

EAN Fact Sheet

Country profile of Armenia

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The EAN is pleased to present this fact sheet to each and every national neurological society, offering key insights into the latest epidemiological, economic, and demographic trends. This data aims to support informed decision-making and enhance understanding of neurological conditions on both national and European level with information provided by three EAN projects: the [“Burden of Neurological Disease in Europe”](#) study, the EAN [“COst of Illness in Neurology in EUrope \(COIN-EU\)”](#) project, the EAN NNS 2021-2022 survey.



Burden of Disease in Europe – Collaboration with IHME

Neurological disorders are the second most common cause of disability and premature death in the European Region and their prevalence and burden will likely increase with the progressive ageing of the European population. Greater attention to neurological diseases must be paid by health authorities for prevention and care. For this reason, the European Academy of Neurology is conducting research on gaining and analysing reliable data on the number of patients with neurological diseases.

These data are obtained from the currently most developed data base, the [Global Burden of Disease \(GBD\)](#) study of the Institute for Health Metrics and Evaluation (IHME), University of Washington, Seattle. The burden of neurological disorders in Europe was calculated for the year 2021 as prevalence, mortality, disability-adjusted life-years (DALYs), years of life lost (YLLs), and years lived with disability (YLDs) for the countries in the EU and the WHO European region for a total of 26 neurological disorders.

The study in Europe is run by the EAN and led by Prof. Dr. Günther Deuschl, Dr. Maurizio Leone and Maria Konti, M.Sc., in close collaboration with the leading scientists of the IHME Institute.

In the table below, you will find the national total counts for DALYs, YLDs, YLLs, prevalence, and deaths, the age-standardised rates by neurological disorder category for the years 1990 and 2021, and the percentage change for both of your country and the WHO Europe.

Diseases with counts less than one have been excluded and the number of decimal points has been adjusted individually for each disease.

	Counts (thousands)		Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Armenia	WHO Europe	
All Neurological Disorders						
DALYs	130,753	4,439	3,348	-24.6%	-29.0%	
Deaths	4,179	150	98	-34.6%	-43.2%	
Prevalence	1,380,277	42,229	42,432	0.5%	0.3%	
YLDs	58,493	1,588	1,601	0.8%	2.9%	
YLLs	72,253	2,850	1,747	-38.7%	-44.4%	
Alzheimer's disease and other dementias						
DALYs	17,295	383	399	3.9%	-2.5%	
Deaths	903	20	21	6.8%	-2.8%	
Prevalence	28,418	655	652	-0.5%	-2.1%	
YLDs	5,882	136	135	-0.7%	-2.6%	
YLLs	11,412	248	264	6.5%	-2.5%	
Chromosomal abnormalities						
DALYs	94	3.77	4.00	6.1%	-12.3%	
Prevalence	1,031	42	45	6.4%	-12.8%	
YLDs	94	3.77	4.00	6.2%	-12.4%	
Covid-19 (neurological)						
DALYs	2,064	-	58	-	-	
Prevalence	19,769	-	577	-	-	
YLDs	2,064	-	58	-	-	
Cystic echinococcosis						
DALYs	8	0.31	0.25	-20.2%	-18.3%	
Prevalence	29	0.95	0.88	-6.6%	-9.0%	
YLDs	8	0.31	0.24	-20.3%	-18.4%	
Diabetic neuropathy						
DALYs	13,156	189	308	63.2%	98.1%	
Prevalence	102,800	1,476	2,407	63.1%	97.9%	
YLDs	13,156	189	308	63.2%	98.1%	

