



Local authorities are responsible for monitoring the migration of all social and national groups, as well as their health status. This is necessary for political and economic reasons, as well as to meet the requirements of federal laws which provide social security for certain population groups, including the indigenous peoples of the North. However, in the absence of a unified system for monitoring the health of the indigenous peoples in Russia, the results of monitoring activities in different administrative territories often cannot be easily compared*. This situation presented difficulties when attempts were made to make comparative assessments of the pilot areas included in this project. The data obtained were therefore subjected to an independent uniform medical and statistical analysis, prior to the formulation of conclusions.

Chapter 8

The demographic situation and health status of indigenous peoples in the project study areas



* The most complete and systematic medical and statistical information relating to the indigenous population is obtained from the Chukchi Autonomous Okrug (CAO) and the Nenets Autonomous Okrug (NAO), due to the more numerous population, and the greater social and economic importance of the indigenous peoples in these administrative territories.

8.1. The Chukchi Autonomous Okrug (CAO)

Political and economic changes in Russia have affected the demographic situation in the CAO more than in any other region. The closure of unprofitable mining enterprises, demilitarization, and the destruction of certain social and economic structures led to a massive emigration, in particular of the more recent immigrants, away from the CAO. Such major shifts in population interfere with the evaluation of the natural population dynamics of the new-migrants, and also prevent an objective evaluation of their health status. Therefore, comparisons in this section are limited to the use of demographic and medical data for the indigenous population of two districts (Anadyrsky and Chukotsky), as well as for the CAO as a whole.

8.1.1. General demographic situation

The dominant indigenous peoples in the areas of the CAO studied all belong to the paleoasiatic group and thus demonstrate a similar level of adaptation to the Chukotka environment. The only exception to this are the Chuvans, an indigenous population group arising from Russian, Chukchi, and Yukaghir origins, which emerged in late 18th century in Anadyrsky District. In the 1980s the group was classified as 'Chuva', while before the census of 1989 they were considered to be Chukchi. From Table 8.1 it can be seen that most of the population in the areas studied are Chukchi.

As shown in Figure 8.1, the total population of the CAO has halved in the last 10 years, whilst the population of Anadyrsky and Chukotsky Districts has decreased by 30–40%.

Over the same period, there have been no significant changes in the total populations of indigenous population, either in the CAO as a whole, or in Chukotsky

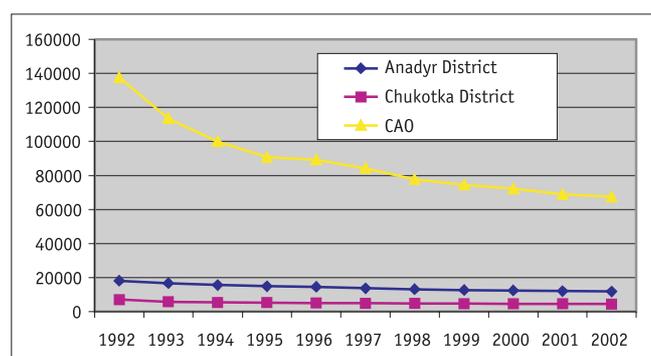


Figure 8.1. Total population of the CAO and study areas, 1992–2002.

Table 8.1.

Ethnicity of northern indigenous peoples residing in the areas of the CAO studied, according to censuses; population number, and % (in parentheses).

Area	Year of Census	Chukchi	Chuvans	Evens	Eskimo	Others	Total (100%)
Anadyrsky District	1970	2479 (83)	-	369 (12)	57 (2)	104 (3)	3009
	1979	2456 (85)	-	265 (9)	17 (<1)	136 (5)	2874
	1989	2090 (61)	747 (22)	366 (11)	28 (1)	179 (5)	3410
Chukotsky District	1970	2384 (89)	-	4 (<1)	290 (11)	-	2627
	1979	2620 (89)	-	7 (<1)	323 (11)	-	2952
	1989	3067 (89)	6 (<1)	15 (<1)	340 (<10)	4 (<1)	3432
Chukchi Autonomous Okrug	1970	11001 (82)	-	1061 (8)	1149 (9)	171 (1)	13382
	1979	11292 (81)	-	1077 (8)	1278 (9)	236 (2)	13883
	1989	11914 (75)	944 (6)	1336 (8)	1452 (9)	257 (2)	15903

District, both have infact increased slightly (Figure 8.2). The indigenous population in Anadyrsky District has decreased by 17% since 1996, as many of the suburban dwellers have moved into Anadyr city. However in this district, as for everywhere in the CAO, there has been some growth of the indigenous population over the last decade. The indigenous population was at its lowest level during the most difficult years of the recent economic crisis (1994–1996), but has been growing since then (Figure 8.3).

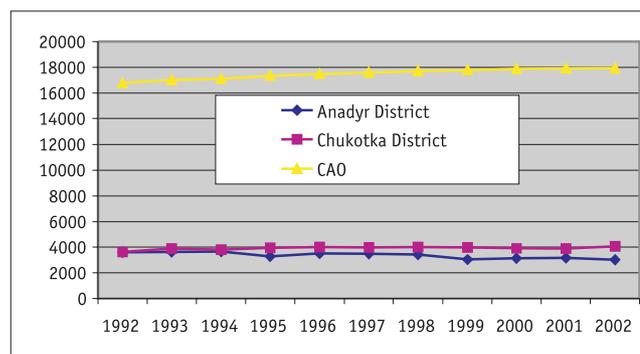


Figure 8.2. The indigenous population of CAO and study areas, 1992–2002.

For continued growth of indigenous populations, their specific age and gender distribution are determining factors, and must be favourable (Table 8.2). More than 70% of the indigenous people in the CAO are younger than 40 years of age, while in Arctic Scandinavia as a whole, this age group constitutes only 30%.

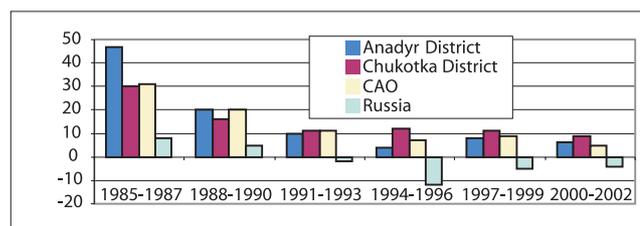


Figure 8.3. Rates of population growth (per 1000 persons) of the indigenous population in study areas in the CAO and the CAO as a whole, compared with that of the total population of the Russian Federation, 1985–2002.

8.1.2. Death rates of the indigenous population

The death rate for indigenous people in Anadyrsky and Chukotsky Districts, and in the CAO as a whole, has not altered greatly from 1986 to the present*. Before 1994, it exceeded the rate for all of Russia by 10–50%. More recently, the death rate in Russia has exceeded that of the indigenous population of the areas studied, and of the whole of the CAO.

* the observation period in this case and hereafter is based on unpublished information of the Medical Statistics Bureau.

Table 8.2. Age and gender distribution of indigenous peoples of the CAO in census years, %.

Age Group	Sex	Year of the Census			
		1970	1979	1989	2002
0 - 19	All	50	51	46	39
	Men	51	53	50	41
	Women	47	47	43	38
20 - 39	All	27	26	35	32
	Men	26	26	33	33
	Women	29	28	35	31
40 - 59	All	20	18	14	21
	Men	20	16	13	20
	Women	20	20	16	22
60 and above	All	3	5	5	8
	Men	3	4	4	6
	Women	4	5	6	9

Due to the small population size of the indigenous peoples, infant mortality in the areas studied varies by as much as a factor of eight. On average, there is no significant difference between infant mortality for the two areas studied and for the whole of the CAO over the past 16 years. However, at the same time, the death rate of indigenous people in Chukotsky District is more than twice the average rate for Russia as a whole.

An assessment of available data on infant mortality among indigenous people, for the period 1991-2001, based on average data and given the high variation in death rates, suggests that unfavourable perinatal development may be affecting infants in Chukotsky District. The death rate due to this cause is twice as high in this district as that for Anadyrsky District, and figures for mortality caused by perinatal pathologies for all indigenous infants exceed those for the CAO by 40% (Figure 8.4).

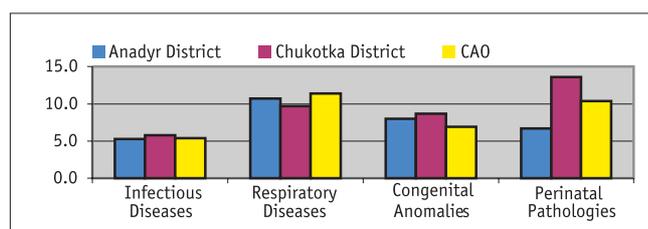


Figure 8.4. Main causes of infant mortality in the indigenous population, 1991-2001; mortality rate per 1000 live-births.

