between the private and public facilities?
- Are there any geographical disparities?
- Are the official prices adhered to in practice?
- Include links to online resources used, if applicable (e.g., hospital websites).

Note: a standardised list of treatments was also included in the original ToR, as can be viewed in the report.

Cost of medication

Guidance / methodology on how to complete the tables related to medications:

- Do not delete any medicines from the tables. Instead, state that the prices could not be found if that is the case.
- Are the available medicines in general accessible in the whole country or are there limitations?
- Are the medicines registered in the country? If yes, what are the implications of it being registered?
- Indicate in the tables: generic name, brand name, dosage, form, pills per package, official prices, source, insurance coverage.
- Are (some of the) medicines mentioned on any drug lists like national lists, insurance lists, essential drug lists, hospital lists, pharmacy lists etc.?
- If so, what does such a list mean specifically in relation to coverage?
- Are there other kinds of coverage, e.g., from national donor programmes or other actors?
- Include links to online resources used, if applicable (e.g., online pharmacies).

Note: a standardised list of medication was also included in the original ToR, as can be viewed in the report.

NGOs

Include if relevant, otherwise delete section.

- Are any NGOs or international organisations active for patients with neurological diseases? What are the conditions to obtain help from these organisations? What help or support can they offer?
- Which services are free of charge and which ones are at a cost? Is access provided to all patients or access is restricted for some (e.g., in case of faith-based institutions or in case of NGOs providing care only to children for instance).


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