Down syndrome						
DALYs	36	1.36	1.54	13.2%	-19.6%	
Prevalence	400	15	17	13.1%	-20.7%	
YLDs	36	1.36	1.54	13.3%	-19.8%	
Encephalitis						
DALYs	750	26	27	3.3%	-30.1%	
Deaths	15	0.37	0.45	18.9%	-15.9%	
Prevalence	1,025	38	30	-20.1%	-13.6%	
YLDs	103	3.87	3.17	-18.2%	-12.0%	
YLLs	647	22	24	7.0%	-31.0%	
Epilepsy						
DALYs	3,712	156	125	-20.2%	-12.6%	
Deaths	28	0.99	0.83	-16.0%	3.9%	
Prevalence	8,724	306	296	-3.1%	3.3%	
YLDs	2,493	103	85	-17.4%	-11.3%	
YLLs	1,219	54	40	-25.5%	-14.3%	
Guillain-Barre Syndrome						
DALYs	18	0.54	0.55	0.4%	12.4%	
Prevalence	61	1.83	1.84	0.3%	12.4%	
YLDs	18	0.54	0.55	0.3%	12.4%	
Idiopathic intellectual disability						
DALYs	605	30	22	-27.1%	-19.7%	
Prevalence	12,813	697	462	-33.7%	-21.2%	
YLDs	605	30	22	-27.1%	-19.7%	
Klinefelter syndrome						
DALYs	1	0.03	0.03	3.1%	5.7%	
Prevalence	87	3.39	3.53	4.2%	5.5%	
YLDs	1	0.03	0.03	3.1%	5.5%	

	Counts (thousands)		Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Armenia	WHO Europe	
Meningitis						
DALYs	443	87	15	-82.3%	-80.5%	
Deaths	4	1.06	0.12	-88.9%	-75.4%	
Prevalence	3,648	168	112	-33.4%	-66.7%	
YLDs	277	14	9	-33.5%	-64.6%	
YLLs	166	73	6	-91.4%	-81.3%	
Migraine						
DALYs	16,485	511	510	-0.2%	0.0%	
Prevalence	437,577	13,656	13,629	-0.2%	0.3%	
YLDs	16,485	511	510	-0.2%	0.0%	
Motor neuron disease						
DALYs	172	3.09	5.09	64.7%	37.5%	
Deaths	5	0.05	0.12	131.7%	54.1%	
Prevalence	80	2.67	2.66	-0.6%	19.8%	
YLDs	17	0.57	0.57	-0.6%	19.5%	
YLLs	155	2.53	4.53	79.2%	38.5%	
Multiple sclerosis						
DALYs	462	10	12	17.5%	-5.0%	
Deaths	8	0.18	0.18	2.0%	-12.5%	
Prevalence	1,294	23	32	42.3%	26.4%	
YLDs	326	6	8	36.5%	25.5%	
YLLs	135	3.84	3.38	-12.1%	-22.2%	
Nervous system cancer						
DALYs	7,484	207	213	2.9%	-3.3%	
Deaths	228	4.97	5.78	16.3%	10.8%	
Prevalence	445	11	14	29.9%	35.9%	
YLDs	76	1.73	2.12	22.5%	25.3%	
YLLs	7,407	205	210	2.8%	-3.7%	

Neurocysticercosis						
DALYs	641	28.20	15.79	-44.0%	-42.5%	
Deaths	0.028	0.002	0.001	-59.7%	-69.2%	
Prevalence	2,637	98.69	64.62	-34.5%	-32.8%	
YLDs	640	28.14	15.76	-44.0%	-42.5%	
YLLs	1	0.07	0.02	-63.9%	-70.7%	
Neurosyphilis						
DALYs	4	0.26	0.09	-64.6%	-43.6%	
Prevalence	23	1.44	0.60	-58.2%	-11.7%	
YLDs	4	0.26	0.09	-64.6%	-43.4%	
Other neurological disorders						
DALYs	1,086	22	35	60.4%	25.8%	
Deaths	15	0.19	0.39	110.9%	45.0%	
YLDs	690	15	23	57.2%	62.9%	
YLLs	389	7	12	68.9%	14.2%	
Parkinson's disease						
DALYs	2,840	65.93	66.16	0.4%	5.6%	
Deaths	164	3.71	3.81	2.6%	4.0%	
Prevalence	3,408	73	78	7.1%	21.9%	
YLDs	487	10	11	7.0%	21.4%	
YLLs	2,354	56	55	-0.9%	2.0%	
Spinal cord injury						
DALYs	2,622	130	80	-38.0%	-26.9%	
Prevalence	9,098	399	276	-31.0%	-21.9%	
YLDs	2,622	130	80	-38.0%	-26.9%	

