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MORTALITY TRENDS BY CAUSES OF DEATH IN THE REPUBLIC OF MOLDOVA, 1965-2020

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The monograph examaines cause-specific mortality trends in Moldova in 1965-2020. The analysis is based on the reconstructed time series of deaths after mortality and population adjustments. The reconstructed mortality series are available and regularly updated in the Human Cause-of-Death Database https://www.causesofdeath.org. Several statistical annexes to the monograph are available, including online (https://github.com/PeninaOlga). The monograph is published within Project 21.00208.8007.02/PD "Socio-demographic and regional mortality disparities in the Republic of Moldova".

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INTRODUCTION

This monograph examines cause-specific mortality trends in the Republic of Moldova over the past 55 years. The Republic of Moldova, also known as *Moldavia* during the Soviet era, is landlocked between Romania and Ukraine with a population of fewer than three million[1] people. Moldova's history is very complex and at times delicate. Over the last two centuries, the borders of the country have changed a few times. Between 1812 and 1918, the part of Moldova situated between the Prut and Dniester rivers, historically named Bessarabia, was a province of the Russian Empire. Then, between 1918 and 1940, Bessarabia became part of Romania, but in 1940, this area was annexed by the Soviet Union as the Moldavian Soviet Socialist Republic. After the Second World War, the Soviet Republic was created by joining most of Bessarabia with a part of the Moldavian Autonomous Soviet Socialist Republic, the so-called Transnistrian region, established in the early 1920s by the Soviet Government on the territory of Ukraine. At the same time, the Soviet government gave Ukraine large areas of land in the southern territories of Bessarabia, pushing Moldova off the northern shore of the Black Sea. After the break-up of the Soviet Union in 1991, the Republic of Moldova became an independent state. A year earlier, Transnistria declared its independence, which is not recognised by the Moldovan official authorities. So far, the country remains split in two because of the unresolved problem of the Transnistrian region.

Apart from favourable agricultural conditions, the country has virtually no natural productive resources and depends on imports for nearly all of its raw materials, including energy. The country's domestic market is so small that its economic development is driven entirely by international trade. During the Soviet era, Moldova sent its agricultural products to the markets of the Soviet Union and in turn received subsidised energy imports (Hensel and Gudim, 2004). The disintegration of the Soviet Union caused

[1] Excluding the Transnistrian region with a population of half a million.

a sudden break-up of these commercial links and Moldova's economy immediately entered a serious social and economic crisis characterized by a huge decline in income, increasing income differentiation, lower expenditure and consumption, growing poverty, and a marked deterioration in nutrition (Keune and Orlova, 1999). Despite the relative economic growth since 2000, Moldova is the poorest country in Europe and the problem of poverty remains acute, in particular in rural areas. The decline in living standards since independence has led to a significant exodus of workers, mainly to Russia and Italy, which continues until now. Remittances sent solely through official channels account for 27 per cent of the country's total GDP (Cuc and Ruggiero, 2006). The aim of the monograph is to analyse changes in the health of the Moldovan population through the prism of cause-specific mortality trends. We want to understand the reasons behind the severe health crisis that hit this country like many other former Soviet republics in the mid-1960s of the last century. The results of our analysis covering the period 1965-2020 depend to a great extent on the availability and quality of statistical data. Soviet government structures constantly interfered in the process of collecting the statistical data on population, published them incomplete Soviet governmental structures have constantly interfered with the process of collecting statistical data on the population, published incomplete data and even sometimes falsified official publications (Tolts, 2004). Only when Mikhail Gorbachev launched glasnost and perestroika in the late 1980s was the secret label removed and researchers were able to access the rich archives of statistical offices. Thanks to a very fruitful collaboration between the French and Russian demographers, it has been possible to photocopy the original manuscripts on mortality data by cause of death classified under a special Soviet Classification tabulated by the Central Statistical Administration (TCSU) of the USSR for the period 1959-1990. In the early 1990s, these data were computerised and verified at the French Institute for Demographic Studies or INED for each former Soviet republic, including Moldova.

Although the quality of the data for Moldova is somewhat more problematic than for the other republics of the European part of the Soviet

Union, we have analysed these issues in detail and provided the relevant correction methods. Another major methodological problem concerns the compatibility of death series by cause over time, which is complicated by periodic changes in classification. The Soviets used their classification, albeit based on the International Classification of Causes of Diseases and Causes of Death (ICD), which was revised several times. Then, after the break of the USSR, many former Soviet republics, Moldova in particular, adopted the ICD. To quantify the disruptions in the time series of deaths, statistical offices in some countries practice a double classification of causes of death during one or two years of transition. This so-called "bridge coding" makes it possible to use the observed transition coefficients to redistribute the deaths classified according to the items of an old classification among the items of a new one. In the former Soviet republics, such a double classification was never produced and the only way to ensure the consistency of cause-of-death series over time is to apply a method of reconstruction proposed by Jacques Vallin and France Meslé. Originally, this method was developed for the French data to reconstruct the time series under the detailed ICD-8 list from 1925 to 1978 (Vallin and Mesle, 1988; Vallin and Meslé, 1988) and extended up to the early 1990s under the detailed ICD-9 list (Meslé and Vallin, 1996; Vallin and Mesle, 1998). Then, the method was successfully applied to several countries. A first attempt was made at the level of the entire Soviet Union for the period 1970-87 (Meslé, Shkolnikov and Vallin, 1992). Next, reconstruction works were undertaken for individual republics of the Soviet Union (Russia, Ukraine, the Baltic countries, Belarus, Armenia, and Georgia), and then to other European countries (the Czech Republic, Western and Eastern Germany, Poland, Romania, Spain, the United Kingdom), and finally non-European countries (Japan, the USA).

For the countries of the former USSR, the mortality series and first analyses for Russia were published in the INED series of *Données statistiques* for the period 1965-1994 (Meslé et al., 1996), while complementary analyses were published in *Population* (Shkolnikov, Meslé and Vallin, 1996a, 1996b). For Russia, mortality series were also extended to the early

1950s (Meslé France et al., 2003). Next, the Ukrainian time series of causes of death were analysed for the period 1965-2004 (Meslé and Vallin, 2003, 2012). Reconstructed mortality series have also been published for Belarus (Grigoriev, Meslé and Vallin, 2012). An INED book on mortality in the Baltic countries will soon be published, whereas several articles on the Caucasian countries have been published (Duthé et al., 2010; Yeganyan et al., 2001). Finally, reconstructed time series of cause-specific mortality for 16 developed countries, including Moldova, are available in the Human Cause-of-Death Database (https://www.causesofdeath.org), a joint project of INED and the Max Planck Institute for Demographic Research.

This monograph focuses on cause-specific mortality trends in Moldova for the period 1965-2020 and consists of five chapters. The first chapter examines trends in mortality by sex and age in Moldova since the end of the 1950s. As a first step, the death registration system is descrybed, both during the Soviet period and after independence. Second, the quality of mortality data, particularly for infants and the elderly, and population data are examined and methods for correcting incomplete data are presented. Finally, the effect of adjustments to life expectancy at birth and trends in mortality by age is shown. The second chapter provides a brief description of the past and present cause-of-death registration system in Moldova. This chapter also gives the reader an idea of the data collected for this study and some of the issues regarding the quality of mortality data by cause. The third chapter presents the method of reconstruction of mortality series for Moldova using specific examples. In the fourth chapter, the reconstructed mortality trends by sex, age, and major groups of causes of death are analysed and compared with Ukrainian trends. The fifth chapter provides a description of mortality trends by sex, age, and detailed causes of death. Each chapter concludes with a summary of the key findings. General conclusions and annexes are provided at the end of the monograph.

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CHAPTER I. HALF-CENTURY EVOLUTION OF SEX- AND AGE-SPECIFIC MORTALITY

This chapter focuses on the evolution of mortality trends by age and sex in the second half of the 20th century in Moldova. First, a short description of the system of death registration during the Soviet period and after independence is presented. Next, we discuss the quality of mortality estimates, notable for infant mortality and old-age mortality. Methods for correction of an incomplete death registration are developed, with particular emphasis on the reliability of official population estimates. Lastly, the effect of mortality adjustments on life expectancy at birth is demonstrated and trends in mortality by sex and age are discussed.

1. The history of the death registration system

In the 19th century, when Moldova (Bessarabia) was a province of the Russian Empire, deaths, as well as baptisms and marriages, were registered by the church in special parish registers which up to now are preserved in the National Archives of Moldova and represent a rich source for genealogical research[2]. When the Moldovan territory belonged to Romania from 1918 to 1940, the death registration system gradually became the same as in that country. In 1928, the Romanian Civil Status Law was adopted (Parlament of Romania, 1928), and from there, vital records were registered by the civil status officer [*ofițerul stării civile*] either at the district civil registration office [*oficiul stării civile*] or at the level of *primaria* of the administrative-territorial unit where the death occurred. The Moldavian Soviet Socialist Republic created in 1940 adopted the Soviet death registration system, but the latter itself was replaced by new rules when Moldova became independent of the former USSR. Here, a description of the death registration system is given separately for the Soviet period (since 1945) and the period of independence proclaimed in 1991.

[2] The earliest church records in Moldova date back to 1810 (Corlăteanu-Granciuc, 2008).

A. During the Soviet period

In the Soviet Union, the rules for recording vital events were established after the 1917 Revolution following the transfer of the church's registration functions to specially established units named ZAGS [*Zapis' aktov grazhdanskogo sostoiania*, Registry of Acts of Civil Status]. ZAGS is the district administrative office responsible for recording births, deaths, marriages, divorces, and other acts related to the legal status of family members (Andreev, Scherbov and Willekens, 1995).

The death must be recorded no later than three days after the event. After a death, the deceased's relatives or any other person close to the deceased must obtain a medical death certificate from the responsible medical institution and present it to the ZAGS. In exchange, the deceased's relatives receive a civil death certificate that serves as both a burial permit and a legal document for inheritance purposes. The ZAGS then transmits the medical death certificate to the regional statistical office.

In the Soviet Union, besides a medical doctor, the death could also be confirmed by a medical assistant named *feldsher*[3], but only in cases where the forensic medical examination is not required (violent death or suspicion of death, death of a child out of the medical unit, abortion performed out of the medical unit, and some other cases). The certificate issued by a doctor is referred to as a medical certificate of death [*vrachebnoe svidetelstvo o smerti*], and the certificate issued by a feldsher is known as a feldsher certificate of death [*feldsherskaya spravka o smerti*]. As far as we know, the Ministry of Health and the TCSU of the Soviet Union issued three orders concerning the approval of the death certificate: in 1954 (Ministry of Health of USSR, 1954), 1966 (Ministry of Health of USSR, 1966), and 1984 (TCSU of USSR, 1984).

A special certificate of perinatal death (stillbirths after 28 weeks of gestation and deaths among children aged 0-6 days) was adopted in the USSR in September 1973 (Ministry of Health of USSR, 1973). This is referred to as a perinatal death certificate [*svidetelstvo o perinatalinoi*

[3] The intermediate position between the nurse and the doctor.

smerti]. Generally, a case of perinatal death was certified by a medical doctor, including in rural areas if there were at least two doctors. However, if in a rural area, there was only one doctor or in case of absence, a feldsher or midwife who assisted delivery or treated an ill child could certify a perinatal death. During the Soviet period, the perinatal death certificate was issued in 1974 and related instructions were revised in 1984. At ZAGS, sillbirths were recorded based on the perinatal death certificate, whereas deaths occurring within the first six days of birth were recorded based on the medical birth certificate and the perinatal death certificate.[4] It is important to note that the introduction of the perinatal death certificate in 1974 was accompanied by an increase in infant mortality that varied from one republic to republic. In the case of Moldova, there was a significant increase in infant deaths a year earlier, in 1973, which will be discussed in detail later (Chapter I, section 3A).

Three forms of the death certificate issued either by a medical doctor or a feldsher were distinguished in the Soviets: "final", "preliminary" and "instead of preliminary". The last two forms were used when death was unclear and it took more time to complete the final post-mortem diagnosis. The same three options applied to the perinatal death certificate as well.

In addition to a civil death certificate, ZAGS issued a death record for administrative and statistical purposes. This form, known as a civil status act [*akt grazhdanskogo sostoiania*], was made up of two identical copies[5]. The first copy of a death record was retained in ZAGS, while the second copy was regularly forwarded to the district statistical office for data processing (with a medical/feldsher/perinatal death certificate). In Soviet Moldova, the processing of second copies of civil status forms was centralized and produced at the national statistical office called the Central Statistical Administration (TCSU, *Tsentral'noe statisticheskoe upravlenie*) of

[4] Before the introduction of the perinatal death certificate in 1974, stillbirths were registered based on a special stillbirth certificate (adopted in 1966), while early neonatal deaths were registered on the basis of a medical death certificate or feldsher death certificate.

[5] The procedure of making two identical copies of a civil status act was adopted in the Soviets in 1926 (Jones and Grupp, 1987).

the MSSR[6]. Every year, the TCSU of the MSSR compiled different statistical forms on the basis of second copies of civil status forms and death certificates in accordance with the instructions drawn up by the TCSU of the USSR. Medical/feldsher and perinatal death certificates were used to codify causes of death and to produce special statistical tables on causes of death, a detailed description of which can be found in Chapter II.

The TCSU of the USSR made different attempts to overcome the problem of under-registration of vital events such as births and deaths, which in some regions of the USSR, particularly in Central Asia and the Caucasus countries, was very important. The central statistical offices carried out annual *control checks* on the completeness of death and birth registration. Their history starts in 1933 when in the North Caucasus, the first control check took place at the initiative of the local authorities. However, a single concept of control checks in the Soviets was accepted only after 1948, and it varied according to the type of area (urban or rural) (Kharkova, 2006). The procedure was as follows. In urban areas, individual birth and death records were collected in maternity units or hospitals, while in rural areas, they were retrieved from household registers [*pohozeaistvennaia kniga*]. These records were then compared with the corresponding civil status forms from ZAGS. Usually, 10% of villages were randomly selected for one control check, but in some republics, this proportion was increased up to 20% (TCSU of USSR, 1971).[7] The villages were selected according to the special instructions of the TCSU of the USSR, which could change from year to year.[8] In rural areas, the

[6] Moldavian Soviet Socialist Republic.

[7] The following republics used 10% sample: Ukraine, Belarus, Lithuania, Moldova, Latvia, Estonia, and Russia (with a few exceptions for Russia).

[8] The sampling method for selecting the villages to be checked was as follows. The list of regions was initially prepared in alphabetic order. After that, the villages in each region were organized in alphabetic order. Finally, all the villages were enumerated independently of the region of which they were part (TCSU of USSR, 1971). The selection of the villages on this list differed annually, according to the instructions given by the TCSU of the USSR. For example, in 1974, in the Soviet republics where a 10% sample had to be taken, villages with numbers ending in 3 (3, 13, 23 etc.) were selected, while in the republics with a 20% sample, villages with numbers ending in 3 or 4 (3, 4, 13, 14 etc.) had to be checked (TCSU of USSR, 1974).

completeness of birth and death registration was checked for one calendar year, while in urban areas, it was only for the last quarter of the year.

TABLE I.1. – Results of an official check on the completeness of births and death registration in 1971, Moldavian SSR

a) Rural areas (number of villages = 73)

Records registered in household register			**Records not registered by ZAGS**		
Births	Total deaths	Infant deaths	Births	Total deaths	Infant deaths
5172	2171	114	11 (*0.2%*)	7 (*0.3%*)	3 (*2.6%*)

b) Urban areas (number of medical units = 42)

Records registered by medical units			**Records not registered by ZAGS**					
Births	Total deaths	Infant deaths	Births		Deaths		Deaths under one year old	
			Local residents	Foreigners	Local residents	Foreigners	Local residents	Foreigners
5865	972	146	56 (*1.0%*)	301 (*5.1%*)	6 (*0.6%*)	47 (*4.8%*)	2 (*1.4%*)	8 (*5.5%*)

Source: TCSU of MSSR, 1972

Table I.1 presents the results of an annual check carried out in Moldova in 1971 (TCSU of MSSR, 1972). These data indicate that in urban areas, only 6% of births, 5.5% of deaths, and 6.8% of infant deaths were not recorded by ZAGS. Most unregistered records were assigned to foreigners, while under-registration of vital events among the residents was much less important. Unfortunately, no explanation on the origin of these foreigners in urban areas (whether they are from rural areas or other republics) is given in the corresponding documents we were able to find in the Moldovan archives. At the same time, monitoring in rural areas revealed virtually no unregistered deaths. As it will be shown later, the true degree of under-registration of infant deaths in the country prior to the mid-1970s is much more serious than the situation described by these official checks, especially in rural areas. According to our estimates, the percentage of non-

registered infant deaths in Moldova in 1971 is 42% in rural areas and 33% in urban areas (Chapter I, section 3A). Admittedly, official correction coefficients are useless when assessing infant mortality data. It is necessary to find another approach to overcome this problem.

B. After independence

After declaring independence in 1991, the death registration system has not changed substantially. However, there have been important changes in the way vital statistics are managed, such as the establishment of the State Register of Population in the mid-1990s (Government of the Republic of Moldova, 2002). The Centre for State Information Resources "Registru" (SE CSIR "Registru"), subordinate to the Ministry of Information Technology and Communication (MITC), is responsible for maintaining the State Population Register (SPR). The SPR provides information on all Moldovan citizens and foreign citizens and stateless persons residing in Moldova on a permanent or temporary basis. Personal data in the SPR are linked by a personal identification number (IDNP). The IDNP consists of 13 numbers and is assigned to any individual on the first record: at birth, when the identification document is issued for the first time, at the first crossing (in the case of foreigners) of the state border or visa preparation. The IDNP stays unchanged afterwards and is withdrawn from the SPR only if death or permanent departure (for foreigners) occurs. In addition to the National Bureau of Statistics (NBS), three ministries and their subordinate institutions contribute to the collection and processing of death certificates:

- The Ministry of Justice, which supervises the district civil registration offices;
- The Ministry of Information Technology and Communications (MITC), which oversees the Centre for State Information Resources "Registru";

- The National Agency for Public Health (NAPH)[9], which functions within the Ministry of Health and is responsible for statistics on causes of death.

The scheme of making two identical copies of civil status acts introduced by the Soviets holds true in independent Moldova. However, currently, both copies are intended solely for administrative purposes. Instead, the National Bureau of Statistics introduced four new statistical forms in 1997 called a statistical bulletin [*Buletin statistic*]: one for births (n°1), one for deaths (n°3), one for marriages (n°4), and one for divorces (n°5).[10] The death statistical bulletin is completed based on the medical death certificate and covers 17 sociodemographic variables, including the deceased's IDNP. Cause of death information is not available in the statistical form. In 2015, the NBS cancelled these forms but received direct online access to the State Register of Population (Bargan Natalia, 2016). After independence, the medical death certificate was reviewed in 1998 (Ministry of Health of Moldova, 1998) and 2004 (Ministry of Health of Moldova, Department of Statistics and Sociology, and Department of Information Technology, 2004).

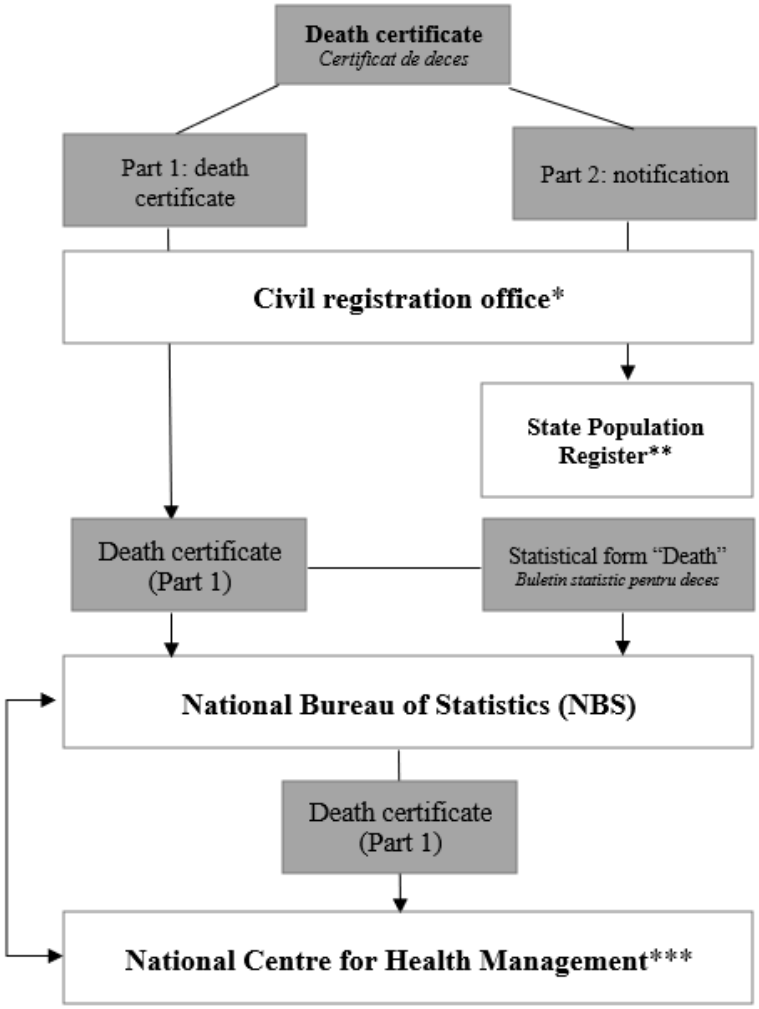
The present system of death registration functions as follows (Ministry of Health of Moldova, Department of Statistics and Sociology, and Department of Information Technology, 2004). A certified physician issues a medical death certificate after examining the body. In some cases (a death at a hospital, violent death, or suspicion of death) a forensic autopsy is compulsory. The medical death certificate, which has a serial number supplied by MITC, includes the deceased's identification number and consists of two parts. One part of the document is given to the family member of the deceased or the person who reported the death (a neighbour or physician of the medical institution where the death occurred) who must present it to the civil registration office within three days of the event in exchange for a civil death certificate. The other part of the

[9] National Centre for Health Management until 2017.
[10] The same statistical forms are used in Romania, except for form n°2 (for stillbirths).

medical death certificate (a notification) is transmitted to the civil registration office by the medical institution every 10 days of the month.

At the civil registration office, the medical death certificate submitted by the person who has reported the death and the notification received from the medical facility must be identical. If the two documents match, the death is recorded. Otherwise, the civil registration officer must inform the local authorities (i.e., the police) for investigation. This process ensures that all deaths are recorded at the civil registration office. The civil registration office sends the information relating to each "notification" to the MITC within two days for inclusion in the State Register of Population. It also transmits the medical death certificate (until 2015 with its corresponding statistical bulletin) to the NBS. Further, the NBS verifies the completeness and correctness of medical death certificates and forwards them to the National Agency for Public Health, which is in charge of coding causes of death under the 10th revision of the International Classification of Diseases and Causes of Death (ICD). The NAPH maintains a database, which includes all medical death certificates, and is also responsible for submitting aggregated statistics on causes of death to the NBS for publication and dissemination.

Figure I.1 illustrates the circulation of a medical death certificate in Moldova before 2015 and *Figure I.1a* after 2015. A different certificate referred to as the perinatal death certificate is used for all deaths occurring within six days after birth and stillbirths. The perinatal death certificate must be completed by a forensic pathologist. For each neonatal death, birth and perinatal death certificates must be recorded in the civil registration office. Since 2014, the NBS has started publishing deaths counts by the date of the event, as well as deaths counts by the date of registration. At the same time, the cause-of-death statistics produced by the NAPH and used in our analysis are based on the date of registration. The two data sources differ by 0.1%.



*Ministry of Justice
**Ministry of Information Technology and Communications
***Ministry of Health

FIGURE I.1. – Circulation of medical death certificate in Moldova from the late 1990s until 2015

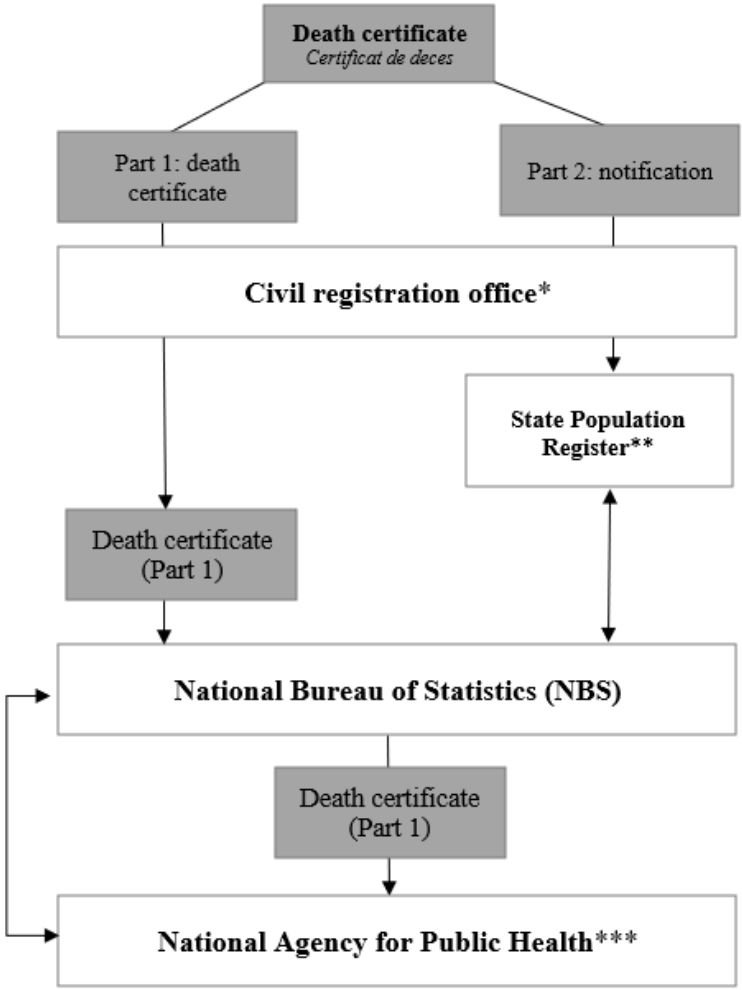


FIGURE I.1a. – Circulation of medical death certificate in Moldova since 01.01.2015

2. Correcting for population estimates

The quality of the official population of Moldova is very doubtful both during the Soviet period and after independence. In this section, we will focus on the nature of the official erroneous estimates and discuss possible methods for correcting the data. This will be carried out separately for the Soviet period and the post-independence period.

A. During the Soviet period

Following the Second World War, four censuses took place (1959, 1970, 1979 and 1989). Soviet censuses traditionally make a distinction between two types of population. The first one is the *de jure* population, i.e., the number of persons permanently resident on the given territory, including temporarily absent population. The second form refers to the *de facto* population, i.e., the number of persons present on the given territory at the census moment, including temporary residents. During the Soviet period, the difference between the *de jure* population and the *de facto* population at the time of each census was not very large due to low international migration flows in and out of Moldova.

Official annual population estimates for the Soviet period are available by five-year age group and sex for the period 1965-1990. These estimates were produced by the TCSU of the USSR and refer to *de jure* population. Population estimates for the 1980-1988 period are intercensal and consistent by age and year. However, verification of the data for the period 1965-1978 showed certain quality problems for older age groups. *Figure I.2* shows the trends in annual official estimates of the population aged 60 years and above over the period 1965-1980. Some changes in the population numbers of the elderly are fully anticipated. Thus, a decline in population numbers for the 60-64 age group in 1976-1979 reflects the decline in births during World War I. However, some changes in official population numbers appear surprising and require further consideration. For instance, in 1970, the census year, we observe a sudden decrease in the number of people aged 70 to 84 and a moderate increase in the number of people aged 60 to 69.

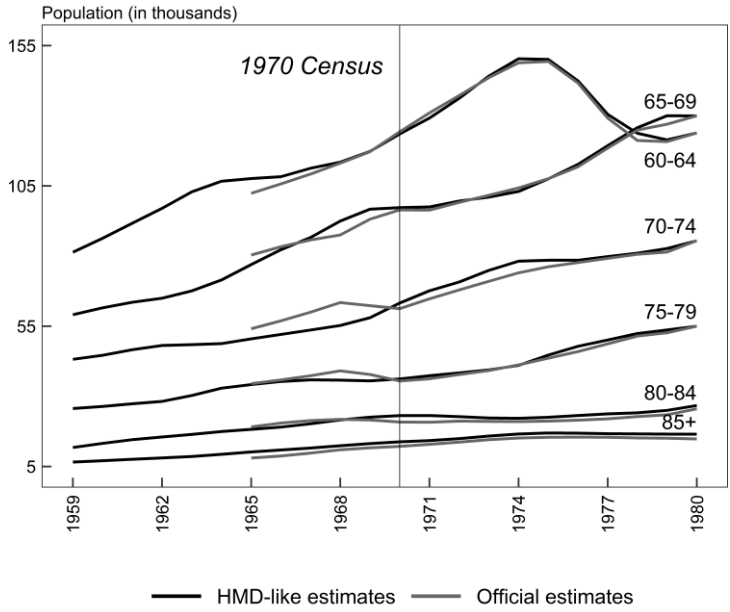


FIGURE I.2. – Official estimates (1965-1980) and HMD-like estimates (1959-1980) of the elderly population by five-year age groups, Moldova, both sexes

Source: Official estimates – unpublished TCSU of USSR archived data; HMD-like estimates – (Penina, Jdanov and Grigoriev, 2015)

At the same time, the population trend is not seriously affected at the age of more than 85. Older people may have reported their age at the time of the census more accurately in 1970 than in 1959, which probably caused these interruptions in the official population estimates. In the same figure, official population numbers contrast with estimates produced under the standard Human Mortality Database methodology (HMD-like estimates) for the period since 1959 (Penina, Jdanov and Grigoriev, 2015). The HMD-like estimates for age groups over 70 are obtained using the extinct cohort method, which is based only on deaths and does not take into account erroneous population numbers at older ages (Vincent, 1951). For Moldova, the new population trends become much more consistent over time as a result of the elimination of a sudden decline in 1970.

B. After independence

In Moldova, following independence, the first census was carried out on 5 October 2004 and the second on 12 May 2014. Unlike the four post-World War II Soviet censuses, the last two censuses did not cover Transnistria. The population of this region represents approximately half a million or 14% of the total population of Moldova. The NBS published the 2004 census results only with respect to the *de jure* population, although data on temporarily absent residents are also available with a breakdown by sex, age, and duration of absence. For the period of independence, the difference between the *de jure* population and *de facto* population is much larger than in Soviet times because of the intense migration flows. At the time of the 2004 census, the number of Moldovan residents who were absent for at least one year amounted to 130306, representing 3.9% of the total *de jure* population (National Bureau of Statistics of the Republic of Moldova, 2006). This share rose to 7.0% by the time of the 2014 census. The NBS corrected the results of the last census because of the incomplete coverage of the population, especially in the capital Chisinau where it was just 59%. Adjustments were made based on post-census survey results and data from electricity suppliers (Valcov, 2017).

The NBS up to 2019 calculated annual *de jure* population numbers which were used as denominators for all official demographic indicators. This created a systematic bias since deaths and births refer to the *de facto* population (i.e., occurred within the country), while the *de jure* population estimates also include long-term emigrants (Moldavian citizens living abroad). Furthermore, the *de jure* population figures for the period since independence are post-1989 census estimates and do not take into account the results of the 2014 census. Consequently, this numerator-denominator bias resulted in the underestimation of mortality and fertility rates (Penina, Jdanov and Grigoriev, 2015).

In 2019, the NBS published annual estimates of the usually resident population based on the 2014 adjusted census, vital statistics by date of occurrence, and individual data on migration at border crossings. The

usually resident population concept is closer to the *de facto* population and excludes long-term temporary emigrants[11]. As well, the NBS recalculated key demographic indicators based on new population estimates *(Fig. I.3).*

The accuracy of the usually resident population may be partially influenced by two important international migration issues. The first is dual citizenship for a number of Moldovan citizens, and the second is the uncontrolled border between Transnistria and Ukraine on the part of the Moldovan authorities. The NBS operates with individual border crossing records provided by the Border Guard Service as two databases. The first deals with the cases of Moldovan citizens who presented a Moldovan passport, while the second concerns foreign citizens and Moldovan citizens who presented a passport issued by another country (Moldovan citizens with dual citizenship). The Border Guard Service merged the two databases by first/last name, year/month/year of birth to identify the Moldovan citizens who crossed the border using a passport issued by another country. Furthermore, data on border crossings of Moldovan citizens living in Transnistria were identified and excluded from the database since population estimates do not cover this region. Finally, the problem of the uncontrolled frontier between Transnistria and Ukraine was also partially solved. If the two consecutive entries/exits of the same person occur (illogical itineraries), this means that a person entered/exited the country crossing the uncontrolled border. The share of these records represents less than 2% of all people involved in migration. In such a case, the approximate time spent in/out of the country is half of the time between the two illogical itineraries (Vremiș, 2019).

In this study, we use the intercensal population estimates for the periods 1959-2003 (Penina, Jdanov and Grigoriev, 2015) and 2004-2013 (Penina, unpublished), and the official estimates of the usually resident population for 2014-2020.

[11] Resident is a person who lived in Moldova for at least the last 12 months and who intends to stay in Moldova the next 12 months, not including temporary absences for holidays or work assignments (Istrati, 2019).

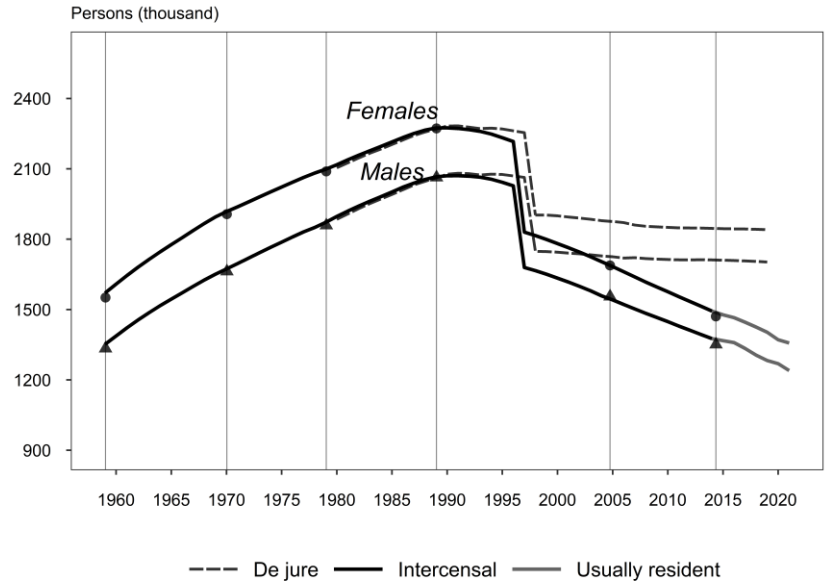


FIGURE I.3. – Population estimates in Moldova: 1981-2019 de jure population; 2014-2020 usually resident population; 1959-2013 intercensal population

Note: Vertical lines refer to the census dates: 15/01/1959, 15/01/1970, 17/01/1979, 12/01/1989, 05/10/2004 and 12/05/2014. Since 1998 official population statistics do not include the Transnistrian region.

Source: official estimates – NBS https://statistica.gov.md/; intercensal 1959-2003 estimates – (Penina, Jdanov and Grigoriev, 2015); intercensal 2004-2013 estimates – Penina (unpublished).

3. Correcting mortality estimates

A. Infant mortality[12]

This part aims at reassessing trends in infant mortality in Moldova since the Second World War. A distinction must be drawn between two types of under-estimation of infant mortality. The most important is related to a genuine under-registration of infant deaths in Moldova until the mid-1970s. The second, less crucial question, deals with the problem of

[12] The text (with some changes) and some figures (updated for the recent years) for this section are taken from the previously published paper (Penina, Meslé and Vallin, 2010)

the definition of live births and therefore the very notion of infant mortality.

a) Improved registration in the 1970s

Following the decline in infant mortality after the Second World War, which bridged much of the gap between the USSR and Western Europe, an abrupt reversal was observed in the 1970s, hastily interpreted by the West as clear proof of the failure of the Soviet system. As a result, the Soviet authorities stopped publishing detailed information on mortality from 1974. According to Petukhov and O. Nikolaev[13] (1981), this increase in infant mortality reflected changes in health strategy at the end of the 1960s, which involved the removal of certain facilities (midwives and paediatric beds in village healthcare units) from villages with a population of fewer than 700 inhabitants on the grounds that they were underused. However, if this assumption were true, the effect would likely have been evident before 1970. Nevertheless, infant mortality continued to fall in the early 1970s, and the trend reversal did not begin until 1972. Barbara Anderson and Brian Silver noted that this new increase in infant mortality was likely a result of improved registration rather than a real deterioration in newborn survival (Anderson and Silver, 1986).

As previously shown (section 1A, Chapter I), in 1974, a special certificate of perinatal death was adopted in the Soviet Union to record early neonatal deaths (0-6 days) and stillbirths. On the basis of this certificate, the Soviet Central Statistical Administration drew up a new statistical table on perinatal mortality by age and sex. This table known as Form 5d covers 45 medical causes of death. Obviously, the TCSU required more detailed information on deaths occurring in the first week of life, and civil registration offices were therefore obliged to pay more attention to the distinction between still and live births to ensure that all deaths were effectively registered. The effect of these new instructions on perinatal

[13] Cited in an unpublished document by Carlson and Bernstam referred to by Velkoff and Miller, 1995.

mortality varied from republic to republic, depending on the actual level of under-registration of infant mortality.

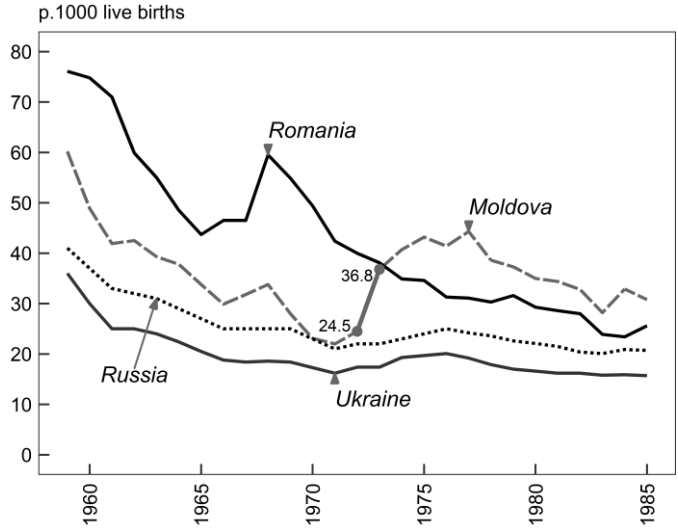


FIGURE I.4. – Infant mortality recorded in Moldova compared to those of Russia, Ukraine and Romania, 1959-1985

Source: (Penina, Meslé and Vallin, 2010)

Figure I.4 shows that compared to other European countries of the former USSR, like Russia or Ukraine, Moldova is the country where the apparent increase in infant mortality was by far the strongest, indicating that under-registration was a severe problem in that country. Comparison with Romania, where a sharp upsurge in infant mortality in 1968 is related to a sudden abortion ban (Gheţău, 1997), only highlights an implausibly low level of infant mortality in the republic before the improvements in the registration system. The sudden leap in infant mortality in Moldova in 1973 is particularly spectacular. The infant mortality rate, which stood at 24.5 per 1000 in 1972, rose by more than 50% to 36.8 per 1000. Almost 60% of the total increase observed between the minimum of 1971 (22 per 1,000) and the peak of 1975 (43.2 per 1,000) occurred in

1973 alone. This suggests that the impact of the new TCSU instructions on registration practices was strongest in that year.

Further, will focus on what happened between 1972 and 1973 to try to estimate the degree of infant mortality under-registration and to offer some methods of correction. The increase in infant mortality in 1973 was much higher in rural than in urban areas *(Fig. I.5)*. Yet this is not proof of a worsening situation due to the withdrawal of certain health facilities from villages of below 700 inhabitants but rather testifies to an improvement in registration. Indeed, the increase, though smaller, is equally manifest in urban areas, notably in 1973. Very likely, the stronger rural increase is due to simply much higher rural under-registration.

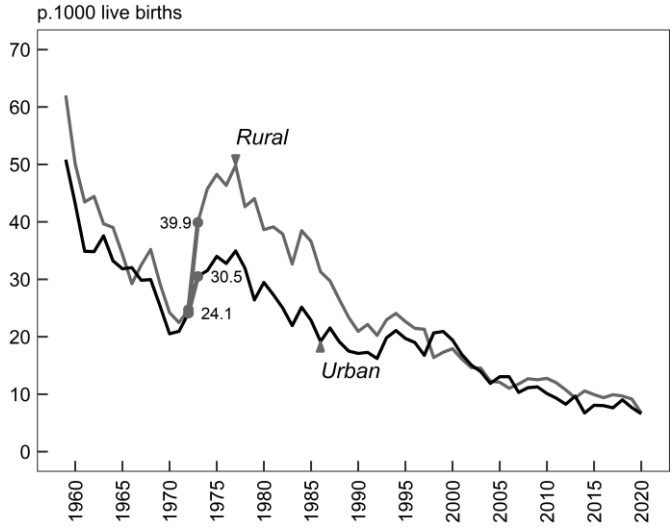


FIGURE I.5. – Rural and urban infant mortality recorded in Moldova in 1959-2020

Source: (Penina, Meslé and Vallin, 2010) updated

Improved registration produced a sharp increase in the figures for early neonatal mortality (0-6 days), whose level was similar to that of late neonatal mortality (7-27 days) in the early 1970s but leapt suddenly – by a remarkable 120% – in 1973. Late neonatal mortality also rose sharply, however (+110%). Post-neonatal mortality (4 weeks – 11 months) increased

much less than neonatal mortality in relative terms (+38%) but contributed strongly to the rise in overall infant mortality *(Fig. I.6)*. Without a doubt, the apparent increase in early neonatal mortality was due mainly to efforts by the statistical authorities to establish accurate records of mortality in the first days of life by distinguishing clearly between early neonatal and late foetal deaths. It is equally plausible that this new focus on accurate registration also had a major knock-on effect on the recording of late neonatal mortality and even to a lesser extent of post-neonatal mortality. Hence, not only did the improved recording of premature births produce an apparent increase in mortality beyond the early neonatal period, but above all, the context created by the directive on registration of early deaths had a generally beneficial effect on the registration of infant mortality which extended beyond the neonatal period.

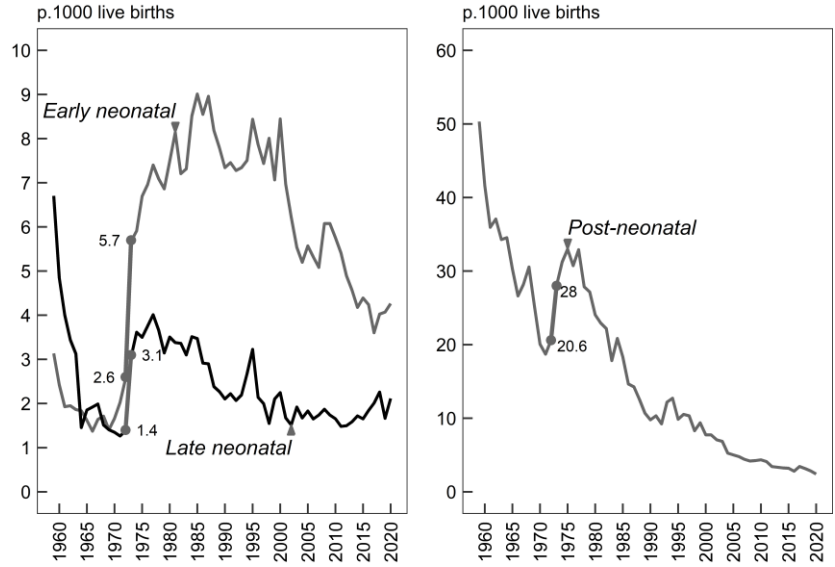


FIGURE I.6. – Early neonatal and late neonatal mortality (a), and post-neonatal mortality recorded in Moldova in 1959-2020

Source: (Penina, Meslé and Vallin, 2010) updated

Figure I.7 shows that the mortality increase observed in 1973 was much stronger in rural than in urban areas, both for neonatal mortality

(267% vs 47%) and for post-neonatal mortality (44% vs 17%). As a result, the urban-rural gap in neonatal mortality has since become much narrower (rural neonatal mortality was curiously much lower than urban neonatal mortality before 1973). The fact that, nevertheless, a gap remains could be interpreted as a sign of underestimation that persisted well beyond 1973. In fact, neonatal mortality continued to increase very sharply in rural areas until 1985, while in urban areas it started falling again from 1978. The low rural neonatal mortality still recorded today may no longer be a sign of under-registration, however, since it is likely that rural women with high-risk pregnancies (and hence with a higher risk of neonatal mortality) more often give birth in a town or city, especially now that there are fewer health facilities in small villages.

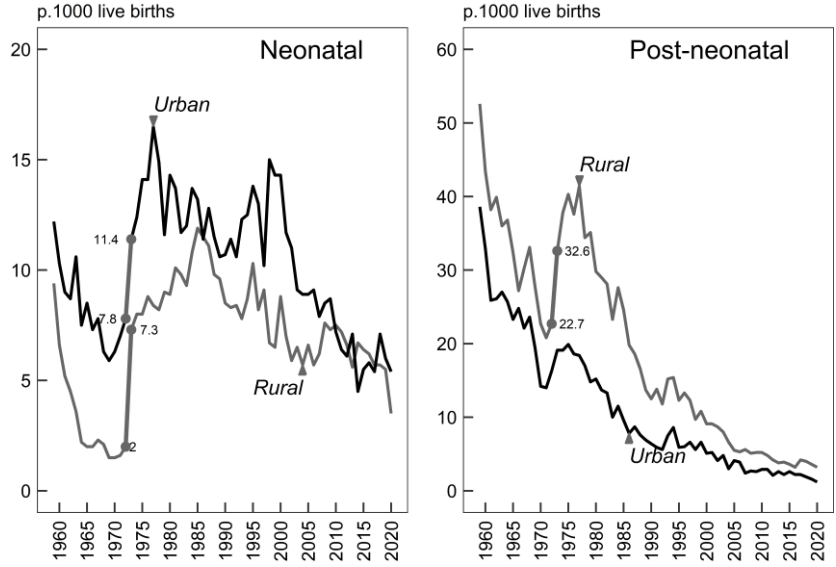


FIGURE I.7. – Rural and urban neonatal mortality and post-neonatal mortality recorded in Moldova in 1959-2020

Source: (Penina, Meslé and Vallin, 2010) updated

Last, the registration of stillbirths increased considerably over the same period, in rural areas especially. Contrary to the situation observed in certain western European countries, improved registration of neonatal

deaths is not simply the result of a category transfer. This shows clearly that the problem arose not from poor knowledge of the distinction between stillbirths and infants born alive, but rather from indifference to the under-registration of deaths at early ages.

b) Correcting for under-registration before 1973

To re-estimate infant mortality in the countries of the former Soviet Union, Ward Kingkade and Cheryl Sawyer (2001) used mortality at ages 4-9 months to correct mortality at 0-3 months (Kingkade and Sawyer, 2001). Apart from the fact that their adjustments for Moldova only cover the years after 1988, by which time the problem examined here was no longer an issue, we believe that the method used is inappropriate, given that changes in registration practice introduced in the mid-1970s clearly also concerned post-neonatal mortality as a whole and not simply mortality at the very youngest ages. Rather than applying a theoretical coefficient of mortality structure by age, we prefer to focus more pragmatically on the size of the 1972-1974 upsurge to estimate the effect of changes in practice on registration.

We cannot assume without the risk that the totality of this increase is due to improved registration. Despite the many arguments in favour of this assumption, it would be imprudent to totally refuse the thesis of a genuine upsurge in infant mortality in the early 1970s (Davis and Feshback, 1980). However, we have no obvious means to distinguish between the actual mortality increase and the apparent increase due to improved registration. We, therefore, chose a minimal adjustment option, which takes account solely of the sudden improvement observed in 1973 while excluding the more moderate increase during the subsequent years. In doing so, we perhaps over-correct for 1973, when the actual rise in infant mortality may already have begun, and under-correct for 1974 and 1975, when registration may have continued to improve.

To re-estimate infant mortality in the years preceding 1973 by attributing the sudden rise in 1973 to improved registration, we distinguished between neonatal and post-neonatal deaths on the one hand, and between

rural and urban contexts on the other, so that the enormous differences observed between these four categories could be taken into account.

Two different methods can be used. The most "natural" method is to reason in terms of the under-registration rate. We consider that the relative increase in the number of deaths observed between 1972 and 1973 corresponds to this rate and we apply it to the numbers of deaths observed in each previous year, based on the assumption that under-registration was constant. However, while such a procedure works well for post-neonatal mortality, it is less obviously the right choice for neonatal mortality. The number of post-neonatal deaths depends entirely on the health conditions of the time and it is reasonable to believe that the number of missing deaths is directly linked to the number of reported ones. It might, at a stretch, even become more than proportional as we go back in time, assuming that registration improvements were already underway before the reform. Neonatal mortality, on the other hand, is only partly dependent on the health conditions of the time. It is also largely governed by the proportion of fragile newborns who were unlikely to survive. At a time when pregnancy monitoring and perinatal medicine were still not widely available, this proportion must have been partly independent of health conditions.

In fact, *Figure I.8 (A)* shows that if we applied a constant under-registration rate, we would obtain rural neonatal death rates of more than 200 per 1,000 in the early 1950s, and even 350 per 1,000 in 1945, a level which has never been observed anywhere.

Another approach involves applying the absolute difference observed between the 1972 and 1973 rates to all the previous years. This probably leads to the under-estimation of under-registration that increases as we go backwards in time, but the error is certainly smaller, at least in rural areas. So, we chose this method for neonatal mortality, preferring to make a minimum adjustment rather than over-correct the existing data. In urban areas *(Fig. I.8 B)*, the correction difference is much smaller, but for the sake of consistency in our assumptions, we also adopt an absolute correction of neonatal mortality. By contrast, for post-neonatal mortality,

relative correction produces re-estimations that are quite acceptable and more plausible than absolute correction, for both urban and rural areas *(Fig. I.9)*. This type of mortality is much more sensitive than neonatal mortality to the external context and hence to the severe crises of the 1940s and 1950s, notably the 1947 famine which affected Moldova and many other regions of Russia and Ukraine (Adamets, 2002).

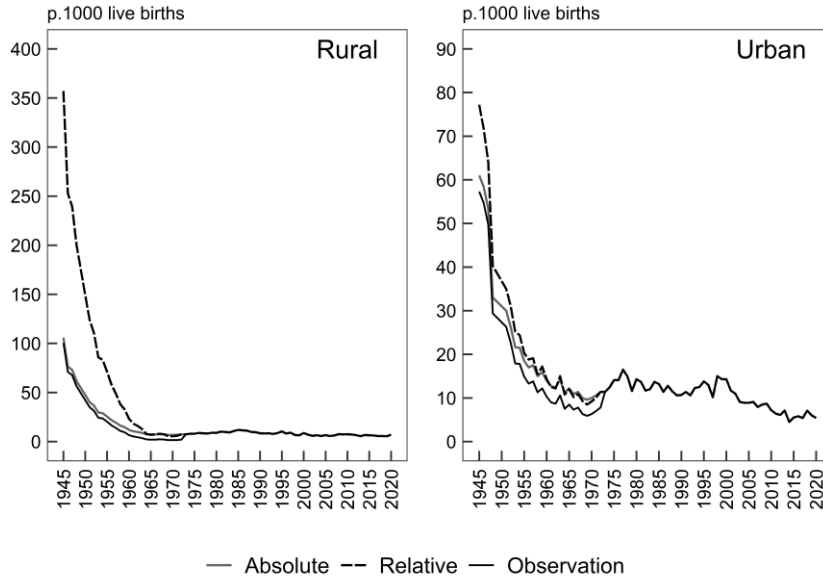


FIGURE I.8. – Rates of rural (a) and urban (b) neonatal mortality re-estimated after absolute and relative correction in Moldova, 1945-2020

Source: (Penina, Meslé and Vallin, 2010) updated

Figure I.10 shows the final adjusted rates for years prior to 1973 obtained using this combined correction method (absolute for neonatal and relative for post-neonatal) compared with those obtained by applying the absolute or relative correction to both components of infant mortality.

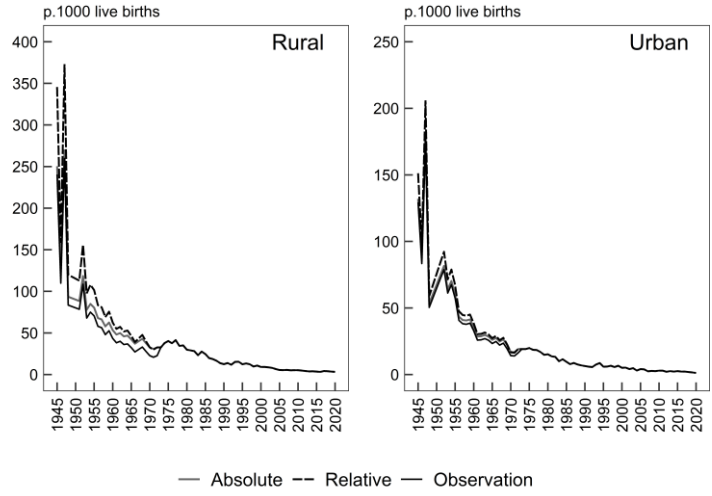


FIGURE I.9. – Rates of rural (a) and urban (b) post-neonatal mortality re-estimated after absolute and relative correction in Moldova, 1945-2020

Source: (Penina, Meslé and Vallin, 2010) updated

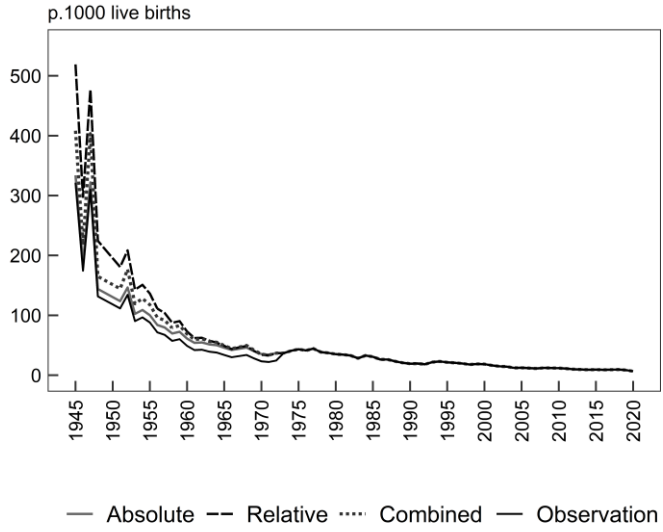


FIGURE I.10. – Infant mortality rates re-estimated for the whole of Moldova after relative, absolute or combined correction, 1945-2020

Source: (Penina, Meslé and Vallin, 2010) updated

c) Application of WHO live-birth definition

Despite this improvement in the registration of infant deaths in the 1970s, Moldovan infant mortality has remained slightly under-estimated to this day because the definition of live birth used in the country includes restrictions that the World Health Organization (WHO) no longer applies. For WHO, all newborns showing a sign of life must be considered as born alive, whatever their weight or gestational age, even if they die just a few moments after birth. Moldova, on the other hand, continued to apply the Soviet definition until 2008, which considered infants presenting a sign of life as live-born only if they had a gestational age of 28 weeks at least, weighed more than 1000 grams, and measured more than 35 centimetres. A way to estimate the impact of this difference on the measurement of Moldovan infant mortality is to see how the transition to the WHO standard affected mortality statistics in the former Soviet countries where it was adopted. The Baltic countries made the change just after independence, Latvia and Lithuania in 1991 and Estonia in 1992 (Estonian Medical Statistics Bureau, Latvian Medical Statistics Bureau, and Lithuanian Statistics Bureau, 1993), immediately giving rise to a sudden break in the regularity of the corresponding statistical series. For these republics, an estimated 50% of the increase in early neonatal mortality (0-6 days) was attributable to this change of definition (Shkolnikov, Meslé and Vallin, 1996).

In Ukraine, the WHO definition was not adopted until 2007, but an initial improvement in registration seems to have occurred in 2005 when the 10th revision of the International Classification of Diseases was brought into use. The break observed in 2007 must therefore be aggregated with that of 2005 to fully capture the effect of the new WHO definition. This gives us a change whose order of magnitude is similar to that observed in 1991-1992 in the Baltic countries: a 50% increase in registered early neonatal deaths.

In 2008, Moldova introduced a new definition of live birth, which considers infants presenting signs of life as live-born if they have a gestational age of 22 weeks at least or their weight is 500 grams or more.

However, these new criteria only increased the number of neonatal deaths by 20%, suggesting that registration is likely to remain incomplete. Based on the case of the Baltic countries, we, therefore, decided to increase early neonatal mortality by 50% for all years before 2008. For 2008 and 2009, early neonatal death rates were interpolated assuming that within these two years the transition to a definition was incomplete. We chose not to correct early neonatal death rates for years after 2010.

B. Old-age mortality

Two separate problems can be identified concerning Soviet statistics on mortality among older people. The first refers to an inaccurate calculation of official population estimates for older adults, as discussed earlier (section 2A, Chapter I). In this study, we use intercensal population estimates produced following the Human Mortality Database (HMD) Protocol for the period 1959-2003 (section 2, Chapter II). The population figures for advanced ages (in the case of Moldova, the age threshold was 70 years) were calculated using the extinct cohort method, which is entirely dependent on death counts and does not take into account potentially erroneous population counts at older ages. However, even after this population adjustment, mortality rates among the elderly continue to be suspiciously low in Moldova at the beginning of the period. Thus, in 1960, life expectancy at 80 in Moldova compared to a Western country with a good death registration system is far higher. For instance, in Sweden, this difference is around two years for both men and women (Penina, Jdanov and Grigoriev, 2015). This is the second problem associated with the incorrect registration of age at death known as age heaping in deaths. Misreporting of age at death is the main source of mortality underestimation among the elderly in the countries of the ex-Soviet Union, including Moldova. This type of problem, not handled under the HMD Protocol, remains open to researchers and therefore to the Moldovan case.

In this study, we attempted to correct the under-estimated mortality rates at older ages for Moldova using the Coale-Demeny model life tables

(Coale, Demeny and Vaughan, 1983). The key to selecting the appropriate level of the models is corrected infant mortality rates (section 3A, Chapter I). The same approach was followed in the studies undertaken for Russia (Meslé et al., 1996) and Ukraine (Meslé and Vallin, 2003, 2012). If we had chosen middle-age mortality as a benchmark, it could have led to misleading results since abnormally high mortality in adults, especially in men, is a specific feature of the mortality pattern in these countries.

In *Table I.2*, the observed values of life expectancy at age 60 are compared with those taken from the four Coale-Demeny regional models and their average for the period 1959-1975 and the subsequent selected years. The models were selected based on the adjusted infant mortality rate[14]. Given the annual fluctuations in infant mortality that persisted into the late 1960s, we used a five-year moving average rather than annual estimates. Regardless of the regional model we take, it has higher values than the Moldovan life expectancy at age 60 since the late 1960s among men and the mid-1970s among women. Thus, in 1980, the average of the four models was 2.2 years higher among men and 1.5 years higher among women than in Moldova. In 2020, the gap widened up to 5.7 and 3.5 years, respectively. It is not surprising to find this discrepancy since Moldova, like other former Soviet republics, has been facing a serious population health crisis since the mid-1960s that primarily affects the adult population, including the elderly. This deterioration stands in sharp contrast to the progress made in Western countries, first of all, due to significant improvements in old-age mortality. However, it is surprising not to find this difference for the 1960s and 1970s. Indeed, if we look at these years, we can see the opposite, namely that life expectancy at age 60 in Moldova is much higher than any model. Among women, the difference was 4.8 years in 1960 and did not disappear until 1975. For men, this difference is much smaller than for women (3.8 years in 1960) and has a shorter period (until 1969). Beyond all doubt, this anomaly is

[14] The Coale-Demeny life table levels were interpolated based on corrected infant mortality rates.

due to an underestimation of mortality at older ages that requires correction.

Using the average model of life expectancy at age 60, we computed new age-specific rates for older age groups and re-estimated life tables for 1959-1968 in males and 1959-1970 in females. For females, we extended this correction for the age 80 and over until 1977 as the difference between the average model and the observed life expectancy was persistent even after adjusting for life expectancy at age 60. New mortality rates were multiplied by population numbers and new death counts were generated. Finally, the "missing" deaths (i.e., the difference between the registered and estimated death counts) were redistributed proportionally among all causes after the reconstruction process (Chapter III).

TABLE I.2. – Life expectancy at age 60 (e_{60}, years): observed values and values from Coale and Demeny models corresponding to the same level of infant mortality rate (IMR, per 1000)

Year	IMR* estimated	e_{60}** observed	e_{60} values in the models, interpolated levels					
			West	North	East	South	Average	Average difference
MALES								
1959	84.9	18.4	14.5	15.6	14.9	16.2	15.3	-3.1
1960	78.9	19.3	14.7	15.9	15.0	16.5	15.5	-3.8
1961	74.1	19.0	14.8	16.1	15.1	16.8	15.7	-3.2
1962	68.1	17.5	15.0	16.3	15.2	17.2	15.9	-1.5
1963	63.8	18.0	15.2	16.6	15.3	17.4	16.1	-1.9
1964	60.3	18.8	15.3	16.7	15.5	17.7	16.3	-2.5
1965	57.5	18.0	15.4	16.9	15.5	17.9	16.4	-1.5
1966	55.9	17.8	15.4	17.0	15.6	18.0	16.5	-1.3
1967	52.6	17.5	15.5	17.1	15.7	18.2	16.6	-0.8
1968	49.6	17.2	15.6	17.3	15.8	18.5	16.8	-0.4
1969	47.9	16.6	15.7	17.4	15.9	18.6	16.9	0.3
1970	45.9	16.5	15.8	17.5	15.9	18.8	17.0	0.6
1971	43.3	16.2	15.9	17.7	16.1	19.0	17.2	1.0
1972	43.6	16.6	15.9	17.6	16.0	19.0	17.1	0.5
1973	45.6	16.1	15.8	17.5	16.0	18.8	17.0	0.9
1974	47.5	16.3	15.7	17.4	15.9	18.7	16.9	0.7
1975	49.4	15.5	15.6	17.3	15.8	18.5	16.8	1.4
1980	43.7	14.9	15.9	17.6	16.0	19.0	17.1	2.2

Year	IMR* estimated	e_{60}** observed	e_{60} values in the models, interpolated levels					
			West	North	East	South	Average	Average difference
1985	37.5	14.4	16.2	18.0	16.3	19.6	17.5	3.1
1990	27.4	15.4	16.8	18.8	16.9	20.6	18.3	2.8
1995	29.0	13.9	16.7	18.6	16.8	20.6	18.2	4.3
2000	23.3	14.3	17.1	19.2	17.3	20.6	18.6	4.3
2005	16.3	13.5	17.9	20.2	17.9	20.6	19.1	5.6
2010	12.9	13.9	18.3	20.8	18.4	20.6	19.5	5.7
2015	10.2	14.5	18.8	21.3	18.8	20.6	19.9	5.4
2020	9.6	14.2	18.9	21.3	18.7	20.6	19.9	5.7
	FEMALES							
1959	78.0	20.8	15.9	16.5	16.3	18.0	16.7	-4.1
1960	70.7	21.8	16.2	16.8	16.6	18.5	17.0	-4.8
1961	65.9	21.0	16.4	17.1	16.7	18.9	17.3	-3.8
1962	60.1	19.8	16.6	17.4	17.0	19.4	17.6	-2.2
1963	56.1	20.6	16.7	17.6	17.1	19.7	17.8	-2.7
1964	53.0	21.2	16.9	17.8	17.3	20.0	18.0	-3.2
1965	49.9	20.4	17.0	18.0	17.4	20.3	18.2	-2.2
1966	48.4	20.6	17.1	18.1	17.5	20.5	18.3	-2.3
1967	46.0	20.2	17.2	18.2	17.6	20.7	18.4	-1.8
1968	43.0	20.2	17.3	18.4	17.7	21.1	18.6	-1.6
1969	40.4	19.3	17.4	18.6	17.9	21.4	18.8	-0.5
1970	38.3	19.5	17.5	18.7	18.0	21.6	19.0	-0.5
1971	35.7	19.0	17.7	18.9	18.2	22.0	19.2	0.2
1972	35.0	19.4	17.7	19.0	18.3	22.0	19.3	-0.1
1973	36.4	19.0	17.6	18.9	18.2	21.9	19.1	0.1
1974	37.8	19.1	17.6	18.8	18.1	21.7	19.0	-0.1
1975	39.3	18.4	17.5	18.7	18.0	21.5	18.9	0.5
1980	34.4	17.8	17.7	19.0	18.3	22.1	19.3	1.5
1985	28.2	17.2	18.1	19.4	18.9	23.0	19.9	2.6
1990	20.7	18.4	18.8	20.2	19.6	23.5	20.6	2.1
1995	21.0	16.8	18.8	20.2	19.6	23.5	20.5	3.7
2000	18.2	17.3	19.1	20.5	20.0	23.5	20.8	3.4
2005	13.6	16.9	19.7	21.3	20.7	23.5	21.3	4.4
2010	10.2	17.6	20.3	22.1	21.4	23.5	21.8	4.2
2015	8.1	18.5	20.7	22.6	21.9	23.5	22.2	3.7
2020	8.3	18.6	20.7	22.6	21.8	23.5	22.2	3.5

* 5-year moving average

** Based on 1959-2013 intercensal and 2014-2020 post-census population counts

4. Readjustment of life expectancy at birth

Abridged life tables were computed for Moldova by sex for every year of the period 1959-2020. Table I.3 presents crude estimates of life expectancy at birth based on intercensal (1959-2013) and post-census (2014-2020) population counts and adjusted estimates of life expectancy after two corrections of infant mortality and mortality correction at older ages (Chapter I, section 3).

The effect of the first correction of infant mortality rate (before 1973) on life expectancy at birth diminishes progressively from 1.7 years for males and 1.9 years for females in 1959 to 0.8 and 0.9 years, respectively, in 1972 *(Table I.3).* The second correction of infant mortality rate applied for the period 1959-2009 has an insignificant effect on life expectancy and varies between 0.2 and 0.3 years. The correction of life expectancy at age 60 is of much greater importance for females than for males, especially in the late 1950s and early 1960s. In 1960, for example, this type of adjustment accounted for about 60% of the total reduction in life expectancy (2.7 years for males and 3.8 years for females). While for males the impact of the correction of old age mortality decreased gradually towards the late 1960 (0.3 years in 1968), for females it extended to the mid-1970s due to life expectancy adjustments for the age group 80 years and over (0.2 years in 1975). The maximal overall effect of two corrections of infant mortality and mortality correction at older ages is 4.5 years for males and 5.6 years for females in 1960.

Mortality corrections not only significantly reduce Moldovan life expectancy at birth but also dramatically affect its trends for the early Soviet period *(Fig. I.11).* The correction in infant mortality significantly mitigates the observed decline in life expectancy between 1965 and 1984 by eliminating a sudden fall in 1973. Adjustments to mortality rates at older ages even shift the turning point in mortality trends from the mid-60s to the early 70s.

TABLE I.3. – Life expectancy at birth (e_0, years) before and after two corrections of infant mortality rate (m_0) and old-age mortality correction

Year	Observed e_0*	After the 1st correction of m_0	After the 2nd correction of m_0	After two m_0 and old-age mortality corr.	Effect of the 1st correction of m_0	Effect of the 2nd correction of m_0	Effect of old-age mortality correction	Total effect
MALES								
1959	65.3	63.6	63.3	61.1	-1.7	-0.2	-2.2	-4.2
1960	67.3	65.8	65.6	62.8	-1.5	-0.2	-2.7	-4.5
1961	67.7	66.3	66.1	63.7	-1.3	-0.2	-2.4	-3.9
1962	66.4	65.0	64.8	63.7	-1.3	-0.2	-1.1	-2.6
1963	67.2	65.9	65.7	64.3	-1.3	-0.2	-1.4	-2.9
1964	67.9	66.6	66.4	64.5	-1.3	-0.2	-1.8	-3.3
1965	68.0	66.9	66.7	65.6	-1.2	-0.2	-1.1	-2.5
1966	67.8	66.7	66.6	65.6	-1.0	-0.2	-0.9	-2.1
1967	66.7	65.6	65.5	64.9	-1.1	-0.2	-0.5	-1.8
1968	66.5	65.3	65.1	64.9	-1.1	-0.2	-0.3	-1.6
1969	66.0	65.0	64.8		-1.0	-0.2		-1.1
1970	66.3	65.5	65.3		-0.9	-0.2		-1.0
1971	66.1	65.2	65.0		-0.8	-0.2		-1.0
1972	66.3	65.4	65.2		-0.8	-0.2		-1.1
1973	64.9		64.6			-0.2		-0.2
1974	64.2		63.9			-0.2		-0.2
1975	63.0		62.8			-0.2		-0.2
1980	62.9		62.6			-0.3		-0.3
1985	62.7		62.4			-0.4		-0.4
1990	65.1		64.8			-0.3		-0.3
1995	62.1		61.8			-0.4		-0.4
2000	63.7		63.4			-0.3		-0.3
2005	62.9		62.7			-0.2		-0.2
2010	63.0							
2015	65.1							
2020	65.9							
FEMALES								
1959	69.6	67.7	67.6	64.4	-1.9	-0.2	-3.2	-5.2
1960	72.1	70.4	70.3	66.4	-1.7	-0.2	-3.8	-5.6
1961	72.0	70.5	70.4	67.3	-1.5	-0.1	-3.1	-4.7
1962	71.1	69.5	69.4	67.6	-1.5	-0.1	-1.8	-3.4
1963	72.0	70.6	70.4	68.3	-1.4	-0.2	-2.2	-3.7
1964	73.4	72.0	71.9	69.3	-1.4	-0.1	-2.6	-4.1
1965	73.1	71.8	71.6	69.9	-1.3	-0.1	-1.7	-3.1
1966	73.4	72.2	72.1	70.2	-1.2	-0.1	-1.9	-3.2
1967	72.6	71.4	71.3	69.9	-1.2	-0.1	-1.3	-2.7
1968	72.6	71.4	71.2	70.0	-1.2	-0.1	-1.2	-2.6
1969	72.0	70.9	70.8	70.4	-1.1	-0.1	-0.3	-1.5
1970	72.3	71.4	71.3	70.9	-0.9	-0.1	-0.4	-1.4

Year	Observed e_0*	After the 1st correction of m_0	After the 2nd correction of m_0	After two m_0 and old-age mortality corr.	Effect of the 1st correction of m_0	Effect of the 2nd correction of m_0	Effect of old-age mortality correction	Total effect
1971	72.2	71.4	71.2	71.0	-0.8	-0.2	-0.2	-1.2
1972	72.3	71.4	71.2	70.9	-0.9	-0.2	-0.3	-1.4
1973	71.0		70.9	70.6		-0.2	-0.3	-0.4
1974	70.6		70.5	70.1		-0.2	-0.4	-0.6
1975	69.5		69.3	69.1		-0.2	-0.2	-0.4
1980	69.4		69.2			-0.2		-0.2
1985	69.3		69.1			-0.3		-0.3
1990	72.1		71.9			-0.2		-0.2
1995	69.9		69.7			-0.2		-0.2
2000	71.2		71.0			-0.3		-0.3
2005	71.1		70.9			-0.1		-0.1
2010	72.1							
2015	73.6							
2020	73.9							

* Based on 1959-2013 intercensal and 2014-2020 post-census population counts

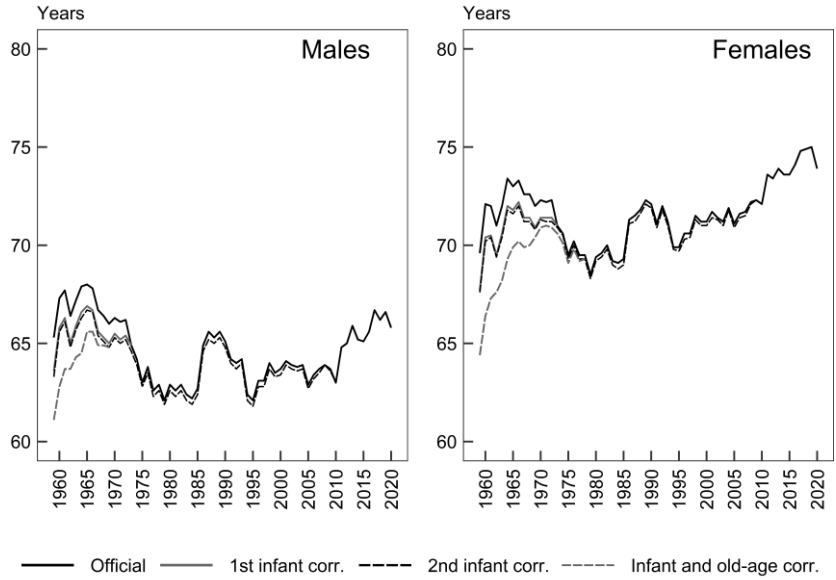


FIGURE I.11. – Evolution of official and estimated life expectancy at birth in Moldova in 1959-2020, by sex

Note: Official estimates: 1959-2020; 1st infant correction: 1959-1972; 2nd infant correction: 1959-2009; infant and old-age mortality correction for males: 1959-1968 and for females: 1959-1979

The new estimation of life expectancy at birth in Moldova seems much more in line with the trends observed in European former socialist countries. *Figure I.12* provides a comparison with Romania, for which data are available from 1961, and with Russia and Ukraine, for which data on infant mortality have been corrected using the same method (Meslé et al., 1996; Meslé and Vallin, 2003, 2012).