Primary data on causes of mortality among the indigenous population in the areas studied and for the CAO as a whole, also document significant variability in death rates, by as much as a factor of two to three (Figure 8.5). Also, an analysis of averaged data over a period of 11 years (1991-2001) suggests that in Chukotsky District, there is a greater risk of disease of the respiratory and digestive systems, and also from infectious and parasitic diseases, when compared with Anadyrsky District and the CAO as a whole. Only death rates from alcohol intoxication are found to be greater in the CAO, than in the two study areas. In part, this may be due to a 'sympathetic' attitude of health personnel in Chukotsky District, when issuing death certificates to families of those who have died of alcohol intoxication (i.e., attributing death to other causes). A diagnosis of death from alcohol intoxication, apart from causing moral damage, also

leads to close relatives being deprived of certain social privileges and subsidies. On the other hand, the high mortality from diseases of the digestive system, and from parasitic and infectious diseases, affecting the indigenous population of Chukotsky District can probably be directly attributed to significant changes in the indigenous diet. During recent years, for various economic reasons, the population of domestic reindeer in the area has rapidly declined, and inhabitants of some settlements (such as Uelen) were forced to switch from a diet based on reindeer meat to one based on whale fat, and walrus and seal meat. One of the traditional methods used in processing meat of marine animals, is its fermentation in containers (often not suitable for food products) or directly in the ground; and it is thought that this process may have been responsible for some of the increase in disease which occurred.

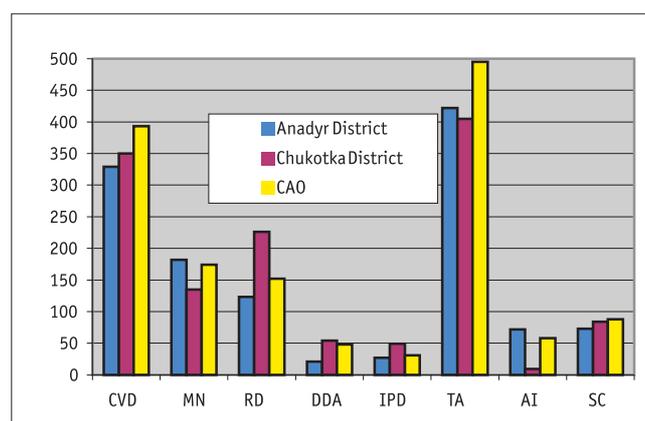


Figure 8.5. Main causes of mortality in the indigenous population of the CAO, 1991-2001; mortality rate per 100000.

Abbreviations: CVD – cardiovascular diseases, MN – malignant neoplasms, RD – respiratory diseases, DDA – diseases of digestive system, IPA – infectious and parasitic diseases, TA – traumas and accidents, AI – alcoholic intoxication, SC – suicide.

8.1.3. Morbidity

The Medical Statistics Service of the CAO monitors morbidity in adults and children according to disease type (Table 8.3). Specific nosologic types, which follow the International Classification of Diseases, are used only for the CAO in general, where the indigenous population is identified separately. Within the districts, only primary causes of morbidity and sickness in adults and children are monitored, although the indigenous population is also identified separately.

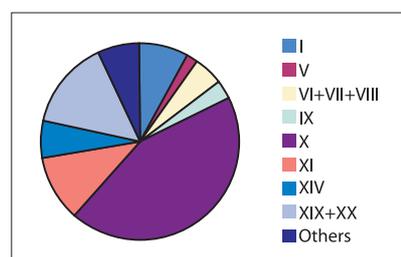


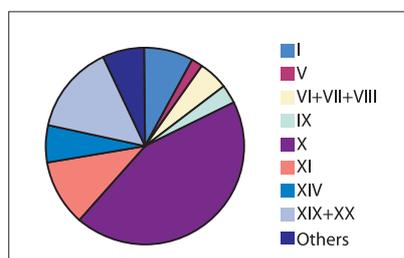
Figure 8.6. Primary morbidity in the indigenous adult population in the CAO, 1991-2001.

Figures 8.6 and 8.7 show the distribution of primary causes of morbidity for indigenous adults and children in the CAO. For both groups, respiratory diseases (X), constitute a major cause of morbidity, followed by traumas and

Class	Diseases and Health Problems
I	Infectious and parasitic diseases
II	Neoplasm
III	Diseases of blood and hemopoietic organs
IV	Diseases of endocrine system, impairments of digestion and metabolism
V	Psychical and behavioral disturbances
VI	Diseases of nervous system
VII	Eye diseases
VIII	Ear diseases
IX	Diseases of blood circulation system
X	Diseases of respiration organs
XI	Diseases of digestion organs
XII	Diseases of skin and subcutaneous fibre
XIII	Diseases of bones, muscles and connective tissue
XIV	Diseases of genitourinary system
XV	Pregnancy, deliveries and postnatal period
XVI	Specific conditions during perinatal period
XVII	Congenital malformations
XVIII	Symptoms not classified in other headings
XIX	Traumas, poisonings and some other sequences of external influences
XX	External causes of morbidity and mortality
XXI	Factors which have an influence on health status

Table 8.3. International Statistical Classification of Diseases and Related health Problems (ICD-10), (WHO, 1992).

Figure 8.7. Primary morbidity among indigenous children in the CAO, 1991-2001.



poisonings in adults (XIX+XX), and infectious and parasitic diseases in children (I). Diseases of the digestive system (XI) for both adults and children occupy a third ranking, followed for adults by diseases of urogenital system (XIV), and for children, diseases of the skin and subcutaneous tissue (XII), and then traumas (XIX+XX).

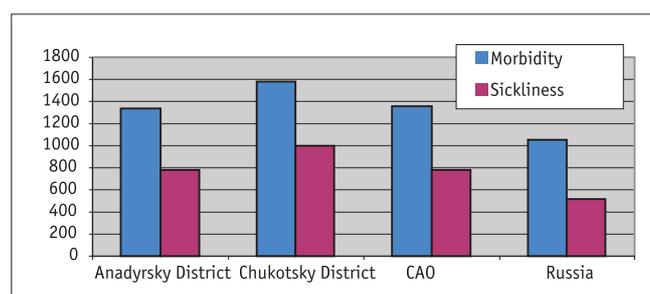


Figure 8.8. Reported sickliness, and primary morbidity of the indigenous adult population in the CAO and the Russian Federation, 1989-2001; rate per 1000 persons over 15 years of age.

Table 8.4. Population of the the TAO, and Khatanga District, thousands of people, 1993-2002. *total population including indigenous population

Area	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
TAO (total population)*	48.1	47.5	47.2	47.2	46.3	45.2	44.3	43.7	42.5	41.7
TAO indigenous population	8.5	8.5	8.5	8.5	8.6	8.6	8.6	8.8	8.8	8.8
Khatanga District (total population)*	9.2	9.2	9.2	9.1	9.2	9.3	9.4	9.5	9.5	9.5
Khatanga District indigenous population	3.6	3.6	3.6	3.7	3.7	3.7	3.7	3.8	3.8	3.8

Primary morbidity and sickliness in indigenous adults and children in Chukotsky District is, in general, greater than that in Anadyrsky District or in the CAO as a whole, by 15–25 % (Figures 8.8 and 8.9). However, the correlation between primary morbidity and sickliness in the study areas within the CAO, corresponds to average correlations for Russia.

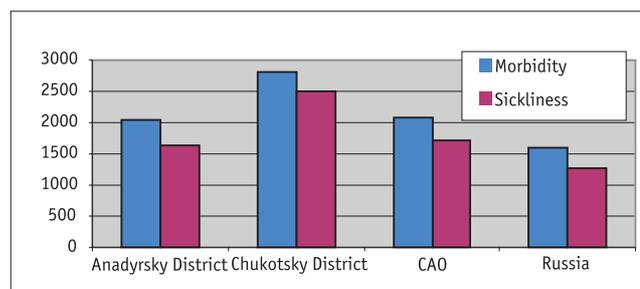


Figure 8.9. Reported sickliness, and primary morbidity of indigenous children in the CAO and the Russian Federation, 1989-2001; rate per 1000 persons, 0-14 years of age.

8.2. The Taymir (Dolgan-Nenets) Autonomous Okrug (TAO)

Whilst a cause of environmental pollution, the economically stable and highly profitable enterprises of the Norilsk Industrial Area (NIA), located in Taymir, also contributes to a relatively higher standard of living for all population groups in the TAO.

