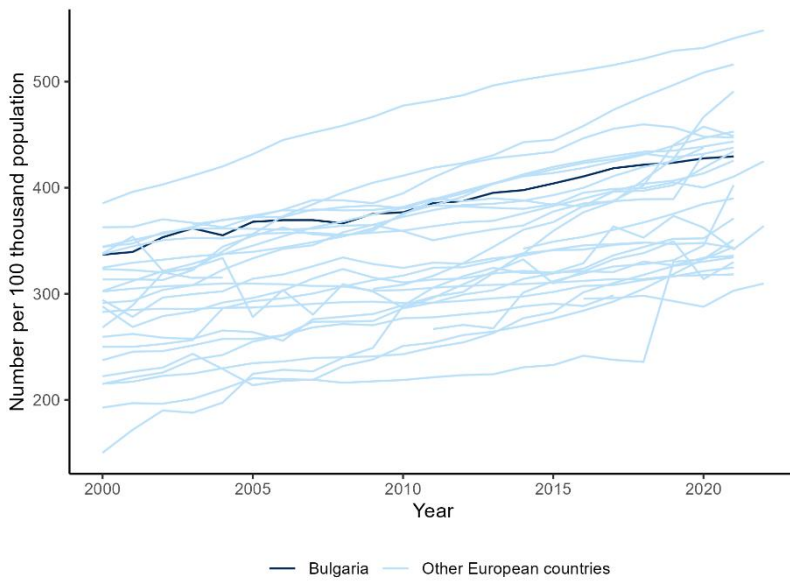


Health Workforce Shortages

Ralitsa Simeonova-Ganeva, Kaloyan Ganev

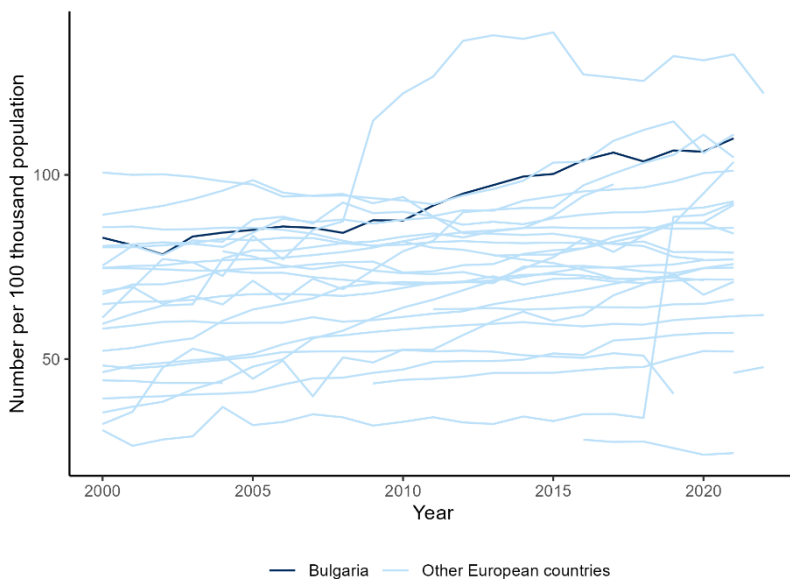
Appendix

Figure 1. Number of practicing physicians per 100 thousand population in Bulgaria and European countries



