CHAPTER VI. HEALTH AND MEDICAL CARE IN FOREST-STEPPE UKRAINE (MIDDLE AND SECOND HALF OF THE 19TH CENTURY)

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1. Sources, research history

Researchers are known to make the most fascinating discoveries when they combine different fields of scientific knowledge. This applies not only to the precise sciences but also to the humanities, particularly history. The history of medicine exemplifies the scientific sources and methods interpenetrate. The doctors who write about it have a professional education. And what about the history of health statistics? Professionals should also do it. There are potentially many such people since it is a mandatory academic discipline in all higher medical institutions. The English-language segment of the Internet on request "history of healthcare statistics" offers a significant number of scientific and popular works for free access. Ukrainian – several titles of training manuals and links to regulatory documents. In our opinion, this indicates a serious problem in domestic historiography associated with the unwillingness of specialists and historians to study the formation and development of healthcare statistics in Ukraine. It was not less developed than similar ones in the leading countries of Western Europe in the 19th century.

What are medical statistics? Here is one of the definitions: "Medical statistics is a branch of statistics that studies the quantitative and qualitative characteristics of the population's health, the development of the state's health care system, determines the impact of socio-economic, medical-biological and other factors on them, and also justifies the use various statistical methods for processing and analyzing the results of medical research <...>" (Encyclopedia of modern Ukraine: electronic resource).

To begin with, we propose to limit ourselves to the statistical data of six provinces of Forest-Steppe Ukraine for the half-century from the 1840s to the 1890s.

Like statistics in general, it has gone through a long process of formation and development. Regarding Ukraine, D. P. Zhuravskyi (1810 – 1856) was

credited with being the first domestic statistician on a global scale. His talent was revealed thanks to the support of another extraordinary personality, endowed with significant state powers and vast opportunities, namely the Greek of Ukrainian origin I. I. Fundukley (1799 – 1880), Kyiv civil governor in 1839 – 1852, patron of sciences and arts. The result of their fruitful collaboration was the multi-volume "Statistical description of Kyiv province" (1852). The first part provides important statistical data on the demographics and health of Kyivans and province residents during the 1830s and early 1840s (links to this and other publications are provided below). At the same time, the materials of the series "Military-statistical review of the Russian Empire" by provinces, including Ukrainian Forest-Steppe (1848 – 1851), were being prepared for publication. Almost all volumes had information on common diseases, seasonal disease peaks, and a network of healthcare facilities. The lack of data depended on how statistics were collected and processed in the administrations of provinces. Some materials of the governors' annual reports were selectively printed in the provincial and central press, with separate information and statistical collections, most often under the name "Commemorative Book" of the respective province. In the 1870s, the armed forces reform led to the publication of systematized data on important aspects of medical statistics for the entire European part of the Russian Empire. The first publication of statistical information on the provision of medical care to the population occurred in the early 1880s. The General Census of 1897 contains valuable information about the distribution of certain types of disability. Additionally, the archives hold significant information on the chosen topic. Medical statistics for younger ages and adolescents are available in student medical certificates, an example of which is given below.

2. Common diseases

Kyiv province. In the spring, after the floods, the water that remained in the lowlands rotted, leading to alternating fevers. Daytime temperature drops often cause colic in the chest and respiratory tract inflammation in the summer. Low-lying areas near rivers and swamps showed yellow fever and diarrhea. In Chyhyrynskyi district, located on the Tiasmin River lowlands, there were special fevers that didn't have paroxysms and caused

numbness in limbs and a severe headache during hot weather. Measles and scarlet fever cause sickness in children. The people were not confident in the smallpox vaccination and only reluctantly agreed to it. From the observations of the Kyiv Medical Board, it follows that fevers and fevers prevailed in the spring, diseases of the digestive organs, jaundice, yellow fever in the summer, rheumatism, catarrhal diseases in the fall, and various inflammations and rushes of blood in the winter. Home treatment was the preferred option during illness (Voyenno-statisticheskoye obozreniye Rossiyskoy imperii. Kiyevskaya guberniya, 1848, pp. 84–85).

Podillia province. Common spring illnesses include colds, mastitis, rheumatism, and erratic temperatures. In the summer, the population suffered from digestive tract inflammation and diarrhea, not least because the water in many rivers became unfit for drinking due to the soak of hemp. Strong wind and dust can cause eye inflammation frequently. Swelling of the legs was observed in Yampol-town, especially among women. Autumn here was dry and sometimes rainy. In November, it was often warmer than in September. Diarrhea, including bloody, alternating fevers and rheumatic fevers, was typical at this time. In winter, they most often fell ill with colds, dropsy, and rheumatism. Children's diseases were the same as in other places – smallpox, measles, scarlet fever, and whooping cough. The threat of this disease was reduced by smallpox vaccination. Among the external diseases, the most common were ulcers, often scrofula (Ibid. Podolskaya guberniya, 1849, pp. 71, 159, tbl. 16).

Interesting information about the diseases of students of the Vinnytsia Gymnasium (mainly children of Polish nobles aged 10 – 16) is contained in the certificates collected by the doctor of this educational institution in 1838 – 1840 (Derzhavnyi arkhiv Vinnytskoi oblasti (DAVO), fund D-14, inventory 2, file 677, sheet 1–61). We managed to decipher 44 documents with the following diagnoses of the local Aesculapian: “sick” – 9, fever – 13, worm fever – 1, gastric fever – 1, fever – 5, head fever – 1, meningitis – 1, “eye disease” – 1, scrofula – 1, ear inflammation – 1, pneumonia – 1, sore throat – 1, asthma – 1, arthritis – 1, rheumatic bloody diarrhea – 1, joint dislocation – 1, leg injury (thigh muscle rupture) – 1, “leg disease” – 1, erysipelas – 1. Unique evidence of the time is the certificate about the illness of three brothers who came home for the summer vacation (DAVO, fund D-14, inventory 2, file 677, sheet 49) (fig. VI.2.1).