Each month an amount is paid to every person in the TAO by the NIA, as compensation for the assumed environmental damage. These payments have subsidised social needs and promoted the settlement of new migrants in the TAO, has and have been a contributing factor to the positive trends seen in social and economic development of the indigenous communities in the TAO.

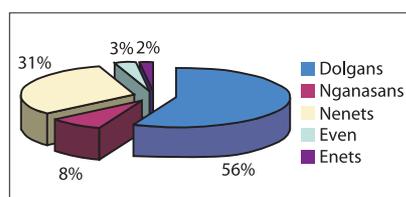
8.2.1. General demographic situation

Due to the small number of indigenous peoples resident in the region, assessment of the general demographic situation and health status of this population group by the Health Directorate of the TAO Administration, occurs mainly at the TAO level. However, to assist the needs of social and economic development in Khatanga District, the Central District Hospital regularly collects medical and demographic data, mainly regarding natural migration of the indigenous population.

As in the CAO, over the past 10 years there has been no significant reduction in the indigenous population of the TAO, although the total population of the TAO has declined (Table 8.4). In fact, the number of indigenous people has increased in the area studied, the whole of Khatanga District, and in the TAO in general.

The indigenous population of the TAO consists of various peoples (Figure 8.10). Dolgans constitute more than half of the indigenous population in the Khatanga District. This is a relatively new inter-ethnic group, of Russian, Yakut, and Yukaghir origin, which emerged in the 18th century. The Nenets, who accomplished their long migration from south-eastern Asia to the Far North in the 14th century, form a further third of the population. Paleoasiatic groups, of which the Nganasans are the most numerous, form 13% of the indigenous population.

Figure 8.10. Distribution of the indigenous population in the TAO by ethnic group, 2002.



As shown in Table 8.5, the age and gender structure of the indigenous population of the TAO is generally similar to that of the CAO. However, certain changes have taken place over the past 13 years. The number of elderly people has almost doubled; with twice as many women as men in this age group. The proportion of children (under 16 years) has decreased, and that of adults (16-59 years) increased.

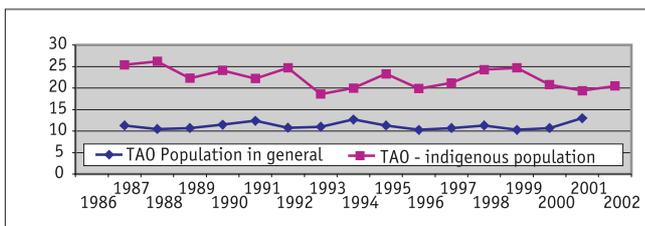


Figure 8.11. Birth rates, per 1000 persons, of the indigenous and general population of the TAO, 1986-2002.

The birth and death rates of the indigenous population, both in the TAO in general, and in Khatanga District, exceed those of the more recently arrived immigrant population (Figures 8.11 and 8.12). Unlike the situation for Russia in general, the combined trends in birth and death rates has ensured the growth of both the indigenous and the non-indigenous populations in the TAO (Figure 8.13).

Year	Both sexes, total	Men			Total	Women			Total
		0-15	16-59	60 and above		0-15	16-59	60 and above	
1989	8511	1940 (47)	2065 (50)	124 (3)	4128	1972 (45)	2147 (49)	264 (6)	4383
1995	8538	1735 (42)	2152 (53)	187 (5)	4074	1758 (39)	2357 (53)	349 (8)	4464
2001	8860	1701 (40)	2313 (56)	181 (4)	4145	1790 (38)	2471 (53)	404 (9)	4665

Table 8.5. Age and gender distribution of indigenous peoples of the TAO; number in category at year-end, absolute figures and percentage (in parentheses).

The reproductive potential is demonstrated by the frequency of births among women of child-bearing age (Table 8.6). In the TAO in general, over the past seven years, women from the indigenous population groups gave birth twice as often as women from the non-indigenous population. However the situation in Khatanga District is different. In some years (1997 and 2001), women from the new migrant population increased their birth rate, and surpassed that of indigenous women.

Area	1996	1997	1998	1999	2000	2001	2002
General TAO population	28.6	30.4	31.3	32.7	34.0	38.3	33.5
TAO - indigenous population	56.2	67.4	65.1	68.3	71.7	45.2	70.1
General Khatanga District population	47.3	50.5	44.2	39.0	44.7	62.2	32.8
Khatanga District-indigenous population	58.8	57.2	66.3	65.4	70.5	50.4	67.8

Table 8.6. Birth rate, per 1000 women of child-bearing age, for the TAO and Khatanga District, 1996-2002.

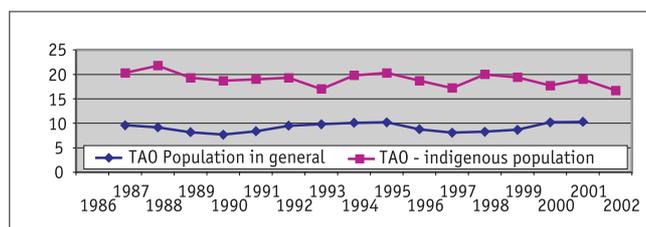


Figure 8.12. Death rates, per 1000 persons, of the indigenous and general population of the TAO, 1986-2002.

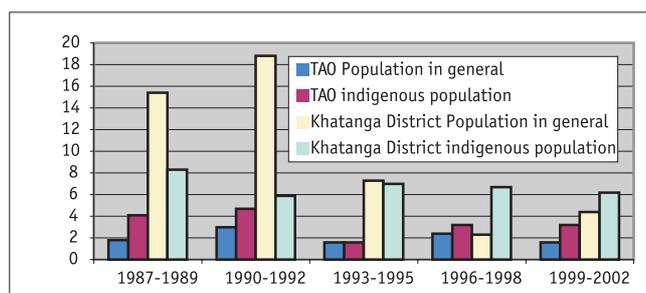


Figure 8.13. Rates of population growth (per 1000 persons) of the indigenous and general population in the TAO, and Khatanga District, 1987-2002.

8.2.2. Death rates of the indigenous population

The annual death rate in Khatanga District for both the general population and for indigenous peoples varies significantly, due to the small size of the community

(Figure 8.14). However their levels are within the range of annual rates for the total TAO population and for the indigenous population in this Okrug. During the period of study, the death rate of indigenous people in the TAO, who represent 18% of the population of the TAO, was twice as high as that of the general population.

The death rate for the total population in Khatanga District over the period 1987–2001, on average, differed only slightly from the rate for the indigenous population (Figure 8.14). As the indigenous population constitutes only 28% of the total population of the district, this suggests that the death rate of the new migrant population is similar to that of the indigenous population.

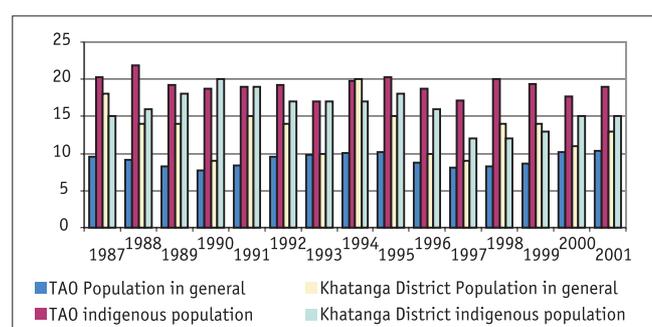


Figure 8.14. Death rates, per 1000 persons, of the indigenous and total population of the TAO, and Khatanga District, 1987–2001

Assessment of infant mortality (Table 8.7) shows similar death rates of indigenous children living in Khatanga District and indigenous children in TAO. However infant mortality rates among general population in Khatanga District and TAO are 1.5 times lower than among natives. Assessment of the health status of the new migrant population is beyond the scope of this project. However any further research in this area should also consider the state of health of the new migrant population of Khatanga.

Data in Table 8.8 shows the changes in causes of death over the last 15 years for the indigenous population and for the total TAO population. The ranking of the main categories of disease, as reflected by the death rate, has changed over time.

Table 8.8.

Death rate, per 1000 people, for the indigenous and (in parentheses) total population of the TAO, 1983–1997.

*the period is limited to pre-1997 due to the introduction of a new form of Russian Passport, which no longer identifies the 'ethnicity' of the holder. Medical death certificates and the Civil Registry Act are now based on the information contained in the passport.