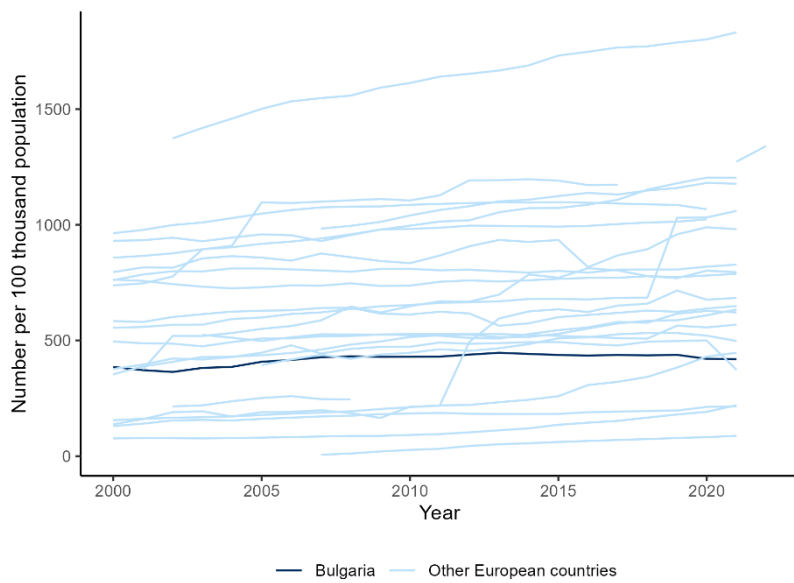
Source: Eurostat

Figure 2. Number of practicing dentists per 100 thousand population in Bulgaria and European countries



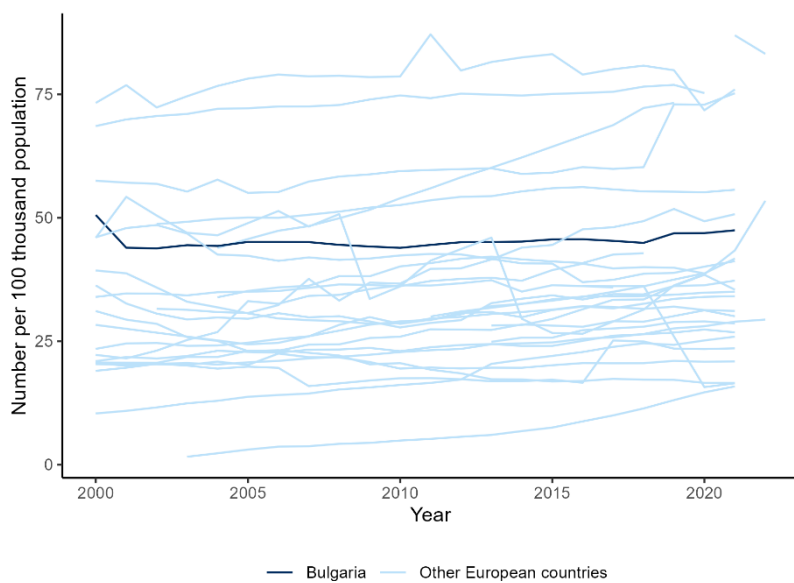
Source: Eurostat

Figure 3. Number of nurses per 100 thousand population in Bulgaria and European countries