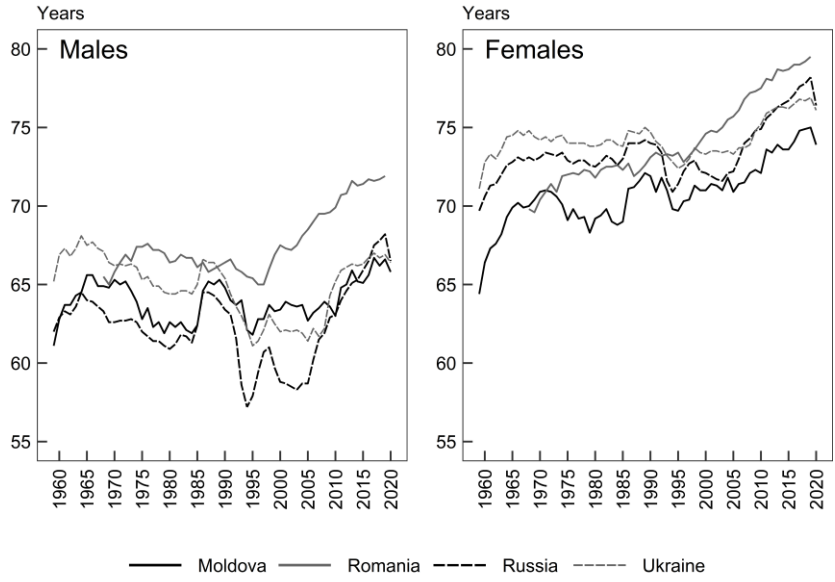


FIGURE I.12. – Comparative trends in life expectancy at birth since the late 1950s: Moldova, Romania, Russia and Ukraine

Source: Romania (1961, 1963, 1965, 1968-2019) – calculations based on the National Institute of Statistics data, https://insse.ro/cms/en; Ukraine and Russia (1959-2006) – (Meslé and Vallin, 2012); Ukraine (2007-2020) –calculations based on the State Statistics Service of Ukraine data, http://database.ukrcensus.gov.ua/Pxweb2007/popul_eng.htm; Russia (2007-2020) – Federal State Statistics Service, https://eng.rosstat.gov.ru/.
Note: For Ukraine for 2014-2020, data exclude the temporarily occupied territories of the Autonomous Republic of Crimea, the Donetsk and Luhansk regions.

The readjusted Moldovan trends before the mid-1970s proved especially close to those for Romania, where the effect of infant mortality decline on life expectancy at birth played an important role until the early 1970s (Gheţău, 1978). The comparison reveals a striking divergence in

female mortality trends in the 1970s between Moldova and other countries. The decline in Moldovan female life expectancy was as sharp as that occurred in Moldovan males, while in Ukraine, Russia, or Romania, females were much less adversely affected by the deteriorating health conditions. The less favourable female health trend in Moldova is probably linked to the fact that Moldova is also the country where the Mediterranean tradition weighs most heavily on women's status. Finally, after readjusting population counts for the period of independence, Moldovan mortality trends for males come much closer to those observed in Russia and Ukraine, while for Moldovan females the situation is still worse compared to the adjacent countries disregarding the recent health improvements.

5. Age-specific mortality trends

Figures I.13 and *I.14* illustrate, respectively, 1959-2020 trends in age-specific probabilities of dying for the first four age groups (under 1 year old, 1-4, 5-9, and 10-14 years) and for the five-year age groups beyond age 15.

Among children and adolescents, particularly those less than one year old, considerable progress was made over the past 55 years. After a period of deterioration in the 1970s, mortality in these age groups began to decrease, particularly quickly in the 1980s. The severe economic and social crisis of the 1990s affected newly independent countries, including Moldova, after the break-up of the USSR halted these health improvements for some time, but from the late 1990s, the downward trend recommenced. However, since 2012, infant mortality appears to have stopped decreasing and is at the same level so far. It takes more observation time to figure out whether this is a temporary stagnation or the start of a new trend. Mortality among young adult men aged 15 to 39 following short-term stagnation at the beginning of the period began to deteriorate very rapidly in the 1970s. The second half of the 1980s and early 1990s were marked by significant fluctuations in mortality related to specific social and economic conditions in the countries of the former USSR. In May 1985, Mikhail Gorbachev launched the last major Soviet-style alcohol

reduction campaign in the Soviets, which lasted until 1987 (Nemtsov, 2011). The social and economic crisis of the 1990s in Moldova was exacerbated by a war conflict in the Transnistrian region. As a result, mortality among young men peaked in 1992. Nevertheless, after the end of these fluctuations, mortality among young adults began to decline from the mid-1990s, especially in the under-30 age groups.

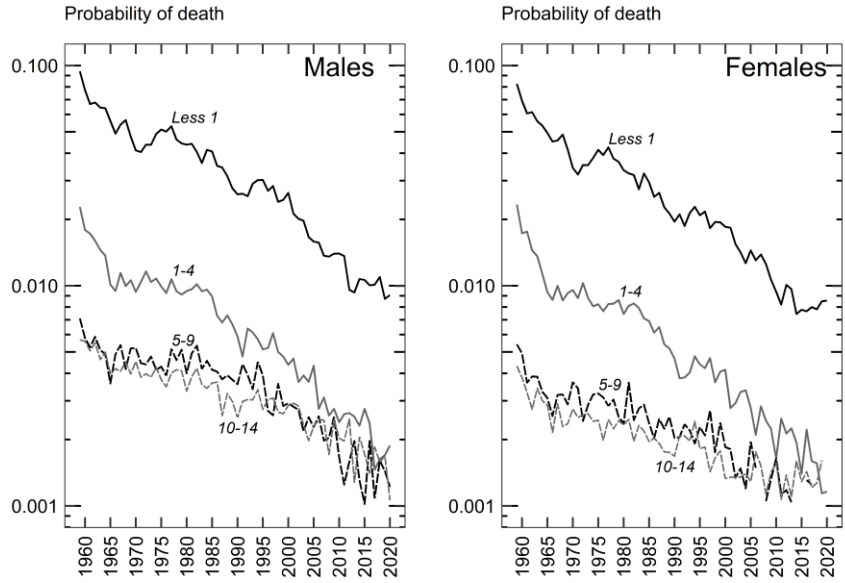


FIGURE I.13. – 1959-2020 trends in age-specific probabilities of dying after infant and old-age mortality corrections, by sex

For mature adults aged 40 to 64, long-term mortality growth and fluctuations in the 1980s and 1990s are by far the most striking when compared to other age groups. While we can see more or less stable recent improvements for young men, in these age groups, on the contrary, mortality appears to resume growth or come to a halt after the end of the 1980s and 1990s fluctuations. But since 2010, the situation has tended to improve slightly, especially among women.

When considering trends in mortality among the elderly, account must be taken of the major adjustments made for the 1960s and the early

1970s. For this reason, we must be cautious about the decline in mortality until the end of the 1960s. Regardless of these data problems, mortality trends clearly show that older people are much less sensitive to the social and economic disturbances in the 1980s and 1990s than young and mature adults. Finally, 2020, the last observation year, is marked by a sudden jump in mortality among adults of both sexes as a result of COVID-19 infection.

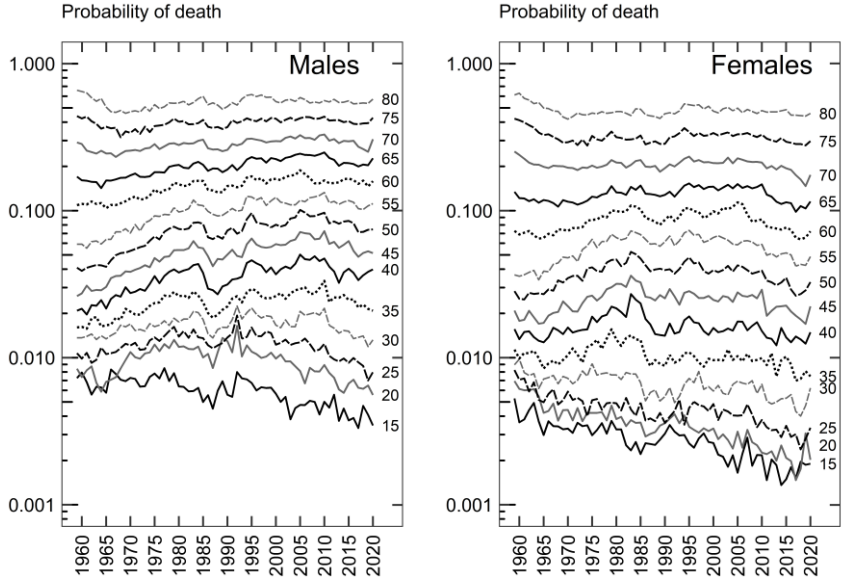


FIGURE I.14. – 1959-2020 trends in age-specific probabilities of dying after infant and old-age mortality corrections, by sex

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In this chapter, we discussed the overall mortality by sex and age in Moldova after the Second World War. The quality of data in the country with regard to vital statistics is somewhat problematic in the early Soviet period. We attempted to correct infant and old-age mortality rates, which are heavily under-estimated in Moldova before the mid-1970s. Mortality data for the late Soviet period and post-independence seem to be quite

reliable with the only minor exception regarding the definition of live-birth. This is a problem common to all the countries of the former Soviet Union, which we have also attempted to correct. Furthermore, official data on annual population counts for the period of independence are reliable only for the post-2014 census period, while for the preceding period, we produced the intercensal population estimates. Without taking into account all these data problems, the adjusted trend in life expectancy at birth in Moldova is very similar to that observed in other former Soviet republics, such as Ukraine or Russia. As in these countries, the grave health crisis has affected the people of Moldova since the mid-1960s. The rising trend in long-term mortality has been punctuated by short-term fluctuations linked to Mikhail Gorbachev's anti-alcohol campaign launched in 1985 and the social and economic crisis of the 1990s. Surprisingly, Moldovan women's health status is much lower than that of Ukrainian or Russian women and deteriorated very rapidly in the 1970s. To better understand the poor health of the Moldovan population, we analyse mortality trends by causes of death. But before that, we will describe the past and present systems of codification of causes of death, data quality problems related to cause-of-death statistics, and we will briefly present the data collected as part of this study.

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CHAPTER II. REGISTRATION, COLLECTION AND QUALITY OF CAUSE-OF-DEATH DATA

1. The history of cause-of-death classifications

A. During the Soviet period

In the former Soviet Union, the coverage of mortality data by cause was considered incomplete until the late 1950s, because only medical doctors were authorized to certify a cause of death (Bystrova, 1965). In rural areas, which covered 78% of the Moldovan population, according to the 1959 census, there was a considerable shortage of doctors, and the system could only function properly in urban areas. In 1958, the Ministry of Health and the TCSU of the USSR issued a new directive under which the death certificate could also be issued by a *feldsher* when there was no doctor. In 1959, 15% of death certificates in rural areas were filled out by feldsher. Then, this proportion went down steadily in the 1960s and 1970s, dropping to 5% or 6% in the mid-1980s (Meslé and Vallin, 2012). The former USSR never adopted the International Classification of Diseases and Causes of Death (ICD), but used its own Soviet classification that covered 116 items until 1964, then around 200 items since 1965. The first Soviet Classification, drawn up in 1922 and formally adopted in 1924, was fairly close to the 1920 ICD (Meslé et al., 1996). It was revised 7 times, twice before and five times after the Second World War. Since 1965, the successive revisions of the Soviet classification have come even closer to the ICD. *Table II.1* gives a summary of the revisions to the Soviet classification used since 1955. In the USSR, the medical death certificate distinguished three levels of causes of death: the underlying cause (principal or primary), the immediate cause and the contributory (associated or secondary) causes. The central statistical office of the MSSR codified causes of death on the basis of the underlying cause and annually produced special statistical forms on deaths by sex, age and cause (the so-called "Form 5"). Any official publication of mortality data, particularly by cause of death, was halted by the Soviet authorities from

1974. In addition, some causes of death had even more secret status and were subject to very special statistical processing, apart from the other causes. Thus, until 1988, some items of the Soviet classification (cholera, plague, suicide, homicide, occupational accidents) were not included in the statistical "Form 5" mentioned above and were presented separately in the statistical Form 5b. To maintain correct totals for all causes in Form 5, deaths from these so-called "hidden" causes were included in Item 159 "ill-defined causes".[15] Apart from these hidden causes, death certificates issued by a medical doctor or feldsher based on testimonial evidence were also coded under this item. In this study, we combined the two sources by subtracting the totals of hidden causes (Form 5b) from Item 159 (Form 5).

TABLE II.1. – Classification of causes of death used in Moldova during the Soviet period

Years	Title	Number of items	Age groups
1955-1964	1952 classification (Soviet classification of causes of death, 3rd revision)	116	0, 1, 2, 3-4, 5-6, 7-13, 14-15, 16-17, 18-19, 20-24, 25-29, 30-39, 40-49, 50-59, 60-69, 70 and over
1965-1969	1965 classification 1965 (based on ICD7)	210+13*	0, 1, 2, 3, 4, 5-9, 10-14, 15-19, 20-24, 25-29, … 80-84, 85 and over
1970-1980	1970 classification 1970 (based on ICD8)	185+10*	0, 1, 2, 3, 4, 5-9, 10-14, 15-19, 20-24, 25-29, … 80-84, 85 and over
1981-1987	1981 classification 1981 (based on ICD9)	185+10*	0, 1, 2, 3, 4, 5-9, 10-14, 15-19, 20-24, 25-29, … 80-84, 85 and over
1988-1990	1981 classification 1981, adapted for deaths from injury and poisoning (based on ICD9)	175+10*	0, 1, 2, 3, 4, 5-9, 10-14, 15-19, 20-24, 25-29, … 80-84, 85 and over

* An additional number of items from external causes, according to the character of trauma

[15] In the case of Moldova, in 1986 and 1987, the totals of hidden causes of deaths from Form 5b were not included in Item 159, but in Item 181 "Other accidents, excluding occupational".

In the former USSR, all statistical forms were compiled manually up to the late 1980s, and it was only in 1988 that electronic data processing was introduced. The latter was also accompanied by the changes in the inventory of statistical tables. Thus, the statistical forms 5 and 5b were converted to a single form S-51, but Form 4 (deaths by single year of age and sex) was labelled S-42. The national statistical office of the MSSR produced the annual statistical forms on deaths by cause for the entire republic and separated by place of residence (urban/rural). As well, for rural areas, forms 5 and 5b were also compiled separately based on medical and feldsher death certificates.

B. After independence

In 1991-1995, in Moldova, two statistical institutions produced statistics on mortality by cause of death in an independent manner.

TABLE II.2. – Classification of causes of death used in Moldova after independence

Years	Title	Number of items/ ICD level	Age groups	Responsible institution
1991-1995	1981 classification 1981, adapted for deaths from injury and poisoning (based on ICD9)	175+10*	0, 1, 2, 3, 4, 5-9, 10-14, 15-19, 20-24, 25-29, … 80-84, 85 and over	The National Bureau of Statistics of Moldova
1991-1995	ICD 9	4-digital level	Exact age	The National Agency for Public Health
Sine 1996	ICD 10	4-digital level	Exact age	

*An additional number of items from external causes, according to the character of trauma

The National Bureau of Statistics (NBS) continued to codify causes of death under the latest revision of the Soviet Classification. At the same time, the National Agency for Public Health (NAPH), subordinate to the Ministry of Health, codified causes of death, according to the 9th revision of the International Classification of Causes of Death. The medical death certificates were merely submitted by the NBS to the NAPH. The latter

remained the only institution responsible for codifying causes of death since 1996 when the 10th revision of the ICD was adopted (Ministry of Health of Moldova, 1995) *(Table II.2)*. Further, it will be shown that this double codification of causes of death was not a genuine case of double coding practised by certain countries for a few years after the adoption of a new classification. Nevertheless, we could take advantage of this situation to reconstruct the cause-of-death mortality series for Moldova (section 2C, Chapter III).

2. Collected data

For the Soviet period, we use the original statistical forms on death counts (forms 5 and 5b) tabulated on the basis of medical or feldsher death certificates by the national statistical office of the MSSR. For Moldova as for the other republics of the former USSR, mortality data by cause of death for the period 1959-1990 were computerised and verified at INED using the original manuscripts produced by the TCSU of the USSR. This tremendous work was made possible through the collaboration between French and Russian demographers in the early 1990s when the very rich Soviet archives kept in secret for decades became open to scholars.

For the period of independence (1991-2020), we use the electronic database of medical death certificates (Form 106/e) provided by NAPH. The database includes the date of birth (day/month/year), the date of death (day/month/year), sex, four-digit ICD code of underlying cause of death and place of residence of the deceased (location). As in 1991-1995, data on cause-of-death mortality were generated independently by two statistical institutions, using two different classifications, and we analysed data from these two sources.

3. Data quality

The central statistical administration of the USSR made a number of attempts to assess the quality of the mortality data not only in terms of their completeness (section 1A, Chapter I) but also in terms of the accuracy of the diagnosis of the cause of death. Thus, in the early 1970s, the TCSU of the USSR issued a new directive concerning the control checks

of the accuracy of the death certificate completed by a medical doctor or feldsher (TCSU of USSR, 1974). The general idea behind such checks is as follows. The national statistical office and qualified medical staff annually select the medical / feldsher death certificates from different types of medical facilities and then compare them with the corresponding information in the medical documentation (post-mortem report, patient medical card, etc.). Careful consideration is given to the underlying cause of death. The death certificate is considered erroneous if the underlying cause of death does not match the basic diagnosis from the medical documentation, or if the doctor chose an incorrect line on the death certificate. Typically, for one medical unit, 10-15 medical death certificates and 15-20 feldsher death certificates are randomly selected. Next, information on the underlying, immediate and contributory causes of death and some details about the deceased (sex, age, date of death) are copied into a special table from death certificates and medical records.

To our great regret, in the Moldovan archives, we could only find the summary results of these checks without breaking down the data by cause of death, sex and age. In 1972, for example, the Moldovan TCSU selected 128 medical death certificates from nine medical facilities in different districts of the country. In 63 cases, the underlying cause matched the baseline diagnosis from the medical documentation. In eight cases, the baseline diagnosis from a medical record was inconsistent with the underlying cause of death stated on the death certificate. In 13 cases, a doctor chose the wrong line in the medical death certificate for the underlying cause of death. In the remaining cases (44 death certificates), the corresponding medical records were absent (22 cases) or the medical records did not contain a post-mortem clinical summary (22 cases). As a result, nearly 35% of medical death certificates were not checked due to the lack of proper medical documentation, and 16% were inaccurate mainly because of the incorrect line selected for the underlying cause of death (TCSU of MSSR, 1973).

The limited information available in Moldova does not allow us to shed light on the quality of medical diagnosis by cause of death and

coding. However, three major surveys carried out in some regions of Russia, Belarus and Turkmenistan may provide useful information. The first survey took place in central Russia (Tula, Novomoskovsk, Tambov, Michurinsk) in the early 1960s. The second was conducted in different regions of Russia in 1979, and the last in Belorussia (present-day Belarus) and Turkmenistan in 1981-1982 (Meslé et al., 1996; Meslé and Vallin, 2003, 2012). The three surveys were conducted in a manner similar to what was described above. On the one hand, the underlying cause of death reported in the death certificate was compared with the baseline diagnosis from the medical record and autopsy report. On the other hand, the accuracy of the codification of the underlying cause of death was also verified. As such, the percentage of errors was estimated for both medical diagnosis and coding. The total percentage of diagnostic errors ranged from 6.6% (Minsk 1981-1982) to 12.7% (Russia 1979), while the percentage of coding errors varied between 4.1% (Minsk 1981-1982) and 17.7% (Tula, etc. 1960). The total percentage of diagnostic errors in Moldova (16%), even estimated on a relatively small number of observations, is roughly in line with the corresponding results for other parts of the USSR, in particular for Russia. Finally, to our knowledge, during the period of independence, no studies on the quality of cause-specific mortality data were undertaken in Moldova.

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The system of codification of causes of death in Moldova during the Soviet period was the same as in the USSR as a whole. The Soviets used a special classification of causes of death based on the International Classification of Diseases and Causes of Death. It can be assumed that the accuracy of the diagnosis of causes of death in Moldova was more or less satisfied and similar to that of other European countries of the former USSR. Immediately after independence, Moldova adopted ICD-9, but in the first few years, two statistical institutions codified causes of death, according to the latest revision of the Soviet classification and ICD-9. With the introduction of ICD-10 in 1996, medical death certificates are codified only by a single statistical body at the national level. We could

collect statistics on causes of death at the most detailed level for the period from 1965 to 2020. However, both in the Soviet period and after independence, the classification of causes of death was revised several times, breaking the continuity of the time series of deaths and complicating their analysis. The following chapter deals with the reconstruction of the continuous time series of deaths by cause for the period 1965-2020, according to ICD-10.

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CHAPTER III. RECONSTRUCTION OF THE TIME SERIES

In all countries, the analysis of long-term mortality trends by cause of death is complicated by the breaks in statistical series caused by the periodic revisions of the classification. In very rare cases, the responsible statistical office practices a double classification of causes of death during one or two years of transition. This provides the opportunity to use the observed transition coefficients to redistribute deaths classified according to the items of an old classification among the items of a new classification. However, in most cases, including in post-Soviet countries, such a double classification is not available and it is necessary to find a way to estimate the transition coefficients *ex-post*. Such a method was developed based on the French data to reconstruct the time series of causes of death classified according to the detailed ICD-8 list from 1925 to 1978 (Vallin and Meslé, 1988) and then according to the detailed ICD-9 list until 1999 (Meslé and Vallin, 1996). Later, this method was successfully used to reconstruct cause-of-death time series for different countries: the Soviet Union for the period 1970-1987 (Meslé, Shkolnikov and Vallin, 1992), Russia (Meslé et al., 1996), Ukraine (Meslé and Vallin, 2003, 2012), the Baltic countries (Jasilionis et al., 2011), Belarus (Grigoriev, 2012; Grigoriev, Meslé and Vallin, 2012), Armenia and Georgia (Duthé et al., 2010), the Czech Republic and Western Germany (Pechholdová, 2009, 2010), Poland (Fihel, 2011).

For Moldova, based on the same reconstruction method, we produced the 1965-2020 time series of deaths by sex and age, according to the ICD-10 list including 211 items. The main results of the reconstruction work for Moldova are available in the online annexes. Let us summarise the main stages of the method of reconstruction by taking as an example the transition from the 1965 Soviet Classification (that we will call "1965-SC") to the 1970 Soviet Classification (1970-SC), and then, we will briefly describe some peculiarities encountered for other transitions.

1. The method of reconstruction: the case of the transition from 1965-SC to 1970-SC

The reconstruction method for each transition from an old classification to a new classification includes three main stages: constructing correspondence tables, defining fundamental associations of items and calculating transition coefficients.

A. Correspondence tables

First, two symmetric tables showing the correspondences between the old and the new classification must be produced. The first correspondence table (CT-1) lists for each item in the old classification all the items in the new classification that have one or more conditions in common with it. The second table (CT-2) lists for each item in the new classification all the items in the old classification that have elements in common with it. CT-2 is easily produced based on CT-1 by sorting the new items in ascending order. *Table III.1* gives an extract from CT-1 created between 1965-SC and 1970-SC, while *Table III.2* shows an extract of CT-2 that, in the reverse direction, links 1970-SC to 1965-SC. Of course, with regard to the successive revisions of the Soviet classification of causes of death, this step remains the same for all the former Soviet republics.

TABLE III.1. – Extracts of CT-1 between 1965-SC and 1970-SC

	1965 Soviet Classification		***1970 Soviet Classification***
Item	Title	Item	Title
……..			
53	Malignant neoplasm of intestine (excluding rectum)	49	Malignant neoplasm of intestine excluding rectum
54	Malignant neoplasm of rectum	50	Malignant neoplasm of rectum and rectosigmoid junction
……..			
124	Bronchitis and lung emphysema	108	Chronic bronchitis, lung emphysema
125	Other and unspecified forms of bronchitis	108	“
……..			

	1965 Soviet Classification		*1970 Soviet Classification*
130	Chronic abscess lung diseases, pneumosclerosis and lung emphysema	108 113	“ Chronic form of pneumonia and bronchiectasis
……..			
137	Intestinal obstructions and hernia	120 121	Hernia of abdominal cavity Intestinal obstruction without mention of hernia
……..			
167	Arthritis and spondylitis	147	Other diseases of the musculoskeletal system and connective tissue
168	Muscular and unspecified rheumatism	147	“

TABLE III.2. – Extracts of CT-2 between 1970-SC and 1965-SC

	1970 Soviet Classification		*1965 Soviet Classification*
Item	Title	Item	Title
……..			
49	Malignant neoplasm of intestine excluding rectum	53	Malignant neoplasm of intestine (excluding rectum)
50	Malignant neoplasm of rectum and rectosigmoid junction	54	Malignant neoplasm of rectum
……..			
108	Chronic bronchitis, lung emphysema	124 125 130	Bronchitis and lung emphysema Other and unspecified forms of bronchitis Chronic abscess lung diseases, pneumosclerosis and lung emphysema
……..			
113	Chronic forms of pneumonia and bronchiectasis	130	Chronic abscess lung diseases, pneumosclerosis and lung emphysema
……..			
120	Inguinal hernia and other types of hernia of abdominal cavity with obstruction	137	Intestinal obstructions and hernia
121	Intestinal obstruction without mention of hernia	137	“

	1970 Soviet Classification		*1965 Soviet Classification*
……..			
147	Other diseases of the musculos-keletal system and connective tissue	167	Arthritis and spondylitis
		168	Muscular and unspecified rheumatism
		170	Ankylosis and deformities of the spine
		171	Other diseases of the musculos-keletal system

At this stage, only the medical content of the causes of death is considered. The information in tables III.1 and III.2 shows that, in the context of the theoretical definitions of items, the new classification did not introduce substantial changes to the old classification. Most often, one item of the 1965-SC corresponds to no more than two or three items with the same medical content of the 1970-SC and vice versa.

B. Fundamental associations of items

The correspondence tables are then used to define *fundamental associations of items* (FAIs) that include the smallest number of items in each classification needed to obtain the same medical content from both sides. First, the fundamental associations are established based on the medical definition of items, that is to say, based on the correspondence tables. Each association contains the following information: title and code of the items under the new and old classifications, the corresponding death counts observed in the last year of the old classification and in the first year when the new classification is used and an indication (T or P) whether the item of the old classification is totally or only partially transferred to the item of the new classification. *T* means that the entire content of the old item is now in the new one, while *P* means that the content of the old item is shared with other new items.[16] Four types of associations

[16] Fundamental associations of items were found using the R function (Pechholdová and Camarda, 2014) and constructed using the VBA macro (Penina and Bâzgan, unpublished).

can be observed, depending on the complexity of the inter-changes between the items of the two successive revisions. A “simple association” (type 1:1) matches a single item from the new revision with a single item from the old one. Two other types of associations are also quite simple: either “merging” if several items from the old classification merge into a single item in the new classification (type n:1) or “splitting” if one item from the old classification is simply subdivided into several new items in the new classification (type 1:n). But there are also “complex associations” when several items from the old revision correspond to several items of the new revision (type n:n).

TABLE III.3. – Example of a fundamental association of items #83, type n:n

1970 Soviet Classification		**Number of deaths**		**1965 Soviet Classification**		
#	Title	1970	1969	#	T/P	Title
108	Chronic bronchitis, lung emphysema	2001	1564	124	T	Bronchitis and lung emphysema
			23	125	T	Other and unspecified forms of bronchitis
			814	130	P	Chronic abscess lung diseases, pneumosclerosis and lung emphysema
113	Chronic forms of pneumonia and bronchiectasis	629	”	130	P	“
85	108, 113	2630	2401			124, 125, 130

Note: T/P – Deaths counts are transferred from an old item to a new one totally (T) or partially (P)

In the frame of the transition from 1965-SC to 1970-SC, let us consider the complex association #83 built for chronic obstructive pulmonary diseases *(Table III.3)*. According to CT-1 (the first correspondence table), all the deaths from 1965-SC items 124 and 125 correspond fully to 1970-SC item 108, *chronic bronchitis, lung emphysema*. However, CT-2 indicates that 1970-SC item 108 also contains deaths formerly attributed to 1965-SC item 130 which, according to CT-1 is also related to

1970-SC item 113. When checked again in CT-2, 1970-SC item 113 has no other link with any 1965-SC item, the association is closed. Such a complex association is a mixture of merging and splitting of several items. In that case, we simply have one merging and one splitting. Other associations may be much more complex.

Once the fundamental associations of items have been established based on the correspondence tables, the next step is to check their statistical coherence. For that, for each association, we verify if the total of deaths classified under the items of the old classification (here, 2630 in 1969) is roughly the same as the total of deaths classified under the items of the new classification (2401 in 1970). However, this procedure is not sufficient as differences between the number of deaths in 1969 and 1970 may be due to normal trends or fluctuations in mortality. Thus, to ensure statistical consistency, we systematically examined the annual trends in the numbers of deaths for each fundamental association of items for the period 1965-1980 covered by the 1965 and 1970 revisions of the Soviet classification. In most cases, changes in the number of deaths for 1969 and 1970 were consistent with regular annual changes over the entire period. In some cases, however, the disproportionate change occurred in the transition year, clearly indicating a discrepancy between the theoretical definition of the items and actual coding practices. This is a consequence of improved definitions resulting from the advancement of medical knowledge, which often leads to complex inter-item exchanges (Meslé and Vallin, 1996). A simple visualization of trends in annual deaths (eye check) is a classic approach used to detect the discontinuities in death time series. Another way is to use a statistically oriented method based on predicting mortality series and the user-defined cut-offs according to the level of statistical significance (Camarda and Pechholdová, 2014). However, based on the data for the Baltic countries, it was shown that although this automation procedure provides a good indication for detecting the disruptions, it cannot substitute entirely the classical eye check of mortality trends (Meslé and Vallin, 2014).

When detecting a trends disruption for one association, it is then necessary to determine which medical definitions actually correspond to coding practices and to adjust the problematic association accordingly. Following these rules, in our example for Moldova, a complex association #45 was constructed by merging two simple associations assigned to *Malignant neoplasm of intestine excluding rectum* (item 49 of 1970-SC and item 53 of 1965-SC) and *Malignant neoplasm of rectum and rectosigmoid junction* (respectively, items 50 and 54).

Table III.4 displays the fundamental associations of items constructed for the transition from 1965-SC to 1970-SC, by type and number of deaths. The distribution of FAIs is presented on the basis of the medical and statistical correspondence of items, i.e., before and after verification of death time series for disruptions. At the level of medical definitions, 117 associations (75%) belong to the associations type 1:1. In other words, 117 items from 1965-SC could have been easily matched with the corresponding items from 1970-SC and vice versa. However, after checking the death series for their statistical consistency, we had to reduce the number of these "simple" associations up to 99 (70%) mostly at the expense of the associations type n:n (from 14 to 19). Although the changes at the level of associations do not appear quite drastic, the distribution of death counts in the transition year by types of associations shows more important changes. Thus, if the "simple" associations built on the medical correspondence of items cover more than half of the total of 1970 deaths, then this figure must be reduced by twice in case of the associations based on the statistical correspondence. Consequently, the number of death counts involved in the "complex" associations increased from 37% up to 69%. It means that the introduction of the new classification in 1970 introduced some significant changes independent of the medical contents of items first of all for the causes with a high number of deaths, like cardiovascular diseases. For example, complex association #74 referring to diseases of the circulatory system covers 90% of all the deaths from this group of diseases and more than 40% of the total of 1970 deaths. It was

necessary to unite a few associations of different types to ensure the statistical continuity of death series for diseases of the circulatory system in terms of one association. Finally, after treating FAIs for their statistical continuity, 9% are "splitting" and 14% are "merging" but concern quite a few deaths (5%).

TABLE III.4. – Distribution of fundamental associations of items by type and death counts according to medical correspondence (M) and statistical correspondence (S). Transition from 1965-SC to 1970-SC

Association type	Associations				Deaths (in 1970)			
	Number		Proportion, %		Number		Proportion, %	
	M	S	M	S	M	S	M	S
type 1:1	117	99	75	70	14939	7014	56	26
type 1:n	7	9	5	6	1325	1019	5	4
type n:1	17	14	11	10	522	162	2	1
type n:n	14	19	9	14	9808	18399	37	69
Total	155	141	100	100	26594	26594	100	100

Once the statistical continuity of each fundamental association is ensured, at least in terms of the total number of deaths, the next stage involves calculating the transition coefficients that make it possible moving from the items in the old detailed list to those in the new one.

C. Transition coefficients

At the third stage, the associations serve as frameworks within which we estimate, item by item, transition coefficients that will allow us to redistribute the deaths classified according to an old classification among the items of a new one. In the case of simple association (type 1:1), 100% of deaths recorded under the old item are transferred to the new item. The same process is used when several old items are merged to form a single new item (type n:1), which is a simple sum of death counts of all old items concerned. In the case of splitting one item into

several new ones (type 1:n), the hypothetical distribution of deaths recorded under a single item in the old classification is obtained according to the proportions observed for each of the new items.

The computation of the transition coefficients becomes somewhat more difficult in the case of complex interchanges between the items. In many cases, the coefficients can be calculated almost automatically, assuming a proportional distribution of deaths. *Table III.5* demonstrates the estimation of the transition coefficients for the items gathered into Association 85 presented already in Table III.3 At first, a double-classification cross-table must be constructed (*part a*, Table III.5). We know the distribution of deaths in 1969 across the old items and the distribution of deaths in 1970 across the new items. We can assume that the distribution of 1970 deaths in 1970 across the old items is proportional to the distribution observed in 1969. We assume that within the associations the respective proportions of the items do not change between 1969 and 1970. In our example, we attribute 1713 deaths of the total 2630 deaths to item 124, *Bronchitis and lung emphysema*, 25 deaths to item 125, *Other and unspecified forms of bronchitis*, and 892 deaths to item 130, *Chronic abscess lung diseases, pneumosclerosis and lung emphysema* (the estimated values are shown in italic). Then, we redistribute the deaths inside the cross-table. The shaded areas mean that there is no correspondence between the two items according to the links established in the association and these cells are eliminated. The deaths in non-shaded cells can be redistributed automatically. In our example, the entire contents of the cells classified under items 124 and 125 (1713 and 25 deaths, respectively) are transferred to item 108. Similarly, the 629 deaths under item 113 are transferred to the corresponding cell for item 130. Finally, to fill in the last empty cell for item 130, we simply subtract the known deaths from the deaths observed in 1970 (2001-1713-25=263). The transition coefficients (*part b,* Table III.5) are then directly deduced from the completed cross table: 100% of deaths under old items 124 and 125 are to be assigned to new item 108. Deaths recorded under old item 130 are redistributed

among new items 108 and 113 according to the following proportions: 29.5% (263/892) and 70.5% (629/892), respectively.[17]

After having reconstructed the 1965-1969 time series in terms of the 1970-SC, they were linked to the crude 1970-1980 data to produce continuous time-series according to the 1970-SC for the whole period 1965-1980. *Figure III.1* demonstrates annual trends in standardised mortality rates for the items involved in the complex association #83 presented in Table III.3. Panel A of the figure shows the mortality rates calculated for the corresponding 1965-SC items (for 1965-1969) and 1970-SC items (for 1970-1980). Panel B demonstrates the 1965-1969 series recalculated under 1970-SC items based on the transition coefficients presented in Table III.5 and prolonged with the crude 1970-1980 series.

TABLE III.5. – Double-classification cross-table to redistribute ex-post deaths gathered in Association #83 built between the items of 1965-SC and 1970-SC (a), followed by transition coefficients (b)

a)

1970 Classification	1965 Classification			
	124	125	130	Total
108	*1713*	*25*	*263*	2001
113			*629*	629
Estimated total deaths in 1970	*1713*	*25*	*892*	2630
Observed total deaths in 1969	1564	23	814	2401

b)

1970 Classification	1965 Classification		
	124	125	130
108	100.0	100.0	29.5
113			70.5

Note: The estimated numbers are shown in italic

First, the transition coefficients for 210 items of the 1965-SC have been calculated as described above in terms of total numbers of deaths.

[17] Construction of double-classification cross-tables and calculation of transition coefficients were produced with the help of a specially written VBA programme by Vladimir Bâzgan.

Then, for each 1970-SC item, the statistical continuity of the series was checked for the total and by age group as well. Since the total annual number of deaths is relatively small in Moldova, this was done only for three main age groups: under one year old, 1-59 years, 60 years and over. In most cases, the results were acceptable, since the age and cause-specific time series did not show any significant discontinuities at the point of transition; however, 20 out of 210 items in the transition coefficients had to be age-adjusted.

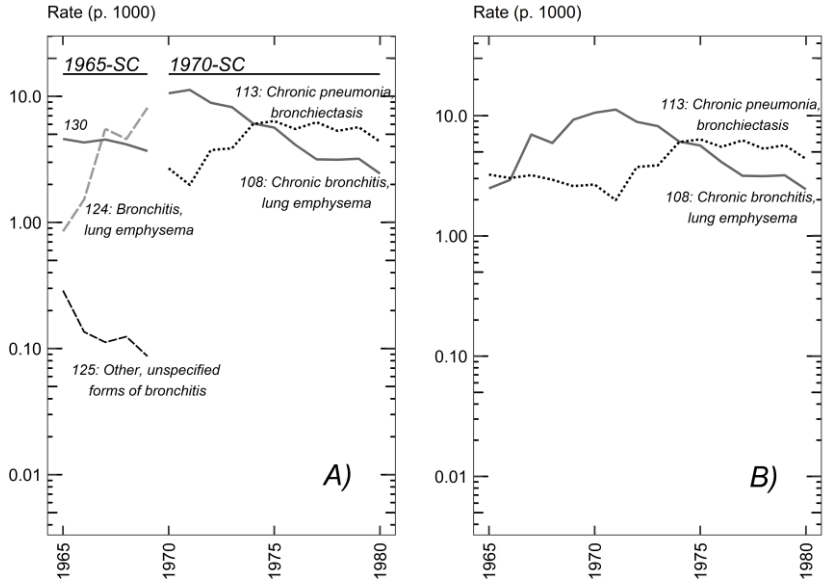

FIGURE III.1. – Trends in standardised mortality rate for some diseases of the respiratory system classified under 1965-SC and 1970-SC (a) before and (b) after reconstruction

2. Other transitions

The reconstruction method as described for the transition between the 1965-SC and the 1970-SC was applied to the subsequent classification changes. Further, we will focus only on the peculiarities of the next steps of the cause-of-death reconstruction with special attention given to the transition from the last Soviet Classification the 1988-SC to the

International Classification of Diseases and Causes of Death (ICD), starting in Moldova with its 9th revision (ICD-9), progressively used since the beginning of the 1990s.

A. Transition from 1970-SC and 1981-SC

Table III.6 summarizes the results of the transition by the type of associations with the corresponding numbers of deaths before and after checking the death series for their statistical consistency. Here, like for the previous transition, the proportion of associations defined as simple (type 1:1) is the biggest. However, the proportion of all the deaths attributed to this type of FAIs is almost 90% in the case of the medical correspondence, while in the case of the statistical correspondence, it covers only a quarter of all the deaths in 1981. At the same time, the share of the items involved in a complex exchange of items (type n:n) between the two classifications remained quite small after statistical verification of the associations, but the proportion of deaths in terms of this type of association covers almost 70% of total deaths. The new items resulting from splitting or merging of the old items occur even more rarely. At this step of reconstruction, transition coefficients for 19 out of 185 items of the 1981-SC had to be adjusted by age.

TABLE III.6. – Distribution of fundamental associations of items by type and death counts, according to medical correspondence (M) and statistical correspondence (S). Transition from 1970-SC to 1981-SC

Association type	Associations				Deaths (in 1981)			
	Number		Proportion, %		Number		Proportion, %	
	M	S	M	S	M	S	M	S
type 1:1	158	129	90	84	36683	10265	88	25
type 1:n	8	6	5	4	3809	1935	9	5
type n:1	7	6	4	4	514	466	1	1
type n:n	2	13	1	8	470	28810	1	69
Total	175	154	100	100	41476	41476	100	100

B. Abolishment of work accident definition in 1988-SC

In 1988, a particular amendment in relation to accidental causes of death was introduced into the 1981-SC that we can treat as a classification change limited to that specific part of the list of items. Under the 1981 Classification, every accidental cause of death, with a few exceptions, includes two items referring to the occupational and non-occupational accident. In 1988, this division was abolished, and the accidental causes of death either related to occupation or not were united into a single item. As a result, 160-185 old items referring to deaths from injury and poisoning were reclassified into 160-175 new items. This amendment led us to produce a reclassification of accidental causes of death by the simple merging of the two items of the 1981-SC into one item of the 1988-SC.[18]

C. Transition from 1988-SC to ICD-9

Earlier we noted that in Moldova, the 9th revision of the International Classification of Diseases and Causes of Death (ICD) and the last revision of the Soviet classification (1988-SC) were used in parallel over the period 1991-1995. While the National Bureau of Statistics (NBS) continued to codify causes of death under the 1988-SC, the National Agency for Public Health (NAPH) adopted ICD-9 (Chapter II). Certainly, in this situation, we decided first to redistribute death counts classified under the 1988-SC among the ICD-9 items and then to deal with the last transition, from ICD-9 to ICD-10. Since we had at our disposal mortality data codified under the two different classifications for the same years, it was quite reasonable to calculate the transition coefficients *a priori*. At first, we grouped the detailed 4-digit ICD-9 mortality data into 214 groups of

[18] For Russia and Ukraine, item #162 – *motor vehicle traffic accidents, occupational* – was redistributed among the new items #160 – *motor vehicle traffic accidents* – and item #161 – *motor vehicle traffic accidents involving collision with pedestrians*. In case of Moldova, this redistribution of accidental deaths was not applied.

causes of death[19]. Then, fundamental associations of items based on the medical correspondences between the items were built and the unreconstructed death time series covering the 1981-1995 period under the 1988-SC and the period 1991-1995 under ICD-9 were compared. In 1992, the National Bureau of Statistics introduced the new national rules regarding the codification of causes of death under the Soviet classification, which led to important disruptions in the death time series. Figure III.2 gives a very clear example, referring to two categories of renal diseases: *infections of kidneys* (item 130 under the 1988-SC and item 590 under ICD-9) and *other nephritis and nephrosis, nephrotic syndrome* (item 129 of 1988-SC and items 581-589 of ICD-9). In 1991, a transition year, the total of deaths for two causes was almost the same in terms of both classifications. The next year, 1992, there is an abrupt rise in death counts from item 129 accompanied by the symmetric drop in deaths from item 130 under 1988-SC. Over the next years, this interchange of deaths between the items continued. At the same time, the curves for the corresponding ICD-9 items (dotted lines in *Fig. III.2*) represent a smooth continuation of the crude time series under the Soviet classification. We found similar examples for many other causes of death. To our regret, the parallel cause-of-death codification produced by the two Moldovan statistical institutions in the early 1990s is not a genuine case of the "bridge coding" practised by some countries. Nevertheless, it seemed to us reasonable to produce the fundamental associations of items and to calculate the corresponding transition coefficients for the year 1991, before NBS introduced the changes in coding practice. Initially, fundamental associations were built for the total of deaths; however, the obtained transition coefficients had to be adjusted by age for many items. To avoid too complex associations of items, these were constructed separately for three age groups: under one year old, 1-59 years and 60 years and over.

[19] For Moldova, due to relatively small numbers of deaths, we used the short ICD-9 list and the correspondence table between the 1988 Soviet classification and ICD-9 already adopted earlier for the Baltic countries (Meslé and Vallin, unpublished).

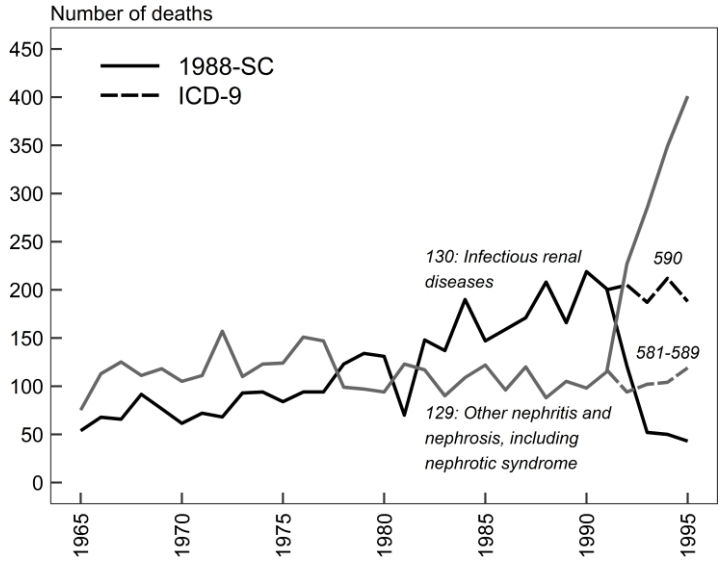

FIGURE III.2. – Trends in annual deaths from "Infectious renal diseases" and "Other nephritis and nephrosis, including nephrotic syndrome" classified under 1988-SC (1965-1995) and ICD-9 (1991-1995)

Table III.7 gives an example of Association #24 built for the age group under one year. This complex association includes items related to conditions originating in the perinatal period (151-157 in 1988-SC and 760-779 in ICD-9) and septicaemia (25 and 038, respectively). Though the total number of deaths in the association in terms of both classifications is almost the same, the coding practice of the items concerned is quite different. Thus, the death counts assigned under 1988-SC to *congenital pneumonia and pneumonia due to aspiration* (153), *other causes of death originating in the perinatal period* (157) and *septicaemia* (25) are by far much higher than death counts attributed to the corresponding items under ICD-9. At the same time, in terms of ICD-9, most of the deaths in the association concerned are concentrated among *birth trauma* (767), *other respiratory conditions* (769, 770.2-.9) and *other specific infections of the perinatal period* (771.8). As a result, in 1991, the sum of deaths from the conditions assigned to Association #24 under 1988-SC almost entirely

compensated for that under ICD-9. Total deaths involved in this association remain very close in terms of both classifications over the next years *(Fig.III.3)*.

TABLE III.7. – Association #24 built between the items of 1988-SC and ICD-9. The case of septicaemia and conditions originating in the perinatal period, under one year old

ICD-9		Deaths		1988-SC		
#	Title	1991	1991	#	T/P*	Title
26 [038]	Septicaemia	7	34	25	P	Septicaemia
193 [771.8]	Other infections specific to the perinatal period	110	"	25	P	"
			146	153	P	Congenital pneumonia and pneumonia due to aspiration
			12	156	T	Septicaemia
			95	157	P	Other conditions originating in the perinatal period
190 [770.0, .1]	Congenital pneumonia and neonatal aspiration syndromes	66	"	153	P	"
191 [769, 770.2-.9]	Other respiratory affections	86	"	153	P	"
			57	154	T	Other respiratory conditions
188 [767]	Birth trauma	83	"	153	P	"
			48	151	T	Birth trauma
			65	152	P	Intrauterine hypoxia and birth asphyxia
			12	155	P	Haemolytic disease and other perinatal jaundice

ICD-9		Deaths		1988-SC		
#	Title	1991	1991	#	T/P*	Title
194 [760-766, 771.0-.7, 772, 775-779]	Other causes of perinatal death	44	"	157	P	“
189 [768]	Intrauterine hypoxia and birth asphyxia	62	"	152	P	“
192 [773, 774]	Haemolytic disease of the foetus and other neonatal jaundice	9	"	155	P	“
24	26, 188-194	467	469			25, 151-157

Note: T/P – Deaths counts are transferred from an old item to a new one totally (T) or partially (P)

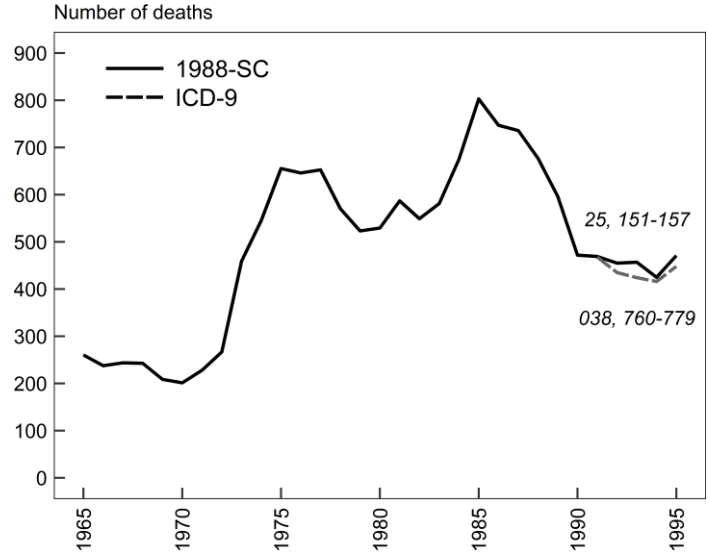

FIGURE III.3. – Trends in annual deaths involved in Association #24 (Table III.7) built between the items of 1988-SC (1965-1995) and ICD-9 (1991-1995), under one year old

Association #79 assigned to certain diseases of the respiratory system in the 1-59 age group provides another example of differences in coding practice between 1988-SC and ICD-9 (*Table III.8*). In terms of the last revision of the Soviet Classification, death counts from *pneumococcal pneumonia* (106) are significantly under-estimated in comparison to the corresponding ICD-9 item, mostly at the expense of *other acute pneumonia* (107). Total deaths from these two forms of pneumonia were united with the items referring to *chronic bronchitis and emphysema* (108) and *empyema, pulmonary abscess* (112) to get a better-balanced association. The problem of underestimation of deaths from pneumonia caused by *pneumococcal pneumonia* under the Soviet Classification also appears at older ages (association #90 shown in *Table III.9*). Here, to compensate for the total of deaths from *pneumococcal pneumonia*, item 106 was merged not only with item 107 like in the age group 1-59 years but also with items 108 and 109 (*Asthma*).

The adoption of ICD-9 led to major changes in coding practice for heart diseases. In 1991, both in terms of 1988-SC and ICD-9, a good part of deaths from heart disease was recorded under the item defined as *cardiosclerosis atherosclerotic* (respectively, 45% and 43%). The Soviet Classification distinguishes two subcategories for this cause of death, depending on the presence or absence of hypertension (items 92 and 93, respectively). In 1991, a certain part of deaths by *cardiosclerosis atherosclerotic* classified in the latter items under the Soviet classification by NBS was attributed to *other forms of ischaemic heart diseases* under ICD-9 (411-413, 414.1-414.9) by NAPH. This led us to gather these two categories of causes of death into one complex association (association #74 for the age group 1-59 years and association #81 for the age group 60 years and over). Further, the practice of gradual substitution of deaths earlier recorded as *cardiosclerosis atherosclerotic* by other forms of ischaemic heart diseases in the mortality pattern for heart diseases increases continuously, especially after the adoption of ICD-10 in 1996.

TABLE III.8. – Association #79 built between the items of 1988-SC and ICD-9. The case of pulmonary diseases, 1-59 years

ICD-9		Deaths		1988-SC		
#	Title	1991	1991	#	T/P*	Title
137 [481]	Pneumococcal pneumonia	113	42			Pneumococcal pneumonia
			316	107	P	Other acute pneumonias
138 [482 - 486]	Other acute pneumonias	178	"	107	P	"
139 [490 - 492]	Chronic bronchitis and emphysema	301	"	107	P	"
			292	108	T	Chronic bronchitis and emphysema
144 [510, 513]	Empyema, lung or mediastinal abscess	81	"	107	P	"
			59	112	T	Empyema, lung or mediastinal abscess
79	137-139, 144	673	709			106-108, 112

Note: T/P – Deaths counts are transferred from an old item to a new one totally (T) or partially (P)

Table III.10 summarizes the results of the transition from 1988-SC to ICD-9, showing the distribution of fundamental associations with the corresponding total of deaths (under ICD-9[20]) by the type. First, the fundamental associations of items based on the medical correspondence of items were constructed for all ages. Then, the statistical continuity of death counts at the level of associations was checked by main age groups. For all three age groups, the majority of deaths are concentrated in the complex associations (type n:n), varying from 70% for the age group under one year and 86% for the elderly.

[20] The total of deaths under the Soviet classification recorded by the NBS and ICD-9 recorded by the NAPH in 1991 differs slightly (45848 vs 45852, respectively).

TABLE III.9. – Association #90 built between the items of 1988-SC and ICD-9. The case of pulmonary diseases, 60 years and over

ICD-9		Deaths		1988-SC		
#	Title	1991	1991	#	T/P*	Title
137 [481]	Pneumococcal pneumonia	78	19	106	T	Pneumococcal pneumonia
			114	107	P	Other acute pneumonias
			1272	108	P	Chronic bronchitis and emphysema
			116	109	P	Asthma
138 [482 - 486]	Other acute pneumonias	97	"	107	P	
139 [490 - 492]	Chronic bronchitis and emphysema	1157	"	108	P	
141 [494-496]	Bronchiectasis and other obstructive pulmonary diseases	7	"	108	P	
			3	110	T	Bronchiectasis and other obstructive pulmonary diseases
144 [510, 513]	Empyema, lung or mediastinal abscess	35	"	108	P	
			21	112	T	Empyema, lung or mediastinal abscess
140 [493]	Asthma	69	"	109	P	
90	137-141, 144	1443	1545			106-110, 112

Note: T/P – Deaths counts are transferred from an old item to a new one totally (T) or partially (P)

TABLE III.10. – Distribution of fundamental associations of items built between 1988-SC and ICD-9 by type and death counts, according to medical and statistical correspondence. Transition from 1988-SC to ICD-9

a) based on medical correspondence, all ages

Type of association	Associations		Deaths (in 1991)	
	Number	%	Number	%
type 1:1	137	83	23897	52
type 1:n	19	11	2995	7
type n:1	3	2	11504	25
type n:n	6	4	7451	16
Total	165	100	45848	100

b) based on statistical correspondence, by three age groups

Type of association	**Under 1 year**			
	Associations		Deaths (in 1991)	
	Number	%	Number	%
type 1:1	113	80	353	25
type 1:n	16	11	75	5
type n:1	3	2	0	0
type n:n	9	7	1012	70
Total	141	100	1441	100

Type of association	**1-59 years**			
	Association		Deaths (in 1991)	
	Number	%	Number	%
type 1:1	87	71	2320	17
type 1:n	11	9	478	3
type n:1	1	1	347	3
type n:n	24	19	10459	77
Total	123	100	13605	100

Type of associations	**60 years and over**			
	Association		Deaths (in 1991)	
	Number	%	Number	%
type 1:1	92	74	2152	7
type 1:n	15	12	1397	5
type n:1	1	1	630	2
type n:n	16	13	26624	86
Total	124	100	30804	100

D. Transition from ICD-9 to ICD-10

Since 1996, cause-of-death data are available according to the four-digit ICD-10 items. However, so great a detail results in a too great number of cells with no or too few deaths to interpret transitions. For our purpose, detailed items have been tabulated into 211 categories with the medical content similar to the 214 categories of ICD-9 items[21].

Table III.11 presents the distribution of associations by type with the corresponding numbers of deaths in 1996. The fundamental associations of items based on their medical correspondence belong almost exclusively (95%) to a "simple" type (type 1:1) with a few cases of a type "splitting" (type 1:n) or "merging" (type n:1). At the same time, no "complex" associations (type n:n) were initially constructed. After examining the death series for their statistical coherence, twenty new complex associations that cover 64% of the total of deaths were created, while simple associations include 35% of the total deaths only.

TABLE III.11. – Distribution of fundamental associations of items by type and death counts, according to medical (M) and statistical (S) correspondence. Transition from ICD-9 to ICD-10

Type of association	ICD-10							
	Associations				Deaths (in 1996)			
	Number		Proportion, %		Number		Proportion, %	
	M	S	M	S	M	S	M	S
type 1:1	197	142	95	85	49106	17560	98	35
type 1:n	4	2	2	1	277	424	1	1
type n:1	6	4	3	2	676	5	1	0
type n:n	0	20	0	12	0	32070	0	64
Total	207	168	100	100	50059	50059	100	100

Figure III.4 displays a case referring to obstructive pulmonary diseases. In the transition 1996 year, the standardised mortality rate for *bronchiectasis and other obstructive pulmonary diseases* (items 494-496 in ICD-9 and J44, J47 in ICD-10) suddenly increased, while the rate for

[21] For Moldova, we used the same short lists for ICD-10 and forICD-9 items as those elaborated for the Baltic countries (Meslé and Vallin, unpublished).

chronic bronchitis and emphysema (items 490-492 in ICD-9 and J40-J43 in ICD-10) decreased symmetrically. To counterbalance death counts in these time series, we merged them into a single association (Association #109).

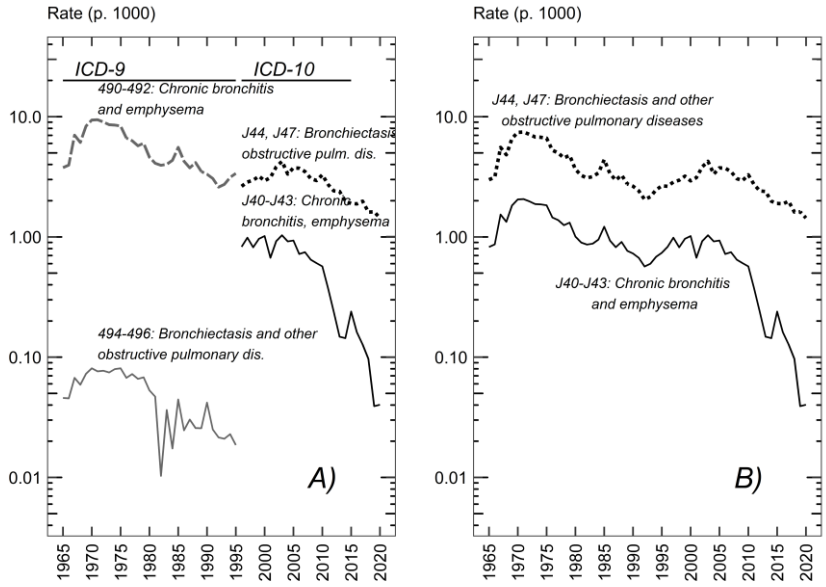

FIGURE III.4. – Trends in standardised mortality rate for some obstructive pulmonary diseases classified under ICD-9 and ICD-10 (a) before and (b) after reconstruction

Transition coefficients for 189 out of 214 ICD-9 items were computed for all age groups, while for 25 items these were adjusted by age. After applying transition coefficients to the ICD-9 series for 1965-1995, continuous series were obtained for 1965-2014, by sex and 5-year age groups for the 211 ICD-10 groups of items. However, before moving to their analysis, we had to produce some additional adjustments to remove the discontinuities in time series caused by changes in coding practice not related to the adoption of any new classification and occurred over the inter-revision period.

3. Additional adjustment of the reconstructed time series

In addition to the periodic revisions of the official classification, changes in practices either of coding (coder's level) or of certifying (doctor's level) may also interrupt the continuity of cause-specific statistical series. This type of problem occurs in all countries, including the former Soviet republics. Consequently, additional *a posteriori* corrections had to be done to solve such discontinuities each time they can be documented. This includes the peculiar case of a sudden rise in mortality from senility that affected Moldova like other former Soviet republics in the 1990s.

A. A posteriori corrections of some time series

This type of correction was produced after every transition from an old classification to a new one, i.e., four times. We made the first round of *a posteriori* corrections to the 1965-1980 time series classified under the 1970 classification and the second one to the 1965-1990 time series classified under the 1988 classification. After the third transition, from 1988 Soviet classification to ICD-9, *a posteriori* coefficients of correction were applied to the 1965-1995 statistical series. Finally, the fourth round of this type of correction was produced after producing the 1965-2014 time series according to ICD-10.

a) After reclassifying according to the 1970 Classification

After reclassifying the 1965-1969 data in accordance with the 1970 classification and adding them to the 1970-1980 data set, *a posteriori* corrections were especially important for the period before the transition year. *Table III.12* presents the proportions of deaths transferred for each item concerned by *a posteriori* correction.

Figure III.5 gives an example. The number of deaths classified under item 85, *Chronic rheumatic heart diseases*, under the 1970 classification decreased abruptly in the 1974 year, which was simultaneously accompanied by the symmetric increase in the number of deaths attributed to item 84, *Active rheumatism*. Quite clearly, this is the

result of a change in coding practices. Indeed, in 1973, the TCSU of the USSR issued new instructions concerning the preparation of the annual cause-of-death statistical forms 5 and 5b (TCSU of USSR, 1973). According to these rules, it was recommended to pay special attention to the codification of item 84 (*active rheumatism*) at age groups above 15 years old and item 85 (*chronic rheumatic heart diseases*) at age groups before 15 years old. This new instruction provoked an exchange of deaths between these two causes of death in 1974, which we tried to counterbalance by *a posteriori* correction: we transferred 30% of deaths attributed to items 85 to item 84 for the period 1965-1973.

Another example of the first round of a *posteriori* corrections refers to infant mortality. According to the TCSU instructions issued in 1973 it was recommended not to codify infant deaths under certain diseases of the digestive system (items 123, 126-129)[22]. As a result of these new codifying rules, we had to transfer 85% of infant deaths registered under item 122[23], *Noninfectious gastroenteritis and colitis excluding ulcer*, and 80% of infant death attributed to item 123, *Chronic enteritis and ulcerous colitis*, to the item 7, *enteritis and other diarrhoeal diseases,* for the period 1965-1973.

However, not all the TCSU codification rules were followed at the republic level on the one hand, and statistical offices of each Soviet Republic introduced their own changes in codification practice on the other hand. Thus, disregarding the TCSU recommendations to attribute a very small count of death certificates to item 125, *Other liver cirrhosis*, due to various aetiologies of this pathology, in Moldova, the proportion of deaths classified under this item in the overall mortality pattern for diseases of the digestive system was very high and increased from 60% in 1970 to 75% in 1980.

[22] The new TCSU instructions issued in 1973 also recommended not to codify infant deaths under the items 106 (*pneumococcal pneumonia*), 111 (*empyema, lung or mediastinum abscess*) and certain items of diseases of the circulatory system (items 100 and 101).

[23] For the item 122, there was a sudden drop in infant deaths in 1974 too, though this item was not mentioned in the TCSU instructions issued in 1973.

Totally, the first round of *a posteriori* corrections concerned 45 items in the 1970 classification that were adjusted in most of the cases by age.

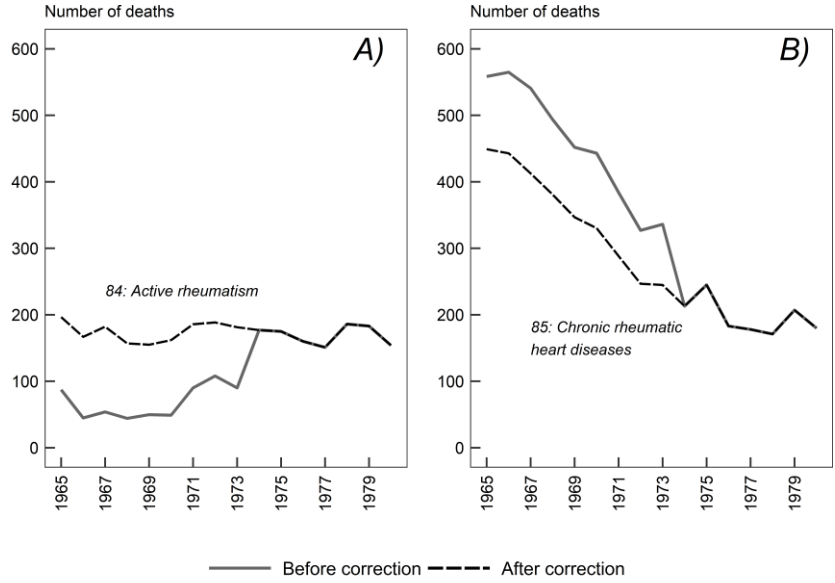

FIGURE III.5. – Trends in annual deaths classified under items 84 and 85 of 1970-SC (a) before and (b) after *a posteriori* correction, age 1-59 years old

b) After reclassifying according to the 1981 Classification revised in 1988

The items involved in the second round of *a posteriori* corrections are almost half what they were compared to the previous one (23 vs 45) (*Table III.13*). In a few cases, statistical discontinuities in the time series are closely related to a transition year. *Figure III.6* provides an example for item 128, *acute nephritis and glomerulonephritis*, and item 130, *kidney infections,* classified under the 1981 Soviet classification. In the transition year, some of the deaths earlier referred to item 130 were codified under item 128. However, the next year, the statistical office annulled these new codifying rules and came back to the previous practice. In this situation, the fundamental association of items built for

these two causes of death was based on the numbers of deaths registered in 1980 and 1982 (instead of 1980 and 1981), while the peak in 1981 was removed by *a posteriori* correction.

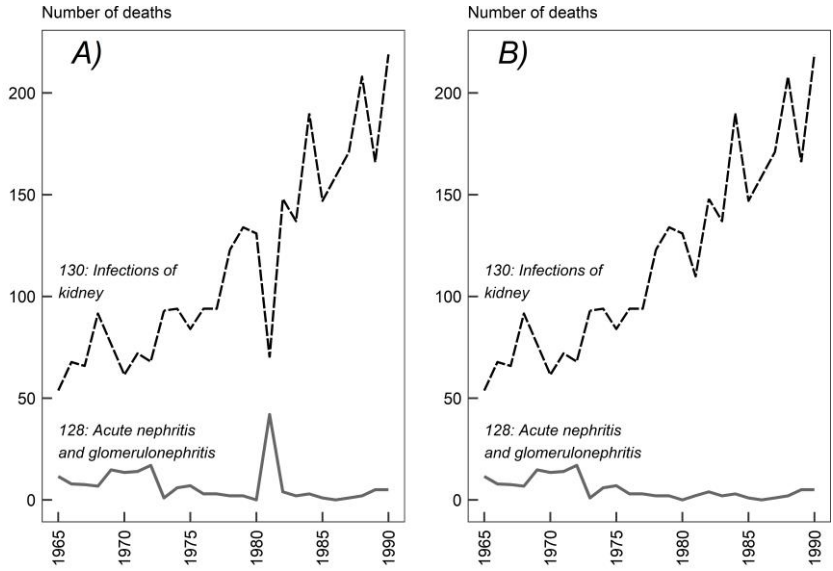

FIGURE III.6. – Trends in annual deaths classified under items 128 and 130 of 1981-SC revised in 1988 (a) before and (b) after *a posteriori* correction

Other cases are more similar to those treated in the previous wave of *a posteriori* corrections.

TABLE III.12. – Percentage of deaths transferred *a posteriori* from one item in 1970-SC to one or more other items

Item of entrance	Item of exit	Age	Proportion (%)											
			1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
49	50	All ages	45	45	45	45	45	45	45					
64	55	All ages							85	85	85			
76	74	> 1 year	40											
76	75	> 1 year	45											
77	74	> 1 year	75	75	75	75	75	75	75					
78	23	> 1 year	80											
85	84	1-59 years	30	30	30	30	30	30	30	30	30			
88	86	1-59 years	35	35	35	35	35	35	35					
88	93	1-59 years	35	35	35	35	35	35	35					
88	86	> 60 years	45	45	45	45	45	45	45					
88	93	> 60 years	45	45	45	45	45	45	45					
89	86	> 60 years	65	45										
89	88	> 60 years	25	15										
94	96	1-59 years							70					
98	93	> 60 years								15				
100	92	1-59 years	76	56										
100	92	> 60 years	56	36										
100	91	> 60 years								8	18			
100	92	> 60 years								8	8			
100	99	> 60 years								14	14			
100	93	> 60 years								20				
101	91	> 60 years								10	20			
101	92	> 60 years								10	10			
101	99	> 60 years								50	40			

Item of entrance	Item of exit	Age	Proportion (%)											
			1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
106	107	< 1 year		85						95	95			
108	106	1-59 years	32	32	32	32	32	32	32					
108	113	> 60 years	30	30	30	30	30	30	30	20	20			
109	107	> 60 years									79			
111	107	< 1 year		95	95	95	95	95	95	95	95	95		
120	121	< 60 years	44	44	44	44	44	44	44					
122	7	< 1 year	85	85	85	85	85	85	85	85	85			
123	7	< 1 year	80	80	80	80	80	80	80	80	80			
127	126	All ages	65	65	65	65	65	65	65	65	65			
131	133	All ages						82						
150	152	< 1 year	80											
157	156	< 1 year										70	50	50
164	163	All ages	80											

TABLE III.13. – Percentage of deaths transferred *a posteriori* from one item in 1981-SC revised in 1988 to one or more other items

Item of entrance	Item of exit	Age	Proportion (%)													
			1965	1966-1971	1972-1973	1974	1975	1976-1978	1979-1980	1981	1982	1983	1984	1985	1986-1987	1988	1990
48	49	All ages												54			54
49	48	All ages									9	9					
83	80	< 1 year	45	45	45	45	45	45	45	45	45	45					
89	98	1-59 years	95	95	95	95	95	95	97	97	97	97					

Item of entrance	Item of exit	Age	Proportion (%)													
			1965	1966-1971	1972-1973	1974	1975	1976-1978	1979-1980	1981	1982	1983	1984	1985	1986-1987	1988	1990
93	94	> 60 years	0.1	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.5	
93	95	> 60 years	4	4	13	13	13	13	13	13	13	13	13	13	10	11	
93	97	> 60 years	1	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4		
95	93	1-59 years	35	35													
97	94	> 60 years														1	
97	95	> 60 years														49	
99	100	> 60 years				7	7	7	7	7	7	7	7	7	7		
107	103	< 1 year	10	10	10	10	10	10	10	10	10	10	10				
107	103	1-59 years	3	3	3	3	3	3	3	3	3	3	3				
107	149	< 1 year				2	2	2	2	2	2	2					
107	150	< 1 year				2	2	2	2	2	2						
107	142	< 1 year					2										
111	112	All ages								95	95	95					
128	130	All ages								95							
153	152	< 1 year									25	25					

c) After reclassifying according to ICD-9

When the 1965-1990 death time series were reclassified under ICD-9, these were added to the 1991-1995 ICD-9 crude data and checked for statistical continuity. At this stage, only six items were corrected *a posteriori*. Two of them refer to *other malignant neoplasms of the digestive system* and *malignant neoplasm of the colon* (groups of items 61 and 57, respectively). Inter-changes were also produced between *heart failure* and *other heart diseases* (groups of items 122 and 123, respectively) and *pulmonary oedema and other interstitial pulmonary diseases with fibrosis* and *chronic bronchitis and emphysema* (groups of items 145 and 139). For all the groups, the correction coefficients were refined by age (*Table III.14*).