Type	Diseases	1983–1987		1988–1992		1993–1997*	
		Rate	Rank	Rate	Rank	Rate	Rank
I	Infectious Diseases	0.15 (0.05)	7 (7)	0.11 (0.07)	8 (7)	0.17 (0.06)	8 (8)
IX	Blood Circulation Diseases	2.1 (2.5)	3 (1)	2.3 (3.7)	2 (1)	3.8 (3.4)	1 (1)
II	Neoplasms	2.5 (0.4)	2 (5)	2.1 (0.5)	3 (5)	1.7 (0.8)	3 (4)
X	Respiratory Diseases	0.8 (0.7)	6 (4)	1.3 (0.5)	6 (5)	1.0 (0.7)	5 (5)
XI	Diseases of Digestive System	0.13 (0.12)	8 (6)	0.17 (0.11)	7 (6)	0.22 (0.15)	7 (7)
XIX+XX excl. X60-X84 and X51	Traumas and poisonings	3.3 (2.3)	1 (2)	2.7 (1.7)	1 (2)	2.8 (1.8)	2 (2)
X51	Alcoholic Intoxication	1.7 (1.8)	4 (3)	1.6 (1.5)	5 (3)	1.3 (1.0)	4 (3)
X60-X84	Suicides	1.6 (0.7)	5 (4)	1.8 (0.8)	4 (4)	0.8 (0.5)	6 (6)

Area	1994	1995	1996	1997	1998	1999	2000	2001	2002
General TAO population	21.5	28.2	22.6	13.6	13.4	13.0	19.7	21.6	20.3
TAO - indigenous population	29.6	39.5	31.1	28.7	32.2	30.0	24.5	31.3	33.5
Khatanga District-general population	33.4	55.3	26.2	22.7	18.7	15.7	26.5	33.8	37.5
Khatanga District-indigenous population	35.8	47.7	40.1	31.3	36.5	42.2	42.7	58.3	40.4

Table 8.7. Infant mortality, rate per 1000 live-born, in the TAO and Khatanga District, 1996–2002.

In the period 1983–1987 the ranking of disease categories for the indigenous population of the TAO was as follows: traumas and poisonings, neoplasms, blood circulation diseases, infectious and parasitic diseases and diseases of digestive system. In the following five years, diseases associated with 'western civilization', such as blood circulation pathologies, became more important, while neoplasms, and traumas and poisoning were lower in the ranking. Alcoholic intoxication and suicides continued to be more frequent causes of death than diseases of the digestive system and respiratory organs.

The decrease in deaths of indigenous people, from cancer (an environmentally-conditioned pathology), can be explained by the end of endemic oesophageal cancer reported for Taymir, Yakutia and Chukotka up to 60–70s.

The TAO population as a whole (which consists of over 80% non-indigenous groups) shows a different trend. There is an increase in blood circulation diseases and cancer (which doubled in 1993–1997 compared to 1983–1987). The death rate from other causes, however, remained unchanged.

The low level of death from cancer in the TAO as a whole, compared to that of the indigenous population deserves special note. It could be explained by

the fact that the non-indigenous population are able to leave Taymir and return to their homeland for cancer treatment, and that some die there, rather than in Taymir.

8.2.3. Morbidity

There has been an ongoing growth trend in morbidity over a period of 12 years in the Khatanga District population and the TAO as a whole (Figure 8.15), and the indigenous population has been particularly affected by this change.

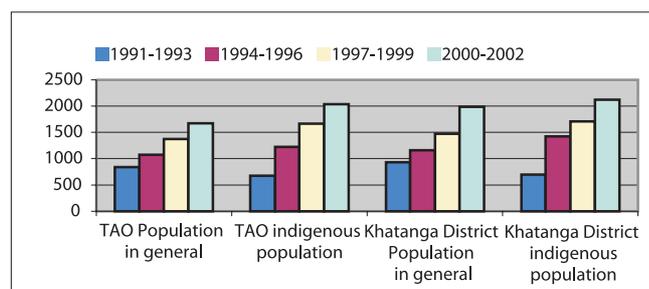


Figure 8.15. Reported morbidity, per 1000 persons, for the indigenous and general population of the TAO, and Khatanga District, 1991-2002.

Data for the last three years (Table 8.9) shows that for most types of disease, the morbidity rate of the indigenous population is higher than that of the population in general. This does not, however, apply to blood or endocrine disorders, blood circulation problems, or eye diseases.

Respiratory diseases are the most frequent health problem for all population groups, followed by diseases of the digestive system, traumas and poisonings, and diseases of the urogenital system. The high rates reported for eyes, are because applications are often made for laser correction.

Since it is more difficult for the indigenous population (which includes reindeer-breeders, hunters, etc.) to visit an ophthalmologist, reported morbidity relating to 'eye diseases' for the indigenous population is lower.

Type	Disease	2000	2001	2002
	All diseases (total)	1717.1 (2014.4)	1678.6 (2307.2)	1610.2 (1776.3)
I	Infectious and parasitic	28.9 (46.6)	44.1 (50.2)	40.2 (66.5)
II	Neoplasms	10.3 (14.6)	9.7 (13.5)	11.3 (18.7)
III	Blood	8.1 (7.3)	7.5 (5.1)	7.3 (10.5)
IV	Endocrine systems	34.3 (28.4)	27.7 (19.2)	30.8 (25.7)
V	Mental disorders	7.1 (5.6)	8.9 (12.3)	10.8 (14.6)
VI	Nervous disorders	40.7 (78.1)	36.6 (56.4)	41.0 (36.3)
VII	Eye	340.7 (226.4)	334.3 (274.1)	411.1 (237.5)
VIII	Ear	23.0 (77.5)	17.7 (39.2)	23.8 (54.8)
IX	Blood circulation	112.0 (96.4)	98.6 (75.8)	107.5 (87.1)
X	Respiratory organs	476.0 (644.2)	377.3 (534.5)	281.7 (425.3)
XI	Digestive system	76.6 (111.5)	70.2 (93.7)	87.5 (104.1)
XII	Skin and subcutaneous fibre	21.0 (52.3)	55.7 (111.8)	65.7 (88.5)
XIII	Musculoskeletal system	34.3 (42.3)	50.2 (76.2)	41.3 (64.5)
XIV	Urogenital system	87.6 (112.5)	64.4 (97.8)	86.0 (113.1)
XV	Pregnancy, birth*	8.3 (12.7)	6.2 (14.4)	10.5 (17.6)
XVI	Perinatal period	2.0 (2.5)	3.6 (4.1)	2.7 (5.2)
XVII	Congenital anomalies	7.7 (10.7)	6.9 (9.3)	10.8 (11.5)
XIX+XX	Traumas, poisonings	99.3 (159.2)	105.0 (132.3)	112.7 (170.7)

Table 8.9. Total reported morbidity, per 1000 people, for the total and (in parentheses) indigenous population of the, 2000-2002. *per 1000 women aged 15-49 years.

According to data from the Khatanga Central Hospital (Figure 8.16), the ration "primary morbidity/sickliness" is similar for TAO and Khatanga District both for general and indigenous population. Primary morbidity and sickliness are the highest among natives of Khatanga District.

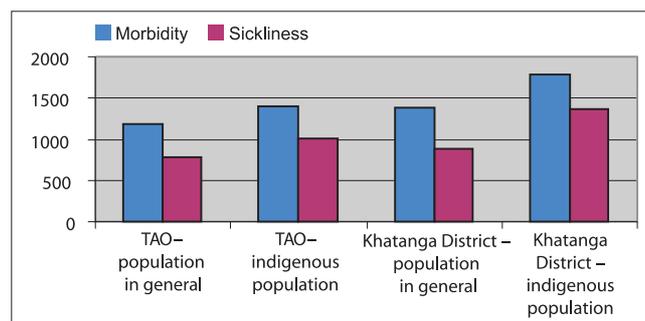


Figure 8.16. Reported sickliness, and primary morbidity for the indigenous and general population in the TAO, and Khatanga District, 1991-2002; rate per 1000 persons.

8.3. The Nenets Autonomous Okrug (NAO)

8.3.1. General demographic situation

The social and economic situation in the NAO is significantly affected by the gas and oil industry, in which, trans-national private companies are involved. Living standards in the NAO are lower than in the CAO and the TAO. The indigenous population in the NAO is officially represented only by Nenets, there being no other indigenous peoples resident there.

More than 50% of the so-called new-migrant population in the NAO consists of Russian immigrants from the Archangelsk Oblast and the Komi Republic. The new-migrants are as numerous as the Nenets, and have adopted a lifestyle largely similar to that of the indigenous population.

