



FAMILY HEALTH AND BIRTH RATE IN THE BEGINNING OF THE 21st CENTURY

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Accepted May 24, 2022

Health is part of the basic human needs, after providing adequate housing and food, followed by education and training necessary to acquire a profession that allows the independent assurance of existence. In Romania, the population is currently experiencing a sharp process of decline, caused by three main causes: population aging, decreasing fertility, external migration. The birth rate registered in 2020 represents the lowest value in the history of Romania, respectively 8.1‰ newborns per 1000 inhabitants. The mortality of children under the age of 5 in all its components is strongly influenced by economic and social factors and with limited community support for families with low parental abilities and especially for young families, for whom housing, and work are vital. If things do not change in the near and medium future, through policies that protect the interests of Romania and its population, the forecast for the 2050s is bleak in terms of demographic change.

Keywords: health, education, birth rate, Romania.

Health is part of the basic human needs, after providing adequate housing and food, followed by education, and training necessary to acquire a profession that allows the independent assurance of existence. (1970 ROME Club)

Among the social problems, extremely important is the health status of the population (public health), for which the state has structures, laws and obviously an allocated budget, which in Romania (about 5.6% of GDP), in recent years has always been below the average level of the respective budget of the European Union (EU), (approximately 7.2%).

Through this mechanism, the state can really protect and develop the health of the population or, if the laws are inappropriate, it can seriously affect the health of the population. This will lead to very serious social problems with serious consequences.

Examples of controversial laws are free, on demand abortion law, legislative shortcomings in child and family protection, job retention, same-sex marriage approval. Another example is the absence of a vaccination law, which directly contributed to the recording of about 60000 deaths in people infected with the SARS-CoV2 virus, of which over 90% were unvaccinated and 64 deaths

from measles, mostly unvaccinated children, in the last three years.

All these shortcomings in the legislative field and errors in the decisions of the government of social, political, economic life, public health, education, etc. have led and will continue to lead to negative effects on the birth rate and fertility index and finally on the negative demographic evolution in the Romanian population and beyond.

We are referring to the lack of jobs, the insufficient number of nurseries and kindergartens, the shortcomings in the educational process which, if not doubled by a parallel, very expensive and continuous private training, which most families (parents) cannot afford, led to the known result: hundreds of thousands of high school graduates without a baccalaureate in recent years as a result of the discrepancy between the normal requirement for the exam and insufficient training during the years of high school education and school in general.

The official solution? It has been announced for several years: start work freely, officially, through a new law for children starting as young as the age of 15 years! WHO (World Health Organization) defines the child as a human being in the period 0–18 years. It means that Romania no longer has the capacity to provide training for education and

work of children aged 15–18 through vocational schools, technical secondary schools, and high school. This right to education and instruction of children being a right enshrined in the Romanian Constitution. We return to health, which generates many social problems but also has direct implications for demographic evolution. Demographic studies have always been a key tool for politicians and state institutions in developing economic and social programs and strategies.

The decline is revealed by the estimated number of inhabitants in the last 32 years:

- In 1990 the inhabitants in Romania were estimated at 23 000 000.

- The 2011 census in Romania established the number of inhabitants at 20 121 641. Urban population about 55.20%. Rural population 44.80%

- On 1st of March 2016 the estimated number was 19 441 708 inhabitants, calculated based on the negative increase, similar to the number of the Romanian population before the Second World War. Urban population about 55.20%; Rural population about 44.80%.

The ethnic structure of the population in 2011 was:

- Romanians – 88,9%
- Hungarians – 6,5% (1.300.000)
- Romany 4% – 665.000
- Germans: in 1930 – 745.421; in 2015 – 60.000.
- jews: in 1924 – 796.036; in 2002 – 6170.
- other communities: Ukrainians, Lipovans, Turks, Tatars, Serbs, Slovaks, Czechs, Poles, Italians, Armenians.

The main demographic indicators of the Romanian population in 2011 were:

- net migration rate: 0.13 migrants per ‰ inhabitants.
- birth rate: 9.9 live births per ‰ inhabitants.
- overall mortality rate: 12.1 deaths per ‰ inhabitants.
- natural increase: 2.2 ‰.
- infant mortality rate: 9.3 deaths 0–1 year in ‰ live births.
- fertility: 1.36 children/woman; minimum 2.15 required to replace generations.
- life expectancy at birth: 68.69 years old men; 75.89 years old women.

The demographic process is closely correlated with the health of the family, the basic structure of society and which in the traditional Romanian family consists of three generations with a fundamental role in the birth, upbringing, and education of new generations: parents, grandparents and obviously children.

Parents and children own the genetic background of the nation. The health of all these generations is especially important for the health of the family and the evolution of the demographic process.

Parents with an essential role in the birth of children; the mother respectively the woman, and especially her health are at the forefront, and this is expressed by specific demographic indicators for reproductive health; the most important are: birth rate, fertility, pregnancy termination (abortions) with therapeutic or on-demand indications, maternal mortality, etc.

- **children** also have specific demographic indicators such as infant mortality, perinatal mortality, infant mortality (1–4 years), mortality under 5 years.

- **grandparents** are affected by chronic diseases and regression caused by old age.

The situation of the social and economic environment can decisively influence the health of the family as a whole.

BIRTH RATE

The birth rate registered in 2020 represents the lowest value in the history of Romania, respectively 8.1‰ newborns per 1000 inhabitants, i.e., 178,609 newborns. The highest birth rate is in the North-West regions, 8.8 ‰ Center 8.7‰, and the lowest values in the South-West-Oltenia regions 7.0 ‰ and South-East.

The counties with the highest birth rate are Suceava, Sălaj, Ilfov and the Municipality of Bucharest (values of 8.9‰–10‰) The lowest birth rate is in the counties of Caraș-Severin, Brăila, Teleorman and Râmnicu Vâlcea (6.1‰–6.3‰). There is a change in the known pattern of higher birth rates in Moldova, due in large part to higher rates of emigration of young people from some regions of the country, with a more vulnerable economy.

Before the Second World War, Romania registered high values of the birth rate of 35 ‰ in 1930. After its decrease induced by the conditions of the war, the birth rate stabilizes in the period 1947–1956 at values of 24–25‰. In 1956 the legislation liberalized abortion on demand, which together with the new socio-economic conditions, respectively urbanization due to the country's industrialization process, with the involvement of women in economic activities, which led to changing reproductive behavior of the population at fertile age and declining gradual birth rate to 14.3‰ in 1966. In the same year, the legislation

changes: abortions are prohibited on request, allowing them only for strictly controlled medical and social reasons, and severe criminal penalties are established for those who do not comply with them. The consequence was a sudden increase in the birth rate for a year, until it almost doubled. Subsequently, the population changes its reproductive behavior again, and under the same restrictive legislation on abortion on demand, the birth rate gradually decreases, reaching in 1985 a level similar to the one in 1965.