TABLE III.14. – Percentage of deaths transferred *a posteriori* from one group of items under ICD-9 to one or more other groups of items

Item of entrance	Item of exit	Age	Proportion (%)			
			1965-1988	1989	1990	1991
61	57	> 60 years	20	20	20	20
122	123	> 60 years	40	20	40	40
145	139	1-59 years	50			
145	139	> 60 years	50			

d) After reclassifying according to ICD-10

After the transition from ICD-9 to ICD-10, ten items at age groups 1-59 years old and 60 years old and over were corrected *a posteriori* (*Table III.15*). Two of them are assigned to *Diabetes mellitus* and *Other nutritional and metabolic disorders* (groups of items 80 and 83, respectively) and the rest to diseases of the circulatory system.

TABLE III.15. – Percentage of deaths transferred *a posteriori* from one item in ICD-10 to one or more other items

Item of entrance	Item of exit	Age	Proportion (%)								
			1965- 1996	1997	1998	1999-2000	2001-2003	2004	2005-2006	2007-2012	2013-2014
83	80	1-59 years								60	
83	80	> 60 years								90	
113	109	> 60 years	10	10	10	10	10	10	10	10	10
114	109	> 60 years	15	15	15	15	15	15	15	15	15
114	122	> 60 years	5	5	5	5	5	5			
114	124	> 60 years	15	15	15	15	15	15	15	15	
120	114	> 60 years	60	80	60						
123	122	1-59 years	25	25	25	25	25				
123	122	> 60 years	18	18	18	18	18				
125	114	> 60 years	35	35	35	35					

B. The peculiar case of senility

In Moldova, like in other former Soviet republics, very few deaths were classified under senility as well as under other items dealing with unknown or ill-defined causes before the end of the 1980s. The situation has changed completely after 1989, when the Soviet Health Ministry headed by Evgeni Chazov, formerly leader of a cardiology unit, issued a new directive regarding the diagnosis of deaths from cardiovascular diseases among people above age 80 and diagnosis of sudden cardiac death at younger ages. The new instructions recommended that any death occurring after age 80 be registered as due to senility unless the person's medical history or an autopsy report makes it possible to diagnose a precise cause of death or mentioned death from injury, poisoning, or another external cause (Meslé and Vallin, 2012).

As soon as the new directive came into force, the number of deaths attributed to the item *senility*[24] rose dramatically in the former USSR countries. In 1992, the proportion of deaths classified under that item reached 2.5% of all deaths in Russia (Meslé et al., 1996) and 10% in Ukraine (Meslé and Vallin, 2012). In Moldova, the impact of this reform was even greater. In this country, the maximum number of senility deaths registered in 1993 achieved 17% of all deaths (12% in males and even 21% in females). At the same time, the number of deaths from certain cardiovascular diseases, in particular from *atherosclerotic cardiosclerosis*, which accounted for the lion's share of deaths in the Soviet mortality pattern, was sharply declining. The new directive also prohibited the registration of acute cardiovascular diseases before the age of 80 unless the diagnosis was confirmed by an autopsy report. This accounts for a large share of deaths registered as due to senility in these age groups in Moldova in the 1990s (20% among those aged 70-79 and 2% among those aged 60-69 in 1993).

The number of deaths classified under senility has started to decline rapidly since 1993. It was 5% of the total of deaths in 1997 and 3% in 2000. The number of deaths attributed to ill-defined causes of death (without senility)[25] was quite insignificant before the late 1980s. However, in contrast to senility, the new instructions caused a very small increase in mortality for this group of causes in the 1990s, though it continued into the 2000s. Nowadays, ill-defined causes of death, including senility, make up less than 1% of total deaths.

Certainly, to avoid discontinuity in the time series, we had to distribute the deaths attributed to senility and ill-defined causes between other items. For ill-defined causes of death, we distributed the contents proportionally between all other items (apart from senility) for the whole period 1965-2018. For senility, we tested three different methods and compared the evolution of the new trends by nine broad groups of causes

[24] Item 158 under the 1981 Classification, item 797 under ICD-9 and item R54 under ICD-10.
[25] Item 159 under the 1981 Classification, items 780-796, 798, 799 under ICD-9 and R00-R53, R55-R99 under ICD-10.

of death and across three older age groups (60-69, 70-79 and 80 years and over). The first method is a proportional distribution of senility deaths among all the causes of death. The second one is a proportional distribution of senility deaths but limited to diseases of the circulatory system. The third method is a special distribution of deaths registered under senility among cardiovascular diseases. Let us consider the results of these three methods for Moldova compared to Russia and Ukraine, for which senility deaths were also redistributed (Meslé et al., 1996; Meslé and Vallin, 2003, 2012). Although the first approach was accepted in the case of Russia, for Ukraine this resulted in an implausible peak of deaths for some items, especially over the age of 80. We observed the same situation and for Moldova. This overestimation of deaths was especially pronounced in the case of cancer mortality, which is known to be insensitive to socioeconomic disturbances in the countries of the former Soviet Union in the 1980s and 1990s (*Fig. III.7*). For Ukraine, this led to the necessity to limit the proportional distribution of senility deaths to only circulatory items (the second method of senility distribution). However, for Moldova, even this second approach became also questionable due to an excessive allocation of deaths to cerebrovascular diseases and other circulatory diseases as compared to heart diseases (Fig. III.8), and it was necessary to find another solution.

The third method of senility redistribution adopted for Moldova suggests the use of the special coefficients for three different groups of diseases of the circulatory system (heart diseases, cerebrovascular diseases and other circulatory diseases). The algorithm of computation of these coefficients is as follows. First, we need to redistribute senility deaths among cerebrovascular diseases and other diseases of the circulatory system. For that, we first computed a correction coefficient as a ratio of the total number of deaths from all causes in 1991 to the total number of deaths from all causes in 1989. The option for the year 1991 is due to a relatively small increase in deaths from senility in 1990. Then, we had to estimate the expected deaths from cerebrovascular diseases and other diseases of the circulatory system in 1991. To do that, we simply

multiplied the corresponding deaths registered in 1989 by the correction coefficient.

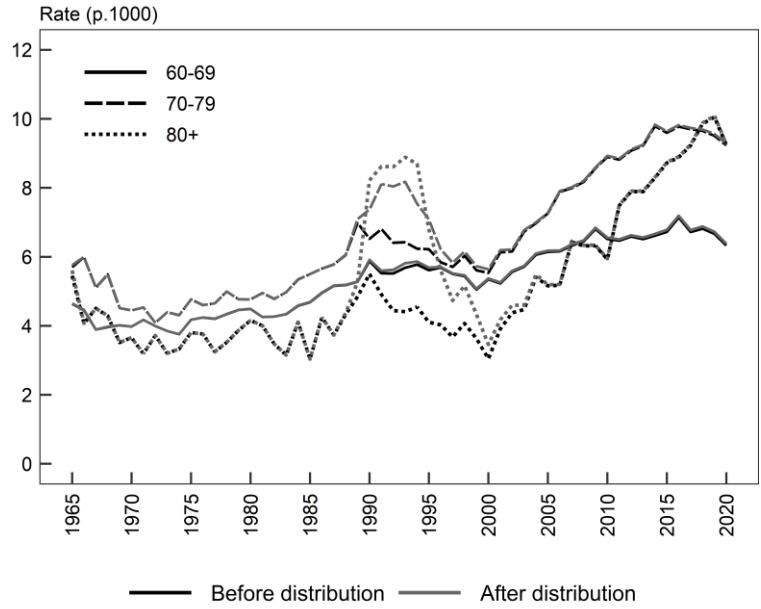

FIGURE III.7. – Trends in the standardised mortality rate for cancer for three older age groups before and after proportional distribution of deaths from ill-defined causes, including senility

The difference between the expected and registered deaths gives us the "missing deaths" in 1991, i.e., deaths that are expected to be registered under these two cardiovascular items if no new rules on the registration of senility deaths had been introduced. Finally, the ratios of these "missing deaths" to senility deaths in 1991 are the required distribution coefficients. We used these coefficients to redistribute senility deaths among cerebrovascular diseases and other diseases of the circulatory system. After redistributing senility deaths among these two groups, the remaining senility deaths are attributed to heart diseases. This technique was refined by sex and applied only in relation to the age group 80 years and older for the post-1988 period. For the 60-69 and 70-79 age

groups, the given approach was not applicable because of the relatively low number of deaths. For these ages, we used the second method of senility redistribution, that is, the proportional distribution limited to diseases of the circulatory system. A detailed description of the calculation of the distribution coefficients used in the study is given in the corresponding annexe.

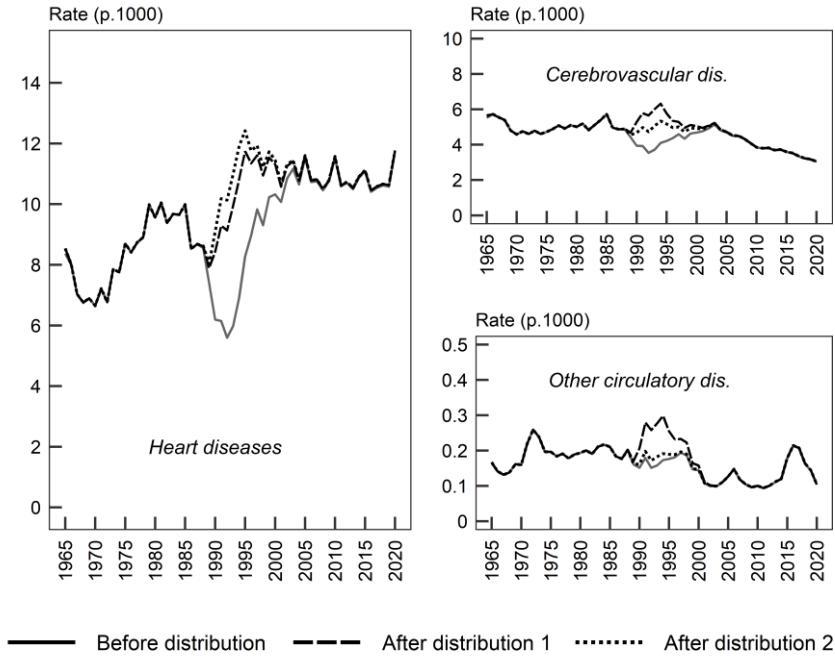

FIGURE III.8. – Trends in the standardised mortality rate for three groups of circulatory diseases before and after distribution of senility deaths by two methods: limited proportional distribution (1) and special proportional distribution (2)

Figure III.8 presents new trends in cardiovascular mortality after distribution of senility deaths by the special method (the third method) and the proportional method limited to cardiovascular diseases (the second method). The former eliminates the peak of deaths from cerebrovascular diseases and other diseases of the circulatory system

resulting from the application of the latter. It is important to note that after these adjustments, mortality from diseases of the circulatory system changes completely its trend during the recent years and becomes in compliance with the overall mortality trend. If unadjusted trends in cardiovascular mortality have been on an upward path since the early 1990s, followed by stagnation (heart diseases and other circulatory diseases) or a slight decline (cerebrovascular diseases) after 2005, then new estimates show that moderate improvements have commenced since the mid-1990s.

***

This chapter describes the method for reconstructing the continuity of the death time series, according to ICD-10, the last classification of causes of death used in Moldova. Based on this method, we eliminated all the interruptions caused since 1965 by the periodic changes in the classification of causes of death both in the Soviet period and after independence. An additional *a posteriori* correction was made after each transition from an old classification to a new one. Particular attention was paid to the problem of the increase in mortality from senility in the 1990s. For Moldova, we adopted a special method of distributing senility deaths between three groups of diseases of the circulatory system. As a result, we obtained the 1965-2020 death time series by sex and age reconstructed under the 10th revision of the International Classification of Diseases and Causes of Death.

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CHAPTER IV. MORTALITY BY AGE, SEX AND MAIN GROUPS OF CAUSES OF DEATH

In this chapter, we will review the reconstructed death time series for Moldova by broad groups of causes of death, while a more in-depth analysis will be reported in the next one. The Moldovan results will be compared to the Ukrainian mortality already reconstructed in the same way for the period 1965-2013 (Meslé and Vallin, 2012; Poniakina and Shevchuk, 2016) and extended with crude data for 2014-2020. It is important to highlight that officially published data for Ukraine since 2014 are highly problematic. The State Statistics Service of Ukraine does not publish data on the temporarily occupied territory of the Autonomous Republic of Crimea since 2014, while official mortality rates for the Donetsk and Luhansk regions devastated by the military conflict are severely underestimated. The Ukrainian Statistical Office produces life expectancy estimates without these three territories, which represent around 18% of the total population. In this study, the same approach was used and the Donetsk and Luhansk regions, both in terms of population and cause-of-death mortality data, were subtracted from the official national estimates for the period since 2014. However, this fact cannot prevent disruptions in the Ukrainian time series due to territorial changes and excessive mortality provoked by the military conflict and hence the under-registration of mortality associated with these events. Considering this, to present mortality rates for Ukraine since 2014, we used a distinct line type with a corresponding note. Data for Ukraine for the period 1965-2013 were extracted from the Human Cause-of-Death Database (French Institute for Demographic Studies (France) and Max Planck Institute for Demographic Research (Germany), 2016) and for the recent period from the website of the State Statistics Service of Ukraine (State Statistics Service of Ukraine, 2021).

Section I of this chapter will evaluate the contributions of mortality by age and cause to changes in life expectancy at birth, while Section II will describe trends in mortality rates by broad groups of causes of death

in both Moldova and Ukraine. Although the comparative analysis of mortality between Moldova and Ukraine is limited to the main groups of causes of death, we made one exception for two detailed alcohol-related causes of death (accidental poisoning and liver cirrhosis), which are the emblematic causes of mortality patterns in these countries. The impact of mortality trends by age and causes on the changes in life expectancy at birth since 1965 and over six different time periods in Moldova is available in annexes. Standardised mortality rates by sex, age and main groups of causes of death after redistribution of senility and ill-defined deaths are available in the Human Cause-of-Death Database https://www.causesofdeath.org/cgi-bin/main.php.

1. Decomposition of life expectancy at birth changes into specific effects of mortality trends by age and main groups of causes

Decomposing the changes in life expectancy at birth into mortality changes by causes of death and age is a useful tool for a better understanding of the nature of life expectancy gains and losses. To do this, we use the method proposed by E. Andreev (Andreev, 1982; Andreev and Shkolnikov, 2002). After presenting the global changes in life expectancy at birth in Moldova compared to Ukraine (1965-2020), we focus our analysis on six different periods.

A. Global changes in life expectancy in Moldova and Ukraine since 1965

In 1965 compared to 2020, Moldovan life expectancy at birth remained unchanged in males (65.8 years in 1965 and 65.9 years in 2020), while it gained less than 4 years in females (70.1 years in 1965 and 73.8 years in 2020). Such a lack of progress for men and moderate rise for women contrasts sharply with the large gains observed in France (+ 11 years whatever the sex) or even more in Japan (+ 15 years). It is much more similar to Ukraine, where life expectancy declined by 1.3 years among males and gained barely two years among females between

1965 and 2020. The COVID-19 pandemic in 2020, which is the latest year of observation, has certainly had an important impact on life expectancy, but this does not explain the absence of progress in both countries. Despite these small improvements, the cause-specific mortality structure underwent substantial changes in the two countries. *Figure IV.1* illustrates the decomposition of the changes in life expectancy at birth between 1965 and 2020 by five-year age groups and seven broad classes of causes of death for men and women.

In Moldova, infant mortality decline, especially from infectious and respiratory diseases, increased life expectancy at birth by almost three years over the entire period, and the reduction in mortality among children (1-14 years old) and young adults (under 30 years old) added almost one year for both sexes. In Ukraine, the contribution of the decrease in mortality of children under one year of age was much lower than that in Moldova since the level of infant mortality was much lower in that country at the start of the study period. Among Moldovan males, a considerable increase in adult mortality after the age of 40 completely offset gains made at younger ages and shortened male life expectancy by 4.0 years. Male losses are especially devastating at working age with a peak at the age of 55-59. Diseases of the circulatory system, neoplasms and diseases of the digestive system are almost completely responsible for this deterioration and, consequently, for male life expectancy losses. Among these causes of death, cardiovascular diseases played a leading role. In Ukraine, the adult male population also suffered a significant deterioration in health at the same ages, although the overall losses were somewhat less pronounced compared to Moldova with a negative contribution of 3 years. As in Moldova, the main source of male health problems in Ukraine is closely associated with diseases of the circulatory system. At the same time, among Moldovan males, the adverse impact of neoplasms and infectious diseases on the health of the adult population is greater relative to Ukraine.

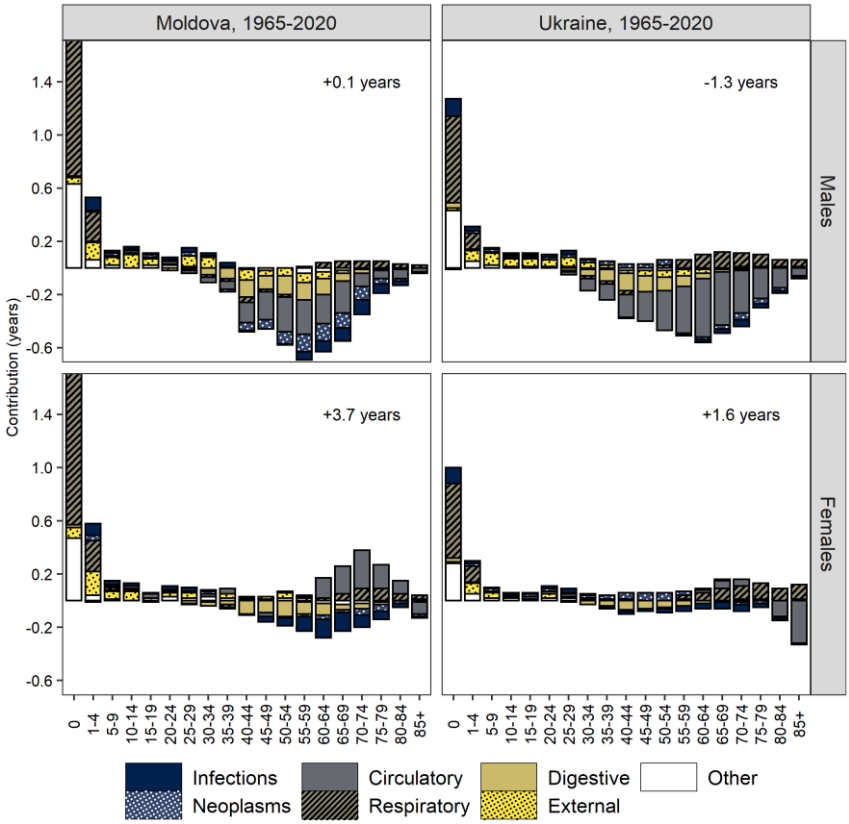

FIGURE IV.1. – Age and cause of death contributions to the changes in life expectancy at birth between 1965 and 2020 in Moldova and Ukraine

Note 1: For better visibility of the figure, the maximum limit for Y-axis is set at 1.6, while for Moldova for the first age group it is 3.0 years for males and 2.8 years for females.
Note 2: For Ukraine in 2020, the data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the regions of Donetsk and Luhansk.

With regard to women, apart from the progress made for the younger age groups, which certainly resembles those of men, the present health situation has not changed drastically since the mid-1960s, either in Moldova or in Ukraine. Moreover, the burden of diseases of the digestive system and infectious diseases in Moldova has only hindered overall moderate gains in female life expectancy. Finally, improvements in

mortality from diseases of the circulatory system among older Moldovan females and diseases of the respiratory system, particularly among older Ukrainian females, are too small to have a sizeable effect on the overall changes in life expectancy at birth.

The decomposition of changes in life expectancy at birth between two points in time separated by more than half a century revealed a profound deterioration in men's health and stagnation for women in Moldova as in other former Soviet republics, for example, in Ukraine. However, the overall mortality trend in these countries was subject to the wide fluctuations induced by the specific events characteristic of the Soviet period and the period of independence. From this point of view, it is interesting to examine changes in mortality patterns by age and cause over various subperiods marked by different contextual changes.

B. Changes in life expectancy over six periods

The synchronous fluctuations in life expectancy in the European ex-Soviet republics can be explained by the common social and economic circumstances that affected these countries during the Soviet period and immediately after the collapse of the USSR. At least two major events that have had a significant impact on mortality in these countries should be highlighted. The first is the anti-alcohol campaign launched by Mikhail Gorbachev in the former Soviet Union in 1985, while the second is the grave social and economic crisis that struck the newly independent states after the break-up of the USSR in 1991 and the sudden transition from the communist regime to the market economy. Based on the minimum or maximum life expectancy values recorded before, during and at the end of these two events, we distinguish the following six periods that may differ slightly in Moldova and Ukraine (*Figure IV.2*):

- Long-term health deterioration (1);
- Anti-alcohol campaign (2) and its fading effect (3);
- Socio-economic crisis (4) and post-crisis recovery (5);
- Recent improvements (6).

For 20 years, from 1965 to1984, life expectancy decreased continuously in both countries, so that in 1984, a year before the anti-alcohol campaign, it decreased by 3.9 years for males and 1.2 years for females in Moldova and by 3.3 and 0.6 years, respectively, in Ukraine (*period 1*).

The steady decline in life expectancy only came to an end in 1984, when the Soviet government introduced the anti-alcohol measures. Although the Soviet government began implementing certain anti-alcohol measures in the early 1980s (McKee, 1999), the most spectacular achievements were those of Mikhail Gorbachev's campaign launched in May 1985. The campaign included a series of tough administrative measures to restrict public access to alcohol. The production and sales of alcoholic beverages were reduced by almost three times in State commerce (the only legal source of alcohol in the Soviet Union), the price of alcohol was raised, strict penalties for home alcohol production were legislated and there was an expansion of the networks of narcological clinics and special facilities for the compulsory treatment of alcoholism, so-called medical-labour dispensaries (Chervyacov and Shkolnikov, 2000, p. 15). In Moldova, traditional winemaking and wine-drinking country, in addition to these measures, the vast areas of vineyards were cleaned and the wines were destroyed during the anti-alcohol campaign. Areas under vines in Moldova decreased by 20% between 1984 and 1987, while the annual gross harvest of grapes declined by one third over the same period (TCSU of USSR, 1985; Goskomstat of USSR, 1988). Such a strong anti-alcohol campaign immediately raised life expectancy in all European countries of the former USSR. In Moldova, in three years alone, between 1984 and 1987, life expectancy rose by 3.3 years for men and 2.4 years for women. In Ukraine, Gorbachev's anti-alcohol campaign had a significant but less important effect than in Moldova on the increase in life expectancy for males (2.3 years) and, in particular, females (0.9 years) in 1984-1986 (unlike Moldova, the latest year of life expectancy growth in Ukraine was 1986). Yet Gorbachev's campaign was as short as it was strong. The draconian measures implemented quickly were less

and less applied and soon abandoned, opening the door to a jump in male mortality from 1987 in Moldova or even from 1986 in Ukraine. At the same time, the increase in female life expectancy slowed down until 1989 and reversed thereafter. Overall, between 1987 and 1991, Moldovan life expectancy decreased by 1.2 years for men and by 0.3 years for women. In Ukraine, between 1986 and 1991, the losses were more marked as compared to Moldova (2.3 and 0.7 years, respectively) (*periods 2 and 3*).

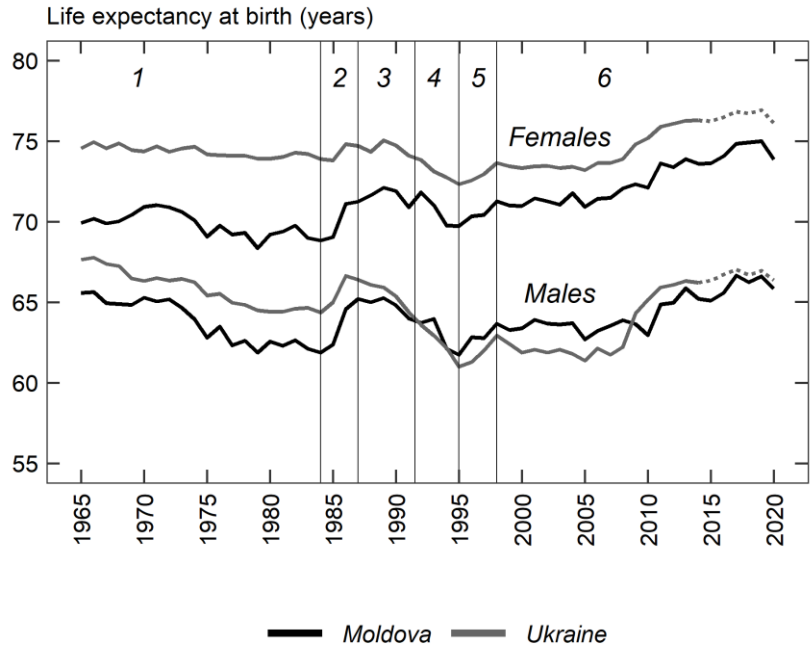

FIGURE IV.2. – Six periods in the evolution of life expectancy at birth in Moldova and Ukraine, 1965-2020

Note: For Ukraine in 2014-2020, the data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the regions of Donetsk and Luhansk.

After the dissolution of the USSR in 1991, a severe social and economic crisis hit the newly independent countries, which moved abruptly to the market economy. transitioned abruptly into a market economy. Between 1990 and 1999, real gross domestic product (GDP)

was cut by 2.4 times in Moldova and by two times in Ukraine. The decline was particularly sharp up to 1994 and decelerated in 1995-1998. In the first years after independence, the decline in production was accompanied by soaring inflation which reached 1183% in Moldova and even 3691% in Ukraine in 1993 (WHO, 2016).

The new growth in mortality induced by the withdrawal of the anti-alcoholic measure was then accelerated and relayed by the health consequences of that brutal socio-economic crisis during the years 1991-1995. Losses were more impressive in Ukraine, where life expectancy at birth was reduced by 3.4 years for males and 1.8 years for females during these four years. The response of the Moldovan population to the crisis of the early 1990s was also noticeable, although weaker compared to Ukraine: men lost 2.1 years and women lost 1.3 years over the same period. In 1995, life expectancy at birth reached an all-time low over the study period in Ukraine (61.0 years among males and 72.3 years among females), while in Moldova, its values were very close to the minimum recorded in 1979 and made up 61.9 years for males and 69.7 years for females (*period 4*). From there, regardless of the continued deterioration of the social and economic situation in both countries, there was a brief period (1995-1998) of recovery, when people adapted to the crisis, which gave rise to a rebound in life expectancy of 1.8 and 1.9 years among Moldovan and Ukrainian males, respectively. Similarly, female life expectancy at birth increased by 1.6 years in Moldova and by 1.3 years in Ukraine during the same period (*period 5*).

Following the end of the large fluctuations brought about by the particular circumstances of the 1980s and 1990s (periods 2-5), male life expectancy in Ukraine resumed its long-term downward trend, and in 2005, its values were roughly the same as those recorded in 1995. For Ukrainian females and Moldovan males, life expectancy remained stagnant up to 2005 and 2010, respectively, while for Moldovan females it seems to have risen in a more or less continuous way since 1998. In Ukraine, life expectancy after 2005 stopped falling for men and increased slightly for women over the next three years, followed by a marked

increase that jumped notably in 2009 and less so in 2010. In Moldova, the recent recovery period in males is still quite short and unstable. In total, in 1998-2020, males gained 2.1 years in Moldova vs 3.4 years in Ukraine. Among females, these gains were almost the same in the two countries and represented 2.6 years in Moldova and 2.5 years in Ukraine (*period 6*). Mortality from COVID-19 infection in 2020 slowed down these moderate improvements in both countries. Thus, in Moldova, life expectancy decreased by 0.8 years in males and 1.1 years in females in 2020 compared to 2019, while in Ukraine, by 0.6 years and 0.8 years, respectively. Disregarding these recent changes, male life expectancy in these countries corresponds roughly to the level registered at the height of the 1985-1987 anti-alcohol campaign, while female life expectancy has already caught it up.

Further, we will provide the decomposition of changes in life expectancy at birth by age and main groups of causes of death over the six periods mentioned above.

a) The period of the long-term population health deterioration

Figure IV.3 shows the decomposition of the total loss in life expectancy between 1965 and 1984 into the specific effects of mortality changes by age and broad groups of causes. The reduction in infant mortality due to exogenous causes of death, such as respiratory and infectious diseases, compensated partly for the enormous loss of life expectancy caused by increased working-age mortality rates. Thus, the increase in mortality among those aged 15 and over would have led to a loss of 4.7 years of male life expectancy in Moldova rather than the observed loss of 3.9 years. The same results are obtained in Ukraine: 3.7 years of adult-specific loss compared to 3.3 years of total loss.

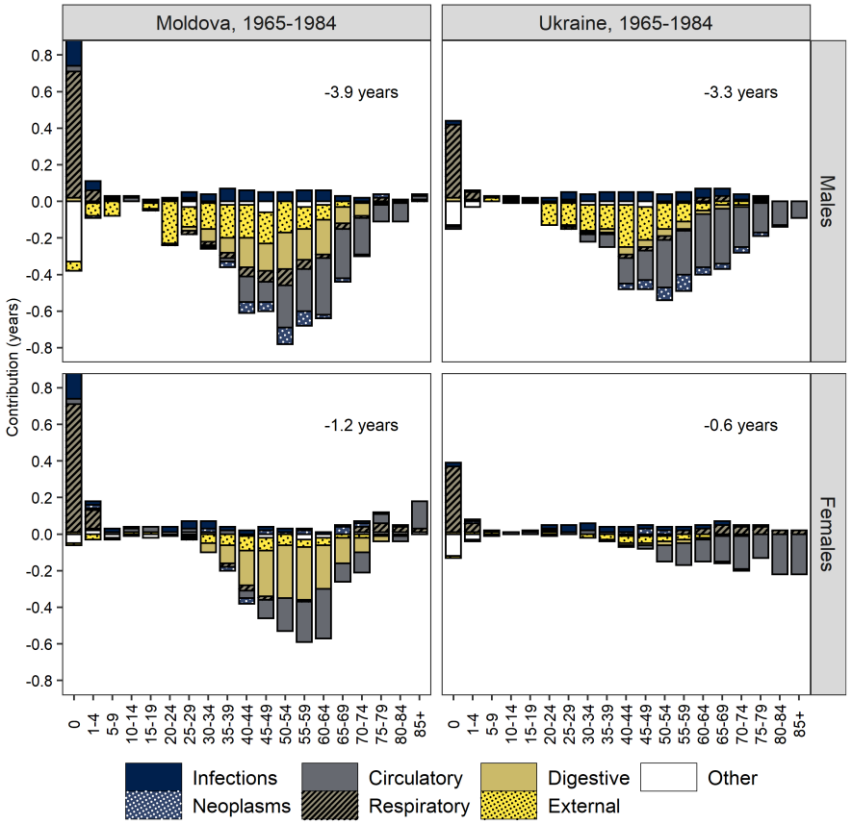

FIGURE IV.3. – Age and cause of death contributions to the changes in life expectancy between 1965 and 1984 in Moldova and Ukraine, by sex

Note: For Moldova, the positive contribution of the first age group is 0.8 years for males and 1.1 years for females.

In Moldova, cardiovascular diseases, digestive diseases and deaths from injury and poisoning are responsible for 90% of men's loss of life expectancy after age 15 with a slight predominance of the first group of causes of death over the other two. Young adults are primarily affected by deaths from injury and poisoning, whereas circulatory and digestive diseases play a key role for mature adults and the elderly. In Ukraine, cardiovascular diseases and deaths from injury and poisoning account for

90% of all losses, with the former having a much larger impact than the latter.

For females, the deterioration of the situation in adulthood is particularly impressive in Moldova. Here, the increase in mortality after the age of 15 accounts for a loss of 2.6 years, while the total loss (partially offset by the decrease in infant and child mortality) is only 1.2 years. In Ukraine, the effect of the increase in adult female mortality is much less (-1.0 year) than in Moldova, but the gains arising from the decrease in infant and child mortality are also less and, therefore, the total loss is not negligible (-0.6 years). In Moldova, the negative influence of digestive diseases (mainly liver cirrhosis) on women's health during this period is especially significant, while it is completely absent in Ukraine. The contribution of this cause of death to the loss of female life expectancy is 1.7 years, more than double the impact of diseases of the circulatory system (0.7 years). The enormous losses of the working-age female population in Moldova due to diseases of the digestive system are particularly striking when compared to Ukrainian females whose losses in adulthood are almost entirely influenced by diseases of the circulatory system.

b) The period of the anti-alcohol campaign and its fading effect

During the period of the active anti-alcohol campaign (1984-1987 in Moldova and 1984-1986 in Ukraine), there was a sharp decline in adult mortality. The effect turned out stronger in Moldova than in Ukraine, for both men (3.3 vs 2.3) and women (2.4 vs 0.9). The decrease in mortality after 15 years accounts almost entirely for the increase in life expectancy in both countries (80% in Moldova and even more than 90% in Ukraine). Although positive contributions were registered for all causes of death, with the exception of neoplasms, deaths from injury and poisoning and diseases of the circulatory system account for the lion's share of the increase in male life expectancy in Moldova (60%) and Ukraine (80%). Among Moldovan males, the drop in mortality from diseases of the digestive system explains about 20% of the overall growth in life

expectancy, while their contribution is almost negligible in Ukraine (*Fig.IV.4*).

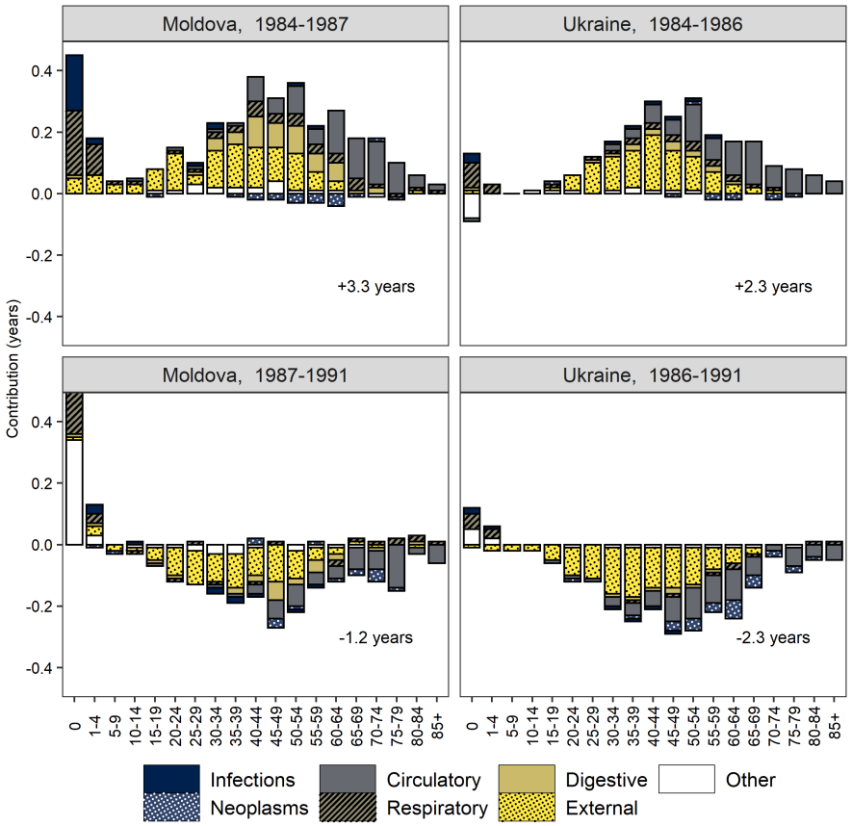

FIGURE IV.4. – Age and cause of death contributions to the changes in male life expectancy during the anti-alcohol campaign (first row) and its vanishing (second row) in Moldova and Ukraine

Note: For Moldova, in 1987-1991, the positive contribution of the first age group is 0.6 years

Among females, diseases of the circulatory system at an older age play a major role in both countries, particularly in the case of Ukraine (up to 70% of the total gain). For Moldovan women, overall health improvements during the period of the anti-alcohol campaign are also closely associated with diseases of the digestive system, even stronger

than for Moldovan men. As a result, the decrease in mortality due to this group of causes of death alone accounted for over 30% of the growth in female life expectancy in this country (*Fig. IV.5*).

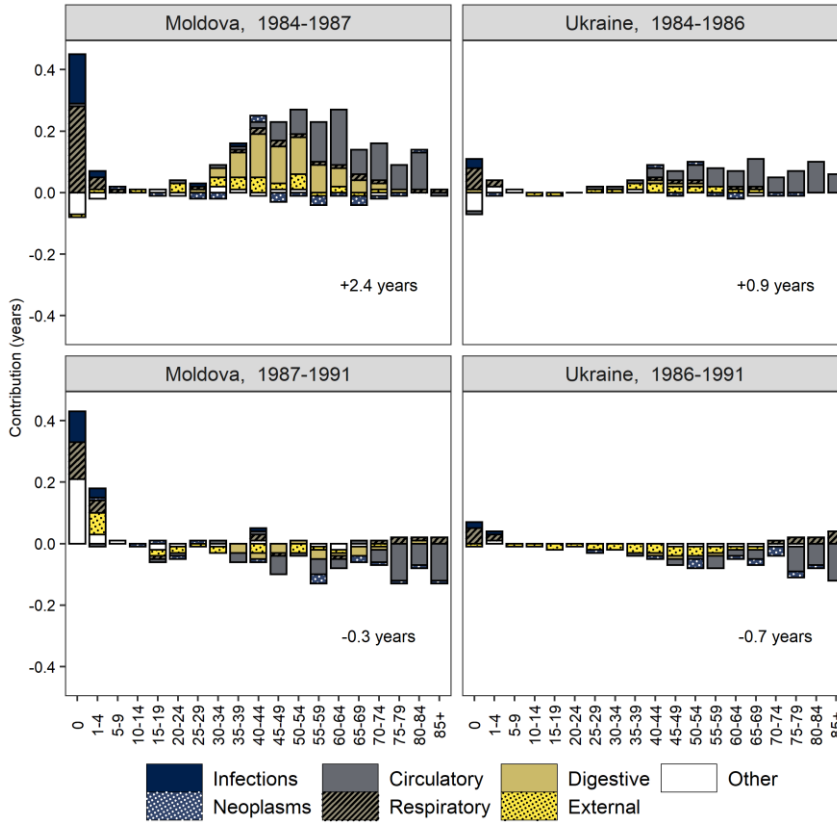

FIGURE IV.5. – Age and cause of death contributions to the changes in female life expectancy during the anti-alcohol campaign (first row) and its vanishing (second row) in Moldova and Ukraine

During the period when the effect of the anti-alcohol campaign disappeared, the deterioration of the population health was greater in Ukraine than in Moldova, but changes in mortality patterns were fairly close in both countries. The largest losses in male life expectancy are

mainly attributable to deaths from injury and poisoning (most among young adults) and diseases of the circulatory system (most among the elderly). Together, these two groups of causes of death account for more than 70% of the loss of male life expectancy in Moldova and Ukraine. Among females, diseases of the circulatory system are more often than not responsible for deteriorating health.

In Moldova, a steady decline in infant mortality between 1984 and 1991 contributed to a certain extent to the increase in life expectancy in 1984-1987 and partially halted its fall in 1987-1991. In the latter period, these improvements were due not only to exogenous causes of death but also to the residual group "other causes" presented at this age mostly by diseases of the perinatal period. In Ukraine, on the contrary, as in the previous periods, the impact of the first age group on changes in life expectancy was of minor importance.

Finally, it is worth mentioning that age- and cause-specific contributions to life expectancy decrease over the period of the fading effect of the anti-alcohol campaign seem almost symmetrical compared to the previous period of improvement. While these findings are more apparent among men and less so among women, they do occur in both countries.

c) The socio-economic crisis and the post-crisis recovery

In Moldova, the deterioration in health in the early years of the social and economic crisis (1991-1995) affected all age groups, even those under one year old. The positive effect due to the decline in infant mortality observed for previous periods does not persist anymore. Among males, in terms of causes of death, the crucial role belongs to diseases of the circulatory system (40% of the total loss of life expectancy), while the contribution of deaths from injury and poisoning is insignificant (less than 6%). At the same time, the spectrum of diseases involved in the process of health deterioration widened with a notable involvement of diseases of the respiratory system, diseases of the digestive system and the residual group of causes of death. Combined, these three groups of

causes of death accounted for 45% of the loss of life expectancy among Moldovan men between 1991 and 1995 (*Fig. IV.6*).

In Ukraine, the situation for men looks quite different. Compared with Moldova, the role of deaths from injury and poisoning involving the working population is striking, while diseases of the circulatory system affect more age groups, including young people. These two categories of causes of death together account for more than 70% of Ukrainian men's loss of life expectancy between 1991 and 1995.

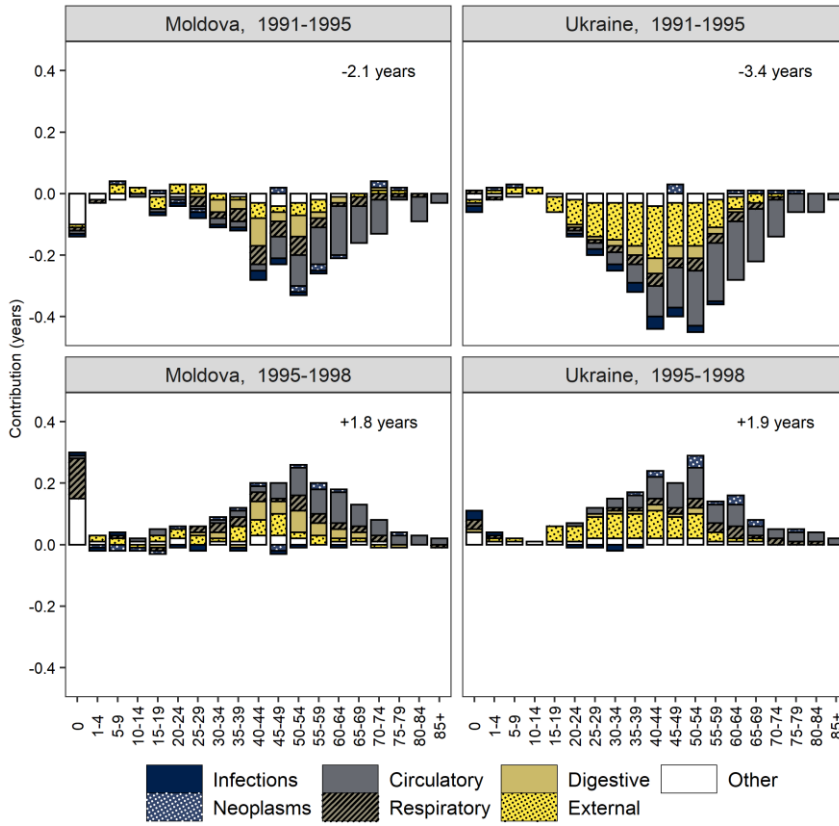

FIGURE IV.6. – Age and cause of death contributions to the changes in male life expectancy during the socio-economic crisis of the early 1990s (the first row) and the post-crisis recovery (the second row) in Moldova and Ukraine

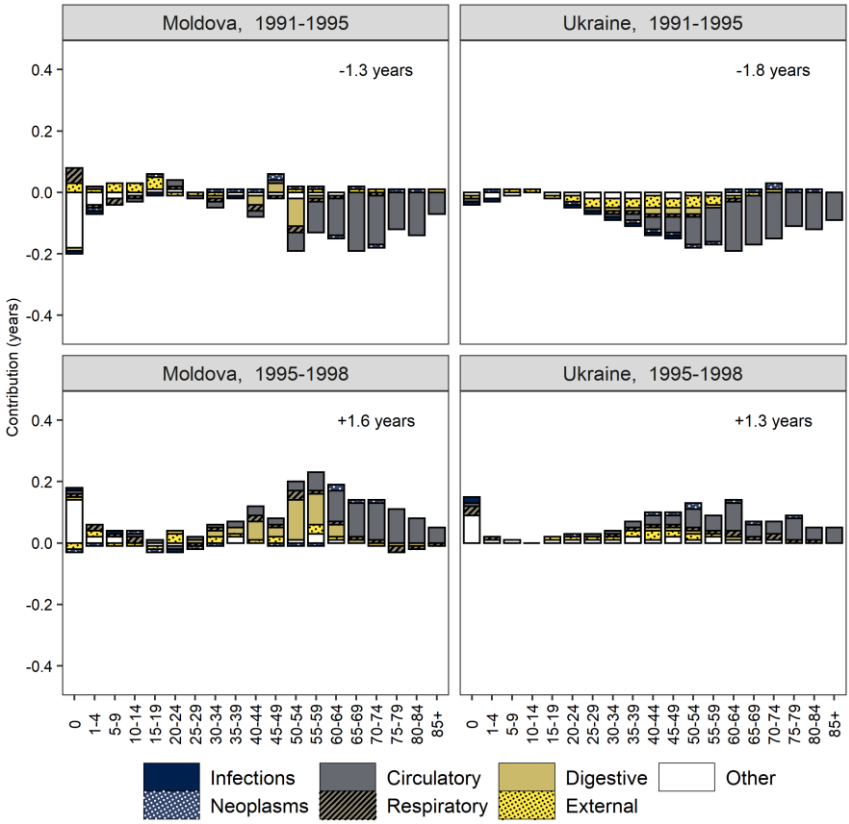

FIGURE IV.7. – Age and cause of death contributions to the changes in female life expectancy during the socio-economic crisis of the early 1990s (the first row) and the post-crisis recovery (the second row) in Moldova and Ukraine

The deterioration in women's health in the early 1990s was quite similar in both countries, largely due to an increase in mortality from diseases of the circulatory system. Finally, in the early years of independence, growth in infant mortality, especially due to the residual group of causes of death closely related to perinatal diseases, contributed negatively to the evolution of life expectancy in both countries, but much more so in Moldova (*Fig. IV.7*). The rise in life expectancy in 1995-1998 registered during the continuing social and economic crisis in the two

countries may be attributed to the population's adaptation to new social and economic conditions, rather than to the beginning of a new sustained positive trend. This fact may also be confirmed by the symmetrical age- and cause-specific components of the decrease in life expectancy in 1991-1995 and its subsequent increase in 1995-1998, especially marked in the male population.

d) The recent improvements

Health improvements differently marked by sex and country occurred after 1998. For Ukrainian men, the situation improved more quickly than for their Moldovan counterparts (3.4 years vs 2.1 years), chiefly as a result of an important decline in deaths from injury and poisoning that explains more than half of the increase in life expectancy between 1998 and 2020 (*Fig.IV.8*).

The results for Ukraine should be interpreted with caution taking into account changes in the territory since 2014 and unavoidable under-registration of mortality due to the military conflict. The contribution of this category of causes of death in Moldova is also considerable (1.3 years) and is mainly limited to young adults. The positive impact of changes in mortality from diseases of the circulatory system among males is quite inconsiderable in both Moldova and Ukraine. On the other hand, Moldovan and Ukrainian women showed signs of amelioration for mortality from diseases of the circulatory system that account for half of the recent growth in female life expectancy. In parallel, people in Moldovan began to experience more health problems with malignant neoplasms, while the Ukrainian population demonstrates a visible negative role played by diseases of the digestive system. These recent health improvements are partially offset by the negative contribution of infectious diseases due to the 2020 COVID-19 pandemic, which is more pronounced in Moldova than in Ukraine, especially among the female population. Finally, the reduction in infant mortality, notably from "other causes", contributed to the amelioration of the situation in both countries.

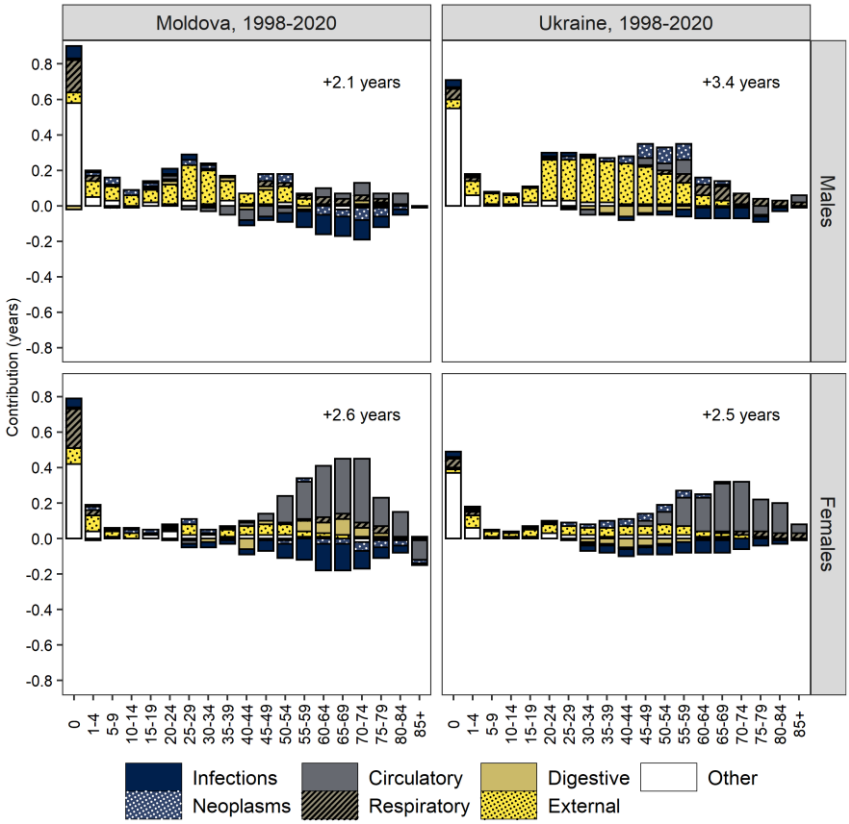

FIGURE IV.8. – Age and cause of death contributions to the recent changes (1998-2020) in life expectancy in Moldova and Ukraine, by sex

Note: see Note 2 for Fig. IV.1

2. Trends in standardised mortality rates by main groups of causes of death

After examining the mortality trends for seven major groups of causes of death in Moldova, we will provide their comparison with Ukraine.

A. Overview of trends in mortality from main groups of causes of death

The evolution of standardised mortality rates[26] for seven main groups of causes of death shown in *Figure IV.9* gives a preliminary overview of mortality dynamics in Moldova. In this and subsequent graphs, if not else specified, the semi-logarithmic scale was used to more easily combine the causes of death with different levels of mortality, as well as to more clearly compare paces of change.

Diseases of the circulatory system are the leading cause of death for both sexes and govern the overall mortality trend throughout the study period (1965-2020). Their proportion in total mortality is always close to 60% for males and 70% for females.

Neoplasms are the second largest group of causes of death for both sexes and account for between 8% and 14% of total mortality. In males, the level of mortality from neoplasms during the entire period is more or less in line with deaths from injury and poisoning; although, there has been a divergence between these two groups of causes since 2005. In females, the risk of dying from neoplasms and digestive diseases was almost the same in the 1980s and 1990s, though the distance between these two conditions was quite significant early and late in the period.

Mortality from diseases of the digestive system is very high and almost the same for both sexes. Between 1965 and 2020, the proportion of this category of causes of death in total mortality doubled in men and tripled in women, and now, it makes up about 10% of all deaths for both sexes. A dramatic increase took place between 1965 and 1985, prior to the launch of the anti-alcohol campaign. By the mid-1980s, when standardised mortality rates for diseases of the digestive system had reached peak values, this cause of death occupied second place with neoplasms in females and third place with deaths from injury and poisoning in males, very close to the second one (neoplasms and diseases

[26] Standardised mortality rates were calculated using the 2013 European standard population, https://www.causesofdeath.org/docs/standard.pdf

of the respiratory system). The anti-alcohol measures of the 1980s brought about a decline in mortality as rapid as the earlier increase, but only for a few years followed by the recommencement of the unfavourable trend that continued until 2005. Recent trends for diseases of the digestive system show moderate improvements for females, while for males, growth after 2005 has given way to stagnation.

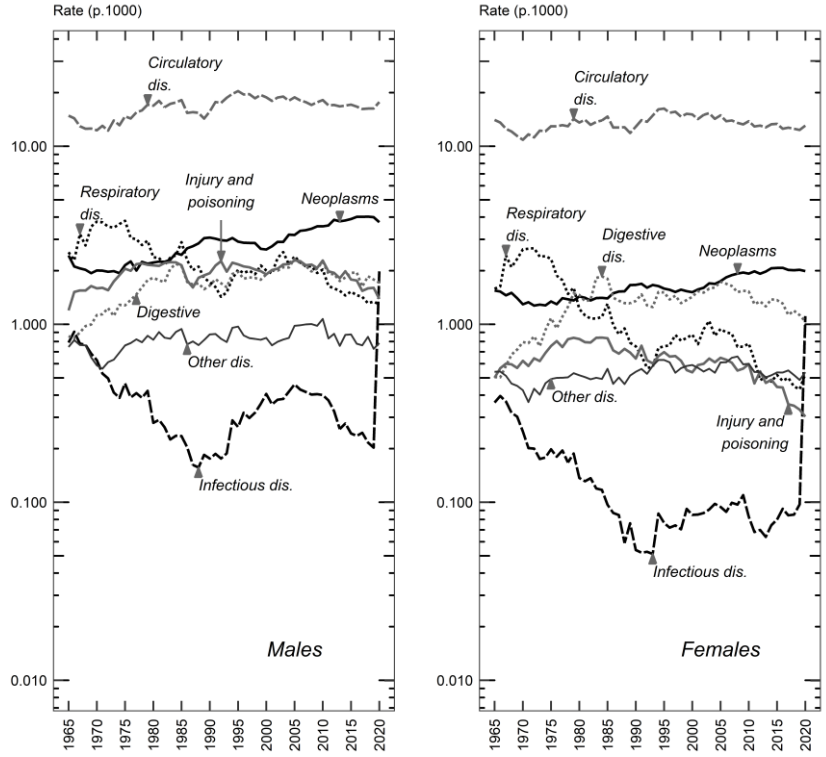

FIGURE IV.9. – Annual trends in standardised mortality rate from seven broad groups of causes of death in Moldova, 1965-2020, by sex

Mortality from respiratory diseases, which was the second major cause of death at the end of the 1960s, decreased impressively until it suddenly reversed with the socio-economic crisis of the mid-1990s. The decreasing trend has only resumed since 2005 (more in females than in

males). The improvements were even more impressive for infectious diseases until the mid-1980s, and from then on, mortality started to increase again. In men, this rapid rise continued until 2005-2010. In women after the crisis of the 1990s, infectious mortality was rather stagnating. The COVID-19 pandemic resulted in a 10-fold increase in infectious disease mortality in 2020 compared to the previous year for both men and women. As a result of this enormous increase, the risk of dying from infectious diseases in 2020 was even higher than that from injury and poisoning in males or identical to that from diseases of the digestive system in females. Finally, the standardised mortality rates from the group "Other diseases" were stagnated over the entire period, for both males and females (*Fig.IV.9*).

B. Comparison with Ukraine

Further, we will provide a comparative analysis of mortality trends in the seven major groups of causes of death in Moldova and Ukraine. For Ukraine, we use reconstructed time series of causes of death from 1965 to 2013, based on the abridged list of ICD-10 (Meslé and Vallin, 2012; Poniakina and Shevchuk, 2016) and extended to 2014-2020 by crude data. A separate line type for highlighting the crude data inconsistency with reconstructed data is used.

a) Diseases of the circulatory system

Figure IV.10 shows the 1965-2020 annual trends in standardised mortality rate from diseases of the circulatory system in the two countries based on the semi-logarithmic scale, while for *Figure IV.11* the arithmetic scale was applied to focus on the details of the fluctuation since 1980. Moldova, like Ukraine, experienced a continuous rise in mortality from diseases of the circulatory system in the 1970s and the early 1980s due to the enduring health crisis that affected those countries. This escalating deterioration of health in the former USSR countries contrasts strongly with the progress made in Western countries which

benefited from the cardiovascular revolution of the 1970s (Vallin and Meslé, 2004). For Moldovan and Ukrainian males, the curves are almost coincident between the 1970s and the late 1990s and after 2010. At the same time, for Moldovan females, mortality from diseases of the circulatory system is higher than for Ukrainian females, especially during the Soviet period.

In both countries, the long-term increase in mortality from diseases of the circulatory system was abruptly halted in 1985, when the Gorbachev anti-alcohol campaign was launched. Although the campaign lasted only until 1987, its positive effect was maintained in both countries until 1989. Between 1984 and 1989, standardised mortality rates for diseases of the circulatory system decreased by 18% in Moldova and 14% in Ukraine. However, the discontinuation of the campaign against alcohol abuse and the ensuing social and economic crisis in the 1990s led to a renewed increase in mortality. In both countries, mortality started increasing in 1990 and rose steadily to 1995. This rise was the same for males (30%), while for females it was steeper in Moldova than in Ukraine.

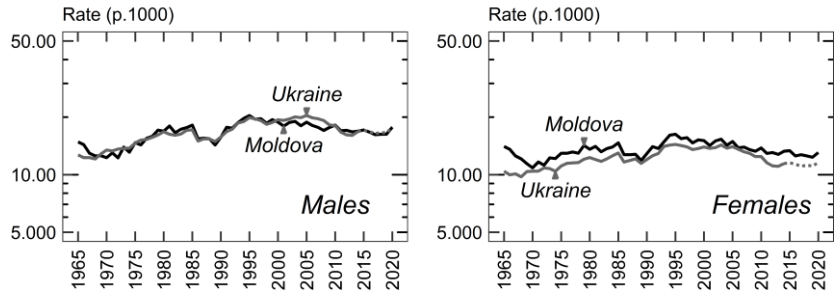

FIGURE IV.10. – Annual trends in standardised mortality rate from diseases of the circulatory system in Moldova and Ukraine, 1965-2020, by sex (semi-logarithmic scale)

Note: see note for Fig. IV.2

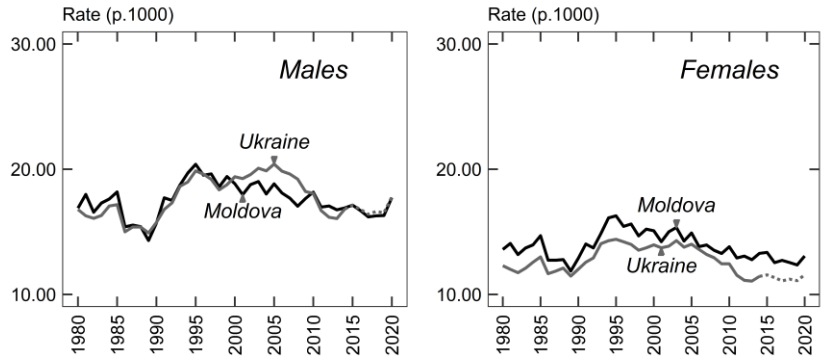

FIGURE IV.11. – Close-up of annual trends in standardised mortality rate from diseases of the circulatory system in Moldova and Ukraine, 1980-2020, by sex (arithmetic scale)

Note: see note for Fig. IV.2

After the post-crisis recovery in 1996-1998, mortality from diseases of the circulatory system resumed a growing trend among Ukrainian men and started to stagnate among Ukrainian women. Here, the negative trend continued until 2005, and from then on, a marked fall can be seen, followed by the stagnation since 2014 for both sexes. In Moldova, male mortality from diseases of the circulatory system, after a short reduction in the late 1990s, has remained unchanged so far. Among Moldovan women, recent improvements are less apparent in comparison with their Ukrainian counterparts. Notwithstanding this slight improvement, cardiovascular mortality remains very high in both countries. Currently, its standardised mortality rate among Moldovan and Ukrainian men remains above the historical minimum level reached in 1989 in response to the measures of the anti-alcohol campaign. Ukrainian women crossed that threshold in 2012, while Moldovan women are very close to it. Finally, it is important to note an increase in cardiovascular mortality in 2020 in both countries, particularly among men, that is most likely linked to the COVID-19 pandemic.

b) Neoplasms

During the Soviet era, the cancer mortality rate was significantly lower in Moldova than in Ukraine in males, while the difference was less noticeable in females. In both countries, mortality rose gradually in the 1980s, particularly among men. In the early 1990s, the trend reversed and began to decline, contrasting with the continued increase in mortality from diseases of the circulatory system, accidents and other causes. While cancer mortality in Moldova has resumed its growth since the late 1990s, in Ukraine this downward trend persisted until 2010, followed by stagnation. The recent fresh upsurge in cancer mortality in Moldova and the continuing decline in Ukraine closed up the curves for males in 2009 and even overlapped them for females in 2003. (*Fig.IV.12*).

Shkolnokov et al. (Shkolnikov et al., 1999) studied cancer mortality in Russia and Ukraine and suggested several assumptions which could explain the changes observed in the 1980s and early 1990s. The authors provide evidence of significant under-recording of cancer deaths among the elderly, especially in rural areas, and changes in coding practices in the 1980s. In November 1984, the Ministry of Public Health of the USSR promulgated Ordinance 1300 to improve the system of registration of causes of death. Furthermore, the active development of a territorial network of cancer dispensaries in the former republics at that time could raise attention to the issue of the registration of causes of death and contribute in part to the growth of cancer mortality in the 1980s. In March 1989, the Ministry of Health introduced more drastic changes in coding practices, which, as already discussed earlier (Chapter III, section 3B), resulted in a huge rise in "senility" deaths in the former USSR republics. According to this directive, if a malignant neoplasm co-existed with cardiovascular disease, the first had to be registered as the underlying cause of death. These changes in coding practices in the 1980s and the return to a prior registration custom in the 1990s may serve as a plausible explanation for the increase in cancer mortality among the elderly in the 1980s and its decline in the 1990s. The same authors attribute some reduction in male mortality from cancer in middle age in the 1990s to a

combination of a cohort effect and a simultaneous sharp rise in mortality from competing causes of death like cardiovascular diseases and accidents.

The level of under-registration of cancer mortality during the Soviet period appears to be higher in Moldova than in Ukraine. Taking into consideration the hypotheses suggested by Shkolnikov et al. (1999), a greater proportion of Moldova's rural population relative to Ukraine may partly lead to a greater proportion of under-recorded cancer deaths. This fact may partially explain the rise in cancer mortality in the 1980s and make stronger mortality decline observed in the 1990s when a return to the previous coding practice took place.

Another important point also underlined in previous studies on cause-specific mortality in the former USSR countries is the absolute insensitivity of cancer mortality to the economic and social conditions of these countries in the 1980s and 1990s (Grigoriev, 2012; Meslé et al., 1996; Meslé and Vallin, 2012). The same feature was also found and for Moldova.

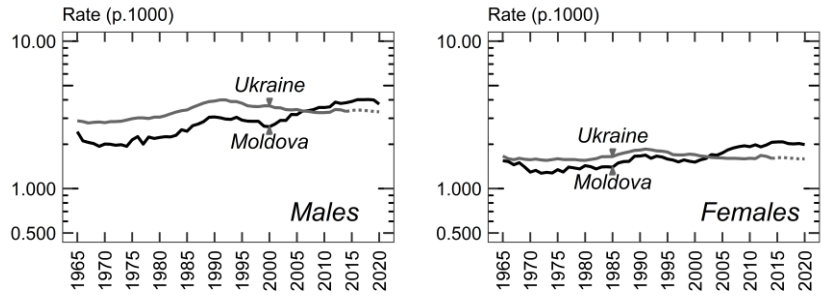

FIGURE IV.12. – Annual trends in standardised mortality rate from cancer in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

c) Injury and poisoning

Trends in male mortality due to injury and poisoning, like those in cardiovascular mortality, are highly chaotic and fluctuate dramatically as

a result of the 1985 anti-alcohol campaign and the social and economic crisis of the 1990s (*Fig.IV.13*). For the Soviet period, this type of male mortality traces absolutely the same path in Moldova and Ukraine. A constant upward trend in mortality from injury and poisoning was suddenly broken only in 1985 when the anti-alcohol campaign was introduced in the Soviets to resume again shortly after its abandonment. This campaign had a very similar effect on this type of male mortality in both countries. The standardised mortality rates fell by about 30% in 1984-1987 and rose by 30% in Moldova and by 40% in Ukraine in 1987-1991.

Mortality trends differ between the two countries during the period of independence. The crisis of the 1990s had a significant impact on male mortality from injury and poisoning in Ukraine, where standardised rates increased by more than 50% in 1991-1995. Conversely, among Moldovan males, the increase in mortality in the early 1990s was only 12%, except for 1992 marked by a sudden jump due to the local war conflict in Transnistria. Further, in Ukraine, after the post-crisis improvement in 1995-1998, male mortality resumed its growth again, followed by a decrease from 2002, particularly marked in 2009 and 2010. In Moldova, male mortality from injury and poisoning continued its slow rise or stagnation until 2010, followed by very modest improvements. The rapid fall in mortality in Ukraine in 2009 and 2010 and stagnation in Moldova led to an overlap of trends in 2009, but the recent improvements in Moldova brought both countries back to the same level. However, given that the data for Ukraine are analysed without the territories involved in the war conflict, the recent trends for Ukraine need to be interpreted with caution.

Among women, mortality from injury and poisoning evolves differently in the two countries. Interestingly, mortality among Moldovan women was consistently higher before the 1990s than among Ukrainian women. The effect of the anti-alcohol measures was more decisive for women in Moldova than for their Ukrainian counterparts. However, while the decline in mortality among Moldovan women has been more

or less stable since 1985, the trend for Ukrainian women is very similar to that of Ukrainian men. Nevertheless, Moldovan and Ukrainian females, as well as males, have achieved the same level of mortality due to injuries and poisoning.

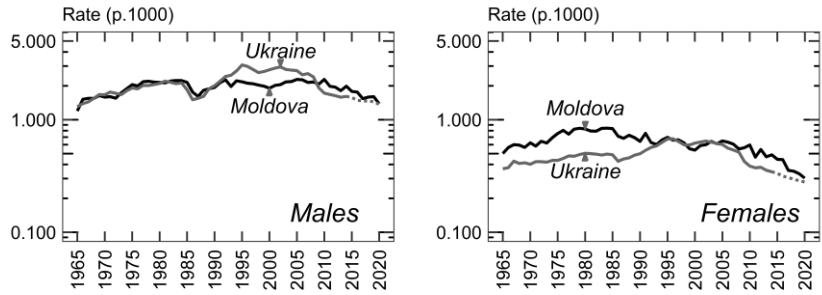

FIGURE IV.13. – Annual trends in standardised mortality rate from injury and poisoning in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

Although this chapter examines mortality trends in main causes of death, it seems reasonable to give particular attention to certain alcohol-related detailed causes of death, which are of particular importance for the countries of the former USSR, especially in its European region. Among the deaths due to injuries and poisonings, the category "accidental poisoning by alcohol" is codified differently in the former Soviet republics as compared to Western countries. In Russia and Ukraine, for example, most deaths attributed to acute alcohol intoxication are codified according to this cause of death. The same situation is in Moldova. This category of external causes of death ranges from 5% to 19% of all deaths due to injuries and poisonings in Ukraine and from 3% to 10% in Moldova. In Western countries, such as France, this item mainly covers accidental poisoning by industrial substances with a standardised mortality rate of less than 0.5 per million inhabitants. At the same time, deaths provoked by alcohol intoxication are rather attributed to the item "Alcoholism" in the group "Mental and behavioural disorders" (Meslé et al., 1996).

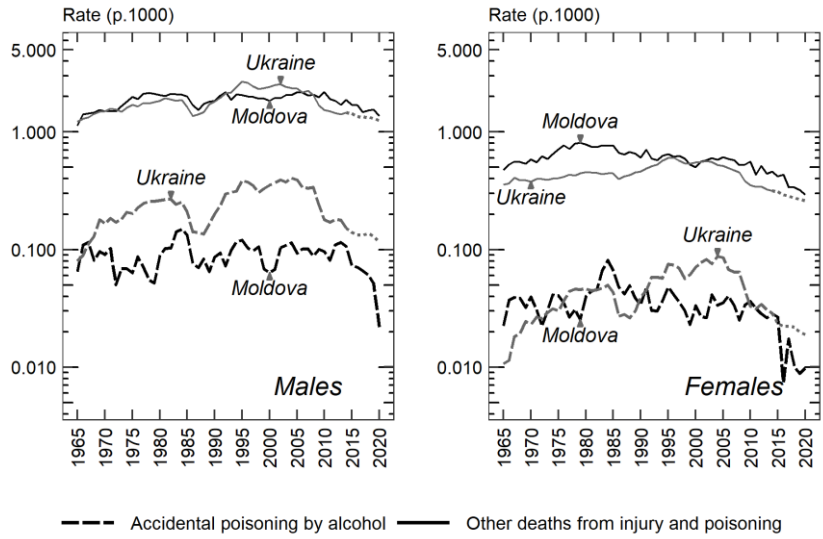

FIGURE IV.14. – Annual trends in standardised mortality rate from alcohol poisoning in Moldova and Ukraine from 1965, by sex

Note: see note for Fig. IV.2

Figure IV.14 illustrates the trends in mortality from "accidental poisoning by alcohol" and other deaths from injury and poisoning in Moldova and Ukraine. In Ukraine, where strong alcoholic beverages are traditionally consumed, overall mortality due to injury and poisoning is closely correlated with accidental poisoning by alcohol in both sexes. In Moldova, which is much closer to the Mediterranean culture of wine consumption, the male mortality from acute alcoholism is not only well below that of Ukraine, but the overall trend is relatively stable, with quite a weak reaction to the crises of the 1990s. Among females, the situation is somewhat different, since the level of Moldova is very close to that of Ukraine before the 1990s.

d) Diseases of the digestive system

Diseases of the digestive system, especially among females, as well as diseases of the circulatory system and deaths from injury and

poisoning, played an important role in the evolution of life expectancy in Moldova over its different periods (Chapter IV, section 1).

