# DEMOGRAPHIC AND HEALTH CHALLENGES FACING ALBANIA IN THE 21<sup>ST</sup> CENTURY



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# List of abbreviations

ICDP	International Conference on Population and Development	IGME Chif	Inter-agency Group for Child Mortality (UN) Compulsory Health Insurance Fund
DHS	Demographic and Health Survey	PHR	Primaru Healthcare Registers
ADHS	Albanian Demographic and Health Survey	MoHSP	Ministry of Health and Social Protection
RHS	Reproductive Health Survey	YRBS	Youth Risku Behaviour Surveu
MICS	Multiple Indicator Cluster Survey	CDC	Centre for Disease Control
LSMS	The Living Standards Measurement Study	IMIAS	International Mobility Study on Aging
GDP	Gross Domestic Product	ICD	International Classification of Disease
HDI	Human Development Index	DALYs	Disability-Adjusted Life Year
MDGs	Millennium Development Goals	MMM	May Measurement Month Initiative
SDGs	Sustainable Development Goals	BP	Mean Blood Pressure
HIC	High Income Countries	GPS	General Population Survey
LMIC	Low and Middle Income Countries	BMI	Body Mass Index
INSTAT	Institute of Statistics of Albania	COSI	Childhood Obesity Surveillance Initiative
IPH	Institute of Public Health	LDL	Low-density Lipoprotein (Cholesterol)
NCD	Non-Communicable Diseases	ALL	Albanian Lekë
CD	Communicable Diseases	IHME	Health Metrics and Evaluation
CVD	Cardio Vascular Disease	WDI	World Development Indicators
IHD	Ischemic Heart Disease	NSDI-II	National Strategy for Development and
COPD	Chronic Obstructive Pulmonary Disease		Integration II
ARI	Acute Respiratory Infection	ANHS	Albanian National Health Strategy
SEE	South Eastern Europe	UHC	Universal Health Coverage
GDB	Global Burden of Disease	MAPS	Mainstreaming, Acceleration and Policy
IMR	Infant Mortality Rate		Support
NM	Neonatal Mortality Rate	EGHI-EC	The Expert Group on Health Information (EU)

# FORWARD

The recent ICDP+25 recommendations on Albania (UNFPA, November 2019) addressed some of the main health and demographic challenges that the country is facing in the 21st Century. From a demographic point of view, issues such as ageing, very low levels of fertility and low prevalence of family planning were discussed in details and the lack of clear integrated policy was the main subject. As to health, one of the main issues addressed was the increased number of particular cancers and other non communicable diseases in the country. Other analyses and reports have addressed the immediate need for policies addressing matters regarding young people's life and their potential in the region and how they have been hindered by the massive migration in these countries and Albania is no exception. Issues regarding ageing, as well as long term trends of low fertility have also been addressed (UNFPA regional Conference on "Population Dynamics, Human Capital and Sustainable Development in South-East Europe", Sarajevo, October 2019).

It is the mission of UNFPA "to look after every pregnancy and birth", to focus on "reproductive health issues and rights" and in particular "the lives of the young people and their potential to be fulfilled". In order to address some of these challenges in the context of Albania, a team of national and international researchers was put together with the support of the UNFPA Country Office in Tirana, to deliver this detailed report on Demographic and Health Challenges facing Albania in the 21st Century. From the scientific viewpoint, this report is of particular importance as it highlights Albanian's most urgent demographic and health challenges of the 21st century. The need to address migration through developmental policies for the young people has been concluded. Focusing on young people and creating opportunities within the country might help to slow down the fast approaching ageing of the Albanian society. The importance of disease prevention measures, such as the extended "check-up" programme, is shown,

and results demonstrate improvement of health and lives of young and middle age women and men.

Of particular importance is the fact that this report highlights the need for integrated policies that address not just the health of the young children but of their mothers as well; that we need to focus on young people potentials in the country in order to not just stop migration, but to also slow down the ageing process; the need to address the increase in public health expenditure not just as a measure of improving people's health, but also to improve access to health care through reducing the informal payments.

This report is of particular importance for human rights and reproductive health rights. By addressing the regulation of abortion, the stopping of sex selective abortion as well as giving women power to make their own decisions, this report highlights the importance of reproductive health rights as part of the human rights.

The report is a continuation of the work done in the recent ADHS 2017-2018 report and makes use not just of all ADHS data available on Albania, but also of a large number of databases available on the issues it addresses, from vital registration and census data to utilisation of services and other specific population studies.

UNFPA takes this opportunity to thank the Ministry of Health, INSTAT, Institute of Public Health and the experts for the partnership and the support in making possible such in depth analysis. I believe that this recent report of the UNFPA will serve as a basis for further improvements from the government and non-government sector to improve policies that are related to health and demographic progress of Albanian population.

> Manuela Bello Head of Office UNFPA

# EXECUTIVE SUMMARY

Demographic challenges - reversing the negative population growth and migration trends. At the start of the 21st century, Albanians are experiencing a new demographic regime of long lives and very low fertility rates. The country has the highest life expectancy at birth for females in the Western Balkans, at 80.6 years (2018), as well as one of the lowest fertility rates in Europe, at 1.37 children per woman (2018). This very low level of fertility has been achieved through a paradoxical route of fertility transition compared to other European countries through an early fertility pattern, with a mean age at first birth of 26.4 years (2017-2018), and an early entrance into marriage, with a mean age at first marriage for females of 21.9 years (2018). This reflects the interplay between modernisation (through low fertility) and traditional values (through early entrance into marriage).

Albania has entered a third decade of negative population growth, with a current population of 2,854,191 (2019) inhabitants, which is far lower compared to the situation in 1989, when the state socialist government collapsed, and there were 3,182,400 inhabitants. This negative population growth has been driven by large, extended waves of out-migration and, since 1989, the country has lost one third of its population due to out-migration.

The level and pattern of this out-migration have not only determined the negative growth of the population in Albania, but also its age structure, thereby becoming the main driver of population ageing in Albania. The Albanian population residing in the country is ageing very quickly. The percentage of the population aged over 65 years was 14.7 percent in 2020 and is expected to reach 24 percent by 2035.

Despite previous efforts to change this situation, the country continues to have an imbalanced sex ratio at birth, with 110 males to 100 female births in 2017, suggesting that the situation has not changed since it was initially raised by UNFPA in 2012, and that the application of

sex selective abortion (due to the male predominance tradition) continues to be widespread, despite being illegal in the country.

Health and Mortality challenges - avoiding neonatal deaths and the triple burden of malnutrition for children. Albania continues to be a country that has presumably achieved "good health at low cost", with a far higher life expectancy at birth compared to its level of economic development: the so-called "Albanian paradox". This paradoxical situation has been driven by the very low levels of adult mortality compared to its neighbouring countries. The main reduction has been noted in deaths from chronic respiratory conditions. While the number of deaths from cancer and cardiovascular disease is considered low by European standards, attention should be paid to the increased levels of risk factors such as hypertension, obesity, sedentary behaviour, and high plasma glucose level, which could be translated into health and mortality hazards in the future, unless these are addressed through the introduction of adequate policies.

Despite the continuous improvement in infant and child mortality since 1990, the neonatal mortality rate stopped improving in the past decade. In fact, there has been a slight increase in the past two years compared with the 2018 rate of 6.5 deaths per 1,000 live births. The rate of neonatal mortality is one of the highest in the region, and constituted more than 75% of the overall infant mortality by 2018. A significant hazard remains the large number of accidents that occur in the country, which contribute to the highest death rate from external causes amongst the younger population (aged 19-29 years).

Regarding the overall burden of disease in Albania, the major share is non-communicable disease, at about 82% of the total. While cardiovascular disease and cancer remain the dominant diseases, the country has witnessed an increase in the burden of diabetes and mental health disorders overall, particularly amongst the younger

population, but also the elderly living alone, whose share has rapidly increased in Albania.

When the health determinants are considered, the top five risk factors in Albania in 2017 were high blood pressure, dietary risks, smoking, a high BMI, and hyperglycaemia. This pattern differs from the Western prototype of risk factor distribution, resembling instead the pattern of developing and transitional countries, where hypertension is the main risk factor for ill-health. About 33% of all deaths and 17% of the overall disease burden among the Albanian population in 2017 were attributable to high systolic blood pressure alone, making this by far the most important risk factor in the country. Dietary risk was the second main risk factor accounting for 27 percent of all-cause mortality and 15 percent of the overall disease burden. In addition to child under-nutrition, which is still present in some areas of the country, the prevalence of over-nutrition is increasing alongside the presence of micronutrient deficiencies, which indicates a triple burden of malnutrition among Albanian children. Smoking was the third leading risk factor, accounting for 19% of all deaths and 13% of the overall disease burden among the Albanian population. Nevertheless, its prevalence is decreasing, probably due to the recent anti-smoking campaign and policy. Of note, smoking's prevalence among Albanian women remains very low compared to all other European countries.