In 1985, the law was amended again, raising the age at which abortion is allowed from 40 to 45 and the number of children from four live births to five.

After a moderate increase in 1986, the birth rate decreases again. In 1990, one of the first legislative measures taken by the new government was the liberalization of abortion on demand. At the same time, the Ministry of Health (MH) began to promote family planning services (F.P.), respectively the use of modern methods of contraception, replacing abortion as a method of family planning. At the same time, by changing the reproductive behavior, the later appearance of children in the family is planned and the number of children is also restricted. The massive emigration of over 4 million Romanian citizens, mostly of childbearing age, with the immediate and average goal of accumulating material income, which delayed the appearance of the first child in the family and contributed greatly to the decrease in the number of children in the family.

With the emigration of over 4 million citizens from Romania, a large part of the Nation's genetic fund also emigrated. According to the World Bank in the EU the birth rate varies in 2019 between 7–12‰ with an EU average of 9‰, Romania reported in 2019 a birth rate of 10‰. From non-EU European countries higher birth rates are recorded in Turkey and Georgia respectively 13‰.

Regarding the fertility index, respectively the average number of children born to a lifelong woman, is in every country in the EU less than 2, which indicates that the parents are not fully replaced by a next generation, with effects on the age structure of the population and therefore we cannot expect in the medium term an increase in the birth rate.

The lowest fertility rates in 2019 were reported in Italy (1.3), Finland, Greece, Poland and Portugal (1.4), and higher indicators were recorded in France (1.9), Czech Republic, Denmark, Estonia (1.7) and Romania (1.8). In Romania, the lowest fertility rate before 1990 was recorded in 1965

(1.9), rising sharply as a result of the abortion ban to 3.66 in 1967 and then gradually declining with all pronatalist policy imposed on the population at 2.22 in 1989. After 1990, the fertility rate decreases faster until 2013 to 1.46, later registering an increase to 1.76 in 2019.

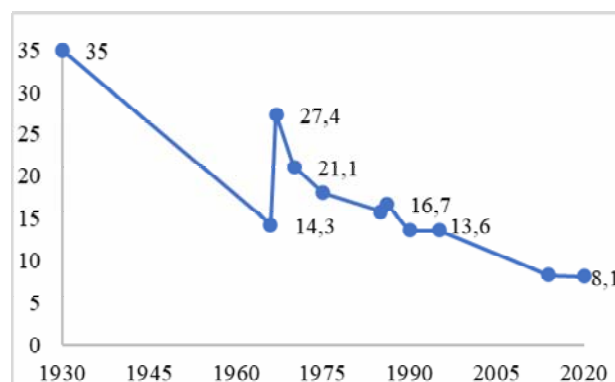


Figure 1. Birth rate evolution in 1930–2020 (live births % inhabitants).

The reproductive behavior of the population revealed by the fertility index which, although it has increased in recent years, is below the value of 2, as well as the decrease of the fertile contingent by the aging population and by the external emigration of the young population, concludes that the number of live births will not increase significantly in the coming years.

We can appreciate that the possible interventions of the social and economic state, relatively limited given the modest performances of the Romanian economy, can lead to an increase in the quality of life of children and their families, but will not significantly change the reproductive behavior of the general population.

PREGNANCY IN ADOLESCENTS

A significant feature of the reproductive behavior of the population in Romania is a very high area of pregnancy in adolescence.

Thus, out of the 210,489 pregnancies registered in 2020 (respectively 178,609 births and 31,889 abortions), 9.2% represented pregnancies in the 12–19 age group, meaning 1 in 10 births and one in 10 abortions were registered at this age group.

A total of 500 pregnant women aged 16 gave birth to their second child. In previous years, a similar number of births were recorded at the age of 12–19. These “children with children” are deprived of the right to health, the right to education and, of course, part of their childhood.

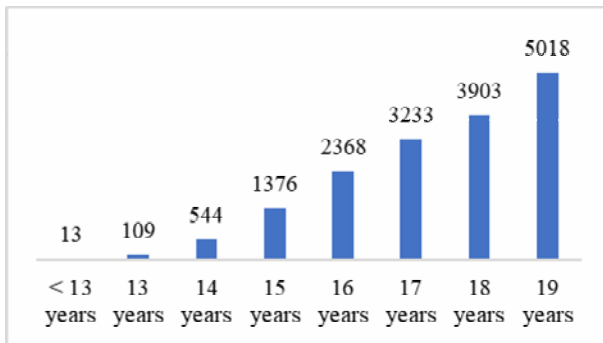


Figure 2. The situation of teenage pregnancies in 2020. In 2020, 178 609 children were born, of which 16 564 were teenage mothers. Source: INS.

According to World Bank data, the high birth rate for adolescents aged 15–19 characterizes Romania and Bulgaria among EU countries, even in non-EU countries in the European region where adolescent birth rates are much lower, although ethnicity, cultural and religious traditions may suggest a different reproductive behavior.

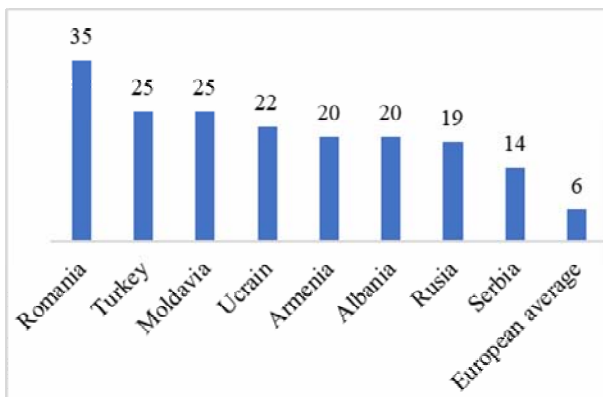


Figure 3. Birth rate in adolescents in some non-EU countries (per 1000 adolescents) Source: INS.

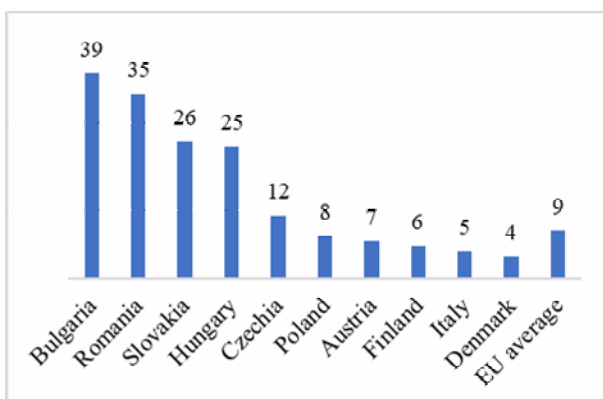


Figure 4. Birth rate in adolescents in some EU countries (per 1000 adolescents aged 15–19 years). Source: WB 2019.

These “children with children” usually come from low-income families, which indicates the

considerable effort that the state should make through community medical and social services to ensure the harmonious physical, mental and emotional development of these children. Health education programs, including reproductive health, life education, etc. should be addressed not only to adolescents but also to their families, who, in devotion of anachronistic traditions, impose a certain reproductive behavior on adolescents.