In Moldova, mortality from this cause of death rose exceptionally rapidly before the onset of the anti-alcohol campaign. Between 1965 and 1984, the standardised mortality rate was multiplied by 2.7 times in men and 4.0 times in women, whereas in Ukraine, this indicator rose by just 40% and 15%, respectively. This spectacular rise in mortality from diseases of the digestive system in Moldova significantly widened the initial gap between the two countries, especially among women. If at the beginning of the period, the standardised mortality rate for both sexes was about twice as high in Moldova as in Ukraine, then in 1985, it was already three times higher among Moldovan males and even seven times higher among Moldovan females than the corresponding levels recorded in Ukraine. Gorbachev's anti-alcohol campaign put an end to this long-term increase in mortality and even reversed the trend. From the late 1980s, mortality from diseases of the digestive system has increased moderately or stagnated in Moldova, although female mortality has started to decline slowly since 2010. The extent of this deterioration during the period of independence is much smaller than in the Soviet period. Thus, in 2020 compared to 1989, the standardised mortality rate increased by less than 10% for Moldovan men, and it even decreased by 20% for Moldovan women as a result of very recent improvements. This contrasts with a three- and a fourfold increase in 1965-1985, respectively. Conversely, in Ukraine, the rise in mortality for the period of independence is much more rapid than that observed for the Soviet period for both sexes. Between 1989 and 2020, the standardised mortality rate for diseases of the digestive system increased by almost 50% for Ukrainian men and women (*Fig.IV.15*). The marked decline in mortality in 2009 and 2010 is too short and maybe of a temporary nature given the stagnation in subsequent years.

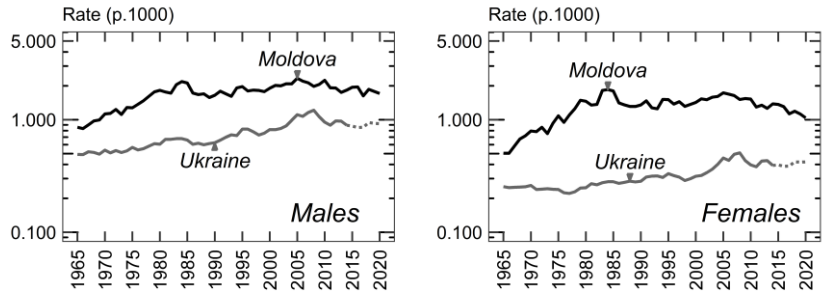

FIGURE IV.15. – Annual trends in standardised mortality rate from diseases of the digestive system in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

Cirrhosis of the liver is the main mortality factor due to diseases of the digestive system in both countries. In Moldova, where alcohol drinking pattern is largely dominated by unrecorded homemade wine for both sexes (WHO, 2014), mortality from liver cirrhosis is much higher than in Ukraine without a clear sex gap (*Fig.IV.16*). From 1965 to 2020, mortality from this cause of death increased by 2.5 times for both sexes in Moldova and by over three times for Ukrainian males and twice for Ukrainian females. The situation in Moldova deteriorated very rapidly before the introduction of the anti-alcohol measures in the 1980s and then remained stagnant or rose moderately for a long time until 2010. The brutal ban on alcohol consumption in the 1980s contributed significantly to the decline in male and female mortality in both countries, especially in Moldova. Conversely, the increase in mortality in Ukraine was particularly intensive from the late 1980s to 2009-2010, which contrasts sharply with the quasi-stagnation seen in Moldova. The rapidly worsening situation between the late 1980s and 2009 in Ukraine significantly reduced the gap with Moldova. As with accidental poisoning by alcohol, a marked decline in mortality from liver cirrhosis was registered in Ukraine in 2009-2010, but it is too short-lived to draw any conclusions. Moreover, the decline stopped in the following years, which may indicate the temporary nature of this progress, as already seen

in the late 1980s and late 1990s. Most impressive is the much higher rate of female mortality from liver cirrhosis in Moldova than in Ukraine, and its persistence. The gap between the two countries is still very wide and, despite its reduction in the 1980s and 1990s, it stopped shrinking after 2010. To a lesser degree, the same holds true for men.

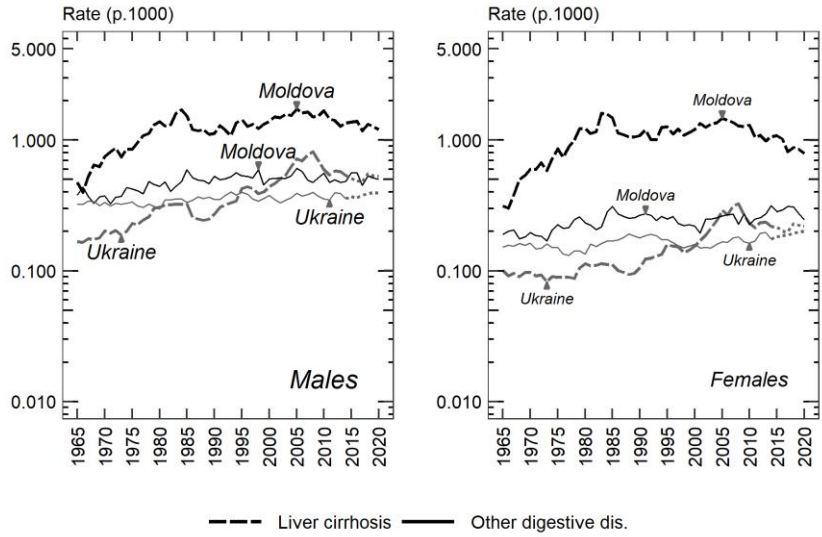

FIGURE IV.16. – Annual trends in standardised mortality rate from liver cirrhosis and other diseases of the digestive system in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

The impact of the dangerous consumption of wine in Moldova and the consumption of strong alcoholic drinks in Ukraine in terms of overall mortality is not significantly different. The difference only exists when it comes to alcohol-related causes of death. While the losses of life expectancy among Ukrainian men are closely associated with the acute consequences of alcoholism, specifically in terms of deaths from injury and poisoning, Moldovan men suffer much more from the chronic consequences of alcoholism, namely liver cirrhosis. The hazardous culture of wine drinking in Moldova has by far a heavier impact on

women's health than the culture of spirits drinking in Ukraine. The burden of liver cirrhosis accounts for much lower Moldovan female life expectancy compared to their Ukrainian counterparts (Penina, 2017).

e) Diseases of the respiratory system

In both countries, the mortality rate from diseases of the respiratory system was almost the same for men until the turn of the millennium, while it was higher for Moldovan women in the 1970s and particularly over the period of independence (*Fig.IV.17*).

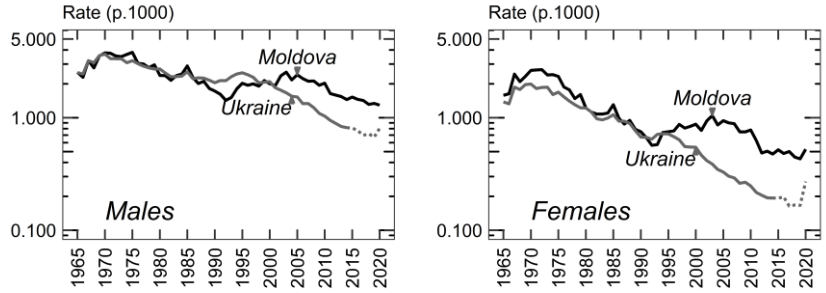

FIGURE IV.17. – Annual trends in standardised mortality rate from respiratory diseases in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

The evolution of mortality during the Soviet era and the first years of independence is quite similar. After a short period of growth in the late 1960s and stagnation in the early 1970s, mortality from respiratory diseases decreased substantially through the late 1980s. The social and economic crisis of the 1990s resulted in a moderate rise for men and stagnation for women in both countries. However, once the impact of the crisis was overcome in the late 1990s, this situation developed into a downward trend in Ukraine, while in Moldova, it remained relatively stable for both sexes up to 2010, followed by a moderate reduction. Because of the opposite trends, the Moldovan population, especially women, has more problems with respiratory diseases compared to the

Ukrainian population. In 2020, mortality in this disease category rose, especially among females from Ukraine (more than 60%), as a result of the COVID-19 pandemic. In Moldova, this jump is less marked for females (20%) and is even absent for males.

f) Infectious diseases

Apart from the general similarity of mortality trends for infectious diseases in Moldova and Ukraine, there are some slight differences between countries that may be noted here. (*Fig.IV.18*). First, in Moldova, this type of mortality was higher than in Ukraine for men only at the start of the period, while Moldovan females showed a steadily higher level up to the end of the 1980s. In contrast, mortality from this disease has been consistently higher in Ukraine than in Moldova since the late 1980s among males and since the beginning of the millennium among females. Second, in Moldova, the overall downward trend is marked by a period of stagnation in the second half of the 1970s, which is absent from the Ukrainian curves. The subsequent fall was more rapid in Moldova than in Ukraine, so that in the late 1980s, women reached the same level and Moldovan males were even at an advantage. However, after a period of rapid progress, the growth in mortality from infectious diseases rebounded in the two countries because of the social and economic crisis of the 1990s. Further, unlike diseases of the circulatory system or deaths from injury and poisoning, the increase in mortality from infectious diseases continued throughout the 1990s, but the typical post-crisis decline did not occur at the end of the 1990s. The growth in infectious disease mortality since the late 1980s has tended to be more rapid in Ukraine than in Moldova, especially among Ukrainian women. Since about 2005, both countries have shown some improvement for males, but less for females. Finally, in 2020, there was an impressive increase in mortality due to infectious diseases in both countries, which is fully explained by excess deaths caused by COVID-19 (see Chapter V). In Moldova, this increase is much larger than in Ukraine for men (9.8 times vs 4.0 times) and women (11.4 times vs 5.2 times).

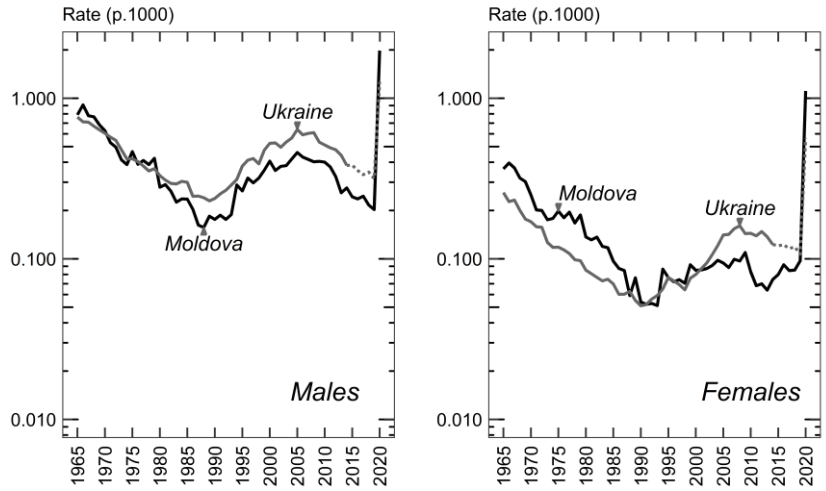

FIGURE IV.18. – Annual trends in standardised mortality rate from infectious diseases in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

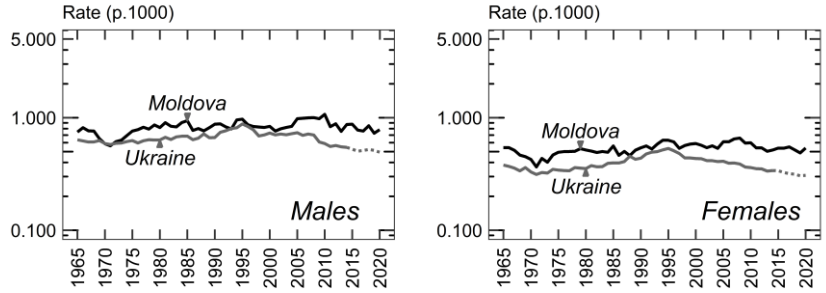

FIGURE IV.19. – Annual trends in standardised mortality rate from other diseases in Moldova and Ukraine, 1965-2020, by sex

Note: see note for Fig. IV.2

g) Other diseases

Mortality from "other diseases", a group of causes comprising a wide range of causes of death, is characterized by the period of long-term

deterioration in both countries. In Moldova, the growth in mortality accelerated for both sexes in the 1970s. The effect of the social and economic crisis of the 1990s on this group of causes of death is more visible in Ukraine than in Moldova. Recent trends trace a clear downward path in Ukraine, especially among females, while in Moldova, the general stagnation continues to this day (*Fig.IV.19*).

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For more than half a century, Moldova did not advance in life expectancy at birth. Disregarding the large fluctuations linked to the 1985 anti-alcohol campaign and the social and economic crisis of the 1990s, the overall trend in life expectancy is stagnant among men and slightly improving among females. The decomposition of life expectancy at birth for the period 1965 to 2020 showed that the lack of improvement was the result of two contrasting trends: a significant decline in infant mortality and an enormous deterioration in working age, especially among men. In terms of causes of death, the worsening health status of men is closely related to changes in mortality from three main causes of death: diseases of the circulatory system, diseases of the digestive system and deaths from injury and poisoning. The same three major categories of causes of death are responsible for the evolution of male life expectancy as a result of the social and economic events of the 1980s and 1990s. For women, the gains and losses in life expectancy are mainly attributable to diseases of the circulatory system and digestive system. However, it was the latter that caused a rapid fall in life expectancy in the 1970s. Comparison between Moldova and Ukraine revealed similarities and specific characteristics of mortality trends and patterns. Exceptionally high mortality from liver cirrhosis without sex differences in Moldova compared to Ukraine seems to be a very specific feature of the mortality pattern in this country, attributed to the dangerous consumption of homemade wine. At the same time, contrary to the traditional spirit-drinking Ukraine, in Moldova, the consequences of acute alcoholism are less significant for the health of the population. Finally, the COVID-19

pandemic provoked a huge excess of mortality from infectious diseases in both countries. The jump in mortality in 2020 was also observed for diseases of the respiratory system (especially in Ukraine) and diseases of the circulatory system. Further analysis of mortality by age and detailed causes of death will provide a clearer picture of the health crisis affecting the Moldovan population.

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CHAPTER V. MORTALITY BY AGE, SEX AND DETAILED CAUSES OF DEATH

This chapter presents the evolution of standardised mortality rates by sex, age and detailed causes of death. The analysis is given for five large age groups: infants (under one year old), children (1-14 years), young adults (15-39 years), mature adults (40-64 years) and the elderly (65 years and older). First, for each age group, we will show the dynamics of mortality trends according to the seven main groups of causes of death studied in the preceding chapter. Second, depending on the significance of each main group of causes, varying with age, we will provide more detailed data. For certain detailed causes of death, we will make a comparative analysis with Ukraine for which the 1965-2013 mortality series were reconstructed under ICD-10 (Meslé and Vallin, 2003, 2012; Poniakina and Shevchuk, 2016) and extended with the 2014-2020 crude data. It is important to underline that the data for Ukraine for the period since 2014 exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the regions of Donetsk and Luhansk. Therefore, the most recent period for Ukraine should be interpreted cautiously (Chapter IV). Finally, at the end of each paragraph, a table presenting the standardised mortality rates in 1965 and 2020 for each group of causes of death is given. Standardised mortality rates[27] by sex, 5-year age groups according to the full ICD-10 list that includes 211 items are available in the Human Cause-of-Death Database[28]. Trends in standardised mortality rates are presented after infant and old-age mortality corrections (Chapter I, section 3) and redistributing deaths from senility and ill-defined causes (Chapter III, section 3B).

[27] Standardised mortality rates are calculated using the 2013 European Standard Population, https://www.causesofdeath.org/docs/standard.pdf

[28] https://www.causesofdeath.org/cgi-bin/main

1. Causes of death at under one year old

A. Major causes of death

Trends in infant mortality by cause are reported after correcting for two different under-registration factors (Chapter 1). The first correction results from a heavy under-registration of infant deaths prior to 1973. As demonstrated earlier (chapter I, section 3A), a sudden 50% increase in infant deaths in Moldova in 1973 was at the expense not only of the neonatal component, which is the most sensitive to the changes in recording practice but also of the increase in mortality during the post-neonatal period, when the baby's health largely depends on the environmental factors. With some reserve, we attributed this increase to improved registration of infant deaths. At the same time, a more moderate rise in the number of infant deaths that occurred up to 1977 was not corrected.

The increase in the late 1970s most likely reflects not only a continuous improvement in infant mortality records but also a real deterioration in the health status of the population, especially in rural areas. However, given that there is no clear way to separate the impact of artificial growth due to improved recording from actual health impairment, a minimum adjustment option was chosen (only before 1973). Under these assumptions, infant mortality is expected to be higher by 47% in 1965 and 50% in 1972. The correction coefficients computed separately for neonatal and post-neonatal components were applied to the corresponding reconstructed death time series for all causes (except ill-defined items) before 1973. The need for the second correction in infant mortality as a result of the change in the definition of live birth is far less important than the first correction. It was applied only to deaths due to perinatal conditions and congenital diseases, from 1965 to 2009. *Figure V.1* shows the trends in observed and corrected infant mortality rates for infectious diseases, respiratory diseases, perinatal conditions and other diseases. An important peak in mortality from *infectious diseases* that is absent for the other three major groups of causes of death persists

after correction for deaths before 1973. This fact supports our view that health actually deteriorated in the 1970s, coinciding with an improvement in the registration of infant deaths.

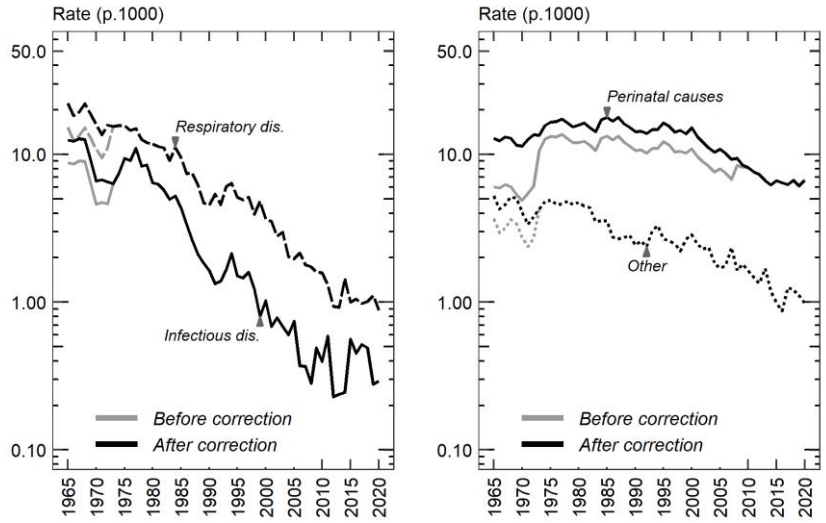

FIGURE V.1. – 1965-2020 trends in infant mortality rates by four groups of causes of death before and after correction due to under-registration

Among the seven main groups of causes illustrated in *Figure V.2*, the infant mortality pattern is determined by two groups of exogenous causes of death (infectious and respiratory diseases) and a group of endogenous causes of death, "other diseases", represented mainly by different perinatal conditions. In general, Moldova has achieved a substantial reduction in infant mortality due to *respiratory* and *infectious diseases*. The former even held first place at the very beginning of the period, and the two conditions, notably infectious diseases, showed a dramatic decline in the 1980s. Between 1965 and 2020, the infant mortality rate dropped by more than 40 times for infectious diseases and 25 times for respiratory diseases. Progress stopped and the trend was reversed during the social and economic crisis of the 1990s. At the same time, until the turn of the millennium, the Moldovan health system did

not succeed in controlling the endogenous factors responsible for the high infant mortality rate. Indeed, mortality from *other diseases* represented for this age group, as previously mentioned, by different perinatal conditions, remained relatively stable until the late 1990s, followed by a regular decline. Since the mid-1970s, this class of cause of death has taken first place. If at the start of the period, the mortality rates for the residual group were much the same as for respiratory and infectious diseases, then since the 1980s, the gap between exogenous and endogenous conditions has widened significantly.

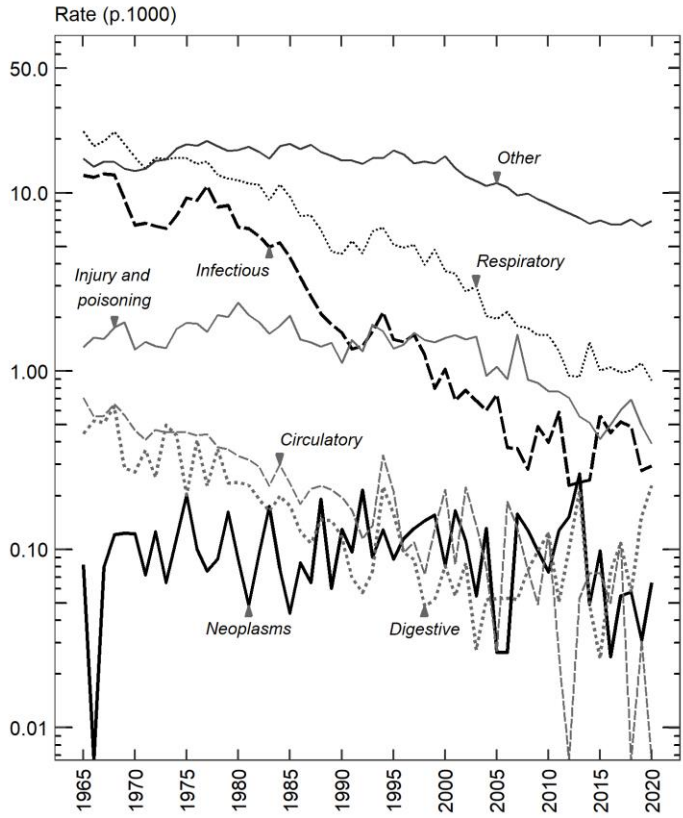

FIGURE V.2. – 1965-2020 trends in infant mortality rates by major groups of causes

Substantial progress in mortality from respiratory and infectious diseases, on the one hand, and a prolonged stagnation in mortality from perinatal conditions, stand behind the global changes in the infant mortality pattern. Early in the study period, respiratory and infectious diseases accounted for 65% of all infant deaths, while only a third resulted from the influence of "other diseases", i.e., endogenous factors. Nowadays, the latter is responsible for more than two-thirds of infant deaths. At the same time, the share of respiratory diseases is 15%, but the impact of infectious diseases is less important and is close to deaths from injury and poisoning or insignificant conditions such as neoplasms or digestive diseases.

Mortality from *injury and poisoning* remained practically unchanged at least until 2010 and has since improved. External causes of death and infectious diseases are now in third place. It is important to note that the stagnation in all-cause infant mortality observed in recent years (Chapter I, section 5) is primarily associated with the “other diseases” group and diseases of the respiratory system. Further, we will proceed to the detailed analysis of infectious and respiratory diseases, “other diseases” and deaths due to injury and poisoning.

B. Infectious diseases and diseases of the respiratory system

In the 1960s and 1970s, infant deaths from infectious diseases were almost exclusively due to *acute intestinal infections*, which mainly affect babies in the post-neonatal period, when their health depends to a large extent on external factors. After a sharp increase in mortality in 1974-1977, attributed to the deterioration of the health care system, infant deaths from acute intestinal infections began to decline rapidly. Between 1977, when the infant mortality rate reached its highest level during the crisis of the 1970s, and 1991, the year preceding a further increase in mortality, the indicator fell by almost 17 times (*Fig.V.3*). The social and economic crisis of the 1990s led to a new upsurge in infant mortality from acute intestinal infections, but since 1998, mortality from this cause of

death has decreased markedly. Unlike acute intestinal infections, the decline in infant mortality from *other infectious diseases* caused primarily by meningococcal infections did not begin until the mid-1980s. An increase in infant mortality in the 1970s was also evident for *septicaemia*. Among diseases of the respiratory system, *pneumonia* has by far the largest influence on infant mortality. Unlike acute intestinal infections, trends in mortality from pneumonia over the 1970s crisis did not show a significant spike, but remained stable until 1977, followed by a downward trend thereafter. The social and economic crisis of the 1990s also brought about an increase in this kind of mortality, but the decline resumed shortly afterwards.

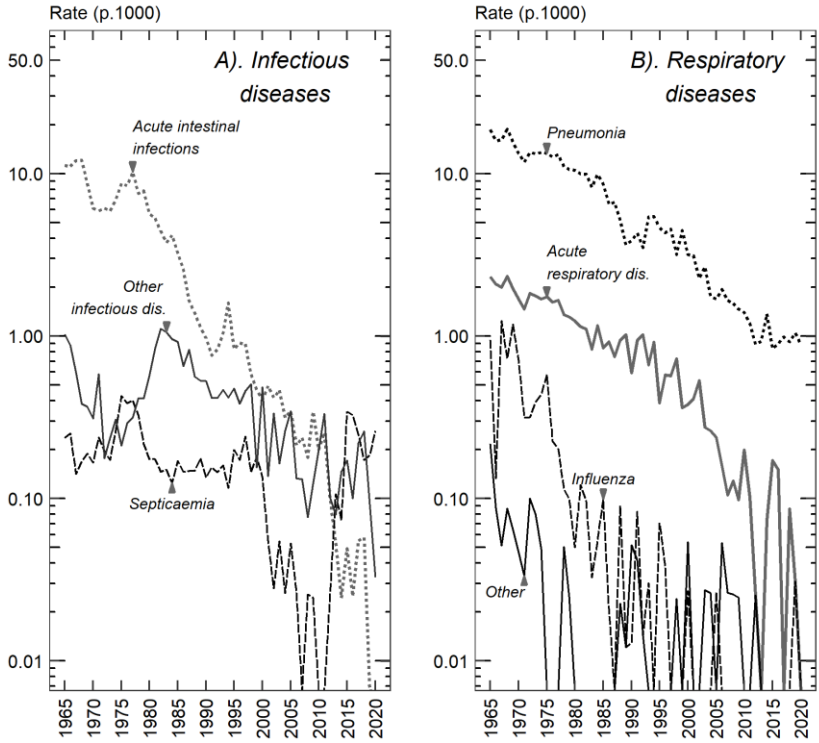

FIGURE V.3. – 1965-2020 trends in infant mortality rates from infectious diseases and diseases of the respiratory system

Acute respiratory diseases, the second largest cause in the respiratory system group, declined throughout the reporting period, but at a more moderate rate compared to pneumonia or acute intestinal infections with no sharp peaks in the 1970s and 1990s. Mortality from *influenza* among children less than one year old was influential in the 1960s and the 1970s, although from the early 1990s onwards it was seen as episodic. *Other respiratory diseases* mainly represented here by severe forms of destructive pulmonary diseases such as *empyema and lung abscess* were visible in the 1960s and the early 1970s, but since then they have been represented by rare cases.

C. Other diseases

Among the "*other diseases*", which have predominated in the infant mortality pattern from the mid-1970s, two subgroups can be distinguished: "*conditions originating in the perinatal period*" (or perinatal diseases) and "*congenital anomalies*" (*Fig. V.4*, panel A). The risk of death related to these two causes is particularly high in the first days of a newborn's life and is critically dependent on the quality and accessibility of perinatal diagnosis and treatment services.

Mortality from both perinatal diseases and congenital anomalies has oscillated for a long time with no marked improvement. It was not until the early 2000s that visible progress was made, notably on perinatal diseases. However, this is not characteristic of all congenital anomalies. In fact, *congenital anomalies of the heart* showed a better trend, especially in recent years, compared to *other anomalies* (Fig. V.4, panel B).

Mortality from *diseases of the nervous system* declined sharply in the 1980s and the early 1990s and is currently of minor significance. Finally, mortality from the residual group of causes of death, including "sudden infant death syndrome" (R95 under ICD-10) after a deep decline in the 1980s, has remained constant over recent years.

By looking in more detail at conditions of the perinatal period, we will distinguish birth trauma, congenital pneumonia, other respiratory diseases of the newborn and other perinatal conditions (*Fig.V.5*).

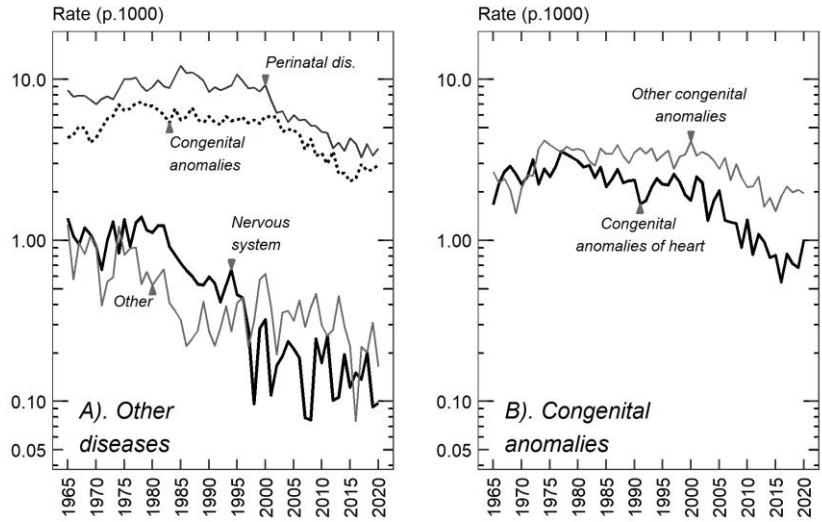

FIGURE V.4. – 1965-2020 trends in infant mortality rates from other diseases and congenital anomalies

The trend in mortality from *birth trauma* is characterised by three periods of growth registered in the 1970s, 1980s and 1990s. If the nature of the first and third peaks is well known (the crisis of the 1970s and 1990s), the second is a little unexpected but explainable. In the former USSR, including Moldova, the early 1980s saw a pronatalist policy that provided a wide range of financial and material support to young married couples and families with children. This resulted in a surge in the number of births in 1981-1986, followed by a drastic decline. It is highly probable that the growth in mortality from birth trauma, which started in 1981 and continued until 1985, was due to the incapacity of obstetric units to cope with the sudden increase in the number of births, especially in rural areas. After the mid-1980s, infant mortality from birth trauma started to decline again and experienced a new temporary upsurge when the social and

economic crisis hit the country in the early 1990s. Nevertheless, since the turn of the millennium, mortality from this cause has greatly decreased, and this improvement explains the recent overall reduction in mortality due to perinatal conditions. These advances in neonatal mortality, especially in the early neonatal period, can be explained by the implementation of national perinatal programmes (Stratulat, Curteanu and Chitic, 2004).

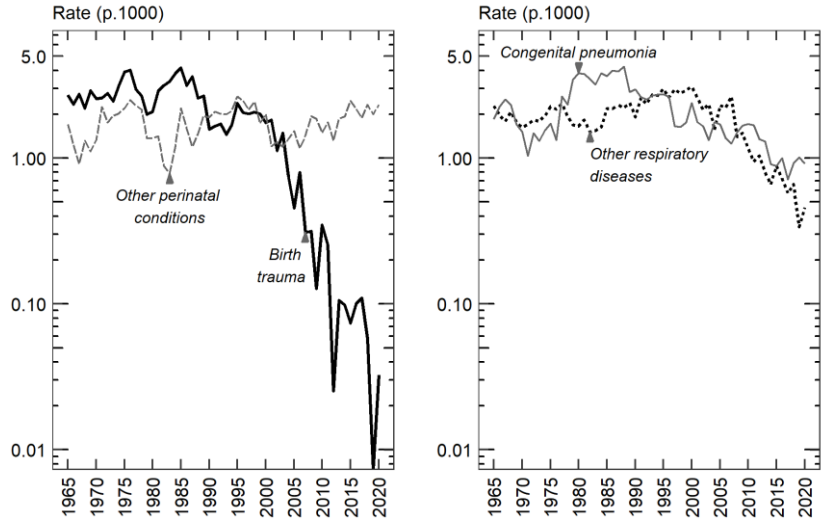

FIGURE V.5. – 1965-2020 trends in infant mortality rates from conditions originating in the perinatal period

The increase in mortality from *congenital pneumonia* of the newborn began in the 1970s and only stopped in the late 1980s, which most likely reflects a progressive improvement in the registration of infant deaths that continued for a while after the decisive year of 1973. Mortality from *other respiratory diseases of the newborn* and *other perinatal conditions* following a brief period of deterioration in the 1970s continued to grow until the early 2000s. Recent improvements are evident for congenital pneumonia and other respiratory diseases, but to a much lesser extent, in contrast to birth trauma. At the same time, changes

in neonatal mortality due to other perinatal conditions have kept the level for the last two decades.

D. Deaths from injury and poisoning

The leading cause of death from injury and poisoning among children under one year of age is *accidental inhalation of a foreign body (Fig. V.6*). Mortality from this cause of death after the rise in the 1970s stagnated. Mortality from *homicide* and *injuries undetermined whether accidentally or purposely inflicted* went up steadily up to the beginning of the millennium, but it has since gone down. The residual group of external causes of death "*other accidents"*, which is currently in second place, has been on a somewhat downward trend since the late 1970s.

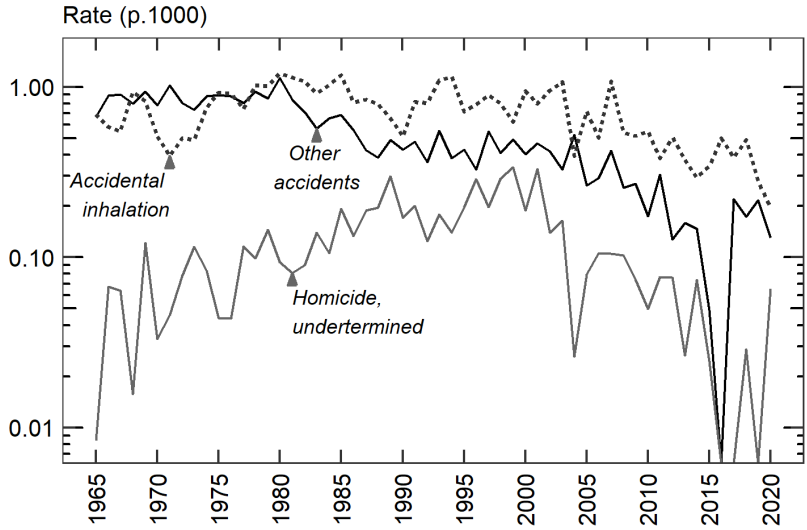

FIGURE V.6. – 1965-2020 trends in infant mortality rates from injury and poisoning

TABLE V.1. – Infant mortality rates (p.1000) by selected groups of ICD-10 items in 1965 and 2020, Moldova

Groups used	ICD (10th revision)	IMR p.1000	
		1965	**2020**
Certain infectious diseases	**A00 to B99, U071**	**12.513**	**0.294**
Acute infectious intestinal diseases	A00 to A09	11.250	0.000
Septicaemia	A40, A41	0.236	0.261
Other infectious diseases	A15 to A39, A42-B99, U071	1.026	0.033
Diseases of the respiratory system	**J00 to J98**	**22.174**	**0.882**
Acute respiratory diseases	J00 to J06, J20 to J22	2.321	0.000
Influenza	J10, J11	0.948	0.000
Pneumonia	J12 to J18	18.688	0.882
Other respiratory diseases	J30 to J98	0.217	0.000
Neoplasms	**C00 to D48**	**0.082**	**0.065**
Diseases of the circulatory system	**G45, I00 to I99**	**0.710**	**0.000**
Diseases of the digestive system	**K00 to K92**	**0.447**	**0.228**
Deaths from injury and poisoning	**V01 to Y89**	**1.367**	**0.391**
Accidental inhalation	W78 to W84	0.688	0.196
Homicide, deaths from injury undetermined whether accidentally or purposely inflicted	X85 to Y36	0.008	0.065
Other deaths from injury and poisoning	V01 to V99, W00 to W77, W85 to W99, X00 to X84, Y40 to Y89	0.671	0.130
Other diseases	**D50 to G44, G47 to H95, L00 to Q99**	**15.521**	**6.958**
Diseases of the nervous system	G00 to G44, G47 to G98, H00 to H95	1.378	0.098
Congenital anomalies, *including*:	Q00 to Q99	4.338	2.972
Congenital anomalies of heart	Q20 to Q24	1.672	1.013
Other congenital anomalies	Q00 to Q18, Q25 to Q99	2.666	1.959
Conditions originating in the perinatal period, *including*:	P00 to P96	8.553	3.725
Birth trauma	P10 to P15	2.705	0.033
Congenital pneumonia	P23, P24	2.286	0.457
Other respiratory diseases of the newborn	P20 to P22, P25 to P28	1.856	0.915
Other perinatal conditions	P00 to P08, P29 to P96	1.706	2.321
Other diseases	D50 to E90, F01 to F99, L00 to N99, R95	1.252	0.164
Total for all causes	**A00 to Y89, U071**	**52.814**	**8.819**

2. Causes of deaths in children aged 1-14

A. Major causes of death

Mortality trends by main causes of death are very similar among 1- to 14-year-old children of both sexes (*Fig.V.7*). Mortality from *injury and poisoning*, which is higher among boys than girls, has started to decline since the mid-1980s.

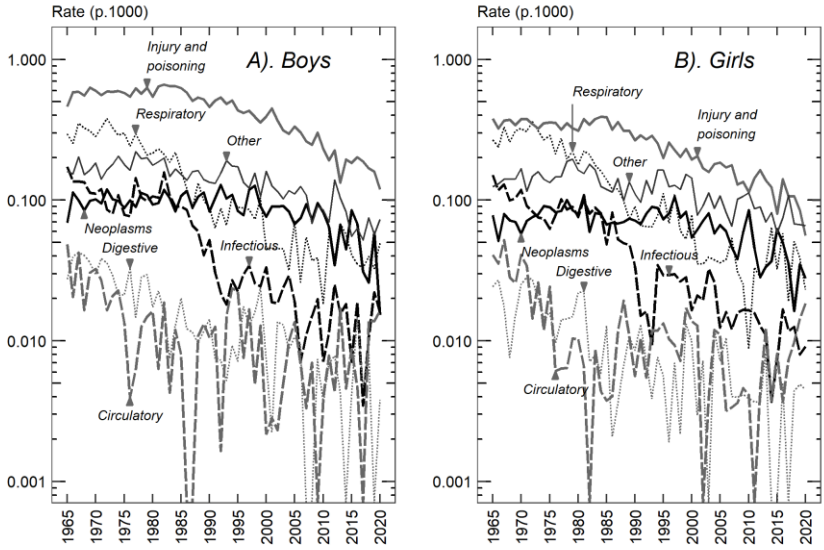

FIGURE V.7. – 1965-2020 trends in standardised mortality rates for major groups of causes at ages 1-14, by sex

At the start of the study period, mortality from *diseases of the respiratory system* was the second-largest for both sexes, and even near the external causes of death in girls. It went down significantly from the late 1970s, although the economic and social crisis of the 1990s halted this progress for some time. A rapid fall in mortality from diseases of the respiratory system, especially in the 1980s, brought to the fore *"other diseases"*, which have remained relatively stable throughout the study period. As in infancy, this group of causes continues to play a meaningful

role in child and adolescent mortality. *Neoplasms* evolved without significant changes over the entire period and are currently in third place, after "other diseases". The declining trend in mortality from *infectious diseases*, such as in the case of respiratory diseases, was interrupted by two periods of growth in the late 1970s and the early 1990s. Deaths caused by *circulatory* and *digestive diseases* decreased rapidly until the 1980s and are now marginally important.

Further, we will go into detail about four groups of causes: respiratory diseases, injury and poisoning, neoplasms and "other diseases". Taking into account a weak differentiation by sex, the standardised mortality rates will be analysed for both sexes.

B. Diseases of the respiratory system

As with infant mortality, mortality from diseases of the respiratory system in children aged 1-14 consists of four main components: pneumonia, acute respiratory diseases, influenza and other respiratory diseases *(Fig.V.8*).

Mortality from pneumonia remained more or less stable until the late 1970s and then declined rapidly in the 1980s. The social and economic crisis of the early 1990s hampered that progress, which did not resume until the turn of the century. The "other respiratory diseases" category, unlike infant mortality where it remained at the low end of the scale, was second among children and adolescents until the early 1990s. Influenza-related mortality in this age group followed the same trend as in children under the age of one. Fluctuations in mortality from influenza were especially marked in the 1960s and 1970s but became almost invisible after the 1990s. Finally, acute respiratory diseases, which occupy the second place in infancy, among children aged 1 to 14 years, by contrast, are of much lesser importance.

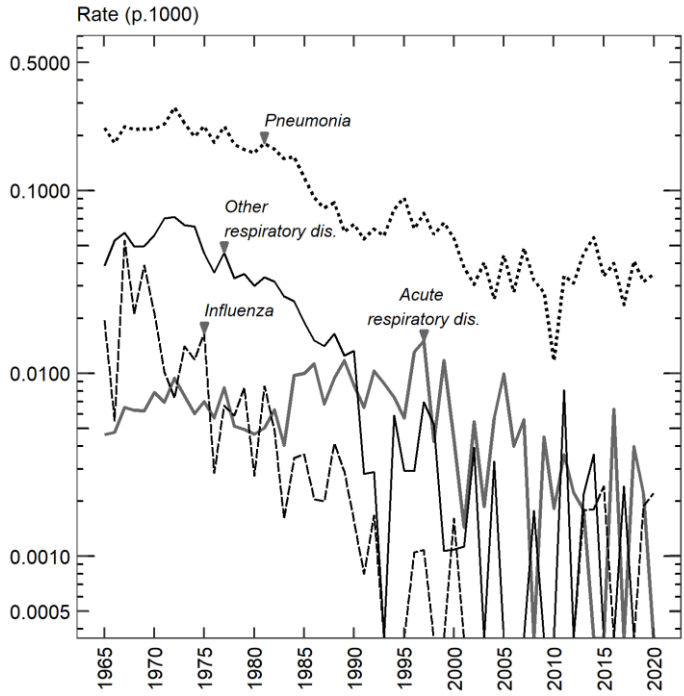

FIGURE V.8. – 1965-2020 trends in standardised mortality rates for diseases of the respiratory system at age 1-14, both sexes

C. Deaths from injury and poisoning

Over half of all deaths due to injury and poisoning in children aged 1 to 14 are due to two conditions: *drowning and falls* (with a much higher prevalence of the former) and *transport accidents*. Then, *other accidents*, *accidental poisoning*, *accidents caused by fire*, *electric current and firearms* and, finally, a group composed of *homicide, suicide and "injury undetermined whether they were accidentally or purposely inflicted"* come. With the exception of the latter, all other categories have followed the general trend in deaths from injuries and poisonings, with visible improvements since the early 1990s. The group bringing together

homicide, suicide and injury with an undetermined intent played a minor role and remained relatively stable over the whole period (*Fig.V.9*).

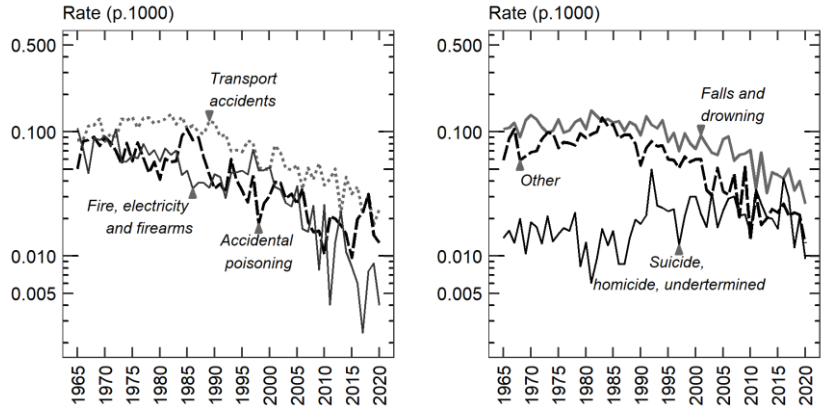

FIGURE V.9. – 1965-2020 trends in standardised mortality rates for injury and poisoning at ages 1-14, both sexes

D. Neoplasms

In children and adolescents, neoplasms of *lymphatic and haematopoietic tissue* (leukaemia and lymphomas) have been responsible for almost half of all cancer deaths for a long time. Only in the past decade has this type of mortality declined significantly. On the contrary, *other neoplasms* taken together had a very stable evolution throughout the whole period, and after recent improvements in the neoplasms of lymphatic and haematopoietic tissues, this group of cancer occupies the first position. (*Fig.V.10*).

E. Other diseases

Congenital anomalies as well as *diseases of the nervous system* are the two leading causes of death in the "other diseases" group among children and adolescents (*Fig.V.11*). From the mid-1990s onwards, mortality from the latter fell slightly, while the former continued to maintain its level. The residual group of causes of death was declining in

the 1980s and today, together with *endocrine and blood disorders* are quite marginal.

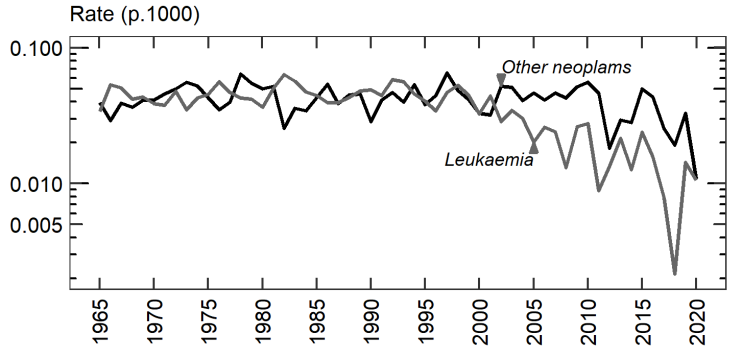

FIGURE V.10. – 1965-2020 trends in standardised mortality rates for neoplasms at age 1-14, both sexes

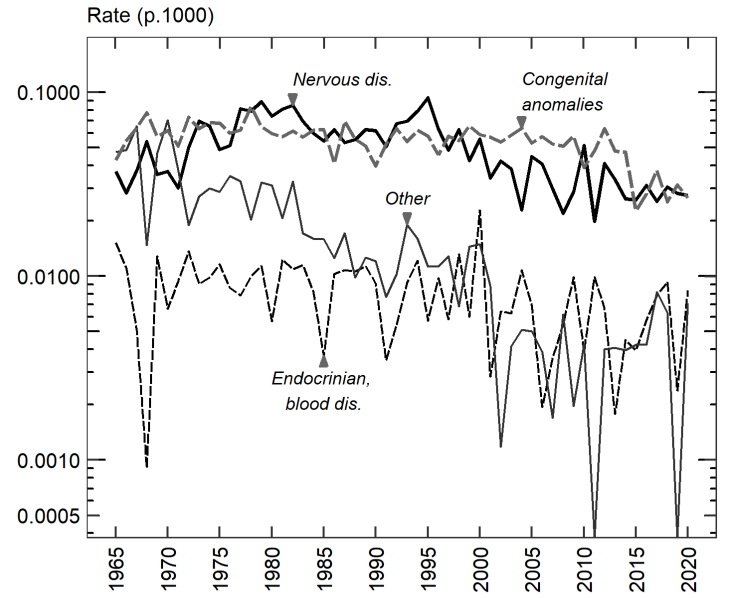

FIGURE V.11. – 1965-2020 trends in standardised mortality rates for other diseases at age 1-14, both sexes

TABLE V.2. – Standardised mortality rates (p.1000) at age 1-14 by selected groups of ICD-10 items in 1965 and 2020, Moldova, both sexes

Groups used	ICD (10th revision)	SMR p.1000	
		1965	2020
Infectious and parasitic diseases	**A00 to B99, U071**	**0.162**	**0.013**
Neoplasms	**C00 to D48**	**0.073**	**0.021**
Leukaemia and lymphomas	C81 to C96	0.034	0.011
Other neoplasms	C00 to C80, C97, D00 to D48	0.039	0.010
Diseases of the circulatory system	**G45, I00 to I99**	**0.045**	**0.017**
Diseases of the respiratory system	**J00 to J98**	**0.282**	**0.037**
Acute respiratory diseases	J00 to J06, J20 to J22	0.005	0.000
Influenza	J10, J11	0.020	0.002
Pneumonia	J12 to J18	0.219	0.035
Other diseases of the respiratory system	J30 to J98	0.039	0.000
Diseases of the digestive system	**K00 to K92**	**0.026**	**0.004**
Deaths from injury and poisoning	**V01 to Y89**	**0.422**	**0.089**
Transport accidents	V01 to V99	0.086	0.024
Falls and drowning	W00 to W19, W65 to W74	0.105	0.026
Accidental poisoning	X40 to X49	0.050	0.013
Accidents caused by fire, electric current or firearm	W32 to W34, W85 to W87, X00 to X09	0.107	0.004
Suicide, homicide, deaths from injury undetermined whether accidentally or purposely inflicted	X60 to Y36	0.014	0.009
Other accidents	W20 to W31, W35 to W64, W75 to W84, W88 to W99, X10 to X39, X50 to X59, Y40 to Y89	0.059	0.013
Other diseases	**D50 to G44, G47 to H95, L00 to Q99**	**0.142**	**0.069**
Endocrine diseases, diseases of the blood	D50 to D89, E00 to E90	0.015	0.008
Diseases of the nervous system	G00 to G44, G47 to G98, H00 to H95	0.037	0.027
Congenital anomalies	Q00 to Q99	0.043	0.027
Other diseases	F01 to F99, L00 to N99, O00 to O99	0.047	0.007
Total for all causes	**A00 to Y89, U071**	**1.153**	**0.251**

3. Causes of death in young adults aged 15-39

A. Major causes of death

Starting from this age group, the difference in mortality pattern between males and females is very strong, and further analysis of mortality trends by cause should be done by sex. Between the ages of 15 and 39, the gender difference is particularly pronounced: male mortality is five to six times higher than female mortality.

The mortality profile is largely dominated by deaths caused by *injuries and poisonings*. Among men, it accounts for 55% of total mortality and soars over the other six major categories of deaths that are very close over different periods. For a better distinction between the seven main causes of death, they are presented in two separate graphs for males (*Fig.V.12*) and females (*Fig.V.12bis*). Among females, deaths from injury and poisoning represent 25% of total deaths, not far from neoplasms, diseases of the digestive system and other diseases.

At this age, we can clearly identify so-called socially sensitive groups of causes of death prone to large fluctuations in mortality caused by the 1985 anti-alcohol campaign and the social and economic crisis of the 1990s. These groups include deaths due to injuries and poisonings, diseases of the digestive system, respiratory and infectious diseases and "other diseases", most often represented among young people by mental disorders and diseases of the nervous system. With regard to neoplasms and diseases of the circulatory system, at that age, we found no susceptibility of mortality to these social and economic factors. Obviously, the fluctuations in mortality from socially sensitive groups of causes of death are especially marked in males. Young adult females also responded to these factors, but to a much lesser degree.

From 1965 to 1984, the evolution of the main causes of death, except for neoplasms and infectious diseases, was rather unfavourable (rise or stagnation). During this period, the situation deteriorated particularly for the groups of socially sensitive causes of death mentioned above, excluding infectious diseases. For the latter, good progress was made, in

particular during the 1970s, although male mortality has been stagnant since the 1980s. The increase in mortality from 1965 to 1984 was especially pronounced for diseases of the digestive system, surprisingly for women. Between 1965 and 1984, the standardised mortality rates tripled in males and increased fivefold in females.

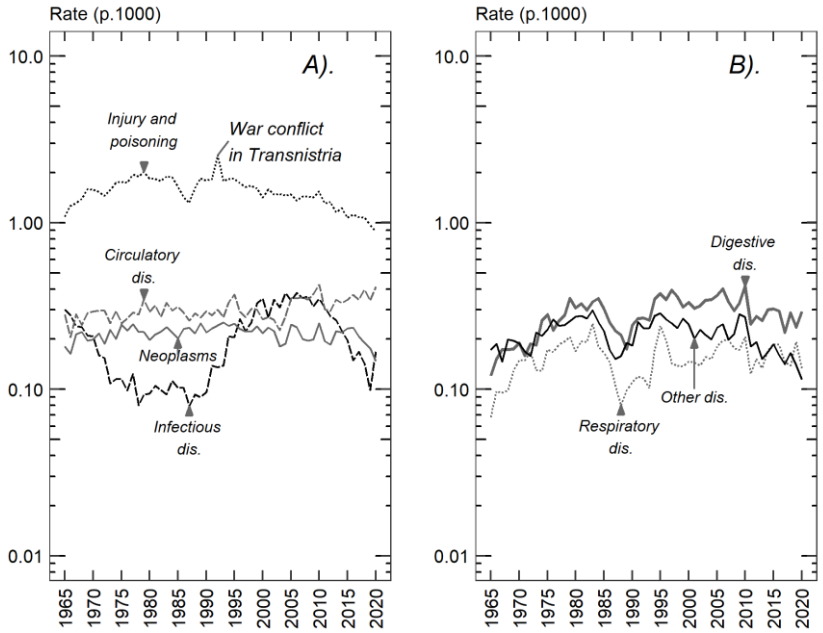

FIGURE V.12. – 1965-2020 trends in standardised mortality rates by major groups of causes at ages 15-39, males

Once the restrictive measures against alcohol came into effect in 1985, the situation suddenly improved for all socially sensitive causes of death, with the exception of infectious diseases. However, with the misuse of the anti-alcohol measures in 1987, the adverse trends resumed very rapidly, particularly in the case of infectious diseases. The reaction was marked for deaths due to injuries and poisonings in men. Thus, in 1989, their standardised mortality rates reached the 1984 level. The social and economic crisis of the 1990s did not accelerate the growth in

mortality caused by injury and poisoning among young adults as it did in Ukraine (Meslé and Vallin, 2012) or Russia (Meslé et al., 1996). In fact, after a short period of stagnation in the early 1990s, interrupted by a peak in 1992 due to the war in Transnistria, this trend has been declining since 1996.

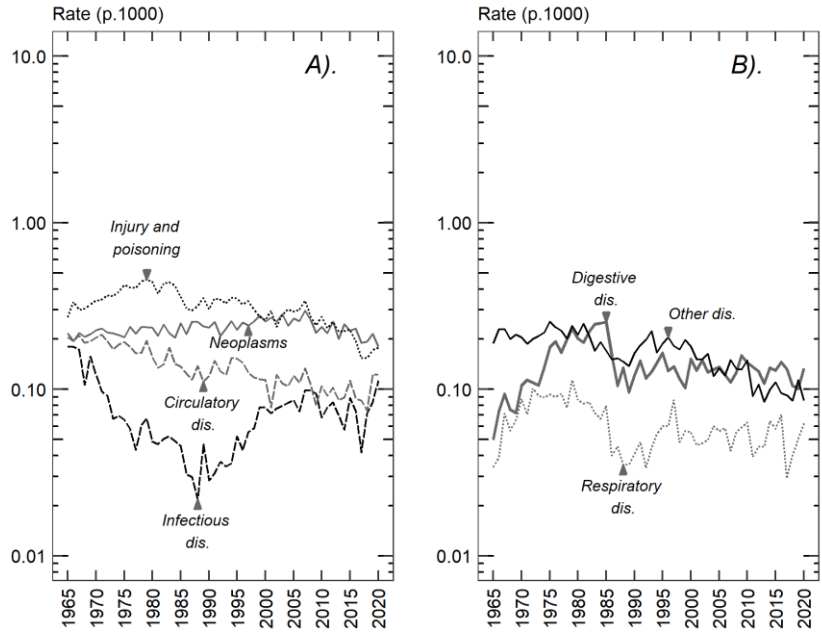

FIGURE V.12bis. – 1965-2020 trends in standardised mortality rates by major groups of causes at ages 15-39, females

At present, after over half a century of change, standardised rates from deaths due to injury and poisoning among young males have reached the levels observed in the mid-1960s, while among young females, they fell by just 35%. Mortality from diseases of the digestive system, by contrast, experienced a further moderate rise during the crisis of the 1990s, and since then it has fluctuated without much improvement. The same is true for *diseases of the respiratory system* and "*other diseases*", although mortality from the latter has declined noticeably in

recent years, especially among young females. Mortality from infectious diseases began to rise sharply from the late 1980s, especially during the 1990s. However, at the beginning of the millennium, this kind of mortality stopped increasing and began to decline over the last ten years.

We will further examine in more detail deaths from injury and poisoning, infectious diseases and other diseases. Although neoplasms, circulatory diseases and diseases of the digestive system play an important role in the mortality pattern of this age group, we will leave them for a detailed analysis for the next age group.

B. Deaths from injury and poisoning

Among men aged 15 to 39, *transport accidents* and *suicide* are the two leading causes of death from injury and poisoning, accounting for about 70% of overall external mortality both at the start and end of the study period (*Fig. V.13* and *V.13 bis*). The fastest growth in deaths due to injury and poisoning before the anti-alcohol campaign occurred for *suicide* and *injury undetermined whether accidentally or purposely inflicted*, with standardised mortality rates almost tripling between 1965 and 1984. Mortality from transport accidents and homicide also increased significantly, particularly in the 1970s.

Different categories of deaths from injury and poisoning showed different sensitivity to the 1985 anti-alcohol campaign, its misuse and the social and economic crisis of the 1990s. Furthermore, the reaction to these social and economic factors was not always the same according to gender. The anti-alcohol campaign had the greatest effect on mortality from *accidental poisoning* and *drowning and falls* in both sexes and *suicide* in males and *homicide* in females. The most significant effect was for female homicide rate (death rates fell by 80% in 1984-1987), while for males it was quite modest (only 17%). In both sexes, in 1985-1987, mortality continued to increase for *"injury undetermined whether accidentally or purposely inflicted"* independently of restrictive anti-alcohol measures. Here, we can think of the gradual changes in coding practice for deaths from injury and poisoning. This category, which had

a minor impact on external mortality before the anti-alcohol campaign (less than 1% in both sexes in the 1970s), could serve as a substitute for any specific subcategory of injury and poisoning deaths (accidents, suicide or homicide). Consequently, by the late 1990s, its share of overall mortality from injury and poisoning increased to 10% for both sexes.

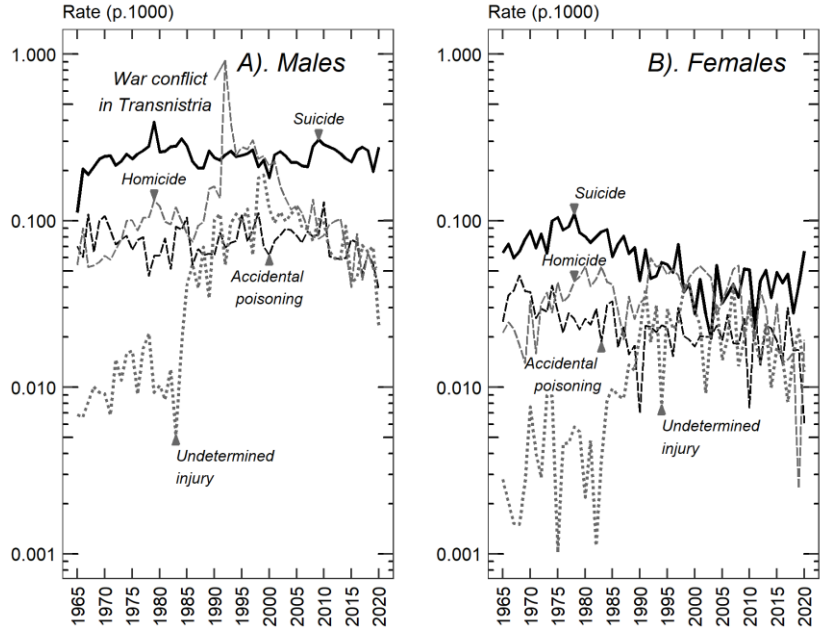

FIGURE V.13. – 1965-2020 trends in standardised mortality rates for suicide, homicide, accidental poisoning and injury undetermined whether accidentally or purposely inflicted at age 15-39, by sex

When the ban was relaxed, mortality began to rise again among young men and women, but at that time there was the strongest growth for homicides and transport accidents (70% rise in 1987-1989), while mortality from other external factors proved less sensitive. In 1989, male mortality due to transport accidents was at the same level as before the start of the anti-alcohol campaign, but standardised mortality rates for homicides reached the values recorded in the late 1970s.

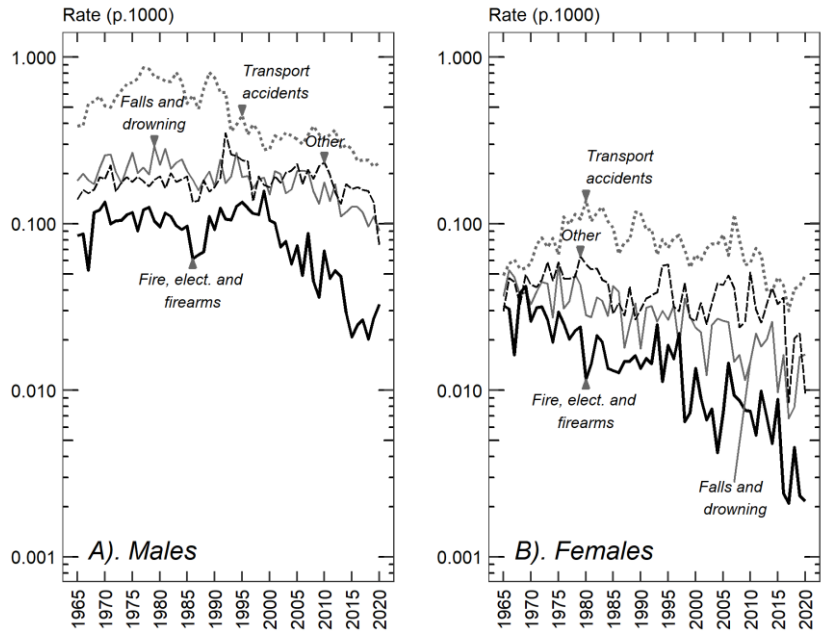

FIGURE V.13 bis. – 1965-2020 trends in standardised mortality rates for transport accidents, falls and drowning, exposure to fire, electric current and firearms and other deaths from injury and poisoning at age 15-39, by sex

The social and economic crisis of the early 1990s accelerated the growth of homicide mortality, which continued until 1995, followed by a constant decline. The spike in mortality in 1992 for this external cause of death is due to the war conflict in Transnistria. On the contrary, the mortality trend in transport accidents followed a marked decline throughout the period of the economic crisis (1990-1999). This could be explained by lower incomes and gasoline shortages during this period, which reduced the risk of fatalities in motor vehicle accidents. Once the country's economic situation improved, mortality due to transport accidents began to stagnate. The opposite trends in mortality from homicides and transport accidents, combined with a relative stagnation of other external causes of death, explain the general stagnation of

mortality from injury and poisoning in the early 1990s among Moldovan young men.

From the mid-1990s onwards, the overall mortality from injury and poisoning among young men declined moderately, followed by stagnation in the first decade of the 21st century. There have been improvements with regard to homicide, "injury undetermined whether accidentally or purposely inflicted" and accidents provoked by fire, electricity and firearms. However, the recent stagnation in mortality from other categories of external causes of death, including transport accidents and suicide, casts doubt on the sustainability of these fragile advances among young men in Moldova.

The response to the social and economic factors of the 1980s and 1990s was far less pronounced among young women than among young men. We can see a constant reduction in female suicide mortality, even starting in the late 1970s, which is not visible in men. However, the lack of significant progress in reducing mortality due to transport accidents, as in men, has led to the general stagnation of female mortality from injury and poisoning in recent years.

The stagnation in mortality from injury and poisoning among Moldovan young men in the early 1990s, followed by a moderate decline thereafter, contrasts with the situation in other ex-Soviet republics. In Russia and Ukraine, the crisis of the 1990s had a much more dramatic impact on mortality from external causes of death, particularly accidental poisoning by alcohol, which is a well-known proxy for hazardous alcohol consumption in this region (*Fig. V.14*). Indeed, in these former Soviet republics, which practice the dry, "Nordic" type of alcohol consumption, accidental poisoning by alcohol has a strong negative correlation with life expectancy, especially in men (Levchuk, 2009; Nemtsov, Levchuk and Davydov, 2011), even if it represents only 10-15% of deaths from injury and poisoning. Mortality from accidental alcohol poisoning in Ukraine, unlike Moldova, is very chaotic and sensitive to the circumstances of the 1980s and 1990s, and it declined considerably in 2009. Conversely, in Moldova, which is much closer to the Mediterranean type of alcohol

consumption, this type of mortality is not only well below that of Ukraine, but the general trend is relatively stable, with little reaction to the 1990s crisis and no recent improvement. For women, the situation is somewhat different because the level of Moldova is quite close to that of Ukraine before the end of the 1980s.

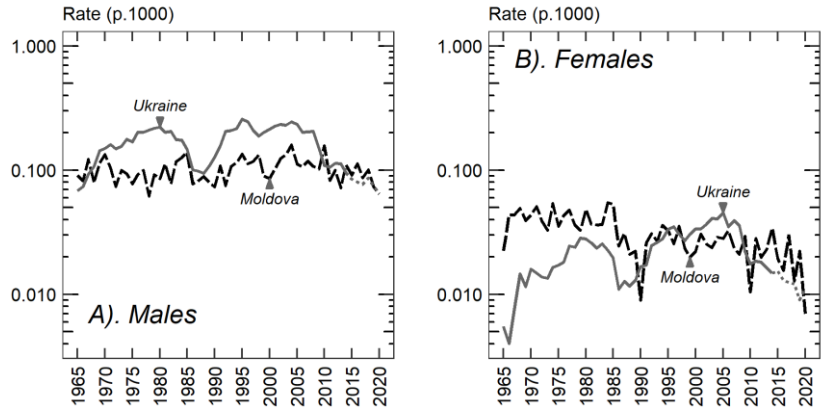

FIGURE V.14. – 1965-2014 trends in standardised mortality rates for accidental poisoning by alcohol in Moldova and Ukraine at ages 15-39, by sex

Note: For Ukraine in 2014-2020, data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the regions of Donetsk and Luhansk.

C. Infectious diseases

Among young adults, infectious diseases are largely dominated by *tuberculosis* (*Fig.V.15*). The standardised mortality rate associated with this infection declined very rapidly in the late 1960s and early 1970s. It then stagnated for a period of time, followed by a rapid rise starting in the late 1980s. Since the beginning of the millennium, mortality from tuberculosis has been relatively stable and is now at the levels seen in the mid-1960s for men and the mid-1970s for women. The arrival of AIDS was relatively late compared with that of Western countries. It suddenly manifested itself in the late 1990s and reached a very high point in 2005, ranking second among infectious diseases in young men and sharing first place with tuberculosis in young women. Mortality from *"other*

infectious diseases" was close to that from tuberculosis before the late 1980s and has since decreased, except for the 2020 peak due to the COVID-19 pandemic.

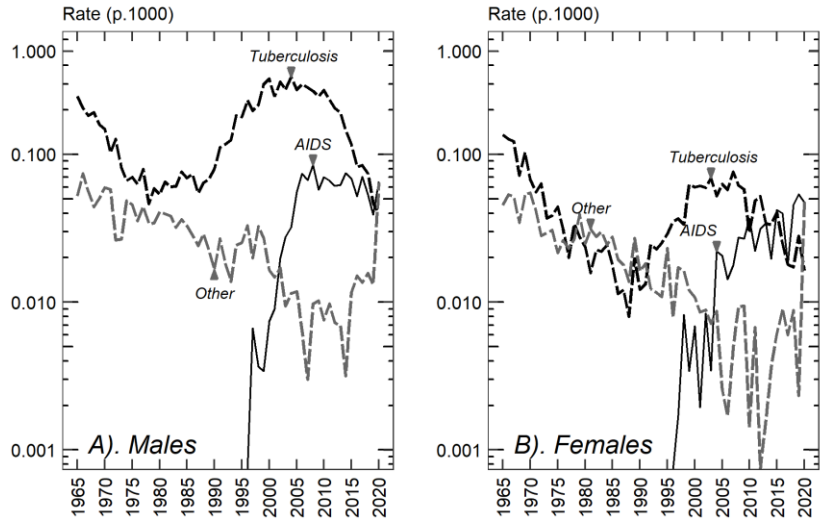

FIGURE V.15. – 1965-2020 trends in standardised mortality rates for infectious diseases at age 15-39, by sex

D. Other diseases

Among young adults, mortality from *"other diseases"* mainly related to *mental disorders* and *diseases of the nervous system* is characterised by the large fluctuations caused by the anti-alcohol campaign and the socio-economic crisis of the 1990s, in particular among men (*Fig.V.16*). From 1998 to the present, no stable improvement was observed in young males, while a slightly decreasing trend can be observed in young females. A more detailed analysis of this type of mortality, primarily associated with alcohol abuse in adults, will be presented for the following age group. Among young women, mortality due to "other diseases" was highest until the early 1970s, although considerable progress was made throughout the study period, mainly due

to *conditions related to pregnancy, delivery and puerperium* (this category is not shown in the corresponding figure, but is included in *Table V.3*). Thus, the standardised mortality rate for this condition was reduced by more than eight times between 1965 and 2020. These improvements were closely related to a decrease in maternal deaths caused by abortion complications and a general decrease in infectious diseases. It is the result of significant changes in maternal and child health care that took place in Moldova at the end of the Soviet period and continued after independence (Stratulat Petru, Paladi Gheorghe, and Gațcan Ștefan, 2013).

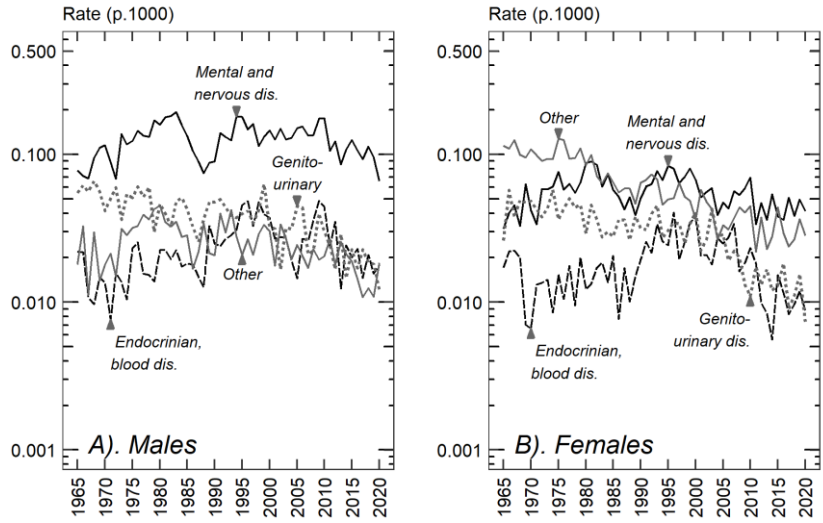

FIGURE V.16. – 1965-2020 trends in standardised mortality rates for "other diseases" at age 15-39, by sex

Mortality from *diseases of the genitourinary system*, with standardised mortality rates similar to those for mental disorders and diseases of the nervous system at the start of the period, has decreased moderately throughout the entire period for both sexes. At present, this category of causes of death, along with *diseases of the endocrine glands*

and blood diseases and the group containing the residual causes of death are of minor importance.