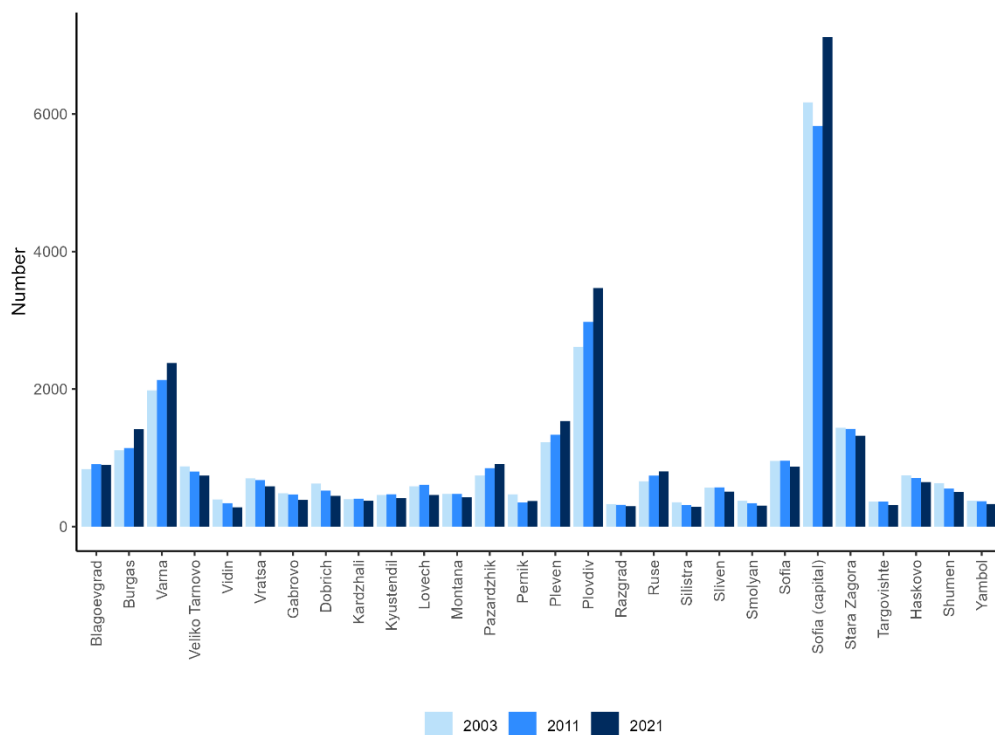
Source: Eurostat

Figure 4. Number of midwives per 100 thousand population in Bulgaria and European countries



