

EAN Fact Sheet

Country profile of Kyrgyzstan

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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	Age-standardized rate		Percentage change, 1990-2021	
	(thousands)	1990	2021	Kyrgyzstan	WHO Europe
All Neurological Disorders					
DALYs	228,197	6,608	4,237	-35.9%	-29.0%
Deaths	5,194	235	124	-47.1%	-43.2%
Prevalence	2,795,080	41,999	42,327	0.8%	0.3%
YLDs	92,935	1,547	1,547	-0.03%	2.9%
YLLs	135,248	5,061	2,690	-46.8%	-44.4%
Alzheimer's disease and other dementias					
DALYs	13,596	396	387	-2.3%	-2.5%
Deaths	632	21.24	20.09	-5.4%	-2.8%
Prevalence	23,637	645	650	0.7%	-2.1%
YLDs	4,880	135	136	0.5%	-2.6%
YLLs	8,716	261	251	-3.7%	-2.5%
Chromosomal abnormalities					
DALYs	314	4.42	4.18	-5.4%	-12.3%
Prevalence	3,513	49	47	-5.2%	-12.8%
YLDs	314	4.42	4.18	-5.5%	-12.4%
Covid-19 (neurological)					
DALYs	3,071	-	47	-	-
Prevalence	30,629	-	475	-	-
YLDs	3,071	-	47	-	-
Cystic echinococcosis					
DALYs	26	0.38	0.39	1.6%	-18.3%
Prevalence	86	1.10	1.29	17.1%	-9.0%
YLDs	26	0.38	0.39	1.5%	-18.4%
Diabetic neuropathy					
DALYs	13,403	115	252	118.6%	98.1%
Prevalence	104,452	901	1,965	118.1%	97.9%
YLDs	13,403	115	252	118.6%	98.1%

Down syndrome					
DALYs	108	1.70	1.44	-15.3%	-19.6%
Prevalence	1,200	19	16	-15.5%	-20.7%
YLDs	108	1.70	1.44	-15.3%	-19.8%
Encephalitis					
DALYs	4,070	135	56	-58.6%	-30.1%
Deaths	57	1.90	0.83	-56.1%	-15.9%
Prevalence	2,545	40	39	-1.3%	-13.6%
YLDs	278	4.01	4.13	2.9%	-12.0%
YLLs	3,792	131	52	-60.5%	-31.0%
Epilepsy					
DALYs	20,139	345	291	-15.8%	-12.6%
Deaths	204	3.14	3.06	-2.6%	3.9%
Prevalence	28,466	460	417	-9.4%	3.3%
YLDs	8,935	170	131	-23.0%	-11.3%
YLLs	11,204	176	160	-8.7%	-14.3%
Guillain-Barre Syndrome					
DALYs	35	0.54	0.54	0.4%	12.4%
Prevalence	119	1.83	1.84	0.4%	12.4%
YLDs	35	0.54	0.54	0.4%	12.4%
Idiopathic intellectual disability					
DALYs	2,433	31	34	10.2%	-19.7%
Prevalence	60,540	762	841	10.3%	-21.2%
YLDs	2,433	31	34	10.2%	-19.7%
Klinefelter syndrome					
DALYs	4	0.03	0.03	3.1%	5.7%
Prevalence	287	3.73	3.84	2.8%	5.5%
YLDs	4	0.03	0.03	3.1%	5.5%