NATURAL GROWTH

Since 1992, the general mortality rate (MR) has exceeded the birth rate and the natural increase has become negative, a situation that has been maintained for about 30 years.

In 2020, MR recorded a significant increase compared to previous years, respectively 13.4‰, compared to 11.7‰–11.9‰ in the period 2015–2019.

The number of general deaths was in 2020, higher by 37 624 compared to the previous year. The birth rate in 2020 registered the lowest value in the history of Romania, respectively 8.1 live births per 1000 inhabitants.

Under these conditions, the population deficit was double in 2020 compared to 2019, respectively 118 737 people compared to 57 244 in 2019, and the negative increase grew from 2.6‰ to 5.4‰.

Table 1

General deaths and live births in Romania in the period 1980–2020. In 2020, there were 297,344 general deaths and 178,609 live births in Romania, generating a deficit of 118,609

CNSISP source

Year	General deaths (‰)	Live births (‰)
1980	10,4	18
1990	10,6	13,6
1992	11,6	11,4
2000	11,6	10,5
2010	12,1	9,9
2015	11,7	8,4
2020	13,4	8,1

At the level of the European Union, the population decreased by about 312 thousand; 10 countries compensate for the natural decline in population through positive migration, and 8 countries have both a positive (modest) natural growth and a positive migration. In 4 countries the population decrease is determined both by the natural decrease (lower number of births than deaths) and by emigration: Croatia, Italy, Latvia, and Romania.

In 2020, the significant population loss suffered by Romania was determined primarily by the massive increase in overall mortality, which is likely to be influenced by the direct or indirect COVID-19 pandemic and the lower birth rate than in previous years. The continuation of external emigration also had a contribution. From the point of view of the demographic process with negative evolution, the situation of the population in our country is extremely vulnerable also at the level of the support given to the third generation of the family; Further studies on representative samples will be needed to determine the contribution of chronic diseases to the increase in the overall mortality indicator. The risk of death from these diseases has been estimated to be twice as high as deaths from chronic diseases in the EU. An objective of these studies should also be to assess access to primary and secondary preventive health services that prevent or stabilize a chronic disease and thus contribute to prolonging life expectancy. Such studies should identify the needs of the population in order to intensify the support provided to families to stabilize or even increase the birth rate. France has introduced an obligation for large companies employing a large number of women to organize or build nurseries and kindergartens in their vicinity, which has helped increase the birth rate nationwide.

Among the specific indicators for the health of children in the whole family, an important contribution is the weight at birth.

Low birth weight decisively influences perinatal morbidity and mortality and infant mortality (in the first year of life). According to data published by the National Institute of Statistics in 2020, as many as 12 740 children weighing less than 2,500g were born, respectively with a low-birth-weight rate of 7.1%. Of these, 5352 and 42%, respectively, were reported to be from a pregnancy lasting less than 36 weeks.

A higher number of low birth weight was registered in the age groups of mothers aged 15–19, with a rate of 9.9% and in 40–50 years with a rate of 11.6%. Among the low-birth-weight newborns, a number of 3638 children weighed less than 2000g, i.e., 28.5% of the low birth weight and 2.5% of the total newborns, respectively.

Worldwide, according to WHO/UNICEF estimates, the frequency of low birth weight is between 7.2% in more developed regions and 17.35% in some parts of Asia. From this point of view, Romania ranks among the developed countries. In the EU countries, according to World

Bank data – 2015, the low birth weight varies between 5 and 10%.

In the study of the reproductive health carried out in 2016 at Romania national level on a representative sample, an incidence of low birth weight of 8% on the studied group was found.

Abortions have had a permanent negative influence in the last 30 years on the Romanian birth rate, the number of on-demand and spontaneous abortions far exceeding the number of births in some periods.

In 2020, they were reported to the DSP by hospitals and clinics, public and private obstetrics, and gynecology a number of 31,889 abortions on request and 16,176 miscarriages. In 2019, 47,492 abortions of which 26 863 on request and 20 462 spontaneous. In 2015, 70 885 abortions of which on request 41 056 and 29 820 spontaneous.

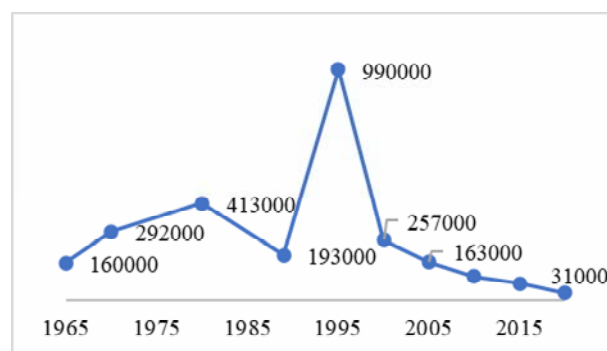


Figure 5. Evolution of total number of abortions in the years 1960–2020. We can notice a significant increase after the free abortion law in 1990.

Immediately after the liberalization of abortion on demand in 1990, there were a very large number of abortions on demand (approximately one million abortions in 1990). Subsequently, their number decreased with the development of family planning services (F.P.) and changes in the reproductive behavior of the population.

The number of abortions registered and reported from 1966–1989 under the conditions of the prohibition of abortion on demand, represent only abortions that were approved by the accredited commissions for medical and social reasons and abortions that arrived urgently in health facilities usually as a result of an abortion maneuver outside a hospital by the pregnant woman or by unskilled persons.

Since 1990, reporting and recording abortions has been mandatory for all medical institutions, both public and private. The decreasing trend can be observed and there are significant differences between the number of abortions registered in

different counties, which is not explained by the different number of inhabitants nor by the fertile population in those areas. The difference in reporting abortions between counties could be explained by the different number of health care units usually in primary care that also provides counseling for FP.

After 1990 with the development of a FP well-established training of medical staff, decentralization of services to the primary care network, public information campaigns and the provision of modern contraceptives free of charge to a wide range of beneficiaries has resulted in a decrease in the number of abortions on demand. The ratio of abortions/live births also decreased from about 3152 abortions to 179 abortions per 1000 live births.

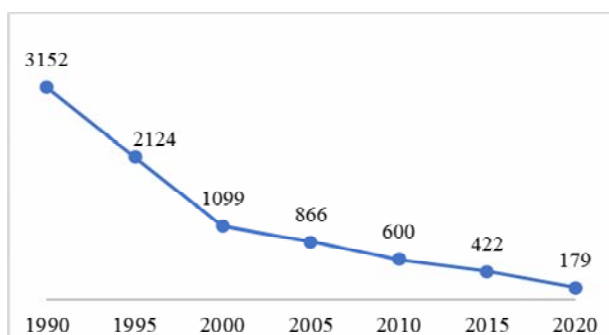


Figure 6. Evolution of number of abortions in the years 1990–2020 (per 1000 live births).