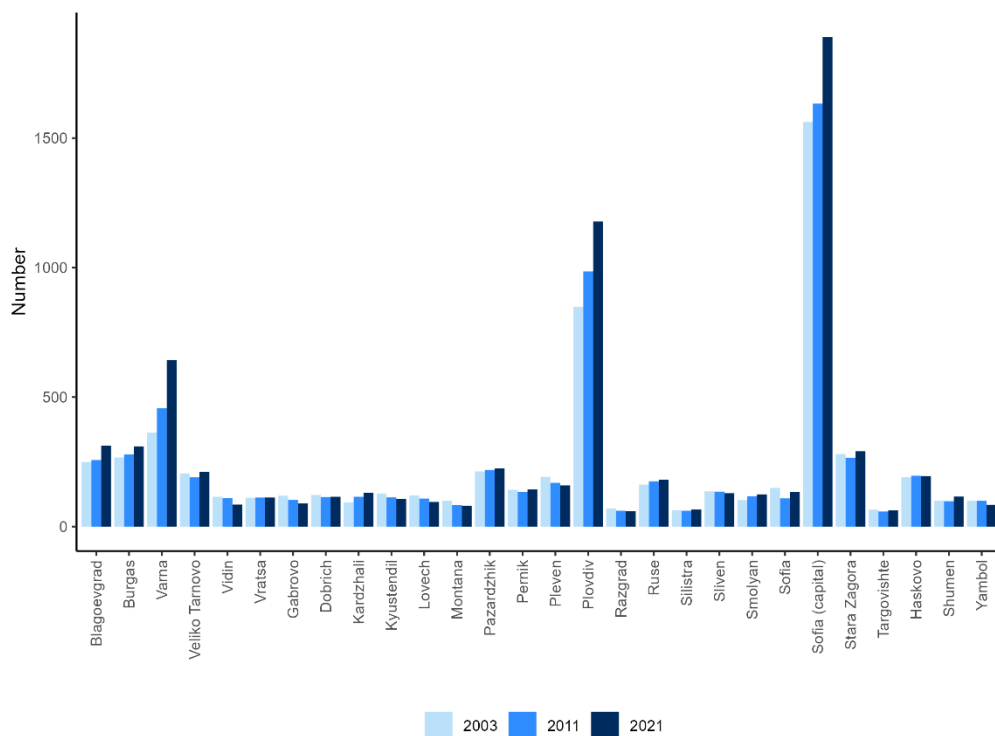
Source: Eurostat

Figure 5: Physicians by district



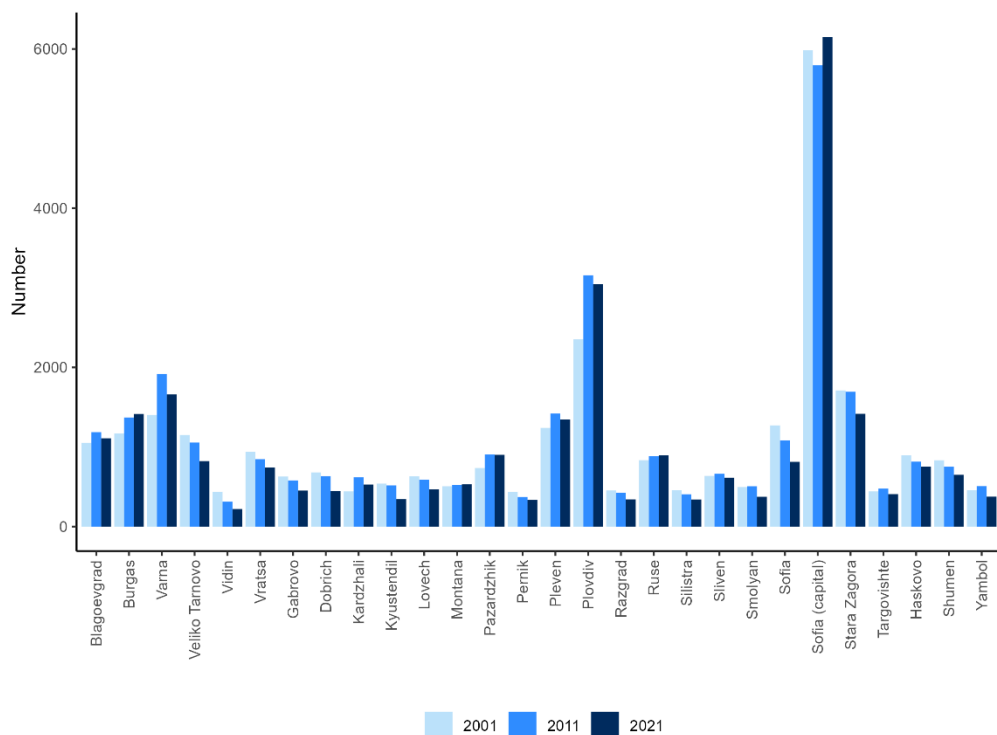
Source: NSI

Figure 6. Dentists by district



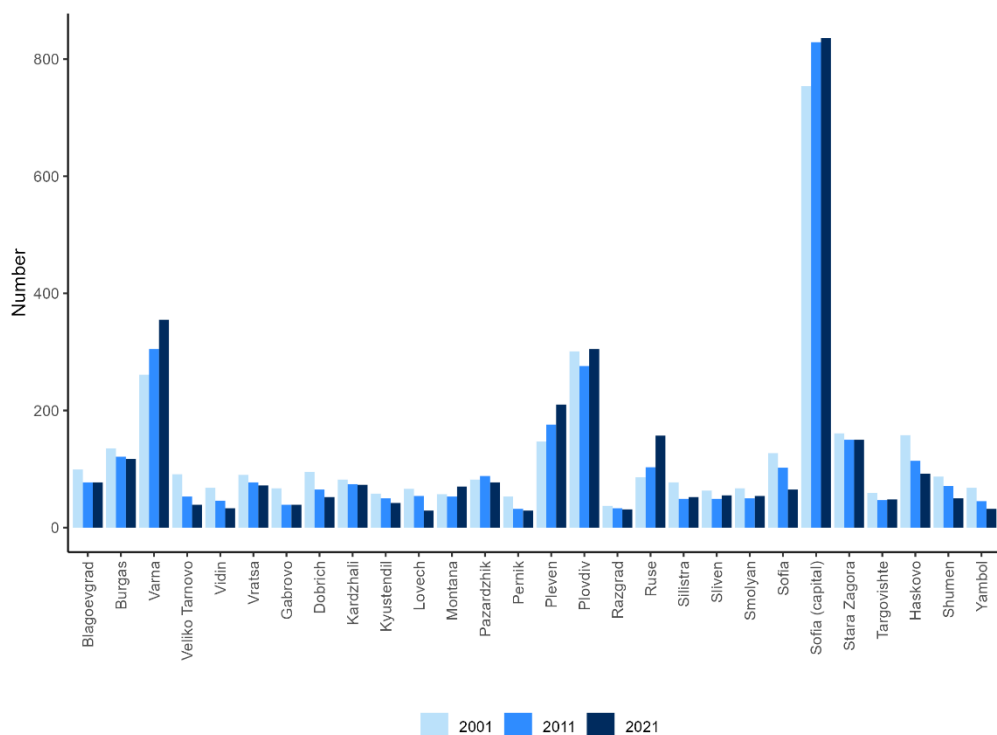
Source: NSI

Figure 7: Nurses by district



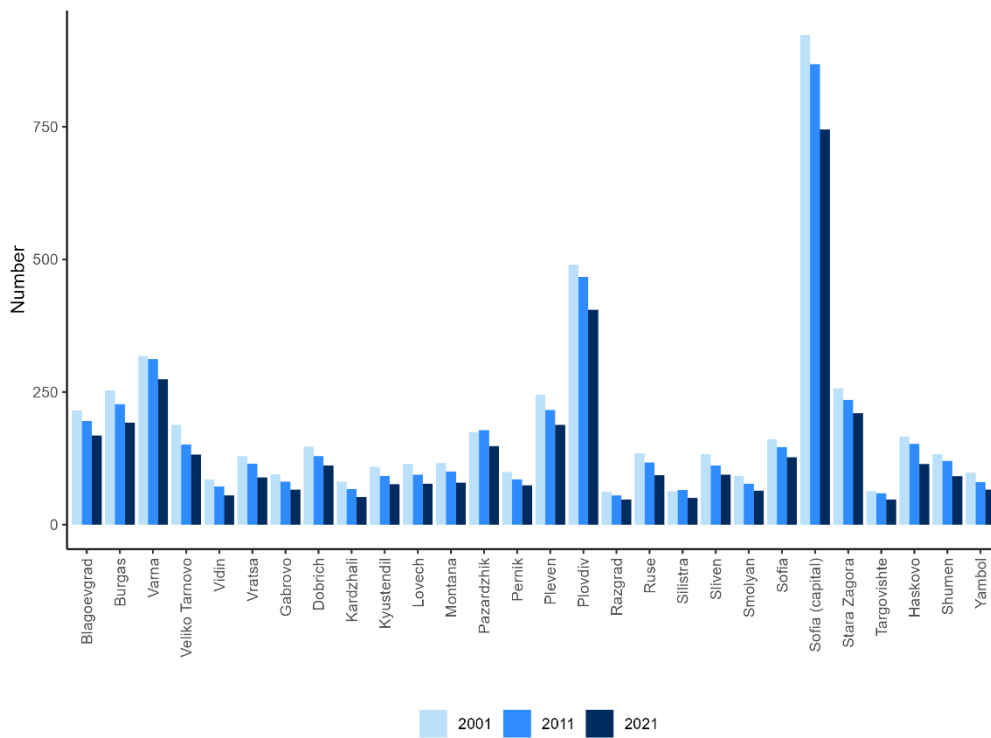
Source: NSI

Figure 8: Midwives by district



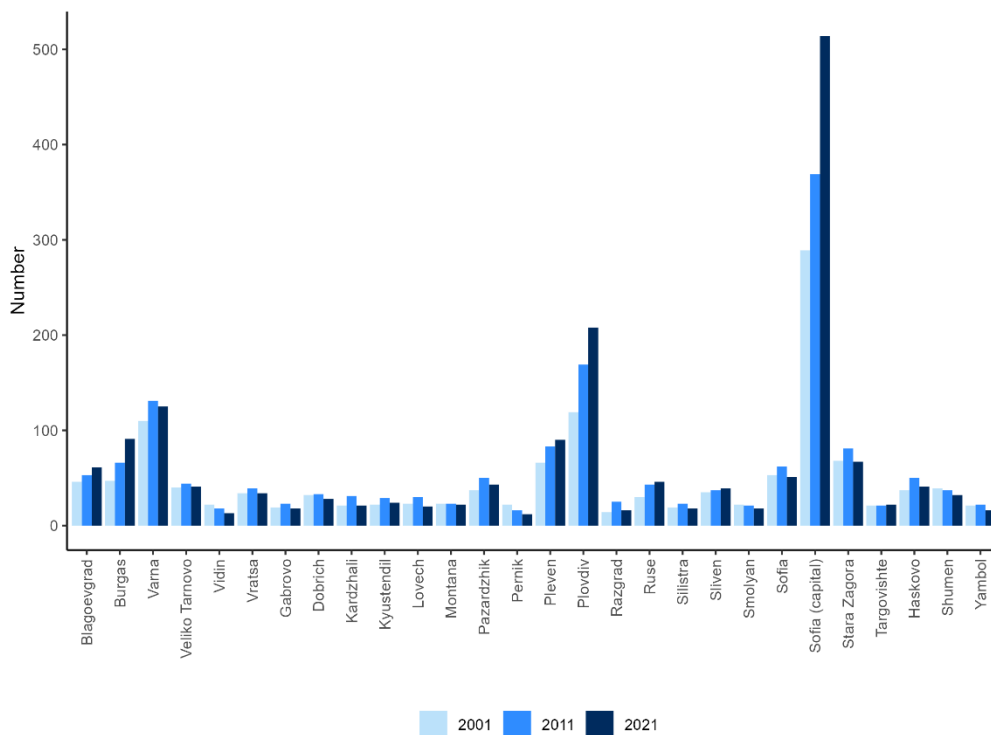
Source: NSI

Figure 9. General practitioners by district



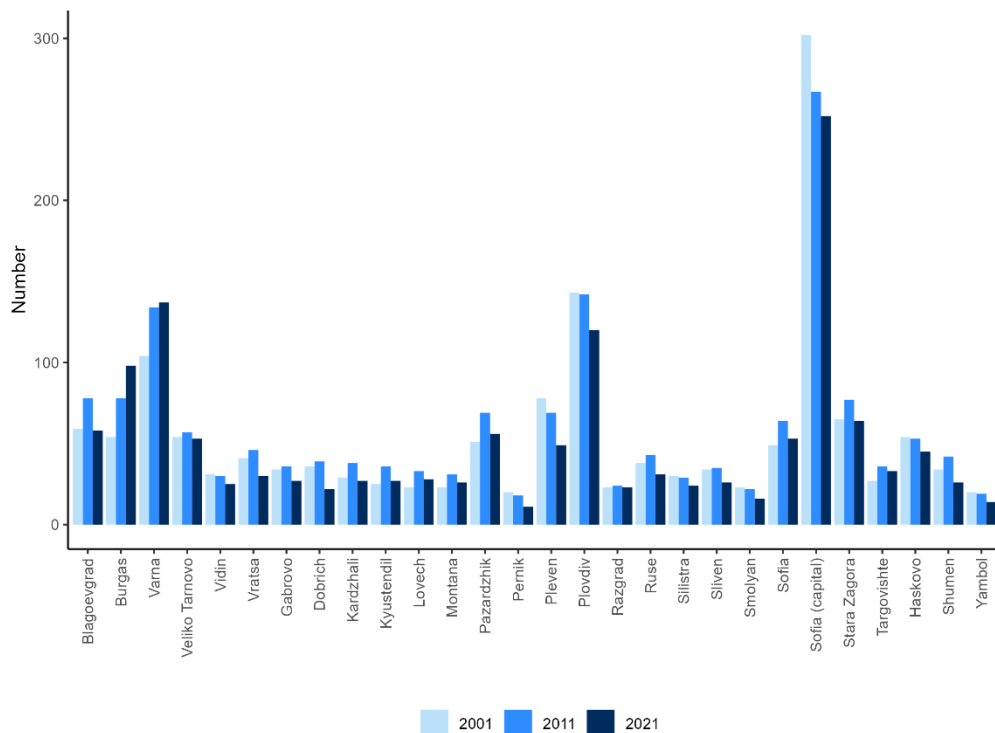
Source: NSI

Figure 10. Obstetricians and gynaecologists by district



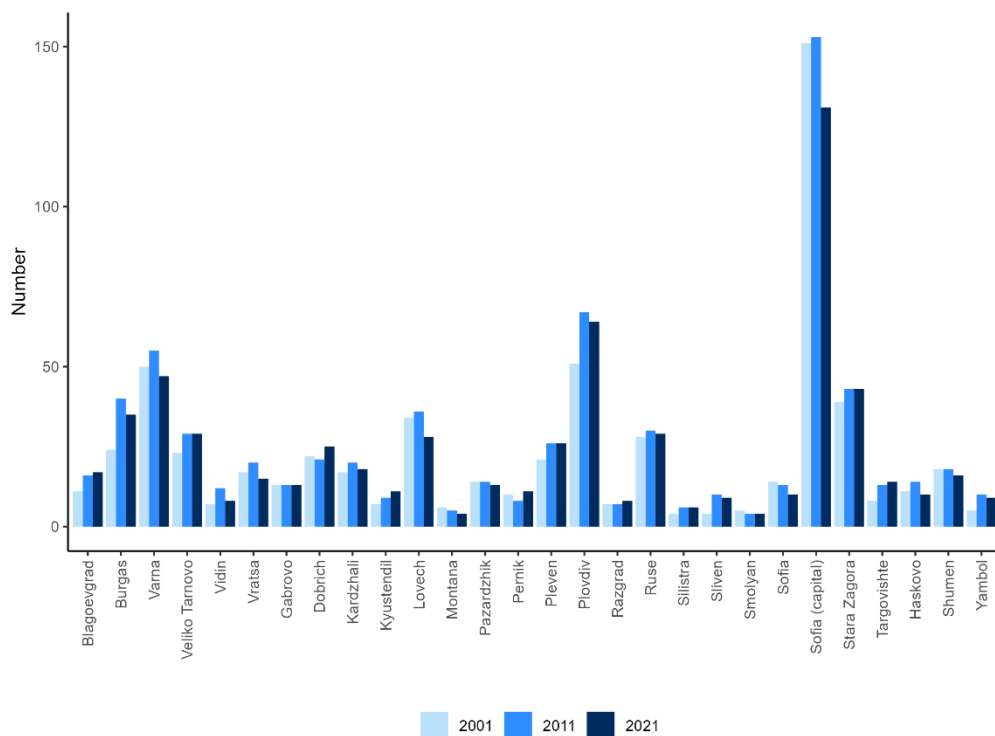
Source: NSI

Figure 11. Paediatricians by district