Volyn province. Almost no data on the morbidity of the Volynians of the considered period have been preserved. Among the seasonal diseases, heat strokes in the summer, the spread of bloody diarrhea, and rheumatism in the fall are mentioned most often (Voyenno-statisticheskoye obozreniye Rossiyskoy Imperii. Volynskaya guberniya, 1850, p. 60).

Poltava province. Fluctuations in temperature, fevers lasting one or more days, and acute rheumatism were common in spring. Stomach diseases can spread during the heat of the summer, sometimes leading to typhoid or simple and bloody diarrhea. Autumn saw the beginning of alternating four-day fevers, putrid fever, and typhus. The winter months brought about toothaches, lung and liver inflammation, and severe cough in children. Spring and autumn are the seasons when disease outbreaks are most common, particularly in towns (Voyenno-statisticheskoye obozreniye Rossiyskoy Imperii. Poltavskaya guberniya, 1848, pp. 32–33, 80–81).

Kharkiv province[1]. In the middle of the 19th century, Kharkiv province had almost the same list of diseases as other Ukrainian provinces in the Forest-Steppe zone. Inflammation of the respiratory tract and coughing were common during winter. The flu epidemic was spread due to unstable weather which had a significant impact on almost everyone. Death from it was only occasionally higher than usual. Typhoid fever in the spring, in most cases, followed the flu. It affected people who were exhausted from previous illnesses. During spring, whooping cough was most prevalent among children. Purulent inflammation of the eyes was a summer disease brought to the south of Kharkiv province by military units that arrived here in 1832 from Poland and St.-Peterburg. The disease that spread among the Ukrainian settlement troops began slowly, but it became an epidemic in 1839 and lasted until 1842. Up to 3,000 people fell ill daily in the districts of the military settlement at that time. The disease spread due to both the summer heat and the unhappiness caused by military uniforms with tight collars, dust, and eye infections from washing with cold water. Scurvy occasionally developed in Kharkiv province to the point of an epidemic. Usually, it began in late February or March in lowland and damp locations, affecting primarily those who contracted the fever. The province experienced an average of one scurvy case per

[1] There is no data on Chernihiv province at that time.

700 inhabitants in 1840, but it reached the military settlement in February and killed 491 out of 3,600 patients. At that time, there were 4,332 cases of illness in the province. The epidemic did not kill anyone the following year, but many in the lower ranks were unable to continue their service. During the beginning of summer, stomach and bilious fevers appeared. Initially, it was just stomach fever. Due to the increased heat, they became bile. In the middle of September, the diseases took on the greatest intensity and turned into malignant ones. As the temperature dropped, they gave way to simple and bloody diarrhea and fever. Intermittent spring fevers appeared as daily or three-day fevers, but they disappeared almost completely by the onset of summer. Autumn fevers usually lasted three to four days and were prone to returning, exhausting the body, and exposing a person to other diseases. The fever epidemics of 1827, 1837, and 1842 – 1844, which lasted for multiple years, were the most widespread. These fevers, which resembled Moldavian and Transcaucasian, manifested as apoplexy or convulsions throughout the body and frequently resulted in the patient's death during the second or third paroxysm. These fevers caused significant complications. Throughout the province, there were 23,690 cases of illness in 1843 and 18,860 in 1844. Syphilis became dangerously widespread in Kharkiv province by 1843 after its initial appearance in 1827: 1,325 civilians and 360 military personnel were officially identified. Doctors worked hard to bring the disease under control. Smallpox was most prevalent in children. Infants were vaccinated in the military settlement, leading to the cessation of disease outbreaks (Ibid. Kharkovskaya guberniya, 1850, pp. 59, 61–66).

According to data from the Kyiv Military Hospital, cited by D. P. Zhuravsky, in the period from 1831 to 1841, the largest number of servicemen died from fever (1,045), nervous fever (648), spinal fever (leptospirosis?) with diarrhea (373), inflammation of the brain (meningitis?) and diseases of other parts of the body (233) (Statisticheskoye opisaniye Kiyevskoy gubernii, 1852, tbl. on p. 157). In Poltava province in the early 1860s, the largest number of deaths were caused by tuberculosis, gangrene, pneumonia, typhus, paralysis, and dropsy (Bodiansky, 1865, pp. 119, 340–341). The Chernihiv Town Hospital medical statistics for 1856 – 1860 showed that patients died most frequently from typhoid fever, bloody diarrhea, dropsy, pneumonia, and consumption.

The first generalizing publications on medical statistics of the population appeared in the early 80s of the 19th century. The tbl. VI.2.1 provides quantitative information on infectious diseases and mortality from them in provinces of Forest-Steppe Ukraine according to the data of the medical department of the Ministry of Internal Affairs for 1882 (Statisticheskiy vremennik Rossiyskoy imperii, 1886 a, pp. 78–83). Typhus, smallpox, scarlet fever, diphtheria, measles, dysentery, and whooping cough caused the most suffering among the population of these territories. An outbreak of cholera was observed in Podillia province, in Kharkiv and Kyiv provinces more often than in other regions. There were mumps and rubella, although the greatest number of deaths occurred in Podillia; purulent ophthalmia and puerperal fever were also widespread; in addition, 228 people fell ill with anthrax in Kharkiv province, and 130 cases of croup were recorded in Volyn. In total, during the year, 240,299 people with specified diseases were under the supervision of doctors, and 45,017 died. This means that the average mortality rate in hospitals was 18.7%. The largest number of cases and fatalities were recorded in Kharkiv province. In second place was Kyiv province, and in third was Poltava province. The situation in Volyn and Chernihiv provinces looked better when compared to others. But if we take into account the ratio of the dead to the number of patients who received medical care, the situation will seem different: a higher-than-average mortality rate of 20.1 – 21.1% was observed in Podillia, Chernihiv, Poltava, and Kyiv provinces close to the average in 18.2% in Volyn and significantly lower at 14.2% in Kharkiv province. During the same period, the population's mortality varied between 3 – 4% per year (Voyenno-statisticheskiy sbornik, 1871, p. 68). According to Ukrainian state statistics, the population's mortality rate between 1991 and 2014 ranged from 1.2% to 1.4% (Korolchuk, 2015, tbl. 1, 8).