Health system challenges – increasing public health financing and reducing out-of-pocket payments. The health system in Albania faces many challenges, but two stand out as most important for the country to address if it is to improve the health of its population further. First, the country needs to increase public health expenditure, as this is currently the lowest in the Western Balkans and among the lowest in Europe, with an estimated 50% in 2014, compared to Greece and Serbia with about 62%, or the European Union's average level of 78%. The second important challenge is to reduce the outstanding out-of-pocket payments in the health system which constituted more than 50% of the total in 2018. This is the highest figure in the region. Arguably, out-ofpocket payments lead to catastrophic health expenditure, with a significant impoverishing effect among many Albanian families, especially among the poorest and most vulnerable population categories, which raises serious inequity concerns. Other challenges include the increased requirement for health care resources for medical facilities, particularly in tertiary care, and particularly the prevention of migration of medical personnel to other European countries. This can be achieved only by creating better employment opportunities, significantly increasing the remuneration, and providing a better working environment for them. Lastly, inequalities in healthcare continue to be an issue that requires immediate attention, with the most vulnerable groups and poorer categories being affected the most. Universal health coverage is a laudable mission and the current measures and actions undertaken by the Albanian government represent steps in the right direction, yet the low health care financing (as a share of GDP) and high out-of-pocket payments seriously undermine the efforts of the key stakeholders to achieve universal health coverage for the overall Albanian population.

# INTRODUCTION

Prior to the 1994 Cairo conference, the international community's main concerns were the high fertility rate and the issue of overpopulation, and thus focused on policies related to family planning. The 1994 conference caused a significant change by directing the focus not only towards family planning, but also female sexual and reproductive health. This constituted a significant change, as it placed women's health and reproductive rights at the centre of policymaking and development. During the past three decades, Albanian health and demographic issues had been the focus of research and reporting by international organisations. Albania had failed to comply with any of international guidelines prior to the 1994 Cairo conference; however, the fertility rate fell in the absence of any family planning policies by the time the ICPD took place in Cairo (with 2.9 children per woman in 1990).

Later, the recommendations of the ICPD conference in 1994 served as a basis for building the Millennium Development Goals (MDGs) and, more recently, the Sustainable Development Goals (SDGs), with the aim of uniting the development, health, gender, and demographic goals. When Albania's development is compared to these SDGs, again, the country was in an advanced state, with insignificant levels of maternal mortality and very low levels of infant and child mortality given its level of economic development, with an improved Human Development Index from 0.629 in 1995 to 0.791 in 2018. While the HDI has improved over the years, the ranking of the country has changed little since the collapse of communism, suggesting that the pace of change nationally, in terms of economic development, gender equality and health, has been relatively slow. The infant mortality rate was about 30 and 23 infant deaths per 1,000 live births in 1994 and 2000, respectively, and, by 2010, had reached a level of 11 infant deaths per 1,000 live births.

While the international health and demographic targets were being met by Albania during the transition period

(1990-2015), the country was entering a new phase, with a new demographic and health regime of long lives and very low fertility. By 2018, Albania had one of the lowest total fertility rates in Europe, with a TFR of 1.38 children per woman, and also one of the lowest adult mortality rates in Europe, with a probability of dying for ages 15-69 of 204.2 and 109.5 deaths per 1,000 for males and females, respectively. Simultaneously, Albania was also experiencing one of the highest negative net migration rates in Europe and the highest in the Western Balkans, determining thus a negative growth rate for the population during the whole transition period (from 1990 to the present day). By 2018, non-communicable diseases constituted more than 87% of all diseases, suggesting that the country has developed a different health pattern and so different and specialised policies are required.

Despite the rapid change in the demographic and health landscape, little was done by the different governments to address some of the main issues in terms of adopting an integrated approach. Albania has never had an integrated health and population policy, during either the communist or transition periods. In fact, there have been specialised, focused policies. Under state socialism, the only pronatalist policy was the provision of universal access to nurseries and kindergartens, as well as a financial award for mothers with more than five children. Another policy that indirectly affected the fertility level was that focused on women and children's health. This policy continued even during the transitional period. As a result, Albania witnessed an insignificant number of maternal deaths and a very low infant mortality rate. More recently, different governments have attempted to address various public health and population issues. The first such policy was the creation of a Task Force in 2012 as a result of a report by UNFPA on the increased incidence of selective abortion amongst female births. Another focused policy that was recently introduced (2014) is the health check-up for adult population. Within this public health policy, there have been particular policies focusing on women; e.g. breast cancer

screening, and diabetes testing. Another very recent policy is the introduction of financial incentives for having children, introduced by the current government (2018).

Some of the policies that were introduced proved largely unsuccessful, as they focus on only a single issue with a single approach. Unfortunately, the reality of the health and demographic issues facing by the country has not been, and cannot be, addressed by a single policy or approach. If the negative growth of the population can be reversed, this will not be achieved solely by introducing a policy of offering financial incentives to mothers. This should be accompanied by gender-related policies that give women equal rights in terms of employment and paternal leave, as well as policies that improve their position in society. To reduce non-communicable diseases, the focus should not merely be on early prevention, but also treatment, and the latter requires further investment in tertiary care. If the policy for the early prevention of non-communicable diseases (health check-up) works, one must also address the possible risk factors, from smoking and obesity to exercise and pollution. Above all, the policy approach should be multi-sectorial.

Based on this approach, this study represents a unique opportunity to analyse the health and demographic issues within Albania by adopting a multidisciplinary approach, embracing the areas of demography, epidemiology, and public health, to mention a few. It is also important to note that a multidisciplinary approach requires the use of the wide number of datasets available in the country. In this respect, the report makes use of the vast amount of data available for the country, from ADHS, MICS and LSMS surveys to censuses to vital statistics, and many more. The international estimates by different organisations are also used in order to obtain a fuller picture of Albania's health and demographic changes, as well as to validate the quality of the data used.

The multidisciplinary analysis approach is also replicated in the approach to policymaking. The policy recommendations of this report involve a multi-sectorial approach to policymaking.

The report aims to address Albania's main demographic and health challenges in the 21st century. The analysis will focus first on the demographic changes in Part 1 of the report. A detailed account of the fertility, mortality, and migration rates among the Albanian population will be analysed and discussed in this part of the report. Part 2 of the report will focus on the changes in Albania regarding mortality and cause of death over the past few decades and the options regarding future improvements. This will be followed by a detailed analysis of morbidity and its risk factors in Albania in Part 3. Part 4 provides an account of the health care provision in the country, under which these changes in health and mortality have taken place. The report ends by offering detailed policy recommendations based on the findings outlined in Part 5.

# DEMOGRAPHIC CHANGE AND CHALLENGES IN ALBANIA A REGIONAL PERSPECTIVE KEY FINDINGS

- By 2018, the Albanian demographic regime could be characterised as one of low mortality and low fertility. Life expectancy at birth for females was the highest in the Western Balkans, at 80.6 years. The total fertility rate was among the lowest in Europe, with 1.37 children per woman.
- Albania continues to be a country that has achieved "good health at low cost", with a very high life expectancy given its level of economic development, and the so-called "Albanian paradox" in the literature continues.
- Albania has achieved one of the lowest fertility rates in Europe by adopting very different patterns to other European countries – early marriage (the mean age at first marriage = 21.9 years) and early fertility (mean age at first birth = 26.4 years). This constitutes a paradoxical route to low fertility, through maintaining aspects of the traditional values and norms.

- Migration has become the main demographic component in the past 30 years, determining not only the growth rate of the population, which has been negative for three decades, but also the age structure of the population.
- The Albanian population is ageing very quickly. This is not only due to the recent low fertility rate, but mainly a result of the long-term migration of the active age population. The percentage of the population over 65 is 14.7% at present (2020) and is expected to reach 24% by 2035.
- Unfortunately, Albania continues to have an imbalanced sex ratio at birth of about 110 male to 100 female births (2017), suggesting, as previously researched, the application of sex selective abortion in the country. This requires immediate policy attention.

# PART 1

## DEMOGRAPHIC CHANGE AND CHALLENGES IN ALBANIA - A REGIONAL PERSPECTIVE

### 1.1. Introduction

Various international publications and researchers point out that Albania is experiencing very low levels of fertility, unforeseen for the country within any projections made in the 1990s. The level of fertility is dissimilar to other European countries but actually far lower, thereby positioning the country as one of the populations with the lowest fertility in Europe (EUROSTAT, 2020; WB, 2020, UNFPA, 2020). At the same time, Albania has also continued to improve its level of mortality far better compared to its wealthier neighbours in the Western Balkans and the rest of Eastern Europe. At the same time, the country has also been noted for having unprecedented levels of emigration, which is a phenomenon that has not stopped, even in recent decades.

It is important to analyse these demographic trends and patterns in detail in order to answer some of the questions raised, but also to understand the factors underlying these changes, in order to design the right policies with regards to all aspects of population change. The analysis here will be detailed so that the policy makers can be better informed about the changes and the factors affecting them.