These graphs objectively illustrate the positive results of a program with a well-defined strategy, accompanied by concrete implementation and continuity measures, up to a given management point. The obvious results obtained determined that Romania, known as the country with the highest mortality by abortion and subsequently by the highest number of abortions on demand, to be a positive example of a public health intervention at the level of the WHO/UNFPA office for Europe.

The reproductive health study conducted at INSMC in 2016 revealed that the use of contraception and especially modern contraceptives has had an upward trajectory. In 2016, 48.4% of women of childbearing potential used contraception, of which 38.7% modern methods, 23% in 1999 and 9.6% traditional methods.

In recent years, although the FP was an objective of the health strategy in Romania, it was no longer funded, no resources were allocated for the free purchase and distribution of contraceptives and the number of offices and specialized staff decreased. Although it is included in the health

program for women and children, the intervention has not been funded for about 2–3 years. The same study cited above shows that the potential need for contraception is about 65% for women aged 15–45 and 75% for women in couples. 19.3% of women married or in a consensual union do not use contraception at all and 12.0% use traditional methods, thus being exposed to the risk of an unwanted, unplanned pregnancy.

Under these conditions, the unmet need for a modern method of contraception for a woman of childbearing age is 26.3% and for married women 31.4%. These data constitute arguments for the continuation of the F.P. in the initial parameters, program that proved its effectiveness as long as it worked properly.

At European level, with all the positive results, Romania still registers another high number of abortions.

MATERNAL MORTALITY

The maternal mortality index and the causes of maternal mortality are considered two of the most important indicators of maternal health.

Maternal mortality is an important indicator of health system performance even in developed countries, where maternal deaths are very rare. In these countries, maternal deaths are perceived as signaling events for the effectiveness and quality of pre-, intra- and postnatal care. For this reason, the WHO recommends that both large and small countries have regular maternal deaths analysis of cases. In Romania, data collection and analysis of maternal mortality is regulated by the Order of the Minister of Health no. 620/2001. WHO recommends that Member States carry out an analysis of cases with a serious pathology in addition to the analysis of maternal mortality.

According to the 10th WHO International Review of Classification of Diseases, maternal death is defined as: the death of a woman during pregnancy or within 42 days of termination of pregnancy, regardless of the duration and location of the pregnancy, by any determinant or aggravated cause of the pregnancy or its management, but not due to accidental or incidental causes.

Maternal deaths are divided into four categories:

1. *Deaths by direct obstetric risk*, those resulting from obstetric complications (pregnancy, childbirth, period after childbirth), intervention of omission, incorrect treatment, or by a chain of events resulting from one of the factors listed above.

2. *Deaths due to indirect obstetric risk* are the result of a pre-existing pregnancy or a disease which coincided with the pregnancy without any obstetric causes, but which may have been aggravated by physiological changes in the pregnancy.

3. *Collateral deaths*, also called “accidental deaths”, are those that occur during pregnancy, or postpartum, but are not related to pregnancy.

4. *Deaths by abortion* are a particular case of deaths by direct obstetric risk, given the age of the pregnancy at which the event of death occurred. Because many abortion deaths are self-inflicted abortion, in countries such as Romania where induced abortion has been a major social and public health problem, these types of deaths are treated separately, and not in maternal deaths by direct obstetric risk.

In Romania, since 1996, all maternal deaths are registered regardless of the cause of their occurrence, including deaths due to indirect and collateral causes. For this reason, since 2009 the analysis of maternal deaths and implicitly of maternal mortality is done after the four groups of maternal deaths, by abortion (internal code 000-008), direct obstetrical risk (code 010-092). Indirect obstetrical risk (code 095-099) and collateral causes. Romania has achieved the goal set by the UN at the universal level, within the Millennium Development Goals, namely the reduction by three quarters of maternal mortality in 2015 compared to 1990.

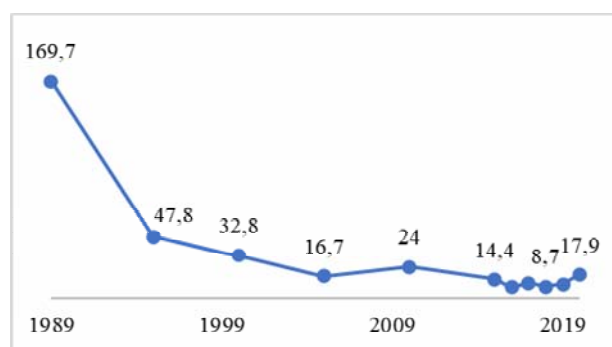


Figure 7. Evolution of maternal mortality in the years 1989–2020 (per 100 000 child births).

This sharp and rapid decline after 1990 was mainly due to the legalization of abortion on demand and the drastic reduction of even the disappearance of abortion deaths. From this point of view, Romania can be considered an experiment to be studied because it shows the consequences of a forced pronatalist policy.

Simultaneously with the decrease in abortion mortality, there was also a decrease in mortality

due to direct obstetrical risk 43 cases in 2000, 12 cases in 2020.

Since 2009, when it is recorded in the statistics, the share in maternal mortality of maternal deaths due to indirect risk is highlighted, which in 2020 exceeded 50% of the number of maternal deaths.

The significant share of deaths due to or favored by pre-pregnancy or pregnancy-related conditions (indirect risk) strongly indicates the importance of placing a pregnancy in the “at risk” category and defining the risk.

The family doctor has an important role, because he knows both the health history of the pregnant woman and of the family, as well as the need to supervise the risky pregnancy by a multidisciplinary team in which the obstetrician is one of the specialists.

This team of specialists should take responsibility for the general care and management of pregnancy and childbirth, especially for pregnant women with chronic illnesses known before the risky pregnancy. The direct responsibility for mobilizing specialists to monitor a pregnant woman with a “risky pregnancy” lies primarily with the family doctor who knows the medical history and current situation of the pregnant woman, provided that the basic medical package for monitoring the pregnant woman does not include the obligation of a medical evaluation by an obstetrician-gynecologist, only after the birth in the hospital. In practice, there are still a significant number of pregnant women who come to the hospital to give birth without having an antenatal medical examination and without essential tests (e.g., blood group and Rh) especially in the rural population.

Maternal mortality by causes in 2020: indirect risk (59.3%), direct risk (37.5%), abortion (3.11%).

The problem is becoming very current, given that there is evidence that the rate of indirect deaths is steadily rising due to pre-pregnancy diseases (also favored by the delay in the birth of the first child). The prevention and reduction of maternal mortality will be the responsibility of other specialists, not only obstetricians. Despite the significant decrease in maternal mortality, a decrease due both to the reduction of deaths by direct obstetrical risk but especially by the obvious decrease in abortion deaths, Romania is still among the countries with increased maternal mortality in Europe at almost double the European average of this indicator. It is a progress compared to 2012 when the number of maternal deaths in Romania was 5 times higher than the EU average. These

realities must be taken into account by the medical services administration and the necessary regulations must be drawn up. Regardless of the source of the data and the differences between them, it is very clear that a significant number of pregnant women do not have a medical control of their pregnancy or their general health. This is especially the case for pregnant women belonging to vulnerable groups, with consequences for their health, newborns and also with additional costs for the system, predominantly in rural areas.