	Counts	Age-standardized rate		Percentage change, 1990-2021	
	(thousands)	1990	2021	Kyrgyzstan	WHO Europe
Meningitis					
DALYs	2,381	365	33	-90.9%	-80.5%
Deaths	30	4.91	0.44	-91.0%	-75.4%
Prevalence	5,692	217	86	-60.2%	-66.7%
YLDs	511	16	7	-54.7%	-64.6%
YLLs	1,870	349	26	-92.6%	-81.3%
Migraine					
DALYs	34,132	510	509	-0.1%	0.04%
Prevalence	915,873	13,647	13,622	-0.2%	0.3%
YLDs	34,132	510	509	-0.1%	0.04%
Motor neuron disease					
DALYs	357	0.60	5.44	811.2%	37.5%
Deaths	7	0.00	0.12	8750.1%	54.1%
Prevalence	161	2.45	2.34	-4.6%	19.8%
YLDs	34	0.52	0.50	-4.6%	19.5%
YLLs	323	0.07	4.94	6536.5%	38.5%
Multiple sclerosis					
DALYs	412	7.75	7.24	-6.6%	-5.0%
Deaths	5	0.13	0.11	-12.6%	-12.5%
Prevalence	1,077	17	18	5.3%	26.4%
YLDs	287	4.62	4.83	4.5%	25.5%
YLLs	126	3.13	2.41	-22.8%	-22.2%
Nervous system cancer					
DALYs	8,258	40	126	213.9%	-3.3%
Deaths	183	0.89	3.05	243.3%	10.8%
Prevalence	500	2	7	223.8%	35.9%
YLDs	72	0.33	1.12	244.5%	25.3%
YLLs	8,186	40	125	213.7%	-3.7%

Neurocysticercosis					
DALYs	76	1.92	1.30	-32.3%	-42.5%
Prevalence	265	5.84	4.58	-21.6%	-32.8%
YLDs	76	1.87	1.29	-31.1%	-42.5%
YLLs	1	0.05	0.01	-75.2%	-70.7%
Neurosyphilis					
DALYs	5	0.104	0.096	-7.5%	-43.6%
Prevalence	38	0.97	0.63	-34.9%	-11.7%
YLDs	5	0.104	0.096	-7.9%	-43.4%
Other neurological disorders					
DALYs	3,501	30	53	79.2%	25.8%
Deaths	32	0.18	0.64	254.8%	45.0%
YLDs	2,103	21	31	44.3%	62.9%
YLLs	1,385	8	22	174.3%	14.2%
Parkinson's disease					
DALYs	2,090	64	56	-12.4%	5.6%
Deaths	101	3.60	3.02	-16.2%	4.0%
Prevalence	2,846	71	70	-1.5%	21.9%
YLDs	416	10.12	10.00	-1.2%	21.4%
YLLs	1,674	54	46	-14.6%	2.0%
Rabies					
DALYs	24	1.80	0.36	-79.8%	-59.7%
Deaths	1	0.03	0.01	-71.5%	-57.2%
YLLs	24	1.80	0.36	-79.8%	-59.7%
Spinal cord injury					
DALYs	3,134	76	48	-37.2%	-26.9%
Prevalence	9,984	223	154	-30.9%	-21.9%
YLDs	3,134	76	48	-37.2%	-26.9%

	Counts (thousands)		Age-standardized rate (per 100 000 people)		Percentage change, 1990-2021	
	2021	1990	2021	Kyrgyzstan	WHO Europe	
Stroke						
DALYs	108,093	4,315	2,190	-49.2%	-52.6%	
Deaths	3,943	199	93	-53.3%	-55.6%	
Prevalence	55,873	1,511	1,030	-31.8%	-19.2%	
YLDs	10,147	278	190	-31.7%	-18.9%	
YLLs	97,947	4,037	2,000	-50.5%	-55.3%	
Tension-type headache						
DALYs	4,393	66.93	67.08	0.2%	-1.6%	
Prevalence	2,022,325	30,292	30,281	0.0%	-0.8%	
YLDs	4,393	66.93	67.08	0.2%	-1.6%	
Tetanus						
DALYs	0.62	0.13	0.01	-91.7%	-97.3%	
Traumatic Brain Injury						
DALYs	4,140	99	67	-32.4%	-28.2%	
Prevalence	27,748	667	451	-32.4%	-28.0%	
YLDs	4,140	99	67	-32.4%	-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.