Figure 8.17 shows the impact of migration processes on the NAO population. During the period of economic and social changes, from 1990-1998, there was a clear reduction in the non-indigenous population, however,

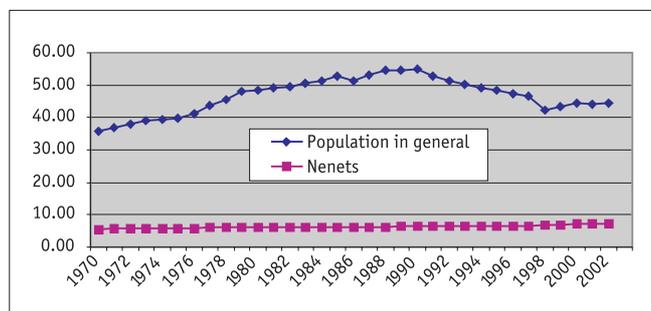


Figure 8.17. The indigenous and general population of the NAO, 1970-2002; annual average population figures in thousands.

the situation has stabilised and there is now a general trend of population growth. The indigenous population (Nenets) constitutes about 17% of the total population of the NAO and does not significantly affect either the demographic or medical statistical indices. Therefore, albeit based on certain assumptions, the authorities responsible for medical statistics in the NAO, when evaluating the health status of the indigenous population, refer to the population of the NAO in general. The age and gender structure of the Nenets population, show a clear dominance of younger age groups (Table 8.10)

Age group	Sex	Year of Census		
		1970	1979	1989
0 - 19	Both sexes	2719 (48)	2718 (45)	2505 (39)
	Men	1339 (49)	1314 (46)	1222 (40)
	Women	1380 (48)	1404 (44)	1283 (39)
20 - 39	Both sexes	1699 (30)	1868 (31)	2184 (34)
	Men	820 (30)	885 (31)	1068 (35)
	Women	879 (29)	983 (31)	1116 (33)
40 - 59	Both sexes	963 (17)	1085 (18)	1285 (20)
	Men	437 (16)	485 (17)	580 (19)
	Women	526 (17)	600 (19)	705 (20)
60 and above	Both sexes	283 (5)	360 (6)	449 (7)
	Men	136 (5)	171 (6)	183 (6)
	Women	147 (6)	189 (6)	266 (8)
Total	Both sexes	5664	6031	6423
	Men	2732	2855	3053
	Women	2932	3176	3370

Table 8.10. Age and gender distribution of the Nenets population in the NAO; number in category, and percentage of the total for the age or gender group concerned (in parentheses).

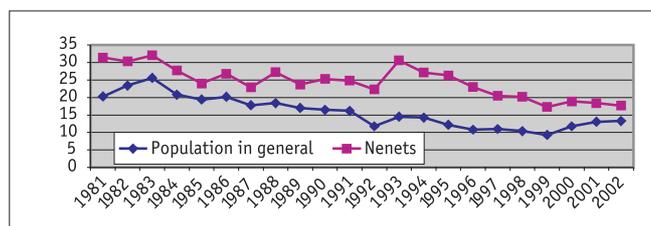


Figure 8.18. Birth rates, per 1000 persons, of the indigenous and general population of the NAO, 1970-2002.

Despite the current age structure, there is an obvious trend towards 'ageing'. Over two decades (between the censuses of 1970 and 1989), the proportion of children decreased, whilst the aged population increased, with a significant predominance of women. The 20-39 year-old age group, which is mainly responsible for reproduction within the population, constituted one third of the

total population and grew until 1989. However, despite achieving an optimal age and gender structure for reproduction, the birth rate of the Nenets population has since halved in the period 1981-2002 (see Figure 8.18). The dynamics of the birth rate for the total population of the NAO is similar, but the birth rate for this group is 30-50% lower than that of the Nenets.

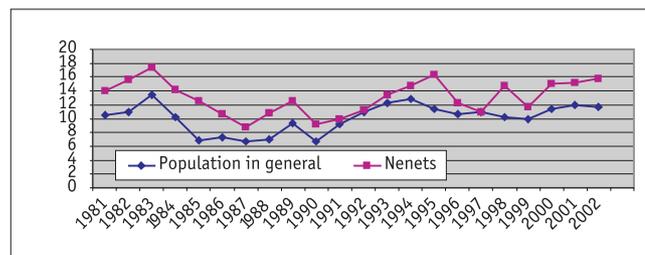


Figure 8.19. Death rates, per 1000 persons, of the indigenous and general population of the NAO, 1981-2002.

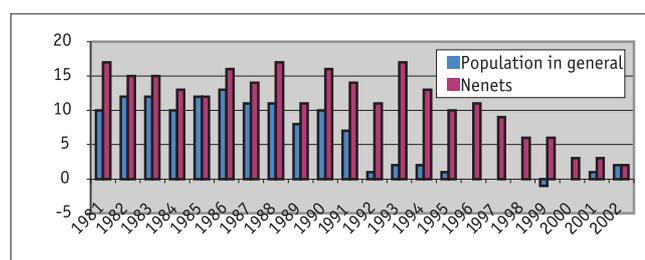


Figure 8.20. Rates of population growth (per 1000 persons) of the indigenous and general population of the NAO, 1981-2002.

Unlike the birth rate, the death rates of the total NAO population and the Nenets do not differ significantly, and even coincide for some years. (Figure 8.19). The high birth rate, together with a death rate which is not significantly above the average for the NAO, has ensured that the Nenets, unlike the total population, have seen a constant, albeit decreasing population growth since 1981 (Figure 8.20).

8.3.2. Death rates of the indigenous population

The general death rate for the total NAO population and for the Nenets in particular has varied in recent years, within the limits of the average Russian rate, however, for both groups there is a trend towards an increase in death rate since the early-1990s.

Infant mortality for both groups, by comparison, was significantly higher than the average for Russia as a whole, and for the Nenets population the rate was more than

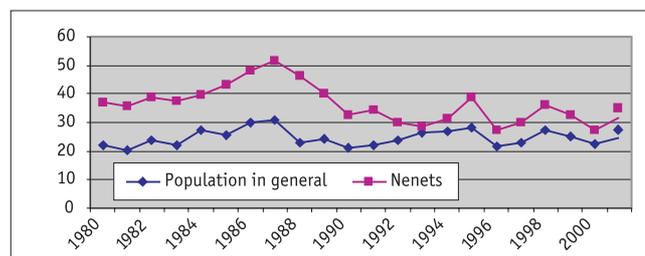


Figure 8.21. Infant mortality, per 1000 live-births, in the indigenous and general population of the NAO, 1981-2002.

twice as high (Figure 8.21). Infant mortality among the Nenets as a result of perinatal pathologies and congenital anomalies is significantly higher than infant mortality in the NAO population in general (Figure 8.22).

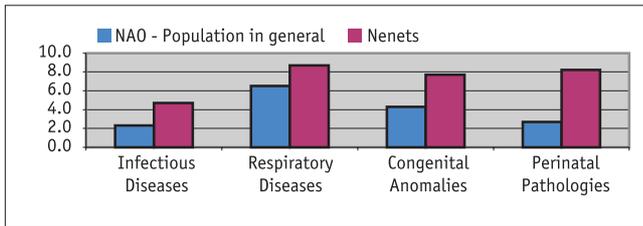
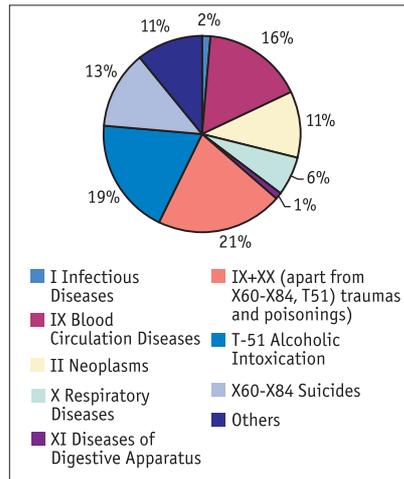


Figure 8.22. Main causes of infant mortality in the indigenous and general populations of the NAO, 1990-2002; rate per 1000 live-births.

The death rate due to respiratory diseases and infectious diseases amongst Nenets infants also exceeds that for the Okrug in general.