Similar data on the distribution of provinces according to the state of combating mass infectious diseases is provided by the multidimensional cluster analysis of the materials in tbl. VI.2.1 (fig. VI.2.2). Most provinces form a fairly homogeneous macrogroup of objects on the dendrogram, with Kyiv situated on the periphery. Kharkiv province was highly differentiated from other provinces in terms of the level of medical aid provided to victims and the quality of treatment [2].

[2] Epidemics and their impact on population growth see: (This book, pp. 58–59, tbl. I.4.1, fig. I.4.1).

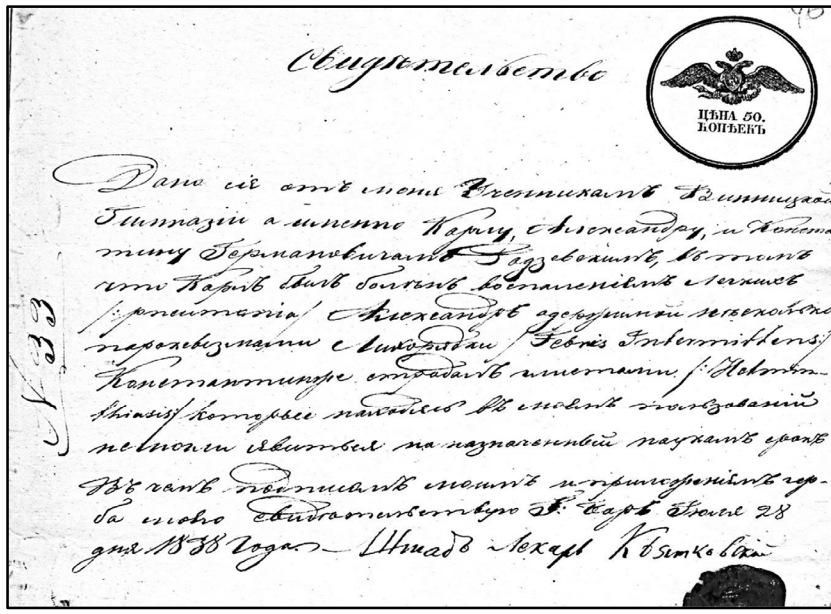


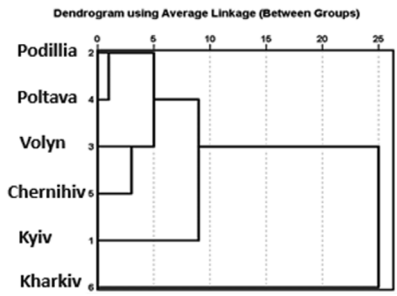
Figure VI.2.1. Health certificate of the Radzevskiy brothers dated July 28, 1838

Certificate

This is given by me to the students of the Vinnytsia Gymnasium, namely Karl, Aleksandr and Konstantin Germanovich Radzevskiy, in that Karl was sick with pneumonia, Aleksandr suffered from paroxysms of fever (Febris intermittens), Konstantin suffered from worms (Helmensiasis), who [pupils], being under my supervision, could not appear in the term assigned to the sciences. To which I testify with my signature and the attachment of my coat of arms. T[own] Bar, July 28, 1838. Staff doctor (signature) [Kosimkovskiy].

Table VI.2.1. Statistical data on infectious diseases in Forest-Steppe Ukraine provinces, 1882

Provinces	Thiphus		Variola		Scarlatina	
	Got sick	Died	Got sick	Died	Got sick	Died
Kyiv	5974	840	3643	883	4418	425
Podillia	4289	451	4511	924	1007	270
Volyn	2695	255	3673	728	2468	639
Poltava	6335	572	4369	991	1705	383
Chernihiv	4622	514	853	265	1056	205
Kharkiv	19489	1675	4453	1419	4244	904
Provinces	**Diphteritis**		**Morbilli**		**Tussis convulsiva**	
	Got sick	**Died**	**Got sick**	**Died**	**Got sick**	**Died**
Kyiv	8503	3397	3474	451	2375	86
Podillia	11354	2954	503	49	1414	230
Volyn	314	90	3214	295	247	51
Poltava	9573	3500	4648	611	64	0
Chernihiv	4326	2120	1749	134	151	20
Kharkiv	8390	2902	11859	1705	3620	281
Provinces	**Dysenteria**		**Cholera nostras**		**Parotitis**	
	Got sick	**Died**	**Got sick**	**Died**	**Got sick**	**Died**
Kyiv	5737	1554	187	22	866	30
Podillia	2310	460	824	59	393	1
Volyn	3767	920	8	0	32	1
Poltava	5399	654	3	0	39	1
Chernihiv	5627	614	8	0	165	2
Kharkiv	9253	1287	10	0	2925	61
Provinces	**Erysipelas**		**Ophtalmia**		**Inflamm puerper**	
	Got sick	**Died**	**Got sick**	**Died**	**Got sick**	**Died**
Kyiv	1960	53	755	0	771	327
Podillia	875	138	93	0	212	38
Volyn	134	3	15	0	247	39
Poltava	157	10	131	0	66	3
Chernihiv	286	9	113	0	92	11
Kharkiv	2154	58	1225	0	539	55
Provinces	**Pustula maligna**		**Laryditis cruposa**		**Total**	
	Got sick	**Died**	**Got sick**	**Died**	**Got sick**	**Died/%**
Kyiv	5	0	0	0	38368	8074/21,1
Podillia	42	10	0	0	27827	5584/20,1
Volyn	1	0	130	71	16966	3093/18,2
Poltava	1	0	0	0	32546	6741/20,7
Chernihiv	6	5	0	0	19054	3899/20,1
Kharkiv	228	37	0	0	67170	9552/14,2