	Counts (thousands)	Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Armenia	WHO Europe
Stroke					
DALYs	55,854	2,397	1,310	-45.3%	-52.6%
Deaths	2,810	119	65	-45.0%	-55.6%
Prevalence	40,584	1,187	990	-16.6%	-19.2%
YLDs	7,486	218	182	-16.4%	-18.9%
YLLs	48,367	2,179	1,128	-48.2%	-55.3%
Tension-type headache					
DALYs	2,266	66.86	67.18	0.5%	-1.6%
Prevalence	967,732	30,284	30,276	-0.03%	-0.8%
YLDs	2,266	66.86	67.18	0.5%	-1.6%
Traumatic Brain Injury					
DALYs	2,654	121	74	-39.0%	-28.2%
Prevalence	18,109	821	500	-39.1%	-28.0%
YLDs	2,654	121	74	-39.0%	-28.2%

Table 1: National total counts for DALYs, YLDs, YLLs, prevalence, and deaths, age-standardised rates by neurological disorder category for 1990 and 2021, and percentage change of 1990-2021. Diseases with counts less than one have been excluded and the number of decimal points has been adjusted individually for each disease.

Neurological conditions

In figure 1 below, the top 20 neurological disorders are ranked based on the national age-standardised rate of DALYs per 100 000 population in 2021 for all age groups.