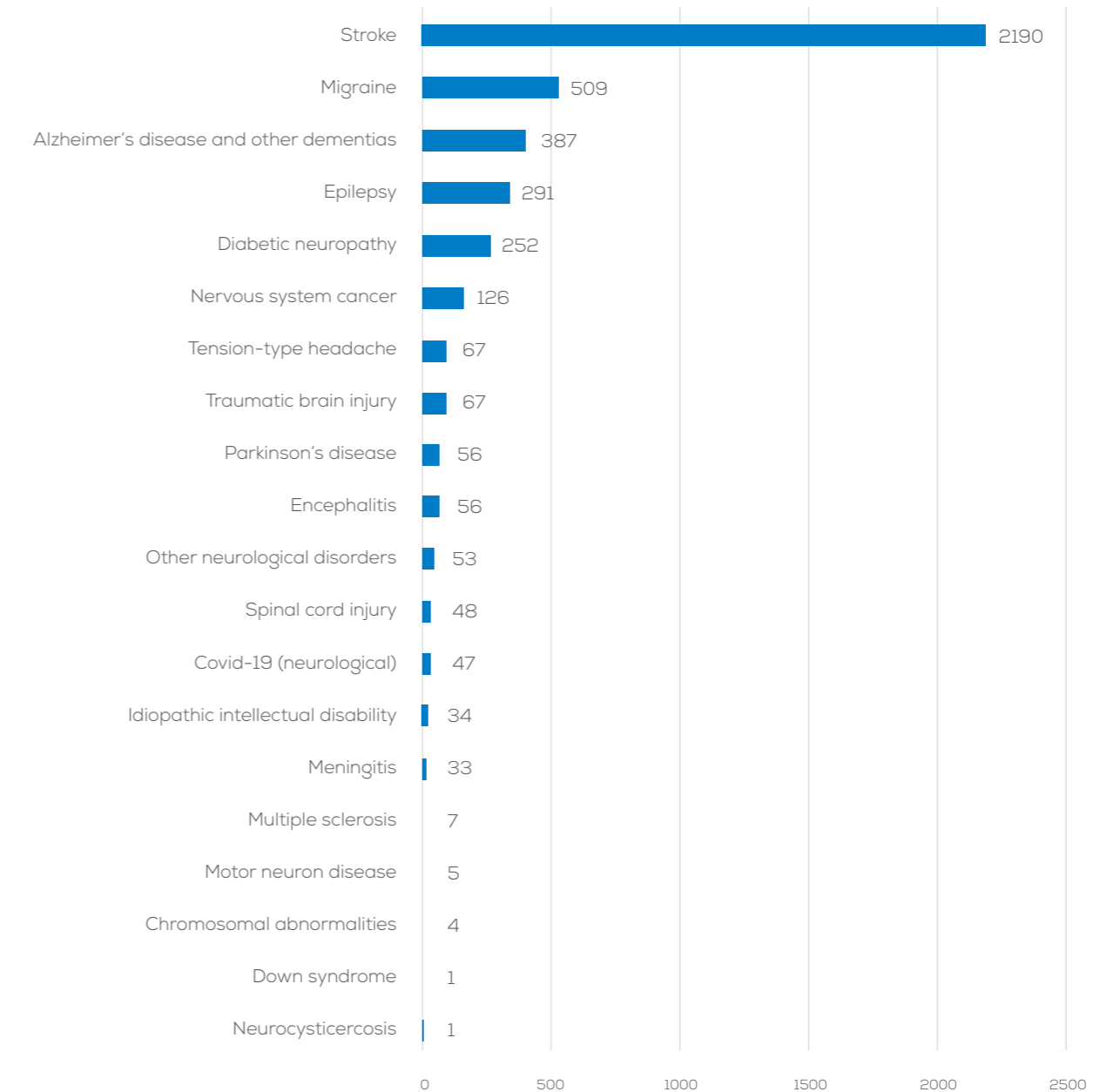


Figure 1: National age-standardised DALYs per 100 000 population by neurological disorder in 2021.