Proximity Matrix

Provinces	Kyiv	Podillia	Volyn	Poltava	Chernihiv	Kharkiv
Kyiv	0.0	0.7	1.3	0.6	1.0	1.4
Podillia	0.7	0.0	0.8	0.3	0.5	2.1
Volyn	1.3	0.8	0.0	0.8	0.4	2.6
Poltava	0.6	0.3	0.8	0.0	0.4	1.9
Chernihiv	1.0	0.5	0.4	0.4	0.0	2.3
Kharkiv	1.4	2.1	2.6	1.9	2.3	0.0

Figure VI.2.2. Results of the cluster classification of provinces according to the data in tbl. VI.2.1

3. State of health and anthropometric data of recruits of the Forest-Steppe provinces of Ukraine

From 1839 to the end of the Eastern War (1853 – 1856), recruitment sets were announced twice a year in two zones, western and eastern, and two consecutive sets were deemed one. There were four simultaneous sets in 1836, 1840, 1854, and 1855. The normal number of men recruited per 1,000 "souls" was no more than 6, but in exceptional instances, up to 10, and in 1855, from the western part, including the Ukrainian Forest-Steppe provinces, even 12. According to physical characteristics, recruits had to be at least 21 and no more than 30 years from birth, although, as we will see below, this was not always observed, be at least 2 "arshins" and 3 "vershkas" (155.56 cm) tall, not have physical defects, not be under trial and investigation, not be convicted of serious crimes (Voenno-statisticheskiy sbornyk, 1871, pp. 2–14). The recruitment rules were not affected by the military reform from 1864 – 1874, and the transition to the state-wide principle of military service was slow. Interesting information about men's health in Chernihiv province can be obtained through medical statistics from the recruitment sets of 1850, 1852, 1854, 1855, and 1863. There were 42,377 people involved in these sets, with 31,078 people (73.3%) being examined by medical commissions and 13,574 (43.6%) being rejected. The reasons for culling for physical defects were as follows:

"physical weakness", that is, physical underdevelopment, 2,177 (16%), hernias 1,277 (9.4%); clubfoot and lameness 475 (3.5%); dislocations and bone deformations 397 (2.9%), flexion of fingers and their lack 381 (2.8%), fractures 266 (2.0%), stooping or humpback 258 (1.9%). According to chronic diseases, the following were rejected: scrofula, scabies, ulcers, ringworm, suppuration 1,227 (9.4%), varicose veins 965 (7.1%), the tendency to tuberculosis 428 (3.2%), and scurvy 137 (0.7%). The number of recruits who were accepted for military service was 17,304, or 40.8%. They were distributed by age as follows: 17–20 years 12%, 21–25 years 62.8%, 25–30 years 18.5%, 30–35 years 5.5%, and 35–40 years 0.3%. In the province as a whole (tbl. VI.3.1), the average height of men of conscription age was about 165 cm. The lowest were the recruits of Chernihivskyi district, the conscripts of the Borznianskyi and Sosnytskyi districts were close to the general provincial indicators, and the young people of the Krolevetskyi, Novhorodsiverskyi, Starodubskyi districts were considered relatively tall (Materialy dlya geografii i statistiki, 1865, pp. 127–129, 137–145). Judging by the data on the culling of recruits for short stature in the provinces of the European part of the Russian Empire in 1863, in the Ukrainian provinces of the early 60s of the 19th century, short men were most often found precisely in Chernihiv province (Voenno-statisticheskiy sbornyk, 1871, Appendix, fig. 37).

The recruitment statistics for the next five years (1863 – 1868) can provide a complete picture of the health status of young men in Forest-Steppe Ukraine. A height discrepancy caused a 3% rejection rate for recruits from Chernihiv province, with 2.2 – 2.4% rejecting them from Podillia and Volyn. Physical disabilities were the reason for 12.0% of young people in Podillia and 6.2% of Kharkiv province failing the selection. In all places except Volyn, chronic diseases were the reason for about 11.0% of potential recruits being rejected. According to the mentioned parameters, the situation looked worse in Chernihiv province and Podillia, where medical commissions rejected 24.5% – 25.1% of recruits, and it was comparatively better in Kharkiv province, where the dropout of recruits was 18.9% (tbl. VI.3.2) (Ibid., 1871, pp. 32–37).

At the end of this part of the chapter, we will consider comparative data on conscripts from 1874 to 1883, collected and processed by the outstanding anthropologist D. M. Anuchin and summarized in tbl. 4 (Anuchin, 1889,

pp. 64, 66, 77, 79, 99–100, 102–103, 104–105). As we already know, conscripts from Chernihiv province (1.8%) were rejected the most due to insufficient height, while the least number of conscripts were rejected from Kyiv, Poltava, and Kharkiv provinces (0.8%). The number of ”very tall” recruits was higher in Poltava and Kyiv provinces (4.3% – 4.7%). At the same time, the average height of recruits was 165.2–165.4 cm. In Poltava and Volyn provinces, 18.2–18.5% of young men were unfit for military service, in Podillia and Kyiv provinces – 15.3–15.4% and 14.4–14.6%, respectively. Significantly, a third or more of those examined received a postponement of the draft due to insufficient physical development in the provinces of Chernihiv (30.0%), Volyn (38.8%), Kharkiv (38.9%), every fourth conscript in Kyiv and Poltava provinces (26, 6% – 26.7%), slightly less in Podillia (18.7%). The most strikingly unsatisfactory state of health of young men of supposedly prime age in the six provinces of Forest-Steppe Ukraine is characterized by the total number of people not admitted to the ranks of the armed forces due to physical defects: Volyn 61.5%, Kharkiv 57.9%, Poltava and Chernihiv 50.0% – 50.8%, Kyiv 46.7%, Podillia provinces 38.3% (Statisticheskiy vremennik Rossiyskoy imperii, 1886 b, pp. XVII–XIX).