The causes of death in the Okrug, and especially in the Nenets population have changed significantly over the last 20 years. From 1982 to 1991, the most frequently reported causes of death for the general population in the Okrug were blood circulation diseases, followed by traumas and poisonings, and alcoholic intoxications (Table 8.11). During the same period, for the indigenous population, traumas and poisonings and alcoholic intoxication were the most frequent causes of death, while blood circulation diseases took third place in the ranking. The percentage of each of the three causes was, however, very similar (Figure 8.23). In the following 10 year period, however, causes of death among the indigenous population are very different (Figure 8.24). Blood circulation diseases caused 42%

Figure 8.23. Causes of mortality in the Nenets population of the NAO, 1982-1986; %.



of all deaths, while the percentage due to traumas and poisonings, and alcoholic intoxication were relatively unchanged (16% and 14%, respectively). Between 1997 and 2001, the number of deaths in the indigenous population caused by blood circulation diseases was 3.7 times greater than the number registered in the period 1982-1986.

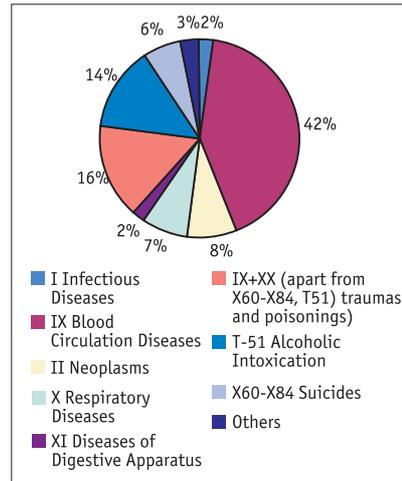


Figure 8.24. Causes of mortality in the Nenets population of the NAO, 1997-2001; %.

Over the past 20 years, along with the overall increase in death rates in both the indigenous and general NAO populations, in addition to the increase in blood circulation pathologies, these groups have also experienced more deaths from infectious diseases and diseases of the digestive system. Over the same period, the level of deaths caused by neoplasms, traumas and poisonings, alcoholic intoxication, and suicides has remained stable.

8.3.3. Morbidity

Reported morbidity levels (including those of children) show an even clearer increasing trend than that for death rate (Figures 8.25 and 8.26). Since 1994, this tendency has been stronger for the general Okrug population than for the indigenous population.

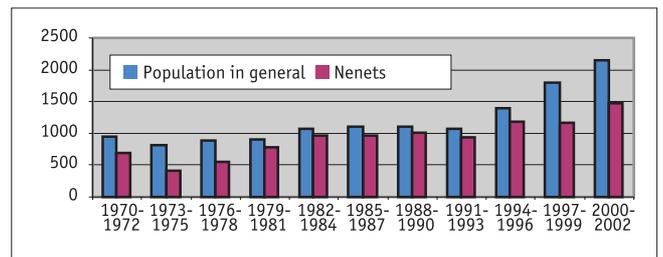


Figure 8.25. Reported morbidity, per 1000 persons, for the indigenous and general population of the NAO, 1970-2002.

Type	Diseases	1982-1986	1987-1991	1992-1996	1997-2001
I	Infectious Diseases	0.17 (0.08)	0.14 (0.05)	0.21 (0.10)	0.34 (0.18)
IX	Blood Circulation Diseases	1.80 (2.20)	2.50 (3.30)	4.00 (3.70)	6.70 (5.50)
II	Neoplasms	1.20 (1.40)	1.10 (0.90)	1.50 (1.30)	1.30 (1.10)
X	Respiratory Diseases	0.70 (0.50)	0.90 (0.70)	0.80 (0.80)	1.20 (0.70)
XI	Diseases of the Digestive System	0.11 (0.12)	0.14 (0.18)	0.22 (0.17)	0.33 (0.21)
IX+XX					
Excl. X60- X84 and T51	Traumas and poisonings	2.30 (1.50)	2.00 (1.70)	1.80 (1.10)	2.50 (2.10)
T51	Alcoholic Intoxication	2.10 (1.80)	0.70 (1.40)	1.70 (1.40)	2.20 (1.50)
X60-X84	Suicides	1.40 (0.80)	0.80 (0.50)	0.70 (1.10)	1.00 (0.70)

Table 8.11. Death rate, per 1000 people, for the Nenets and (in parentheses) total population of the NAO, 1983-2002.

Compared to 1990, by 2000-2002 there was a significant increase in reported morbidity in the indigenous population for almost all types of pathologies, in some cases by as much as a factor of five (Table 8.12). However, reported morbidity relating to infectious and parasitic diseases, mental disorders, and pathologies of the nervous system decreased.

Respiratory diseases (38%) are the commonest reported illness (Table 8.13), followed by traumas and poisonings (8%), diseases of the digestive system (7%), blood circulation, and skin problems (6%), and disease relating to the urogenital system and musculoskeletal system (5%).

8.4. Murmansk Oblast

Murmansk Oblast is the most industrially developed, militarised, and densely populated region of the Russian Far North. Indigenous peoples constitute only 0.2% of the total population, and about 50% of these reside in concentrated settlements in the Lovozero area. State statistics authorities monitor only the general demographic processes, and social and economic aspects of life of the indigenous population of Lovozero. Due to the small size of the indigenous population, the Medical Statistics Office does not report on, or assess health indices of indigenous peoples. However, Medical Research Centres in the Russian Federation and in the neighbouring Nordic countries do conduct such research under the auspices of a number of federal and international programs.

8.4.1. General demographic situation

The population of the Lovozero area amounts to 13500 people, of which 3500 live in villages, including about 1000 indigenous peoples and 1200 Komi-Izhem, whose lifestyle is similar to that of the indigenous population. The current assessment compares the demographic and medical conditions of the indigenous population and the rural population in general.

Table 8.12.

Reported morbidity, per 1000 people, of the Nenets population in the NAO. *per 1000 women aged 15-49 years.

Type	Disease	1990	2000	2001	2002
	All Diseases (total)	972.0	1390.0	1387.4	1646.4
I	Infectious and Parasitic	100.9	56.9	51.6	71.5
II	Neoplasms	4.7	10.6	10.2	13.5
III	Blood	3.4	15.6	6.1	15.5
IV	Endocrine Systems	4.6	23.7	23.3	23.5
V	Mental disorders	116.1	15.6	21.5	44.6
VI	Nervous disorders	55.7	38.1	26.8	26.4
VII	Eye	-	123.0	114.7	139.9
VIII	Ear	-	37.7	34.9	44.0
IX	Blood Circulation	30.2	76.7	88.6	85.7
X	Respiratory Organs	471.4	519.3	507.7	625.4
XI	Digestive System	25.2	98.1	102.7	114.7
XII	Skin and Subcutaneous Fibre	39.2	82.5	116.3	92.5
XIII	Musculoskeletal system	22.3	62.4	66.0	94.5
XIV	Urogenital system	19.8	76.6	71.6	83.1
XV	Pregnancy, birth*	4.2	19.9	15.5	18.1
XVI	Perinatal period	-	5.5	3.2	4.0
XVII	Congenital anomalies	2.5	11.7	12.3	14.9
XIX+XX	Traumas, poisonings	57.6	109.6	107.1	130.3

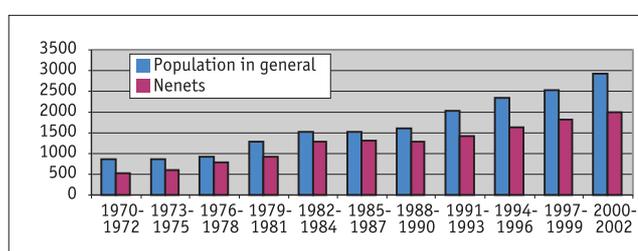


Figure 8.26. Child morbidity for the indigenous and general population of the NAO, 1970-2002; rate per 1000 persons, 0-14 years of age.

Type	Disease	1990	2000	2001	2002
	All Diseases	100	100	100	100
I	Infectious and Parasitic	10.4	4.1	3.7	4.3
II	Neoplasms	0.5	0.8	0.7	0.8
III	Blood	0.3	1.1	0.4	0.9
IV	Endocrine Systems	0.5	1.7	1.7	1.4
V	Mental disorders	11.9	1.1	1.5	2.7
VI	Nervous disorders	5.7	2.7	1.9	1.6
VII	Eye	-	8.8	8.3	8.5
VIII	Ear	-	2.7	2.5	2.0
IX	Blood Circulation	3.1	5.5	6.4	5.2
X	Respiratory Organs	48.5	37.4	36.6	37.9
XI	Digestive System	2.6	7.1	7.4	6.9
XII	Skin and Subcutaneous Fibre	4.0	5.9	8.4	5.6
XIII	Musculoskeletal system	2.3	4.5	4.8	5.7
XIV	Urogenital system	2.0	5.5	5.2	5.0
XV	Pregnancy, birth*	0.4	1.4	1.1	1.1
XVI	Perinatal period	-	0.4	0.2	0.2
XVII	Congenital anomalies	0.3	0.8	0.9	0.9
XIX+XX	Traumas, poisonings	5.9	7.9	7.7	7.9

Table 8.13. Reported morbidity, per 1000 people, of the Nenets population in the NAO as a percentage of the total morbidity.