DALYs per 100 000 population

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

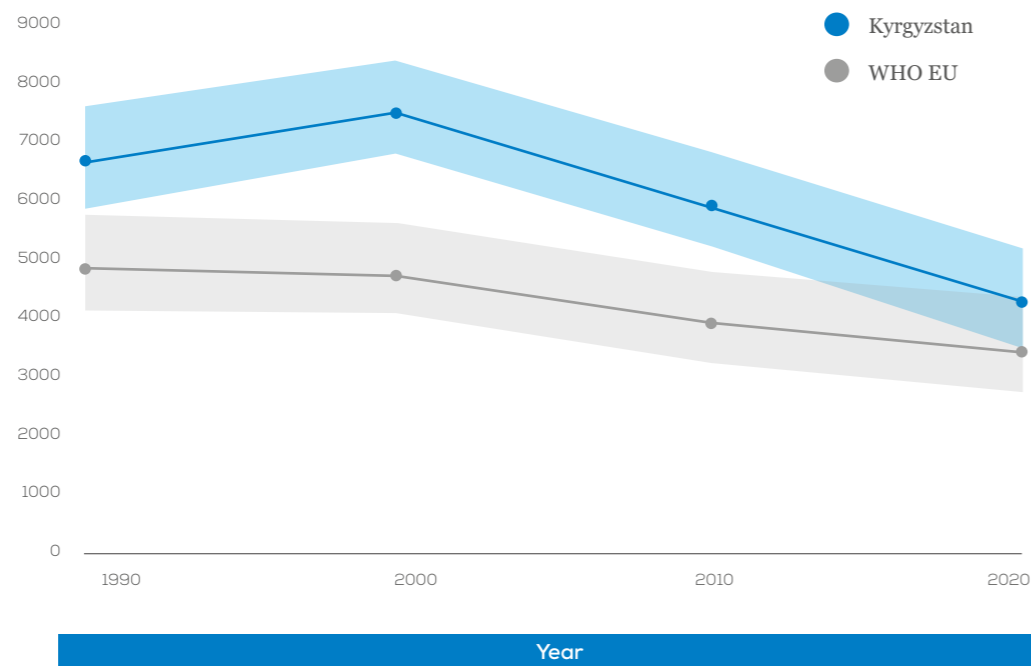


Figure 2: Age-Standardized DALYs per 100 000 population over the last 3 decades.