The cluster classification results for Ukrainian Forest-Steppe provinces, based on the materials collected from recruit surveys between 1863 and 1883, are depicted in fig. VI.3.1. The dendrogram reveals two groups of close objects. Kyiv, Poltava, and Chernihiv are the provinces on one hand. On the other, Volyn and Kharkiv provinces are similar because of the high values of indicators for the unsatisfactory health state of conscripts. Podillia province occupies the intermediate position between the groups. Above, in fig. VI.2.2, the statistical classification of Forest-Steppe provinces has been observed in the fight against infectious diseases (tbl. VI.2.1). It is quite likely that in these cases, using modern means of statistical measurement, we reveal latent connections between failed recruitment sets and increased attention on the part of the government to the level of medical and sanitary provision of the population of Volyn and Kharkiv provinces.

Table VI.3.1. Distribution of recruits of Chernihiv province of 1850, 1852, 1854, 1855, and 1863 by height and on districts

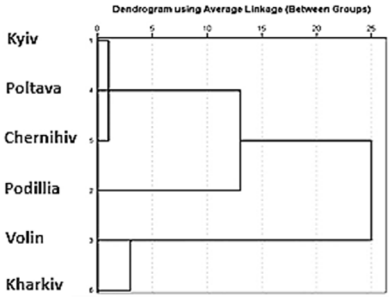
Districts	Height of recruits (cm) / specific gravity (%)					
	155.9 – 157.8	160.4 – 162.2	164.5 – 166.7	168.9 – 171.2	173.4 – 175.6	177.8 – 180.1
Chernihivskyi	23.1	32.6	18.6	10.7	5.0	1.7
Nizhynskyi	16.4	26.6	30.1	16.8	7.8	1.6
Kozeletskyi	9.2	25.4	34.2	19.3	8.8	3.1
Osterskyi	20.3	28.2	27.2	15.3	7.4	1.5
Sosnytskyi	12.5	30.4	30.0	17.5	6.3	2.5
Borznenskyi	12.9	29.1	30.2	18.3	6.5	2.9
Konotopskyi	10.4	26.9	34.2	19.2	6.5	2.7
Krolevetskyi	8.0	27.3	28.6	26.5	7.1	2.5
Hlukhivskyi	13.7	35.6	28.8	15.6	4.4	2.0
Novhorodsiverskyi	15.0	30.0	32.5	13.5	8.0	1.0
Novozybkivskyi	8.5	26.3	35.7	20.7	7.5	1.4
Starodubskyi	10.0	31.4	34.3	15.5	7.9	0.8
Mhlynskyi	12.2	27.0	32.0	23.0	4.1	1.8
Surazhskyi	7.5	29.4	37.3	18.4	6.1	1.3
Horodianskyi	13.8	29.3	30.9	20.7	5.3	0.0
Total	12.8	28.9	31.5	18.1	6.6	1.8

Table VI.3.2. Medical and anthropological statistics on recruits of the Forest-Steppe Ukraine's provinces by 1863 – 1868 (%)

Provinces	Not accepted during recruitment				Removed after recruitment	
	For height	For physical disabilities and underdevelopment	For chronic diseases	Total	Got sick	Died
Kyiv	1,1	9,5	10,5	21,1	2,6	0,0
Podillia	2,2	12,0	10,9	25,1	2,8	0,1
Volyn	2,4	10,2	9,5	22,1	3,9	0,1
Poltava	1,9	9,2	11,3	22,4	0,7	0,0
Chernihiv	3,0	11,0	10,5	24,5	1,0	0,0
Kharkiv	1,6	6,2	11,1	18,9	0,9	0,0

Table VI.3.3. Medical and anthropological statistics on recruits of the Forest-Steppe Ukraine's provinces by 1874 – 1883 (%)

Provinces	Average height (cm)	Rejected				Deferred due to physical under development	All are not accepted
		For short stature	Very high	Due to health problems	Total		
Kyiv	165.4	0.8	4.7	14.6	20.1	26.6	46.7
Podillia	164.8	1.3	3.9	14.4	19.6	18.7	38.3
Volyn	164.1	1.3	2.9	18.5	22.7	38.8	61.5
Poltava	165.2	0.8	4.3	18.2	23.3	26.7	50.0
Chernihiv	164.1	1.8	3.0	15.3	20.1	30.7	50.8
Kharkiv	164.5	0.8	2.8	15.4	19.0	38.9	57.9



Proximity Matrix

Provinces	Kyiv	Podillia	Volyn	Poltava	Chernihiv	Kharkiv
Kyiv	0	158	399	41	58	301
Podillia	158	0	985	249	308	871
Volyn	399	985	0	296	214	75
Poltava	41	249	296	0	48	261
Chernihiv	58	308	214	48	0	177
Kharkiv	301	871	75	261	177	0

Figure VI.3.1. Results of the cluster classification of provinces according to the data in tbl. VI.3.2 and VI.3.3.

4. Public health protection

Kyiv province. The largest hospital in the region was the Kyiv Military Hospital of the 4th class, which in the mid-1840s had facilities for 20 officer beds and 1,200 beds for lower ranks. On average, there were 900 patients per month. The service personnel had 265 people, which included 114 soldiers who were reassigned from the Kyiv garrison battalion. A paramedic school was established at the hospital and every year, 35 specialists, mainly from line army regiments, graduated. In addition, the Treasury spent on providing training for 10 Cossacks from the Don and Azov Cossack troops, and two cantonists from the Department of Communications were paid 25 rubles

per year for each. The hospital was located in a newly built two-story building, from which up to 500 patients were taken to the barracks arranged on Prince Prozorovskyi's estate in the summer. The Kyiv Military Hospital was equipped with a brewery, a laundry, and apartments for staff (Voyenno-statisticheskoye obozreniye. Kiyevskaya guberniya, 1848, pp. 244–245).