*per 1000 women aged 15-49 years.

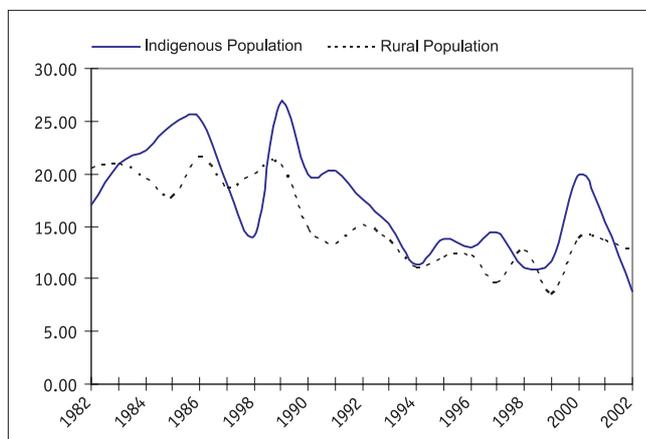


Figure 8.27. Birth rates, per 1000 persons, of the indigenous and total rural population of the Lovozero area, 1982-2002.

Table 8.14.

The indigenous population in rural areas of the Lovozero District, 2001.

Settlement	Komi	Saami	Nenets
Lovozero	867	722	53
Krasnoshchelje	255	87	64
Sosnovka	7	12	4
Kanevka	0	14	0

From 1973-1996, the general rural population varied within a range of 4500-4800 people. However, as a result of difficult economic conditions in 1997, a process of emigration began, and by 2003 the rural population totalled only 3800 people.

The indigenous peoples are represented in the area by the Saami (920 individuals) and Nenets (121 individuals) (Table 8.14). Their population has not altered significantly for several decades.

Figures 8.27 to 8.29 show the natural dynamics of the rural and indigenous populations. Birth and death rates document an apparent process of depopulation for both groups.

Age group	Sex	Year of the Census		
		1970	1979	1989
0 - 19	Both sexes	445 (43)	379 (37)	367 (34)
	Men	225 (44)	189 (37)	186 (34)
	Women	220 (42)	186 (36)	181 (33)
20 - 39	Both sexes	383 (37)	410 (40)	413 (38)
	Men	189 (37)	204 (40)	209 (38)
	Women	194 (37)	200 (39)	204 (37)
40 - 59	Both sexes	154 (15)	174 (17)	208 (19)
	Men	76 (15)	87 (17)	102 (19)
	Women	78 (15)	92 (18)	106 (19)
60 and above	Both sexes	52 (5)	61 (6)	102 (9)
	Men	21 (4)	30 (6)	46 (9)
	Women	31 (6)	36 (7)	56 (10)
Total	Both sexes	1034	1024	1090
	Men	511	510	543
	Women	523	514	547

Table 8.15. Age and gender distribution of the indigenous population of the Lovozero area; number in category, and percentage of the total for the age or gender group concerned (in parentheses).

The age and gender structure of the indigenous population (Table 8.15.) shows the dominance of younger age groups, which should potentially guarantee population growth. However, some, as yet, unidentified factors are exerting a negative impact on this process.

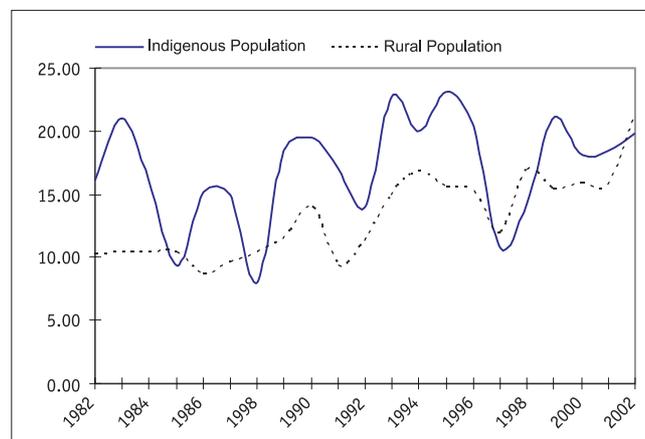


Figure 8.28. Death rates, per 1000 persons, of the indigenous and total rural population of the Lovozero area, 1982-2002.

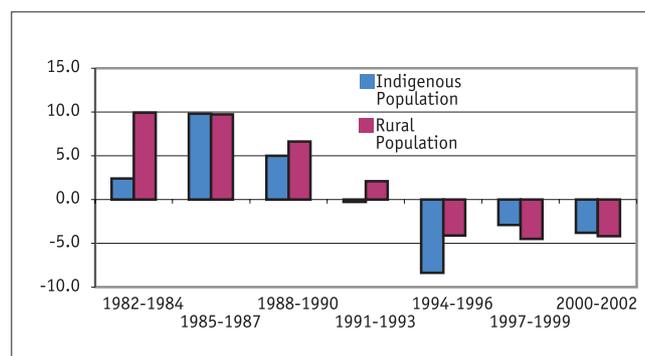


Figure 8.29. Population dynamics of the indigenous and total rural populations of the Lovozero area, 1982-2002; rate of change per 1000 persons.

The frequent scientific and medical surveys of the indigenous populations of Lovozero and Krasnoshchelje are a cause of concern for these indigenous peoples. Recently, death from cancer has become more frequent in Krasnoshchelje village. Given the attention paid by scientists to health of the indigenous population, most local people attribute this increase to the poor local environmental situation.

8.4.2. Death rates of the indigenous population

The death rates for the total rural population and the indigenous population are reasonably similar (Table 8.16). However, rates of death from blood circulation and respiratory diseases, as well as traumas and poisoning are exceptions to this situation. Blood circulation diseases are the most frequent cause of death in the total rural population, but only after 1998 did the death rate from this pathology among the indigenous population become equal to that of the total rural population. The reasons for the continuing higher frequency of deaths in the case of indigenous peoples, from respiratory diseases and external influences (such as accidents) are obvious, and include frequent overcooling and prolonged intensive physical activity in a cold environment, accompanied by the use of weapons, small boats, etc. An exception to this situation occurred, however, during the period 1993-1997, which coincided with significant changes in the economic, social and political system in Russia.

Table 8.16.

Death rates, per 1000 people, for the indigenous and (in parentheses) total rural population of the Lovozero area, 1983-2002.

Type	Death Causes	Periods of Observation			
		1983-1987	1988-1992	1993-1997	1998-2002
I	Infectious Diseases	0.13 (0.11)	0.08 (0.06)	0.10 (0.08)	0.33 (0.27)
IX	Blood Circulation Diseases	2.80 (3.10)	2.20 (3.70)	3.30 (5.80)	7.30 (7.50)
II	Neoplasms	1.40 (1.70)	1.20 (1.50)	1.00 (1.20)	1.80 (1.30)
X	Respiratory Diseases	0.50 (0.20)	0.60 (0.50)	0.40 (0.20)	0.70 (0.40)
XI	Diseases of Digestive System	0.07 (0.15)	0.12 (0.28)	0.21 (0.11)	0.12 (0.07)
XIX+XX Excl. X60-X84 and T51	Traumas and poisonings	1.70 (2.00)	1.50 (1.80)	2.60 (2.30)	3.30 (1.70)
T51	Alcoholic Intoxication	0.50 (2.20)	0.40 (2.70)	2.00 (1.40)	1.70 (1.20)
X60-X84	Suicides	0.90 (0.70)	1.20 (0.60)	0.30 (0.90)	1.10 (0.60)

8.4.3. Morbidity

Data on reported morbidity and the primary classification of pathologies in 2002 are shown in Figure 8.30 and Table 8.17. Population morbidity suggests that the indigenous peoples residing in Murmansk Oblast form an integral part of Kola population, as all three population groups when compared show similar morbidity structures.

Some discrepancies do occur between the groups being compared, in the level of morbidity from certain kinds of pathologies, as shown in Table 8.17. Thus, the frequency of diseases of the endocrine system, skin and subcutaneous fibre, as well as of infectious diseases is significantly higher in Murmansk Oblast in general than in the indigenous population. On the other hand, the indigenous population is more prone to diseases of the respiratory system, the nervous system, and trauma resulting from external factors. By comparison, the rural population of Lovozero shows intermediate values for all indices.