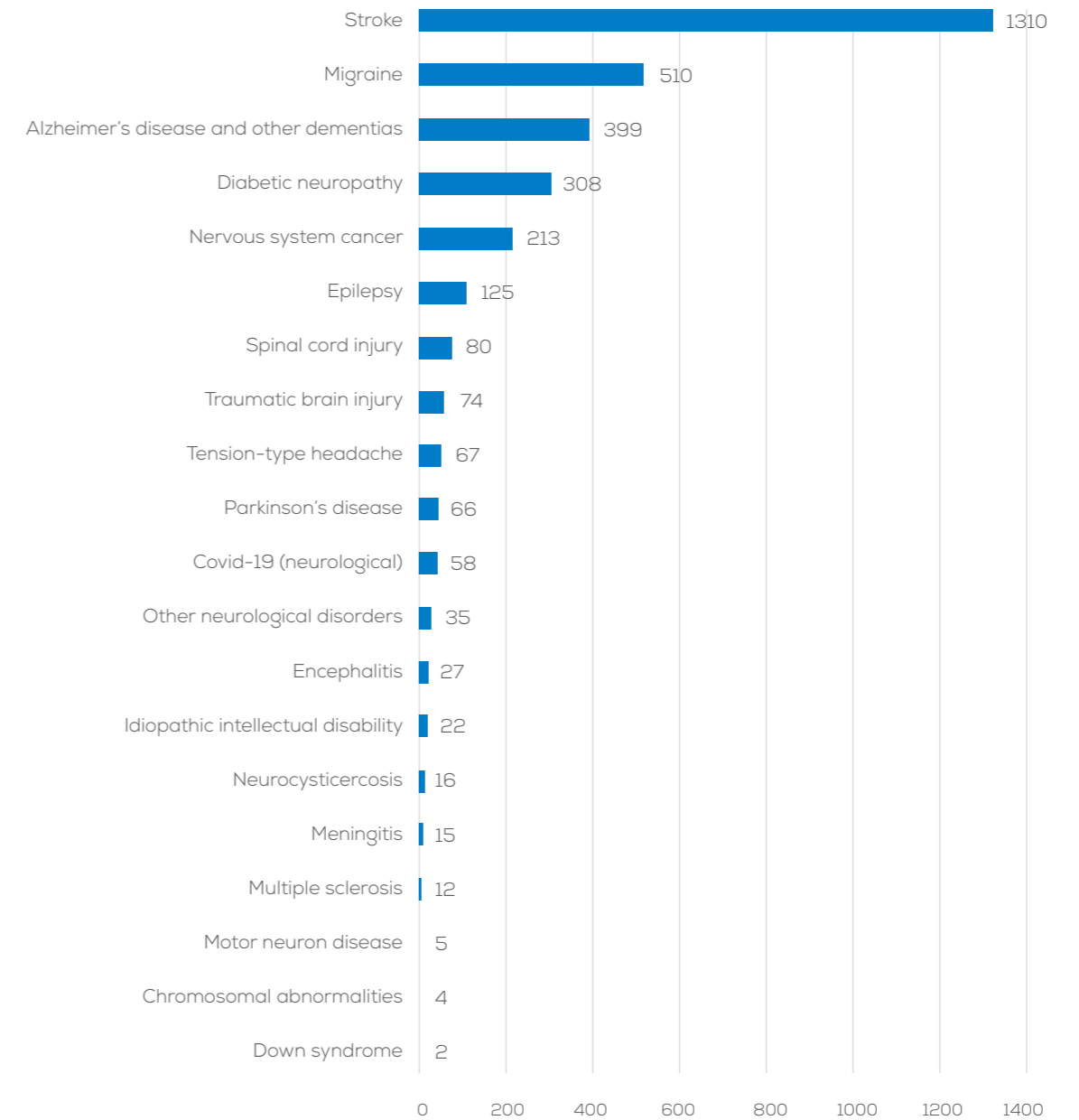


Figure 1: National age-standardised DALYs per 100 000 population by neurological disorder in 2021.

DALYs per 100 000 population

In order to show how the diseases are evolving both in **Armenia** and the European Region, we present the temporal pattern of DALYs per 100 000 population over the last three decades in the figure below:

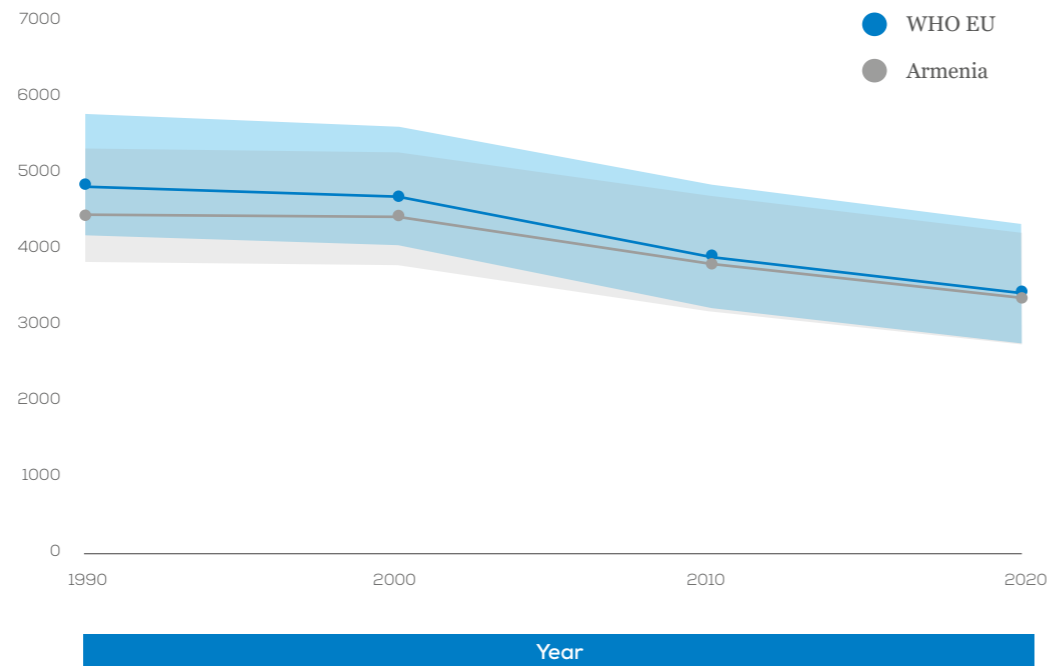


Figure 2: Age-Standardized DALYs per 100 000 population over the last 3 decades.