The various civil institutions for the relief of the poor and the sick were divided into two categories: institutions created at the expense of the Public Care Order and institutions maintained by the owners of the estates where they were established. The first category included a hospital, an almshouse, a home for the insane, a home for the disabled, and a workhouse in Kyiv itself. In districts, 50 hospitals were backed by landowners, with Taraschanskyi having 10. In addition, three clinics operated at St. Volodymyr University – therapeutic, surgical, and obstetric. During 1846, 4,973 people (0.3% of the population) received help in hospitals and other institutions of various forms of ownership (Ibid., 1848, pp. 142–143). In 1855, there were 10,765 sick men and 2,444 women (a total of 0.7% of the population) in all hospitals of Kyiv province; for their maintenance, 136,835 rubles were spent, of which 51.3% were the funds of the patients themselves, the rest was provided by towns and charitable organizations (Pamyatnaya knizhka Kiyevskoy gubernii, 1857, table on 236–237). In 1859, the province had 58 hospitals that were running, with 16,648 patients (0.9% of the population) (Sbornik statisticheskikh svedeniy o Kiyevskoy gubernii za 1859 god, 1861, tbl. on pp. 125–126).

Podillia province. In 1846, hospitals under the Order of Public Care existed in the provincial town of Kamianets-Podilskyi and other district towns. They treated 3,820 people (0.2% of the population) during the year. The state military hospitals located in Kamianets-Podilskyi, Tulchyn, mistechko Ladyzhyn, and the village of Trebukhivtsi (for military peasants) were designed for 29 officers and 750 soldier beds. There were 92 doctors in the entire province (an average of 16,742 residents per 1 doctor), among them 28 full-time, 10 who lived in private estates, 52 free practitioners, 2 freelances (Voyenno-statisticheskoye obozreniye. Podolskaya guberniya, 1849, pp. 71, 159; tbl. 16). In 1857, there were 45 pharmacies in the province, among them 3 in Kamianets-Podilskyi, 2 each in Vinnytsia and Balta, and

another 40 in other districts' towns and large villages (Pamyatnaya knizhka Podolskoy gubernii na 1859 god, 1859, p. 120).

Volyn province. By the mid-1840s, 15 full-time civil hospitals and an orphanage were operating in the province. In almost all towns, there were Jewish almshouses, which were supported by the funds of the wealthiest among them. Hospitals and almshouses were established in some estates owned by landlords, as well as Catholic churches. Annually, 8,000 – 11,000 patients (0.6 % – 0.8% of the population) were cared for in state hospitals and almost the same in private landowners' medical institutions. Of the pharmacies, 11 were owned by the government, 35 were free, and issued 90,000 to 110,000 signatures every year. The province had 125 doctors who practiced (with an average of 11,308 residents per 1 doctor) (Voyenno-statisticheskoye obozreniye. Volynskaia guberniya, 1850, pp. 126–127). After 20 years, the Public Care Order was the sole owner of 14 medical institutions in this province, and almost 4,050 patients (0.13% of the population) were helped with 112,390 rubles. Jewish communities were cared for by 9 hospitals, which cost 10840 rubles, and included 8 Jewish almshouses that cost 1,800 rubles to provide care for 540 patients. The box collection and voluntary donations of Jews led to the maintenance of Jewish public hospitals, almshouses, and shelters. In addition, the province operated 2 military hospitals in Zhytomyr and Lutsk, hospitals attached to the Kremenets Orthodox Theological Seminary, a Zhytomyr District Theological School, a Zhytomyr Orphanage, and a school for virgins of spiritual status (Bratchikov, 1869, pp. 333–335).

Poltava province. In 1845, there were 74 doctors, among them: 33 "staff and medical officials", 3 members of the medical board, 1 veterinary doctor with an assistant, 5 doctors at religious institutions, 15 visiting doctors, 7 city doctors, 1 at the seminary in Pereyaslav, 3 doctors at the Poltava Chamber of State Estates, 1 veterinary assistant, 7 doctors in the estates of landowners with the right to serve in the state, and there were 30 freely practicing doctors in the entire province. There was an average of 22,812 residents of the province per one doctor (Voyenno-statisticheskoye obozreniye. Poltavskaya guberniya, 1848, pp. 32–33, 80–81). In 1864, 98 doctors worked in Poltava province (1 per 19,508 inhabitants), 22 pharmacies operated, and 83,707 infants were vaccinated against smallpox (26,857 remained unvaccinated). During the year, 12,285 patients (0.6% of the population)

used the services of doctors, 88% of whom recovered (Bodiansky, 1865, pp. 119, 340–341), i.e., the mortality rate during the provision of medical care was about 18%. This is the value of the indicator, judging from the above calculations according to the tbl. 1, was common for Ukrainian Forest-Steppe provinces in the 60s – 80s of the 19th century.

Chernihiv province. In the mid-1840s, there were 15 hospitals in the province, each with 25 beds, one each in the provincial and regional cities. In addition to that, in Nizhyn, there was by the synagogue a home for the insane, an orphanage, and a home for the disabled (Voyenno-statisticheskoe obozrenie. Chernigovskaya guberniya, 1851, p. 112). In 1860, the entire province had 71 medicines or one for every 20,730 residents. The number of pharmacies was 17, and 55,638 infants were vaccinated against smallpox (Materialy dlya geografii i statistiki Rossii, 1865, pp. 127–130).

Kharkiv province. As of 1862 (earlier data are not available), there were 131 medical workers here (1 per 12,145 inhabitants), namely 38 doctors in the Ministry of Internal Affairs, 39 independent practitioners, 11 midwives, 7 state veterinarians, paramedics, and 28 medical students in the public service, 3 freely practicing dentists. There were 3 state and 21 private pharmacies. During the year, 6,806 people (0.5% of the population) received help in 56 hospital institutions, the most in the Kharkiv Hospital of the Order of Public Care – 2,350 patients (Golikhovsky, 1864, pp. 212–215, 217).