TABLE V.3. – Standardised mortality rates (p.1000) at age 15-39 by selected groups of ICD-10 items in 1965 and 2020, Moldova, by sex

Groups used	ICD (10th revision)	SMR p.1000			
		1965		2020	
		Males	Females	Males	Females
Infectious and parasitic diseases	**A00 to B99, U071**	**0.300**	**0.181**	**0.170**	**0.113**
Tuberculosis	A15 to A19, B90	0.248	0.136	0.040	0.016
AIDS	B20 to B24	0.000	0.000	0.066	0.047
Other infectious and parasitic diseases	A00 to A09, A20 to B19, B25 to B89, B91 to B99, U071	0.053	0.045	0.064	0.049
Neoplasms	**C00 to D48**	**0.181**	**0.206**	**0.147**	**0.180**
Diseases of the circulatory system	**G45, I00 to I99**	**0.280**	**0.216**	**0.415**	**0.122**
Diseases of the respiratory system	**J00 to J98**	**0.068**	**0.034**	**0.133**	**0.063**
Diseases of the digestive system	**K00 to K92**	**0.121**	**0.050**	**0.292**	**0.134**
Deaths from injury and poisoning	**V01 to Y89**	**1.084**	**0.272**	**0.888**	**0.178**
Transport accidents	V01 to V99	0.386	0.049	0.233	0.049
Falls and drowning	W00 to W19, W65 to W74	0.181	0.037	0.090	0.016
Accidental poisoning	X40 to X49	0.091	0.023	0.065	0.007
Accidents caused by fire, electric current or firearm	W32 to W34, W85 to W87, X00 to X09	0.085	0.032	0.033	0.002
Suicide	X60 to X84	0.142	0.074	0.292	0.067
Homicide	X85 to Y09, Y35, Y36	0.052	0.025	0.067	0.017
Deaths from injury undetermined whether accidentally or purposely inflicted	Y10 to Y34	0.007	0.003	0.034	0.010
Other accidents	W20 to W31, W35 to W64, W75 to W84, W88 to W99, X10 to	0.140	0.030	0.073	0.010

Groups used	ICD (10th revision)	SMR p.1000			
		1965		2020	
		Males	Females	Males	Females
	X39, X50 to X59, Y40 to Y89				
Other diseases	**D50 to G44, G47 to H95, L00 to Q99**	**0.173**	**0.189**	**0.114**	**0.086**
Endocrine diseases, diseases of blood	D50 to D89, E00 to E90	0.022	0.017	0.018	0.009
Mental disorders and diseases of the nervous system	F01 to F99, G00 to G44, G47 to G98, H00 to H95	0.078	0.032	0.066	0.041
Diseases of the genitourinary system	N00 to N99	0.055	0.026	0.012	0.007
Other diseases, *including:*	L00 to M99, O00-O99, Q00 to Q99	0.018	0.115	0.018	0.028
Complications of pregnancy, childbirth and puerperium	O00 to O99	-	0.103	-	0.012
Total for all causes	**A00 to Y89**	**2.207**	**1.148**	**2.160**	**0.876**

5. Causes of death in mature adults aged 40-64 years

A. Major causes of death

Diseases of the circulatory system are the most common cause of death in the 40-64 age group. They account for more than 30% of male deaths and more than 35% of female deaths throughout the period (*Fig.V.17*). The steady growth of this mortality was halted by the anti-alcohol measures introduced in 1985, which resulted in a significant decline. However, the slackness of the anti-alcohol campaign and the social and economic crisis of the 1990s led to a new upsurge in cardiovascular mortality. After this period of fluctuations, cardiovascular mortality resumed its slow growth in men and remained stable in women up to 2005, followed by a moderate decline since then.

Neoplasms occupy the second place in the global mortality profile of this age group (often shared with injuries in males and with diseases of the digestive system in females) with a proportion hovering around 20% of total mortality during the entire period. Among men, mortality from this cause of death increased rapidly until the late 1980s, followed by stagnation and even a moderate decline in the 1990s. For women, neoplasm mortality was fairly stable compared with men throughout the study period.

Diseases of the digestive system play a very important role in the Moldovan mortality pattern, particularly for women. The proportion of this cause of death in total mortality increased from 8% in males and 7% in females in 1965 to 14% and 18% in 2020, respectively. The increase in mortality was especially pronounced before the launch of the anti-alcohol campaign: in 1965-1984, standardised mortality rates increased seven-fold among women and four-fold among men. At the end of this spectacular growth, the curve for diseases of the digestive system was very close to that for diseases of the circulatory system in females and reached the level of neoplasms and deaths from injury and poisoning in males. After a short period of improvement linked to the 1985 anti-alcohol campaign, this type of mortality resumed a slow upward trend in

males and remained at a stable level close to neoplasms in females. It is only since 2010 that mortality from diseases of the digestive system has slowly begun to decline after a long-term negative trend.

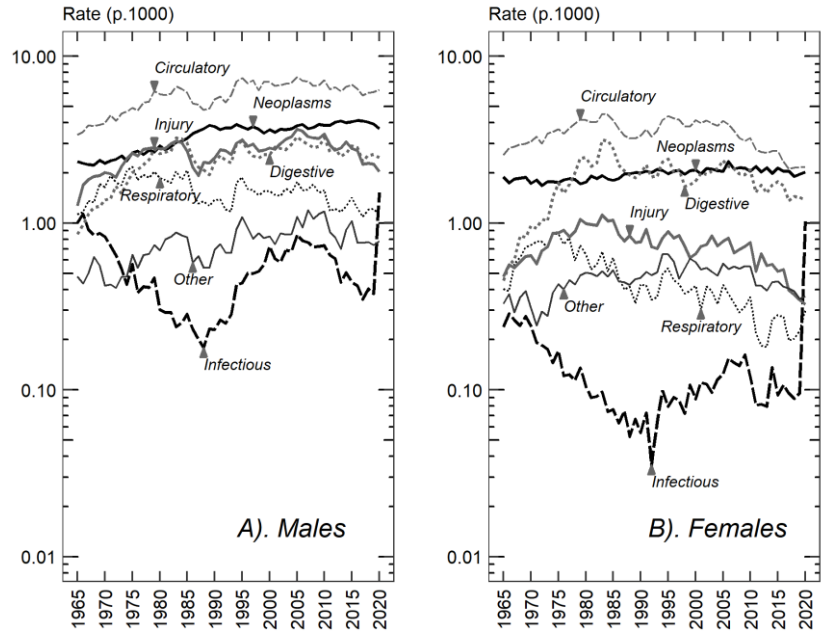

FIGURE V.17. – 1965-2020 trends in standardised mortality rates by major groups of causes at ages 40-64, by sex

Also closely linked to trends in alcohol consumption, the evolution of male mortality due to *injury and poisoning* is very close to that of diseases of the digestive system. In particular, the immediate circumstances of the 1980s and 1990s had a significant impact on changes in this category of causes of death. However, despite these fluctuations, the overall upward trend in male mortality continues to persist. As with digestive system diseases, moderate positive changes in deaths from injuries and poisonings are only visible from 2010 onwards. In women, mortality from injury and poisoning is much lower than in men, and well below neoplasms and digestive system diseases. In

addition, unlike males, after a decline during the anti-alcohol campaign, this type of female mortality continues to decline until today.

After the growth period, there was a short-term decline in male mortality from *diseases of the respiratory system* during the anti-alcohol campaign, followed by a further rise in the 1990s and continued stagnation to date. In females, this cause of death followed a downward trend from the mid-1970s, although it was interrupted by the stagnation over the 1990s.

Mortality from *infectious diseases* after a period of deep decline between the 1960s and the 1980s was on the rise in the 1990s, although since 2010, it has been decreasing until the COVID-19 pandemic in 2020. For this age group, there was a much larger increase in infectious disease mortality in 2020 compared to 2019 among women than men (11-fold rise vs 4-fold rise). Changes in male mortality from "other diseases" are also marked by fluctuations linked to the social and economic factors of the 1980s and 1990s, with an adverse trend continuing in recent years. Female mortality from the residual group of causes of death was rather stable throughout the period, with a very weak response to the events of the 1980s and 1990s.

It can be said that among adults aged 40-64 years, male mortality is dominated by four major causes of death: diseases of the circulatory system, neoplasms, digestive diseases and deaths from injury and poisoning with very similar contributions played by the last three groups. Female mortality is largely influenced by diseases of the circulatory system, neoplasms and diseases of the digestive system, with an equal impact of the latter two factors. All major causes of death, except neoplasms, showed much greater sensitivity to the social and economic events of the 1980s and 1990s among men than among women. Among males, the long-term deterioration in mortality trends in 1965-1984 continued after the period of large fluctuations in the 1980s and 1990s with an abrupt reversal for infectious diseases. Among females, the situation is also unfavourable, although the recent trend in mortality from

diseases of the circulatory system gives us hope for new and lasting improvements.

B. Diseases of the circulatory system

Figures V.18 and *V.18bis* show the evolution of the three main categories of diseases of the circulatory system (heart diseases, cerebrovascular diseases and other diseases of the circulatory system) and different heart diseases among adults aged 40 to 64. For better readability, two groups of causes referring to heart diseases (hypertensive disease and rheumatic heart disease) were placed in Figure V.18. As regards the main categories, the leading role belongs to *heart diseases*, with a share of around 70% among men and 60% among women. The general upward trend in male mortality from heart diseases is punctuated by short-term and wide-ranging fluctuations associated with the 1985 anti-alcohol campaign and then the social and economic crisis of the 1990s. Between 1984 and 1989, standardised mortality rates for heart diseases in males decreased by 25%, while the slackening of restrictive anti-alcohol measures and the crisis of the 1990s resulted in a 50% increase between 1989 and 1995. Among women, the fluctuations brought on by the anti-alcohol campaign and the crisis of the 1990s is also very marked, especially during the anti-alcohol campaign. For both sexes, recent trends in mortality caused by heart diseases are very unfavourable. In males, long-term mortality growth has continued to the present, while in females it has ceased. Between 1965 and 2020, standardised mortality rates for heart diseases more than doubled in men and remained the same for women.

Mortality from cerebrovascular diseases, which accounts for approximately 30% of total cardiovascular mortality in men and 40% in women, has started to decline steadily since 2005. These improvements are more pronounced in females than in males. Thus, in 2006-2020, mortality from cardiovascular diseases decreased nearly three times in women and twice in men. As a result of the advances, the present level of mortality associated with this pathology after 55 years of deterioration

reached the level observed at the very beginning of the period (it is still higher for males but lower for females). However, these improvements for mature adult men are totally outweighed by a huge increase in mortality caused by heart diseases. The remainder of the causes of death combined in the "*other circulatory diseases*" group has a minor impact with a contribution of about 2-3%.

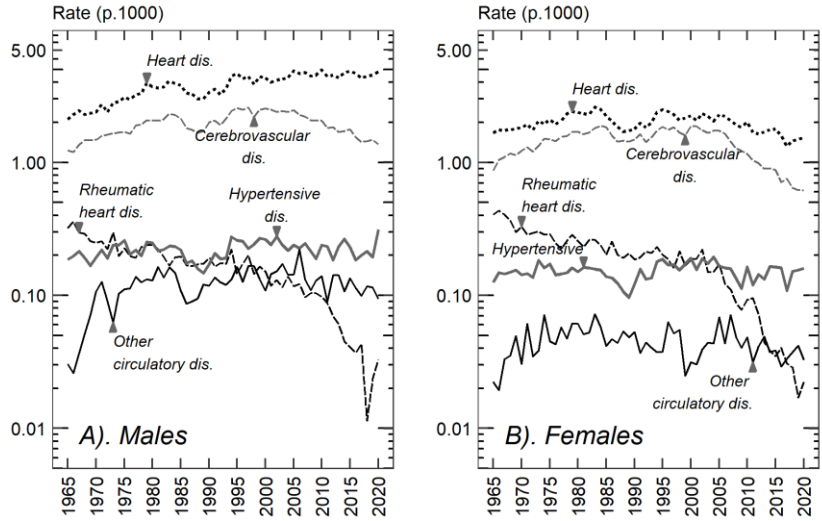

FIGURE V.18. – 1965-2020 trends in standardised mortality rates by three main categories of diseases of the circulatory system, including two heart diseases (hypertensive disease and rheumatic heart disease) at ages 40-64, by sex

It is necessary here to clarify the content of the huge cause of death called heart disease. In Moldova, the coding practice of heart diseases is very inaccurate as in Russia (Meslé et al., 1996) and Ukraine (Meslé and Vallin, 2012). At the beginning of the period, up to 45% of deaths from heart diseases in males and 55% in females were coded as *atherosclerotic cardiosclerosis*[29] (Fig.V.18bis). This cause of death represents a specific

[29] The Soviet classification distinguishes between atherosclerotic cardiosclerosis with hypertension (item 92) and without hypertension (item 93). The corresponding ICD headings are 414.0

type of chronic ischaemic heart disease, but in the countries of the former USSR, it has been widely used to cover many causes of death other than ischaemic heart disease and probably served as a catch-all category for ill-defined heart diseases (Meslé et al., 1996; Meslé and Vallin, 2003). The adoption of the ICD in Moldova in 1991 progressively modified coding practices for heart diseases. Thus, most of the deaths earlier referred to as atherosclerotic cardiosclerosis have become increasingly attributed to the category of *other ischaemic heart diseases*. As a result, by the end of the study period, the proportion of atherosclerotic cardiosclerosis is only 5% for both sexes, whereas the share of other ischaemic heart diseases is about 50% in males and 60% in females.[30] However, these changes in coding practice do not imply an improvement in reality. In fact, the lion's share of deaths attributed to the "other ischaemic heart diseases" category represents an unspecified form of chronic ischaemic heart disease (item I25.8 under ICD-10)[31]. Thus, the combined impact of atherosclerotic cardiosclerosis and other ischaemic heart diseases on total heart disease mortality did not change drastically throughout the entire period. This proportion ranges from 55% to 60% for men and 65% to 70% for women, with the highest numbers occurring in the early 1980s (up to 80% in both sexes). However, the recent rise in mortality from *acute myocardial infarction* and *other forms of heart diseases*[32] may be partly attributed to these incremental improvements in coding practice for heart diseases. The latter group of causes of death covers less than 2% of deaths from heart diseases in the 1970s, 5% in the 1990s and approximately 10% today. A very small proportion of "other forms of heart diseases" is found and for other former Soviet republics,

(coronary atherosclerosis) in ICD-9 and I25.0 (atherosclerotic cardiovascular disease, so described) and I25.1 (atherosclerotic heart disease) in ICD-10.

[30] In the case of ICD-10, the "other ischaemic heart diseases" category includes items I20, I24, I25.2-.9.

[31] In 2014, 97% of all deaths attributed to the "other ischaemic heart diseases" group were recorded under the item I25.8, other forms of chronic ischaemic heart disease.

[32] The "other forms of heart diseases" group combines "pulmonary heart disease", "nonrheumatic valve disorders", "cardiac arrest", "heart failure", and the residual group of heart diseases corresponding to items 116-120 of the full list of ICD-10.

such as Russia and Ukraine, thereby indirectly supporting the idea about misdiagnosis of cardiac diseases in these countries.

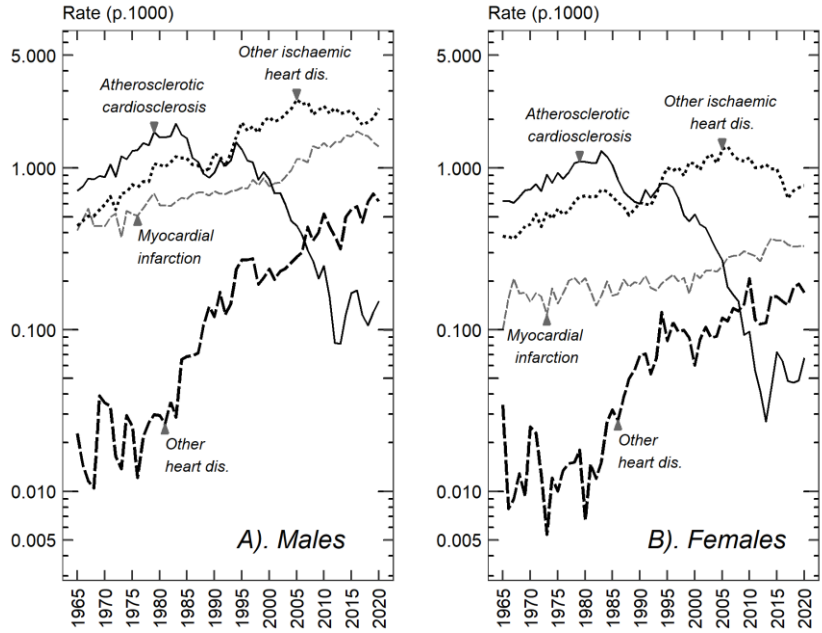

FIGURE V.18bis. – 1965-2020 trends in standardised mortality rates by heart diseases at ages 40-64, by sex

Note: standardised mortality rates for hypertensive disease and rheumatic heart disease are presented in Figure V.18.

The dynamics of *hypertensive diseases* (Fig. V.18) that have a minor effect on total heart disease mortality (3% for men and 7% for women) must also be interpreted with caution since they reflect gradual changes in coding practices rather than the real situation. Thus, the 1970 revision of the Soviet classification distinguished between several diseases of the circulatory system “with hypertension” and “without hypertension”. This led to ascribing a certain proportion of deaths previously coded as different forms of hypertensive diseases to different forms of cardiovascular diseases with hypertension, first of all, to atherosclerotic

cardiosclerosis with hypertension. The result was an artificial decline in mortality from hypertensive disease in the 1970s and 1980s. Finally, mortality from *rheumatic diseases* (Fig. V.18) that was quite high at the beginning of the period, especially among women, followed a continuous downward trend during the whole period. This reflects a better diagnosis and the use of preventive measures such as antibiotic therapy.

C. Neoplasms

In the 40-64 age group, neoplasms occupy a key position as compared to young adults (especially men) and the elderly, where deaths from injury and poisoning and diseases of the circulatory system, respectively, are largely predominant. Further, we will go into more detail on the neoplasms of different sites.

Figure V.19 illustrates mortality trends in neoplasms strongly related to tobacco and alcohol consumption: respiratory system, upper aerodigestive tract (nose, oral cavity, pharynx and oesophagus) and urinary system.[33] Cancer of the *respiratory system*, mainly represented by lung cancer, is a major cause of death from neoplasms in men. Its share in the cancer mortality pattern ranges from 30% at the beginning and end of the study period to 40% in the late 1980s, when standardised mortality rates were at their highest. Male mortality from this cause of death increased steadily until the late 1980s, and then levelled off and even declined moderately in the mid-1990s. The same lung cancer death dynamics can be observed in mature adult men, for example in Ukraine and Russia. In Moldova, as in these former Soviet countries, the period of growth is directly associated with the spread of tobacco consumption and environmental pollution provoked by the rapid development of the industry and agriculture at that time. Conversely, the economic recession in the late 1980s in the former USSR followed by the economic crisis in the newly independent states reduced industrial and agricultural pollution

[33] The cancers considered to be causally related to tobacco smoking include those of the lung, upper aerodigestive tract (oral cancer and cancer of the oropharynx, hypopharynx, larynx and oesophagus), urinary bladder and renal pelvis and pancreas (IARC, 2004).

and tobacco consumption habits in these countries (Meslé and Vallin, 2012). To explain the decline in lung cancer mortality among Moldovan males in the 1990s, we can assume the hypothesis on competing risks previously proposed to account for the same phenomenon, at least partially, in Russia and Ukraine. The rapid growth in mortality from diseases of the circulatory system and accidents provoked by the economic and social crisis of the 1990s increased the risk of dying from these causes among people suffering from cancer (Shkolnikov, McKee, Leon, et al., 1999; Shkolnikov, McKee, Vallin, et al., 1999). Indeed, after the end of the economic crisis of the 1990s, the Moldovan trend of male mortality from lung cancer resumed its slow growth, followed by a stagnation that has persisted until now.

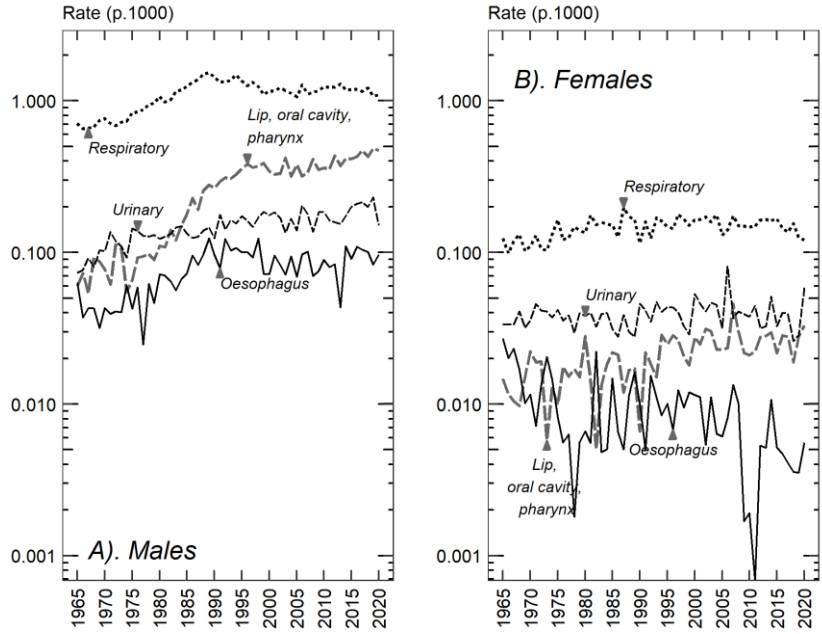

FIGURE V.19. – 1965-2020 trends in standardised mortality rates for neoplasms of the respiratory system, upper aerodigestive tract and the urinary system at ages 40-64, by sex

Although the contribution of cancer of *the lip, oral cavity and pharynx* to the overall male cancer rate is not so large at present (7% in 2020), mortality from neoplasms of this site increased the most rapidly throughout the period: between 1965 and 2020, standardised mortality rates increased by almost seven times in males and doubled in females. As with neoplasms of the respiratory system, cancer mortality of this location increased particularly rapidly until the mid-1990s, while in subsequent years, this rate remained at the same level and has resumed its growth over the last few years. The same dynamics, although far less drastic, can be observed in males for *urinary system* cancer, dominated by bladder cancer, and for *oesophagus* cancer, with a 3–5% and 2–3% share, respectively, in total cancer mortality.

In females, mortality from malignant neoplasms of the respiratory system, upper aerodigestive tract and urinary system is lower than in males between 3 times (for cancer of the urinary system) and 15 times (for cancer of lips, oral cavity and pharynx), and their trends have been fairly stable throughout the entire period.

Breast cancer, which is the leading cause of death from malignant tumours in women aged 40-64, has shown an upward trend over the study period: between 1965 and 2020, standardised mortality rates more than doubled, which is mainly linked to the late diagnosis of the disease. Mortality from *uterus* cancer, on the contrary, declined, especially quickly in the 1970s and 1980s; however, these advances have come to an end since independence. These opposite trends in cancer mortality from breast and uterus, which occurred in Moldova as in all industrialized countries, resulted in a crossover between these two conditions in the early 1980s. Mortality from cancer of *other female genital organs* did not change considerably throughout the period. Although *prostate* cancer has a fairly modest impact on overall cancer mortality (3% in 2020) in this age group, it showed an upward trend for the period as a whole (*Fig.V.20*).

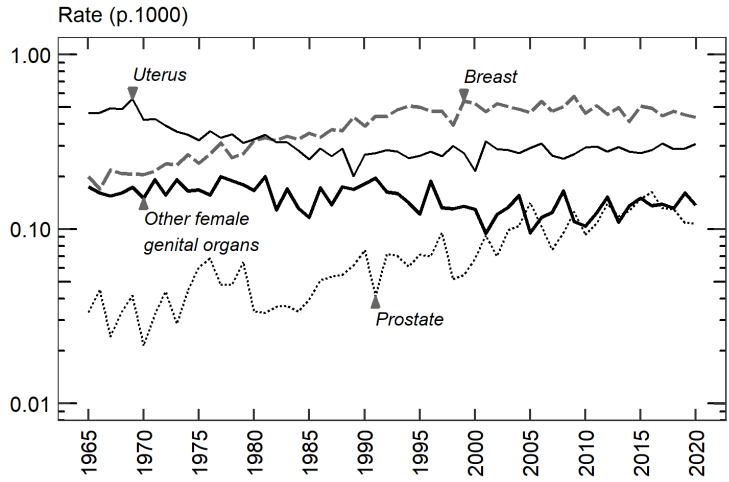

FIGURE V.20. – 1965-2020 trends in standardised mortality rates for neoplasms of breast and genitourinary organs at ages 40-64

Changes in mortality from malignant neoplasms of the digestive system (apart from oesophagus cancer presented in Fig.V.19) vary considerably depending on the location. From 1965 to 2020, standardised mortality rates for *stomach* cancer decreased more than three times in males and females. At the same time, mortality from cancer of the *intestine* and *other digestive organs* has increased significantly (*Fig.V.21*). As we know, these contrasting trends in mortality from malignant neoplasms of the stomach and intestine occur in all developed countries and are attributed to changes in food preparation traditions and dietary habits. Thus, declining mortality from stomach cancer is closely associated with the increased food variety in a diet, while the rise in mortality from cancer of the intestine is positively correlated with the consumption of meat and animal fat (Meslé, 1983). In Moldova, as in other countries of the former Soviet Union, this phenomenon has occurred with an enormous lag compared to Western countries, particularly among men. While in women, the trend lines for stomach and intestine cancer mortality became overlapped in the early 1980s, in men,

the two curves came into line only at the beginning of this millennium. Among males, mortality from *liver* cancer and cancer of *other organs of the digestive system* has shown a rising trend, especially in the first case, and at present, malignant neoplasms of these two sites have reached the levels of stomach cancer and cancer of the intestine. Among females, mortality trends for the two locations mentioned above remained relatively stable during the entire period.

Mortality from *leukaemia and lymphomas* has not changed considerably throughout the overall period, in both males and females aged 40 to 64, unlike children and adolescents, for whom we have seen improvements in recent years (*Fig.V.22*). Finally, the group of *other malignant neoplasms* showed a fairly rapid growth: its proportion in total cancer mortality increased from 5% in 1965 to 10% in 2020. "Other malignant neoplasms" are in most cases presented by two groups: "malignant neoplasms of the brain and other parts of the central nervous system" and "malignant neoplasms of other and unspecified sites" (70% in 2020, both sexes).

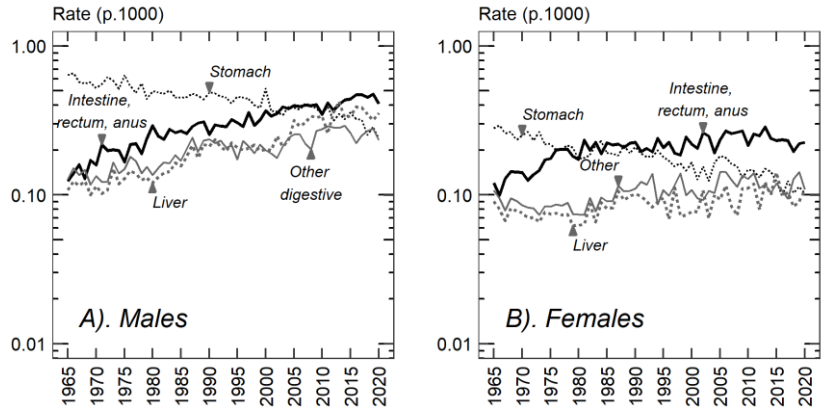

FIGURE V.21. – 1965-2020 trends in standardised mortality rates for neoplasms of the digestive organs at ages 40-64, by sex

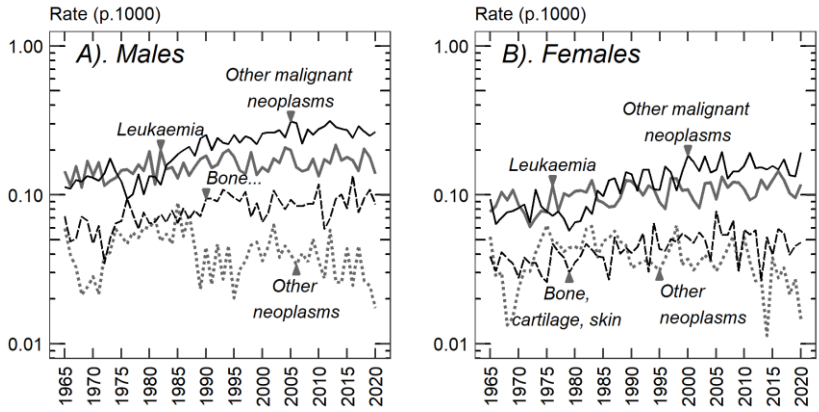

FIGURE V.22. – 1965-2020 trends in standardised mortality rates for neoplasms of other sites at ages 40-64, by sex

D. Deaths from injury and poisoning

Among Moldovan men between the ages of 40 and 64, the mortality pattern associated with injury and poisoning has evolved over time. Like for the previous age group, before the launch of the anti-alcohol campaign, *suicide* and *transport accidents* were the two principal causes of external deaths and accounted for about 35% of the overall pattern, the leading position being played by the former, and not by the latter as in young men. In addition, unlike men aged 15 to 39, the impact of *accidental poisoning* becomes more significant at this age, especially in the mid-1980s (up to 25%). Finally, the category of *other accidents* has come to the fore as a result of the very rapid growth in the 1990s. Currently, it accounts for as much as 25% of all deaths caused by injuries and poisonings among men in this age group (*Fig.V.23* and *Fig.V.23bis*).

The sensitivity of mortality from external factors to the social and economic events of the 1980s and 1990s among those aged 40 to 64 has numerous points in common with young adults. A brutal ban on alcohol consumption led to a significant decline in mortality from all external causes of death, except for mortality from *injury undetermined whether accidentally or purposely inflicted*, which continued an upward trend

regardless of restrictive measures. We have already observed the same situation in the 15-39 age group and attributed it to the interchange of deaths between this cause of death and other subcategories of deaths from injury and poisoning (accidents, homicide and suicide).

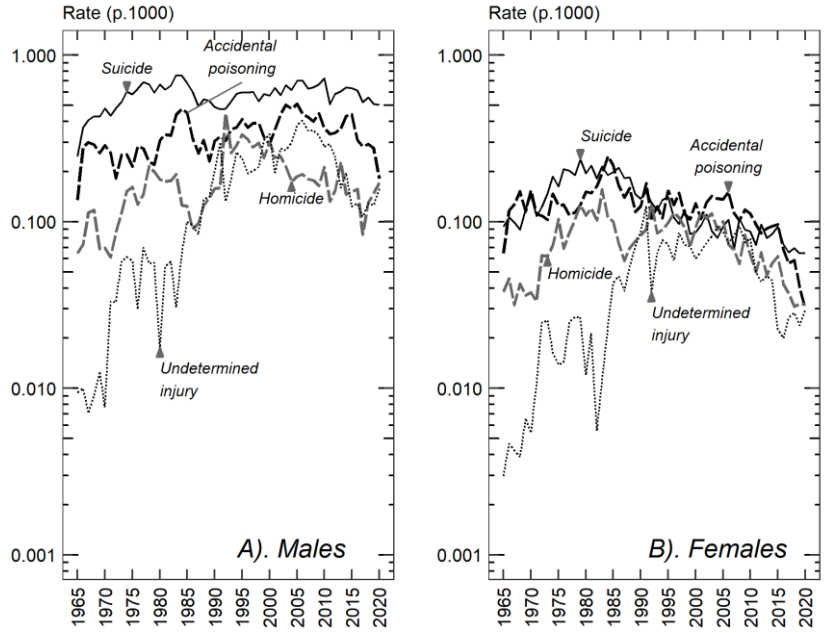

FIGURE V.23. – 1965-2020 trends in standardised mortality rates for suicide, homicide, accidental poisoning and injury undetermined whether accidentally or purposely inflicted at ages 40-64, by sex

Among men aged 40 to 64, as in the preceding age group, the anti-alcohol campaign had a huge impact on mortality from *drowning and falls* and *accidental poisoning*: standardised mortality rates were reduced almost twice between 1984 and 1987. Concerning other causes, the decrease in male mortality in 1985-87 ranged from 30% for homicides to 75% for "other accidents", with the rest of the causes of death being placed between them. For women between the ages of 40 and 64, the double reduction was achieved for mortality caused by *fire, electricity*

and firearms. Female mortality due to homicides and accidental poisoning has also fallen significantly (80%).

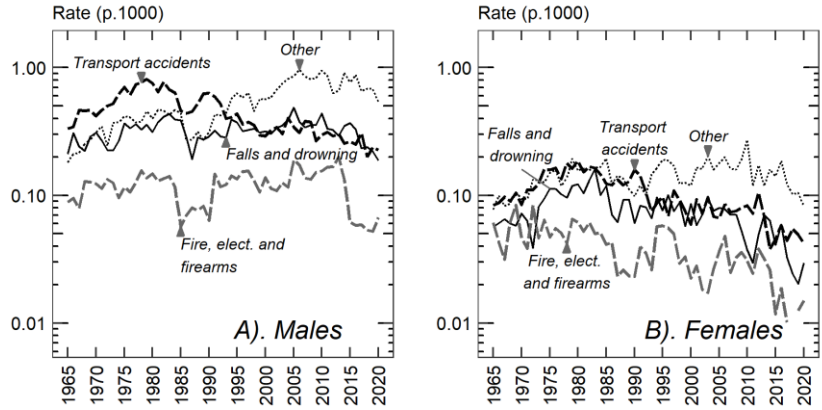

FIGURE V.23bis. – 1965-2020 trends in standardised mortality rates for transport accidents, falls and drowning, exposure to fire, electric current and firearms and other deaths from injury and poisoning at ages 40-64, by sex

In the late 1980s, mortality from "injury undetermined whether accidentally or purposely inflicted" accelerated its growth considerably: between 1987 and 1991, standardised mortality rates more than tripled for both sexes. In relation to other categories, the situation has also deteriorated seriously, especially in the case of homicides, accidents caused by fire, electricity and firearms (for both sexes), falls and drowning and other accidents (for males). Mortality from other external factors was much less sensitive to the misuse of the anti-alcohol campaign.

As in the previous age group, the social and economic crisis of the 1990s substantially accelerated the increase in male mortality from *homicide*: between 1991 and 1995, the standardised mortality rate more than doubled, with the result that by the mid-1990s, it had reached its all-time high during the study period. Mortality from "injury undetermined whether accidentally or purposely inflicted" fluctuated over the first half of the 1990s, but did not change significantly in the total. The increase in

male mortality from other categories of injury and poisoning deaths during the 1990s crisis was much smaller than for homicides or even absent. In fact, there was even a steady decline in mortality from *transport accidents* in the 1990s, which we have already explained by the severe economic situation in the country and the petrol deficit. As in the previous age group, these improvements with traffic accidents were temporary and once the economic situation had improved, the decline moved into stagnation.

Among women between the ages of 40 and 64, during the first part of the 1990s, most categories of injury and poisoning deaths, including homicide, remained at the same level or showed a downward tendency. The improvement in the suicide rate started in the mid-1980s for young adult females.

After the end of the period of sharp fluctuations induced by the social and economic events of the 1980s and 1990s, male mortality from injury and poisoning continued the 1965-84 upward trend or came into stagnation for most of the categories. The downward trend in homicides in the first decade of the millennium is not a reflection of the real improvement in the situation because, unlike young adult men, there was a symmetrical upward trend in mortality from injuries with undetermined intent. We can assume that there was an interchange of deaths between these two categories. The recent situation seems especially alarming for *other accidents* that have become the leading cause of death from injuries and poisonings for both sexes in the last two decades. This group consists of accidental inhalation of a foreign body, misadventures to patients during medical and surgical care, and the residual group of external causes of death. The first and third components of this combined category of external deaths represent 28% and 70% of all deaths, respectively. Finally, it is important to note that at the detailed ICD-10 level, nearly 60% of deaths related to the residual group of injuries and poisoning deaths in the 40-64 age group are caused by exposure to excessive natural cold (X31).

E. Digestive diseases

As mentioned earlier, in Moldova, mortality from diseases of the digestive system is exceptionally high compared with other post-Soviet countries, such as Ukraine and Russia, and changes in this type of mortality are correlated with life expectancy gains and losses over different periods analysed (Chapter IV, section 1). *Cirrhosis of the liver* is the leading cause of death among diseases of the digestive system in both sexes. The lack of a gender gap in this cause of death seems to be a very specific characteristic that distinguishes Moldova from other countries where this pathology had a high impact on the total mortality pattern in the past, such as France (Vallin and Meslé, 1988) or Hungary (Meslé, 2004). The share of liver cirrhosis increased from 50% in men and 60% in women in 1965 to 80% and 90% in 2020, respectively. Another peculiarity is that the mortality dynamics due to cirrhosis of the liver were much more unfavourable among the female population, especially before the launch of the 1985 anti-alcohol campaign. For example, between 1965 and 1984, standardised mortality rates for this cause of death increased 5-fold in men and 10-fold in women. (*Fig.V.24*). The share of *alcoholic liver cirrhosis* among all types of liver cirrhosis in Moldova is relatively low (5-10%) because of a significant under-registration of this type of pathology. As with all types of liver cirrhosis combined, the male/female ratio is close to one for alcoholic liver cirrhosis (1.3 in 1970, 0.9 in 1985, 1.2 in 2000) but there has been a growing trend over the last two decades (1.6 in 2020). This means that the alcohol factor in Moldova has a similar impact on the development of liver diseases in both sexes.

The 1985 anti-alcohol campaign made clear the dependence of adult mortality on alcohol consumption for a wide range of causes of death, including liver cirrhosis. Cirrhosis of the liver as a slowly developing chronic disease is considered to have a lag of approximately 15 years between the reduction in alcohol consumption and the onset of the decline in mortality. Nevertheless, the sharp decline in alcohol consumption during Gorbachev's anti-alcohol campaign appears to have

delayed many deaths, resulting in a significant reduction in mortality in the former USSR republics. This has already occurred in France (Nizard and Munoz-Perez, 1993). In Moldova, between 1984, the year preceding the launch of the campaign, and 1989, the latest year in which mortality for this disease fell, standardised mortality rates decreased by 90% in males and 70% in females. Shortly after the removal of the restrictive measures, mortality growth resumed, but at that time it was much slower than that of the 1965-84 period, especially for women.

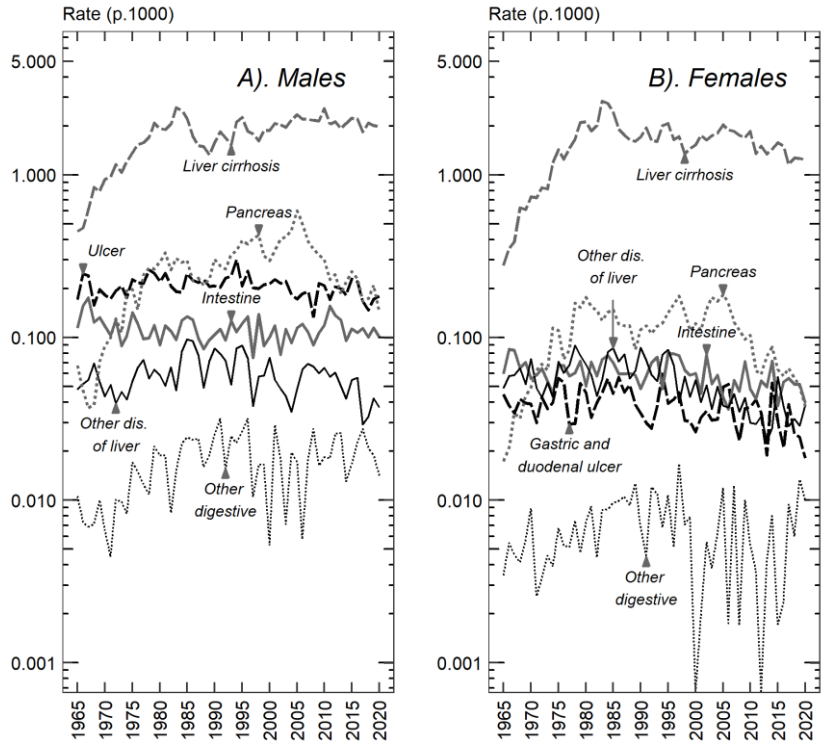

FIGURE V.24. – 1965-2014 trends in standardised mortality rates for diseases of the digestive system at ages 40-64, by sex

The same trend, with rapid growth before the mid-1980s and moderate increase following a short-term break in the second half of the

1980s, is observable for mortality from *diseases of the pancreas*, the ethology and pathogenesis of which are closely related to alcohol abuse, in particular, that of strong alcoholic beverages. Mortality from *gastric* and *duodenal ulcers*, also closely linked to alcohol use, remained unchanged over the study period. The downward tendency throughout the period can be seen for *diseases of the intestine* for both males and females, which may be due to medical achievements in the diagnostics and treatment of these pathologies.

Mortality from liver cirrhosis and other diseases of the liver and biliary tract is characterised by no gender gap, which we attribute to similar habits of regular wine consumption in both sexes. At the same time, for diseases of the pancreas and gastric and duodenal ulcers, whose mortality is associated with excessive consumption of strong alcoholic beverages, the differences between the sexes are clearly stated.

The trends in liver cirrhosis mortality in Moldova differ from those in Ukraine (*Fig.V.25*). Although liver cirrhosis mortality is much higher in Moldova than in Ukraine, the rapid increase observed in the latter country is in sharp contrast to the quasi-stagnation observed in the former since the middle of the 1980s. Standardised mortality rates for this cause of death have increased by approximately five times in both countries for both sexes. Unlike Ukraine, the situation in Moldova deteriorated very rapidly prior to the introduction of the anti-alcoholic measures in the 1980s and has since stagnated for a long period so far. Conversely, the increase in mortality in Ukraine was particularly intensive from the late 1980s to 2008. Ukraine experienced a significant decline in 2009-2011 but is too short to draw conclusions. Moreover, the decline has ceased during the next years of observation in Ukraine, which may indicate the temporary nature of this progress, as already seen in the late 1980s and late 1990s. The very rapid worsening of the situation observed between the end of the 1980s and 2009 in Ukraine has considerably reduced the gap with Moldova, particularly for men. In total, what is the most impressive is the much higher level of female mortality by liver cirrhosis in Moldova than in Ukraine, as well as its persistence. Despite its decline

in the 1980s, the gap between the two countries is still very wide for women, but it is narrowing very rapidly, especially for men.

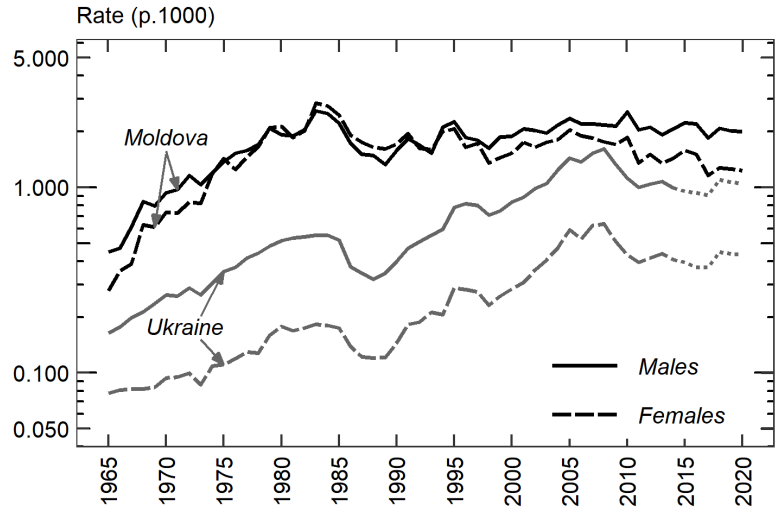

FIGURE V.25. – Trends in standardised mortality rates for liver cirrhosis in Moldova and Ukraine at ages 40-64, by sex, 1965-2020

Note: See note for V.14

The unfavourable evolution of mortality from liver cirrhosis in Moldova is closely linked to the hazardous variation of the Mediterranean type of alcohol consumption established in this region. Such a drinking pattern seems especially dangerous for the female population. According to the WHO Global Status Report on Alcohol (WHO, 2014a), Moldova has the second-highest level after Belarus with 16.8 litres of total alcohol consumed (both recorded and unrecorded) per adult aged 15 years and over in 2008-2010. Although these estimates are inevitably inaccurate, they suggest a considerable amount of unrecorded alcohol consumption in the country (up to 60%) mainly represented by homemade wine (Expert Group, 2008). According to data from a recent health survey in Moldova, nearly half of current drinkers (those who reported consuming alcohol in the past 30 days) have consumed unrecorded alcohol in the last

seven days. The consumption of homemade wine dominates the total unrecorded consumption (about 80% for both sexes) and represents about 30% of the total alcohol consumed. Moreover, unrecorded alcohol consumption is particularly popular among Moldovan women aged 45 to 69, accounting for around 45% of total alcohol consumption, vs 35% for men of the same age group (WHO, 2014b).

The quality of the unrecorded alcohol may be important to provide a reasonable explanation for the high mortality from cirrhosis of the liver, although it has not been proven due to a lack of appropriate studies. Hungary is also strongly influenced by the Mediterranean style of alcohol consumption, and the case of this country suggests that the poor quality of unrecorded alcohol can contribute to its high level of alcohol-induced liver cirrhosis (Szucs et al., 2005).

It can also be assumed that a high prevalence of hepatitis B and C in former Soviet republics also contributes to high rates of liver cirrhosis mortality. The spread of viral hepatitis is significantly higher in the New Independent States than in Western Europe, with the prevalence of hepatitis B carriers of 8-12% in Moldova, 8.3% in Ukraine and 1.9% in Russia (with great regional differences) (Bonanni, 1998; Berger, 2016; Grob, 1998). In Moldova, before the implementation of compulsory immunization of all infants in 1994 (Iarovoi et al., 2008), viral hepatitis played an important role in the public health system, especially among children and pregnant women. This was primarily the result of unsafe injection practices. (Hutin et al., 1999). However, given that the prevalence of hepatitis B carriers in Moldova and Ukraine is quite similar, there is little reason to suppose that the spread of viral infections could lead to such a dramatic increase in adult mortality from liver cirrhosis in Moldova.

F. Infectious diseases and diseases of the respiratory system

In adults aged 40 to 64, as in young adults, *tuberculosis* is the leading cause of death from infectious diseases, except for the COVID-19 outbreak in 2020 (*Fig.V.26*).

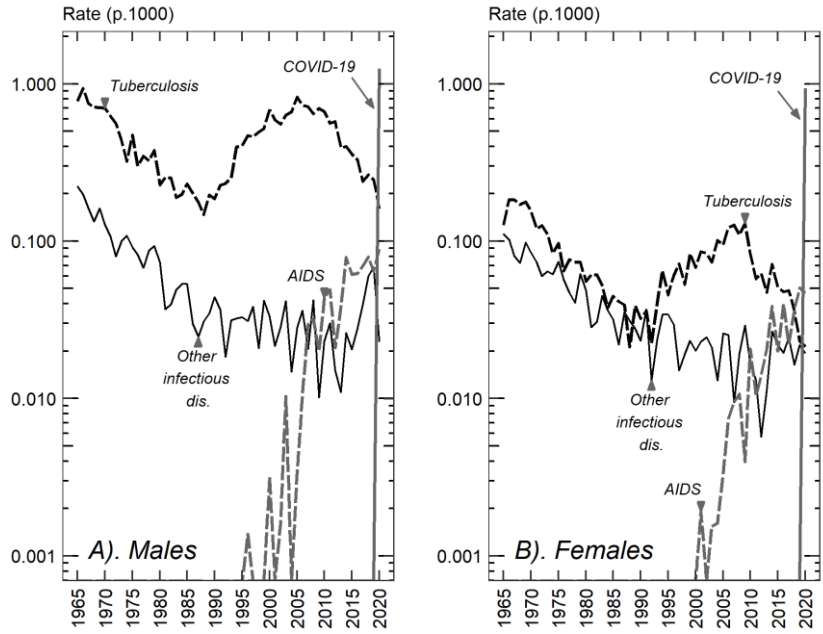

FIGURE V.26. – 1965-2020 trends in standardised mortality rates for infectious and parasitic diseases at ages 40-64, by sex

After a dramatic decline, there was huge growth between the end of the 1980s and 2010, followed by a decline Today, standardised mortality rates from this cause of death correspond to the level recorded in the late 1980s for both men and women. As with the previous age group, tuberculosis-related mortality among mature adults has begun to decline since 2010, reducing the gap with AIDS, which has followed a drastic increase since the mid-1990s. The mortality rate associated with

COVID-19 was the highest ever for infectious diseases in this age group throughout the period. The male-to-female ratio for COVID-19 infection is less (1.3) than for any other infectious disease ranging from 2.0 (other infections) to 10.0 (tuberculosis). Finally, mortality from *other infectious diseases* fell steadily throughout the study period, especially rapidly in the 1970s.

The mortality pattern for diseases of the respiratory system among mature adults is mainly represented by two causes of death: chronic obstructive pulmonary disease and pneumonia (*Fig. V.27*). The increase in mortality before the mid-1980s and its reduction during the anti-alcohol campaign are evident in cases of *pneumonia* for both men and women. Then, following a sharp increase in the 1990s, mortality from this cause of death continued to increase among men and stagnated among women. In contrast, *chronic obstructive pulmonary disease* after a short period of growth in the 1970s began to decline in both men and women, although these improvements ceased over a period of time during the crisis of the 1990s. Due to these two opposing trends, the recent overall trend in mortality from diseases of the respiratory system is stagnating in mature adults.

Mortality from *pulmonary empyema and lung abscess* was highly susceptible to the measures of the anti-alcohol campaign, but progress stopped in the 1990s and has continued since the millennium. Mortality caused by different categories combined in the group of *other respiratory diseases* experienced a significant decline in the 1980s and 1990s, and today, it accounts for less than 1% of all deaths from respiratory diseases. Under the Soviet classification, this residual group was mainly presented by *pulmonary congestion*[34], a category used to codify ill-defined deaths from diseases of the respiratory system. This practice has also been widespread in other former Soviet republics, such as Russia and Ukraine (Meslé et al., 1996; Meslé and Vallin, 2012).

[34] Item 113 "pulmonary congestion and hypostasis, post inflammatory fibrosis" under 1988 Soviet Classification, items 514-515 under ICD-9 and item J81 under ICD-10.

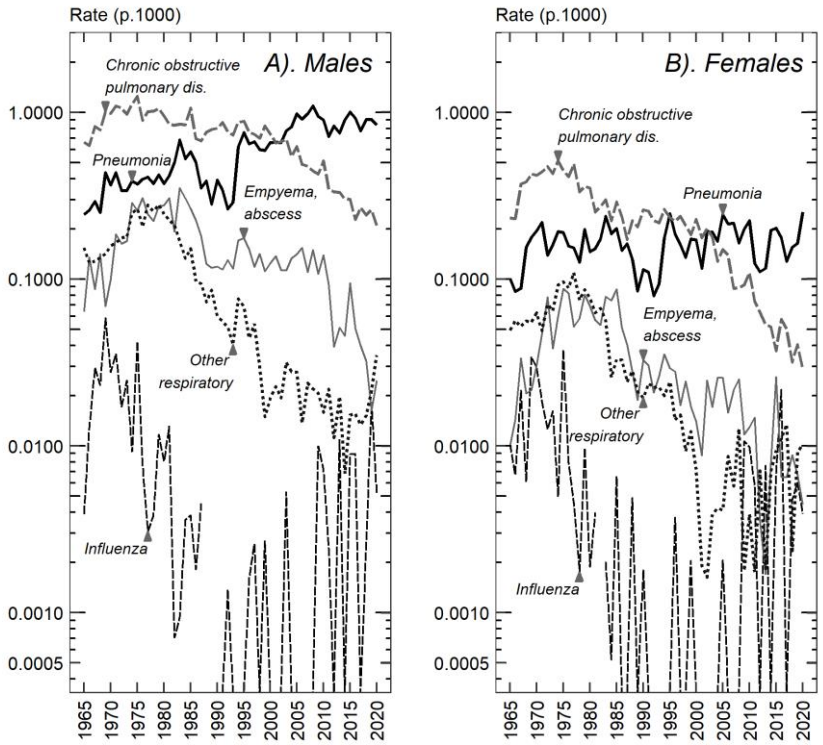

FIGURE V.27. – 1965-2020 trends in standardised mortality rates for diseases of the respiratory system at ages 40-64, by sex

When reconstructing the time series of deaths for Moldova, during the transition from ICD-9 to ICD-10, most deaths codified as pulmonary congestion were attributed to the group "*other affections of the respiratory system*" (see association # 113 for the transition from ICD-9 to ICD-10). Therefore, the "other respiratory diseases" group shown in Figure V.27 consists mostly of deaths attributed to the item "other affections of the respiratory system" (items J30-J39, J90-J98 in ICD-10). In addition, this group of respiratory system diseases was corrected *a posteriori* with the "chronic obstructive pulmonary disease" group (the third round of a posteriori correction) to reduce its very sharp decline in

the 1980s. As will be shown later, the prevalence of this residual group of respiratory diseases becomes more important in older age groups. Finally, *influenza* mortality was manifested by outbreaks in the 1960s and early 1970s, albeit far less severe than in previous age groups.

G. Other diseases

In men aged 40-64, diseases of the nervous system are predominant in the "other diseases" group, whereas in women, this type of mortality is as important as diseases of the genitourinary system or the group of causes made up of diseases of the endocrine glands and blood diseases (*Fig.V.28*).

As with the previous age group, mortality from *diseases of the nervous system* among mature adults was very sensitive to the anti-alcohol campaign, its misuse and the social and economic crisis of the 1990s. However, if over the past two decades, mortality from this cause of death has stagnated in young males or even declined moderately in young females, in mature adults, the increase in mortality has resumed with a new force, especially in males.

Figure V.29 illustrates the evolution of the three main components of diseases of the nervous system: mental and behavioural disorders due to the use of alcohol, epilepsy and other diseases of the nervous system. The overall trend in mortality from diseases of the nervous system is closely correlated with its first and last components, although the impact of "other diseases of the nervous system" has become increasingly important in recent times, particularly among men. A more detailed analysis has shown that the recent growth in mortality from this residual group is mainly associated with "other degenerative diseases of the central nervous system" (65% for both sexes in 2020)[35] represented almost entirely by "alcohol-induced degeneration of the nervous system". Mortality from *epilepsy*, on the contrary, has been relatively stable over the entire period.

[35] Item G31 in ICD-10.

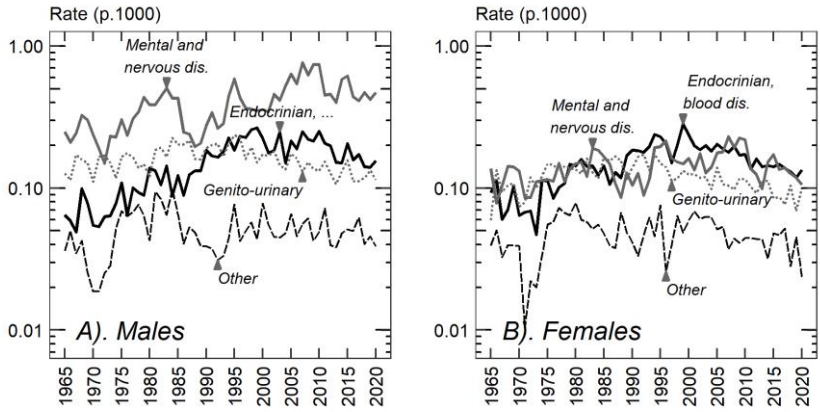

FIGURE V.28. – 1965-2020 trends in standardised mortality rates for „Other diseases" at ages 40-64, by sex

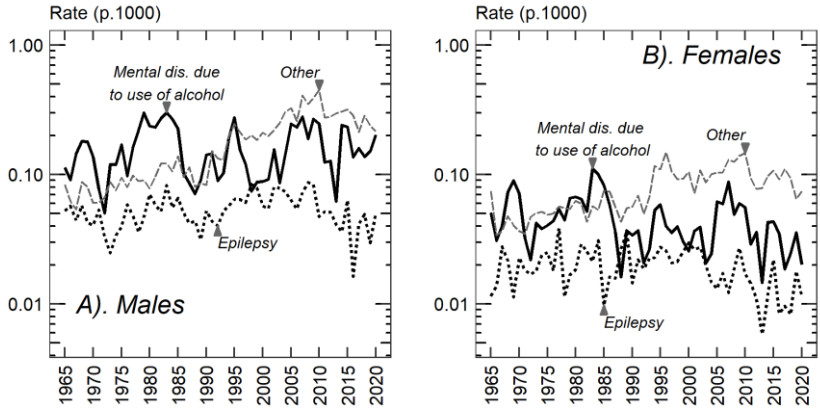

FIGURE V.29. – 1965-2020 trends in standardised mortality rates for diseases of the nervous system and mental disorders at ages 40-64, by sex

Mortality from *diseases of the endocrine glands* and *blood diseases*, largely dominated by diabetes mellitus, was marked by a rapid rise during the 1990s. Mortality trends in diseases of the genitourinary system have been on a downward trajectory over the recent period, particularly among women. To exclude the repetition, the detailed evolution of mortality

from diseases of the genitourinary system will be shown for the elderly, for whom this type of pathology is most important. Finally, for both sexes, the residual group of causes of death is marginal.

TABLE V.4. – Standardised mortality rates (p.1000) at age 40-64 by selected groups of ICD-10 items in 1965 and 2020, Moldova, by sex

Groups used	ICD (10th revision)	SMR p.1000			
		1965		2020	
		Males	Females	Males	Females
Infectious and parasitic diseases	**A00 to B99, U071**	**1.001**	**0.238**	**1.523**	**1.024**
Tuberculosis	A15 to A19, B90	0.777	0.126	0.161	0.021
AIDS	B20 to B24	-	-	0.090	0.047
Other infectious and parasitic diseases	A00 to A09, A20 to B19, B25 to B89, B91 to B99	0.224	0.112	0.023	0.019
COVID-19	U071	-	-	1.249	0.937
Neoplasms	**C00 to D48**	**2.344**	**1.895**	**3.684**	**2.019**
Cancer of lip, oral cavity and pharynx	C00 to C14	0.060	0.015	0.471	0.033
Cancer of oesophagus	C15	0.064	0.027	0.097	0.006
Cancer of stomach	C16	0.641	0.280	0.242	0.103
Cancer of intestine, rectum and anus	C17 to C21	0.124	0.121	0.408	0.225
Cancer of liver	C22	0.108	0.090	0.356	0.109
Cancer of other organs of the digestive system	C23 to C26	0.128	0.107	0.233	0.109
Cancer of the respiratory system	C30 to C39	0.711	0.124	1.091	0.121
Cancer of breast	C50	0.003	0.200	0.005	0.436
Cancer of uterus	C53 to C55	-	0.460	-	0.307
Cancer of prostate	C61	0.033	-	0.107	-
Cancer of other genital organs	C51, C52, C56 to C60, C62, C63	0.009	0.175	0.014	0.137
Cancer of urinary tract	C64 to C68	0.073	0.034	0.151	0.059
Leukaemia and lymphomas	C81 to C96	0.145	0.077	0.138	0.118
Cancer of bone, cartilage and skin	C40 to C44, C49	0.072	0.039	0.087	0.048
Other malignant neoplasms	C45 to C48, C69 to C80, C97	0.114	0.094	0.266	0.193
Other neoplasms	D00 to D48	0.060	0.052	0.017	0.015

Groups used	ICD (10th revision)	SMR p.1000			
		1965		2020	
		Males	Females	Males	Females
Diseases of the circulatory system	**G45, I00 to I99**	**3.369**	**2.565**	**6.286**	**2.179**
Heart diseases, *including*:	I00 to I51	2.107	1.671	4.821	1.530
Rheumatic diseases	I00 to I09	0.321	0.405	0.032	0.022
Hypertension	I10 to I15	0.186	0.125	0.313	0.159
Ischaemic heart diseases *including*:	I20 to I25	1.577	1.106	3.850	1.179
Myocardial infarction	I21 to I23	0.413	0.101	1.357	0.328
Atherosclerotic cardiosclerosis	I25.0, I25.1	0.724	0.626	0.151	0.067
Other ischaemic heart diseases	I20, I24, I25.2 to .9	0.441	0.379	2.342	0.784
Other heart diseases	I26 to I28, I30 to I38, I40 to I51	0.023	0.034	0.626	0.170
Cerebrovascular diseases	G45, I60 to I67, I69	1.232	0.872	1.371	0.616
Other diseases of the circulatory system	I70 to I99	0.030	0.022	0.094	0.033
Diseases of the respiratory system	**J00 to J98**	**1.128**	**0.403**	**1.115**	**0.300**
Influenza	J10, J11	0.004	0.010	0.005	0.004
Pneumonia	J12 to J18	0.244	0.101	0.840	0.252
Chronic obstructive pulmonary disease	J40 to J47	0.663	0.232	0.210	0.029
Pulmonary empyema and lung abscess	J85, J86	0.063	0.010	0.025	0.004
Other diseases of the respiratory system	J00 to J06, J20 to J39, J60 to J84, J90 to J98	0.154	0.050	0.035	0.010
Diseases of the digestive system	**K00 to K92**	**0.861**	**0.452**	**2.473**	**1.375**
Gastric and duodenal ulcer	K25 to K28	0.171	0.045	0.180	0.018
Diseases of intestine	K29, K35 to K63	0.114	0.060	0.101	0.040
Liver cirrhosis	K70, K74	0.449	0.278	1.998	1.231
Other diseases of the liver and biliary tract	K71 to K73, K75, K76 to K83	0.048	0.049	0.037	0.039
Diseases of pancreas	K85, K86	0.067	0.017	0.143	0.037
Other diseases of the digestive system	K00 to K22, K30, K31, K65, K66, K90 to K92	0.011	0.003	0.014	0.010

Groups used	ICD (10th revision)	SMR p.1000			
		1965		2020	
		Males	Females	Males	Females
Deaths from injury and poisoning	**V01 to Y89**	**1.268**	**0.478**	**2.034**	**0.325**
Transport accidents	V01 to V99	0.332	0.084	0.227	0.042
Falls and drowning	W00 to W19, W65 to W74	0.211	0.056	0.187	0.030
Accidental poisoning	X40 to X49	0.135	0.065	0.182	0.030
Accidents caused by fire, electric current or firearm	W32 to W34, W85 to W87, X00 to X09	0.089	0.061	0.067	0.015
Suicide	X60 to X84	0.247	0.094	0.503	0.065
Homicide	X85 to Y09, Y35, Y36	0.065	0.038	0.171	0.032
Deaths from injury undetermined whether accidentally or purposely inflicted	Y10 to Y34	0.009	0.003	0.157	0.030
Other accidents	W20 to W31, W35 to W64, W75 to W84, W88 to W99, X10 to X39, X50 to X59, Y40 to Y89	0.181	0.077	0.539	0.082
Other diseases	**D50 to G44, G47 to H95, L00 to Q99**	**0.477**	**0.329**	**0.779**	**0.364**
Endocrine diseases, diseases of blood	D50 to D89, E00 to E90	0.065	0.093	0.156	0.134
Diseases of the nervous system and mental disorders, *including*:	F01 to F99, G00 to G44, G47 to G98, H00 to H95	0.249	0.137	0.471	0.106
Mental and behavioural disorders due to use of alcohol	F10	0.113	0.051	0.203	0.020
Epilepsy	G40, G41	0.052	0.011	0.051	0.011
Other diseases of the nervous system and mental disorders	F01 to F09, F11 to F99, G00 to G44, G47 to G98, H00 to H95	0.084	0.075	0.216	0.074
Diseases of the genitourinary system	N00 to N99	0.127	0.059	0.114	0.101
Other diseases	L00 to M99, Q00 to Q99	0.036	0.040	0.039	0.024
Total for all causes	**A00 to Y89**	**10.446**	**6.360**	**17.895**	**7.587**

6. Causes of death at older adults aged 65 years and over

A. Major causes of death

Before analysing trends in mortality by cause in the elderly, it is important to emphasize two issues. First, mortality in this age group was adjusted until the late 1960s for males and the mid-1970s for females because of inaccurate population data and considerable under-estimation of official death counts (Chapter I, sections 2A and 3B). Second, we analyse mortality trends after redistribution of deaths recorded as *Senility* by a special method between diseases of the circulatory system (Chapter III, section 3B).

The predominance of *diseases of the circulatory system* in the mortality of the elderly is much more pronounced than that of those aged 40-64, especially in relation to the female population (*Figure V.30*). The proportion of this cause of death in total mortality varies between 65% and 80% in men and between 75% and 85% in women over the period 1965-2020. Next, the fluctuations in mortality from circulatory diseases and other socially sensitive groups of causes of death among the elderly were significantly lower than among young and mature adults. No major change in cardiovascular mortality in older people occurred and after the period of large fluctuations, despite a slight decline observed for older women between 1998 and 2020. *Diseases of the respiratory system* before the early 1980s were the second most common, followed by neoplasms. Mortality of the elderly from this condition increased in the late 1960s, followed by a considerable decline: from 1967 to 1992, the standardised mortality rate was reduced by almost three times in men and five times in women. The social and economic crisis of the 1990s led to the reversal of this downward trend. As we have already seen for the previous age group, this negative trend continued into the new millennium, although it has improved slightly for both sexes since 2010.

Neoplasms (11% in males and 8% in females in 2020) remained relatively stable through the study period. Mortality in older men caused by neoplasms increased moderately in the 1980s, followed by a slight

decrease in the 1990s, already seen in mature adults. However, since the beginning of the millennium, the trend has been upward for both men and women.

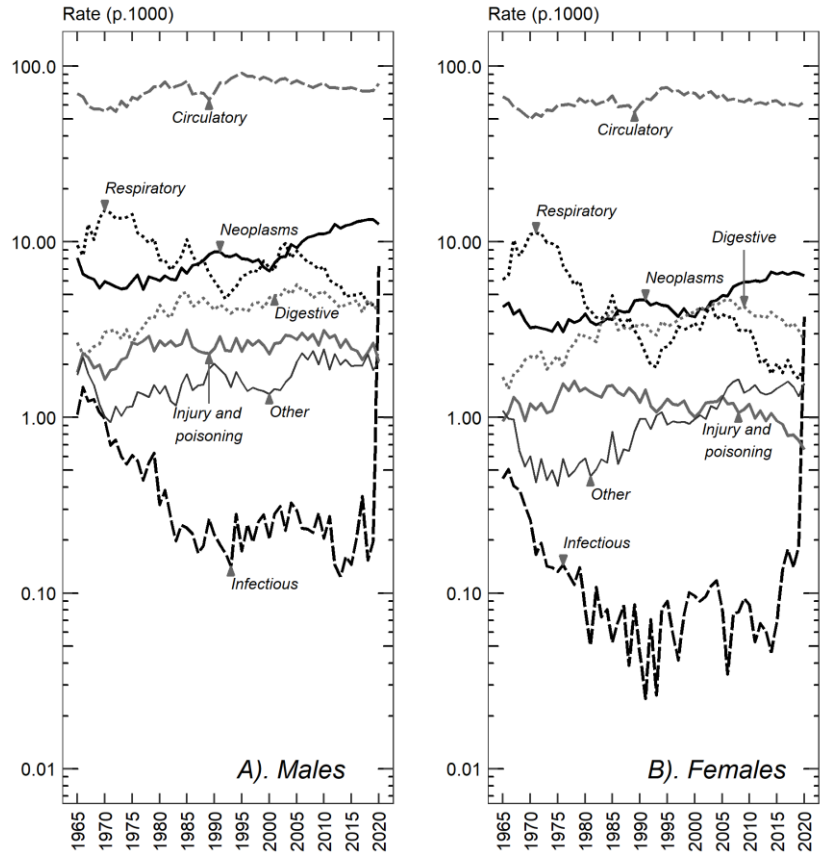

FIGURE V.30. – 1965-2020 trends in standardised mortality rates by major groups of causes at ages 65 years and over, by sex

Mortality from *diseases of the digestive system* at older ages has followed a rather unfavourable trend, especially in females, although it has been much less pronounced than in mature adults. Between 1965 and 2020, standardised mortality rates doubled among men and increased by

50% among women. As with young and mature adults, most of this deterioration occurred before the start of the anti-alcohol campaign. Since then, old-age mortality from this condition has remained relatively stable until 2010, followed by a moderate decline, particularly among females. In older women, mortality rates from diseases of the digestive system and neoplasms have been virtually identical since the mid-1980s, although there is a recent discrepancy in their trends due to reduced mortality in the former and slow growth in the latter. As for the two previous age groups, the lack of sex differences in mortality due to diseases of the digestive system can be seen and in older people.

Mortality of the elderly from *injury and poisoning* remained constant throughout the period, whereas the group of *other diseases* has followed a notable increase in mortality, especially among women. Finally, mortality from infectious diseases, which was as high as mortality from "other diseases" at the beginning of the period, went down significantly in the 1970s and 1980s. Since that time, this type of mortality has stagnated until 2020, when the COVID-19 pandemic triggered a huge jump in deaths. As a result, infectious diseases, which had always been in the bottom spot since the mid-1960s, ranked third in 2020. As with previous age groups, we will provide more precise details on each of the major causes of death.

B. Diseases of the circulatory system

Figure V.31 illustrates the evolution of mortality across the three main components of diseases of the circulatory system by sex. The gender gap in cardiovascular mortality in the elderly is much narrower than in previous adult age groups and is even absent at the beginning of the period, largely reflecting data quality issues.

The effect of the 1985 anti-alcohol campaign on old-age mortality from *heart disease* as well as on the entire class of diseases of the circulatory system was much less considerable in comparison with the previous age group. On the contrary, the social and economic crisis of the 1990s caused a significant growth in this type of mortality, the

standardised rates of which rose by 60% between 1991 and 1995 for both males and females. This growth is even higher if compared with corresponding changes in the mature adult population (respectively, 50% and 40%).

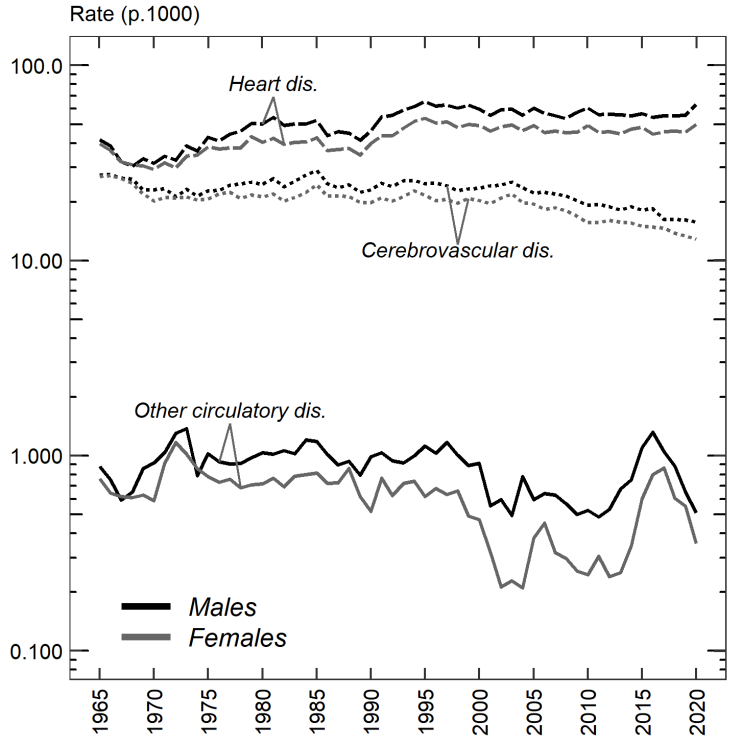

FIGURE V.31. – 1965-2020 trends in standardised mortality rates by main three components of diseases of the circulatory system at ages 65 years and over, by sex

Unlike heart disease, the reaction of mortality from cerebrovascular diseases to the social and economic turmoil of this period is much lower. Next, recent trends in mortality from heart diseases and cerebrovascular diseases in older adults show no signs of improvement until 2005, followed by a more pronounced decline in mortality among women than men. As with mature adults, this recent moderate improvement in

mortality from cerebrovascular disease contrasts with the ongoing deterioration of the heart disease situation. The group of *other circulatory diseases* has a minor impact on overall cardiovascular mortality throughout the period (its proportion barely exceeds 2%), which, as we have already pointed out, is due to the poor diagnosis of cardiovascular diseases in Moldova.