This part of the report starts with a detailed description of the data used in this analysis and their availability. It follows the concept of population dynamics and demographic transition, by initially analysing population growth in Albania, followed by the processes that affect it, fertility, mortality, and migration. In line with the concept of population dynamics and demographic transition, the analysis in this part focuses on the consequences of these demographic changes, the ageing population of Albania, and the factors responsible for this.

### 1.2. Data and methods

This chapter employs data from a number of different sources. The main primary data used here are derived from population and housing censuses in Albania carried out at regular intervals from 1950 to the present day. Vital statistical data on fertility and mortality available from INSTAT have also been used to build a picture of the various rates of mortality, fertility, and migration. Other sources of information used in this chapter are the United Nations Population Prospectus, UNICEF data on infant and child mortality, and ADHS data, where applicable. Where different sources of data were employed, their source is stated.

Conventional demographic methods were applied to the data analyses to analyse the fertility, mortality, and net migration of Albania for the period under consideration. The last part of this chapter involves some estimates of the effect of migration on population change and structure. To form these estimates, the authors applied the cohort component method of population projection, the details of which are explained in the text alongside the presentation and discussion of the results.

### 1.3. Demographic transition and the major shift in age structure in Albania's population

### 1.3.1. From the highest growth rate in Europe to a declining population size - Albania's demographic transition route

Historically, Albania has experienced a high growth rate within its population from end of World War II to the collapse of the state socialist regime. From 1950 to 1990, when state socialism collapsed, the population almost tripled, with the fastest annual growth rate in Europe of about 2.4% per year. This high growth rate was due to the

high levels of fertility in Albania but also a result of the rapid improvement in the mortality rate during the later period. During the main period of growth, in the 1950s and 1960s, the state socialist government followed a pro-natalist policy, albeit an indirect rather than a direct one, with support for children and mothers (Falkingham, J., and Gjonça, A., 2001). The establishment of a national health service with a particular focus on primary healthcare helped particularly with reducing infectious diseases as well as the infant and child mortality rates.

Once the country opened up to the world in the 1990s, we see a different demographic regime, with the Albanian population showing signs of a negative rather than a positive population growth rate. From 1989 to 2001, the country lost a net population of 114,600 people, with a negative annual growth of -0.33%. It was estimated that over 700,000 Albanians left the country during this period (INSTAT, 2004). This marks a change in the demography of the country, with migration becoming the most important determinant of the population at both the national and local levels, rather than fertility and mortality, as in previous decades (Lerch, M., 2014). This trend continued between 2001 and 2011, with the country losing a net population of 265,640 people between the two censuses, which accounts for a 5.3% negative change for the population of the country. Between the 1989 census, the last census under the state socialist governance, and the 2011 census, Albania lost about a third of its population. This trend continues to the present day, with the population growth still being negative, and the country's trend of losing population as a result of migration continues. It goes without saying that Albania had experienced a full demographic transition by the end of the last century, with both the fertility and mortality rates falling to levels

similar to those of most European countries. This change records a major shift in the demographic regime of the country, from one where the main determinants were mortality and fertility to one dominated by migration. The following sections will analyse these changes in detail from an historical perspective.

## 1.3.2. Rapid fertility reduction in a very short period of time

The latest statistics on fertility in Albania show an unprecedented level of low fertility in the country, with a total fertility rate of around 1.38 children per woman in 2018. Despite the very high level of fertility existing at the end of state socialist regime in 1990 (three children per woman), Albanian's fertility rate fell far more rapidly than that of the other Western Balkan countries. The main reduction occurred during the first two decades of this period, in the 1990s and 2000s, where the fertility rate almost halved, from three to 1.6 children per woman by 2010. Unlike other Western Balkan countries, Albania has had historically higher levels of fertility (Figure 1), so this reduction has also been more dramatic. This decrease in fertility rate resembles those that occurred in certain southern European countries, such as Italy, Spain, and Greece rather than Eastern European ones, including most of the former Yugoslav countries. This, in a sense, demonstrates Albania's historical positioning with regards to its demographic transition, in between Eastern Europe and the Mediterranean countries. This geographic position was also reflected in other aspects of the demographic regime, such as mortality and migration.

In order to understand the present, one needs to analyse the past. This is the case with most social sciences but even more so with demography. In Albania's case,

	1950	1960	1969	1979	1989	2001	2011*	2019*
Total Population	1,218,900	1,626,300	2,068,100	2,590,600	3,182,400	3,067,740	2,905,195	2,854,191
Population Change	96,900	407,400	441,800	522,500	591,800	-114,660	-162,545	-51,004
Population Change (%)	7.9	25.1	21.4	20.2	18.6	-3.7	-5.30	-1.76
Annual Growth Rate (%)	1.66	2.88	2.67	2.25	2.06	-0.33	-0.55	-0.197

#### TABLE 1. POPULATION CHANGE IN ALBANIA AND THE ANNUAL GROWTH RATE 1945 – 2019 (ABOUT HERE)

Note: \*The 2011 and 2019 data refer to corrected estimates of INSTAT from the 2011 Census base population. The data refer to the mid-year population of that particular year. Source: Author's calculation based on census data and INSTAT estimates



FIGURE 1. TOTAL FERTILITY RATE FOR ALBANIA AND SELECTED WESTERN BALKAN COUNTRIES

Source: Author's calculations based on UN Population Prospects data, 2019 edition

where the historical trends differ from those of the neighbouring countries, analysing the past becomes vital for understanding the present pattern. At the end of the Second World War, Albania had the highest fertility rate in Europe, with an average of more than six births per woman. This high level of fertility, at the time, was reinforced by the traditional patriarchal family values. The country was primarily an agrarian society - fourfifths of the population lived in the rural areas, there was little industry, and only one in five of the population was literate. When Albania emerged from behind the 'Olive Curtain' in the early 1990s, it came as something of a surprise to learn that, in the intervening period, the fertility rate had fallen to around three children per woman, despite a pro-natalist state socialist regime and the virtual absence of contraception and abortion (Falkingham, J., and Gjonça, A., 2001).

Figure 2 shows the changes in fertility indicators in Albania since the end of the Second World War to the present day. The total fertility rate rose during the 1950s, reaching a peak of almost seven children per woman by 1960, which resembles the baby boom taking place in almost every European country, before declining steadily until 1990 to just over three children per woman.

The post-war period was already a pro-natalist, traditional environment with respect to fertility. Patriarchy

dominated all aspects of life. Illiteracy was highest amongst females, with 92% of them being illiterate in 1950. During the state socialist government in Albania, population growth was seen as positively correlated with economic growth. Other indirect pro-natalist policies encouraged women to join the labour force, so pre-school care provision was introduced. By the end of 1990, women comprised 46% of the labour force. They were also other policies that reduced the cost of childbearing. The most significant one with a strong effect was the restriction placed on any forms of family planning, with no access at all to contraception, and abortion being illegal in the country until 1995.

As noted earlier, since 1990, Albania has achieved rapid fertility reduction, with the TFR falling from 3.0 (1990) to 1.38 children per woman (2018). Although the society was open, with family planning through contraception becoming available, and abortion being legalised in 1995, the society was predominantly patriarchal (Gjonça, et al., 2008; Lerch, M., 2013). It terms of the underlying factors, education remained by far the most important factor in fertility reduction in Albania. At present, females outnumber males in higher education. Economic factors have also played a role in the last decade, particularly economic hardship and the high youth unemployment rates. The 2002, 2005, and 2012



FIGURE 2. TOTAL FERTILITY RATE AND MEAN AGE OF CHILDBEARING, 1990 - 2018 (ABOUT HERE)

Souce: Author's calculations based on data provided by INSTAT

LSMS showed that unemployment was high amongst young people and that poverty had a young face (INSTAT, 2005, 2019). Another factor that played an important role was the reduction in infant and child mortality, with an indirect effect on the number of children being born (Gjonca, Aassve, and Mencarini, 2010). In terms of proximate determinants, the Albanians did not use any contraception until early 2000, but legal abortions became available very quickly, particularly in the urban areas (UNFPA, 2012). The abortion rate dramatically increased in the 1990s and the first Albanian RHS (2005) revealed an extremely high rate of about 400 abortions per 1,000 live births, which was almost double the figure stated by the government at the time. However, the increasing trend in the abortion rate seen in the 1990s has now ceased, with recent figures showing a decreasing abortion rate in the country, although it remains high by European standards. At present (2018, INSTAT), there are about 170 abortions per 1,000 live births in Albania, resembling the childbearing behaviour in eastern Europe, where abortion is a significant and sometimes the main proximate determinant of fertility. Regarding contraception use, Albania shows signs of being a traditional society that is slowly moving forwards. The ADHS data in 2017 (ADHS, 2018) showed that only 46% of currently married women use any method of contraception, with the vast majority of them using traditional methods (42% out of this 46%) and only 4% using modern methods. This clearly shows that relatively little has changed in this regard, which supports the evidence that abortion continuous to be a significant alternative means of birth control in Albania.