Some of the causes of this situation have been identified by epidemiological studies, but no organizational measures have been taken to ensure access to and increase accessibility to prenatal health services and the proposed measures did not involve excessive costs to the health system.

PRENATAL EXAMINATION

Medical supervision of pregnancy by both FM, obstetrician and other specialists depending on the risk presented by the pregnant woman is a safe and effective way to prevent and/or treat early pregnancy complications.

Specialists in the health system, especially those in maternity hospitals, estimate that a large proportion of pregnant women do not see a doctor during pregnancy or make only 1-2 visits, possibly to do some tests. INS reports indicate for 2019 that a very large number of pregnant women were not evaluated prenatally, respectively 50,912 pregnant women out of a total of 188,135 births, i.e., 27%. There may also be registration errors because the data on which the INS analysis is based are extracted from the live birth certificate, in which there is a section on prenatal check-ups, which is sometimes not completed. For 2019, 7 of the 16 maternal deaths did not have completed the “prenatal consultation” section, which affects the validity of the statistical processing. There are also data obtained from epidemiological studies conducted through interviews with pregnant women:

- 71% of pregnant women without prenatal consultations and about 8% only with 1–3 consultations, 55 pregnant women without prenatal consultation and 18% under 3 consultations.

- 37% of maternal deaths in 2014 and 2015 (Analysis of maternal and infant mortality 2014 / 2015- INSMC 2016/2017) had not performed any prenatal consultation (data collected from medical documents from maternity and family doctor)

INFANT AND CHILD MORTALITY UNDER 5 YEARS

Child health is another essential component of family health.

Infant mortality (IM). The IM rate defines the annual number of deaths under the age of one year relative to 1000 live births from the same period of time and from the same territory. IM it is universally accepted as the most accurate indicator of the health and well-being of children globally and at the same time the level of economic and social development of a community. The socio-economic environment directly influences the health, morbidity, and mortality of children, especially those under one year of age. IM in relation to age, mode of residence, socio-economic status has a very important role in diagnosing differences in access to qualified medical services. Medical services can help to improve health as long as they are accessible, of good quality and adapted to the population they serve. In Romania, both infant mortality and 1–4 year age mortality have decreased significantly in recent years (source CNSISP).

The favorable evolution of infant mortality and infant mortality under 5 years of age was determined by changes in the family structure, with a decrease in the number of children in the family, by investments in maternity and newborn rehabilitation programs, regionalization of perinatal care, and in the general positive evolution of the Romanian society. The conditioning of children's health by the general health of society is also supported by the fact that the increase in gross domestic product / person is concomitant and contributes among other factors to the decrease of IM.

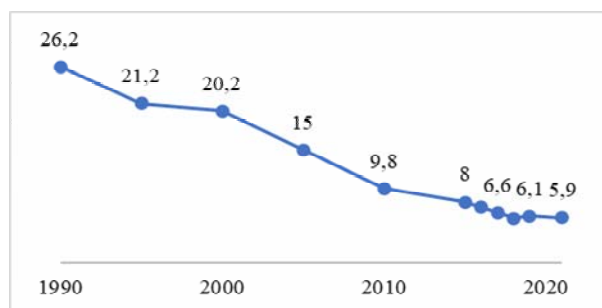


Figure 8. Infant mortality in the years 1990–2020 (deaths per 1000 live births).

In terms of territory in 2020, there is still an inhomogeneous situation in the country. There are counties with an IM which exceeds by 30 % the

average value of the country (Tulcea, Satu Mare, Suceava, Ilt). In other counties, IM although traditionally they were at or below the average level of the country as: Satu Mare, Mureș, Covasna, Harghita. This, simultaneously with the counties that came out of the bottom of the ranking, although the social and economic structure of the population and the county placed them with many deaths under one year (Vaslui, Iași, Vrancea).

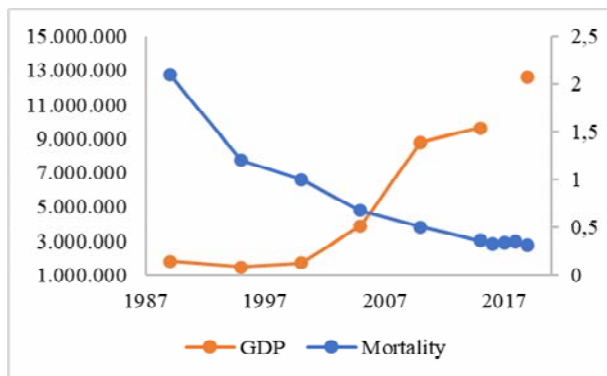


Figure 9. Evolution of mortality in the age group 1–4 years and of gross domestic product (GDP) in the years 1989–2019.

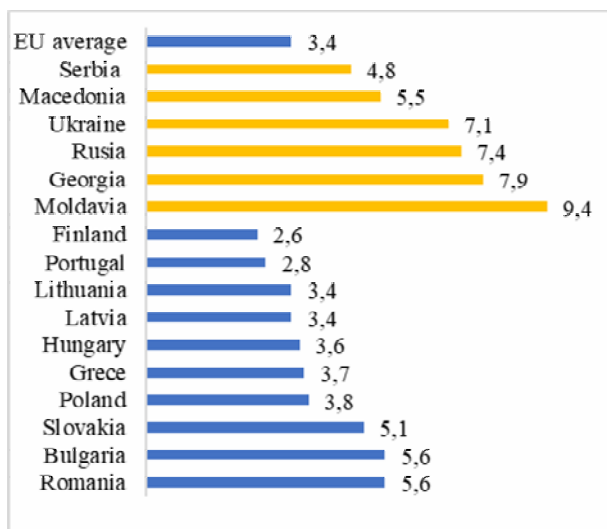


Figure 10. Infant mortality in some EU and non-EU countries reported for the year 2019 (per 1000 live births).

Despite the remarkable decrease in IM, Romania continues to record the highest infant mortality in the EU, and one of the highest in Europe (Eurostat), i.e., twice the average IM of the EU. It should be noted that non-EU nearby have rates of IM lower than Romania (e.g. Serbia, and Northern Macedonia). Portugal, which 40 years ago had an indicator of IM even bigger than Romania's in that era, it managed to have one of the lowest IM from Europe at this point.

Neonatal mortality. Over 50% of deaths occur in the first month of life. In the neonatal period, the segment of the first 6 days represents the “early neonatal” period, i.e., the first 0-6 days of life. Deaths during this period have specific causes. Statistics show that in this early period of life most neonatal deaths are recorded. Deaths during this period are strongly determined / favored by the low birth weight determined in turn by prematurity and congenital malformations incompatible with life.