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

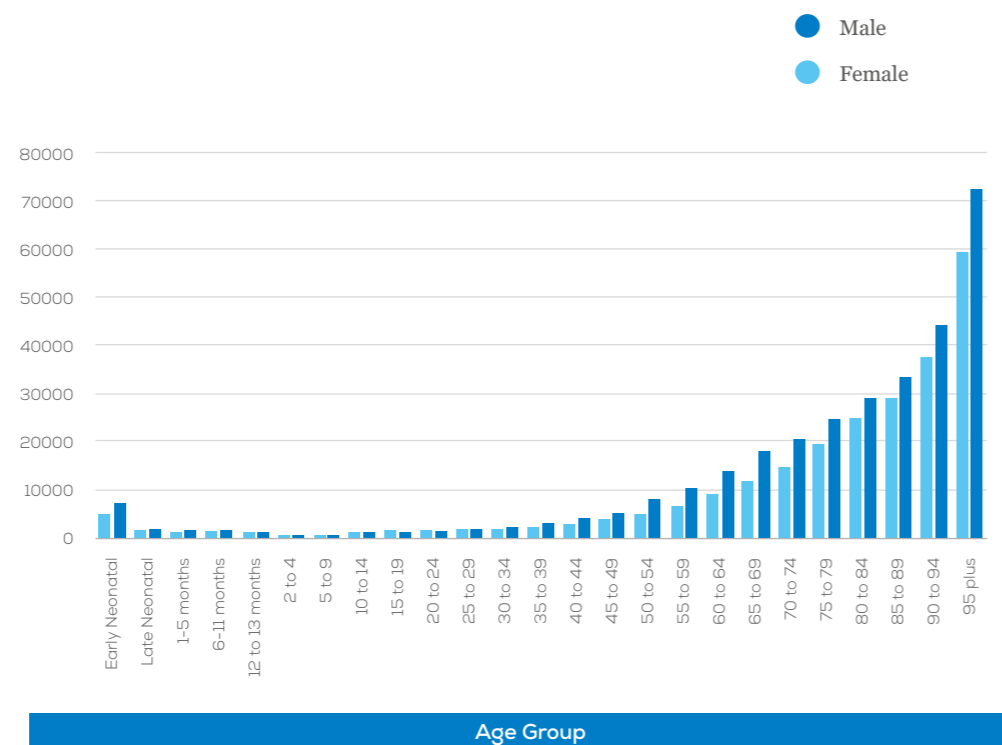


Figure 3: National DALYs per 100 000 population by age group and sex in 2021.

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.

Unfortunately for **Kyrgyzstan**, the literature review did not identify any relevant studies, and the GNI category in which Kyrgyzstan is included also lacked data that could be used for imputation. In the table below, the costs for the 47 EAN European countries have been calculated, 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
Headache disorders	814,559.6	256,143.1	93,330.3	465,086.2
Sleep disorders	422,900.9	204,308.2	-	218,592.6
Alzheimer's disease and other dementias	221,391.2	93,210.9	128,121.0	59.4
Stroke	82,938.9	42,643.7	23,441.1	16,854.0
Traumatic brain injury	53,112.5	24,095.1	11,454.6	17,562.8
Polyneuropathies	38,718.6	19,958.8	-	18,759.8
Parkinson's disease	22,786.5	17,308.5	4,442.8	1,035.2
Multiple sclerosis	18,832.2	11,852.7	2,632.0	4,347.5
Idiopathic epilepsy	16,325.9	7,917.2	-	8,408.7
Motor neuron disease	1,101.1	661.6	309.8	129.8
Brain and central nervous system cancer	913.7	557.3	356.4	-
Meningitis	148.9	148.9	-	-
Total Costs:	1,693,730.0	678,806.1	264,088.0	750,835.9

Table 2: Total, direct, informal care and indirect costs per neurological disorder among the 47 European countries.

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.