The mean age at marriage remained almost unchanged during the communist period for both sexes, as this increased by less than two years for women and one year for men from 1960 to 1990. Most importantly, marriage still remained universal during the transition period and, by the age of 28 years, 90% of the women had married in 2001 (RHS, 2005). The latest ADHS data (2017) also suggest that, while there have been changes, two thirds of the women surveyed between the ages of 15 and 49 years were currently married, with only a small percentage cohabitating (2.5%). Moreover, the number of births outside marriage continued to be insignificant, at less than 1% of all births. The data from the 2017 ADHS suggest that the mean age at marriage has remained relatively stable, and the median age at first marriage for the surveyed women aged 15-49 years was 22 years. When fertility is analysed in relation to the mean age of childbearing and marriage, respectively, two features emerge regarding the reduced fertility rate in the past 20 years in Albania: the mean age of childbearing (MACB) has remained relatively stable. In fact, the 2018 figure is identical to that for 1990 with MACB, at 28 years, which



#### FIGURE 3. CHANGES IN THE PATTERNS OF FERTILITY IN ALBANIA (ASFR)

suggests that Albanians have not fully abandoned the East European model of early childbearing. This is also clear from the pattern of age-specific fertility rate for 2018 when compared to the previous period (Figure 3), as the fertility rate has reduced for all age groups and there is no sign of postponement. From this figure alone, it is clear that majority of fertility is still associated with the 25-29 years age group. The last five years (the 2015



FIGURE 4. TOTAL FERTILITY RATE AND MEAN AGE AT FIRST BIRTH, ALBANIA AND EU COUNTRIES, 2018

Souce: Author's calculations based on data from EUROSTAT 2020 Note: The dotted lines indicate the EU average values

Source: Author's calculations based on data provided by INSTAT



FIGURE 5. TOTAL FERTILITY RATE AND MEAN AGE AT FIRST MARRIAGE, ALBANIA AND EU COUNTRIES, 2017-18

Souce: Author's calculations based on data from EUROSTAT 2020, and ADHS 2018 Note 1: Mean age at first marriage for Albania has been derived from the ADHS, 2018 Note 2: The dotted lines indicate the EU average values

and 2018 curves in figure 3) show, for the first time, an increased fertility rate in the 30-34 years age group, which one may assume will be the trend in the future as women start delaying childbearing for the coming years. Secondly, the data suggest a similar small increase in the mean age at marriage for women (figure 2), which, in a sense, goes hand in hand with the change in the mean age at childbearing. This shows that the increase in age at childbearing in recent years might be due to a recent change in the mean age at first marriage. More detailed analysis is required to investigate this recent change further.

When both the childbearing and marriage patterns are compared with those of other European countries (Figure 4 and 5), it becomes clear that why, with one of the lowest fertility rates in Europe, Albania continues to display different patterns. When the total fertility rate and mean age at first birth are plotted, it appears that, similarly to certain Western Balkan countries. Albania has both a very low fertility rate but also early fertility, and thus a low mean age at first birth. This further indicates that Albania's fertility pattern resembles the so-called Eastern European pattern of early childbearing, and that postponement is not widespread, as also shown in Figure 3. The same comparison with European countries suggests likewise; that Albania, together with certain Western Balkan countries, have a lower fertility rate but a relatively early age at marriage, which may reflect the interplay between modernisation and traditional values (Gjonça, A., Thornton, A., 2019).

### 1.3.3. The continuous improvement in mortality – the paradox of Albania's success "lives on"

One of the most significant achievements of Albania's socialist rule was the reduction in the mortality rate at an unprecedented speed, with life expectancy at birth improving by 20 years for both sexes within a 40-year period. When the state socialist regime collapsed, in 1990, Albania had a life expectancy for males of 69 years and for females of 75 years (UNFPA, 2019). This was a success compared to the situation in the 1950s, when male life expectancy was about 51.9 years and female life expectancy about 51.3 years. After 1990, the mortality rate continued to improve in Albania even further and, by the end of 2018, the country had a life expectancy of 80.6 years for females and 77.4 years for males. As figure 6 suggests, Albania has a higher life expectancy at birth for females compared to all other Western Balkan countries, and one of the highest male life expectancies at birth, with only Croatia having a higher value. Both graphs, for



FIGURE 6. LIFE EXPECTANCY AT BIRTH IN YEARS FOR ALBANIA AND SELECTED BALKAN COUNTRIES (MALES, FEMALES)



Source: Author's calculations based on UN Population Prospects data, 2019 edition

males and females, show a clear, sharp improvement in the 1950s in Albania of about ten years within a decade, which is well argued in the previous research as being due to reductions in infectious and parasitic diseases in the 1950s, including tuberculosis and malaria (Gjonça, A., 2001). After the dramatic period following the Second World War, we see a gradual improvement, which continues linearly to the present day. It is striking that Albania did not experience the same worsening adult mortality as other Eastern European countries in the 1980s initially, but also in the 1990s as a result of the collapse of the state socialist regimes in Eastern Europe.

An important feature of Albania's success in improving mortality to a rate similar to that of far more advanced and economically developed countries is the fact that this



#### FIGURE 7. ALBANIA'S ECONOMIC DEVELOPMENT AND MORTALITY IMPROVEMENT (ABOUT HERE)



Source: Author's calculations based on the World Bank Dataset

was achieved under conditions of relatively low economic development (Figure 7). Albania has been recognised as one of the countries that has achieved 'good health at low cost' under a state socialist rule, similar to countries such as China, Cuba, the Indian state of Kerala, Sri Lanka, and many more (Gjonça, A., 2001, Ballabanova, K. et al., 2013). These countries were seen as outliners, meaning that their economic development level would not be able to predict the level of life expectancy at birth and the infant mortality rate (Caldwell, J., 1986). It has been argued that investment in health, prioritising children and mothers' health, universal coverage of the whole population, as well as free at the point of delivery were the major factors in this regard. Priority was given to female education, which was significant in Albania, with illiteracy falling from 92% in the 1950s to less than 5% in 1990. The expectation was that, during the



#### FIGURE 8. MORTALITY INDICATORS OF ALBANIA BY AGE GROUP, 1950-2018

Souce: Author's calculations based on data provided by INSTAT

transitional period, Albania would lose this "advantage" and show signs of mortality trends and patterns similar to its economic development level but, in fact, this was not the case and the country's expectancy continues to improve at the same pace as in the past. The most recent data (2017 in Figure 7) suggest that this paradoxical situation continues, with Albania witnessing very high life expectancy at birth for its development level. A detailed analysis of this will follow in Parts 2 and 3 of this report, but the main argument is that the factors responsible for the success achieved under the socialist rule remain pronominally present even today in Albania.

A closer look at how Albania achieved this high level of life expectancy at birth is presented in Figure 8, which shows various indicators of mortality over a long period of



#### FIGURE 9. NEONATAL DEATHS AS A PERCENTAGE OF INFANT DEATHS

Souce: Author;s calculations based on data provided by INSTAT

time, including the infant, child, and adult mortality rates, the last represented by life expectancy at age 15. The Albanian population's life expectancy at birth improved by almost 20 years in a relatively short, 40-year period. The majority of the improvements took place in the 1950s and 1960s. In 1950, life expectancy for males was 51.9 years and 51.3 years for females while, at the end of socialist rule, it was 67.9 and 73.9 years, respectively. This rapid mortality improvement was mainly due to the reduced infant and child mortality levels, which were amongst the highest in Europe at the end of socialism (Figure 8), but fell to very low levels, given the development level of the country. Mortality improved for all age groups and both sexes, although more so for females than males. The collapse of socialism left Albania with an infant mortality level at 47 (males) and 43 (females) deaths per 1,000 live births.<sup>5</sup> Despite the rapid improvement under communism, these relatively high levels of infant mortality show the conditions of poverty in the country.

Adult mortality, as shown in Figure 8, based on life expectancy at age 15 also improved. Two important features emerged regarding adult mortality. The first is that it did not worsen in the 1980s, as in most East European countries, including some of the Western Balkan ones (Gjonca and Bobak, 1997, and Gjonça 2001). The second is of particular importance and will be analysed in detail later in this report. It is a fact that adult mortality continued to improve at a higher pace in the last two decades, 2000-2018. While still having one of the lowest adult mortality rates in Europe, there has been a change in the risk factors, with obesity almost tripling within a short period of time. This can be observed amongst young children (ADHS, 2008-9), but mainly occurs amongst adult males (aged 15 to 60 years), more than 66% of whom are overweight (ADHS, 2008-09). Hypertension is also on the increase. It is expected that this will increase the level of mortality due to cardiovascular disease. It is important to address this in the case of Albania as, in theory, changes in the lifestyle factors and other risk factors for adult mortality would predict a negative change in adult mortality. These important findings will be analysed in more detail in parts 2 and 3 of this report.

The reduction in infant mortality is also a success story for socialist Albania but only to a certain degree, as the levels, as mentioned above, were still high in 1990 when the country opened up. Nevertheless, this can also be considered a success even in the past two decades,

<sup>5</sup> These figures are corrected for completeness of death registration at end of 1980s. The official figures are much lower.