In 2020, there were 1 097 deaths under the age of one year, of which in the age group 0–27 days, 639 deaths (58.24%) and in the age group 28–365 days, 458 deaths (41.7%). (CNSISP source); for 907 the weight at death is known. In 2020 IM recorded 6.1‰ by weight and by gestational age under 36 weeks.

Out of 3638 children born weighing less than 1999 g, 364 newborns died resulting in a specific indicator of 100‰.

Out of 12,740 children born with a weight under 2499 g, 555 children died, of which 470 with a gestational age of less than 37 weeks, resulting in a specific IM indicator for these weights of 43.7‰.

Out of 165,269 newborns weighing 3000g and over, 209 children died resulting in an indicator of IM of 1.2‰.

There are significant differences between early neonatal mortality in different counties; in some early mortality is unexpectedly low (Buzău 0.6‰, Vrancea 1.1‰, Dâmbovița 1.2‰, Vaslui 1.5‰). In other counties it is well above the national average (Satu Mare 5.2‰, Gorj 5‰), the situation must also be analyzed at regional level. There is a significant decrease in neonatal mortality in the period 2004–2015. It is necessary to correlate with the programs of restructuring, technical endowment, and intensive training that the Ministry of Health carried out in the wards of newborns, and especially the regionalization of perinatal care by degrees of competence with the concentration of severe pathology in stronger centers with the capacity to do face technical and human resources serious pathology.

However, there is still an important difference between the neonatal mortality indicator in Romania and in the EU, respectively 3.5‰ and 2.4‰. It should be noted that at the value of the average indicator in the EU. Malta also contributes 4.2‰, Bulgaria 3.8‰ and Romania 3.6‰ deaths in the neonatal period compared to 1000 newborns; the rest of the EU reporting indicators below 2–2.2‰. Neonatal mortality, and especially early mortality, has stagnated in recent years. The

findings could bring into question the functioning of the regionalization of Intensive Care (IC) services for newborns under the equipment of regional maternity hospitals, the decommissioning of equipment purchased in programs financed by the World Bank, and the significant fluctuation of specialized staff.

Postnatal mortality. Deaths after 27 days of life are accepted internationally as being caused by several causes:

- the quality of community and family care.
- the capacity of the primary health sector to respond to the needs and access of the population to these services including active preventive medical surveillance of health, strongly influenced by the parental capacity of some groups to participate in the care of their own health and the health of children.

The national average for 2020 was 2.6 deaths per 1,000 live births; there are counties in which the national average is much exceeded, some with explanations of social and economic development, others less: Tulcea 6.3, Mureş 6.1, Covasna 4.8, Suceava 4 deaths per 10,000 live births. Therefore double the national average.

MEDICAL CAUSES OF IM

In 2020 infant mortality due to diseases indicates:

1. conditions whose origins are in the perinatal period, and which record the most deaths, respectively 426 (2.49‰) due to congenital malformations, and chromosomal abnormalities 275 deaths (1.54‰);

2. deaths from respiratory diseases: 247 (1.38‰). This is the first year that congenital malformations and chromosomal abnormalities outweigh respiratory diseases.

There are no data showing how many cases of birth defects were outside the therapeutic resources and how many did not have access to these resources. There is a lack of evidence-based data on medical structures that can solve such malformations; what is the need for beds at the national level, how many specialists do we have and what else do we need, what is the need for material resources to deal with this pathology.

The deaths from 0–6 days were caused by congenital malformations and chromosomal abnormalities (20.6%), respiratory diseases (2.8%), early neonatal deaths had perinatal causes of non-traumatic intracranial hemorrhage (17.5%).

In the age group 28–365 days 42.4% (154 deaths) were caused by the death of respiratory diseases, 28.6% of deaths were caused by malformations, and 3.7% of deaths were due to infectious and parasitic diseases

Three of the deaths were COVID-19, 2 of which were associated with bronchopneumonia and one with heart malformation.

Given the large number of deaths under the age of one, IM is a public health problem in Romania. This is the reason for requesting the preparation of the Death Record, in order to collect data that identify at individual and collective level what are the determining and especially favorable causes of death. The form is completed by the doctor who cared for/ ascertained the death and through the DSP the data are centralized by the National Center for Statistics and Informatics in Public Health where the specialists calculate and interpret the specific indicators.

Unfortunately, these Sheets are incomplete and even essential information may be missing, and in these situations reliable statistical indicators cannot be calculated.

From the data that could be highlighted with significance, and which indicate important information, especially about the influence of medical and social factors in IM, we cite the following: the number of deaths in rural areas is higher than in urban areas, respectively 55.8% compared to 44.2% situation that is also found in the age group 1–4 years. This may involve both more difficult access to medical services but also a population structure that does not sufficiently and timely understand the use of medical services.

Other factors that can negatively influence the indicators of morbidity and mortality in children and implicitly the health of the family as a whole:

– Medical supervision of pregnancy: 32.2% of mothers of children who died under the age of one, did not undergo any medical examination during pregnancy, and 18.9% performed only 1–4 medical examinations. Diagnosis and medical monitoring of pregnancy is the responsibility of the family doctor according to the provisions contained in the Basic Package of medical services addressed to pregnant women starting from 01.06.2014.

– The precariousness of the mother's level of education. The death records show that 16% of the mothers of children who died under the age of one were illiterate or had attended only or incompletely only primary school.

– The mother's level of education is an important variable with a potentially severe influence on the child's health and quality of care. Lack of education makes it more difficult to access general lifestyle information, making it more difficult to understand the importance of implementing the recommendations in practice. In addition, a person with basic knowledge gaps, many of which are passed on in school, remains captive to cultural traditions and patterns that are unfavorable to the child's proper development. Usually, an untrained person accumulates other risks such as social exclusion due to inappropriate behavior and insufficient economic resources.

– Mother's occupation. 48.68% of mothers were not in an institutional work system (they were domestic or unemployed), which is why they should have had the necessary time to take care of their own health and the health of their children. This situation indicates limited financial resources of families in which the death rate is also higher.

– Vaccination. 24.2% of children who died under the age of one year did not undergo the immunizations provided for in the national immunization program until the date of death. In a study conducted by INSMC *Alessandrescu-Rusescu* in Bucharest of 33 cases of children under the age of one who died at home in which medical documents were retrospectively analyzed, none were completely vaccinated according to the vaccination schedule of the Ministry of Health until the date of death.

– Place of death. In 2020, as in previous years, most children under one year of age died in maternity hospitals, respectively 590 out of 1097 (53.8%), 342 in the pediatric ward and assimilated, (31.2%), 121 at home (11%), the rest in other places, but not in sanitary units.

– Most of those who died at home for various reasons, did not receive medical care for the disease that caused the death (23% of deaths). In 33% of cases the family doctor and in 40% the family doctor's assistant did not visit the child's home although this is expressly provided for in the contract for the of medical services.