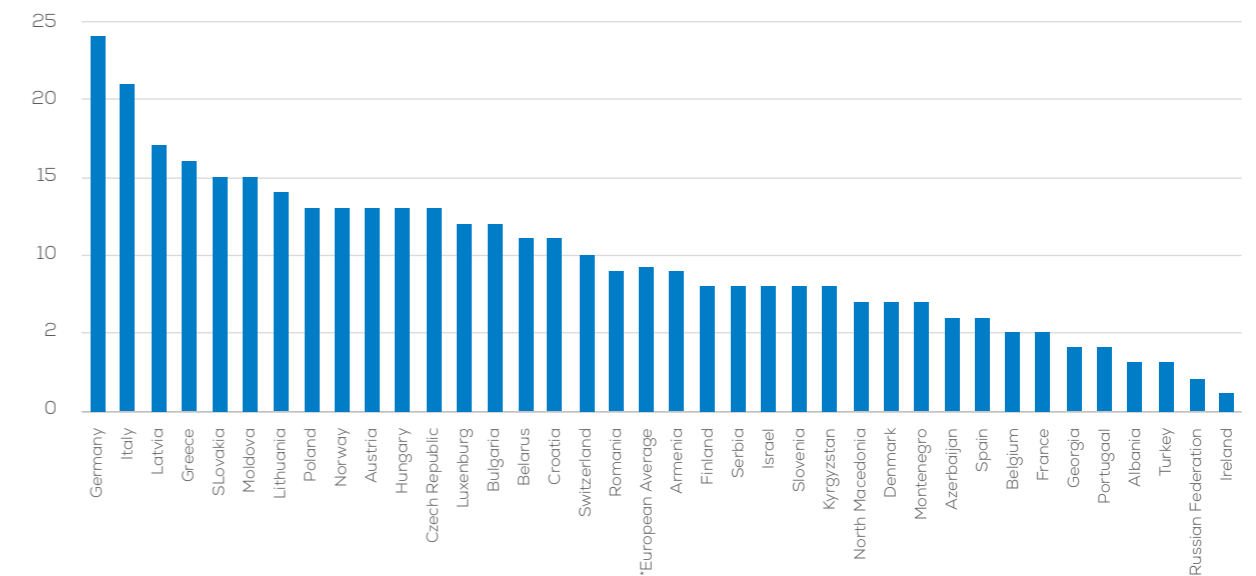


Figure 4: Number of neurologists (fully specialised and in training) per 100 000 population.

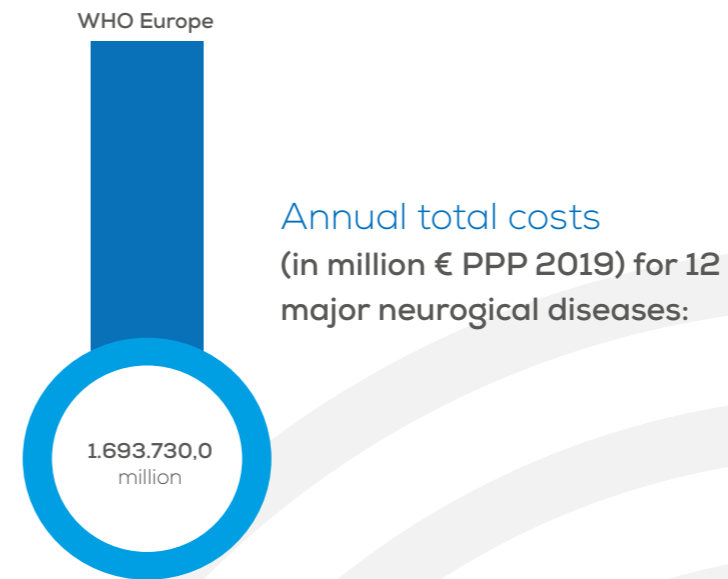
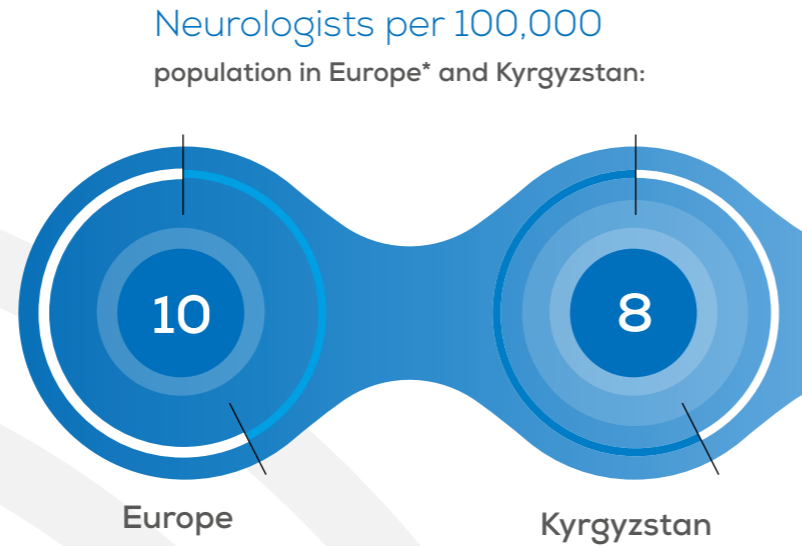
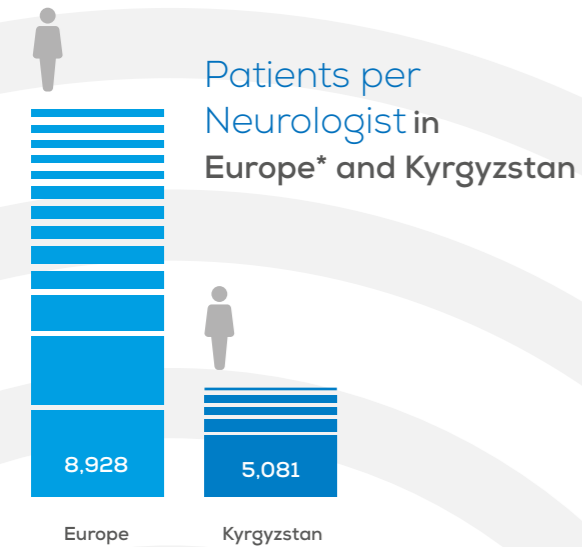
In the last figure the number of patients per neurologist is displayed:



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

Neurological Diseases in Europe and Kyrgyzstan:

Key Data and Trends from 2021



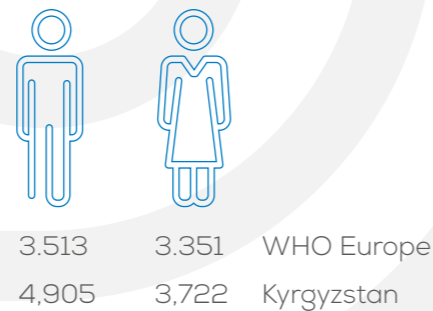
Most prevalent neurological diseases in Kyrgyzstan in

2021

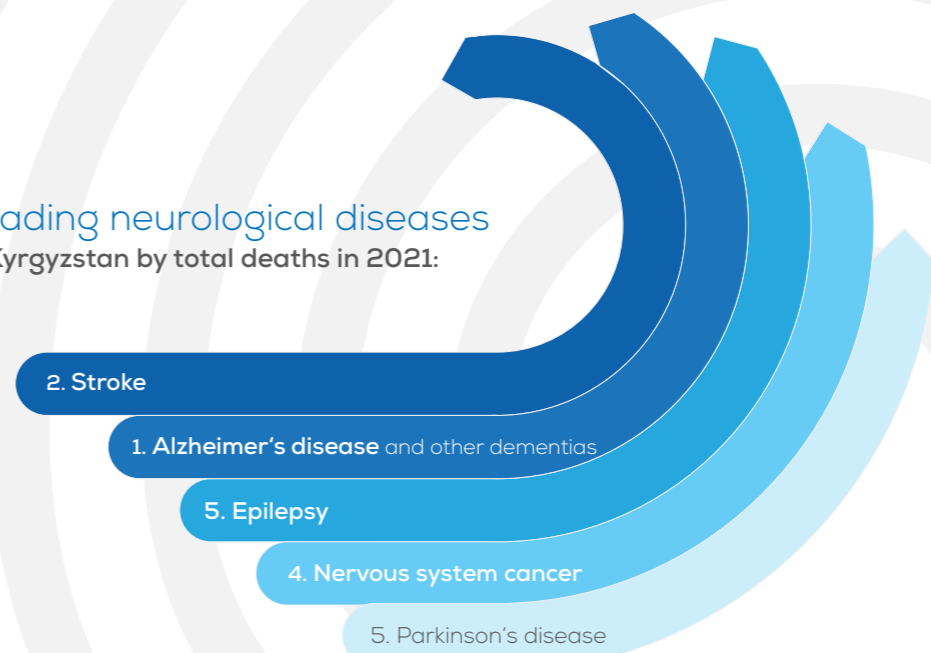
- 1 Tension-type headache
- 2 Migraine
- 3 Diabetic neuropathy
- 4 Idiopathic intellectual disability
- 5 Stroke

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

	WHO Europe	vs	Kyrgyzstan
DALYs	-28.98%		-35.88%
Deaths	-43.19%		-47.08%
Prevalence	0.34%		0.78%



Leading neurological diseases in Kyrgyzstan 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.