In figure 3 we show the distribution of DALYs rate per 100 000 population by age group divided in female and male:

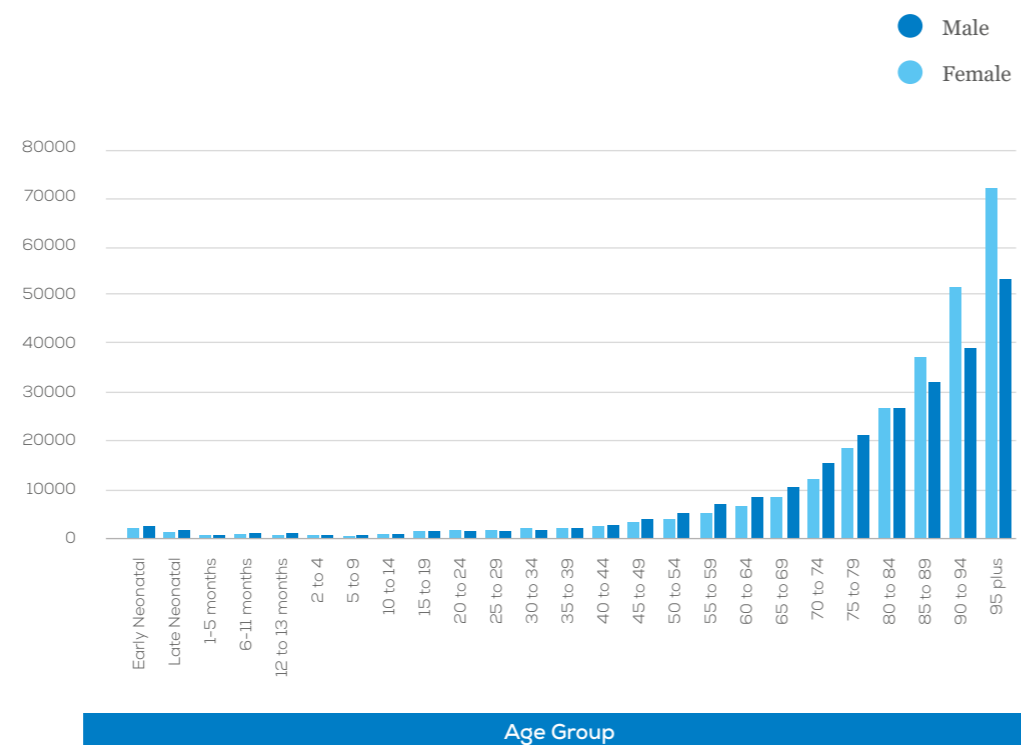


Figure 3: National DALYs per 100 000 population by age group and sex in 2021.

Extensive data and analyses are provided in the published paper and it will be communicated to the National Neurological societies.

COIN-EU (Cost of Illness in Neurology in Europe)

The Cost of Illness in Neurology in Europe (COIN-EU) project, which was launched in 2021, is run by EAN and led by Prof. Richard Dodel, Prof. Uwe Siebert and Prof. Günther Deuschl. This project is overseen at the EAN by Prof. Paul Boon, Prof. Claudio Bassetti and Prof. Thomas Berger.

The aim of the study is to assess disease- and country-specific annual costs for 12 categories of neurological diseases in Europe with a focus on the prevalent adult patient population. Costs have been calculated in three main categories: a) direct health care costs (i.e., all goods and services related to the prevention, diagnosis and treatment of a disorder; e.g. physician visits, hospitalizations and pharmaceuticals), b) informal care costs (i.e. other goods and services related to the disorder; e.g. social services, special accommodation and informal care), and c) indirect costs (i.e., lost productivity due to work absence or early retirement).

As the literature review revealed many gaps in research for many diseases and many countries, the group has developed a method to provide estimations of the above cost categories for the cases where no data are available. Data are imputed for those countries which belong to the same GNI category with countries that do present data. In case none of the countries which belong to the same GNI category present data, then an imputation is not possible.