8.5. Conclusions

An analysis of the demographic and health status of the indigenous population in four regions of the Russian Arctic shows notable similarities between Chukotka, Taymir, Lower Pechora, and the Kola Peninsula. Despite ethno-genetic, social and economic differences, the populations of the areas studied, show generally similar population dynamics, age and gender distribution, death and birth rates, and morbidity.

Table 8.17.

Population morbidity, per 1000 people, in the Murmansk Oblast, and the Lovozero area, 2002.

*per 1000 women aged 15-49 years.

Type	Disease	Murmansk Oblast		Lovozero Area - rural population		Lovozero area - indigenous population	
		Registered	First diagnosed	Registered	First diagnosed	Registered	First diagnosed
	All Diseases (total)	1393.0	774.3	1599.6	866.3	1634.7	911.3
I	Infectious and Parasitic	63.6	46.5	35.8	24.1	32.3	20.6
II	Neoplasms	33.9	10.3	27.2	4.4	31.3	5.8
III	Blood	8.6	3.2	7.0	3.2	5.3	1.8
IV	Endocrine Systems	48.3	12.1	37.7	6.6	22.8	4.5
V	Mental disorders	40.9	6.9	53.3	3.8	66.4	5.1
VI	Nervous disorders	41.8	12.5	68.1	17.5	88.0	31.2
VII	Eye	107.0	28.9	198.8	22.0	211.7	44.8
VIII	Ear	36.5	25.1	40.6	26.9	68.9	37.1
IX	Blood Circulation	137.9	13.5	116.9	17.4	93.6	11.5
X	Respiratory Organs	387	348.7	551.9	436.9	771.7	514.4
XI	Digestive System	95.9	25.6	77.6	29.1	65.4	21.9
XII	Skin and Subcutaneous Fibre	64.3	52.8	38.9	26.8	35.5	23.3
XIII	Musculoskeletal system	112.1	36.8	84.6	49.6	114.7	66.0
XIV	Urogenital system	90.2	41.2	93.4	31.3	118.8	45.5
XV	Pregnancy, birth*	50.3	43.4	35.5	35.5	23.3	23.3
XVII	Congenital anomalies	6.2	0.8	4.0	0.6	5.6	1.3
XIX+XX	Traumas, poisonings	84.2	83.4	97.3	96.5	123.6	119.7

The financial and economic crisis of the 1990s led to massive emigration of the non-indigenous population from the Northern regions, which resulted in a reduction in the total population of some of the areas studied. At the same time, the indigenous populations of all 4 regions have not undergone significant changes over the past 10 years, these populations remaining essentially stable over the past 20-30 years.

The age structure of the indigenous populations in the regions studied, is characterized by a high percentage of young people; in all regions, age groups below 40 years constitute about 70% of the indigenous population, while those over 60 years old represent less than 10%. This is common for northern indigenous populations, where life expectancy does not exceed 50 years. Age structure in Arctic regions is affected by many factors, both internal and external; among the most important are genetic pre-conditioning, and the attrition of physical health brought about by exposure to the severe climate and lifestyle.

The birth rate of the northern indigenous peoples is higher than the average rate for the Russian Federation, however differences appear when comparing the various areas in the study. Whilst the birth rate in Chukotka has been about 15-60 births per 1000 people for the last 10 years, (compared with 8-17 for the Russian Federation), and 18-27 per 1000 for

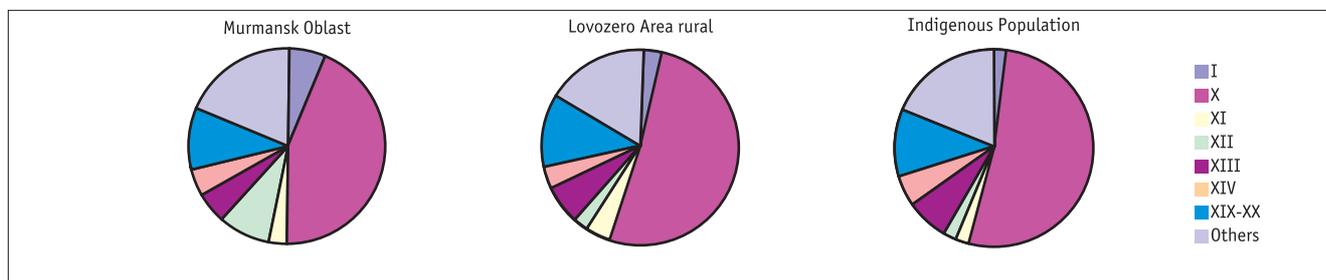


Figure 8.30. Primary morbidity of the indigenous and total rural population of the Lovozero area, and in Murmansk Oblast, 2002.

Taymir; in the Lower Pechora area, the birth rate has decreased over the past 20 years by 33% (from 30 to 20 per 1000), and in the Lovozero area by 40% (from 20-12 per 1000).

The death rate of indigenous people in the areas studied has varied between 10 and 20 per 1000 people over the past 20 years, which corresponds to the average Russian rate. Infant mortality for all areas studied was 30-60 cases per 1000 live-births, which is greater than this index for the Russian Federation as a whole (15-20 cases per 1000 live-births).

The relationship between birth and death rates has determined population growth in Chukotka and Taymir, while in the Lower Pechora area, population size remains unchanged, and is decreasing in the Lovozero area. From this perspective, the population dynamics of the Nenets people are a cause for concern, whilst the population of the Kola Saami shows a clear tendency towards extinction.

In all areas studied, 'external causes', such as traumas, accidents, and suicides, continue to be as important among the causes of death as they were 20-30 years ago. Alcoholic intoxication is, however, often the main underlying factor leading to death from other 'external causes' among the indigenous populations of the Russian North; frequent consumption of large amounts of alcohol is common in these populations. Taken together, the four above-mentioned causes of death are responsible for about 50% of all deaths in the areas studied.

Cardiovascular disease, which is the main official cause of death in the TAO and the Kola Peninsula, and the second most important in the CAO and the NAO, is also frequently related to the excessive consumption of alcohol. Respiratory diseases, and neoplasms rank below external causes and blood circulation diseases, as the most common causes of death.

The high level of cancer, seen in the indigenous populations of the Far North in the 1960-1970s (twice as high as in the USSR in general), have not been satisfactorily explained. Some researchers have associated the high level of cancer pathologies with the increased exposure to radiation experienced by reindeer-breeders, as a result of nuclear weapon testing in Novaya Zemlya.

An analysis of spatial and temporal aspects of cancer prevalence shows that in the western part of Russian Arctic (i.e. the Kola Peninsula and the NAO) deaths caused by cancer were significantly less frequent than in the eastern areas (the TAO and the CAO). Furthermore, deaths from cancer in the NAO during this period, were less frequent than in Russia as a whole. The highest indices registered were in Taymir and Yakutia, which were the areas least polluted by the radiation. An analysis of death rate dynamics due to neoplasms, shows stable levels over 30 years of monitoring for all western areas (Murmansk Oblast, the NAO, and the Republic of Komi) and also for the CAO. The gradual increase in indices in western areas corresponds to a general tendency for the development of cancer, common to all regions and to Russia in general. The dynamics in Taymir are slightly unusual, as in 1960-1975 deaths from cancer amongst the indigenous population exceeded the average Russian rate by 3.5-4 times, while in 1975-1980s, the indices suddenly halved.

Deaths from cancer in the areas studied, were mainly caused by tumours in the oesophagus, stomach, and lungs. These three types accounted for more than 80% of deaths caused by neoplasms in 1960 in the Lovozero area, and for more than 60% in the NAO. By the end of 1980s, these figures were 40% and 50%, respectively. Oesophageal growths were, until 1980, the local 'Northern pathology'. In the 1960s, nearly one half of all tumours among reindeer-breeders in the Lovozero area were in the oesophagus. By the late-1980s, this percentage had reduced by nearly 5%. In the NAO, the percentage of oesophageal growths has remained relatively stable over the 30 years of monitoring, at 15-30%. Today, oesophageal cancer occurs only occasionally, both in Northern areas and in the Russian Federation in general.

Morbidity and sickliness among the indigenous population is typical for the areas studied. Prevailing diseases are respiratory diseases (up to 30-40% of all diseases), traumas, eye diseases, cardiovascular pathologies, and diseases of the digestive system and of the urogenital system.

An increase in sickliness (reported morbidity) is common for all areas studied, and can be attributed to a number of factors, including greater awareness and accessibility to medical treatment.