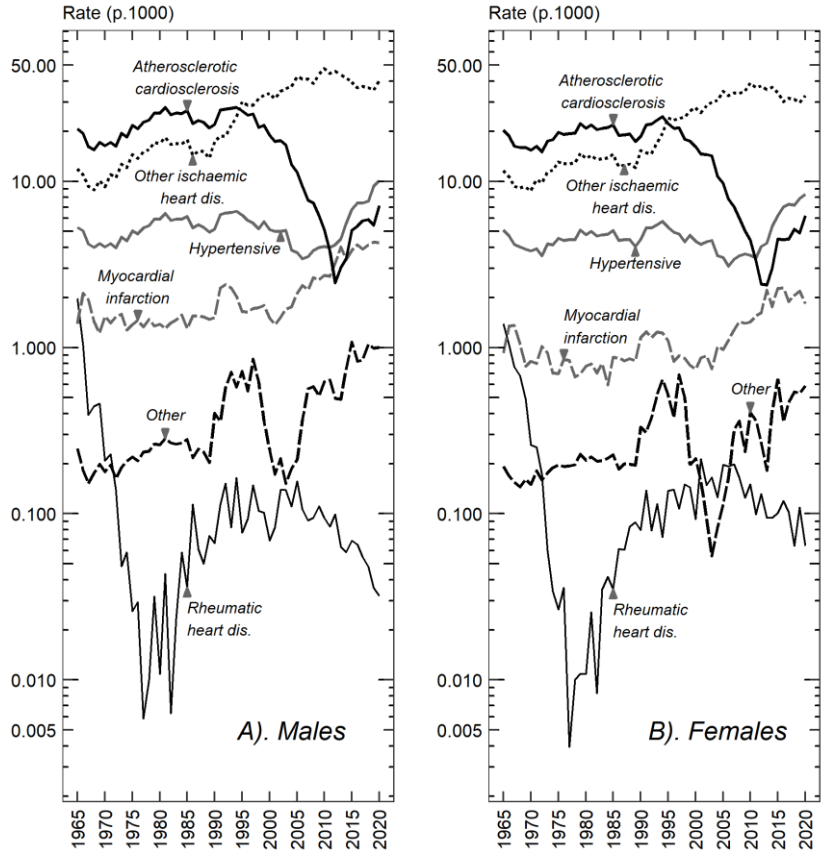

FIGURE V.32. – 1965-2020 trends in standardised mortality rates by different groups of heart diseases at ages 65 years and over, by sex

Figure V.32 presents different nosological forms of heart diseases as previously mentioned for the 40-64 age group. The tremendous role of *atherosclerotic cardiosclerosis* that played in the coding practice of heart diseases during the Soviet period is far more apparent in older ages, as the accuracy of the diagnosis worsens with age. At the turn of the 1990s, the proportion of cardiosclerosis in heart disease mortality was 65% for both sexes. The adoption of the International Classification of Diseases in 1991 resulted in a progressive decrease in mortality from cardiosclerosis accompanied by a compensatory increase in mortality from *other ischemic heart diseases* and other forms of heart diseases, except for rheumatic heart diseases. These gradual changes in coding practice cannot be eliminated by the reconstruction method and the observed trends should be interpreted cautiously as they do not reflect the actual dynamics.

C. Respiratory and infectious diseases

Among people aged 65 years and over, *chronic obstructive pulmonary diseases* are by far the most dominant cause of death from diseases of the respiratory system (*Fig.V.33*). This group alone represents 70% to 80% of all deaths due to respiratory diseases at different times. After a marked decline in the 1980s, mortality in the elderly from this cause of death began to increase again with new vigour in both sexes until 2005. Similar to the previous age group, recent improvements in chronic obstructive pulmonary disease are partly offset by increased mortality from *pneumonia*. As a result, the overall trend in mortality from respiratory diseases at older ages stagnated until 2010, followed by some progress due to a decline in mortality from chronic obstructive pulmonary diseases. Compared to the previous age group, pneumonia mortality was less sensitive to the effects of social and economic factors in the 1980s and 1990s.

The contribution of the residual group of *other respiratory system diseases* becomes much larger in older adults than in mature adults. As noted for the previous age group, this combined group of causes of death

is represented primarily by the "other affections of the respiratory system" group, which was widely used in the Soviet period to codify ill-defined respiratory conditions. At present, less than 1% of deaths from pulmonary diseases are attributed to the residual group, against 15% in 1965, 8% in 1985 and 2% in 1995. This decline is referred to the gradual exchange of death between this ill-defined pulmonary condition and other categories of pulmonary disease. It is worth mentioning that this decrease was initially much more pronounced, and we corrected it partially *a posteriori* through the exchange of deaths with the "chronic obstructive pulmonary disease" group.

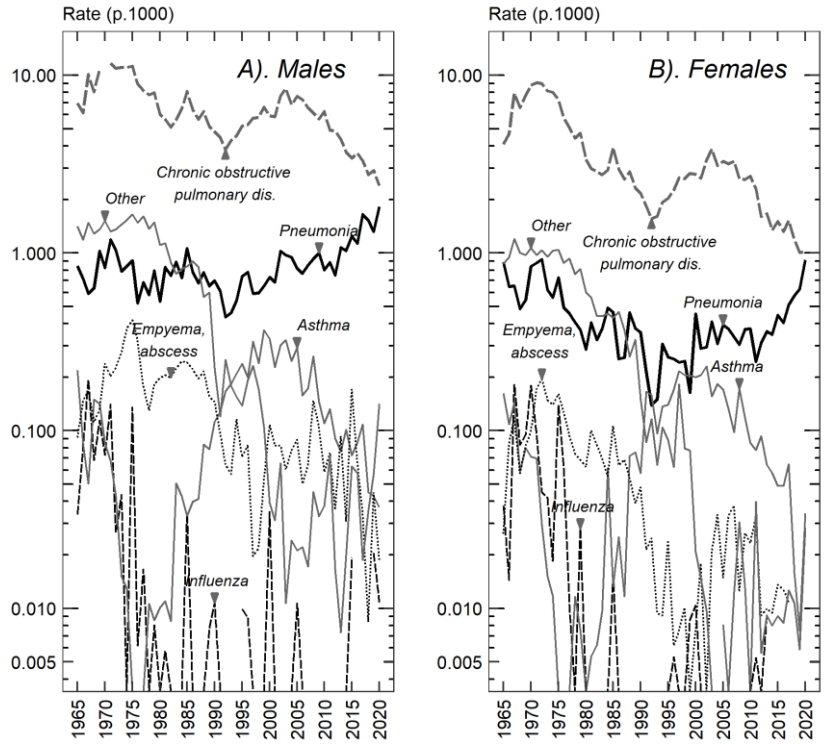

FIGURE V.33. – 1965-2020 trends in standardised mortality rates for diseases of the respiratory system at ages 65 years and over, by sex

Continuing our comparison with the 40-64 age group, we can also point to a much larger gap between pneumonia and chronic obstructive pulmonary disease and a close distance between pneumonia and *asthma*, particularly in older women. A sharp increase in old-age mortality due to asthma in the 1990s also merits mention here. Mortality from *pulmonary empyema and lung abscess* has declined substantially since the mid-1970s, although it has tended to stagnate in males in recent years. Finally, mortality from *influenza* among the elderly has virtually disappeared since the late 1970s, while this near-disappearance dates back to the mid-1980s for young and mature adults and even to the early 1990s for infants, children and adolescents.

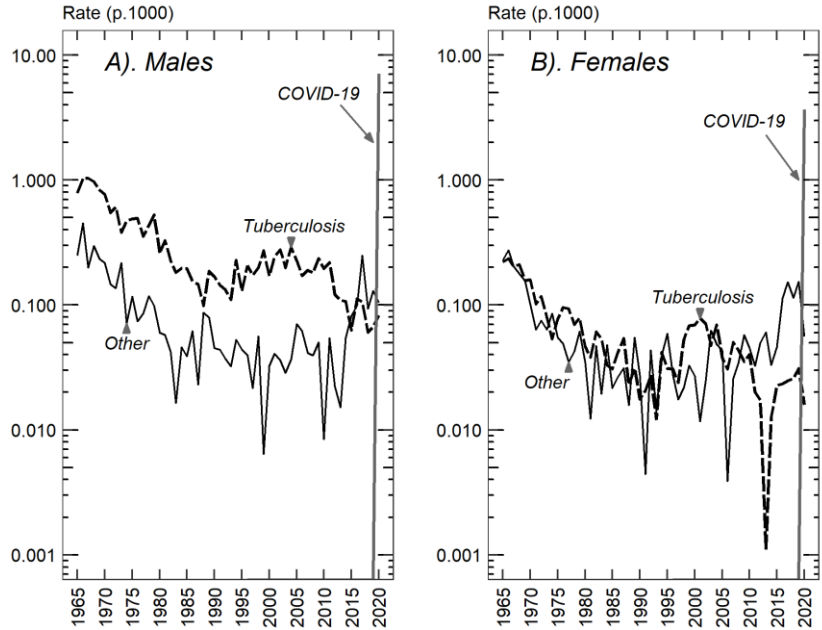

FIGURE V.34. – 1965-2020 trends in standardised mortality rates for infectious diseases at ages 65 years and over, by sex

In elderly men, *tuberculosis* is the dominant infectious disease (until 2020), but, in contrast to the two previous age groups, the curve is much

closer to the residual group of infectious diseases (*Fig.V.34*). In elderly women, this gap does not even exist at all. Unlike young and mature adults, the increase in mortality of older people due to tuberculosis since the late 1980s is far less evident. Finally, deaths from COVID-19 infection topped the list of infectious diseases at a later age in 2020. The male-to-female ratio of COVID-19 deaths in the elderly is higher than in mature adults (1.9 vs 1.3).

D. Neoplasms

As in the previous age group, the relative stability of neoplasm mortality in 1965-2020 among older adults is the result of contrasting trends in different forms of cancer. *Figure V.35* shows mortality trends in cancer of different locations, with the exception of genital organs.

A downward trend in mortality from stomach cancer contrasts with an increase in mortality from cancer of the intestine, cancer of the respiratory organs and cancer of other digestive organs. *Stomach* cancer, which was the main cause of neoplasm mortality at the beginning of the period, ceded its position to cancer of the respiratory system in the mid-1970s, then to cancer of other digestive organs in the late 1980s, and, finally, to cancer of the intestine in the late 1990s. However, as noted for the previous age group, since the turn of the millennium, this downward trend in stomach cancer mortality has entered a straight line.

Cancer of *other digestive organs* is largely dominated by liver cancer, which we have not separated as in the 40-64 age group. Until the mid-1970s, this type of mortality was in moderate decline, particularly among women, but since then it has been on an upward trend, along with *intestinal* cancer. Among older females, the curves for these two cancer locations have been entirely superimposed since the late 1970s.

Among males, cancer of the *respiratory system* has competed for first place with cancer of other digestive organs since the late 1990s and with intestine and rectum cancer in very recent years. Up to the late 1980s, respiratory cancer increased steadily, followed by stagnation and even a slight decline in the 1990s. As for those aged 40-64, we attribute

this temporary improvement to the economic recession and, consequently, to the reduction of air pollution and tobacco consumption. Another possible explanation for the decline in lung cancer mortality in the 1990s is the aforementioned hypothesis regarding the competing risks between cancer and an abrupt upsurge in mortality from other causes induced by the economic crisis of that time (Shkolnikov, McKee, Leon, et al., 1999; Shkolnikov, McKee, Vallin, et al., 1999). In any case, among older Moldovan men, there has been a further increase in respiratory cancer mortality since the end of the social and economic crisis of the 1990s, which has continued until now.

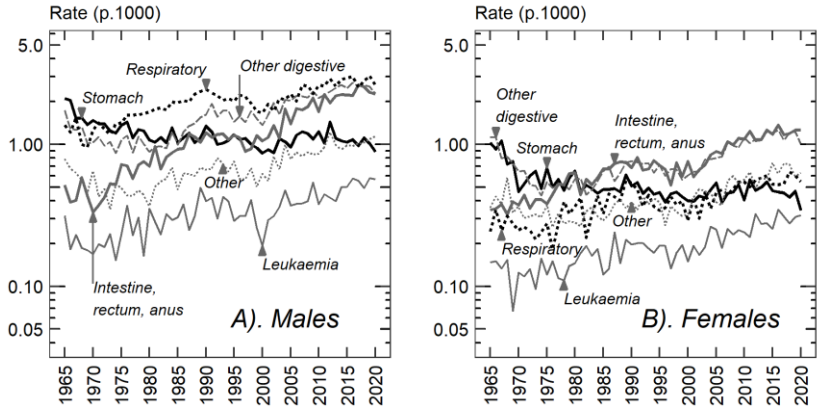

FIGURE V.35. – 1965-2020 trends in standardised mortality rates for malignant neoplasms (without cancer of genital organs and cancer of the genitourinary system) at ages 65 years and over, by sex

Prostate cancer and cancer of *the urinary system* in older men have very close mortality rates and follow the same long-term increasing trend throughout the study period. In recent years, growth has accelerated for prostate cancer, which represents the leading cause of death from diseases of the genitourinary system (*Fig.V.36*).

Mortality from *breast* cancer in older women, as in the 40-64 age group, increased significantly between 1965 and 2020 (standardised mortality rates multiplied by 3.8). As far as *uterus* cancer is concerned,

unlike the preceding age group, where marked progress was made in the 1970s and 1980s, old-age mortality was relatively stable between 1965 and 2020. As a result, mortality lines for uterus and breast cancer were superimposed throughout the 1980s and 1990s. This is somewhat different from the figure obtained for the previous age group (Fig.V.20), where the two trajectories intersected only in one year (1981). Finally, unlike women aged 40 to 64, for whom the recent trend of breast cancer mortality has stabilized, at a later age mortality growth has accelerated.

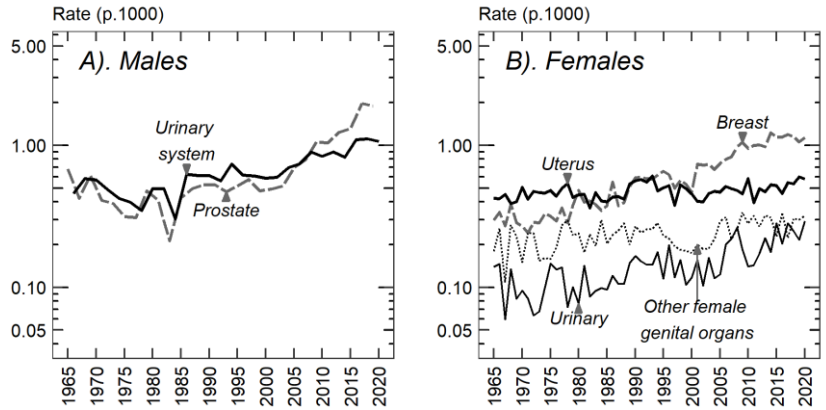

FIGURE V.36. – 1965-2020 trends in standardised mortality rates for cancer of genital organs and cancer of the genitourinary system at ages 65 years and over, by sex

E. Digestive diseases

The primary cause of death from diseases of the digestive system, as in the previous two age groups, is *liver cirrhosis*, with standardised mortality rates 1.5 to 5.5 times higher than for any other digestive disease. For simplicity, in *Figure V.37*, we combined liver cirrhosis with other diseases of the liver and biliary tract.

Among the elderly, the evolution of mortality from liver cirrhosis is characterized by two important moments already emphasized. The first one is the lack of gender differences in the level of mortality, especially

over the Soviet period. The second is a rapidly deteriorating situation before the launch of the 1985 anti-alcohol campaign, followed by a moderate increase or stagnation. Compared to the previous age group, at an older age, the increase in mortality from 1965 to 1984 (the standardised mortality rates doubled for both sexes) and the effect of the anti-alcohol campaign were far less drastic. Furthermore, the economic crisis of the 1990s had no visible effect on liver cirrhosis. Unlike mature adults, for whom recent trends in liver cirrhosis mortality have stagnated, in older adults, particularly women, the situation has begun to improve over the past decade. In 2011-2020, mortality from this cause of death declined by 50% for males and 80% for females and is currently at the level observed in the late 1970s. *Gastric* and *duodenal ulcers*, diseases of the *pancreas* and *other diseases of the digestive system* are grouped very closely together, except for the latter category of diseases in females, which is set somewhat apart from the other two causes.

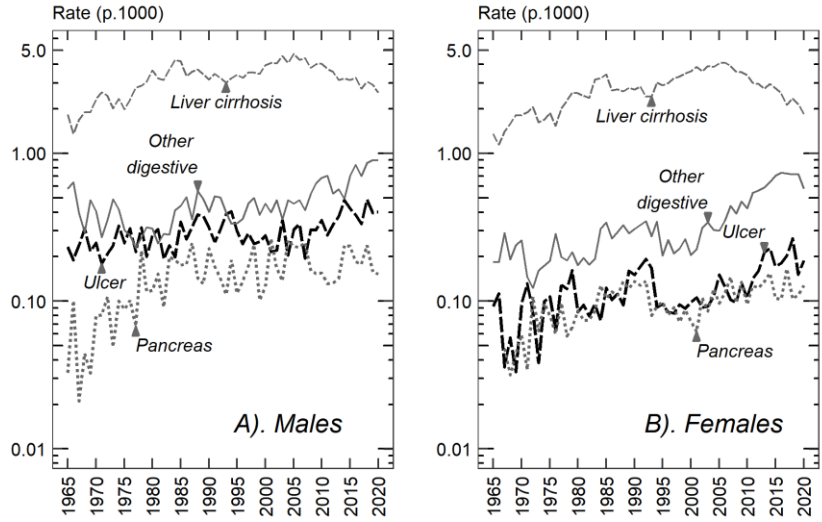

FIGURE V.37. – 1965-2014 trends in standardised mortality rates for diseases of the digestive system at ages 65 years and over, by sex

F. Deaths from injury and poisoning

It has already been mentioned that deaths from injuries and poisonings among persons aged 65 and over have followed a relatively stable trend over the period 1965-2020 compared to other major groups of causes of death. However, this stability is the result of opposite mortality trends across different sub-categories displayed in *Figure V.38* and *V.38bis*. The most notable deterioration of the situation before the mid-1980s occurred for *suicide* among men (standardised mortality rate increased by 70% in 1965-1984) and *drowning and falls* among women with a predominance of falls (standardised mortality rate doubled in 1965-1984).

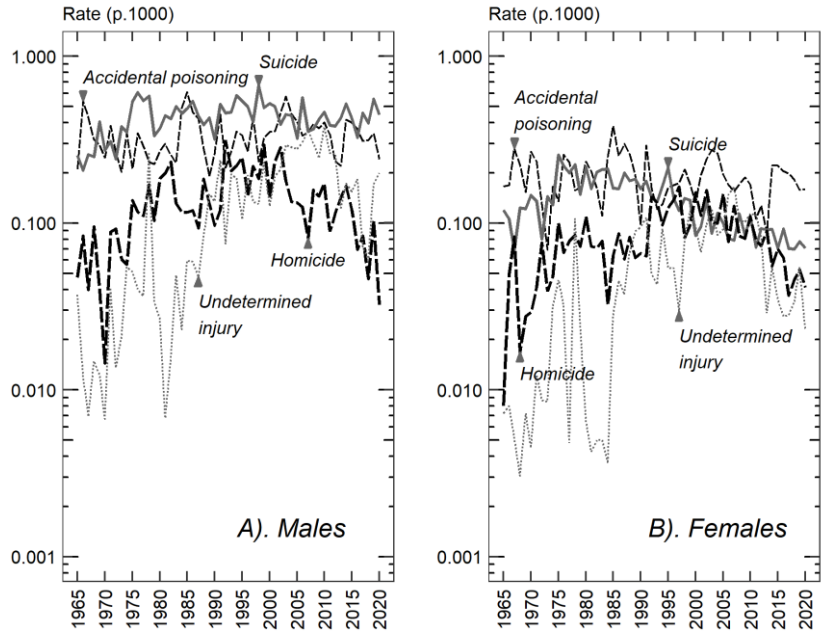

FIGURE V.38. – 1965-2020 trends in standardised mortality rates for suicide, homicide, accidental poisoning and injury undetermined whether accidentally or purposely inflicted at ages 65 years and over, by sex

Compared to the previous two age groups, the social and economic circumstances of the 1980s and 1990s had very little impact on deaths caused by injury and poisoning in the elderly. The *"other deaths from injury and poisoning"* group is an exception: from the end of the 1980s, mortality from this residual group of causes of death started to increase considerably. Currently, approximately 15% of male and 20% of female deaths due to external factors in the elderly are attributed to this group alone.

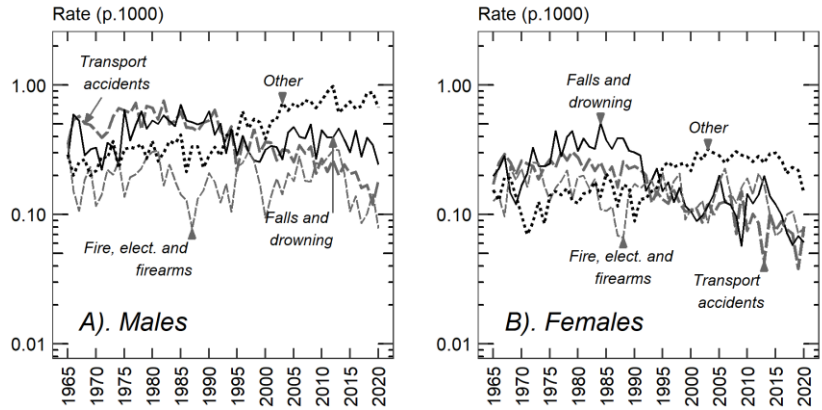

FIGURE V.38bis. – 1965-2020 trends in standardised mortality rates for transport accidents, falls and drowning, exposure to fire, electric current and firearms and other deaths from injury and poisoning at ages 65 years and over, by sex

G. Other diseases

Among the elderly, the "other diseases" group is for the most part dominated by two groups of causes of death: diseases of the *endocrine glands* and *blood* diseases and diseases of the *genitourinary system*. The former is prevalent in females, the latter in males (*Fig.V.39*). In both sexes, mortality from diseases of the endocrine glands and blood diseases, mostly represented by *diabetes mellitus*, has been rising continuously since the early 1970s. Conversely, the trend in mortality from diseases of the genitourinary system is marked by a considerable

increase among females, while among males, the rate remained at the same level over the entire period.

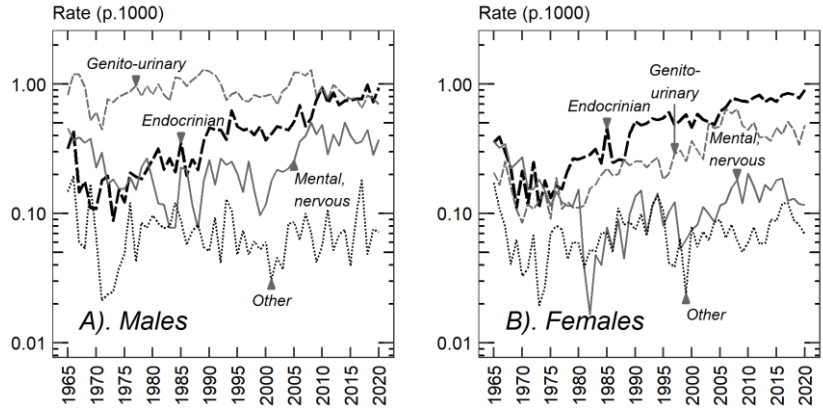

FIGURE V.39. – 1965-2020 trends in standardised mortality rates for "Other diseases" at ages 65 years and over, by sex

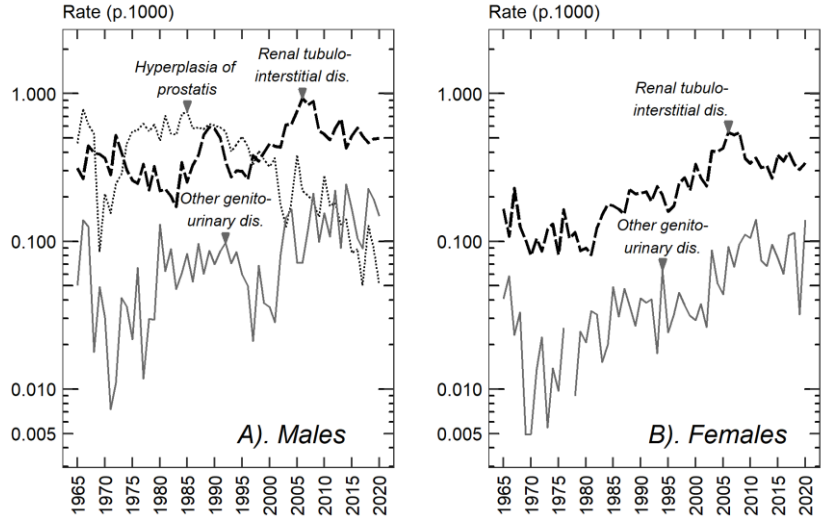

FIGURE V.40. – 1965-2020 trends in standardised mortality rates for diseases of the genitourinary system at ages 65 years and over, by sex

The stagnation of male mortality from diseases of the genitourinary system is due to two opposing trends: a decrease in mortality from *hyperplasia of the prostate* on the one hand and a rise in mortality from *renal tubolo-interstitial diseases* on the other (*Fig.V.40*). Mortality in both sexes associated with the latter category of kidney disease has increased significantly since the late 1970s, and this condition is the leading cause of death from diseases of the genitourinary system at an older age.

TABLE V.6. – Standardised mortality rates (p.1000) at age 65 years old and over by selected groups of ICD-10 items in 1965 and 2020, Moldova, by sex

Groups used	ICD (10th revision)	SMR p.1000			
		1965	2020	1965	2020
		Males	Females	Males	Females
Infectious and parasitic diseases	**A00 to B99, U071**	**1.038**	**0.450**	**7.256**	**3.739**
Tuberculosis	A15 to A19, B90	0.789	0.221	0.083	0.016
Other infectious and parasitic diseases	A00 to A09, A20 to B89, B91 to B99	0.248	0.229	0.105	0.056
COVID-19	U071	-	-	7.068	3.667
Neoplasms	**C00 to D48**	**8.112**	**4.280**	**12.617**	**6.425**
Cancer of stomach	C16	2.100	1.028	0.885	0.342
Cancer of intestine, rectum and anus	C17 to C21	0.515	0.345	2.260	1.263
Cancer of other organs of the digestive system	C00 to C15, C22 to C26	1.743	1.118	2.271	0.998
Cancer of respiratory organs	C30 to C39	1.366	0.244	2.604	0.546
Cancer of breast	C50	0.016	0.298	0.041	1.137
Cancer of uterus	C53 to C55	0.000	0.424	0.000	0.578
Cancer of prostatis	C61	0.681	0.000	1.791	0.000
Cancer of other genital organs	C51, C52, C56 to C60, C62, C63	0.000	0.179	0.025	0.320
Cancer of urinary tract	C64 to C68	0.587	0.139	1.037	0.294
Leukaemia and lymphomas	C81 to C96	0.314	0.147	0.568	0.316
Other neoplasms	C40 to C49, C69 to C80, C97, D00 to D48	0.789	0.358	1.134	0.630
Diseases of the circulatory system	**G45, I00 to I99**	**69.814**	**67.267**	**79.439**	**63.053**
Rheumatic diseases	I00 to I09	1.970	1.393	0.032	0.064
Hypertension	I10 to I15	5.292	5.096	10.072	8.366

Groups used	ICD (10th revision)	SMR p.1000			
		1965	2020	1965	2020
		Males	Females	Males	Females
Myocardial infarction	I21 to I23	1.387	0.925	4.267	1.836
Atherosclerotic cardiosclerosis	I25.0, I25.1	20.722	20.357	7.156	6.215
Other ischaemic heart diseases	I20, I24, I25.2 to .9	11.894	11.611	40.578	32.811
Other heart diseases	I26 to I28, I30 to I38, I40 to I51	0.246	0.193	1.005	0.590
Cerebrovascular diseases	G45, I60 to I67, I69	27.423	26.929	15.820	12.816
Other diseases of the circulatory system	I70 to I99	0.881	0.763	0.508	0.355
Diseases of the respiratory system	**J00 to J98**	**9.561**	**6.085**	**4.420**	**2.014**
Influenza	J10, J11	0.034	0.038	0.011	0.005
Pneumonia	J12 to J18	0.844	0.889	1.825	0.915
Chronic obstructive pulmonary disease	J40 to J44, J47	6.958	4.100	2.387	1.016
Asthma	J45, J46	0.219	0.162	0.037	0.034
Pulmonary empyema and lung abscess	J85, J86	0.092	0.026	0.019	0.016
Other respiratory diseases	J00 to J06, J20 to J39, J60 to J84, J90 to J98	1.415	0.870	0.141	0.028
Diseases of the digestive system	**K00 to K92**	**2.672**	**1.698**	**4.026**	**2.742**
Gastric and duodenal ulcer	K25 to K28	0.233	0.092	0.400	0.189
Liver cirrhosis and other diseases of the liver and biliary tract	K70 to K83	1.829	1.358	2.579	1.851
Diseases of pancreas	K85, K86	0.033	0.064	0.153	0.128
Other diseases of the digestive system	K00 to K22, K29 to K66, K90 to K92	0.577	0.183	0.894	0.575
Deaths from injury and poisoning	**V01 to Y89**	**1.808**	**0.952**	**2.087**	**0.658**
Transport accidents	V01 to V99	0.348	0.171	0.182	0.081
Falls and drowning	W00 to W19, W65 to W74	0.268	0.199	0.242	0.061
Accidental poisoning	X40 to X49	0.210	0.166	0.241	0.158
Accidents caused by fire, electric current or firearm	W32 to W34, W85 to W87, X00 to X09	0.353	0.127	0.078	0.078
Suicide	X60 to X84	0.254	0.119	0.446	0.071
Homicide	X85 to Y09, Y35, Y36	0.047	0.008	0.032	0.041

Groups used	ICD (10th revision)	SMR p.1000			
		1965	2020	1965	2020
		Males	Females	Males	Females
Deaths from injury undetermined whether accidentally or purposely inflicted	Y10 to Y34	0.037	0.007	0.200	0.023
Other accidents	W20 to W31, W35 to W64, W75 to W84, W88 to W99, X10 to X39, X50 to X59, Y40 to Y89	0.290	0.155	0.666	0.145
Other diseases	**D50 to G44, G47 to H95, L00 to Q99**	**1.746**	**1.095**	**2.083**	**1.568**
Endocrine diseases, diseases of blood	D50 to D89, E00 to E90	0.316	0.355	0.942	0.904
Diseases of the nervous system and mental disorders	F01 to F99, G00 to G44, G47 to G98, H00 to H95	0.457	0.361	0.372	0.116
Diseases of the genitourinary system, including:	N00 to N99	0.826	0.208	0.697	0.480
Renal tubulo-interstitial diseases	N00 to N15	0.313	0.167	0.498	0.340
Hyperplasia of prostate	N40	0.462	0.000	0.051	0.000
Other diseases of the genitourinary system	N17 to N39, N41 to N99	0.050	0.041	0.148	0.139
Other diseases	L00 to M99, Q00 to Q99	0.147	0.172	0.071	0.069
Total for all causes	**A00 to Y89, U071**	**94.752**	**81.826**	**111.928**	**80.198**

***

In this chapter, we focused on analysing mortality trends by detailed causes of death and sex across five broad age groups. Improvements in infant mortality over the period as a whole are quite considerable and largely related to advances in post-neonatal mortality from various exogenous factors, first and foremost pneumonia and acute intestinal infections. In children and adolescents, the overall downward trend in mortality is also reflected in the detailed causes of death, such as transport

accidents, pneumonia, acute respiratory conditions. Mortality among young adults, particularly men, is largely dominated by deaths caused by injuries and poisonings and is sensitive to the 1985 anti-alcohol campaign and the social and economic crisis of the 1990s. The pattern of external mortality in this age group is strongly influenced by suicide and transport accidents, although the latter showed a deep decline during the 1990s crisis. Recent improvements in mortality among young adults focus on some of the conditions associated with external causes of death; however, there is no significant progress for suicide and transport accidents. Mortality among mature adult males was most susceptible to the socio-economic factors of the 1980s and 1990s. The most unfavourable trends are observed for ischaemic heart diseases, liver cirrhosis and different external causes of death. Cirrhosis of the liver is a significant burden to the health of the Moldovan population, especially for women. A dramatic increase in mortality from this cause of death, especially before the 1985 anti-alcohol campaign, explains a striking divergence in female life expectancy trends between Moldova and other former Soviet republics, like Ukraine or Russia, which have been significantly less affected by this disease. Trends in mortality among older adults are much less affected by the circumstances of the 1980s and 1990s, although the impact of the social and economic crisis of the 1990s on cardiovascular mortality was quite substantial in this age group. It is important to note that the very unfavourable mortality trends in the adult population over the Soviet period, followed by large fluctuations in the late 1980s and 1990s, have resumed their upward trajectory. The growth in mortality is particularly devastating in mature adult men. Since 2010, the situation has improved for the mortality of older people from certain causes of death, such as cerebrovascular diseases, chronic obstructive pulmonary diseases, cirrhosis of the liver. The continuing increase in adult mortality in Moldova over the past half-century allows us to speak of a serious health crisis that has affected the adult population. Post-2010 improvements in certain causes of death are too fragile to be considered a reversal of an unfavourable long-term trend.

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CONCLUSIONS

This study aimed to understand the reasons for a long-term health crisis that affected Moldova as well as other former Soviet republics nearly half a century ago and that continues in the country so far. Analysing the cause-specific mortality data available for Moldova at the most detailed level since the mid-1960s is the first and most important step in the research. To ensure the completeness of death and birth registration, we verified the quality of the data, which proved to be highly questionable in terms of infant mortality and mortality of the elderly before the mid-1970s (Penina, Meslé and Vallin, 2010). Minor corrections to recorded infant mortality rates related to the definition of live birth were accepted for most of the study period. Furthermore, reliable official post-independence population data are only available for the post-census period since 2014. For the preceding period, inter-census population estimates were used (Penina, Jdanov and Grigoriev, 2015; Penina, unpublished). To ensure consistency in the time series of deaths interrupted by periodic changes in the classification of causes of death, a special method of reconstruction was used (Meslé and Vallin, 1996). Particular attention was paid to the problem of the rise in "senility" mortality in the 1990s. As a result, consistent time series of deaths by sex and 5-year age groups were produced in accordance with the 10th revision of the International Classification of Diseases and Causes of Death covering 211 items. The reconstructed time series of deaths for Moldova are included in the Human Cause-of-Death Database https://www.causesofdeath.org and are regularly updated. The quality of cause-of-death data for Moldova can generally be considered satisfactory, and some specific problems with detailed causes of death can be revealed. For example, there is a universal coding practice for all countries of the former USSR to assign a high proportion of deaths to "atherosclerotic cardiosclerosis" (Grigoriev, Meslé and Vallin, 2012; Meslé et al., 1996; Meslé and Vallin, 2012). However, this fact does not

detract from the general perception of the epidemiological situation in these countries.

In the middle of the 1960s, Moldova, like all industrialised countries, completed the first stage of the health transition (Vallin and Meslé, 2004), even though in the late 1970s, infant mortality from infectious and respiratory diseases continued to be comparatively higher in Moldova than in other European USSR countries. Further, the situation concerning female life expectancy at the start of the study period was worse in Moldova than in Ukraine or Russia, but similar to that of Romania with which Moldova had a common history between the two world wars. In the 1970s, Western countries experienced a significant reduction in cardiovascular mortality, marking the second stage of the health transition known as the cardiovascular revolution. At the same time, the former Soviet republics, including Moldova, entered a period of long-term deterioration as a result of a considerable increase in adult mortality from the diseases typical of the third "age" of the epidemiological transition as defined by Abdel Omran (Omran, 1971) (the "age of degenerative and man-made diseases"). Regardless of the overall worsening health of the adult population, this period was marked by progress in reducing mortality from acute intestinal infections, tuberculosis, stomach cancer and certain other diseases through general improvements in hygiene, immunization, spread of antibiotics etc. Infant mortality did not decrease continuously in 1965-84.

In fact, in the 1970s, there was a rise in infant deaths, particularly in infectious diseases. This peak persists even after the correction of under-registration and is highly likely to be attributed to the health system crisis, especially in rural areas. In Moldova, the most rapid increase in mortality was for liver cirrhosis, especially among females. Exceptionally high mortality from cirrhosis of the liver without significant sex differences is a peculiar feature of the Moldovan mortality profile. This also explains a much lower state of health among women in Moldova than in other European countries of the former USSR.

Mortality trends in the former Soviet republics are easily recognized by sharp fluctuations related to the social and economic traumas these countries experienced in the 1980s and 1990s (Meslé, 2004). In the case of Moldova, the general trend in life expectancy following the long-term decline of the 1970s is also punctuated by these short-term fluctuations, the nature of which as far as Russian data is concerned became the subject of much debate in the late 1990s (Andreev et al., 1998; Leon et al., 1997).

Unprecedented growth in life expectancy during the 1985 anti-alcoholic campaign and a rapid deterioration in the situation following the easing of restrictive measures showed a huge dependence of adult mortality on excessive alcohol consumption for both sexes and a very broad range of causes of death associated with this habit. In Russia and Ukraine, which are the traditional representatives of the 'dry' or Nordic type of alcohol consumption, mortality from external causes of death plays a prominent role in alcohol-related mortality (Shkolnikov, Meslé and Vallin, 1996). At the same time, Moldova is much closer to the Mediterranean culture of alcohol consumption and has much less acute alcoholism problems, but by far much higher mortality from liver cirrhosis associated with chronic alcoholism (Penina, 2017).

The abolishment of the anti-alcohol campaign and serious social and economic changes in the early 1990s brought about by the break-up of the USSR and a sudden move towards a market economy have led to a huge deterioration in the health of adults. Mature adult males (aged 40 to 64) were the most affected age and sex group. Unfavourable trends in adult mortality observed before the launch of the anti-alcohol campaign resumed with new force. Moreover, following a considerable decline, mortality from infectious diseases, in particular tuberculosis, and respiratory diseases, has also begun to rise since the late 1980s. The increase in life expectancy after the crisis in the latter half of the 1990s can be attributed to the adaptation of the population to new social and economic conditions, but not to the onset of a new sustainable positive trend.

The moderate increase in female life expectancy after the end of the fluctuation period (after 1998) is primarily explained by the decline in mortality among mature and older adults from diseases of the circulatory system, in particular cerebrovascular diseases, linked to improved control of hypertension. Among young adult men, a relatively stable decline in mortality from some external causes of death has occurred. Furthermore, there have been positive changes in mortality from tuberculosis, liver cirrhosis in the elderly and chronic obstructive pulmonary disease in recent years. However, this progress is entirely offset by the continued increase in mortality, first and foremost due to heart disease. Controlling key risk factors associated with an increased risk of death from heart disease is a major challenge for Moldova (Raevschi Elena, 2017). The situation is further aggravated by a heavy burden of liver cirrhosis, especially among women, a continuing increase or stagnation in suicide mortality and transport accidents, a growing impact of neoplasms, especially breast cancer and cancer of the intestine, and a recommencement of unfavourable trend in mortality from pneumonia in the adult population. The emergence of new health problems, such as COVID-19 infection, only exacerbates the unresolved problems of chronic degenerative diseases and diminishes the impact of recent advances in public health. During the Soviet period or after independence, Moldova did not succeed in setting up controls on degenerative diseases, first and foremost on cardiovascular diseases, and deaths from injury and poisoning. While advanced countries have tackled new population health challenges at a more advanced age, Moldova has still not completed the second stage of the health transition.

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ANNEXE 1. Life expectancy at birth before and after two corrections of infant mortality rate (m_0) and old-age mortality correction, 1959-2020, by sex

Year	Crude	After the 1st correction of m_0	After the 2nd correction of m_0	After two corrections of m_0 and old-age mortality correction
			MALES	
1959	65.29	63.56	63.33	61.13
1960	67.29	65.78	65.57	62.82
1961	67.66	66.32	66.12	63.74
1962	66.37	65.03	64.84	63.73
1963	67.19	65.89	65.71	64.32
1964	67.88	66.55	66.35	64.54
1965	68.04	66.87	66.69	65.57
1966	67.76	66.74	66.56	65.62
1967	66.73	65.64	65.45	64.93
1968	66.45	65.32	65.14	64.89
1969	65.97	65.00	64.84	
1970	66.32	65.46	65.28	
1971	66.07	65.24	65.04	
1972	66.25	65.40	65.18	
1973	64.86		64.64	
1974	64.17		63.94	
1975	63.04		62.80	
1976	63.77		63.49	
1977	62.61		62.31	
1978	62.86		62.60	
1979	62.11		61.86	
1980	62.87		62.57	
1981	62.62		62.30	
1982	62.92		62.64	
1983	62.38		62.10	
1984	62.18		61.86	
1985	62.72		62.37	
1986	64.92		64.57	
1987	65.56		65.21	
1988	65.32		64.99	
1989	65.56		65.26	
1990	65.08		64.80	
1991	64.25		63.99	
1992	64.03		63.73	
1993	64.22		63.96	
1994	62.44		62.12	
1995	62.14		61.75	
1996	63.11		62.83	
1997	63.13		62.78	
1998	64.00		63P.67	
1999	63.53		63.28	
2000	63.68		63.37	
2001	64.14		63.91	

Year	Crude	After the 1st correction of m_0	After the 2nd correction of m_0	After two corrections of m_0 and old-age mortality correction
2002	63.92		63.68	
2003	63.82		63.61	
2004	63.88		63.69	
2005	62.91		62.70	
2006	63.41		63.21	
2007	63.68		63.54	
2008	63.94		63.89	
2009	63.66		63.64	
2010	62.96			
2011	64.85			
2012	64.97			
2013	65.86			
2014	65.21			
2015	65.11			
2016	65.57			
2017	66.65			
2018	66.24			
2019	66.60			
2020	65.85			
FEMALES				
1959	69.62	67.72	67.55	64.39
1960	72.08	70.41	70.25	66.43
1961	72.00	70.50	70.36	67.31
1962	71.05	69.54	69.40	67.63
1963	71.98	70.59	70.44	68.25
1964	73.38	71.99	71.85	69.26
1965	73.05	71.77	71.63	69.91
1966	73.35	72.18	72.05	70.19
1967	72.56	71.39	71.25	69.90
1968	72.61	71.37	71.23	70.03
1969	71.96	70.89	70.75	70.43
1970	72.32	71.42	71.28	70.92
1971	72.22	71.39	71.24	71.02
1972	72.28	71.39	71.23	70.89
1973	71.04		70.88	70.60
1974	70.64		70.49	70.07
1975	69.52		69.32	69.08
1976	70.20		70.03	69.75
1977	69.53		69.34	69.21
1978	69.51		69.30	
1979	68.54		68.35	
1980	69.39		69.21	
1981	69.59		69.38	
1982	69.96		69.77	
1983	69.20		69.00	
1984	69.06		68.83	

Year	Crude	After the 1st correction of m_0	After the 2nd correction of m_0	After two corrections of m_0 and old-age mortality correction
1985	69.30		69.05	
1986	71.32		71.10	
1987	71.49		71.23	
1988	71.85		71.63	
1989	72.35		72.12	
1990	72.10		71.89	
1991	71.13		70.89	
1992	72.00		71.81	
1993	71.25		71.03	
1994	69.92		69.76	
1995	69.87		69.72	
1996	70.57		70.35	
1997	70.57		70.42	
1998	71.47		71.26	
1999	71.22		70.99	
2000	71.22		70.97	
2001	71.69		71.45	
2002	71.45		71.27	
2003	71.21		71.05	
2004	71.92		71.76	
2005	71.07		70.92	
2006	71.59		71.43	
2007	71.67		71.47	
2008	72.16		72.07	
2009	72.34		72.32	
2010	72.11			
2011	73.61			
2012	73.38			
2013	73.89			
2014	73.59			
2015	73.61			
2016	74.08			
2017	74.85			
2018	74.93			
2019	74.99			
2020	73.86			

Note: Since 1998 official population statistics do not include the Transnistrian region

ANNEXE 2. Life expectancy at different ages, 1959-2020, by sex

Year	Age											
	MALES						***FEMALES***					
	0	**1**	**15**	**30**	**45**	**60**	**0**	**1**	**15**	**30**	**45**	**60**
1959	61.13	66.45	54.73	40.99	27.70	15.33	64.39	69.16	57.39	43.41	29.70	16.65
1960	62.82	67.05	54.93	41.13	27.89	15.52	66.43	70.35	58.11	43.96	30.17	16.97
1961	63.74	67.28	55.05	41.28	27.98	15.71	67.31	70.64	58.32	44.17	30.40	17.24
1962	63.73	67.35	55.11	41.23	28.14	15.96	67.63	71.04	58.48	44.32	30.54	17.57
1963	64.32	67.73	55.3	41.38	28.27	16.15	68.25	71.27	58.7	44.62	30.83	17.83
1964	64.54	67.93	55.45	41.58	28.48	16.33	69.26	72.15	59.37	45.11	31.19	18.07
1965	65.57	68.45	55.6	41.71	28.50	16.46	69.91	72.53	59.59	45.22	31.28	18.26
1966	65.62	67.99	55.17	41.43	28.35	16.55	70.19	72.50	59.42	45.13	31.26	18.36
1967	64.93	67.62	54.95	41.19	28.24	16.72	69.90	72.23	59.34	45.08	31.31	18.53
1968	64.89	67.76	54.95	41.24	28.33	16.87	70.03	72.59	59.57	45.19	31.34	18.72
1969	64.84	67.07	54.31	40.67	27.96	16.60	70.43	72.47	59.47	45.14	31.32	18.88
1970	65.28	67.07	54.27	40.69	27.90	16.45	70.92	72.43	59.53	45.23	31.49	19.07
1971	65.04	66.78	53.95	40.34	27.44	16.19	71.02	72.36	59.37	44.99	31.21	18.77
1972	65.18	67.15	54.42	40.71	27.88	16.63	70.89	72.48	59.54	45.24	31.46	18.95
1973	64.64	66.58	53.77	40.09	27.23	16.14	70.60	72.17	59.16	44.78	31.00	18.67
1974	63.94	66.21	53.41	39.85	27.20	16.25	70.07	71.83	58.77	44.37	30.64	18.62
1975	62.80	65.17	52.27	38.79	26.19	15.45	69.08	71.05	57.99	43.61	30.06	18.12
1976	63.49	65.83	52.86	39.28	26.63	15.82	69.75	71.59	58.46	44.10	30.49	18.32
1977	62.31	64.79	52.00	38.56	26.11	15.55	69.21	71.27	58.19	43.81	30.18	18.13
1978	62.60	64.62	51.72	38.20	25.73	15.16	69.30	71.02	57.93	43.52	29.98	18.16
1979	61.86	63.71	50.80	37.42	25.06	14.73	68.35	69.93	56.83	42.49	29.06	17.35
1980	62.57	64.42	51.43	37.84	25.36	14.92	69.21	70.60	57.41	43.00	29.49	17.82
1981	62.30	64.17	51.28	37.73	25.32	14.89	69.38	70.70	57.65	43.23	29.61	17.79

Year	Age											
	MALES						***FEMALES***					
	0	**1**	**15**	**30**	**45**	**60**	**0**	**1**	**15**	**30**	**45**	**60**
1982	62.64	64.28	51.47	37.82	25.40	15.14	69.77	71.06	57.92	43.48	29.92	18.19
1983	62.10	63.42	50.44	36.84	24.59	14.76	69.00	69.94	56.80	42.32	28.99	17.70
1984	61.86	63.53	50.57	36.94	24.65	14.50	68.83	70.13	56.93	42.44	29.01	17.54
1985	62.37	64.01	51.01	37.24	24.65	14.41	69.05	70.15	56.89	42.42	28.89	17.24
1986	64.57	65.91	52.83	39.11	26.15	15.55	71.10	71.94	58.63	44.10	30.29	18.41
1987	65.21	66.53	53.35	39.46	26.42	15.54	71.23	72.16	58.90	44.38	30.51	18.44
1988	64.99	66.10	52.99	39.30	26.30	15.57	71.63	72.29	58.93	44.41	30.50	18.44
1989	65.26	66.11	52.94	39.45	26.64	15.94	72.12	72.69	59.34	44.87	30.91	18.93
1990	64.80	65.52	52.25	38.69	25.89	15.44	71.89	72.32	58.89	44.41	30.44	18.42
1991	63.99	64.70	51.43	37.77	25.16	14.82	70.89	71.41	57.94	43.51	29.70	17.85
1992	63.73	64.40	51.20	38.11	25.75	15.16	71.81	72.17	58.73	44.32	30.35	18.21
1993	63.96	64.87	51.63	37.99	25.40	14.79	71.03	71.58	58.13	43.72	29.78	17.63
1994	62.12	63.05	49.83	36.23	23.94	14.06	69.76	70.38	56.98	42.50	28.71	16.86
1995	61.75	62.67	49.35	35.75	23.56	13.92	69.72	70.21	56.77	42.28	28.55	16.83
1996	62.83	63.57	50.21	36.50	24.23	14.21	70.35	70.91	57.45	42.97	29.17	17.29
1997	62.78	63.61	50.30	36.59	24.16	14.08	70.42	70.73	57.32	42.84	29.04	17.13
1998	63.67	64.24	50.90	37.25	24.76	14.56	71.26	71.67	58.14	43.70	29.76	17.62
1999	63.28	63.87	50.47	36.83	24.38	14.15	70.99	71.40	57.95	43.45	29.53	17.39
2000	63.37	64.08	50.68	36.87	24.25	14.26	70.97	71.30	57.80	43.33	29.43	17.34
2001	63.91	64.29	50.91	37.11	24.61	14.49	71.45	71.78	58.18	43.62	29.72	17.66
2002	63.68	63.99	50.53	36.72	24.24	14.02	71.27	71.39	57.76	43.24	29.30	17.24
2003	63.61	63.88	50.38	36.45	23.90	13.84	71.05	71.07	57.48	42.91	29.05	16.96
2004	63.69	63.77	50.25	36.33	23.91	13.93	71.76	71.68	58.08	43.51	29.62	17.38
2005	62.70	62.71	49.22	35.27	23.10	13.51	70.92	70.96	57.36	42.79	28.99	16.87

Year	Age											
	MALES						***FEMALES***					
	0	**1**	**15**	**30**	**45**	**60**	**0**	**1**	**15**	**30**	**45**	**60**
2006	63.21	63.22	49.66	35.69	23.46	13.80	71.43	71.37	57.72	43.16	29.33	17.26
2007	63.54	63.42	49.85	35.94	23.63	14.02	71.47	71.47	57.82	43.36	29.51	17.40
2008	63.89	63.77	50.14	36.15	23.97	14.33	72.07	71.98	58.30	43.72	29.90	17.79
2009	63.64	63.54	49.99	35.97	23.72	14.13	72.32	72.10	58.43	43.84	30.00	17.81
2010	62.96	62.86	49.20	35.28	23.21	13.86	72.11	71.80	58.12	43.52	29.65	17.58
2011	64.85	64.74	51.09	37.06	24.51	14.46	73.61	73.21	59.54	44.89	30.90	18.33
2012	64.97	64.60	50.99	36.97	24.36	14.43	73.38	73.12	59.44	44.83	30.89	18.37
2013	65.86	65.48	51.83	37.66	24.87	14.76	73.89	73.60	59.91	45.27	31.18	18.64
2014	65.21	64.92	51.25	37.12	24.51	14.53	73.59	73.14	59.44	44.79	30.91	18.43
2015	65.11	64.81	51.13	36.97	24.35	14.48	73.61	73.18	59.42	44.77	30.84	18.45
2016	65.57	65.24	51.58	37.49	24.77	14.63	74.08	73.65	59.99	45.34	31.36	18.76
2017	66.65	66.32	52.59	38.42	25.57	15.03	74.85	74.45	60.73	46.04	31.99	19.15
2018	66.24	65.97	52.26	38.13	25.39	14.88	74.93	74.52	60.78	46.11	32.02	19.20
2019	66.60	66.18	52.47	38.26	25.44	15.17	74.99	74.63	60.87	46.28	32.24	19.43
2020	65.85	65.45	51.70	37.44	24.64	14.17	73.86	73.50	59.70	45.07	31.12	18.63

Note: Since 1998 official population statistics do not include the Transnistrian region

ANNEXE 3. List of causes of death used in reconstructed series and their correspondence with ICD-10 codes

Code	Title	ICD-10 code
1	Cholera	A00
2	Typhoid and paratyphoid fever	A01
3	Other salmonella infections	A02
4	Shigellosis	A03
5	Other bacterial foodborne intoxications	A05
6	Microorganism intestinal infections including amoebiasis and protozoal intestinal diseases	A04, A06-A08
7	Diarrhoea and gastroenteritis of presumed infectious origin	A09
8	Respiratory tuberculosis	A15, A16
9	Miliary tuberculosis	A19
10	Tuberculosis of nervous system	A17
11	Other tuberculosis excluding sequelae of tuberculosis	A18
12	Plague	A20
13	Anthrax	A22
14	Brucellosis	A23
15	Leprosy [Hansen's disease]	A30
16	Diphtheria	A36
17	Whooping cough	A37
18	Scarlet fever	A38
19	Erysipelas	A46
20	Meningococcal infection	A39
21	Tetanus (incl. obstetrical and neonatorum)	A33-A35
22	Septicaemia	A40, A41
23	Other bacterial infections	A21, A24-A28, A31, A32, A42-A44, A48, A49
24	Human immunodeficiency virus [HIV] resulting disease	B20-B24
25	Yellow fever	A95
26	Arthropod-borne viral fever and viral haemorrhagic fever	A90-A94, A96-A99
27	Acute poliomyelitis	A80
28	Viral encephalitis and other viral diseases of CNS excl. arthropod-borne diseases	A83-A86
29	Measles	B05
30	Viral hepatitis	B15-B19
31	Rabies	A82
32	Other viral diseases	A81, A87-A89, B00-B04, B06-B09, B25-B34
33	Rickettsioses	A75-A79
34	Malaria	B50-B54
35	Leishmaniasis	B55
36	Trypanosomiasis	B56, B57
37	Relapsing fever	A68
38	Syphilis	A50-A53
39	Other predominantly sexually transmitted diseases	A54-A64
40	Other infectious diseases	A65-A67, A69-A74, B35-B49, B58-B64, B95-B99
41	Shistosomiasis [bilharziasis]	B65
42	Other helminthiases	B66, B68-B71, B73, B75-B83

Code	Title	ICD-10 code
43	Echinococcosis	B67
44	Dracunculiasis and filariasis	B72, B74
45	Other parasitic diseases	B85-B89
46	Sequelae of tuberculosis	B90
47	Sequelae of other infectious and parasitic diseases incl. sequelae of acute poliomyelitis	B91-B94
48	Malignant neoplasm of lip, oral cavity and pharynx	C00-C14
49	Malignant neoplasm of oesophagus	C15
50	Malignant neoplasm of stomach	C16
51	Malignant neoplasm of intestine incl. duodenum	C17
52	Malignant neoplasm of colon	C18
53	Malignant neoplasm of rectosigmoid junction, rectum and anus	C19-C21
54	Malignant neoplasm of liver and intrahepatic bile	C22
55	Malignant neoplasm of pancreas	C25
56	Other malignant neoplasm of digestive system	C23, C24, C26
57	Malignant neoplasm of larynx	C32
58	Malignant neoplasm of trachea, bronchus and lung	C33, C34
59	Malignant neoplasm of other respiratory and intrathoracic organs	C30-C31, C37-C39
60	Malignant neoplasm of bones, cartilage and connective and soft tissue	C40, C41, C49
61	Malignant melanoma of skin	C43
62	Other malignant neoplasm of skin	C44
63	Malignant neoplasm of breast	C50
64	Malignant neoplasm of cervix uteri	C53
65	Malignant neoplasm of other parts of uteri and unspecified	C54, C55
66	Malignant neoplasm of ovary	C56
67	Malignant neoplasm of other and unspecified female genital organs	C51, C52, C57, C58
68	Malignant neoplasm of prostate	C61
69	Malignant neoplasm of other male genital organs	C60, C62, C63
70	Malignant neoplasm of bladder	C67
71	Malignant neoplasm of other urinary organs	C64-C66, C68
72	Malignant neoplasm of meninges, brain and other parts of CNS	C70-C72
73	Malignant neoplasm of other sites or unspecified sites	C45-C48, C69, C73-C80
74	Malignant neoplasms of independent (primary) multiple sites	C97
75	Non-Hodgkin’s lymphoma	C82-C85
76	Other malignant neoplasms of lymphoid haematopoietic and related tissue	C81, C88, C96
77	Multiple myeloma and malignant plasma cell neoplasms	C90
78	Leukaemia	C91-C95
79	Other malignant neoplasms	D00-D48
80	Diabetes mellitus	E10-E14
81	Diseases of other endocrine glands	E00-E07, E15-E35, E89
82	Malnutrition	E40-E46
83	Other nutritional and metabolic disorders	E50-E88, E90
84	Some disorders of immunity system	D80-D89
85	Anaemia	D50-D64

Code	Title	ICD-10 code
86	Other disorders of blood and blood-forming organs	D65-D77
87	Dementia, vascular, senile or unspecified	F01, F03
88	Mental and behavioural disorders due to use of alcohol	F10
89	Other mental disorders due to use of psychoactive substances	F11-F19
90	Other psychosis and mental disorders	F04-F09, F20-F69, F80-F99
91	Mental retardation	F70-F79
92	Bacterial meningitis due to other microorganisms or unspecified causes	G00-G03
93	Other inflammatory diseases of the central nervous system	G04-G09
94	Systemic atrophies primarily affecting the central nervous system	G10-G14
95	Parkinson's disease and other extrapyramidal and movement disorders	G20-G25
96	Alzheimer's disease	G30
97	Other degenerative diseases of the central nervous system	G31
98	Multiple sclerosis	G35
99	Other demyelinating diseases of the central nervous system	G36, G37
100	Epilepsy	G40, G41
101	Transient cerebral ischaemic attacks and related syndromes	G45
102	Other diseases of central nervous system	G43, G44, G47-G98
103	Diseases of the eye and adnexa	H00-H59
104	Inflammation of middle ear and mastoiditis	H65-H70
105	Other diseases of the ear and mastoid process	H60-H64, H71-H95
106	Acute rheumatic fever	I00-I02
107	Chronic rheumatic heart diseases	I05-I09
108	Essential hypertension	I10
109	Hypertensive heart disease	I11
110	Hypertensive renal disease	I12
111	Hypertensive heart and renal disease	I13
112	Secondary hypertension	I15
113	Acute myocardial infarction	I21-I23
114	Atherosclerotic cardiovascular and heart diseases	I25.0, .1
115	Other ischaemic heart diseases	I20, I24, I25.2to.9
116	Pulmonary heart diseases	I26-I28
117	Nonrheumatic valve disorders	I34-I38
118	Cardiac arrest	I46
119	Heart failure	I50
120	Other heart diseases	I30-I33, I40-I45, I47-I49, I51
121	Intracranial haemorrhage	I60-I62
122	Cerebral infarction, occlusion and stenosis	I63, I65, I66
123	Other cerebrovascular diseases	I64, I67
124	Sequelae of cerebrovascular diseases	I69
125	Atherosclerosis	I70
126	Phlebitis and thrombophlebitis, venous embolism and thrombosis	I80-I82
127	Other diseases of arteries, arterioles and capillaries	I71-I79
128	Other diseases of the circulatory system	I83-I99
129	Acute upper respiratory infections	J00-J06

Code	Title	ICD-10 code
130	Influenza	J10, J11
131	Viral pneumonia, not elsewhere classified	J12
132	Pneumonia due to Streptococcus pneumoniae	J13
133	Other pneumonia	J14-J18
134	Other acute lower respiratory infections	J20-J22
135	Chronic bronchitis and emphysema	J40-J43
136	Asthma	J45, J46
137	Bronchiectasis and other obstructive pulmonary diseases	J44, J47
138	Pneumonitis due to solids and liquids	J69
139	Other lung diseases due to external agents	J60-J68, J70
140	Pulmonary oedema	J81
141	Other respiratory diseases, principally affecting the interstitium	J80, J82, J84
142	Pyothorax and abscess of lung	J85, J86
143	Other affections of the respiratory system	J30-J39, J90-J98
144	Gastric ulcer	K25
145	Duodenal ulcer, gastro-jejunal ulcer and peptic ulcer, site unspecified	K26-K28
146	Gastritis and duodenitis	K29
147	Diseases of appendix	K35-K38
148	Hernia	K40-K46
149	Noninfective enteritis and colitis	K50-K52
150	Paralytic ileus and intestinal obstruction without hernia	K56
151	Other intestinal diseases	K55, K57-K63
152	Alcoholic cirrhosis of liver	K70
153	Other cirrhosis of liver	K74
154	Other diseases of liver	K71-K73, K75, K76
155	Cholelithiasis and cholecystitis	K80, K81
156	Other diseases of biliary tract	K82, K83
157	Diseases of pancreas	K85, K86
158	Other diseases of the digestive system	K00-K22, K30, K31, K65, K66, K90-K92
159	Glomerular diseases	N00-N07
160	Other renal tubulo-interstitial diseases	N10-N15
161	Renal failure	N17-N19
162	Urolithiasis	N20-N23
163	Other diseases of urinary tract	N25-N39
164	Hyperplasia of prostate	N40
165	Other diseases of genital organs	N41-N99
166	Ectopic pregnancy	O00
167	Medical abortion	O04
168	Other causes due to abortion, ectopic and molar pregnancy	O01-O03, O05-O08
169	Haemorrhage in pregnancy and antepartum	O20, O44, O45, O46
170	Toxaemia in pregnancy	O14-O16
171	Puerperal sepsis	O85
172	Other direct maternal deaths	O10-O13, O21-O43, O47-O83, O84, O86-O94
173	Indirect maternal death	O98, O99
174	Other obstetric causes	O95-O97
175	Diseases of the skin and subcutaneous tissue	L00-L98
176	Osteomyelitis	M86

Code	Title	ICD-10 code
177	Other diseases of the muskuloskeketal system and connective tissue	M00-M85, M87-M99
178	Spina bifida and congenital hydrocephalus	Q03, Q05
179	Other congenital malformations of the nervous system	Q00-Q02, Q04, Q06, Q07
180	Congenital malformations of heart	Q20-Q24
181	Other congenital malformation of the circulatory system	Q25-Q28
182	Congenital malformation of the digestive system	Q35-Q45
183	Other congenital malformations	Q10-Q18, Q30-Q34, Q50-Q99
184	Birth trauma	P10-P15
185	Intrauterine hypoxia and birth asphyxia	P20, P21
186	Congenital pneumonia and neonatal aspiration syndromes	P23, P24
187	Other respiratory affections	P22, P25-P28
188	Haemolytic disease of foetus and other neonatal jaundice	P55-P59
189	Bacterial sepsis of newborn	P36
190	Other causes of perinatal death	P00-P08, P29-P35, P37-P54, P60-P96
191	Senility	R54
192	Sudden infant death	R95
193	Other ill-defined and unspecified causes of death	R00-R53, R55-R94, R96
194	Unknown cause	R98, R99
195	Transport accident with motor vehicle	V12-V14, V19, V20-V79, V82, V87
196	Pedestrian injured in collision with motor vehicle	V02-V04, V09
197	Other transport accidents	V01, V05, V06, V10, V11, V15-V18, V80, V81, V83-V86, V88, V89-V99
198	Accidental poisoning by and exposure to alcohol	X45
199	Other accidental poisoning	X40-X44, X46-X49
200	Complication of medical and chirurgical cares	Y40-Y84
201	Falls	W00-W19
202	Exposure to smoke, fire and flames	X00-X09
203	Accidental drowning and submersion	W65-W74
204	Inhalation or ingestion causing obstruction of respiratory tract	W78-W84
205	Other accidental threats to breathing	W75-W77
206	Handgun discharge	W32-W34
207	Accident due to electric current	W85-W87
208	Other accidents	W20-W31, W35-W64, W88-W99, X10-X39, X50-X59, Y85-Y89
209	Intentional self-harm	X60-X84
210	Assault	X85-Y09, Y35, Y36
211	Event of undetermined intent	Y10-Y34
212	COVID-19	U07.1, U07.2

Note 1: Deaths from ill-defined cause of death 191 (Senility) were redistributed by a special method, while deaths from ill-defined causes 193 and 194 were redistributed proportionally.
Note 2: In Moldova, all deaths from COVID-19 infection in 2020 referred to the item U07.1 (COVID-19, virus identified).