In the table below, costs for **Armenia** have been calculated for the diseases with available data, in three main categories where the numbers represent millions € PPP 2019.

million € PPP
2019

Informal Care

Neurological Disorder	Total Costs	Direct Costs	Informal Care Costs	Indirect Costs
Stroke	156.9	84.2	38.7	34.0
Traumatic brain injury	50.7	50.7	-	-
Multiple sclerosis	37.2	32.8	3.1	1.3
Parkinson's disease	25.8	16.3	8.8	0.6
Idiopathic epilepsy	8.7	8.0	-	0.6
Total Costs:	279.3	192.0	50.6	36.6

Table 2: Total, direct, informal care and indirect costs per neurological disorder. Number of diseases depends on the availability of original studies and imputation of data.

NNS Survey 2021

In December 2021, the EAN conducted a survey among the national neurological societies. By combining the data from the Burden of Disease in Europe study across all European Region countries, we can provide demographic data regarding the workforce of neurologists in Europe for the 37 countries who took part in the survey.

The figure below represents the number of neurologists, fully specialised and in training per 100 000 population.

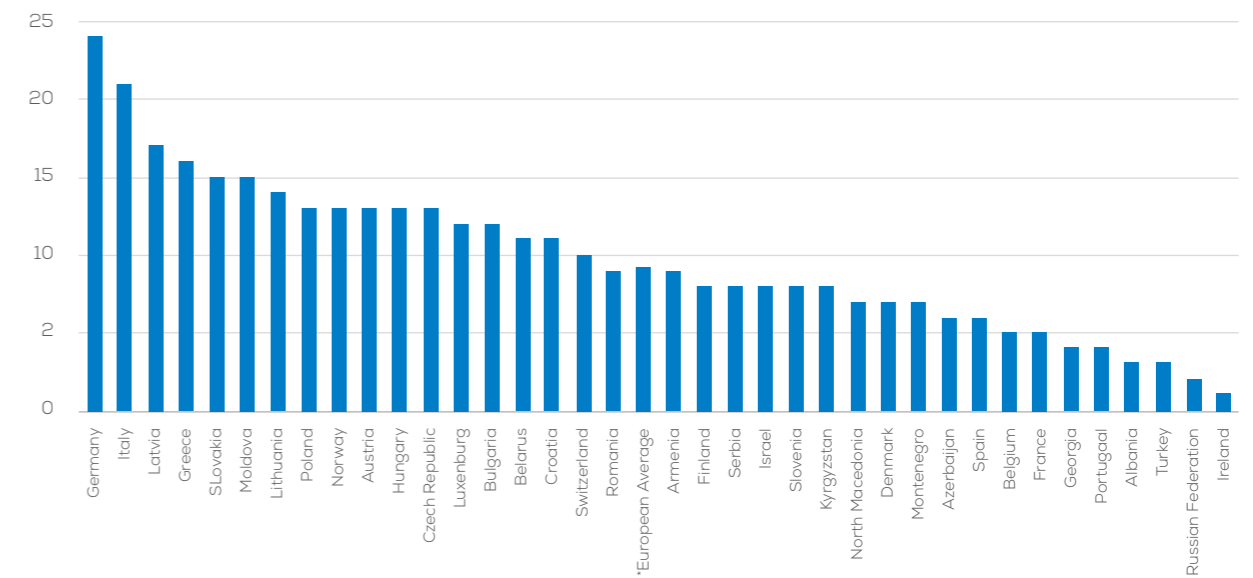


Figure 4: Number of neurologists (fully specialised and in training) per 100 000 population.

In the last figure the number of patients per neurologist is displayed:

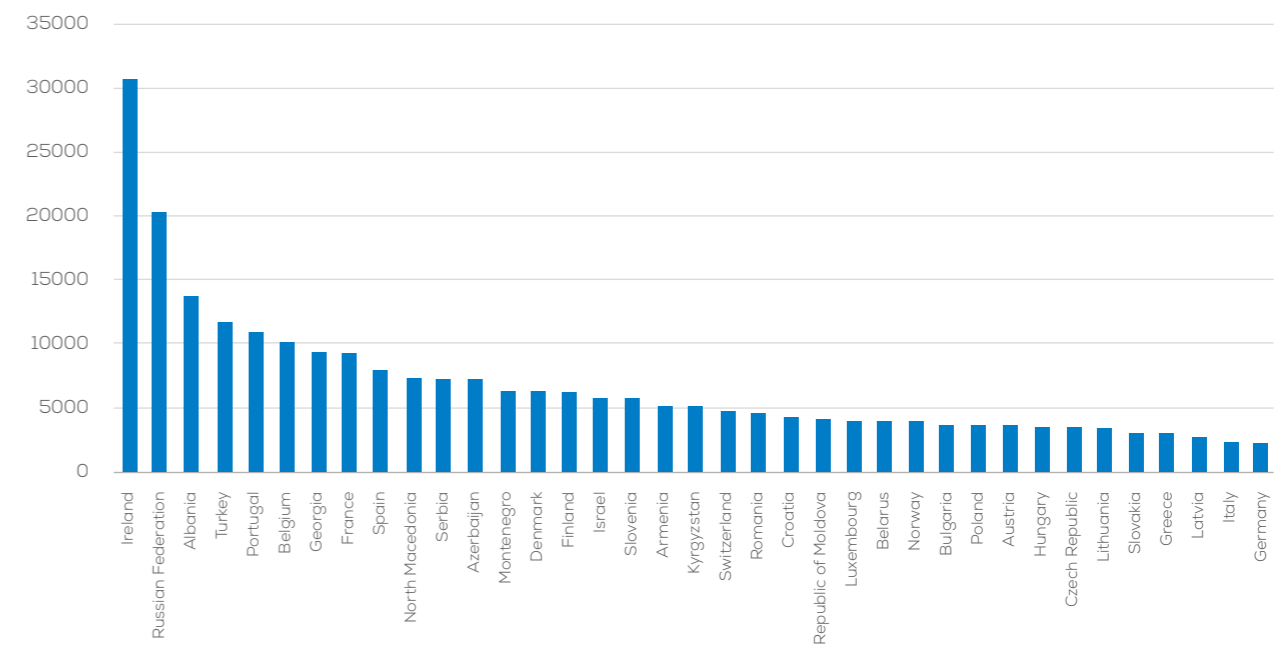
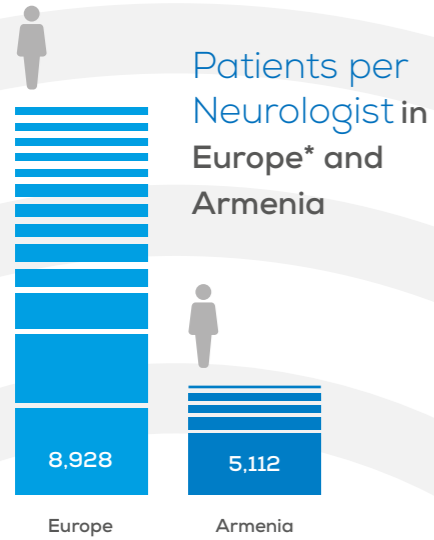
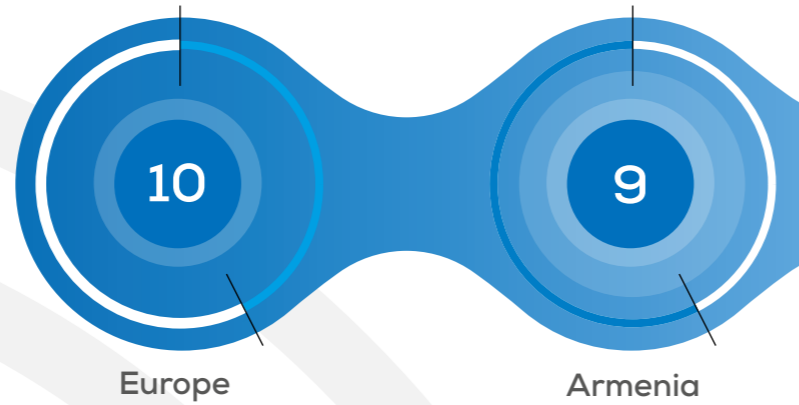


Figure 5: Number of patients per neurologist (fully specialised and in training).