In the early 1880s, among the six Ukrainian Forest-Steppe provinces, as seen from tbl. VI.4.1 and VI.4.2 (Statisticheskiy vremennik Rossiyskoy imperii, 1886 a, pp. 74–75, 78–85), Kyiv province was distinguished by the number of medical institutions – 124, where there were 1,522 beds. The number of hospitals in Kharkiv province was smaller, but they had 1,265 beds available for patients. The fact is that in Kyiv province, most of the hospitals were rural paramedics with a few beds, and 39 city hospitals had an average of 32 beds, while Kharkiv province at that time was dominated by large hospitals with an average of 75 beds in towns and 12 – 13 beds in 8 large villages. In Volyn, the situation was the worst because only 335 beds existed in 14 hospitals. Medical aid was given to 406,712 individuals, or 18.3% of the population in Kharkiv province, in 1882, and 153,819 individuals, or 7.3% of all residents, in Kyiv province.

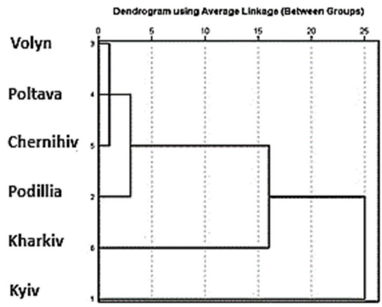
These indicators were significantly below those of other provinces (Podillia – 3.1%, Chernihiv – 2.0%, Volyn – 0.9%, and Poltava – 0.7%). The significant disparity in the number of doctors and paramedics in provinces with approximately the same population is surprising – from 168 doctors and 339 paramedics in Kharkiv province, 148 and 275, respectively, in Podillia to 36 doctors and 45 paramedics in Poltava, 35 and 47 in Chernihiv provinces. Even with 259 paramedics in Kyiv province, there were still only 48 doctors available. True, we should not forget that it is the statistics of the Ministry of Internal Affairs, that did not show data on military doctors, at least in Kyiv – the center of the military region of the same name. The presence of twice as many pharmacies on Right-Bank as in the provinces of the Dnieper Left-Bank is a notable fact. Medicines were expensive everywhere, with an average cost of 0.74 rubles per prescription in Kyiv province, 0.78 rubles in Podillia, and 0.89 rubles in Poltava. The cluster classification of the studied objects (fig. VI.4.1) shows that a relatively favorable trend in terms of the provision of healthcare facilities and qualified medical personnel was observed in Kharkiv and Kyiv provinces, while in others, medical care was available to only 1% – 3% of the population.

Table VI.4.1. Medical care facilities for the population of Forest-Steppe Ukraine, 1882

Provinces	Hospitals				Homes of the insane				Pharmacies		
	In towns		In the villages		Number	The bed	Sick people	Died	Number	Recipes	Received funds in rubles
	Number	The bed	Number	The bed							
Kyiv	39	1234	84	103	1	185	355	34	88	532213	392616
Podillia	12	280	1	15	1	40	131	16	77	272497	212146
Volyn	25	690	1	8	1	30	92	19	61	196914	160511
Poltava	15	739	19	115	1	100	442	31	37	168237	149588
Chernihiv	15	689	5	45	1	100	342	22	33	103319	87197
Kharkiv	14	1054	8	101	1	110	776	62	31	237793	193564

Table VI.4.2. Staffing of actual medical care for the population of Forest-Steppe Ukraine, 1882

Provinces	Sought medical help	From the total population (%)	Doctors	For one doctor	Paramedics	For one paramedic	Midwifes	Were treated for syphilis	Number of smallpox vaccinations
Kyiv	153819	7.34	48	3205	259	594	27	4943	67449
Podillia	70625	3.07	148	477	275	269	193	1052	56257
Volyn	21574	0.87	117	184	208	104	27	2741	43822
Poltava	17949	0.71	36	499	45	399	33	7349	86654
Chernihiv	39814	1.99	35	1138	47	847	16	1989	44062
Kharkiv	406712	18.28	168	2421	339	1120	157	11054	126362



Proximity Matrix

Provinces	Kyiv	Podillia	Volyn	Poltava	Chernihiv	Kharkiv
Kyiv	0	293	501	558	644	442
Podillia	293	0	28	44	69	244
Volyn	501	28	0	5	13	332
Poltava	558	44	5	0	8	338
Chernihiv	644	69	13	8	0	327
Kharkiv	442	244	332	338	327	0

Figure VI.4.1. Results of the cluster classification of provinces according to the data in tbl. VI.4.1. and VI.4.2.

5. Information on some diseases in the First General Census, 1897

The First General Census of the Russian Empire in 1897 included questions regarding illnesses such as blindness, deaf-muteness, dumbness, and madness (Obschiy svod po imperii rezultatov razrabotki dannyih Pervoy vseobschey perepisi naseleniya, proizvedennoy 28 yanvarya 1897 goda, 1905, tbl. XVIII, XIX). The event organizers did not explain the reason for the selective approach. According to the author, the diseases noted had

a significant impact on the socialization of individuals, their inclusion in the social relations system, and their degree of economic independence. At the same time, it became possible for the first time to track the spread of diseases not only by administrative territories but also by social and ethnic groups of patients. The initial statistical data was recalculated per 1000 representatives of the specified groups (‰) for each province to ensure accurate comparison. By summarizing the indicator values vertically and horizontally, the number of points indicating its manifestation's intensity in the territorial and socio-ethnic dimensions (tbl. VI.5.1 and VI.5.2) was determined.

The social aspect of the problem. The confusion of the official rubricating of the social structure of the empire's population can be traced in the materials of the 1897 Census, where 15 "estates" are indicated, and each respondent could add something of his own. We will, as before, consider four large social groups: nobles, clergy, townspeople, and peasants.

Oddly, madness was the most common affliction, affecting primarily the nobility (18.07) and the clergy (12.18), but not much of the peasants (4.75) or townspeople (6.95). Among the provinces, Kharkiv had the highest negative score (9.53), while Podillia and Volyn had the lowest positive score (5.07).