2000-2018. A reduction in the infant mortality rate below 10 per 1,000 live births for both sexes is acknowledged in the literature. Maternal mortality has never been an issue in Albania, with insignificant low levels being the norm. What is significant in more recent years is how has Albania has achieved a continuous reduction in the infant and child mortality rates. Apart from continuing to have a universal health system, the emergency care for children and the facilities have improved, as has nutrition for mothers and children. Having said that, Albania continues to have a very high level of neo-natal mortality compared to its level of infant mortality. Figure 9 shows clearly that the neonatal mortality rate has not changed at all in the past two decades. This relatively high level of neonatal mortality competed to the level of overall mortality in the country requires further investigation, focusing particularly on the delivery of facilities nationwide as well as improved pregnancy care. This will also be analysed in detail in part 2 of this report.

### 1.3.4. Unprecedented Emigration Rates – Albania's migration flow continues

By far the most important demographic change in Albania in the past three decades has been the unprecedented rate of emigration. As previously mentioned, migration is the most important demographic process, affecting the negative annual growth rate of the Albanian population from 1990 to 2018. While the natural increase (the difference between births and deaths) has been insignificant but positive, the net migration has been negative in Albania, with more people leaving the country than being born there, thus determining a negative population growth (Table 1). Considering the relatively short time period, this both internal and outward migration is unprecedented in the case of Albania. In terms of internal migration, we see a concentred population in the main cities of Tirana and Durres, with movements mainly from the north of the country (Lerch, 2016).

When the net migration rate is compared to that of other Western Balkan countries (Figure 10), most of them have a negative rate, with more people leaving their respective countries since the collapse of the socialist state in 1990 and the disintegration of the former Yugoslavia. Albania's emigration trend is similar to that of Bosnia-Herzegovina, with a peak of migration from the middle to the end of the 1990s, when the net migration rate increased to almost -30%. In the case of Albania, this was due to the country's involvement in civil unrest during 1996-1997 as a result of the collapse of the pyramid scheme, which triggered the so-called second wave of migrants, the first having occurred immediately after the country opened up in the early 1990s. During this period, it is estimated that Albania lost 25% of its 1989 population, or a net of about



FIGURE 10. NET MIGRATION RATE, ALBANIA AND SELECTED WESTERN BALKAN COUNTRIES

Source: Author's calculations based on UN Population Prospects data, 2019 edition



### FIGURE 11. POPULATION AGE PYRAMID FOR ALBANIA IN SELECTED YEARS



750,000 people, who left the country between 1989 and 2001. In the case of Bosnia-Herzegovina, the push factors were related to the war period of 1992-1996. The Albanian trend of negative net migration continued in the next decade, between 2001 and 2011, although at a slower pace than in the 1990s. During this period, there was a net migration rate of 10-15%, depending on the year. The net loss due to migration in this period was about 300,000 people. It is estimated that the negative migration rate continued

in Albania even in the period from 2011 to 2019. The net migration rate is estimated to be between -5% and -10%.

The effect of migration has been multifactorial, with many demographic, economic and social consequences. In terms of age pattern, migration has affected the reproductive age groups more (the active population) and so has also had an indirect effect on the number of children born, which has fallen as a result of migration (see Figure



#### FIGURE 12. SEX RATIO AT BIRTH IN ALBANIA 1950-2019

Souce: Author's calculations based on data provided by INSTAT

11). Focusing on the young population, migration has had a direct effect on the population structure by reducing the size of the active population dramatically (see Figure 11). Its main effect has been in the labour market where, for the first time, we see a lack of labour force supply in most of the Balkan countries during the post-communism period. Another indirect effect is the reduction in the fertility rate as a result of migration. While not very significant, it is important to address this.

Migration has also led to a very important demographic phenomenon: the ageing population. While the number of economically active members of the population has fallen due to migration, the elderly population has increased as a result of improved survival. This change has affected the dependency ratios of the country, with Albania facing an unexpected ageing of the population within a very short period of time. This will be addressed in detail in the next section (1.4).

### 1.3.5. The imbalance in sex selection at birth – The patriarchal society remains dominant

When the fertility and marriage patterns were analysed earlier in this chapter, Albania was portrayed as a country where, while modernisation has reduced the fertility rate to a very low level, the traditional values have kept fertility within marriage, with early age at marriage, followed by a pattern of very early fertility. This 'domination' of traditionalism against modernisation is also reflected in another demographic phenomenon, which has been identified in post-socialist Albania, since 2012: the imbalanced sex ratio at birth, found to be a result of sex selective abortion (UNFPA 2012). A report by UNFPA (2012) found that Albania had a very high sex ratio at birth of about 112 male to 100 female births in 2010, compared to the biological ratio of about 104-106 per 100. This was attributed to a preference for male births in Albanian society, which is reinforced by the patriarchal values which continue, to the present day, to favour boys compared to girls (Guilmoto, G.Z. et al., 2018). This becomes apparent once fertility reaches very low levels and the sex selection of birth takes place as early as the first birth. This phenomenon was found to be widespread across Albania and, most significantly, contrary to expectations, it was present within the urban population and among the most educated women. This controversial pattern was argued to be a result of the accessibility and affordability of sex selective abortion for both the urban and most educated populations, which continues to be illegal in Albania. Despite this, the imbalanced sex ratio at birth continues to the present day, with the sex ratio at birth in 2018 being



FIGURE 13. POPULATION AGED 65+ IN ALBANIA AND SELECTED WESTERN BALKAN COUNTRIES, 1990-2035

Source: Author's calculations based on UN Population Prospects data, 2019 edition

108 male to 100 female births (Figure 12). While the Albanian government of the time created a task force to address this situation, the fact that the sex ratio at birth continues to show a biological imbalance, which can only be explained by sex selective abortion, is an issue which requires addressing by policy-makers. More importantly, this is a human rights issue which requires urgent attention.

### 1.4. The Ageing Population in Albania – "Greying from the middle"

At the start of the 21st century, Albania is experiencing a demographic regime of low fertility and long life expectancy. The level of fertility with a TFR of 1.38 in 2018 and a level of life expectancy at birth for males of 77.4 years and for females of 80.6 years, suggest that Albania is reaching the end of its so-called demographic transition. This transition, which started in the 1950s due to the initial rapid improvements in mortality, followed by a steady reduction in the fertility rate from the 1970s onwards, is believed to have reached the end of its course at the start of the new millennium, where the fertility rate was below the replacement level of the population and life expectancy was well over 75 years. The natural consequence of this demographic transition is a shift in the population structure from young to old, thus causing the so-called process of population ageing, where the population aged under 15 years is shrinking due to the continuously low levels of fertility (see figure 11) and the population aged over 65 years is increasing as a result of both the long term trend in low fertility and the improved mortality rates in old age.

This process has occurred in the majority of high income countries of Western European and North America. It also applies to Eastern Europe, although the effect of mortality (improved survival into old age) in this region is almost negligible regarding the process of ageing. An interesting aspect of this process is the speed at which ageing is taking place. In France, it took almost 115 years for the population aged over 65 years to increase from 7% to 14% of the total, and 85 years in Sweden but, in Japan and Singapore, it took only 26 and 19 years, respectively. It depends greatly on the speed of fertility decline, but also whether or not this is accompanied by improved mortality in old age. In the case of Albania, it took about 20 years (2000-2019) for the population aged over 65 years to reach 14% of the total.

Figure 13 shows the changes that have occurred within the population aged over 65 years in the Western Balkans. We see a clear trend of acceleration in the proportion of



FIGURE 14. EFFECT OF MIGRATION, FERTILITY AND MORTALITY ON THE ANNUAL POPULATION GROWTH RATE, 1989-2019

Source: Author's calculations based on data provided by INSTAT

the population aged over 65 years in the case of Albania between 2000 and 2020. Based on the projections (UN Population Prospects, 2019), a second period of acceleration may occur from 2020 to 2035, which will bring the population aged over 65 years to 23% of the total population. This constitutes an extremely fast change when one compares the figures to those of other countries in the Western Balkans, which have witnessed a somewhat more gradual change in terms of population ageing, due to the gradual, long-term decline in fertility. Some of the Western Balkan countries, such as Bosnia-Herzegovina, North Macedonia, and Albania, have experienced a faster pace of increased population aged over 60 and over 65. While the rapid fertility reduction or improved old age mortality might have played a role, these two components alone cannot have effected such a great change with regard to population ageing. It is acknowledged that this might be an added effect as a result of the large-scale emigration.