Neurological Diseases in Europe and Armenia:

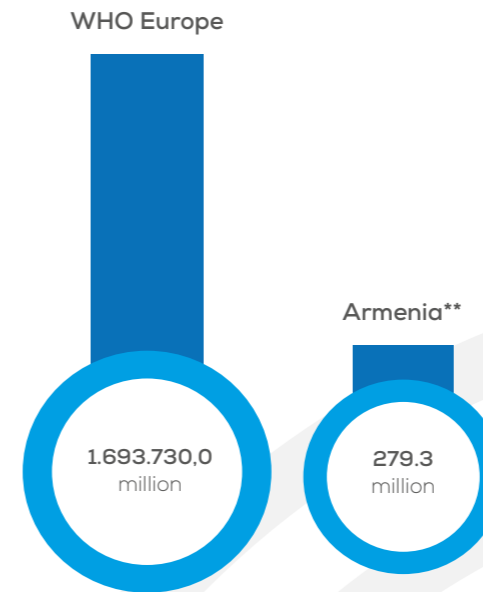
Key Data and Trends from 2021

Neurologists per 100,000 population in Europe* and Armenia:



Percentage change of age-standardised DALYs, Deaths and prevalence from 1990 to 2021:

	WHO Europe	vs	Armenia
DALYs	-28.98%		-24.56%
Deaths	-43.19%		-34.56%
Prevalence	0.34%		0.48%

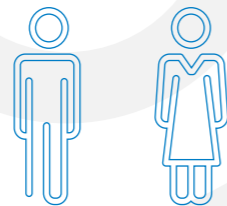


Annual total costs (in million € PPP 2019) for 12 major neurological diseases:

Most prevalent neurological diseases in Armenia in

2021

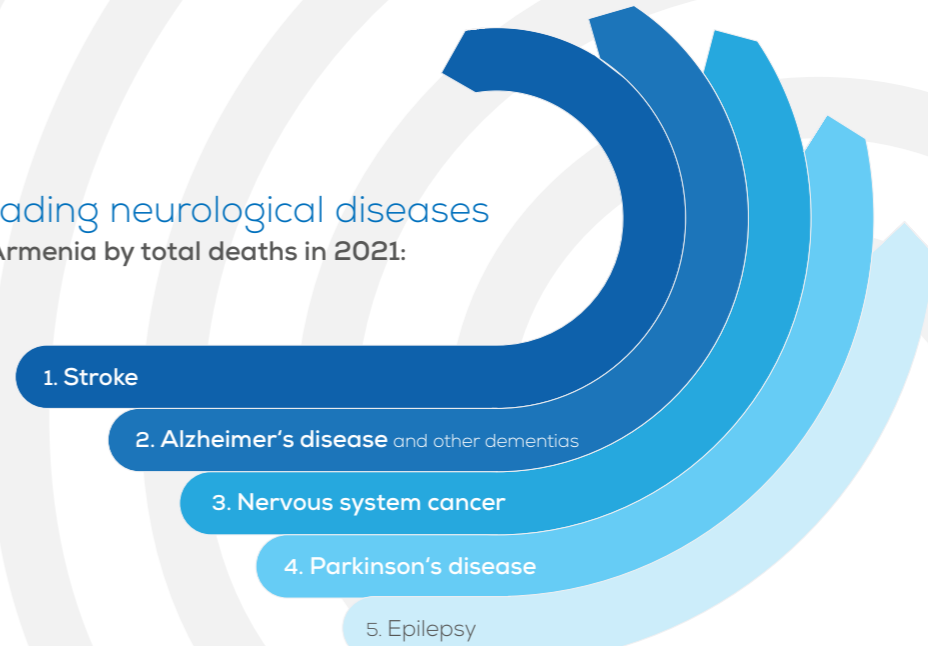
- 1 Tension-type headache
- 2 Migraine
- 3 Diabetic neuropathy
- 4 Stroke
- 5 Alzheimer's disease and other dementias



3,513 3,351 WHO Europe
3,514 3,212 Armenia

Age-standardised DALYs rate per 100,000 population in 2021 by sex

Leading neurological diseases in Armenia by total deaths in 2021:



*Based on data from 37 countries of the WHO European region
**Cost estimates are derived from country-specific data available for specific diseases.