– Deaths at home are one of the indicators that the public health services of primary health must be community-oriented, and that the system must be adapted to the structure, level of education and training, behavior, and cultural traditions of the population they serve (CNSISP source)

Perinatal mortality refers to all stillbirths (late fetal deaths over fetal age over 28 weeks) and

deaths in the first 6 days of life, compared to 1000 live births.

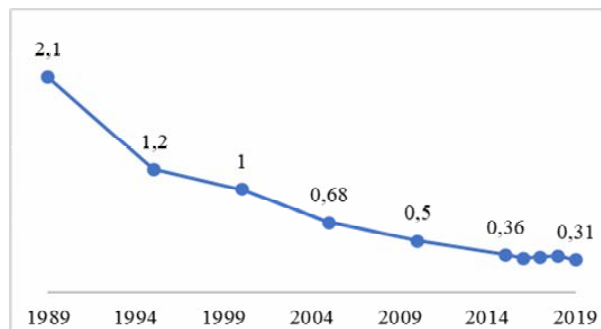


Figure 11. Evolution of mortality in the age group 1–4 years, in the time frame 1989–2019, per 100 000 inhabitants of the same age (source CNSISP).

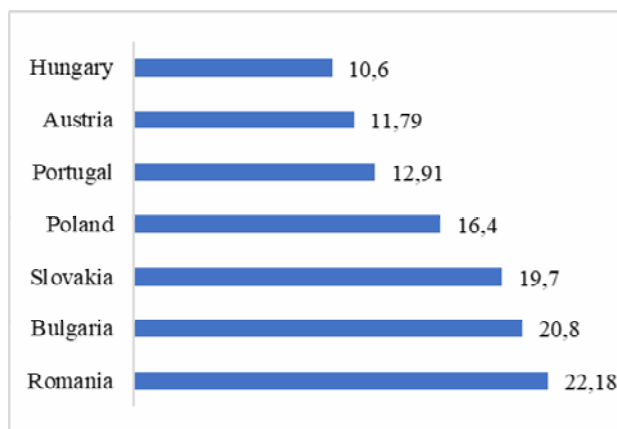


Figure 12. Mortality in children under the age of 5 years in different countries in the year 2000 (deaths per 1000 live births) (source CNSISP).

In 2019, the perinatal mortality rate was 5.7‰ of live births and stillbirths (1082 active cases registered) similar to the values recorded for 2016, 2017, 2015.

Stillbirth (late stillbirth-late fetal death) refers to stillbirths after 28 weeks of gestation (over 196 days) gestational age, or after fetal weight of 1000g, or more, compared to 1000 live births or stillbirths.

In 2020, the stillbirth rate was 3.8‰ live births and stillbirths (respectively 683 cases) being similar since 2013.

It should be noted that considering the figures for 2020, 23.2% of mothers whose children were stillborn or died in the first 6 days did not perform any prenatal consultation and in 18.2% of cases had only 1–4 prenatal consultations. In 12.3% of cases (136 cases out of a total of 1100 cases of perinatal deaths) perinatal deaths occurred at home or elsewhere, not in health facilities.

Mortality 1–4 years (early childhood mortality) represents deaths in the range of 2–4 years compared to 100,000 inhabitants of the same age and in the same territory.

Another indicator that is being used more and more frequently internationally is mortality under 5 years, which combines infant mortality and early childhood mortality, and consequently mortality under 5 years has decreased significantly in recent years, but as in IM there is a tendency to slow down the number of deaths at this age (0–5 years). The separate collection and analysis of deaths in the 1–4 age group is important because the causes of death and especially the proportion in which these causes occur is specific to this period and can provide decision makers with the information needed to develop and implement specific programs and interventions.

Despite the decrease in the mortality of children under 5, the indicator ranks Romania on the last place in the EU. (Eurostat)

Place of death. In 2019, there were 255 deaths unequally distributed over the four years of life; the most common were at the age of one year, respectively 101, and the least at the age of 4 years, i.e., 14. The causes of death are represented by four groups of diseases:

1. Traumatic injuries – caused death in 71 cases out of a total of 255 dead children and 8.7 per 100,000 inhabitants in the same age group
2. Respiratory diseases – 60 cases out of a total of 255 deaths, i.e., 7.3 / 100,000 inhabitants in the same age group
3. Tumors – 35 cases
4. Congenital malformations – 24 cases.

Despite the decrease in the number of children who died in the under-5 age group, the indicator ranks Romania in last place in the EU. The analysis of the age at which the event took place indicates that every year in the range of 1-4 years, the first places are the four categories of diseases that are most frequently involved in the entire group of children who die in this age group, only their frequency varies from year to year.

Remember the significant number of deaths from traumatic injuries, which usually affect healthy children, prior to the event.

The health system in collaboration with social services, preschools and the community can help inform and educate families through home and road accident prevention campaigns, which are the most common causes involved in this category of deaths.

Respiratory diseases, the second leading cause of death, are diseases that can be controlled by complete vaccination according to the calendar of the Ministry of Health, and by adequate medical supervision and appropriate treatment based on a diagnosis as accurate and as early as possible for both acute diseases as well as for chronic diseases.

Congenital malformations require an analysis to identify the type of malformation and the need for specialized services, infrastructure, and staff to address them. Congenital malformations do not naturally decrease like respiratory infections, which is why investing in specific services for their prevention and treatment is profitable.

The deaths of children under the age of 5 and especially under the age of 1 are strongly correlated with the social-economic status of their parents. More than half of the mothers of the deceased children are unemployed or housewives; about 40% have high school education, 20% are illiterate or with unfinished primary school, 20% have not had a medically supervised pregnancy. Only in 42 cases (16.5%) of cases were assisted by the family doctor for the condition that led to death.

Given the significant share of the social component in the structure of under-5 mortality, social services should work more closely with health services, especially primary health services.

The right to health provided in the Child Rights Convention can only be ensured through an intersectoral collaboration between the health, social, education, local authorities, collaboration that must be established (formalized) by normative acts with clear attributions.

Family health, birth rate and fertility are closely correlated with the reproductive behavior of the population, which in competition with the general mortality, directly influences the natural increase of the population which has had a negative evolution in the last three decades.

According to the analyzes carried out by INS, the Romanian population is currently experiencing a sharp decline, determined by three major causes: the phenomenon of population aging, declining fertility and birth rate, and external emigration. The total fertility rate in 2011 (Year of the General Population Census) was 1.36 children / woman. 2.15 newborns / female is necessary for replacing generations.

Population migration had a rate of 0.13 migrants per 1000 inhabitants. In Romania, the emigration of the population after 1989 was about 4–5 million inhabitants, which is an active population and

fertile in terms of birth rate (holding a significant part of the genetic fund of the population far exceeded immigration in Romania), which determined two main consequences: the global decrease of the country's population and at the same time its aging. Other factors also contribute to the aging of the population, such as: prolongation of life expectancy at birth, social security, development of medical services, family support, etc. It should be noted the drastic decrease in the birth rate expressed by the number of births which in 2015 were 50% lower than in 1989.