In order to test the hypothesis that emigration may have partially been responsible for this rapid increase in the size of the older population, Albania constitutes an appropriate case for analysis, as the country has witnessed by far the most dramatic emigration in a short period of time. Albania lost a third of its 1989 population according to the last census in 2011. The data available also facilitate this analysis. We took the 1989 population (census year) as the base-year population and projected the population for 2019, today's population, under different scenarios. In different variants, we wanted to measure the effect of one process (e.g. migration) while keeping the other processes unchanged (fertility and mortality). We repeated this process for all demographic components. The method used was the cohort component method of population projections. The outcome variants based on different assumptions for the 2019 projection were:

- i. Migration effect real, fertility and mortality constant with the rate of base year
- **ii.** Fertility effect real, the others effects of mortality and migration constant
- iii. Mortality effect real, fertility and mortality constant
- iv. The last one is the real change in the population from 1989 to 2019 the actual change

The results of these analyses are plotted in Figures 14-16. Figure 14 shows the actual and predicted annual growth rates of the Albanian population from 1989 to 2019. The three predicted variants are those that measure the effects of migration, fertility and mortality. It is clear from this graph that the curve of the 'migration effect' annual growth rate of the population follows identically that of the real population change, which suggest that the effect of migration has strongly shaped the change

in population growth in Albania since the collapse of the state socialist regime.

For the purposes of this analysis, however we are interested not only in the effect of migration has on population growth, but mainly the effect on population ageing. The other two figures, 15 and 16, take this into account and show this effect on two different measurements of ageing.

Figure 15 shows the effects of demographic processes on the population aged 65 years and over, while Figure 16 shows the same effects but on the old age dependency ratio. Both of these indicators were chosen as the measurments of population ageing. It is striking that, in both cases, the effect of migration in determining the shape of both curves and the changes over the years follow identically the curve showing the actual change. This is a clear indicator that, despite the choice of indicator, migration has clearly had the main effect in shaping the population ageing in Albania. One can claim with confidence that the large-scale migration in Albania has had a far greater influence than the other two components on the process of ageing during the period following the collapse of the socialist state. What this means for the population is that migration has had a double effect. It has, firstly, reduced the size of the population belong to the active age group (aged 15-65

years), thus resulting in fewer people of taxpayers' age. This is particularly important regarding the effect on the old age dependency ratio. The second effect of migration is indirect, since having fewer people in the reproductive age group indirectly reduces the number of children born, and thus the population aged under age 15 years. Both the direct and indirect effects, by reducing the number of people aged under 15 years and 15-65 years, respectively, will automatically increase the proportion of the population aged over 65 years. One may say that the Albanian population has aged from the "middle".

The process of ageing has been debated for a long time in the high income countries (HIC), but has now also started to be discussed in the middle income countries, including Albania, due to the faster pace of ageing now occurring in the latter countries. This accelerated ageing process has raised concerns in these latter countries since the level of economic development under which they are experiencing it is not the same as was experienced in the HIC. This debate also addresses a number of different policies, from aiming to increase the level of fertility to aiming to raise the retirement age. Should these countries be concerned about this? Ageing is a natural consequence of demographic transitions, and sooner or later, every society will experience it. Despite the fact that, in Albania and several other Western Balkan countries, it has happened



FIGURE 15. EFFECT OF MIGRATION, FERTILITY AND MORTALITY ON THE POPULATION AGED 65+ YEARS

Souce: Author's calculations based on data provided by INSTAT


#### FIGURE 16. EFFECT OF MIGRATION, FERTILITY AND MORTALITY ON

Souce: Author's calculations based on data provided by INSTAT

at a faster pace, if the correct policies are in place, society can benefit from it. Albanians now live longer, but they also live healthier. The time at entering employment has increased, with more children staying in education, so late retirement will not change the employment period for the new generation compared to their parents. Another positive aspect is that, even after retirement, the elderly continue to be productive and contribute to both the formal and informal sectors of Albanian society. Thus, with the right social and demographic policies in place, Albania will be able to benefit from this new demographic regime of population ageing.

#### 1.5. Concluding notes

We analysed in this part of the report the recent demographic changes that have occurred in Albania during the period 2000-2018, with two comparative dimensions in mind. One was the long-term trend of demographic changes, comparing the recent changes with the past trends, which gave us some understanding of the progress that Albania has made. We also compared Albania to its neighbours, some of the Western Balkan countries. We analysed the similar patterns within Albania's demographic regime, but also discussed the uniqueness of this regime compared to other countries. We also explored the question of what have been the main factors behind Albania's demographic changes over the past decades.

In 2019, Albania is experiencing a new demographic regime of long life and very low fertility. Life expectancy has continued to increase at very high levels, at times outstripping most of the Western Balkans. In 2018, Albania had a life expectancy of 80.6 years for females and 77.4 years for males. The female life expectancy rate is the highest in the Western Balkan countries, while the male one is second only to that of Croatia. The fertility level is among the lowest in Europe, with a total fertility rate of 1.37 children per woman in 2018. This is even more surprising because it has been achieved under conditions of very low contraceptive prevalence, where the traditional methods predominate. In respect to both fertility and mortality, Albania "is behaving" the same as the rest of Europe. While this is true regarding both fertility and mortality, in terms of migration in Albania, we see the trends and patterns that we find mainly in Eastern Europe, where migration has become the main demographic determinant of population growth and population age structure. Like most of Eastern Europe, Albania is experiencing negative population growth, determined by a high rate of migration.

Albania continues to be a country that has achieved "good health at a low cost". The so-called "Albanian

paradox" with regards to mortality improvement continues to be the case even in the most recent decade, with Albanian outperforming in terms of mortality improvement given the level of economic performance it has achieved. Some of the answers to this paradoxical situation will be detailed in parts 2 and 3 of this report. Despite this improvement in overall mortality, the neo-natal mortality rate continuous to be relatively high given the level of life expectancy at birth that the country has achieved. The reasons for this will be explored in Part 2 of this report. The Albanian population is ageing, with the population aged over 65 years increasing faster than in other countries. This is due to the change in the fertility rate but, in the case of Albania, this age shift is mainly due to the mass emigration of its population at an unprecedented pace over the past few decades. The country has lost a third of its 1989 population. It is also important to mention that Albania, contrary to expectations, has not and is not experiencing the so-called demographic dividend.

# CHANGES IN MORTALITY AND CAUSES OF DEATH IN ALBANIA KEY FINDINGS

- O Albania continues to experience low levels of adult mortality rate compared to other Western Balkan countries, but higher levels of infant and neonatal mortality rates. This supports previous research which addresses this as the so-called "second Albanian mortality paradox".
- During the past 30 years, the infant and child mortality rates have continued to decrease in Albania, in line with the gradual improvements in the well-being of the population and the healthcare system.
- The last decade has witnessed stagnation in the improvements for both indicators, due to the unchanged high neo-natal mortality rate, which constituted more than 75% of infant mortality by 2018. This is not an artefact of the data but a real issue that requires a dedicated policy to address it.
- Regarding adult mortality, we see a slight decrease in the past decade, mainly due to a decline in the number of deaths from chronic respiratory disease and, to a

lesser extent, to ischemic heart disease and strokes (in males). The cancer mortality rate in this age group has not changed in the past decade, which points to the need to strengthen the existing national programs related to early detection and primary prevention.

- The main driver of the male-female difference in adult mortality is the higher cancer mortality rate, particularly as men's lung cancer mortality rate is five times higher than that for women. This is probably due to long-term smoking patterns amongst men.
- For the young adult population (aged 19-29 years), a major concern remains the external causes of death, particularly road traffic accidents. In addition, suicide in both sexes continues to be a significant cause of death within this age group.
- Due to changes in the age structure of the Albanian population, it is important always to employ standardised mortality rates in order to understand the changes over time.

## PART 2

## CHANGES IN MORTALITY AND CAUSES OF DEATH IN ALBANIA

## 2.1. Introduction

It was concluded earlier in this report that Albanians live longer given their level of development, and that the country had achieved very high life expectancy rates of 77.4 years for males and 80.6 years for females in 2018, which is comparable to the life expectancy in far richer countries in Europe. This achievement, which was present at the end of the socialist state rule, continues to the present day. In the literature, this has been labelled the "Albanian mortality paradox" (Gjonça, A. and Bobak, M., 1997). Previous research has shown that, while Albanians live longer, they still have a relatively high infant mortality rate compared to other countries in the Western Balkans region. At the same time, their level of adult mortality is among the lowest in Europe. This has been labelled by researchers the "second Albanian mortality paradox": a pattern of low adult mortality and high infant mortality (Gjonça, A., 2001).

While Albanians are living longer, it is important to analyse this mortality pattern in more detail according to certain important characteristics, such as age, sex, and cause of death, if we wish to quantify Albania's relative success in increasing life expectancy at birth as well as reducing the infant mortality rate. This part of the report will focus on a detailed analysis of the mortality patterns and trends in Albania in recent years. The analysis begins with this introduction, which is followed by a detailed discussion of the data and approach employed. The mortality trends and patterns will be analysed for the whole population and also separately by age group: under 5-mortality (separate infant and child mortality, as well as neonatal mortality), children (aged 5-18 years), young adults (aged 19-29 years), adults (aged 30-69 years), and the elderly population (aged over 70 years). This age-group approach to the analysis of mortality is driven by two important factors. Firstly, we know that mortality varies by age and also that the risk factors and underlying factors also differ for the different agegroups. Figure 2.1 shows this variation in mortality as well as the main risk factors associated with each age group. Although the risk of dying is much higher at older ages, the years of life lost increase for the deaths at younger ages. This is also the case in Albania, which is succinctly described in guantitative terms in Figure 2.1. The diagram shows the likely risk factors that will be addressed in this part of the report, as well as in Part 3. While some of the main health risks lead to death, there are a number of other risks and diseases (e.g. mental health) that affect the health and disability of the population but do not necessarily cause death. These risks and disability will be analysed in Part 3 of this report. During the analysis in this chapter, we will continue to maintain the international comparison with Albania, with a particular focus on its neighbouring countries in the Western Balkans.