Source: NSI

Figure 12. Psychiatrists by district



Source: NSI

Table 1. Medical specialists per 100 thousand population in Bulgaria and reference values for a group of European countries (median, minimum, and maximum values)

Reference year	Medical professionals	Bulgaria	Median	Minimum	Maximum	Deviation from median	Deviation (number)
2015	Cardiology	18.3	8.8	1.9	34.6	9.5	680
2015	Dermatology	4.9	5.0	1.5	12.8	-0.1	-8
2015	Endocrinology	6.3	2.6	0.0	7.1	3.8	268
2015	Gastroenterology	7.5	4.1	0.0	8.5	3.3	238
2015	Haematology	5.0	2.2	0.0	6.0	2.8	202
2015	Immunology	3.8	3.0	0.2	8.5	0.8	56
2015	Internal diseases	18.9	25.2	0.9	56.0	-6.3	-452
2015	Microbiology - Bacteriology	6.1	2.0	0.0	35.9	4.1	294
2015	Neurology	16.1	6.7	0.0	16.6	9.5	677
2015	Occupational Medicine	10.9	3.8	0.0	20.6	7.1	506
2015	Oncology	2.0	3.2	0.4	7.1	-1.3	-91
2015	Otorhinolaryngology	7.4	5.8	1.8	14.9	1.6	112
2015	Pathology	4.6	3.3	0.0	31.9	1.3	93
2015	Radiology	14.5	12.8	3.3	31.0	1.7	119
2015	Respiratory Medicine	7.2	4.5	0.0	16.9	2.7	196
2015	Anaesthesiology and Intensive Care	22.1	17.6	7.9	31.1	4.5	321
2015	Accident and emergency medicine	19.0	4.6	0.0	19.0	14.4	1031
2015	General Surgery	23.3	14.8	2.7	29.0	8.6	612
2015	Neurological Surgery	2.5	1.7	0.7	5.3	0.8	55
2015	Ophthalmology	9.4	9.2	4.4	22.6	0.3	18
2015	Orthopaedics	11.2	8.7	0.0	27.0	2.5	180
2015	Plastic surgery	1.1	1.8	0.2	8.0	-0.7	-50
2015	Thoracic surgery	1.4	1.4	0.0	4.3	0.0	2
2015	Urology	11.6	5.5	3.0	17.4	6.2	441
2015	Vascular surgery	2.2	1.5	0.0	5.3	0.7	50
2021	Dentists	109.9	78.9	24.5	132.7	31.0	2120
2021	General practitioners	57.4	72.1	29.0	279.7	-14.7	-1008
2021	Gynaecologists and obstetricians	26.0	18.8	8.7	33.5	7.2	492
2021	Midwives	47.5	34.6	15.8	86.9	12.9	882
2021	Nurses	419.0	666.3	87.9	1831.7	-247.3	-16914
2021	General paediatricians	20.5	18.3	5.1	42.6	2.2	150
2021	Physicians	429.6	402.5	302.9	540.9	27.1	1853
2021	Psychiatrists	10.2	17.0	6.6	52.9	-6.8	-464
2021	Surgical group of specialists	121.4	78.7	43.3	147.1	42.7	2923