Below we present the causes that influence fertility and birth rate, respectively, and the role that politics plays in this field, given the important social and political changes that took place during the period we are referring to at the beginning of the century and millennium.

Politics decisively marks all aspects of our family, economic, social life, instruction and education, culture, etc. and including the reproductive behavior of the population. There are, as we well know, pronatalist and anti-natalist policies. The policy also directly or indirectly influences the factors on which birth and fertility depend and which I will present below.

Economic factors, namely the general level of economic development and living conditions of the population directly influence fertility (the number of children in a family). In post-revolutionary Romania, the industry was practically destroyed and the economy in general was severely affected, with the consequence of the abolition of millions of jobs. This was the direct cause of the mass emigration of the active segment of the population, which led to a number of consequences: the disintegration of many families, thousands of children left in the care of relatives, the chronic lack of labor in a number of sectors of the economy, the aging of the population by emigration of the young segment; all this determined the decrease of fertility and the birth rate was reduced by half now compared to the year of the Romanian Revolution. Fertility and birth rates are indicators in these cases, a sensitive indicator of family well-being, based on a stable economic background or, on the contrary, expresses poverty and unhappiness. On the other hand, it is known that in economically developed countries with a strong industry and urbanization, fertility is low, for many reasons: the family's desire to accumulate material goods; the woman's desire for a professional career; high spending on raising and educating children; reduction of urban

housing; care for the mother's health; the population at risk is represented by those without jobs, unemployed, those living in poverty, for which estimates in Romania reach up to 42% of the population. All this has happened and continues to happen in the conditions in which there was and is a so-called "political class", a President of Romania, a Government, a Parliament, and political parties, which without exception participated in the elaboration of the legislative framework and the executive measures that created the existing economic and social situation extremely unfavorable for the birth, upbringing, and education of children. Political factors, namely demographic policies, operate with the same means regardless of who generates and applies them:

a. fiscal economic and financial means: allowances for children, financial support for mothers with several children;

b. egal-administrative means: job retention (an issue not sufficiently resolved by the current legislation governing employee-employer relations); appropriate salaries, etc.

c. medical means; The current basic package of medical services for the insured makes it difficult to access a specialist for a pregnant woman.

Cultural, educational means, promotion of pronatalist or anti-natalist policies. Socio-cultural factors: The status of women in society is highly dependent on the degree of economic development and tradition in the country or social group to which they belong. Orthodox religion and Christianity in general as well as Islam have always had a pronatalist attitude.

If things do not change in the near and medium future, through policies that protect the interests of Romania and its population, the forecast for the 2050s is bleak in terms of demographic change. Romania's population will be around 13 million inhabitants, a figure estimated based on current data of the negative natural increase of the population. Romanians must become masters of their country, its natural resources, their land and, on this basis, obtain an economic and social development that will allow them to reduce poverty, to bring to the country the Romanians who work in other lands, to work for them and their country. Only in this context can the demographic evolution in Romania be recovered and this negative forecast could be avoided, which is equivalent to the destruction of a third of the country's population. Only in this way can the anti-Romanian policies that brought us into this

situation be stopped, and for which the political decision-makers who led the country at all levels after 1989 are held responsible.

CONCLUSIONS

The birth rate in Romania is one of the lowest values in Europe, and correlated with the increased value of General Mortality, it contributes significantly to the negative natural increase of the population.

The declining trend in under-5 mortality, perinatal mortality, and maternal mortality, recorded in the last 30 years, has decreased or is stationary for about 3 years, and still places Romania in last place in the EU and even across Europe. There is also a lack of excellence in regional services that can address serious morbidity in children (e.g., birth defects, etc.).

The mortality of children under the age of 5 in all its components is strongly influenced by economic and social factors and with limited community support for families with low parental abilities and especially for young families, for whom housing, and work are vital.

Prenatal consultations are a safe and effective medical intervention for the prevention, early diagnosis and treatment of possible high-risk pregnancies and their complications. The structures of primary medicine, respectively family doctors, have not been able to sufficiently identify the tasks at risk by early diagnosis and to involve on a more comprehensive scale also the specialized doctors, in the pre-hospital stage, in their exploration, monitoring and solving.

In order to be able to rectify the complicated health situation that seriously affects Family Health and Birth rate which is the lowest in the EU with a negative effect on the demographic evolution in Romania, it is necessary to urgently adopt a new health law, which will promote "Universal Health Care for insured patients instead of the Basic Package of medical services". A new health law must take into account all components of the multisystem health care: management, infrastructure, technology, staff qualification, medical education, medical research, public and private healthcare components, reconsideration of

healthcare based on the Basic Package of Medical Services for insured patients, which has been although adopted since 01.06.2014, keeps Romania in last place in the EU and in Europe, in terms of indicators of health care performance in Romania and including those that assess the level of family health and birth rate, an indicator that has reached the lowest level in the modern history of the country.

This is a valuable and mandatory goal for Romania because we have had a tradition and national and international recognition in the medical field for both individual and public health which is a precondition for national sovereignty, security, and prosperity.

REFERENCES

1. Gherghina I., Covăcescu M., Constantin A.T., Damir P. "Negative Demographic evolution in Romania" Vol. 11 Antropologie și Demografie. Editura Academiei, Bucharest, 2018, pg178-183 ISBN:978-973-27-2901-4.
2. Gherghina I., *Declinul demografic rezultat al politicilor antiromânești promovate în perioada post revoluția română*, *Cronica Timpului*, **2016**, 19, 4.
3. Stănescu A, Report on the health of small children and reproductive health through demographic indexes: natality, maternal mortality, maternal pregnancy cessation, infant and perinatal mortality, young child mortality, mortality under the age of 5 years 2019-2020. National Institute for the Health of Mother and Child "Alessandrescu Rusescu", Bucharest. Technical and Management Assistance Unit.
4. National Statistical Institute (INS): Results of the 2011 Census.
5. National Statistical Institute (INS): Estimated population of Romania in 2010 and 2012.
6. United Nations fund for population 2011: Evolution of natality in Romania.
7. Unteanu C: *Perspectiva demografică 2050 (Demographic perspective 2050)*; Adevărul.ro 2013
8. Agency for development of central region – 2010. Demographic analysis of central region – demographic disparities: tendencies and prognosis.
9. Eurostat and World Bank – database – natality, general mortality, infant mortality, maternal mortality, perinatal mortality, mortality under the age of 5 years – 2017, 2018, 2019.
10. Cîrtog C., Ghenea G., Pîrvu D., INSP/CNSISP Infant Mortality 2020.
11. Stativă E., Mihăilescu, Stănescu A.: Analysis of maternal and infant mortality 2016- INSMC.
12. Suci N. and Colab. Health Study on Reproduction in Romania 2016.