#### FIGURE 2.1 MORTALITY AGE DISTRIBUTION IN ALBANIA IN 2018 AND THE ASSOCIATED HEALTH RISK FACTORS



## 2.2. Data and methodology

Similar to the situation in other countries, in Albania, the measurements of the health status of the population are based on the routinely-collected information (alias administrative data) provided by the National Institute of Statistics – INSTAT (data on mortality), hospital discharges, and primary healthcare (morbidity data), as well as on information collected periodically by means of different population-based surveys. This section of the report makes use of all possible data available on Albania. Mortality and cause-specific data are collected from vital registration and made available from the office of INSTAT. The quality of these data has been discussed in previous research and is not the focus of this report. Albania's routinely-collected data are described as accurate and the mortality indicators calculated from them are similar to those published by international organisations. Other



#### FIGURE 2.2. A SCHEMATIC ILLUSTRATION OF THE DIFFERENT WAYS OF MEASURING OVERALL HEALTH IN ALBANIA

Changes in mortality and causes of death

datasets used include the Albanian Demographic and Health Survey (ADHS), with particular reference to the infant mortality and child mortality analyses. Another database used in this part of the report is the Global Burden of Disease (GBD), with particular reference to international comparisons. It is important in such comparisons to use the same dataset, which are based on similar assumptions. Another dataset used is the UNFPA population prospects, the 2019 edition. When data are used, their source of origin is stated.

If we consider the sources of data collection of any country, including Albania, we can draw on different approaches and means for measuring the health status of any population, as well as the Albanian population, which are concisely sketched in the diagram in Figure 2.2. The diagram shows how the analyses are also conceptualised in this report, where first the mortality rate based on the death statistics is investigated, followed by the disease pattern obtained from the hospitalised data as well as primary health data, in what we call routinely-collected health statistics. Following the analyses of the morbidity of the population, a risk factor analysis is performed in order to understand the changes in the mortality and health patterns in Albania. As summarised in the diagram above, in 2018, there were about 22,000 deaths recorded in Albania. Concerning the morbidity patterns, there were about 31,500 hospitalisations recorded nationwide. On the other hand, there were about 81,600 adult individuals with at least one chronic condition/disease according to the primary healthcare registers. As for the general population, the available evidence generated from the different types of surveys (which will be described in the subchapter on "risk factors") indicates that there were at least 1.5 million individuals at risk of different diseases and chronic conditions.

## 2.3. Overall Mortality and Cause of Death Patterns (all ages)

According to the National Institute of Statistics (INSTAT), the overall mortality rate (number of deaths per 100,000 population) in Albania in the past year (i.e., 2018) was about 761 (813 males vs. 708 females). There is evidence of an increase (albeit an inconsistent one) in the crude death rate for both sexes over the past seven years (i.e., during the period for which INSTAT provides reliable mortality calculations), given the unabated aging of the

	2011	2015	2018
MALES			
Life expectancy at birth e <sub>o</sub>	75.38	76.29	77.38
Infant mortality Rate - 190	8.98	8.60	9.27
Child Mortality Rate - 491	2.85	2.14	1.2
Adult Mortality Rate 15-70	237.5	218.8	204.18
Life expectancy at age 70 - e <sub>70</sub>	12.52	12.63	13.51
FEMALES			
Life expectancy at birth - e <sub>o</sub>	79.86	79.99	80.55
Infant mortality Rate - 190	8.00	6.03	7.72
Child Mortality Rate - 491	2.55	1.46	0.92
Adult Mortality Rate 15-70	125.9	120.45	109.5
Life expectancy at age 70 - e <sub>70</sub>	14.20	13.92	14.22

#### TABLE 2.1. MORTALITY INDICATORS FOR ALBANIA 2011-2018

Source: Author's calculations based on data from INSTAT

	Albania	BiH	Croatia	Greece	Montenegro	N Macedonia	Serbia	Slovenia
FEMALES								
Life expectancy at birth	80.10	79.65	81.39	84.48	79.08	77.65	78.40	83.85
Life expectancy at 15	66.11	65.13	66.81	69.80	64.48	63.64	63.85	69.09
Life expectancy at 70	14.27	13.99	15.16	17.54	13.62	12.63	13.27	17.17
Adult mortality (15-60) 45q15	50.00	61.00	51.00	43.00	67.00	64.00	76.00	44.00
Under 5 Mortality Rate	8.21	5.22	4.25	4.11	2.41	9.25	5.00	1.97
MALES								
Life expectancy at Birth	76.73	74.65	75.01	79.48	74.2	73.6	73.17	78.25
Life expectancy at 15	62.84	60.35	60.45	64.83	59.47	59.62	58.71	63.47
Life expectancy at 70	13.17	11.8	12.11	15.61	11.37	11.15	11.17	13.99
Adult mortality (15-60) 45q15	94	117	119	96	127	121	143	90
Under 5 Mortality Rate	9.42	6.37	5.07	4.78	2.69	10.52	6.07	2.31

#### TABLE 2.2. MORTALITY INDICATORS FOR ALBANIA AND SELECTED BALKAN COUNTRIES (2015-20)

Source: UN Population Prospects 2019

Albanian population. It is because of the changes in the age structure of the population that lifetable functions are used in this chapter to analyse the mortality pattern in Albania, as these are free from the effect of changes in the age structure of the population. Table 2.2 presents the different mortality indicators in Albania during the past decade for both males and females. A significant finding from this table is the fact that almost all aspects of mortality by age and gender have gradually improved in Albania during this period (2011-2018). Thus, life expectancy at birth has improved for males from 75.38 to 77.38 years, and for females from 79.86 to 80.55 years. We have witnessed an improvement of almost two years in the last decade. This is significant, considering the stage of mortality transition in which Albania is at present, where any improvements in mortality should arise from investment in tertiary care, thereby increasing the cost of the health system. The same can be said about adult mortality, where the probability of dying aged 15-69 years has fallen significantly. Child mortality (age 1-4 years) has also continued to improve. Having said that, one aspect of mortality by age in Albania has not significantly improved and that is infant mortality. While this might support the idea that Albania's second mortality paradox continues to the present day, with low adult and high infant mortality,

this aspect will be analysed in detail later in this chapter. The changes taking place in old age are as expected. Sometimes, it will take some time to capture the trend in this age group due to the improvements in death recording for this age group. As time passes, the reporting of the cause of death at old age as well as age reporting for this age group are improving.

Table 2.2. presents a mortality comparison of Albania with its neighbouring countries in the Western Balkans. Greece is included, to which Albania has previously displayed similar patterns of adult mortality, as is Slovenia, the country with the fastest improvement in mortality in the region since the collapse of the former Yugoslavia. When Albania is compared to these countries, it emerges that the country has a far higher life expectancy at birth than its mainland neighbours of Bosnia and Herzegovina, North Macedonia, or Serbia, but a relatively lower life expectancy at birth than its Mediterranean neighbours. This trend follows the previous achievement of Albania which placed the country between the Mediterranean's low mortality and East European pattern of high adult mortality. This trend continues for the adult mortality rate, where the Albanian figures for both males and females far outstrip the other Western Balkans countries, apart from Greece



#### FIGURE 2.3. THE NUMBER OF SURVIVALS (Ix values) BY AGE IN 2011 AND 2018 IN ALBANIA, MALES AND FEMALES

Source: Author's calculations based on data from INSTAT.

and Slovenia, emphasising the Mediterranean aspect of Albania's mortality pattern (Gjonça, A.; Bobak, M., 1997, Gjonça, A., 2005). The opposite is true when child mortality is considered, with Albania having the highest (apart from North Macedonia) under 5 mortality rate in the region. As has been shown in the past, this is more an indicator of the country's level of economic development, which is why the figures for Albania are higher.

#### TABLE. 2.3. CAUSE-SPECIFIC MORTALITY (ALL AGES) FOR THE PERIOD 2012-18 (SOURCE: INSTAT)

	2012	2013	2014	2015	2016	2017	2018					
All NCD (crude number of deaths per 100,000 population)												
Males	734.3	716.4	729.5	789.0	758.8	783.6	792.8					
Females	676.0	661.4	670.3	756.4	717.8	751.6	710.7					
Total	705.3	689.1	700.2	772.9	738.5	767.7	751.7					
Injuries (crude number of deaths per 100,000 population)												
Males	61.5	62.8	54.7	50.7	45.1	42.5	42.9					
Females	19.1	19.4	16.4	17.0	16.8	14.4	13.0					
Total	40.4	41.3	35.8	34.1	31.2	28.5	27.9					
Infectious and nutrition	on-related (crude nun	nber of deaths p	oer 100,000 po	pulation)								
Males	2012	2013	2014	2015	2016	2017	2018					
Females	1.7	1.6	1.6	1.4	1.3	1.5	1.7					
Total	0.6	1.0	1.2	1.1	0.5	1.1	0.3					

Source: Author's calculations based on data from INSTAT.