Source: Eurostat, own calculations

Table 2. Estimated shortage of medical specialists by district (number)

District	Physicians	Dentists	Nurses	Midwives	General practitioners	Obstetricians	Paediatricians	Psychiatrists	Nurses (at a ratio of 2:1 to the number of physicians)
Blagoevgrad	-302	77	-878	-26	-47	5	4	-34	-687
Burgas	-227	-13	-1308	-24	-103	14	23	-34	-1421
Varna	492	273	-1461	193	-64	37	51	-33	-3095
Veliko Tarnovo	-166	33	-682	-39	-31	-1	12	-9	-662
Vidin	-37	23	-305	6	-2	-2	11	-5	-340
Vratsa	-34	-9	-282	19	-22	5	2	-11	-428
Gabrovo	-27	7	-237	3	-9	-1	8	-5	-326
Dobrich	-226	-17	-668	-6	-10	-3	-9	-3	-447
Kardzhali	-272	3	-545	17	-64	-9	-2	-9	-224
Kyustendil	-42	17	-411	3	-6	3	6	-8	-485
Lovech	-22	0	-329	-12	-9	-3	6	8	-451
Montana	-65	-16	-282	28	-9	-1	4	-17	-322
Pazardzhik	-85	29	-747	-8	-30	-3	11	-29	-921
Pernik	-104	50	-450	-12	-11	-10	-11	-9	-406
Pleven	617	-21	-174	131	23	47	7	-13	-1725
Plovdiv	802	655	-1369	76	-73	83	-1	-49	-3892
Razgrad	-137	-25	-377	-6	-31	-4	3	-10	-253
Ruse	-38	16	-497	85	-58	7	-7	-6	-710
Silistra	-135	-17	-359	16	-26	-2	5	-12	-234
Sliven	-216	-13	-586	-7	-36	5	-7	-22	-404
Smolyan	-95	46	-288	20	-8	-1	-2	-13	-236
Sofia	-66	-51	-743	-16	-41	7	10	-30	-935
Sofia (capital)	1858	858	-2561	384	-198	268	13	-91	-8090
Stara Zagora	86	49	-629	44	-11	9	8	-9	-1227
Targovishte	-123	-22	-312	11	-31	2	13	-4	-216
Haskovo	-238	21	-713	16	-45	0	5	-27	-541
Shumen	-180	-18	-479	-9	-31	0	-5	-13	-354
Yambol	-132	-6	-386	-8	-16	-5	-7	-10	-280

Source: Eurostat, own calculations

Note: The estimated shortages (represented by the negative values in the table) take into account the size of the population in the individual districts.