Blindness (37.11) was most often affected by peasants (11.22). In any other case, its distribution was close to the statistical norm. Deaf-muteness (35.68) was a frequent phenomenon among the clergy (17.52), especially in Podillia and Volyn provinces (9.80). This social group frequently encountered mutes (5.02 out of 9.93), with Chernihiv province being most commonly found (4.84).

Thus, in the case under consideration, blindness (peasants) and madness (nobles) had pronounced social implications. The clergy was found to have the lowest levels of health (deaf-mute, dumb, and mad) in the cases observed.

Ethnic aspect. The incidence of blindness (37.07) was higher for Ukrainians (10.82) and Russians (8.77), with peasants being the most prevalent group.

The Poles, who constituted the majority of the gentry in the Right-Bank subregion, were prone to madness (32.22), often observed among them in Kharkiv province (2.88). The remaining diseases did not have a sufficiently expressive ethno-social coloring.

In summary, domestic medical statistics have come a long way in half a century, from the collection of purely descriptive information during the 1840s – 1850s to the publication of complex analytical data on the spread of mass diseases, providing the population with qualified medical personnel and a network of health care institutions in the following thirty years.

Table VI.5.1. The frequency of certain diseases in social groups by provinces, 1897

Provinces	Disease	Social groups (‰)				∑
		Nobles	Clergy	Townspeople	Peasants	
Kyiv	Blindness	0.96	1.45	1.11	1.95	5.47
Podillia	Blindness	1.70	1.50	1.28	1.74	6.22
Volyn	Blindness	1.70	1.50	1.28	1.74	6.22
Poltava	Blindness	1.15	1.18	1.36	1.82	5.51
Chernihiv	Blindness	1.69	2.03	1.76	1.96	7.43
Kharkiv	Blindness	1.09	1.56	1.60	2.01	6.26
	∑	8.29	9.21	8.39	11.22	37.11
Kyiv	Deaf-muteness	0.59	0.91	0.85	1.13	3.48
Podillia	Deaf-muteness	0.94	6.92	0.94	1.01	9.80
Volyn	Deaf-muteness	0.94	6.92	0.94	1.01	9.80
Poltava	Deaf-muteness	1.02	0.80	1.02	1.23	4.08
Chernihiv	Deaf-muteness	0.93	1.24	1.10	1.17	4.44
Kharkiv	Deaf-muteness	1.09	0.73	1.10	1.14	4.07
	∑	5.52	17.52	5.95	6.69	35.68
Kyiv	Dumbness	0.15	0.24	0.28	0.34	1.02
Podillia	Dumbness	0.10	0.14	0.43	0.32	0.99
Volyn	Dumbness	0.10	0.14	0.43	0.32	0.99
Poltava	Dumbness	0.24	0.25	0.34	0.28	1.11
Chernihiv	Dumbness	0.18	3.97	0.40	0.29	4.84
Kharkiv	Dumbness	0.19	0.27	0.25	0.27	0.98
	∑	0.96	5.02	2.13	1.83	9.93
Kyiv	Madness	3.17	2.36	1.02	0.76	7.32
Podillia	Madness	2.07	1.28	0.88	0.84	5.07
Volyn	Madness	2.07	1.28	0.88	0.84	5.07
Poltava	Madness	2.92	2.66	1.10	0.80	7.49
Chernihiv	Madness	3.37	2.29	1.13	0.66	7.46
Kharkiv	Madness	4.46	2.29	1.93	0.85	9.53
	∑	18.07	12.18	6.95	4.75	41.94

Table VI.5.2. The frequency of certain diseases in ethnic groups by provinces, 1897

Provinces	Disease	Ethnic groups (‰)					∑
		Ukrainians	Jews	Poles	Russians	Germans	
Kyiv	Blindness	1.97	0.85	1.05	1.36	0.88	6.11
Podillia	Blindness	1.77	1.07	1.36	1.27	2.21	7.69
Volyn	Blindness	1.49	1.01	1.39	0.97	1.10	5.97
Poltava	Blindness	1.82	0.96	0.26	1.21	0.44	4.68
Chernihiv	Blindness	1.72	1.01	1.51	2.53	0.19	6.96
Kharkiv	Blindness	2.04	0.79	0.51	1.43	0.88	5.66
	∑	10.82	5.70	6.07	8.77	5.71	37.07
Kyiv	Deaf-muteness	1.13	0.78	0.90	0.73	0.82	4.36
Podillia	Deaf-muteness	1.06	0.92	0.94	0.60	1.23	4.75
Volyn	Deaf-muteness	1.15	0.86	1.48	0.78	1.00	5.27
Poltava	Deaf-muteness	1.23	0.75	0.26	1.01	0.87	4.13
Chernihiv	Deaf-muteness	1.18	1.01	0.91	1.12	2.26	6.48
Kharkiv	Deaf-muteness	1.14	0.87	0.34	0.97	0.66	3.98
	∑	6.89	5.19	4.83	5.22	6.84	28.97
Kyiv	Dumbness	0.35	0.31	0.23	0.14	0.14	1.17
Podillia	Dumbness	0.32	0.47	0.17	0.26	0.74	1.97
Volyn	Dumbness	0.40	0.40	0.40	0.27	0.32	1.77
Poltava	Dumbness	0.29	0.68	0.00	0.21	0.00	1.17
Chernihiv	Dumbness	0.27	0.54	0.00	0.33	0.38	1.52
Kharkiv	Dumbness	0.28	0.32	0.00	0.19	0.22	1.01
	∑	1.91	2.71	0.80	1.40	1.79	8.61
Kyiv	Madness	0.81	0.98	1.88	1.35	0.95	5.96
Podillia	Madness	0.84	0.87	1.30	0.95	0.74	4.70
Volyn	Madness	0.48	0.65	1.00	0.72	0.92	3.77
Poltava	Madness	0.87	0.90	0.77	1.10	0.87	4.50
Chernihiv	Madness	0.78	0.79	1.82	0.72	0.57	4.67
Kharkiv	Madness	0.92	1.82	2.88	1.12	1.87	8.61
	∑	4.70	6.00	9.64	5.96	5.92	32.22