ANNEXE 4. Standardised mortality rates by sex and cause according to the list of ICD-10 items, 1965-2020 (per 1 million)

Year	Cause, ***MALES***																					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
1965	0	2	5	1	8	47	76	409	67	5	6	0	0	0	0	1	1	0	0	28	5	13
1966	0	3	5	2	4	53	66	488	80	1	4	0	0	0	0	0	0	3	0	22	17	24
1967	0	0	6	4	1	56	75	434	70	0	4	0	0	0	0	1	1	0	0	15	1	9
1968	0	2	5	2	2	60	78	417	66	3	2	0	0	0	0	0	1	0	0	0	5	21
1969	0	1	5	7	0	35	65	376	61	3	5	0	0	0	0	2	0	1	0	6	1	8
1970	1	1	10	6	0	25	48	372	57	0	2	0	0	0	0	0	0	0	0	12	2	14
1971	0	1	4	0	0	30	44	296	47	0	2	0	0	0	0	0	0	0	0	6	1	14
1972	0	0	5	2	0	26	48	292	47	1	3	0	0	0	0	0	1	0	0	4	3	4
1973	0	0	4	14	0	26	43	201	33	0	7	0	1	1	0	0	0	0	2	1	0	5
1974	0	1	4	1	0	34	45	184	30	2	2	0	0	0	0	0	0	0	2	11	2	6
1975	0	0	7	1	6	50	50	231	39	1	2	0	0	0	0	0	0	0	2	3	2	7
1976	0	1	12	2	2	47	45	177	32	0	2	0	0	0	0	0	0	0	2	5	1	5
1977	0	0	17	3	2	60	51	161	33	2	4	0	1	0	0	0	0	0	1	5	5	6
1978	0	1	18	2	0	42	41	154	33	2	8	0	0	0	0	0	0	0	2	11	1	12
1979	0	0	12	0	0	48	41	195	37	1	5	0	0	0	0	0	0	0	2	8	2	6
1980	0	0	7	0	0	30	34	108	22	2	4	0	0	0	0	0	0	0	2	11	1	5
1981	0	0	6	2	0	26	30	130	24	1	3	0	0	0	0	0	0	0	4	9	1	4
1982	0	0	6	1	0	14	34	112	20	6	1	0	0	0	0	0	0	0	2	10	0	8
1983	0	0	5	1	0	18	27	87	13	1	4	0	0	0	0	0	0	0	2	15	1	6
1984	0	0	8	0	0	6	34	99	18	2	2	0	0	0	0	0	0	0	1	12	0	4
1985	0	0	6	3	0	5	25	109	17	1	2	0	0	0	0	0	0	0	3	13	2	6
1986	0	0	3	2	0	4	22	97	19	1	1	0	0	0	0	0	0	0	1	10	1	4
1987	0	0	2	2	0	1	13	80	16	2	3	0	0	0	0	0	0	0	0	9	0	3
1988	0	5	2	0	0	2	15	73	13	0	0	0	0	0	0	0	0	0	1	10	0	4
1989	0	0	1	0	0	2	10	92	17	1	3	0	0	0	0	0	0	0	1	10	1	14
1990	0	0	0	0	0	3	9	99	17	0	1	0	0	0	0	0	0	0	1	11	0	7
1991	0	0	1	1	0	1	8	121	13	1	2	0	0	0	0	0	0	0	0	11	2	5
1992	0	0	2	1	0	1	7	116	10	0	4	0	0	0	0	0	0	0	0	10	0	2
1993	0	0	0	1	0	2	11	118	17	1	4	0	0	0	0	1	0	0	1	6	0	2
1994	0	0	1	1	0	2	14	193	31	2	6	0	0	0	0	2	0	0	1	7	0	3

Year	Cause, ***MALES***																					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
1995	1	0	0	1	0	2	10	183	21	0	3	0	0	0	0	4	0	1	3	3	0	4
1996	0	0	1	0	0	1	10	241	20	0	2	0	0	0	0	3	0	0	2	4	0	8
1997	0	0	0	1	0	6	5	229	11	0	5	0	0	0	0	1	0	0	1	5	0	5
1998	0	0	0	2	0	2	5	251	12	1	3	0	0	0	0	1	0	0	3	5	0	8
1999	0	0	1	1	0	1	3	293	12	4	3	0	0	0	0	0	0	0	0	2	0	7
2000	0	0	1	1	0	5	3	344	11	1	2	0	0	0	0	0	0	0	0	2	0	4
2001	0	0	2	0	1	3	1	304	6	0	4	0	0	0	0	0	0	0	2	0	0	4
2002	0	0	1	1	0	2	4	319	2	1	1	0	0	0	0	0	0	0	0	3	0	3
2003	0	0	0	0	1	3	2	326	4	0	1	0	0	0	0	0	0	0	2	3	0	5
2004	0	0	1	0	0	3	3	370	1	3	2	0	0	0	0	0	0	0	1	6	0	5
2005	0	0	1	0	1	1	1	398	1	0	3	0	0	0	0	0	0	0	5	9	0	5
2006	0	0	0	0	2	1	1	360	2	0	6	0	0	0	0	0	0	0	0	1	0	4
2007	0	0	0	0	0	1	2	354	2	1	2	0	0	0	0	0	0	0	1	3	0	6
2008	0	0	0	0	1	1	2	321	7	0	0	0	0	0	0	0	0	0	3	2	0	6
2009	0	0	0	0	0	1	1	338	12	1	1	0	0	0	0	0	0	0	1	4	0	4
2010	0	0	0	0	1	1	3	339	5	0	1	0	0	0	0	0	0	0	3	3	0	1
2011	0	0	0	0	1	2	2	290	7	0	0	0	0	0	0	0	0	0	0	5	0	8
2012	0	0	0	0	0	1	0	272	6	0	1	0	0	0	0	0	0	0	2	3	0	3
2013	0	0	0	0	1	0	2	205	3	0	0	0	0	0	0	0	0	0	0	1	0	2
2014	0	0	0	0	0	0	2	192	3	1	1	0	0	0	0	0	0	0	0	2	0	9
2015	0	0	0	0	0	0	1	163	2	0	3	0	0	0	0	0	0	0	1	3	0	14
2016	0	0	0	0	0	4	1	145	11	0	2	0	0	0	0	0	0	0	1	4	0	18
2017	0	0	0	0	1	1	4	120	5	0	2	0	0	0	0	0	0	0	0	3	0	44
2018	0	0	0	0	0	1	0	115	3	0	4	0	0	0	0	0	0	0	1	1	0	31
2019	0	0	0	0	1	2	0	104	3	0	2	0	0	0	0	0	0	0	0	2	0	40
2020	0	0	0	0	0	1	0	79	1	0	1	0	0	0	0	0	0	0	1	1	0	13

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***MALES***																					
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
1965	1	0	0	0	0	8	1	51	1	0	0	0	0	0	0	21	0	0	2	6	14	0
1966	0	0	0	0	10	5	1	52	2	0	0	0	1	1	0	38	1	1	0	2	12	0
1967	0	0	0	0	0	9	0	58	2	0	0	0	0	0	0	16	0	0	0	1	11	0
1968	0	0	0	0	0	5	2	45	1	0	0	0	1	1	0	9	1	1	0	3	30	0
1969	0	0	0	0	13	4	0	62	0	0	0	0	1	1	0	10	1	1	0	0	8	0
1970	0	0	0	0	0	7	0	52	1	1	1	0	0	0	0	6	0	0	1	1	5	0
1971	0	0	0	0	0	11	1	51	1	0	0	0	0	0	0	3	0	0	0	1	12	0
1972	0	0	0	0	0	0	0	42	2	0	0	0	0	0	0	6	0	0	0	1	6	0
1973	0	0	0	0	0	0	1	37	0	1	0	0	0	0	0	9	0	0	0	1	21	0
1974	0	0	0	0	0	0	0	31	1	0	0	0	0	0	0	7	0	0	1	5	14	0
1975	1	0	0	0	0	0	0	43	1	0	0	0	0	0	0	4	0	0	0	3	8	0
1976	0	0	0	0	0	0	0	32	3	0	0	0	0	0	0	8	0	0	0	2	2	0
1977	0	0	0	0	0	0	2	33	0	0	0	0	0	0	0	6	0	0	0	2	7	0
1978	0	0	0	0	0	0	1	30	1	0	0	0	0	0	0	4	0	0	0	1	5	0
1979	0	0	0	0	0	0	0	29	2	1	0	0	0	0	0	4	0	0	1	1	15	0
1980	0	0	0	0	0	0	0	36	1	0	0	0	0	0	0	1	0	0	0	2	4	0
1981	0	0	0	0	0	0	1	28	0	0	0	0	0	0	0	0	0	0	0	1	7	0
1982	0	0	0	0	1	0	2	24	2	1	0	0	0	0	0	0	0	0	0	1	6	0
1983	0	0	0	0	0	0	1	23	1	0	0	0	0	0	0	1	0	0	0	0	3	0
1984	0	0	0	0	0	0	0	25	1	0	0	0	0	0	0	1	0	0	0	1	9	0
1985	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	2	1	0
1986	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	6	0
1987	0	0	0	0	0	0	1	16	1	1	0	0	0	0	0	0	0	0	1	1	5	0
1988	0	0	0	0	0	0	0	20	0	1	0	0	0	0	0	0	0	0	0	1	1	0
1989	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	1	0	0	5	0
1990	0	0	0	0	0	1	0	18	0	1	0	0	0	0	0	0	0	1	0	0	2	0
1991	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	3	0	1	5	0
1992	2	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1993	2	0	0	0	0	0	0	10	0	2	0	0	0	0	0	1	0	0	0	0	2	0
1994	1	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	3	0	1	4	0
1995	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	1	0	2	0	0	5	0

Year	Cause, ***MALES***																					
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
1996	4	0	0	0	0	0	0	7	0	1	0	0	0	0	0	0	0	1	0	1	3	0
1997	6	2	0	0	0	1	0	11	0	2	0	0	0	0	0	1	0	0	0	0	3	0
1998	3	1	0	0	0	0	0	11	0	1	0	0	0	0	0	0	0	0	0	0	3	0
1999	4	1	0	0	0	0	0	8	0	2	1	0	0	0	0	0	1	0	0	0	2	0
2000	1	3	0	0	0	1	0	12	0	0	0	1	0	0	0	2	0	0	0	1	5	0
2001	2	3	0	0	0	1	0	7	0	1	0	0	0	0	0	1	0	0	0	0	6	0
2002	5	7	0	0	0	1	1	4	0	2	0	0	0	0	0	1	0	0	0	0	8	0
2003	3	12	0	0	0	1	0	5	0	1	0	0	0	0	0	0	0	1	0	0	7	0
2004	3	10	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
2005	5	19	0	0	0	0	0	5	0	4	0	0	0	0	0	0	0	1	0	0	0	0
2006	4	26	0	0	0	2	0	4	0	1	0	0	0	0	0	0	0	0	0	0	10	0
2007	5	31	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0
2008	6	37	0	0	0	0	0	3	0	3	0	1	0	0	0	1	0	1	0	0	1	0
2009	3	29	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0
2010	4	36	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0
2011	6	38	0	0	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0	0	1	0
2012	4	27	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0
2013	3	32	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2014	8	50	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	0	1	0
2015	2	42	0	0	0	4	0	3	0	2	0	0	0	0	0	0	0	0	0	0	3	0
2016	4	37	0	0	0	1	0	5	1	1	0	0	0	0	0	0	0	0	0	0	2	0
2017	12	45	0	0	0	1	0	2	0	3	0	0	0	0	0	0	0	1	0	0	2	0
2018	7	45	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	2	0	0	1	0
2019	4	34	0	0	0	0	1	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2020	11	52	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	1	0	0	4	0

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***MALES***																					
	45	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**	**61**	**62**	**63**	**64**	**65**	**66**
1965	0	7	0	99	78	631	5	41	98	131	121	36	57	432	21	29	23	25	4	0	0	0
1966	1	8	0	75	68	628	4	33	90	111	101	31	44	402	22	33	15	14	13	0	0	0
1967	1	4	0	71	59	499	5	40	92	109	100	30	53	454	20	34	22	22	2	0	0	0
1968	1	2	0	74	71	499	5	36	122	115	110	33	44	376	9	34	25	24	0	0	0	0
1969	1	5	0	72	40	471	6	41	100	94	86	26	41	391	10	30	17	16	12	0	0	0
1970	1	1	0	58	80	472	4	31	89	91	81	25	46	440	21	25	24	29	4	0	0	0
1971	0	3	0	54	51	468	5	40	105	103	100	30	58	459	6	22	20	21	7	0	0	0
1972	0	4	0	75	40	492	7	47	101	97	87	27	37	445	7	28	10	13	5	0	0	0
1973	0	5	0	66	47	447	7	51	119	118	105	32	46	431	4	24	5	5	6	0	0	0
1974	0	2	0	35	65	414	8	56	109	93	84	25	64	445	15	35	15	20	0	0	0	0
1975	0	4	0	59	45	486	10	68	126	111	101	30	81	473	14	39	6	3	7	0	0	0
1976	1	6	0	74	54	472	13	92	110	117	114	34	70	526	9	34	16	17	15	0	0	0
1977	0	11	0	72	38	389	13	85	97	95	89	27	81	521	15	24	18	19	7	0	0	0
1978	5	12	0	78	48	447	13	86	109	113	103	31	74	554	11	26	16	18	7	0	0	0
1979	0	9	0	72	45	399	14	97	123	104	94	28	79	565	13	31	12	11	7	0	0	0
1980	1	8	0	82	41	383	15	98	131	93	84	25	82	597	12	22	14	13	8	0	0	0
1981	0	12	0	69	52	373	22	126	133	105	95	28	97	579	11	26	19	21	11	0	0	0
1982	3	10	1	76	49	384	16	101	99	113	101	30	68	619	13	33	20	20	7	0	0	0
1983	3	13	0	77	40	376	15	108	133	108	97	29	58	677	10	41	18	19	13	0	0	0
1984	4	9	0	100	56	413	18	96	150	137	116	34	65	700	26	39	16	19	3	0	0	0
1985	2	9	0	94	59	359	12	104	157	115	100	30	68	732	13	28	12	10	10	0	0	0
1986	0	4	0	125	61	377	7	122	144	140	123	36	82	753	14	31	21	18	5	0	0	0
1987	0	4	0	115	46	403	8	156	169	169	148	43	80	768	15	21	17	18	9	0	0	0
1988	3	3	1	151	66	364	13	146	166	144	130	38	86	840	24	29	28	30	5	0	0	0
1989	1	11	0	146	74	372	7	136	170	181	154	44	88	878	16	24	25	28	9	0	0	0
1990	1	3	1	147	72	436	8	130	187	177	157	45	79	869	20	41	21	22	6	0	0	0
1991	1	1	0	185	69	412	17	158	147	203	171	40	91	803	16	36	15	34	1	0	0	0
1992	2	10	0	173	75	358	13	157	163	179	158	23	91	780	16	54	18	38	1	0	0	0
1993	1	4	1	187	69	359	10	168	155	191	151	28	93	761	14	59	22	31	1	0	0	0
1994	2	3	0	191	77	353	13	151	160	181	163	32	101	806	16	41	13	27	0	0	0	0
1995	0	9	0	195	59	388	9	173	153	162	127	31	96	749	14	52	25	26	1	0	0	0

Year	Cause, ***MALES***																					
	45	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**	**61**	**62**	**63**	**64**	**65**	**66**
1996	0	8	0	208	57	372	11	165	140	174	144	44	103	751	14	36	9	28	11	0	0	0
1997	0	5	0	187	51	367	6	160	132	159	150	37	108	758	13	48	19	19	10	0	0	0
1998	0	4	0	220	73	335	10	151	123	169	153	33	119	676	6	46	31	29	15	0	0	0
1999	0	8	2	234	57	319	10	174	153	150	129	32	94	606	13	41	18	15	22	0	0	0
2000	0	7	1	181	49	349	10	165	158	152	146	23	110	597	15	34	19	14	4	0	0	0
2001	0	8	1	202	65	309	5	205	133	170	130	23	100	659	16	31	18	10	9	0	0	0
2002	0	12	0	195	57	302	6	189	191	223	162	39	122	612	14	47	22	40	6	0	0	0
2003	0	5	0	217	60	333	11	179	163	161	152	37	117	687	10	38	19	32	18	0	0	0
2004	0	7	0	194	64	342	12	234	229	259	168	21	107	673	10	42	17	42	9	0	0	0
2005	0	2	0	232	65	321	9	193	207	250	181	27	79	696	31	48	25	15	13	0	0	0
2006	0	5	0	187	74	357	8	246	230	298	180	25	111	700	15	47	16	40	12	0	0	0
2007	0	5	0	197	73	382	7	270	201	270	189	28	106	767	14	29	27	19	11	0	0	0
2008	0	6	0	223	51	367	7	241	247	309	146	42	120	756	18	33	40	37	8	0	0	0
2009	0	5	1	202	70	348	6	284	263	292	216	35	118	715	11	34	23	42	9	0	0	0
2010	0	2	0	213	64	362	8	215	230	285	202	21	136	780	16	30	28	40	10	0	0	0
2011	0	7	1	199	62	335	5	263	316	266	217	29	131	778	16	33	35	20	11	0	0	0
2012	0	2	1	242	48	395	14	252	243	304	238	28	154	810	18	32	31	33	13	0	0	0
2013	0	4	0	214	54	338	10	275	288	361	230	12	135	784	24	40	35	34	7	0	0	0
2014	0	4	0	261	67	320	24	296	267	324	237	22	149	792	23	39	49	21	7	0	0	0
2015	0	1	0	245	64	327	15	297	279	329	206	22	135	819	21	39	43	36	12	0	0	0
2016	0	1	0	265	81	324	23	294	279	342	230	9	121	848	22	44	40	43	7	0	0	0
2017	0	0	0	277	69	302	29	352	295	323	234	18	124	743	20	42	23	31	6	0	0	0
2018	0	2	0	253	85	307	20	377	253	314	243	15	140	802	19	36	44	28	5	0	0	0
2019	0	1	0	304	53	295	21	352	244	285	242	18	146	792	21	35	37	27	7	0	0	0
2020	0	2	0	278	61	257	17	310	256	287	196	17	116	733	26	41	25	37	10	0	0	0

Year	Cause, ***MALES***																					
	67	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**
1965	0	144	7	93	50	25	100	1	24	16	7	84	52	76	6	1	7	0	1	8	3	61
1966	0	61	7	73	39	24	94	1	19	13	5	56	36	100	1	0	5	0	0	11	2	54
1967	0	91	10	53	34	30	82	1	25	17	6	70	29	42	0	1	7	0	0	2	0	76
1968	0	78	17	87	46	27	77	1	19	13	5	62	13	46	8	0	5	0	2	14	1	94
1969	0	134	18	62	38	28	76	1	30	20	7	56	15	41	1	1	7	0	1	8	1	95
1970	0	94	27	82	47	30	79	1	23	16	5	56	26	35	3	0	4	0	0	6	0	68
1971	0	91	18	72	45	24	69	0	41	28	10	37	15	44	4	0	3	0	1	7	0	50
1972	0	76	25	74	46	30	79	1	19	13	4	58	27	51	6	1	5	0	0	7	0	22
1973	0	86	19	67	43	38	85	1	15	10	4	76	29	33	1	1	6	0	0	6	0	64
1974	0	86	14	71	41	31	74	1	28	19	7	44	37	43	6	2	8	0	1	6	0	52
1975	0	82	11	70	44	26	83	1	38	26	10	51	44	53	4	0	5	0	0	9	0	71
1976	0	86	16	74	45	17	67	0	36	23	10	80	33	58	4	0	5	0	0	8	0	45
1977	0	76	6	54	35	20	63	0	23	16	6	71	41	60	7	0	4	0	1	10	0	68
1978	0	108	11	67	42	27	79	1	34	23	9	77	31	64	3	0	4	0	0	5	0	102
1979	0	115	16	76	44	23	73	1	26	18	7	55	40	62	5	1	6	0	1	9	0	138
1980	0	92	8	85	51	25	71	1	41	27	11	77	34	86	7	1	6	0	1	9	0	103
1981	0	91	11	77	46	28	75	1	28	19	8	57	41	104	4	0	5	0	0	5	0	107
1982	0	66	11	85	50	28	76	1	39	26	11	66	37	72	3	1	6	0	2	8	0	118
1983	0	54	9	78	48	34	76	1	37	25	11	68	43	93	6	1	6	0	1	6	0	136
1984	0	94	9	66	40	44	103	1	33	22	9	70	30	64	6	1	5	0	1	4	0	114
1985	0	97	11	86	50	40	84	1	28	18	8	69	59	101	3	1	8	0	0	4	0	112
1986	0	99	5	107	61	48	95	1	33	22	9	83	48	61	2	2	7	0	1	6	0	59
1987	0	114	8	70	43	50	109	1	28	19	8	58	47	81	3	2	9	0	2	5	0	43
1988	0	115	24	98	57	36	85	1	42	28	12	59	31	73	3	2	10	0	1	7	0	31
1989	0	124	19	115	65	59	116	1	45	29	13	90	20	110	4	2	9	0	0	4	0	43
1990	0	121	16	98	55	55	115	1	43	28	12	78	27	141	3	2	11	0	1	7	1	60
1991	0	117	4	117	57	45	112	1	44	31	10	74	16	136	4	1	6	0	3	4	1	66
1992	0	166	14	114	36	58	108	1	49	19	15	55	31	130	2	2	7	0	6	4	1	44
1993	0	116	17	135	33	52	104	1	52	30	6	87	16	125	6	1	6	0	1	7	4	48
1994	0	161	15	149	40	53	111	1	44	21	10	92	26	180	7	1	3	0	8	9	0	83
1995	0	125	13	135	45	56	119	1	38	27	10	70	12	146	2	5	5	1	3	9	1	120

Year	Cause, ***MALES***																					
	67	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**
1996	0	115	13	133	39	46	107	1	31	30	12	58	20	156	5	7	2	1	3	8	0	74
1997	0	144	27	120	40	50	105	1	25	28	10	69	20	161	1	2	1	0	5	6	0	61
1998	0	135	21	121	45	45	100	4	50	40	5	75	30	167	3	5	5	2	2	1	0	34
1999	0	112	15	123	49	44	90	7	33	18	7	60	25	169	2	7	3	0	8	4	0	39
2000	0	115	13	137	36	49	119	8	25	22	5	55	21	136	6	2	5	4	7	5	0	38
2001	0	126	15	135	47	49	115	7	36	25	7	64	30	130	3	4	5	1	5	2	0	45
2002	0	127	12	123	50	50	131	9	54	19	13	52	34	145	1	2	9	1	3	3	0	70
2003	0	134	20	117	54	49	119	6	45	21	12	66	20	170	4	1	2	0	2	3	0	39
2004	0	143	18	122	60	44	160	8	58	24	27	72	29	131	3	0	3	0	6	3	0	68
2005	0	184	15	137	47	64	141	17	65	16	11	67	18	162	3	4	4	0	0	4	0	113
2006	0	195	20	137	67	62	141	1	54	18	15	60	30	184	3	0	4	3	8	5	0	102
2007	0	180	27	147	58	55	139	1	61	18	13	55	32	161	1	8	7	0	7	2	0	121
2008	0	199	17	142	73	67	116	7	54	14	16	61	29	171	1	2	11	1	1	5	0	91
2009	0	248	17	146	66	56	125	7	71	13	26	73	30	210	3	2	13	0	2	5	0	120
2010	0	297	17	153	64	63	153	3	52	11	8	66	20	262	2	0	12	1	4	1	0	118
2011	0	239	10	143	66	79	139	8	69	13	15	59	27	197	0	1	10	0	3	7	0	56
2012	0	311	9	131	98	77	189	2	49	16	15	74	39	222	4	0	11	0	4	4	0	61
2013	0	282	17	140	87	92	139	2	60	13	20	75	18	176	1	1	6	1	4	2	0	33
2014	0	306	11	132	86	85	133	0	62	17	23	65	10	192	1	0	5	0	3	5	0	114
2015	0	304	27	177	87	82	128	1	57	20	14	82	29	201	1	0	1	2	6	11	0	121
2016	0	330	17	174	104	74	118	0	69	21	18	82	31	199	2	2	2	1	2	2	0	73
2017	0	429	33	148	82	102	125	1	65	9	26	72	33	188	2	2	11	1	5	4	0	79
2018	0	370	13	187	94	85	138	1	76	9	23	70	17	235	1	0	0	0	7	4	0	64
2019	0	404	16	153	93	94	136	0	79	15	26	68	27	184	0	0	1	3	5	2	0	73
2020	0	386	11	162	94	99	145	0	66	11	11	77	17	234	3	0	1	0	3	2	0	88

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***MALES***																					
	89	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**
1965	8	20	0	11	9	1	8	5	5	13	0	32	2	43	0	3	0	75	466	0	1036	41
1966	7	11	0	9	6	1	7	5	4	3	0	32	2	41	0	6	0	62	301	0	1021	19
1967	9	13	0	8	4	1	6	4	4	6	0	35	2	36	0	5	0	58	170	0	863	23
1968	10	3	0	9	5	1	6	4	4	7	0	42	2	34	0	12	0	54	175	0	824	15
1969	11	15	0	13	6	1	4	3	3	7	0	40	2	32	0	4	0	52	170	0	867	7
1970	7	10	0	10	7	1	5	3	3	4	0	35	2	31	0	2	0	50	118	0	842	5
1971	6	5	0	11	9	1	4	3	3	8	0	38	2	26	0	2	0	62	115	0	884	14
1972	3	2	0	18	11	0	4	2	2	2	0	28	1	22	0	10	0	58	88	0	833	8
1973	7	1	0	23	14	1	3	2	3	2	0	26	2	27	0	8	0	61	83	0	975	10
1974	5	1	0	19	14	1	4	2	3	1	0	32	1	26	0	6	0	46	69	0	924	13
1975	5	4	0	18	13	1	4	3	4	1	0	32	1	35	0	6	0	51	64	0	1058	12
1976	3	3	0	17	11	1	4	3	4	3	0	42	1	34	0	9	0	43	61	0	1005	6
1977	3	2	0	24	12	1	5	3	5	3	0	33	2	40	0	5	0	45	50	0	1091	10
1978	4	1	0	31	14	1	4	3	4	1	0	29	2	34	0	3	0	62	49	0	1120	8
1979	7	2	0	28	15	1	4	3	5	1	0	34	2	36	0	5	0	55	67	0	1238	7
1980	6	2	0	22	10	1	5	3	5	1	0	40	2	38	0	4	0	47	62	0	1235	9
1981	7	2	0	25	14	1	2	1	4	2	1	39	2	32	0	2	0	52	66	0	1318	6
1982	9	2	0	32	16	1	1	0	4	1	1	34	2	29	0	4	0	39	53	0	1203	6
1983	9	2	0	23	14	0	1	0	3	2	0	45	2	21	0	7	0	29	60	0	1235	3
1984	11	2	0	22	14	0	1	1	3	0	0	36	2	20	0	3	0	25	74	0	1230	3
1985	11	2	0	20	22	1	3	2	4	1	0	36	2	31	0	4	0	27	68	0	1273	3
1986	6	2	0	26	17	1	3	2	4	1	0	25	2	28	0	3	0	21	77	0	1079	7
1987	5	2	0	21	18	1	2	1	3	1	0	26	2	23	0	2	0	19	67	0	1122	9
1988	3	2	0	17	8	0	1	1	3	0	0	30	2	21	0	4	0	19	64	0	1081	4
1989	3	3	0	16	10	1	3	2	4	1	0	29	1	29	0	2	0	21	65	0	1012	4
1990	6	6	0	10	11	1	4	3	5	5	0	34	1	38	0	2	0	20	71	0	1062	5
1991	7	5	0	14	16	1	5	5	8	1	1	35	0	40	0	3	0	15	75	0	1296	6
1992	4	4	0	21	15	1	7	0	15	5	1	35	1	37	0	3	1	22	83	0	1301	7
1993	6	12	0	9	16	1	8	2	11	2	2	35	4	39	2	2	0	11	71	0	1321	6
1994	9	21	0	14	14	1	1	1	18	4	1	39	0	62	3	4	0	22	93	0	1382	3
1995	11	11	0	18	16	1	1	1	20	3	0	41	3	63	0	6	0	16	61	0	1303	2

Year	Cause, ***MALES***																					
	89	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**
1996	5	8	0	20	13	2	0	3	23	3	1	33	0	48	0	1	0	10	75	0	1220	3
1997	2	6	0	11	12	1	3	5	30	4	1	46	0	46	0	4	0	7	95	2	1170	2
1998	1	5	0	12	12	2	5	2	36	1	0	45	0	38	0	1	0	6	78	0	1091	3
1999	9	12	0	6	12	5	0	2	25	2	0	40	0	30	0	2	2	13	79	1	1206	0
2000	7	5	0	20	7	2	0	0	39	1	1	38	0	41	0	3	0	10	66	6	1082	0
2001	9	2	0	12	12	5	4	2	40	1	1	30	0	30	0	4	0	4	58	2	1055	1
2002	8	1	0	11	13	2	3	5	33	1	1	43	0	58	0	3	0	3	74	0	1067	0
2003	3	2	0	8	16	4	9	5	43	1	1	43	0	46	0	3	0	3	67	3	1066	0
2004	3	1	0	10	18	3	1	2	81	3	0	38	0	33	0	4	0	2	72	2	824	0
2005	1	0	0	7	16	7	6	0	78	1	1	38	0	52	0	1	0	1	74	1	803	0
2006	3	5	0	5	22	6	6	1	83	1	1	32	0	42	0	3	0	5	64	0	738	1
2007	1	0	0	5	17	5	3	4	113	5	1	45	0	58	0	3	0	2	52	0	773	0
2008	0	1	0	6	18	3	4	1	104	1	1	48	0	73	0	3	0	1	54	0	821	0
2009	0	1	0	7	23	5	6	7	112	1	0	38	0	71	0	0	0	2	58	1	841	0
2010	1	1	0	9	14	3	11	10	128	2	0	33	0	77	0	1	0	0	56	1	870	0
2011	0	1	0	4	17	6	7	8	80	6	0	30	0	27	0	3	0	0	48	0	862	0
2012	0	1	0	11	17	3	10	11	87	6	0	33	0	40	0	1	0	1	43	3	870	1
2013	0	1	0	2	21	11	5	2	108	1	0	23	0	25	0	1	0	0	33	0	964	0
2014	0	1	0	18	12	4	11	0	104	8	0	32	0	30	0	1	0	0	29	0	1179	0
2015	0	0	1	11	7	7	1	1	105	13	2	35	0	23	0	1	0	2	25	0	1402	1
2016	0	1	0	4	16	5	0	0	103	7	0	16	0	28	0	2	0	0	26	0	1508	2
2017	2	0	0	9	11	7	7	1	68	4	0	25	0	27	0	3	0	0	25	0	1510	1
2018	1	0	0	8	12	6	4	7	90	2	0	34	0	59	1	0	1	0	14	0	1552	0
2019	1	0	0	3	8	4	1	2	77	5	1	18	0	35	1	2	0	0	16	0	1881	0
2020	2	1	0	6	8	4	8	2	67	2	1	24	0	46	0	1	0	0	18	0	2059	0

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***MALES***																					
	111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**
1965	19	0	418	4289	2475	13	14	1	0	37	780	1134	2881	980	145	7	26	6	25	22	3	174
1966	11	0	582	4047	2311	12	1	1	0	32	788	1135	2950	926	119	8	22	7	25	28	3	153
1967	9	0	579	3440	1994	10	1	1	0	29	804	1094	2963	782	103	4	20	3	23	76	7	129
1968	10	0	432	3322	1914	11	3	1	0	30	811	1081	2947	753	117	3	24	3	26	38	2	127
1969	7	0	395	3660	2155	13	9	1	0	35	708	978	2498	818	152	7	32	6	26	71	5	178
1970	9	0	461	3490	2015	11	14	1	0	30	720	976	2539	781	168	7	37	7	24	38	2	168
1971	4	0	449	3711	2380	13	10	1	0	35	737	991	2540	819	179	34	35	2	19	50	1	188
1972	0	0	487	3481	2253	11	4	1	0	29	699	914	2318	769	206	40	41	1	27	23	6	175
1973	0	0	444	4210	2725	13	4	1	0	32	726	1001	2454	917	232	13	46	1	22	25	5	172
1974	0	0	447	3987	2604	13	8	1	0	36	674	940	2270	882	146	13	33	1	21	12	8	199
1975	2	0	456	4665	3098	15	1	1	0	41	688	999	2311	1027	183	15	40	1	21	55	3	210
1976	1	0	467	4477	2945	15	0	1	0	39	693	997	2362	982	176	6	40	0	19	8	3	165
1977	1	0	467	4908	3225	16	0	1	0	43	738	1074	2522	1078	181	4	41	1	20	8	4	222
1978	0	0	517	5044	3309	17	0	1	0	43	752	1094	2549	1108	178	4	40	0	17	5	9	211
1979	0	0	525	5577	3698	18	1	1	0	47	765	1127	2518	1224	183	12	41	0	17	9	7	212
1980	0	0	485	5545	3674	18	0	1	0	46	744	1103	2451	1214	197	9	42	0	15	5	11	200
1981	0	0	468	5945	3954	20	0	2	0	50	779	1174	2587	1309	203	5	47	0	15	13	18	212
1982	0	0	487	5448	3627	18	3	1	0	48	738	1076	2368	1194	194	19	41	0	14	4	22	222
1983	0	0	510	5645	3720	18	0	1	0	45	808	1149	2586	1225	190	26	41	0	12	2	24	301
1984	1	0	537	5541	3697	21	3	2	0	59	866	1217	2840	1219	224	15	48	0	17	2	30	170
1985	1	0	483	5715	3879	22	1	2	0	61	886	1264	2967	1259	219	5	46	1	11	10	32	197
1986	0	0	549	4734	3178	18	2	1	0	52	760	1077	2557	1050	182	9	37	1	12	1	23	162
1987	0	0	550	4914	3348	20	0	1	0	59	708	1040	2371	1095	168	4	34	0	9	2	25	134
1988	0	0	545	4749	3286	21	2	1	0	68	741	1062	2487	1063	163	18	36	1	13	3	19	138
1989	1	0	530	4384	3044	21	4	1	0	72	687	978	2333	946	138	24	33	5	15	2	9	123
1990	1	0	552	4616	3806	29	15	2	0	85	780	1009	2562	839	166	32	37	1	9	3	13	135
1991	0	0	693	5625	4049	31	2	2	0	105	729	1112	2762	962	186	21	41	2	13	3	18	102
1992	11	0	713	5655	4011	17	6	0	0	141	628	1071	2669	945	163	12	51	1	15	1	15	68
1993	2	0	697	5758	4693	32	6	0	0	162	751	1119	2898	977	183	13	25	2	10	1	14	50
1994	1	0	657	5920	5302	25	2	0	0	185	915	1058	2871	1016	188	12	39	3	11	2	19	93
1995	2	0	586	5626	6542	16	0	0	0	237	913	1052	2714	1041	219	17	41	2	5	3	21	112
1996	1	0	585	5252	6205	15	4	0	0	199	934	1089	2644	1038	207	7	30	2	11	3	21	61
1997	1	0	633	5337	6218	16	6	0	0	257	1056	1027	2535	974	233	21	30	5	9	1	15	45
1998	1	0	618	4410	6710	9	0	0	0	192	954	973	2382	908	203	17	29	4	9	0	14	40

Year	Cause, ***MALES***																					
	111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**
1999	0	2	657	4558	7113	13	4	0	0	139	1021	1014	2383	986	182	20	19	1	6	1	16	45
2000	0	0	565	3978	7312	12	6	0	0	126	1178	996	2403	879	172	21	23	0	6	7	12	30
2001	0	2	557	3618	6811	19	7	0	0	89	1227	981	2538	840	118	17	18	7	6	0	9	30
2002	0	0	587	3681	7483	17	9	0	0	105	1292	978	2420	880	117	19	34	1	8	0	7	48
2003	0	0	637	3429	7777	22	8	1	0	91	1282	1019	2634	823	94	22	40	1	4	2	14	66
2004	0	0	684	2627	8049	26	6	0	0	108	1297	1196	2240	687	130	31	37	4	7	0	9	62
2005	1	2	817	2354	9281	30	14	0	0	103	1165	1298	2112	610	111	28	25	2	6	2	6	52
2006	5	0	865	1952	8934	34	9	2	0	146	1119	1293	2242	483	124	19	56	4	3	0	9	55
2007	0	0	827	1607	8924	44	15	1	0	216	1030	1378	2202	449	90	28	47	2	0	0	6	62
2008	0	0	1005	1540	8324	48	14	0	0	192	1024	1323	2105	443	87	15	49	0	1	0	6	68
2009	0	0	973	1287	9411	47	6	0	0	199	965	1230	2100	391	74	18	51	1	3	5	7	59
2010	0	0	1044	1084	10182	23	12	3	0	282	857	1127	2146	328	78	20	52	2	3	4	5	64
2011	0	0	1005	793	9454	30	19	2	0	239	829	1201	2097	263	57	30	40	3	1	1	4	51
2012	0	0	1141	507	9771	35	17	1	0	192	771	1149	2105	298	81	25	49	2	1	0	5	50
2013	0	0	1308	617	9310	38	5	7	1	170	744	1239	1747	386	104	14	66	0	1	4	1	57
2014	0	0	1227	709	8946	57	12	4	1	258	845	1378	1580	491	134	12	40	0	1	1	9	61
2015	0	0	1310	1043	8525	105	5	7	0	306	767	1110	1780	485	177	17	64	2	4	9	2	91
2016	0	0	1415	1111	7818	62	1	9	1	309	675	1193	1893	375	219	20	57	2	2	4	5	101
2017	0	0	1335	1170	7892	72	8	10	1	252	639	1088	1805	134	169	23	48	1	0	0	1	73
2018	5	0	1371	1190	7806	80	5	16	0	341	895	1098	1553	132	110	15	82	6	2	2	0	133
2019	7	0	1355	1107	7654	51	11	10	0	375	859	1260	1432	112	97	17	52	2	1	12	5	123
2020	11	0	1322	1446	8739	44	2	9	0	382	983	1216	1237	126	56	12	63	1	2	4	33	122

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Year	Cause, ***MALES***																					
	133	**134**	**135**	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**	**153**	**154**
1965	307	1	341	52	1237	2	2	0	0	47	324	112	1	13	19	65	3	45	17	5	470	23
1966	281	1	306	21	1109	0	0	0	0	84	275	110	24	0	21	92	3	60	18	15	383	16
1967	297	1	489	16	1767	1	1	0	0	73	331	113	27	4	28	62	2	46	15	26	502	15
1968	327	1	398	34	1439	1	8	0	0	81	286	92	34	0	13	51	3	37	14	20	626	22
1969	384	1	535	38	1931	0	2	0	0	55	310	87	31	2	19	66	2	44	16	39	588	15
1970	315	1	598	26	2160	2	2	0	0	90	343	87	37	0	22	47	3	41	17	42	707	25
1971	378	0	575	20	2075	1	1	0	0	119	312	66	37	0	23	34	2	28	12	40	773	29
1972	346	1	543	14	1960	0	3	0	0	118	323	97	17	0	19	41	3	39	18	50	817	19
1973	288	1	541	10	1956	1	1	0	0	125	343	86	46	0	17	37	4	49	24	39	702	12
1974	284	1	553	6	1998	1	1	0	0	186	385	92	47	0	28	41	3	34	18	78	775	15
1975	292	1	570	1	2061	0	0	0	0	183	413	105	36	1	19	29	3	42	22	87	766	20
1976	259	1	445	0	1609	1	1	0	0	181	358	94	51	0	17	22	5	30	26	95	865	21
1977	251	1	424	0	1535	0	0	0	0	129	411	78	48	0	17	27	3	21	17	61	1022	15
1978	205	0	402	11	1456	0	0	0	0	115	353	101	60	0	22	28	4	29	16	75	1054	18
1979	251	0	414	6	1502	0	0	0	0	146	385	78	60	3	25	23	5	31	23	94	1220	18
1980	183	0	326	6	1181	0	1	0	0	147	301	83	59	0	18	14	5	30	26	73	1307	20
1981	246	0	300	9	1088	0	1	0	0	161	298	96	62	0	25	20	4	24	23	67	1219	18
1982	236	0	280	7	1001	1	2	0	0	119	240	65	52	0	19	26	5	31	21	53	1264	27
1983	230	0	301	17	1088	2	4	0	0	183	202	74	46	0	13	22	5	29	25	83	1526	31
1984	280	0	338	19	1213	0	3	0	0	166	199	57	59	0	19	22	11	24	49	86	1613	35
1985	317	0	421	14	1519	1	1	0	0	151	215	93	69	8	12	13	14	22	63	63	1464	57
1986	248	0	322	15	1160	0	1	0	0	130	208	83	53	7	8	20	18	17	69	46	1164	52
1987	190	0	289	17	1039	0	0	0	0	111	195	82	61	3	10	11	11	22	46	31	1146	42
1988	207	0	321	28	1153	0	1	0	0	90	134	94	67	0	19	18	12	26	58	23	1185	31
1989	153	0	273	33	984	2	9	0	0	75	138	86	61	0	20	21	11	20	52	35	1073	36
1990	190	0	259	39	941	0	0	0	0	72	65	75	64	4	9	9	13	20	55	26	1096	48
1991	182	1	249	44	902	0	2	0	0	62	40	70	55	0	10	23	16	20	64	29	1264	41
1992	160	1	215	49	776	1	2	0	0	62	62	78	70	2	10	19	13	25	55	24	1171	36
1993	211	1	232	55	837	1	1	0	0	54	47	86	82	0	4	24	12	21	58	19	1067	32
1994	302	2	253	60	915	1	0	0	0	91	57	95	102	3	11	11	12	21	45	25	1328	49
1995	381	0	280	74	1011	0	1	0	0	80	52	78	61	0	4	15	10	26	53	28	1407	58
1996	384	0	287	65	977	0	1	0	0	78	54	67	78	1	6	18	9	27	51	33	1238	46
1997	377	0	305	74	1059	0	0	0	0	49	64	71	62	0	12	23	13	17	53	29	1289	34
1998	331	0	295	65	1052	0	2	0	0	57	43	77	53	2	5	14	11	24	90	16	1207	45

Year	Cause, ***MALES***																					
	133	**134**	**135**	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**	**153**	**154**
1999	349	0	364	98	1182	0	0	0	0	54	25	71	58	2	7	19	5	25	50	28	1295	47
2000	393	0	339	89	1046	1	2	0	2	69	13	73	61	3	2	15	10	26	69	38	1363	60
2001	390	0	242	59	1111	0	0	0	0	68	14	67	64	1	3	10	12	24	67	57	1452	34
2002	431	0	306	80	1395	0	1	0	2	61	17	56	71	1	5	17	11	29	61	37	1448	37
2003	446	0	376	78	1489	1	0	0	0	54	12	76	75	2	2	6	5	16	74	39	1540	39
2004	445	0	310	64	1190	0	0	0	2	66	13	58	55	2	6	13	7	17	75	45	1501	35
2005	498	0	319	70	1369	0	1	0	1	73	12	56	69	0	6	14	7	19	81	71	1657	35
2006	462	0	264	43	1315	0	0	0	1	68	7	67	66	4	10	10	9	24	81	75	1547	38
2007	504	0	248	44	1185	1	1	0	1	52	9	59	52	1	3	15	9	22	65	55	1584	42
2008	541	0	247	62	1093	1	1	0	6	84	11	60	53	0	2	12	10	22	86	48	1455	33
2009	506	0	203	41	1039	1	2	0	2	62	10	70	68	1	2	12	6	18	118	57	1485	35
2010	456	0	179	38	1200	0	1	0	7	65	6	72	77	1	7	23	13	24	100	58	1624	44
2011	405	2	142	34	927	1	0	0	11	51	9	52	62	3	7	18	12	22	126	38	1408	29
2012	423	0	104	21	952	0	0	0	1	23	6	72	67	0	7	11	13	14	107	50	1363	45
2013	454	0	56	21	903	0	1	0	1	38	6	61	85	5	8	8	19	14	103	39	1232	34
2014	505	0	54	21	768	0	0	0	0	25	6	63	96	4	1	10	9	11	90	56	1293	23
2015	550	0	71	18	696	0	0	0	6	71	9	62	104	1	3	12	8	22	122	61	1318	46
2016	488	0	50	21	732	0	2	0	4	34	12	66	90	1	3	11	9	23	144	46	1346	28
2017	559	0	43	23	694	0	0	0	5	23	4	59	65	3	6	5	15	14	123	36	1141	18
2018	522	1	31	11	586	0	0	0	4	12	8	58	91	4	9	9	10	26	136	47	1279	21
2019	498	1	18	11	640	0	0	0	5	16	12	51	86	9	4	9	14	18	149	50	1221	26
2020	535	0	12	9	525	0	0	0	30	13	9	57	86	6	7	17	7	14	147	60	1148	27

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Year	Cause, ***MALES***																					
	155	**156**	**157**	**158**	**159**	**160**	**161**	**162**	**163**	**164**	**165**	**166**	**167**	**168**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**
1965	44	1	33	5	37	77	1	6	9	92	1	0	0	0	0	0	0	0	0	0	22	10
1966	42	1	43	6	34	71	1	21	5	155	4	0	0	0	0	0	0	0	0	0	17	8
1967	37	1	21	4	42	110	1	9	11	126	10	0	0	0	0	0	0	0	0	0	12	5
1968	27	1	31	5	40	105	1	2	3	110	0	0	0	0	0	0	0	0	0	0	13	3
1969	43	1	38	5	47	91	1	2	10	19	1	0	0	0	0	0	0	0	0	0	17	4
1970	33	1	55	8	40	83	1	7	1	41	0	0	0	0	0	0	0	0	0	0	6	6
1971	34	2	56	4	37	80	1	4	5	33	0	0	0	0	0	0	0	0	0	0	5	1
1972	26	1	77	9	52	119	1	5	2	48	1	0	0	0	0	0	0	0	0	0	8	2
1973	33	0	53	12	32	103	1	2	11	57	0	0	0	0	0	0	0	0	0	0	9	5
1974	38	0	108	7	30	79	1	4	7	92	0	0	0	0	0	0	0	0	0	0	18	10
1975	33	1	105	9	35	78	1	11	0	110	0	0	0	0	0	0	0	0	0	0	18	9
1976	43	1	85	15	36	79	1	13	0	117	4	0	0	0	0	0	0	0	0	0	25	10
1977	41	0	114	8	36	92	1	5	2	126	1	0	0	0	0	0	0	0	0	0	16	8
1978	45	1	156	6	29	69	1	6	5	113	1	0	0	0	0	0	0	0	0	0	15	1
1979	33	0	146	11	29	86	0	2	3	127	2	0	0	0	0	0	0	0	0	0	18	5
1980	27	1	146	16	27	64	1	26	1	97	4	0	0	0	0	0	0	0	0	0	16	8
1981	29	0	169	10	31	73	1	7	9	146	3	0	0	0	0	0	0	0	0	0	27	8
1982	23	1	126	7	33	72	1	17	4	112	2	0	0	0	0	0	0	0	0	0	20	13
1983	22	1	162	11	30	62	1	13	1	108	1	0	0	0	0	0	0	0	0	0	16	4
1984	31	1	159	17	44	109	1	7	5	144	2	0	0	0	0	0	0	0	0	0	18	10
1985	65	3	155	18	32	75	1	11	14	157	4	0	0	0	0	0	0	0	0	0	11	10
1986	40	3	127	22	30	86	0	14	13	121	2	0	0	0	0	0	0	0	0	0	5	11
1987	44	2	144	17	39	102	1	10	14	120	3	0	0	0	0	0	0	0	0	0	10	5
1988	37	1	108	18	35	122	1	12	6	117	0	0	0	0	0	0	0	0	0	0	13	6
1989	26	2	114	18	36	126	0	19	14	126	2	0	0	0	0	0	0	0	0	0	11	3
1990	45	2	165	20	42	135	1	15	6	124	1	0	0	0	0	0	0	0	0	0	6	3
1991	31	2	147	21	46	115	0	17	13	119	1	0	0	0	0	0	0	0	0	0	10	4
1992	37	1	140	19	36	96	0	16	13	113	4	0	0	0	0	0	0	0	0	0	6	3
1993	35	3	154	17	29	78	0	13	11	82	2	0	0	0	0	0	0	0	0	0	9	3
1994	14	1	184	15	36	88	0	8	11	96	5	0	0	0	0	0	0	0	0	0	18	4
1995	20	2	192	14	40	95	0	4	17	104	2	0	0	0	0	0	0	0	0	0	19	7
1996	22	0	183	20	43	80	0	11	8	93	1	0	0	0	0	0	0	0	0	0	12	7
1997	14	1	206	9	40	84	0	5	9	69	0	0	0	0	0	0	0	0	0	0	12	5
1998	30	1	232	11	44	86	0	8	16	84	1	0	0	0	0	0	0	0	0	0	15	6

Year	Cause, ***MALES***																					
	155	**156**	**157**	**158**	**159**	**160**	**161**	**162**	**163**	**164**	**165**	**166**	**167**	**168**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**
1999	7	2	152	11	39	100	0	4	7	75	1	0	0	0	0	0	0	0	0	0	12	8
2000	20	3	154	9	37	108	1	5	9	65	1	0	0	0	0	0	0	0	0	0	16	11
2001	18	3	193	14	43	91	1	7	9	77	1	0	0	0	0	0	0	0	0	0	14	2
2002	21	2	194	10	38	103	1	15	9	36	0	0	0	0	0	0	0	0	0	0	9	6
2003	3	3	198	10	37	126	0	20	16	29	2	0	0	0	0	0	0	0	0	0	9	2
2004	15	5	230	15	32	129	0	23	16	40	4	0	0	0	0	0	0	0	0	0	16	4
2005	28	1	282	9	56	145	0	9	19	80	2	0	0	0	0	0	0	0	0	0	23	4
2006	17	1	246	5	55	182	0	5	15	48	2	0	0	0	0	0	0	0	0	0	14	6
2007	14	1	198	13	53	150	1	7	25	42	0	0	0	0	0	0	0	0	0	0	18	2
2008	9	3	172	13	42	177	0	24	23	39	2	0	0	0	0	0	0	0	0	0	11	3
2009	19	0	158	8	32	119	0	15	12	32	4	0	0	0	0	0	0	0	0	0	8	1
2010	29	1	157	13	40	105	1	29	9	56	3	0	0	0	0	0	0	0	0	0	9	5
2011	15	2	117	12	34	104	0	15	15	36	4	0	0	0	0	0	0	0	0	0	20	2
2012	31	2	117	12	20	125	0	27	20	40	8	0	0	0	0	0	0	0	0	0	10	1
2013	19	0	106	15	26	135	0	10	16	27	5	0	0	0	0	0	0	0	0	0	15	1
2014	25	1	134	16	28	94	7	15	22	29	12	0	0	0	0	0	0	0	0	0	15	5
2015	14	4	148	16	39	103	14	5	21	18	8	0	0	0	0	0	0	0	0	0	10	4
2016	33	1	132	21	19	128	4	7	12	20	5	0	0	0	0	0	0	0	0	0	20	4
2017	16	2	101	22	22	110	6	4	16	11	4	0	0	0	0	0	0	0	0	0	33	2
2018	25	1	122	24	20	97	7	9	32	26	14	0	0	0	0	0	0	0	0	0	13	1
2019	12	2	111	21	13	119	23	4	13	19	11	0	0	0	0	0	0	0	0	0	17	2
2020	16	0	95	23	18	109	11	8	9	11	12	0	0	0	0	0	0	0	0	0	5	1

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***MALES***																		
	177	**178**	**179**	**180**	**181**	**182**	**183**	**184**	**185**	**186**	**187**	**188**	**189**	**190**	**192**	**195**	**196**	**197**	**198**
1965	15	5	0	25	2	9	19	33	10	24	11	4	2	12	1	57	58	201	65
1966	37	2	0	34	2	8	19	27	17	21	14	5	1	7	0	58	53	247	109
1967	11	2	0	38	2	9	21	37	15	20	13	4	1	4	1	81	74	297	115
1968	10	3	0	40	3	9	20	28	14	23	13	5	1	9	2	82	71	288	81
1969	25	2	0	32	2	7	12	34	11	20	11	2	1	6	0	72	73	311	96
1970	8	4	0	36	2	8	21	34	10	19	9	3	1	10	0	68	80	251	91
1971	10	1	0	40	3	7	18	33	4	20	6	11	2	15	0	63	88	253	102
1972	7	2	0	41	6	7	17	34	8	22	9	4	2	18	0	45	155	244	50
1973	8	1	0	34	5	11	32	33	8	21	8	4	2	18	0	75	151	281	69
1974	11	15	1	39	1	14	29	42	9	24	9	5	2	20	0	80	177	317	69
1975	17	13	1	35	1	13	28	49	10	25	10	5	3	18	0	94	168	340	63
1976	16	7	0	38	2	14	33	57	9	25	9	8	3	21	0	86	176	311	87
1977	13	11	1	48	1	13	28	40	20	27	16	3	3	23	0	106	203	373	71
1978	26	14	2	47	2	13	32	31	15	23	13	4	2	19	0	102	179	351	55
1979	20	13	1	48	2	12	28	25	24	19	17	4	1	11	0	106	194	366	52
1980	21	10	1	42	1	11	25	28	30	19	21	4	1	10	0	102	189	351	90
1981	18	11	1	40	1	11	29	39	28	23	21	6	2	12	0	93	145	329	102
1982	17	11	1	42	0	8	25	44	21	18	23	5	1	6	0	102	211	342	103
1983	23	9	1	39	1	7	27	42	20	19	20	2	1	7	0	102	139	356	141
1984	21	14	1	42	0	12	36	47	23	20	23	6	1	10	0	83	169	311	149
1985	23	13	1	31	0	13	22	53	15	28	30	4	2	21	0	70	128	263	134
1986	14	12	0	31	1	8	20	42	19	31	36	4	2	13	0	75	113	256	76
1987	20	18	1	36	1	9	28	46	22	27	26	4	1	9	0	68	96	247	70
1988	13	11	0	36	1	11	25	33	20	30	37	2	2	12	1	83	107	292	83
1989	11	11	1	35	1	7	21	33	12	27	20	1	2	18	0	89	196	299	65
1990	16	11	1	36	3	5	23	20	13	21	19	2	2	19	0	92	160	318	86
1991	18	12	4	30	2	11	22	20	10	28	17	2	2	15	0	76	188	268	93
1992	11	10	4	31	2	9	22	23	15	27	15	3	2	17	2	81	119	269	72
1993	20	11	4	36	4	8	26	18	12	34	20	4	2	20	1	52	90	190	99
1994	13	11	3	37	1	7	24	20	10	32	23	3	3	19	1	60	87	221	116
1995	9	10	4	26	1	12	19	29	7	30	16	1	4	29	1	55	80	206	120

Year	Cause, ***MALES***																		
	177	**178**	**179**	**180**	**181**	**182**	**183**	**184**	**185**	**186**	**187**	**188**	**189**	**190**	**192**	**195**	**196**	**197**	**198**
1996	12	7	1	29	3	11	22	26	13	28	17	3	4	18	1	60	73	182	103
1997	5	8	8	35	2	8	17	29	12	37	10	2	10	17	0	68	101	153	97
1998	9	9	3	32	2	10	18	21	6	34	13	1	7	21	2	57	105	170	105
1999	4	6	5	34	1	11	19	25	11	36	11	1	5	18	5	60	86	108	68
2000	10	9	3	30	2	12	30	23	15	35	16	1	10	15	6	42	91	134	64
2001	11	10	4	33	3	9	18	19	9	30	10	0	2	9	4	38	76	182	68
2002	11	12	3	31	1	4	25	13	14	26	7	0	4	9	2	36	47	196	104
2003	8	11	3	25	1	7	32	21	6	34	9	1	3	9	1	28	34	219	109
2004	13	4	5	31	2	8	21	10	15	18	12	2	7	12	4	45	60	204	114
2005	8	3	2	31	2	6	18	6	13	25	8	1	8	8	3	32	39	202	93
2006	4	3	2	23	5	10	28	12	9	23	5	3	2	12	2	28	40	203	102
2007	16	2	2	22	3	7	16	1	7	32	5	1	4	13	2	31	39	230	102
2008	10	5	5	22	3	8	28	3	7	11	10	2	5	10	3	34	33	253	89
2009	10	6	3	18	4	4	21	2	9	16	10	1	8	15	4	41	30	179	101
2010	12	6	1	22	4	7	15	5	7	13	12	2	4	12	1	49	35	176	96
2011	15	6	4	19	5	5	20	3	11	13	13	1	3	18	3	67	36	156	81
2012	9	9	2	17	4	10	15	0	3	12	11	0	2	11	3	59	32	179	110
2013	9	3	6	17	2	4	14	0	3	10	9	0	4	13	6	77	29	127	115
2014	9	3	2	19	4	3	19	2	6	7	7	0	11	12	2	66	39	127	106
2015	7	2	3	18	4	1	19	1	4	13	4	1	14	13	2	55	43	126	73
2016	10	4	3	10	2	1	14	0	3	8	9	0	15	12	1	69	20	114	71
2017	15	3	1	18	3	3	21	1	2	5	6	1	10	9	0	132	28	54	66
2018	4	1	4	15	4	1	19	1	2	8	7	2	12	16	2	120	23	38	61
2019	6	4	0	11	1	1	23	0	2	4	7	1	10	12	2	93	28	52	52
2020	13	2	1	17	3	1	28	1	3	6	6	1	6	12	0	98	58	32	22

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, *MALES*													
	199	**200**	**201**	**202**	**203**	**204**	**205**	**206**	**207**	**208**	**209**	**210**	**211**	**212**
1965	58	1	74	85	127	72	2	11	45	102	178	48	13	0
1966	134	2	154	49	152	43	1	6	48	139	243	70	9	0
1967	122	2	150	31	117	45	2	5	37	147	255	63	8	0
1968	116	2	84	75	119	57	2	8	50	149	275	77	10	0
1969	100	2	110	70	146	72	2	11	59	137	310	54	11	0
1970	109	2	101	62	178	67	2	1	60	157	303	48	9	0
1971	105	2	96	48	145	68	2	3	62	192	293	57	23	0
1972	99	2	107	77	129	71	2	5	59	132	288	70	19	0
1973	96	2	108	70	106	84	3	7	50	188	339	80	28	0
1974	124	2	87	72	138	97	3	3	54	159	368	95	39	0
1975	84	2	185	59	174	127	4	4	52	155	389	116	36	0
1976	118	2	142	66	125	121	4	5	44	165	427	97	22	0
1977	119	2	151	60	158	112	4	6	69	157	444	105	37	0
1978	96	2	175	88	141	103	4	9	53	169	450	139	81	0
1979	105	2	166	80	163	114	4	6	60	178	398	134	30	0
1980	101	2	166	98	137	113	4	4	47	182	398	141	16	0
1981	116	4	158	95	184	99	3	5	51	189	390	137	25	0
1982	92	0	187	65	159	104	4	5	55	202	409	139	27	0
1983	97	0	188	83	160	94	3	3	52	210	455	129	21	0
1984	161	4	170	70	158	106	4	2	38	206	465	98	32	0
1985	195	1	187	43	172	97	3	0	45	221	434	92	59	0
1986	156	0	152	40	133	59	2	1	33	142	386	76	60	0
1987	139	1	132	31	105	69	2	4	34	152	328	79	53	0
1988	113	4	147	43	128	63	2	2	36	183	339	114	86	0
1989	83	0	133	51	147	46	2	1	47	159	352	120	92	0
1990	96	3	151	63	140	63	2	3	33	160	313	125	125	0
1991	144	1	154	66	138	92	3	4	61	192	343	126	187	0
1992	101	1	148	45	126	65	2	8	50	266	333	494	83	0
1993	118	2	126	66	110	79	3	10	41	253	354	250	130	0
1994	119	2	150	54	182	106	4	6	57	269	398	223	163	0
1995	132	2	124	83	134	114	4	4	55	271	395	258	136	0

Year	Cause, ***MALES***													
	199	**200**	**201**	**202**	**203**	**204**	**205**	**206**	**207**	**208**	**209**	**210**	**211**	**212**
1996	111	11	131	79	137	103	1	9	58	293	394	224	142	0
1997	163	6	114	96	122	102	4	4	62	261	378	236	123	0
1998	117	2	100	82	141	95	2	3	53	241	384	216	157	0
1999	135	2	87	54	143	120	10	3	71	231	373	222	216	0
2000	136	3	119	46	111	100	6	2	59	233	367	210	184	0
2001	161	0	104	58	152	124	4	2	44	254	399	204	146	0
2002	177	1	122	62	134	130	3	1	43	268	358	192	176	0
2003	218	9	114	56	121	143	5	2	43	317	404	157	188	0
2004	189	1	148	72	133	150	8	1	28	325	378	130	194	0
2005	195	2	157	98	180	153	4	1	29	356	379	132	228	0
2006	150	1	123	107	165	196	9	3	22	316	435	133	229	0
2007	148	2	106	86	159	178	7	1	24	333	361	108	230	0
2008	158	2	124	77	157	171	7	1	21	308	382	135	213	0
2009	155	1	107	92	121	169	5	0	21	318	418	118	198	0
2010	155	1	125	99	180	173	3	2	24	370	438	140	213	0
2011	128	0	117	112	122	207	3	2	11	325	336	103	178	0
2012	84	2	117	116	138	120	5	3	16	332	367	106	157	0
2013	73	0	136	125	94	145	3	1	21	240	384	140	104	0
2014	155	2	133	79	105	176	2	4	13	322	409	111	137	0
2015	182	1	111	39	120	163	1	2	9	296	377	95	90	0
2016	143	1	128	42	116	177	2	1	13	302	365	100	98	0
2017	121	2	81	34	99	154	0	1	9	256	366	63	75	0
2018	134	1	96	37	98	123	1	1	8	335	358	80	76	0
2019	135	1	67	41	118	113	1	2	13	335	359	96	96	0
2020	109	0	54	33	89	106	0	1	16	234	347	86	103	1815

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***FEMALES***																					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
1965	0	3	5	1	5	39	60	108	18	2	0	0	0	0	0	1	2	2	0	20	1	7
1966	0	0	4	5	2	49	67	125	18	1	2	0	0	0	0	0	0	2	0	14	3	20
1967	0	0	4	2	3	55	65	116	18	1	4	0	0	0	0	0	1	1	0	12	4	15
1968	0	0	5	3	2	43	65	100	15	1	4	0	0	0	0	1	0	0	0	0	4	13
1969	0	1	4	6	1	28	52	102	16	1	2	0	0	0	0	0	0	0	1	3	2	10
1970	0	0	4	2	0	18	41	90	14	1	1	0	0	0	0	0	0	1	2	10	0	16
1971	0	1	4	0	0	21	37	62	11	2	1	0	0	0	0	0	0	1	4	4	2	12
1972	0	0	4	2	1	20	38	65	13	1	2	0	0	0	0	0	0	0	1	2	1	4
1973	0	0	4	3	1	18	34	50	9	1	3	0	0	0	0	0	0	1	2	1	6	3
1974	0	1	4	1	1	28	37	38	7	2	3	0	0	0	0	0	0	0	3	11	2	2
1975	0	0	6	2	1	38	38	46	8	2	4	0	0	0	0	0	0	0	2	3	4	7
1976	0	0	12	1	1	33	36	36	8	2	1	0	0	0	0	0	0	0	2	3	2	4
1977	0	1	13	1	1	46	41	37	7	2	3	0	0	0	0	0	0	0	1	6	3	4
1978	0	0	10	0	0	33	32	36	7	1	1	0	0	0	0	0	0	0	1	8	0	6
1979	0	0	9	1	0	37	34	34	8	1	3	0	0	0	0	0	0	0	1	8	2	5
1980	0	0	7	2	0	23	26	26	6	1	1	0	0	0	0	0	0	0	1	8	0	6
1981	0	0	7	1	0	25	27	21	6	1	3	0	0	0	0	0	0	0	3	8	1	4
1982	0	0	6	1	0	12	28	29	6	2	1	0	0	0	0	0	1	0	3	10	2	7
1983	0	0	4	2	0	11	21	25	7	2	1	0	0	0	0	0	0	0	3	9	1	6
1984	0	1	4	1	0	4	37	21	4	0	1	0	0	0	0	0	0	0	6	7	2	3
1985	0	0	5	1	0	4	22	19	4	0	1	0	0	0	0	0	0	0	3	8	1	2
1986	0	0	3	1	0	4	21	18	6	1	1	0	0	0	0	0	0	0	2	7	0	4
1987	0	0	3	2	1	1	15	20	4	1	2	0	0	0	0	0	0	1	3	6	0	4
1988	0	1	2	0	1	2	13	10	3	0	0	0	0	0	0	0	0	0	1	5	1	3
1989	0	0	0	0	0	1	9	20	5	0	0	0	0	0	0	0	0	0	3	8	0	7
1990	0	0	1	0	0	2	6	14	3	0	1	0	0	0	0	0	0	0	2	5	0	6
1991	0	0	0	1	1	1	4	11	6	1	1	0	0	0	0	1	0	0	2	4	0	4
1992	0	0	0	1	0	2	7	16	2	1	2	0	0	0	0	0	0	0	3	4	1	2
1993	0	0	1	0	0	1	6	15	5	1	1	0	0	0	0	0	0	0	2	4	1	3
1994	0	0	0	3	1	2	12	28	6	0	3	0	0	0	0	3	0	0	9	4	0	2
1995	0	0	1	2	2	1	2	25	4	1	1	0	0	0	0	6	0	0	8	4	1	5

Year	Cause, ***FEMALES***																					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
1996	0	0	0	0	0	2	6	28	6	0	1	0	0	0	0	0	0	0	7	5	1	4
1997	0	0	0	1	2	4	5	34	4	1	1	0	0	0	0	0	0	0	2	4	0	4
1998	0	0	0	0	0	1	3	34	2	1	1	0	0	0	0	0	0	0	1	4	0	1
1999	0	0	1	1	0	2	3	57	3	0	1	0	0	0	0	0	0	0	4	5	0	5
2000	0	0	0	0	0	3	3	53	1	0	1	0	0	0	0	0	0	0	3	5	1	5
2001	0	0	1	1	1	3	2	57	4	0	2	0	0	0	0	0	0	0	2	2	1	3
2002	0	0	0	0	0	1	2	51	1	0	3	0	0	0	0	0	0	0	4	3	0	2
2003	0	0	0	1	0	2	3	54	1	1	1	0	0	0	0	0	0	0	4	4	1	4
2004	0	0	1	0	0	2	2	61	1	0	2	0	0	0	0	0	0	0	7	2	0	3
2005	0	0	1	0	1	2	4	59	1	0	0	0	0	0	0	0	0	0	8	2	0	1
2006	0	0	0	0	0	3	1	60	2	2	1	0	0	0	0	0	0	0	0	2	0	3
2007	0	0	0	0	0	2	1	73	1	1	1	0	0	0	0	0	0	0	3	1	0	3
2008	0	0	0	0	1	2	1	61	1	1	1	0	0	0	0	0	0	0	3	3	0	4
2009	0	0	1	0	0	2	3	64	2	0	1	0	0	0	0	0	0	0	4	3	0	8
2010	0	0	0	0	2	1	1	42	2	0	0	0	0	0	0	0	0	0	3	3	0	2
2011	0	0	0	0	0	2	0	36	1	0	2	0	0	0	0	0	0	0	3	3	0	2
2012	0	0	0	0	0	0	1	38	1	0	1	0	0	0	0	0	0	0	4	1	0	3
2013	0	0	0	0	0	0	1	26	0	1	0	0	0	0	0	0	0	0	2	1	0	4
2014	0	0	0	0	0	1	0	35	1	0	1	0	0	0	0	0	0	0	1	2	0	5
2015	0	0	0	0	0	1	1	29	3	0	2	0	0	0	0	0	0	0	2	2	0	8
2016	0	0	0	0	0	2	2	23	4	0	2	0	0	0	0	0	0	0	2	3	0	11
2017	0	0	0	0	1	1	1	21	2	0	2	0	0	0	0	0	0	0	2	0	0	30
2018	0	0	0	0	0	1	0	19	2	0	2	0	0	0	0	0	0	0	3	2	0	23
2019	0	0	0	0	0	0	0	20	2	0	1	0	0	0	0	0	0	0	6	0	0	29
2020	0	0	0	0	0	0	0	14	1	0	0	0	0	0	0	0	0	0	1	1	0	12

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***FEMALES***																					
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
1965	1	0	0	0	0	5	4	38	0	0	0	0	0	0	0	20	0	0	0	3	13	0
1966	0	0	0	0	11	2	1	46	1	1	0	0	0	0	0	11	0	0	0	2	6	1
1967	0	0	0	0	0	5	0	41	1	0	0	0	0	0	0	7	0	0	0	3	7	0
1968	0	0	0	0	0	7	2	39	0	0	0	0	0	0	0	2	0	0	0	1	8	0
1969	0	0	0	0	2	5	1	46	1	0	0	0	0	0	0	6	0	0	1	2	6	0
1970	0	0	0	0	0	6	0	28	1	0	0	0	0	0	0	0	0	0	0	4	7	0
1971	0	0	0	0	0	8	0	24	0	0	0	0	0	0	0	1	0	0	0	0	5	1
1972	0	0	0	0	0	0	0	20	0	1	0	0	0	0	0	3	0	0	1	2	11	0
1973	0	0	0	0	0	0	1	24	0	1	0	0	0	0	0	2	0	0	0	1	7	0
1974	0	0	0	0	0	0	1	16	0	0	0	0	0	0	0	3	0	0	0	2	12	0
1975	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	6	0	0	1	4	4	0
1976	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	3	0	0	0	1	5	0
1977	0	0	0	0	0	0	1	20	0	0	0	0	0	0	0	2	0	0	0	2	5	0
1978	0	0	0	0	0	0	1	19	1	0	0	0	0	0	0	1	0	0	0	1	5	0
1979	0	0	0	0	0	0	0	28	1	1	1	0	0	0	0	2	0	0	0	0	7	0
1980	0	0	0	0	0	0	1	20	0	1	0	0	0	0	0	1	0	0	0	0	4	0
1981	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	1	0	0	0	2	0	0
1982	0	0	0	0	1	0	1	18	0	1	0	0	0	0	0	0	0	0	1	2	3	0
1983	0	0	0	0	0	0	1	21	0	0	0	0	0	0	0	0	0	0	0	0	3	0
1984	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	6	0
1985	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1986	0	0	0	0	0	0	0	15	0	1	0	0	0	0	0	0	0	0	0	0	4	0
1987	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	1	5	0
1988	0	0	0	0	0	0	0	7	0	1	1	0	0	0	0	1	0	1	0	2	3	0
1989	1	0	0	0	0	0	0	12	0	1	0	0	0	0	0	0	0	0	0	1	5	0
1990	0	0	0	0	0	0	2	9	0	0	0	0	0	0	0	1	0	0	0	0	3	0
1991	1	0	0	0	0	1	0	7	0	1	0	0	0	0	0	0	0	0	0	0	3	0
1992	2	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	1	0	1	0
1993	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	1	0	1	0	0	2	0
1994	2	0	0	0	0	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	3	0
1995	1	0	0	0	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0	0	3	0

Year	Cause, ***FEMALES***																					
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**
1996	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	1	1	0
1997	3	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1998	1	3	0	0	0	1	0	8	0	0	0	0	0	0	0	1	0	1	0	0	4	0
1999	1	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	0
2000	0	2	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0	0	1	1	0
2001	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0
2002	0	3	0	0	0	1	0	3	0	3	0	0	0	0	0	0	0	0	0	0	3	0
2003	4	2	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	1	0	0	3	0
2004	3	7	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	1	0	0	1	0
2005	1	8	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4	0
2006	2	8	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0
2007	1	9	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	1	0
2008	2	12	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0
2009	6	10	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	1	0	0	1	0
2010	3	18	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0	0	1	0
2011	1	10	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	2	0	0	2	0
2012	3	15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	6	19	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	2	0
2014	7	19	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	4	20	0	0	0	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	1	0
2016	13	26	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	1	0
2017	6	14	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
2018	4	26	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0
2019	3	34	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0
2020	3	31	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***FEMALES***																					
	45	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**	**61**	**62**	**63**	**64**	**65**	**66**
1965	1	3	0	30	43	300	4	34	73	103	97	28	7	79	7	11	13	10	132	138	113	84
1966	0	1	0	21	44	286	3	27	75	103	96	28	6	83	12	10	13	15	130	171	76	94
1967	0	2	0	19	30	300	4	31	87	77	73	22	5	77	10	23	12	11	132	209	56	73
1968	1	0	0	13	34	236	4	30	79	86	77	23	6	91	13	26	26	32	151	177	77	96
1969	1	2	0	15	19	234	5	35	89	81	75	22	5	80	6	8	14	14	132	206	70	92
1970	1	1	0	24	17	182	5	35	88	73	64	19	6	74	10	11	16	19	129	186	66	71
1971	0	2	0	21	22	198	5	35	95	69	62	18	6	92	2	17	11	13	130	185	48	101
1972	0	5	0	15	19	204	3	25	93	63	55	17	5	71	8	16	11	13	140	189	44	90
1973	1	3	0	11	20	220	5	36	92	60	52	16	4	73	1	24	6	7	145	180	42	86
1974	2	2	0	10	15	175	8	55	78	58	52	15	6	78	9	19	10	11	166	165	53	79
1975	0	2	0	15	3	211	9	64	65	70	63	18	8	98	8	17	12	14	152	170	43	79
1976	0	4	0	14	8	170	9	62	87	65	59	17	5	70	4	15	13	11	157	177	43	81
1977	0	2	0	16	11	184	13	85	80	65	59	17	9	87	6	22	10	10	184	174	46	108
1978	0	3	0	15	7	171	11	73	91	66	61	18	11	116	4	18	11	9	153	183	49	112
1979	1	3	0	14	13	188	13	87	90	57	52	15	9	103	4	18	11	12	175	151	45	95
1980	1	3	0	23	16	194	12	82	90	61	57	17	14	104	3	9	13	14	214	163	47	91
1981	1	2	0	20	21	158	10	67	93	59	54	16	15	126	4	20	10	10	199	159	51	94
1982	0	3	0	8	22	173	10	86	85	62	54	16	2	90	5	23	18	19	197	132	53	79
1983	0	2	0	13	11	174	10	81	90	60	53	16	5	111	2	20	15	17	201	149	57	85
1984	2	2	0	18	8	169	9	82	89	75	64	19	2	130	8	14	14	16	191	123	59	88
1985	1	3	0	20	12	163	12	93	105	80	70	20	2	112	5	13	10	10	210	137	38	70
1986	0	1	0	20	17	166	9	94	106	81	71	21	4	125	2	15	9	9	238	128	57	91
1987	1	1	1	16	9	163	7	108	108	80	67	19	4	146	5	24	16	15	214	118	64	83
1988	1	1	0	14	15	168	4	108	109	82	71	21	3	132	8	10	21	23	214	127	61	101
1989	2	1	0	19	16	188	6	116	103	91	79	23	3	161	6	16	15	15	262	103	76	84
1990	0	0	0	16	18	175	10	111	92	94	82	24	2	138	7	14	14	15	259	116	91	101
1991	2	3	1	24	10	176	6	110	112	74	89	37	4	141	8	23	12	7	276	127	89	102
1992	0	1	1	20	13	157	7	113	83	81	82	33	3	103	9	35	13	23	269	130	78	97
1993	1	2	0	13	14	160	8	114	78	85	86	32	3	131	10	23	9	10	291	132	93	89
1994	0	1	0	25	11	162	8	126	103	74	60	29	4	119	6	24	18	24	307	103	87	80
1995	0	1	0	24	11	156	11	115	86	76	78	36	4	109	7	23	14	18	309	118	78	75

Year	Cause, ***FEMALES***																					
	45	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**	**61**	**62**	**63**	**64**	**65**	**66**
1996	0	3	0	18	9	138	7	116	85	67	69	31	3	112	7	15	11	16	297	118	92	96
1997	0	1	1	31	8	145	4	108	56	84	79	22	3	138	7	26	11	13	269	95	81	69
1998	0	2	0	17	8	151	3	118	94	68	89	33	4	122	9	20	23	8	253	135	79	62
1999	0	1	1	22	12	135	6	122	75	58	69	24	3	125	5	23	12	11	301	130	74	65
2000	0	0	0	21	11	140	3	137	88	57	78	29	4	104	6	15	12	12	277	101	73	68
2001	0	1	0	19	11	128	5	113	73	69	72	31	1	134	6	21	11	20	313	130	76	57
2002	0	6	1	23	12	145	2	132	87	83	75	18	4	111	4	19	22	15	328	114	78	70
2003	0	1	1	25	8	128	7	132	88	90	80	30	4	136	10	20	12	18	324	123	81	65
2004	0	1	1	16	7	156	7	123	104	101	88	24	4	123	5	18	12	17	305	132	72	74
2005	0	0	1	26	12	176	8	141	106	84	104	25	4	123	9	24	17	16	314	138	70	69
2006	0	1	0	28	6	141	7	156	102	105	90	32	4	129	9	13	15	8	346	148	77	91
2007	0	1	0	28	13	152	3	180	112	111	107	39	5	136	10	15	18	25	333	123	78	72
2008	0	1	1	22	8	149	4	160	122	109	103	29	7	140	7	29	20	27	371	117	80	97
2009	0	1	0	22	2	151	6	193	111	124	107	28	7	146	5	13	14	20	408	122	70	77
2010	0	1	0	20	5	133	2	158	128	132	131	21	5	147	9	18	21	26	350	145	83	72
2011	0	0	1	23	4	163	3	170	156	125	118	29	5	141	8	22	21	23	380	107	84	79
2012	0	0	0	27	7	147	3	158	134	124	103	31	3	154	12	22	16	12	363	114	88	87
2013	0	0	0	31	9	151	6	169	142	147	101	19	7	157	7	16	14	17	367	121	82	77
2014	0	0	0	29	9	162	7	186	138	152	122	16	5	163	11	23	27	8	389	128	85	80
2015	0	1	0	30	11	136	11	155	148	139	133	23	3	153	3	23	37	11	406	115	89	86
2016	0	0	0	30	6	128	18	208	124	140	136	17	4	145	4	29	16	21	402	111	92	89
2017	0	2	0	23	10	135	14	171	124	126	117	12	2	143	9	20	17	26	398	128	93	76
2018	0	0	0	28	7	120	8	185	112	116	150	21	8	163	10	22	20	30	394	122	92	82
2019	0	0	0	34	8	132	11	194	120	143	134	12	8	146	9	20	22	19	370	119	107	94
2020	0	0	0	33	10	106	9	199	116	106	117	20	1	139	9	21	18	21	378	123	102	87

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, FEMALES																					
	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
1965	13	0	0	26	15	23	59	1	13	9	3	44	34	80	13	1	8	0	1	11	3	24
1966	15	0	0	27	16	18	56	0	13	9	4	50	26	99	3	1	7	0	2	14	1	23
1967	10	0	0	14	10	17	50	0	15	10	4	48	21	66	5	0	4	0	1	14	1	34
1968	16	0	0	26	17	23	52	1	16	10	4	47	12	54	8	0	4	0	1	11	0	36
1969	15	0	0	18	12	23	48	0	17	11	4	36	14	49	4	0	5	0	1	7	2	44
1970	12	0	0	20	14	22	45	0	19	13	5	32	19	55	4	0	3	0	0	6	2	42
1971	16	0	0	20	14	23	43	0	21	14	6	23	19	37	5	0	4	0	0	7	1	16
1972	15	0	0	17	12	20	42	0	13	8	4	40	20	60	7	1	4	0	0	8	0	14
1973	13	0	0	17	14	29	51	1	6	4	2	47	27	33	2	0	3	0	1	6	1	21
1974	11	0	0	21	13	18	38	0	19	12	5	37	36	58	9	0	4	0	1	8	0	17
1975	12	0	0	28	17	17	46	0	15	10	4	38	37	51	8	1	7	0	1	7	0	18
1976	13	0	0	25	15	15	39	0	22	14	6	47	31	50	5	1	5	0	0	7	0	20
1977	17	0	0	26	17	19	42	0	13	9	4	37	33	57	5	0	3	0	1	8	0	22
1978	18	0	0	16	11	19	39	0	16	11	4	42	27	69	5	0	4	0	1	9	0	19
1979	16	0	0	21	14	14	40	0	16	11	4	46	26	84	12	0	5	0	1	10	0	29
1980	15	0	0	18	12	17	40	0	18	12	5	45	26	92	6	1	5	0	0	4	0	33
1981	14	0	0	26	16	15	36	0	21	14	6	47	29	98	6	1	6	0	0	5	0	28
1982	13	0	0	17	11	19	42	0	30	20	8	38	29	95	6	0	3	0	2	8	0	25
1983	14	0	0	20	12	18	41	0	24	16	7	47	34	97	7	1	6	0	0	9	0	46
1984	16	0	0	21	14	26	49	1	18	12	5	50	19	83	3	0	4	0	1	5	0	44
1985	12	0	0	19	11	26	51	1	14	9	4	38	30	130	6	1	5	0	1	5	0	32
1986	15	0	0	21	12	32	54	1	13	9	3	40	28	72	5	0	3	0	1	7	0	23
1987	15	0	0	21	14	32	57	1	19	13	6	50	31	84	6	1	6	0	1	6	0	20
1988	17	0	0	20	13	30	55	1	24	16	6	33	26	81	5	0	3	0	1	5	0	8
1989	14	0	0	26	14	36	63	1	28	19	8	49	21	120	8	2	10	0	2	6	0	13
1990	17	0	0	31	18	34	61	1	27	18	7	47	23	151	7	1	4	0	1	7	1	16
1991	16	0	0	26	19	28	59	1	18	14	8	50	20	149	3	1	5	0	3	4	1	16
1992	14	0	0	23	18	30	62	1	25	12	9	47	17	153	4	0	1	0	2	4	0	10
1993	17	0	0	26	20	37	67	1	32	14	6	42	18	165	7	1	5	0	3	4	1	12
1994	26	0	0	28	23	24	61	1	28	12	6	41	19	170	7	0	6	0	4	6	0	22
1995	13	0	0	21	17	28	57	1	23	14	5	43	18	174	5	3	2	0	3	4	0	25

Year	Cause, FEMALES																					
	67	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**
1996	14	0	0	32	22	39	51	1	25	9	5	41	17	180	9	5	2	0	3	3	0	19
1997	18	0	0	16	22	39	62	1	31	15	7	33	24	135	5	3	3	0	5	3	0	16
1998	21	0	0	22	21	26	55	0	22	23	8	43	28	168	4	0	2	1	1	3	0	15
1999	19	0	0	14	17	28	64	5	25	13	5	54	17	205	6	3	4	0	1	2	0	11
2000	14	0	0	17	25	36	76	6	26	12	6	39	19	166	8	3	1	0	5	2	0	12
2001	19	0	0	19	27	24	84	7	25	13	6	39	17	176	5	0	2	1	3	2	0	13
2002	10	0	0	19	17	38	68	8	21	10	10	37	22	157	6	2	1	1	3	4	0	17
2003	20	0	0	26	23	38	79	7	32	12	9	47	23	159	3	0	2	0	5	4	0	11
2004	23	0	0	16	24	33	71	4	42	8	9	53	17	156	2	2	2	0	3	2	0	13
2005	24	0	0	18	19	36	68	1	32	10	9	40	21	181	8	1	4	0	2	3	0	28
2006	15	0	0	38	30	35	93	1	28	13	12	43	19	182	4	4	4	0	5	4	0	24
2007	17	0	0	27	30	33	91	0	36	12	13	41	27	206	4	1	3	0	4	2	0	35
2008	15	0	0	33	32	41	78	1	40	10	15	30	32	203	3	3	6	2	3	2	0	28
2009	30	0	0	24	25	39	76	4	39	8	12	44	24	189	3	2	9	0	3	3	0	25
2010	23	0	0	15	26	46	79	1	35	11	12	43	28	186	3	5	7	2	3	3	0	32
2011	26	0	0	22	21	51	83	7	27	15	11	32	26	186	2	2	7	0	7	2	0	14
2012	21	0	0	21	25	41	65	5	43	13	15	39	28	206	2	0	7	1	1	1	0	14
2013	25	0	0	21	36	50	76	1	38	8	10	49	24	185	1	0	3	0	3	2	0	8
2014	26	0	0	19	36	57	66	1	27	8	20	49	12	188	0	0	5	1	4	4	0	17
2015	15	0	0	31	36	60	84	0	40	10	12	44	27	186	2	0	1	0	4	3	1	22
2016	23	0	0	17	37	54	75	0	51	12	19	44	24	200	4	0	1	0	7	3	0	15
2017	18	0	0	32	38	62	88	0	42	6	20	42	27	202	0	0	6	0	4	5	1	12
2018	23	0	0	32	26	60	73	0	41	5	17	31	11	191	7	0	4	0	5	3	0	12
2019	22	0	0	25	28	52	68	0	46	9	16	34	20	185	0	0	2	0	8	2	0	18
2020	23	0	0	37	41	65	84	1	43	9	11	49	12	216	2	0	1	1	4	3	0	8

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***FEMALES***																					
	89	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**
1965	5	20	0	9	6	1	8	5	5	8	0	11	2	44	0	3	0	79	378	0	1005	12
1966	2	7	0	7	3	1	5	3	4	3	0	22	2	33	0	5	0	72	324	0	942	11
1967	4	14	0	7	3	1	5	3	3	7	0	25	2	29	0	5	0	72	269	0	849	8
1968	5	2	0	7	4	1	5	3	3	1	0	19	2	27	0	7	0	62	236	0	816	12
1969	4	17	0	8	4	1	4	3	3	2	0	18	1	27	0	4	0	56	185	0	804	6
1970	5	15	0	6	4	1	4	2	2	8	0	18	1	23	0	3	0	60	147	0	781	5
1971	2	8	0	5	3	0	3	2	2	5	0	15	1	18	0	1	0	60	132	0	813	3
1972	2	2	0	14	10	0	3	2	2	1	0	20	1	20	0	4	0	61	110	0	737	7
1973	2	5	0	17	10	1	4	2	2	1	0	17	1	24	0	6	0	63	88	0	873	10
1974	3	2	0	18	11	0	3	2	2	3	0	15	1	21	0	4	0	55	82	0	861	4
1975	2	2	0	11	9	1	3	2	3	1	0	20	1	24	0	5	0	53	90	0	936	8
1976	1	3	0	8	5	1	4	2	3	1	0	18	1	25	0	7	0	54	64	0	904	5
1977	2	1	0	14	8	1	4	2	4	1	0	21	1	30	0	5	0	48	59	0	918	3
1978	1	1	0	18	7	1	3	2	3	2	0	13	1	25	0	4	0	52	60	0	919	4
1979	2	1	0	16	7	1	4	3	4	1	0	13	1	29	0	2	0	55	70	0	1047	5
1980	3	2	0	16	7	1	4	2	4	2	0	18	1	29	0	5	0	48	59	0	978	4
1981	2	2	0	17	9	0	1	0	3	1	0	22	1	18	0	2	0	36	68	0	1026	5
1982	2	1	0	16	7	0	0	0	3	1	0	16	1	19	0	4	0	42	61	0	963	3
1983	4	1	0	16	9	0	1	0	2	2	0	15	1	14	0	2	0	34	78	0	982	2
1984	4	2	0	12	8	0	0	0	1	1	0	19	2	12	0	2	0	28	77	0	988	2
1985	3	1	0	15	12	0	2	1	2	2	0	13	2	16	0	2	0	23	67	0	1034	3
1986	2	1	0	11	8	0	2	1	3	2	0	12	1	21	0	2	0	22	90	0	895	11
1987	2	1	0	10	10	0	2	1	3	1	0	9	1	19	0	2	0	17	75	0	908	3
1988	1	1	0	10	6	0	1	1	2	0	0	18	1	14	0	2	0	22	74	0	902	2
1989	1	2	0	12	9	0	2	1	2	1	0	21	1	17	0	4	0	20	77	0	820	4
1990	2	6	0	10	7	1	3	2	3	2	0	15	1	24	0	1	0	16	74	0	903	5
1991	2	5	0	13	8	1	2	2	1	3	0	19	0	25	1	1	0	16	87	0	1071	6
1992	1	2	0	7	7	1	3	1	5	2	0	16	0	23	0	0	0	17	82	0	1058	10
1993	1	4	0	7	10	1	4	1	7	2	1	22	1	25	0	1	0	17	86	0	1101	5
1994	2	7	0	12	11	1	2	1	7	3	1	19	0	39	0	4	0	17	84	0	1176	4
1995	3	6	0	9	8	1	2	2	9	1	0	19	1	34	0	2	0	13	89	0	1091	1

1996	3	7	0	10	9	0	0	3	9	2	0	25	0	38	0	3	0	14	84	0	1023	2
1997	4	4	0	6	6	3	2	3	9	4	2	18	0	27	0	3	0	13	70	3	997	1
1998	2	3	0	5	9	1	0	1	6	3	1	19	0	28	0	1	0	9	97	0	895	0
1999	2	3	1	2	9	1	0	4	9	5	1	25	0	21	0	1	0	8	82	4	974	0
2000	1	2	0	5	8	2	2	2	13	1	1	22	0	22	0	3	0	13	76	1	912	2
2001	3	4	0	4	9	1	3	1	8	2	2	14	0	15	0	2	0	1	108	1	865	0
2002	0	1	0	5	9	2	2	4	12	2	2	17	0	28	0	0	0	5	106	2	905	1
2003	0	4	0	4	6	2	2	1	13	4	0	16	0	25	0	3	0	3	82	0	919	0
2004	1	1	0	6	6	6	1	2	18	1	0	13	0	14	0	1	0	4	74	1	760	1
2005	1	1	0	4	10	3	2	2	20	2	1	12	0	18	0	1	0	1	99	0	736	1
2006	1	3	0	2	7	2	2	2	22	6	1	10	0	18	0	2	0	1	80	0	657	0
2007	0	2	0	4	12	3	1	2	25	3	1	11	0	28	0	1	0	3	77	0	716	0
2008	2	1	0	3	7	2	1	2	30	2	0	12	0	29	0	1	0	1	61	0	740	0
2009	0	2	0	4	6	2	2	1	25	6	2	19	0	26	0	2	0	1	52	1	750	0
2010	1	1	0	7	10	3	3	2	36	3	1	17	0	26	0	2	0	0	61	1	754	1
2011	0	1	0	3	10	1	1	12	16	3	0	10	0	20	0	3	0	0	54	1	717	0
2012	1	3	0	3	6	0	1	11	18	5	1	9	0	11	0	1	0	0	51	11	828	0
2013	1	2	0	6	10	4	4	1	18	2	0	8	0	20	0	1	0	0	33	0	872	1
2014	0	1	0	4	10	3	4	2	26	3	0	11	0	18	0	2	0	0	31	0	1101	0
2015	0	1	1	5	9	2	0	6	28	5	1	13	0	18	0	1	0	0	32	0	1267	0
2016	1	1	0	5	10	4	5	2	24	6	1	8	0	16	0	0	0	0	37	0	1427	1
2017	0	0	0	1	6	3	1	3	26	2	1	11	0	23	2	1	1	0	30	0	1457	1
2018	1	1	0	3	7	4	4	3	22	4	1	5	0	20	0	0	0	0	22	0	1451	1
2019	1	1	0	3	3	3	3	0	14	5	0	9	0	24	0	0	0	0	27	0	1583	3
2020	0	1	0	1	7	4	2	6	13	9	1	9	0	14	0	0	0	0	22	0	1679	0

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***FEMALES***																					
	111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**
1965	20	0	218	4181	2396	13	7	1	0	36	727	1093	2767	962	126	6	22	5	22	24	6	134
1966	9	0	318	3852	2213	11	1	1	0	28	773	1110	2904	890	108	3	19	3	22	8	10	68
1967	8	0	338	3376	1942	9	2	1	0	25	768	1068	2878	783	102	6	19	6	20	66	3	84
1968	7	0	264	3334	1922	10	2	1	0	27	743	1026	2742	766	106	3	20	3	23	30	3	89
1969	7	0	209	3356	1953	10	2	1	0	28	645	914	2345	762	111	4	22	4	19	51	2	96
1970	6	0	216	3264	1869	10	5	1	0	28	606	853	2149	737	97	7	18	3	23	58	1	105
1971	2	0	218	3450	2181	12	7	1	0	30	649	891	2244	771	147	23	28	3	16	28	0	123
1972	1	0	254	3187	2059	10	4	1	0	26	657	875	2264	710	180	30	32	0	20	22	8	127
1973	0	0	224	3722	2411	11	2	1	0	27	645	903	2218	828	163	17	31	1	18	22	3	114
1974	2	0	200	3758	2446	12	3	1	0	30	635	886	2131	842	148	15	29	0	17	11	5	105
1975	0	0	187	4161	2745	13	0	1	0	32	620	904	2092	928	135	7	26	0	18	49	4	124
1976	0	0	224	4029	2666	13	0	1	0	34	652	946	2273	908	130	4	24	0	17	19	2	82
1977	0	0	233	4103	2676	13	1	1	0	34	670	965	2327	918	137	3	27	0	17	9	4	101
1978	0	0	205	4175	2729	13	1	1	0	33	630	916	2135	926	123	4	23	0	14	3	8	113
1979	0	0	206	4719	3104	15	1	1	0	39	642	963	2152	1050	130	4	26	0	14	13	6	107
1980	0	0	225	4428	2908	14	0	1	0	32	644	942	2157	984	130	7	25	0	12	1	11	87
1981	0	0	214	4622	3032	15	1	1	0	35	651	968	2198	1028	136	5	26	0	11	4	13	89
1982	0	0	186	4347	2860	14	0	1	0	33	615	903	2032	968	123	7	23	0	12	1	17	92
1983	0	0	217	4492	2929	14	0	1	0	33	659	944	2148	989	134	19	26	0	9	2	19	94
1984	1	0	186	4510	2935	15	2	1	0	39	699	992	2308	1000	139	12	26	0	13	2	29	70
1985	0	0	228	4632	3074	16	1	1	0	41	752	1068	2538	1035	144	3	27	1	9	8	23	71
1986	0	0	226	3966	2600	13	0	1	0	35	667	933	2231	890	123	12	23	0	10	1	17	49
1987	0	0	234	3956	2647	14	2	1	0	40	642	924	2207	896	123	12	22	1	9	0	19	53
1988	1	0	230	3996	2661	15	2	1	0	45	647	918	2176	899	143	16	29	0	10	3	17	62
1989	0	0	230	3607	2557	15	3	1	0	44	615	855	2106	770	99	14	20	7	9	1	7	50
1990	3	0	290	3816	3193	23	8	2	0	62	638	851	2204	677	90	10	19	1	8	2	11	45
1991	0	0	318	4522	3112	12	5	1	0	75	571	923	2393	747	130	17	15	2	10	1	11	37
1992	1	0	288	4536	3063	11	5	0	0	82	490	863	2365	708	108	10	18	2	11	2	9	16
1993	9	0	303	4796	3579	9	11	0	0	112	578	897	2452	758	134	12	8	1	8	0	11	15
1994	1	0	307	5061	4098	25	4	0	0	151	685	971	2547	819	140	10	6	2	9	0	16	26
1995	0	0	286	4606	5061	8	5	0	0	125	737	911	2387	818	116	7	10	3	5	1	16	24
1996	0	0	240	4335	4903	7	6	0	0	106	664	866	2189	834	126	13	12	4	3	4	16	10
1997	0	0	244	4324	5014	7	1	0	0	168	802	865	2185	786	121	7	13	1	7	0	14	10
1998	0	0	243	3672	5058	6	0	0	0	128	849	798	2033	732	125	11	10	1	7	0	10	10

Year	Cause, ***FEMALES***																					
	111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**
1999	0	3	211	3570	5553	6	3	1	0	67	847	845	2153	779	85	9	6	4	7	3	10	10
2000	0	0	220	3334	5761	5	8	0	0	56	920	831	2098	746	87	7	8	1	6	3	13	12
2001	0	1	242	2993	5400	11	3	0	0	51	978	790	1995	692	51	12	12	0	4	0	9	8
2002	0	0	253	2970	5974	13	1	0	0	46	984	830	2158	703	30	12	12	2	5	0	5	9
2003	0	0	225	2897	6260	8	5	0	0	32	996	900	2246	709	31	9	16	4	4	1	9	19
2004	0	0	277	2198	6367	13	2	0	0	35	980	905	2007	581	31	11	9	4	3	0	5	10
2005	0	0	275	1986	7252	16	5	0	0	48	941	1002	1976	472	48	18	29	4	4	1	6	15
2006	1	0	313	1585	6855	18	8	1	0	48	880	1034	1828	402	65	15	22	3	3	0	6	14
2007	0	0	351	1423	7030	16	6	1	0	92	832	1062	1867	384	51	11	21	3	4	1	7	15
2008	0	0	380	1222	6962	27	7	3	0	86	766	934	1898	359	33	13	29	1	4	0	3	9
2009	0	0	379	1015	7211	15	1	0	0	82	679	947	1758	312	24	11	28	2	2	7	4	13
2010	0	0	381	898	8029	16	5	1	0	136	564	878	1753	265	28	8	27	2	4	6	3	14
2011	0	0	404	667	7472	18	4	0	0	92	527	920	1747	220	27	16	26	2	3	3	2	11
2012	0	0	410	486	7641	18	8	0	0	65	518	944	1797	217	23	17	22	2	1	0	6	7
2013	1	0	547	473	7302	27	2	1	0	50	507	978	1544	364	30	12	22	2	1	5	2	10
2014	0	0	471	601	7501	37	7	2	0	95	631	1031	1290	397	46	12	20	2	2	1	6	18
2015	0	0	569	898	7036	35	9	3	0	142	466	891	1468	404	94	19	16	2	2	3	2	19
2016	0	0	572	891	6172	24	4	1	1	98	433	873	1502	332	119	15	29	3	5	7	3	16
2017	1	0	484	892	6403	33	2	5	2	105	467	862	1665	130	142	15	19	4	1	0	0	15
2018	3	0	518	1019	6305	36	6	4	0	125	644	865	1325	86	80	17	32	2	1	2	2	21
2019	6	0	541	972	6085	30	7	5	1	135	594	889	1260	88	80	13	28	2	2	5	3	21
2020	7	0	471	1234	6674	29	2	4	1	149	681	844	1099	86	33	13	28	8	0	3	28	22

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Year	Cause, ***FEMALES***																					
	133	**134**	**135**	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**	**153**	**154**
1965	279	1	190	36	690	0	0	0	0	12	187	33	1	9	10	18	2	15	9	6	309	15
1966	273	1	215	24	779	0	0	0	0	29	204	38	1	1	12	29	2	22	8	7	296	8
1967	261	1	363	32	1311	0	0	0	0	46	252	19	2	2	16	39	1	28	9	11	368	14
1968	273	1	307	15	1110	0	0	0	0	25	215	21	7	0	14	22	2	18	10	15	483	11
1969	255	1	357	18	1289	0	0	0	0	31	210	12	8	1	11	30	2	21	11	21	518	12
1970	304	0	402	20	1452	0	0	0	0	41	224	21	14	0	22	30	2	10	10	22	575	12
1971	281	0	417	17	1505	0	0	0	0	61	206	24	15	0	17	24	1	10	6	25	572	13
1972	274	0	415	10	1499	0	0	0	0	77	225	28	4	0	12	14	1	17	9	33	639	18
1973	229	0	378	5	1363	0	0	0	0	55	208	16	5	0	20	17	1	12	7	17	566	13
1974	233	0	378	6	1366	0	0	0	0	58	233	27	8	0	9	25	2	10	9	50	673	13
1975	248	0	342	2	1237	0	0	0	0	69	237	30	14	1	6	28	3	15	12	62	795	15
1976	227	0	274	0	990	0	0	0	0	61	201	18	15	0	15	25	3	16	18	60	675	10
1977	207	0	252	0	912	0	0	0	0	46	219	21	15	0	14	28	2	12	11	55	834	13
1978	141	0	211	9	765	0	0	0	0	40	176	26	9	1	11	21	2	15	11	49	958	17
1979	174	0	227	5	821	0	0	0	0	48	190	36	16	1	16	20	2	16	12	61	1168	17
1980	138	0	168	5	610	0	0	0	0	42	145	18	15	0	8	14	3	15	14	71	1156	19
1981	155	0	145	4	525	0	0	0	0	46	131	19	11	0	13	29	3	12	14	50	1074	15
1982	149	0	142	6	509	0	1	0	0	41	108	20	11	0	7	17	3	18	11	45	1117	16
1983	152	0	138	7	500	0	1	0	0	48	104	12	22	0	7	17	4	18	18	64	1541	23
1984	185	0	140	18	504	0	0	0	0	42	97	20	14	2	7	29	5	20	24	66	1507	38
1985	169	0	187	10	675	0	0	0	0	56	95	22	18	0	10	30	8	8	34	65	1425	53
1986	114	0	142	11	510	0	0	0	0	34	102	23	18	2	9	19	5	10	26	38	1101	37
1987	111	0	123	8	444	0	0	0	0	31	80	22	16	1	7	19	6	10	31	32	1064	33
1988	119	0	137	23	493	0	0	0	0	23	61	20	17	2	6	16	8	10	37	22	1041	24
1989	92	0	113	23	405	1	4	0	0	16	66	24	21	1	8	20	6	12	27	29	1025	26
1990	101	0	110	19	397	0	1	0	0	23	35	28	14	3	5	14	6	14	30	18	1067	31
1991	86	0	95	42	341	0	0	0	0	18	25	23	21	0	4	19	7	10	38	21	1176	39
1992	74	1	80	44	288	2	0	0	0	13	29	26	22	0	2	27	7	11	40	9	1001	20
1993	102	0	82	30	297	0	1	0	0	11	19	25	22	0	3	28	6	12	29	14	992	27
1994	150	0	100	38	357	0	0	0	0	15	28	21	19	0	7	22	6	13	35	15	1242	37
1995	158	0	102	38	364	0	0	0	0	17	25	14	19	0	3	18	6	12	27	20	1240	41
1996	146	0	129	44	378	0	0	0	0	13	18	18	15	0	9	19	6	10	34	16	1102	37
1997	143	0	172	55	415	0	0	0	0	12	43	16	15	1	3	17	3	12	35	18	1199	24
1998	125	0	124	49	451	0	0	0	0	13	19	15	15	2	3	15	6	11	28	13	1079	36

Year	Cause, ***FEMALES***																					
	133	**134**	**135**	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**	**153**	**154**
1999	135	0	139	49	461	0	0	0	0	7	18	16	13	1	5	13	2	12	36	11	1131	42
2000	172	0	166	50	439	1	0	0	0	8	4	17	13	0	4	15	5	14	24	21	1184	37
2001	121	0	98	51	465	1	0	0	0	10	4	15	17	0	3	18	0	12	27	26	1313	34
2002	141	0	150	52	562	0	0	0	0	10	3	21	9	0	4	22	1	23	37	25	1232	32
2003	156	0	153	37	651	1	1	0	0	13	1	17	11	1	1	17	6	14	47	33	1305	32
2004	138	0	146	45	494	0	0	0	1	18	2	18	14	2	3	18	3	9	43	38	1316	36
2005	176	0	145	40	540	0	0	0	1	13	1	26	21	1	4	15	3	7	42	41	1431	32
2006	165	0	103	34	558	1	1	0	2	13	2	16	26	1	1	12	5	8	52	50	1369	31
2007	149	0	120	25	545	0	0	0	2	16	3	15	17	0	3	11	3	15	70	33	1336	23
2008	135	0	88	38	451	0	1	0	2	13	6	10	17	0	1	19	4	9	57	39	1249	26
2009	150	0	92	24	441	1	0	0	2	11	1	15	24	2	6	17	6	17	74	37	1233	28
2010	157	0	97	21	465	0	0	0	1	10	1	10	24	1	2	12	2	8	74	60	1242	17
2011	99	0	51	18	418	0	0	0	4	13	5	17	24	0	2	19	4	17	75	32	1015	17
2012	112	0	25	19	308	1	0	0	0	4	3	20	24	1	5	22	5	18	80	32	1059	19
2013	123	0	21	13	323	0	0	0	0	3	2	22	27	2	2	13	7	11	94	32	955	18
2014	147	0	20	13	259	1	0	0	1	5	4	27	36	3	5	17	6	14	99	37	1029	20
2015	161	0	42	10	265	0	0	0	3	13	2	21	23	3	2	17	3	15	101	52	1029	25
2016	151	0	26	14	248	0	0	0	2	6	2	22	22	2	2	18	8	17	111	37	978	20
2017	146	0	20	13	295	0	1	0	2	4	4	27	28	0	1	19	10	28	100	32	784	14
2018	167	0	15	4	228	0	0	0	2	4	1	23	38	1	5	16	8	11	111	35	847	15
2019	181	0	4	3	206	0	0	0	0	3	4	13	26	3	3	17	5	16	108	42	808	14
2020	242	0	6	8	202	0	0	0	8	5	1	18	26	7	2	8	8	11	82	41	752	11

Note: Since 1998 official population statistics do not include the Transnistrian region

Year	Cause, ***FEMALES***																					
	155	**156**	**157**	**158**	**159**	**160**	**161**	**162**	**163**	**164**	**165**	**166**	**167**	**168**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**
1965	53	1	21	4	19	38	0	8	5	0	1	3	2	13	5	1	1	5	6	0	12	4
1966	62	0	13	3	30	48	1	4	4	0	10	0	0	19	1	1	1	7	8	0	12	4
1967	46	1	23	3	26	57	1	4	1	0	6	2	2	16	2	1	2	6	6	0	12	4
1968	49	0	19	3	23	47	0	2	4	0	7	3	0	15	1	1	0	5	5	0	14	0
1969	40	1	28	4	27	40	1	2	2	0	3	3	3	11	6	1	0	3	3	0	14	2
1970	37	0	32	6	19	30	0	2	2	0	4	2	1	11	5	1	0	6	7	0	9	5
1971	41	0	33	2	22	36	1	2	3	0	1	4	1	12	4	0	0	4	4	0	5	5
1972	30	1	47	4	26	40	1	3	1	0	4	1	0	10	3	1	1	5	5	0	17	1
1973	36	1	38	3	20	44	1	1	2	0	4	2	1	8	4	1	0	5	6	0	9	2
1974	35	0	62	3	26	49	1	2	1	0	9	1	1	10	5	0	0	4	4	0	9	3
1975	37	0	59	6	24	42	0	5	2	0	7	2	1	10	6	3	1	6	7	0	16	3
1976	38	0	43	12	28	58	1	5	1	0	8	1	2	12	5	3	1	3	3	0	17	6
1977	38	0	57	4	26	47	1	3	1	0	6	1	0	8	3	3	2	4	4	0	19	3
1978	54	1	75	5	24	51	0	4	0	0	7	3	2	9	2	1	1	3	4	0	9	2
1979	42	0	74	6	26	47	0	2	3	0	6	4	2	6	3	0	2	4	4	0	11	5
1980	33	1	86	8	25	44	0	2	1	0	6	2	1	8	2	1	0	3	3	0	15	3
1981	28	0	75	5	23	45	0	6	1	0	4	3	2	8	2	0	2	3	3	0	9	6
1982	27	1	72	4	27	53	1	6	5	0	5	1	1	3	2	0	1	3	4	0	14	5
1983	20	1	68	6	21	50	0	8	0	0	5	2	1	3	2	1	1	2	2	0	5	5
1984	29	1	85	7	23	56	0	3	3	0	4	1	2	2	2	1	0	4	4	0	11	3
1985	38	2	79	10	28	60	0	8	7	0	6	2	1	2	2	0	1	4	5	0	10	1
1986	44	2	68	9	27	58	0	2	8	0	6	0	0	5	1	0	2	1	1	0	7	0
1987	38	1	66	11	26	56	0	8	10	0	7	3	0	1	3	0	0	3	3	0	12	2
1988	30	1	70	11	27	69	0	5	3	0	7	0	0	4	1	1	0	3	3	0	6	4
1989	43	1	56	10	24	59	0	8	2	0	4	0	1	3	1	1	1	2	2	0	10	1
1990	42	1	68	10	24	63	0	10	4	0	5	1	1	1	2	0	2	3	3	0	8	0
1991	29	1	72	10	25	68	1	9	6	0	6	0	0	3	1	0	2	3	4	0	8	1
1992	29	1	69	12	26	63	0	9	9	0	7	1	0	2	2	2	1	3	1	0	13	0
1993	23	1	60	8	28	67	0	5	3	0	6	1	0	1	2	1	0	4	3	0	16	1
1994	27	1	64	8	28	67	0	7	10	0	8	0	0	1	2	1	1	0	1	0	22	2
1995	25	1	74	10	26	57	0	4	7	0	4	1	0	2	1	1	0	0	4	0	18	1
1996	30	2	76	3	19	63	0	6	9	0	2	0	0	2	1	1	0	2	2	0	5	0
1997	12	1	84	7	24	65	0	3	9	0	5	1	0	2	1	0	2	2	4	0	12	1
1998	15	1	71	5	19	72	0	5	8	0	3	0	1	2	0	0	0	2	2	0	9	3

Year	Cause, ***FEMALES***																					
	155	**156**	**157**	**158**	**159**	**160**	**161**	**162**	**163**	**164**	**165**	**166**	**167**	**168**	**169**	**170**	**171**	**172**	**173**	**174**	**175**	**176**
1999	13	3	60	8	32	60	0	4	8	0	2	0	0	0	0	0	0	3	2	0	9	2
2000	20	5	63	2	30	83	0	3	5	0	5	0	0	0	0	1	1	1	1	0	12	4
2001	11	1	54	2	20	66	0	8	9	0	6	1	0	1	0	0	1	5	1	0	16	0
2002	13	2	78	6	24	63	0	3	6	0	3	0	0	1	1	1	1	2	2	0	7	3
2003	19	2	81	2	31	95	0	10	9	0	6	1	1	1	0	1	0	1	1	0	5	3
2004	15	1	89	5	21	87	0	10	7	0	7	0	0	0	0	1	0	1	1	0	13	1
2005	18	2	85	7	23	97	0	8	11	0	9	0	0	0	0	0	1	2	1	0	8	3
2006	28	0	84	5	20	113	2	9	19	0	4	0	0	1	1	0	0	1	1	0	10	1
2007	30	0	77	8	33	98	0	10	14	0	3	0	0	1	0	0	0	0	2	1	9	1
2008	17	1	60	6	15	120	1	13	12	0	4	0	0	1	1	1	1	3	2	0	9	1
2009	14	1	66	3	19	88	0	14	14	0	1	1	0	0	0	0	0	2	2	0	13	1
2010	15	2	56	3	18	82	0	15	9	0	4	0	0	0	1	1	0	2	5	0	11	0
2011	17	2	50	6	12	89	0	20	13	0	5	0	0	0	0	0	0	1	1	0	14	0
2012	14	0	46	2	15	73	0	13	8	0	3	0	0	0	0	0	1	4	3	0	10	1
2013	14	1	55	5	19	74	0	10	9	0	7	0	0	0	0	1	0	1	2	0	11	3
2014	15	0	62	12	19	68	4	8	9	0	4	0	0	0	1	1	0	2	0	0	14	1
2015	20	1	43	9	18	78	3	8	11	0	4	0	0	1	1	0	0	1	5	0	15	0
2016	17	1	45	9	9	88	4	4	8	0	1	0	0	1	1	1	1	0	2	0	18	1
2017	15	1	59	12	7	91	4	8	16	0	4	1	0	0	0	1	0	0	3	0	19	1
2018	23	4	44	9	10	86	6	3	13	0	9	0	0	0	0	0	1	1	1	0	11	2
2019	16	0	40	16	4	74	4	3	6	0	3	0	0	0	0	1	0	0	3	0	16	2
2020	14	6	40	13	10	82	22	7	6	0	2	0	0	0	0	0	0	1	3	0	10	0

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Year	Cause, ***FEMALES***																		
	177	**178**	**179**	**180**	**181**	**182**	**183**	**184**	**185**	**186**	**187**	**188**	**189**	**190**	**192**	**195**	**196**	**197**	**198**
1965	27	6	0	17	1	8	19	21	7	21	8	2	1	13	2	16	20	51	22
1966	17	3	0	23	1	8	20	22	7	21	9	4	2	7	0	17	20	68	37
1967	8	1	0	30	2	8	17	20	12	17	11	3	1	5	0	19	20	83	39
1968	5	2	0	39	2	8	16	17	10	19	10	6	1	5	1	19	21	69	39
1969	8	1	0	35	2	4	7	25	6	16	7	8	1	5	0	18	20	69	32
1970	7	6	0	26	2	5	11	20	6	15	7	6	1	6	0	17	22	69	40
1971	3	7	1	22	3	7	17	21	6	17	7	6	2	12	0	11	56	54	31
1972	6	0	0	39	8	7	17	24	7	16	7	1	1	10	0	9	72	39	22
1973	4	1	0	25	4	10	27	17	5	16	6	3	1	12	1	10	52	51	30
1974	12	10	1	34	0	10	21	24	6	17	7	3	1	10	0	13	73	50	41
1975	12	9	1	32	0	11	24	32	8	22	8	2	2	17	0	12	83	48	41
1976	20	8	1	36	1	11	25	26	4	20	5	2	2	16	0	15	72	62	35
1977	15	10	1	39	1	11	25	20	10	21	9	1	2	16	0	14	83	51	27
1978	21	10	1	45	1	10	23	25	12	18	10	5	2	13	0	17	80	65	31
1979	20	13	2	37	2	9	20	17	18	17	14	3	1	9	0	15	85	59	25
1980	18	9	1	38	0	10	25	14	15	14	11	3	1	8	0	22	74	75	40
1981	14	8	1	35	1	8	22	20	16	15	12	3	1	6	0	17	66	61	44
1982	16	8	1	32	0	6	21	21	16	13	12	2	1	4	0	18	74	66	46
1983	17	5	1	30	1	5	22	29	11	14	16	2	1	4	0	17	70	62	66
1984	21	12	2	30	1	10	18	29	16	13	15	2	1	4	0	15	75	54	81
1985	18	11	1	26	0	7	18	32	12	17	17	5	1	11	0	15	49	56	67
1986	19	12	0	28	0	7	18	23	11	15	16	4	1	9	0	13	53	53	48
1987	23	12	0	33	0	7	18	27	17	19	15	3	1	6	0	14	50	50	42
1988	24	10	1	28	0	7	24	19	12	15	17	2	1	10	0	16	43	66	50
1989	22	10	2	25	1	4	15	20	9	20	14	3	2	13	0	15	73	51	39
1990	19	10	1	24	1	4	21	11	9	17	18	2	1	11	0	18	70	61	34
1991	15	8	3	23	4	7	21	12	14	22	10	1	2	18	0	11	77	43	48
1992	15	7	1	21	3	7	21	11	9	19	9	2	2	13	1	14	47	52	30
1993	24	9	2	26	6	8	23	10	7	20	14	2	1	11	1	11	28	39	30
1994	17	7	4	26	4	8	15	13	9	21	12	1	2	14	2	14	30	46	36
1995	24	10	1	32	4	9	16	17	14	28	16	0	2	16	3	14	23	51	48

Year	Cause, ***FEMALES***																		
	177	**178**	**179**	**180**	**181**	**182**	**183**	**184**	**185**	**186**	**187**	**188**	**189**	**190**	**192**	**195**	**196**	**197**	**198**
1996	13	11	2	25	3	6	20	14	10	23	12	1	1	21	2	12	22	48	41
1997	11	7	5	37	0	7	13	13	6	24	6	1	3	11	0	13	39	52	36
1998	23	7	2	33	1	7	22	19	7	20	6	1	0	17	1	10	36	34	30
1999	13	4	3	28	2	8	22	15	5	22	8	2	2	6	4	15	26	27	23
2000	22	6	6	25	1	6	23	12	6	27	10	1	4	9	3	6	27	33	33
2001	19	10	2	32	1	6	20	18	9	23	8	1	1	13	2	5	33	43	27
2002	25	3	4	32	1	9	24	9	7	17	5	0	5	8	1	3	12	55	26
2003	23	7	5	20	3	7	18	9	4	14	8	1	3	9	5	5	16	65	41
2004	18	11	4	23	5	9	20	7	8	17	3	0	2	7	4	5	18	49	33
2005	20	7	3	32	1	10	20	3	5	22	8	2	7	5	2	9	9	63	36
2006	14	6	2	20	5	7	21	4	9	22	5	1	2	4	3	9	14	54	40
2007	17	5	4	23	4	4	17	5	6	22	8	0	4	7	3	6	12	78	34
2008	16	7	3	21	3	6	17	3	8	18	6	0	8	15	4	6	6	56	25
2009	6	6	4	19	5	5	13	1	7	15	9	1	5	10	4	6	13	59	34
2010	14	8	3	15	1	3	11	2	6	10	9	0	2	10	3	9	9	45	36
2011	13	5	3	13	1	3	11	2	3	6	7	0	3	11	2	10	15	49	32
2012	12	5	4	20	4	7	12	1	3	9	11	1	3	11	2	22	16	40	29
2013	11	3	2	11	3	2	13	2	4	6	10	2	5	12	3	12	12	22	26
2014	12	5	1	14	3	2	11	1	2	7	4	1	10	8	3	13	15	24	29
2015	14	2	1	13	0	2	12	1	4	5	5	0	14	9	2	7	8	31	27
2016	16	4	2	14	3	3	11	2	3	6	5	0	9	8	1	12	20	26	7
2017	16	4	2	11	4	2	16	1	2	7	4	0	8	9	3	14	13	15	17
2018	14	2	3	10	3	1	14	1	4	5	6	1	10	7	1	29	11	9	10
2019	12	2	1	16	1	2	22	0	2	3	10	3	8	7	3	23	8	10	9
2020	8	3	0	16	3	2	17	0	1	4	8	0	14	15	3	22	25	2	10

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Year	Cause, ***FEMALES***													
	199	**200**	**201**	**202**	**203**	**204**	**205**	**206**	**207**	**208**	**209**	**210**	**211**	**212**
1965	48	1	43	62	38	43	1	3	14	36	77	23	4	0
1966	59	1	58	45	33	22	1	1	17	69	79	34	4	0
1967	87	1	60	27	43	14	0	1	15	87	67	35	3	0
1968	86	1	27	83	42	21	1	1	12	71	74	26	3	0
1969	57	1	34	73	32	29	1	0	22	64	87	25	5	0
1970	93	1	45	66	33	24	1	1	16	54	106	31	5	0
1971	84	1	45	47	44	19	1	0	16	52	87	29	7	0
1972	63	1	61	81	39	30	1	0	21	62	82	49	12	0
1973	36	1	60	61	38	27	1	4	13	78	102	42	15	0
1974	70	1	56	52	41	36	1	1	15	57	120	48	16	0
1975	49	1	74	37	42	51	2	2	20	65	139	74	15	0
1976	84	1	116	51	28	44	2	1	14	73	143	51	13	0
1977	79	1	77	52	31	29	1	0	16	70	143	59	11	0
1978	55	1	104	57	35	44	2	0	17	72	140	73	31	0
1979	67	1	110	48	39	45	2	0	15	90	144	78	16	0
1980	78	1	83	59	36	41	1	0	11	83	138	77	6	0
1981	64	1	85	63	46	40	1	0	10	83	133	69	9	0
1982	59	0	82	46	49	29	1	1	18	97	132	69	2	0
1983	41	2	94	60	43	38	1	1	8	93	147	90	5	0
1984	83	1	105	35	48	40	1	1	13	79	143	58	11	0
1985	116	1	94	34	41	29	1	0	11	114	120	62	26	0
1986	79	1	74	34	33	30	1	0	11	72	128	54	29	0
1987	86	2	86	24	27	31	1	1	6	70	127	40	26	0
1988	71	5	97	17	27	30	1	0	13	79	120	54	39	0
1989	50	2	83	37	29	25	1	0	8	68	111	51	50	0
1990	35	3	69	43	25	23	1	0	8	48	92	55	58	0
1991	81	0	64	45	42	29	1	1	8	67	107	58	76	0
1992	51	1	44	45	33	22	1	2	7	64	87	96	30	0
1993	52	0	48	46	29	27	1	1	10	81	85	75	40	0
1994	42	4	50	40	43	36	1	0	15	85	97	70	51	0
1995	49	2	42	56	28	37	1	1	16	99	107	78	45	0
1996	47	3	46	48	40	29	2	0	7	106	78	89	38	0
1997	67	7	33	54	27	30	2	1	12	85	77	84	44	0
1998	56	4	38	54	42	24	3	1	4	91	80	63	53	0

Year	Cause, ***FEMALES***													
	199	**200**	**201**	**202**	**203**	**204**	**205**	**206**	**207**	**208**	**209**	**210**	**211**	**212**
1999	56	3	33	27	27	28	2	1	8	80	69	64	62	0
2000	47	6	33	29	31	29	1	1	10	69	54	81	49	0
2001	60	0	23	28	27	31	3	1	9	108	67	80	46	0
2002	78	7	27	31	27	36	1	0	5	87	73	85	49	0
2003	71	1	36	23	30	39	0	0	5	116	58	76	60	0
2004	79	3	36	34	31	31	2	0	5	99	65	62	59	0
2005	61	3	41	49	41	30	2	1	5	104	64	76	55	0
2006	61	2	40	63	28	41	4	0	3	90	64	54	65	0
2007	45	3	30	39	28	42	2	0	4	96	54	63	75	0
2008	51	2	25	37	25	39	3	0	4	85	71	51	63	0
2009	56	7	13	44	23	30	3	0	3	101	64	55	55	0
2010	39	1	24	48	28	41	1	0	5	127	67	56	61	0
2011	33	1	28	38	15	24	1	0	1	81	49	40	48	0
2012	35	2	34	55	20	26	1	0	4	99	70	49	42	0
2013	32	1	43	46	28	35	1	0	3	72	62	44	29	0
2014	59	0	28	28	32	30	0	0	4	98	60	38	29	0
2015	57	1	26	17	18	33	0	0	3	86	66	44	20	0
2016	62	1	24	20	25	43	0	0	1	89	60	31	19	0
2017	53	0	16	22	15	24	1	0	2	65	50	27	18	0
2018	54	0	12	22	13	26	0	0	1	65	47	25	24	0
2019	44	0	11	17	18	19	1	0	2	71	50	24	25	0
2020	35	0	10	21	19	13	0	0	0	48	57	24	18	1044

Note: Since 1998 official population statistics do not include the Transnistrian region

ANNEXE 5. The impact of mortality trends by age, sex and cause on the changes in life expectancy at birth since 1965 and over six different periods

1965-2020, *MALES*								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.825	-0.003	0.048	1.420	0.013	0.052	0.630	2.985
1-4	0.101	0.006	-0.001	0.219	0.008	0.131	0.060	0.525
5-9	0.018	0.023	0.004	0.012	0.004	0.060	0.018	0.139
10-14	0.020	0.014	0.021	0.000	0.007	0.096	0.000	0.159
15-19	0.012	0.016	0.012	-0.002	0.005	0.051	0.021	0.114
20-24	0.016	0.012	0.019	-0.002	0.013	-0.019	0.017	0.056
25-29	0.033	0.026	-0.015	-0.015	-0.015	0.082	0.007	0.103
30-34	0.021	0.014	-0.044	-0.020	-0.047	0.079	0.005	0.008
35-39	0.034	-0.020	-0.061	-0.015	-0.076	-0.001	0.010	-0.130
40-44	-0.012	-0.064	-0.151	-0.042	-0.126	-0.076	-0.008	-0.480
45-49	-0.004	-0.066	-0.207	-0.024	-0.096	-0.041	-0.024	-0.462
50-54	-0.013	-0.089	-0.256	-0.024	-0.141	-0.065	-0.003	-0.592
55-59	-0.057	-0.126	-0.259	0.009	-0.135	-0.072	-0.041	-0.680
60-64	-0.077	-0.132	-0.220	0.042	-0.121	-0.049	-0.029	-0.585
65-69	-0.099	-0.115	-0.243	0.047	-0.057	-0.021	-0.019	-0.507
70-74	-0.112	-0.104	-0.100	0.047	-0.026	-0.004	-0.005	-0.304
75-79	-0.071	-0.045	-0.063	0.046	-0.013	-0.003	-0.012	-0.161
80-84	-0.033	-0.021	-0.067	0.034	-0.008	0.000	0.003	-0.092
85+	-0.011	-0.003	-0.026	0.020	0.001	0.001	0.001	-0.017
All ages	0.591	-0.677	-1.609	1.751	-0.810	0.202	0.631	0.078

Note: Since 1998 official population statistics do not include the Transnistrian region

1965-1984, *MALES*								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.465	0.001	0.027	0.688	0.019	-0.046	-0.330	0.824
1-4	0.052	-0.008	0.005	0.061	0.005	-0.073	-0.008	0.032
5-9	0.011	0.000	0.005	0.006	0.004	-0.081	0.001	-0.055
10-14	0.009	-0.003	0.017	0.002	0.003	0.002	0.001	0.031
15-19	0.002	0.003	0.013	-0.006	-0.001	-0.027	-0.005	-0.022
20-24	0.012	0.005	0.009	-0.008	-0.003	-0.229	-0.003	-0.217
25-29	0.027	0.011	0.012	-0.016	-0.023	-0.103	-0.027	-0.120
30-34	0.036	-0.011	-0.013	-0.024	-0.068	-0.142	-0.010	-0.233
35-39	0.067	-0.027	-0.019	-0.035	-0.076	-0.177	-0.022	-0.289
40-44	0.061	-0.062	-0.142	-0.053	-0.159	-0.176	-0.023	-0.554
45-49	0.046	-0.051	-0.111	-0.056	-0.154	-0.166	-0.060	-0.551
50-54	0.053	-0.086	-0.234	-0.087	-0.199	-0.169	-0.004	-0.726
55-59	0.058	-0.084	-0.228	-0.052	-0.165	-0.121	-0.034	-0.626
60-64	0.061	-0.020	-0.308	-0.024	-0.185	-0.081	-0.023	-0.579
65-69	0.035	-0.019	-0.269	-0.029	-0.093	-0.032	0.005	-0.401
70-74	0.020	-0.007	-0.197	-0.006	-0.067	-0.007	0.004	-0.260
75-79	0.005	0.021	-0.086	0.021	-0.014	-0.005	0.000	-0.058
80-84	0.004	0.002	-0.101	0.006	-0.009	-0.003	0.001	-0.100
85+	-0.001	0.009	0.018	0.011	0.000	-0.003	0.001	0.036
All ages	1.022	-0.327	-1.602	0.399	-1.185	-1.638	-0.536	-3.867

1984-1987, ***MALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.179	-0.003	0.004	0.209	0.007	0.048	0.003	0.447
1-4	0.016	0.001	0.001	0.100	-0.001	0.056	-0.002	0.172
5-9	0.004	-0.001	0.001	0.011	0.000	0.027	0.002	0.045
10-14	0.000	-0.003	0.006	0.006	0.002	0.029	0.004	0.043
15-19	0.002	-0.007	0.000	0.003	0.004	0.066	0.014	0.082
20-24	-0.004	0.000	0.006	0.006	0.004	0.125	0.007	0.145
25-29	0.008	-0.001	0.007	0.007	0.007	0.027	0.026	0.081
30-34	0.018	0.002	0.008	0.023	0.039	0.115	0.017	0.223
35-39	0.003	-0.007	0.010	0.019	0.040	0.137	0.022	0.224
40-44	-0.003	-0.023	0.083	0.055	0.105	0.127	0.019	0.362
45-49	0.000	-0.020	0.046	0.034	0.085	0.111	0.042	0.297
50-54	0.011	-0.034	0.091	0.039	0.085	0.122	0.008	0.321
55-59	0.010	-0.033	0.055	0.030	0.064	0.056	0.011	0.193
60-64	-0.001	-0.042	0.137	0.032	0.059	0.033	0.006	0.223
65-69	0.000	-0.015	0.127	0.036	0.007	-0.002	-0.003	0.150
70-74	0.001	0.006	0.139	0.009	0.025	0.001	-0.007	0.175
75-79	0.001	-0.008	0.098	-0.011	0.000	-0.004	0.000	0.075
80-84	0.000	0.001	0.037	0.006	0.000	0.006	0.000	0.050
85+	0.001	-0.002	0.019	0.006	0.002	0.002	0.002	0.028
All ages	0.244	-0.190	0.875	0.620	0.534	1.080	0.174	3.337

1987-1991, ***MALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.078	0.000	0.004	0.181	0.006	0.006	0.339	0.616
1-4	0.028	-0.006	-0.003	0.033	0.007	0.035	0.033	0.127
5-9	-0.002	-0.010	-0.003	-0.003	-0.003	-0.019	0.004	-0.037
10-14	0.006	0.003	-0.004	-0.006	0.000	-0.012	-0.008	-0.021
15-19	0.005	0.005	-0.006	0.003	-0.007	-0.038	-0.006	-0.044
20-24	0.002	-0.001	0.003	-0.008	-0.007	-0.088	-0.006	-0.103
25-29	0.003	0.001	-0.001	0.006	0.004	-0.111	-0.019	-0.117
30-34	-0.023	-0.001	-0.006	-0.008	-0.003	-0.088	-0.025	-0.154
35-39	-0.025	0.001	-0.006	-0.003	-0.020	-0.114	-0.027	-0.194
40-44	-0.005	0.016	-0.028	-0.006	-0.017	-0.087	-0.006	-0.134
45-49	-0.002	-0.033	-0.056	0.005	-0.060	-0.116	0.000	-0.262
50-54	-0.011	-0.006	-0.072	0.004	-0.018	-0.091	-0.019	-0.212
55-59	-0.006	0.010	-0.042	-0.001	-0.039	-0.036	-0.007	-0.122
60-64	0.000	-0.011	-0.040	-0.021	-0.015	-0.020	-0.008	-0.114
65-69	0.004	-0.021	-0.075	0.009	0.004	0.012	-0.012	-0.079
70-74	0.000	-0.040	-0.058	0.008	-0.015	-0.008	0.002	-0.111
75-79	0.000	-0.014	-0.140	0.024	0.002	-0.002	-0.003	-0.134
80-84	0.000	0.001	-0.023	0.018	0.006	-0.006	0.002	-0.003
85+	-0.001	-0.003	-0.056	0.008	0.000	-0.003	-0.003	-0.058
All ages	0.051	-0.112	-0.614	0.244	-0.172	-0.787	0.231	-1.159

1991-1995, ***MALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	-0.017	-0.002	-0.005	-0.013	-0.003	-0.011	-0.103	-0.153
1-4	0.002	0.005	0.003	-0.015	0.000	0.001	-0.018	-0.023
5-9	0.003	0.014	-0.001	-0.003	-0.001	0.033	-0.016	0.028
10-14	0.002	-0.003	-0.008	-0.004	0.001	0.024	0.000	0.012
15-19	-0.008	0.007	-0.009	-0.002	0.004	-0.044	-0.009	-0.061
20-24	-0.007	-0.009	-0.010	0.002	-0.002	0.028	-0.007	-0.005
25-29	-0.020	-0.011	-0.014	-0.030	-0.012	0.035	-0.002	-0.054
30-34	-0.014	-0.003	-0.022	-0.022	-0.039	-0.021	0.002	-0.118
35-39	-0.008	0.002	-0.021	-0.037	-0.028	-0.013	-0.011	-0.117
40-44	-0.028	-0.004	-0.024	-0.059	-0.089	-0.046	-0.035	-0.283
45-49	-0.020	0.022	-0.065	-0.048	-0.034	-0.022	-0.039	-0.206
50-54	-0.008	-0.016	-0.098	-0.055	-0.066	-0.045	-0.031	-0.319
55-59	-0.012	-0.020	-0.123	-0.025	-0.016	-0.039	-0.017	-0.252
60-64	-0.003	-0.011	-0.159	-0.008	-0.017	-0.003	-0.008	-0.210
65-69	-0.004	0.001	-0.123	-0.030	-0.004	-0.012	-0.003	-0.174
70-74	-0.002	0.017	-0.111	-0.024	0.009	0.008	0.003	-0.100
75-79	0.001	0.006	-0.008	-0.007	0.002	0.005	0.003	0.001
80-84	0.000	0.000	-0.076	-0.005	-0.001	0.003	0.000	-0.080
85+	0.001	0.003	-0.029	0.002	0.001	0.002	0.002	-0.019
All ages	-0.143	-0.003	-0.901	-0.383	-0.295	-0.117	-0.292	-2.134

1995-1998, ***MALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.021	0.000	0.008	0.130	0.003	-0.004	0.145	0.303
1-4	-0.007	-0.009	-0.002	-0.001	0.000	0.023	0.006	0.009
5-9	0.005	-0.017	0.004	0.007	-0.003	0.022	-0.001	0.017
10-14	-0.002	-0.007	0.010	0.005	-0.003	-0.009	0.008	0.003
15-19	0.003	-0.010	0.017	-0.010	-0.006	0.025	0.005	0.024
20-24	-0.014	0.011	-0.005	-0.001	-0.001	0.027	0.016	0.034
25-29	-0.019	-0.002	-0.001	0.020	0.013	0.028	-0.003	0.035
30-34	-0.002	0.006	0.014	0.025	0.015	0.015	0.011	0.082
35-39	-0.008	0.011	0.025	0.034	-0.008	0.046	0.014	0.114
40-44	-0.005	0.012	0.020	0.026	0.058	0.046	0.029	0.186
45-49	-0.007	-0.019	0.049	0.012	0.042	0.066	0.026	0.169
50-54	-0.007	0.007	0.091	0.052	0.066	0.018	0.023	0.250
55-59	-0.002	0.017	0.077	0.028	0.036	0.028	0.004	0.189
60-64	-0.006	0.011	0.096	0.019	0.025	0.014	0.005	0.164
65-69	0.000	-0.005	0.065	0.022	0.023	0.007	0.011	0.123
70-74	0.000	0.002	0.054	0.018	-0.004	-0.005	0.005	0.071
75-79	-0.003	0.008	0.028	-0.004	-0.008	-0.004	0.000	0.016
80-84	0.000	0.004	0.029	-0.002	-0.002	-0.001	-0.001	0.028
85+	0.000	-0.002	0.022	-0.006	-0.002	-0.001	0.000	0.011
All ages	-0.052	0.016	0.602	0.375	0.245	0.340	0.302	1.829

Note: Since 1998 official population statistics do not include the Transnistrian region

1998-2020, ***MALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.071	0.001	0.009	0.181	-0.021	0.060	0.576	0.876
1-4	0.007	0.024	-0.005	0.034	-0.004	0.087	0.050	0.195
5-9	-0.003	0.037	-0.003	-0.006	0.007	0.076	0.028	0.136
10-14	0.005	0.027	-0.002	-0.004	0.005	0.059	-0.005	0.085
15-19	0.008	0.018	-0.003	0.010	0.010	0.068	0.021	0.132
20-24	0.027	0.006	0.016	0.005	0.020	0.115	0.009	0.198
25-29	0.035	0.028	-0.018	0.000	-0.003	0.200	0.032	0.273
30-34	0.007	0.020	-0.024	-0.014	0.011	0.194	0.009	0.203
35-39	0.004	0.001	-0.047	0.007	0.020	0.112	0.032	0.130
40-44	-0.027	0.000	-0.057	-0.002	-0.021	0.057	0.007	-0.044
45-49	-0.017	0.036	-0.061	0.030	0.024	0.076	0.007	0.095
50-54	-0.046	0.048	-0.028	0.020	-0.008	0.095	0.019	0.100
55-59	-0.093	-0.010	0.011	0.025	-0.016	0.038	0.004	-0.040
60-64	-0.111	-0.047	0.054	0.036	0.010	0.005	0.000	-0.054
65-69	-0.114	-0.045	0.035	0.031	0.003	0.006	-0.016	-0.100
70-74	-0.108	-0.073	0.066	0.033	0.020	0.006	-0.011	-0.066
75-79	-0.060	-0.050	0.030	0.022	0.006	0.005	-0.009	-0.055
80-84	-0.029	-0.025	0.061	0.011	-0.001	0.000	0.001	0.019
85+	-0.009	-0.005	-0.003	0.003	0.000	0.003	-0.001	-0.011
All ages	-0.453	-0.006	0.032	0.421	0.063	1.262	0.753	2.072

Note: Since 1998 official population statistics do not include the Transnistrian region

1965-2020, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.803	0.006	0.046	1.410	0.017	0.078	0.471	2.832
1-4	0.087	0.039	-0.007	0.228	0.004	0.179	0.043	0.573
5-9	0.029	0.007	0.007	0.016	0.007	0.060	0.014	0.140
10-14	0.021	0.004	0.017	0.006	0.007	0.069	0.001	0.125
15-19	0.004	0.010	0.026	0.004	0.002	0.019	-0.005	0.059
20-24	0.034	0.004	0.003	0.007	0.009	0.025	0.029	0.111
25-29	0.031	0.011	0.001	-0.012	-0.018	0.037	0.023	0.075
30-34	0.008	0.015	0.025	-0.001	-0.033	-0.008	0.033	0.040
35-39	0.004	-0.007	0.039	-0.020	-0.035	0.030	0.024	0.035
40-44	-0.007	0.003	0.014	0.001	-0.095	0.005	0.010	-0.070
45-49	-0.039	-0.002	-0.030	-0.005	-0.087	0.018	0.005	-0.139
50-54	-0.063	-0.011	0.001	0.012	-0.122	0.036	0.016	-0.130
55-59	-0.108	-0.016	0.013	0.012	-0.088	0.017	-0.014	-0.184
60-64	-0.135	-0.026	0.145	0.022	-0.089	0.004	-0.022	-0.099
65-69	-0.143	-0.024	0.213	0.053	-0.043	0.000	-0.025	0.031
70-74	-0.094	-0.051	0.294	0.086	-0.043	0.001	-0.015	0.178
75-79	-0.057	-0.054	0.185	0.090	-0.015	0.000	-0.010	0.139
80-84	-0.035	-0.019	0.101	0.052	-0.003	0.004	0.001	0.101
85+	-0.009	-0.015	-0.089	0.026	-0.005	0.005	-0.002	-0.089
All ages	0.331	-0.126	1.004	1.988	-0.630	0.582	0.578	3.726

Note: Since 1998 official population statistics do not include the Transnistrian region

1965-1984, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.454	0.000	0.025	0.696	0.011	-0.009	-0.042	1.135
1-4	0.024	0.019	0.007	0.104	0.007	-0.028	0.019	0.153
5-9	0.025	-0.008	0.006	0.001	0.005	0.002	-0.017	0.013
10-14	0.013	-0.007	0.017	0.001	0.005	0.012	0.000	0.040
15-19	0.002	0.002	0.027	0.000	-0.003	0.006	-0.018	0.016
20-24	0.027	0.001	0.000	0.005	-0.002	-0.013	0.013	0.030
25-29	0.045	0.001	0.020	-0.009	-0.014	-0.007	0.006	0.041
30-34	0.044	0.018	0.013	0.000	-0.048	-0.045	-0.003	-0.021
35-39	0.017	-0.015	0.019	-0.022	-0.099	-0.064	-0.002	-0.167
40-44	0.024	-0.032	-0.044	-0.033	-0.193	-0.077	-0.008	-0.363
45-49	0.020	0.019	-0.099	-0.015	-0.253	-0.072	-0.016	-0.415
50-54	0.019	0.006	-0.182	-0.002	-0.285	-0.057	-0.002	-0.503
55-59	0.008	0.022	-0.223	-0.008	-0.293	-0.037	-0.026	-0.557
60-64	0.014	0.002	-0.266	-0.005	-0.241	-0.041	-0.016	-0.554
65-69	0.011	0.042	-0.100	0.002	-0.137	-0.016	-0.005	-0.202
70-74	0.009	0.015	-0.107	0.035	-0.080	-0.017	0.014	-0.131
75-79	0.006	0.002	0.049	0.050	-0.028	-0.010	0.008	0.077
80-84	0.002	0.006	-0.026	0.029	0.001	-0.006	0.008	0.014
85+	0.003	0.002	0.150	0.017	-0.002	-0.001	0.006	0.174
All ages	0.766	0.093	-0.714	0.848	-1.649	-0.481	-0.081	-1.218

1984-1987, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.163	0.005	0.007	0.281	0.005	-0.009	-0.066	0.386
1-4	0.020	-0.003	-0.002	0.036	0.000	0.013	-0.023	0.041
5-9	0.003	0.013	-0.002	0.007	0.002	0.001	0.001	0.025
10-14	0.004	-0.001	-0.003	-0.001	0.000	0.014	0.003	0.016
15-19	0.005	-0.012	0.000	0.003	0.000	-0.002	0.011	0.004
20-24	0.003	-0.001	0.006	-0.004	0.001	0.031	-0.009	0.028
25-29	0.005	-0.020	0.001	0.008	0.006	0.004	0.004	0.007
30-34	0.000	-0.021	0.008	0.002	0.030	0.032	0.024	0.076
35-39	0.007	-0.001	0.011	0.009	0.080	0.045	0.006	0.156
40-44	-0.004	0.017	0.020	0.016	0.144	0.053	-0.006	0.241
45-49	-0.002	-0.026	0.059	0.016	0.124	0.023	0.008	0.200
50-54	0.003	-0.010	0.082	0.007	0.117	0.049	0.006	0.254
55-59	0.002	-0.029	0.132	0.009	0.093	-0.005	0.002	0.205
60-64	-0.001	-0.009	0.178	0.009	0.065	0.017	0.005	0.263
65-69	0.001	-0.035	0.076	0.020	0.035	-0.008	0.000	0.089
70-74	0.001	-0.014	0.120	0.007	0.022	0.010	-0.008	0.139
75-79	0.000	-0.012	0.084	0.001	0.014	-0.001	-0.003	0.084
80-84	0.001	0.007	0.121	0.011	-0.005	0.004	0.000	0.139
85+	-0.001	0.003	-0.011	0.011	-0.001	0.003	0.000	0.004
All ages	0.209	-0.151	0.886	0.450	0.732	0.275	-0.044	2.356

1987-1991, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.104	-0.004	0.004	0.123	-0.001	-0.004	0.209	0.431
1-4	0.034	0.012	-0.005	0.044	-0.003	0.073	0.032	0.186
5-9	0.001	0.003	0.000	0.004	0.000	0.005	0.015	0.027
10-14	0.003	-0.011	0.005	0.005	-0.005	-0.005	-0.002	-0.010
15-19	0.002	0.006	-0.011	-0.006	-0.001	-0.019	-0.018	-0.048
20-24	0.000	-0.008	-0.005	-0.001	0.002	-0.018	-0.010	-0.041
25-29	-0.004	0.013	0.000	-0.001	0.001	-0.011	-0.004	-0.005
30-34	-0.001	-0.001	0.010	0.002	-0.001	-0.017	-0.011	-0.019
35-39	0.001	-0.005	-0.026	0.001	-0.034	0.001	0.003	-0.059
40-44	0.007	-0.009	0.011	0.019	-0.022	-0.028	0.013	-0.008
45-49	0.004	-0.003	-0.058	-0.006	-0.032	-0.003	0.000	-0.097
50-54	-0.003	0.005	-0.011	0.002	0.008	-0.026	-0.003	-0.028
55-59	-0.002	-0.026	-0.054	-0.005	-0.030	-0.012	-0.014	-0.142
60-64	-0.002	-0.002	-0.030	-0.011	-0.012	-0.006	-0.017	-0.079
65-69	0.002	-0.022	0.014	-0.005	-0.028	0.000	-0.012	-0.050
70-74	0.000	-0.006	-0.039	0.011	-0.014	-0.012	-0.004	-0.063
75-79	0.001	-0.014	-0.121	0.020	-0.003	0.003	-0.004	-0.116
80-84	0.000	-0.012	-0.070	0.011	0.012	0.003	-0.004	-0.060
85+	0.001	-0.006	-0.120	0.019	-0.003	-0.003	-0.004	-0.116
All ages	0.149	-0.089	-0.505	0.227	-0.166	-0.079	0.165	-0.297

1991-1995, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	-0.006	0.003	0.000	0.047	-0.009	0.033	-0.177	-0.108
1-4	-0.007	-0.006	0.007	-0.008	0.005	0.009	-0.041	-0.040
5-9	-0.005	-0.003	-0.002	-0.017	-0.003	0.033	-0.018	-0.015
10-14	-0.002	0.003	-0.006	-0.014	0.005	0.034	-0.005	0.015
15-19	-0.010	0.007	0.001	0.003	0.000	0.038	0.007	0.047
20-24	0.000	0.005	0.015	0.005	-0.004	-0.008	0.009	0.023
25-29	-0.003	-0.002	-0.007	-0.004	-0.002	-0.005	-0.002	-0.026
30-34	-0.002	0.010	-0.015	-0.010	-0.011	-0.010	0.001	-0.037
35-39	-0.007	0.006	0.004	-0.003	0.000	-0.003	-0.011	-0.014
40-44	-0.004	0.013	-0.020	-0.017	-0.026	-0.001	-0.006	-0.061
45-49	-0.003	0.017	0.009	-0.007	0.025	-0.004	-0.013	0.024
50-54	-0.002	0.012	-0.063	-0.016	-0.087	0.006	-0.023	-0.172
55-59	0.002	0.011	-0.096	-0.005	-0.013	0.006	-0.011	-0.107
60-64	0.001	-0.011	-0.120	-0.011	0.004	0.003	-0.012	-0.146
65-69	-0.004	0.010	-0.189	-0.001	0.000	0.005	-0.002	-0.180
70-74	0.001	-0.006	-0.163	-0.010	-0.002	0.007	-0.002	-0.175
75-79	-0.001	0.012	-0.118	-0.004	0.001	-0.004	0.001	-0.113
80-84	-0.001	0.007	-0.139	-0.001	-0.003	-0.002	0.001	-0.137
85+	0.000	0.001	-0.074	-0.001	0.006	0.004	0.002	-0.063
All ages	-0.052	0.091	-0.977	-0.073	-0.115	0.141	-0.301	-1.286

1995-1998, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.013	-0.008	0.010	0.009	0.011	-0.017	0.141	0.160
1-4	0.001	-0.006	0.000	0.016	0.000	0.023	0.018	0.051
5-9	0.006	-0.003	-0.001	0.014	0.003	-0.007	0.021	0.034
10-14	-0.004	0.006	0.006	0.015	0.000	-0.015	0.002	0.010
15-19	0.001	-0.014	0.007	0.000	0.001	-0.008	-0.011	-0.024
20-24	-0.011	-0.001	-0.007	0.003	0.005	0.026	-0.011	0.004
25-29	0.001	-0.007	0.005	-0.006	0.005	-0.005	0.001	-0.004
30-34	-0.002	-0.007	0.006	0.008	0.015	0.020	0.003	0.044
35-39	0.002	-0.003	0.019	0.005	0.018	0.014	0.020	0.075
40-44	0.001	0.003	0.028	0.016	0.063	0.011	-0.003	0.119
45-49	-0.002	-0.010	0.018	0.014	0.035	0.017	0.004	0.074
50-54	0.004	-0.007	0.030	0.028	0.125	0.004	0.014	0.197
55-59	0.000	-0.009	0.058	0.011	0.098	0.030	0.026	0.213
60-64	0.001	0.023	0.098	0.008	0.043	0.012	0.008	0.194
65-69	0.001	0.008	0.106	0.005	0.006	0.003	-0.004	0.125
70-74	0.001	0.008	0.123	0.010	-0.013	0.002	0.000	0.130
75-79	-0.002	-0.005	0.113	-0.018	-0.010	0.003	-0.001	0.081
80-84	0.001	0.000	0.082	-0.007	-0.005	0.003	0.001	0.075
85+	0.000	0.001	0.046	-0.009	-0.002	-0.003	0.000	0.034
All ages	0.013	-0.030	0.745	0.122	0.398	0.116	0.227	1.592

Note: Since 1998 official population statistics do not include the Transnistrian region

1998-2020, ***FEMALES***								
Age	Infectious	Neoplasms	Circulatory system	Respiratory system	Digestive system	Injury	Other	All causes
0	0.049	0.010	0.000	0.219	-0.002	0.085	0.415	0.777
1-4	0.013	0.023	-0.014	0.031	-0.005	0.088	0.038	0.174
5-9	-0.002	0.006	0.004	0.007	0.000	0.025	0.012	0.053
10-14	0.005	0.016	-0.002	0.000	0.002	0.029	0.002	0.051
15-19	0.003	0.021	0.001	0.004	0.006	0.004	0.025	0.064
20-24	0.014	0.009	-0.007	-0.002	0.006	0.007	0.037	0.065
25-29	-0.015	0.027	-0.019	-0.001	-0.013	0.063	0.019	0.060
30-34	-0.034	0.016	0.002	-0.003	-0.017	0.013	0.017	-0.005
35-39	-0.016	0.012	0.011	-0.009	0.002	0.037	0.007	0.044
40-44	-0.032	0.011	0.020	-0.001	-0.059	0.048	0.022	0.007
45-49	-0.057	0.002	0.044	-0.007	0.019	0.058	0.024	0.084
50-54	-0.084	-0.017	0.154	-0.008	0.010	0.060	0.025	0.139
55-59	-0.117	0.017	0.207	0.009	0.065	0.034	0.010	0.225
60-64	-0.145	-0.030	0.290	0.032	0.061	0.020	0.012	0.240
65-69	-0.151	-0.029	0.312	0.027	0.089	0.016	-0.001	0.264
70-74	-0.103	-0.049	0.358	0.028	0.051	0.010	-0.015	0.279
75-79	-0.061	-0.038	0.164	0.039	0.015	0.009	-0.013	0.117
80-84	-0.038	-0.028	0.139	0.010	-0.001	0.003	-0.006	0.080
85+	-0.012	-0.018	-0.106	0.002	-0.005	0.006	-0.006	-0.138
All ages	-0.781	-0.039	1.560	0.376	0.223	0.616	0.625	2.580

Note: Since 1998 official population statistics do not include the Transnistrian region