#### FIGURE 2.4. DISTRIBUTION OF DEATHS (%) BY MAJOR GROUPS OF DISEASE, 2005, 2010, 2015, AND 2019

Source: Author's calculations based on data from INSTAT

The changes in the sex-age pattern of mortality in Albania for the period 2011-2018 are shown in Figure 2.3, where the number of survivors by age and sex are plotted on the graph. This figure highlights two findings. Firstly, the main difference between male and female mortality occurs in adult age in Albania, particularly for those aged 50 to 80 years. This difference narrows later in life. This is expected, as it is here that female mortality is far lower in Albania compared to male mortality, due to changes in cardiovascular disease and neoplasms. This will be discussed in detail later in this chapter. A second feature of the change from 2011 to 2018 is the fact that male adult mortality has improved faster than female adult mortality. Clearly, the differences in the adult ages are far higher for males than females. This faster pace of improvement for males is also reflected in

#### TABLE 2.4. SPECIFIC MORTALITY RATE (ALL AGES) FOR SELECTED DISEASES 2012-18

	2012	2013	2014	2015	2016	2017	2018
Tumours (crude numb	per of deaths per 100,00	0 population)					
Males	161.8	156.2	164.4	158.8	153.7	155.6	165.0
Females	95.5	90.9	97.0	96.0	93.9	97.7	92.9
Total	128.9	123.8	131.1	127.8	124.2	126.9	129.0
Cardiovascular diseas	es (crude number of dea	ths per 100,000	population)				
Males	382.4	384.6	376.1	416.5	400.8	407.4	406.3
Females	391.7	390.9	384.4	435.4	408.5	422.8	402.8
Total	387.0	387.8	380.2	425.8	404.6	415.0	404.6
Ischemic heart diseas	e (crude number of deat	hs per 100,000	population)				
Males	116.2	116.4	117.6	117.1	92.8	114.3	107.2
Females	92.2	94.6	90.8	100.9	79.9	93.7	89.5
Total	104.3	105.6	104.4	109.1	86.4	104.1	98.3
Myocardial infarction	(crude number of death	s per 100,000 p	opulation)				
Males	90.6	88.8	89.7	83.4	92.9	93.2	95.4
Females	69.9	72.0	68.3	70.4	80.0	73.7	79.7
Total	80.3	80.5	79.1	77.0	86.5	83.5	87.6
Diabetes (crude numb	per of deaths per 100,00	0 population)					
Males	8.3	7.5	7.5	8.4	8.9	9.3	9.5
Females	9.5	8.8	8.4	13.1	9.8	10.5	10.1
Total	8.9	8.1	8.0	10.7	9.3	9.9	9.8
Stroke (crude number	of deaths per 100,000	population)					
Males	122.1	120.5	116.9	132.5	117.9	117.1	114.6
Females	149.0	153.6	143.0	164.4	144.8	151.0	142.4
Total	135.5	136.9	129.8	148.3	131.2	134.0	128.5
Lung cancer (crude nu	Imber of deaths per 100	,000 population)	)				
Males	44.5	47.7	47.5	46.0	45.5	46.6	50.4
Females	11.2	11.6	12.8	12.6	11.0	12.4	10.5
Total	28.0	29.8	30.4	29.5	28.4	29.6	30.5
Respiratory diseases	(crude number of deaths	per 100,000 po	pulation)				
Males	27.0	13.7	24.4	27.9	23.5	26.9	24.3
Females	17.1	22.5	13.4	17.5	14.9	18.7	15.4
Total	22.1	18.1	19.0	22.8	19.3	22.8	19.8

Source: Author's calculations based on data from INSTAT

the fact that the overall mortality, as measured by life expectancy at birth, has improved during this period by two years for males but only 0.69 years for females. This requires further investigation to understand the factors underlying this sex-based mortality pattern in Albania.

The table below presents the cause-specific mortality rate for the same period for Albania regarding three main disease categories: non-communicable diseases [NCDs], injuries, and infectious diseases, including nutrition-related deaths. In 2018, the mortality rate (number of deaths per 100,000 people for all ages) from all NCDs combined was about 752 (793 in males vs. 711 in females) in 2018. Conversely, the death rate from all injuries was about 28, whereas the morality rate from infectious diseases and nutritionrelated disorders was only 0.3 (the lowest ever estimate). The mortality rate from injuries has fallen gradually over the years, with a crude rate for both sexes at 27.9 in 2018 compared to 40.4 deaths per 100,000 people. This is a significant reduction. What is interesting and requires analysis is the increase in NCD. This might be a real increase as a result of Albania moving into the last stage of the so-called epidemiological transition, but may also be an effect of the age structure of the population, as we mentioned in the previous chapter that the Albanian population in ageing. This aspect will be discussed in more detail later, when standardised indicators for each NCD will be analysed.

In terms of proportional mortality, NCDs constituted about 96% of overall deaths in 2018, followed by injuries (3.7%). On the other hand, infectious diseases and nutrition-related disorders accounted for only 0.1% of the overall deaths within the Albanian population. This resembles the proportional mortality pattern observed in most of the industrialized/developed countries worldwide. Compared with previous years (Figure 2.4), clearly little has changed. From 2005 to 2019, the two main causes of death remained CVD and Neoplasms, which accounted for 67% in 2005 and 69% in 2019. A significant reduction is seen here in mortality from traumas, injuries, and accidents, from 7% in 2005 to 4% by 2019, as Table 2.3 shows.

Table 2.4 also presents the mortality rates for selected NCD diseases in Albania for both, males and females for the period 2012-2017. One significant feature which we saw when the overall NCDs were considered emerges from this table as well, which is the fact that most of the NCD crude mortality rates, including CVDs, tumours, and IHD,

show a worsening trend over the years. Mortality from stroke and respiratory diseases are the only two rates that have seen improvements. When sex differences are considered, the crude mortality rate (number of deaths per 100,000 population) from cardiovascular diseases (CVD) in 2018 was about 405 (406 in males and 403 in females), as expected. Both the ischemic heart disease and myocardial infarction mortality rates were higher in males than in females, whereas the opposite was the case for stroke mortality. Of note, however, the cancer mortality (overall rate: 129 deaths per 100,000 population) was substantially higher in males than in females (165 vs. 93, respectively). In particular, the death rate from lung cancer was almost five times higher in males than in females (50 vs. 10, respectively), probably reflecting the differences in smoking patterns across the country.

# 2.4. Cause-specific mortality in Albania from a regional perspective

(Based on estimates form the Global Burden of Disease (GBD))

#### Non Communicable Diseases

The analysis of the cause of death patterns in Albania in the previous section showed that the crude rate of NCD in the country had increased. In order to determine whether this is an artefact of the changes taking place in the age pattern, both the crude and age-standardised rates are considered in this section. According to the GBD estimates, the crude NCD mortality rate (deaths from all NCDs per 100,000 population) in Albania has almost doubled in the past three decades (from about 370 in 1990 to 733 by 2017). The age-standardised rate, however, has declined from about 662 in 1990 to 513 by 2017, with an increase in the early 2000. This is a clear indicator that the upward trend seen in NCD is more an effect of the changes in the age structure rather than an increase in NCDs.

Compared to other South Eastern Europe (SEE) countries (Figure 2.6), the age-standardised NCD mortality rate in Albania in 1990 was the lowest in the region, except for Greece. Almost three decades later, the age-standardised NCD mortality rate in Albania is still among the lowest in the SEE region (Slovenia followed by Greece exhibit the lowest NCD death rates). Of note, there is evidence of a decrease in the NCD death rate across all SEE countries, with a remarkable decline observed especially in Slovenia (with a





76% decrease from 1990 to 2017). Overall, it appears that Albania is continuing to maintain a favourable position with regards to the low adult mortality rate mainly due to the low NCD, suggesting that, as argued in previous research, its Mediterranean position serves to link the country with Mediterranean countries more than East European ones.

#### Mortality rates from cardiovascular disease (CVD)

The previous section, based on data from INSTAT, showed that CVD mortality was the main cause of death in Albania, and also that the rate has increased over the past two decades. When GBD estimates are considered, the crude CVD mortality rate (CVD deaths per 100,000 population)



FIGURE 2.6. THE NCD STANDARDISED DEATH RATES IN ALBANIA AND SELECTED SOUTH EUROPEAN COUNTRIES, 1990 AND 2017



FIGURE 2.7. THE CRUDE AND STANDARDISED CVD DEATH RATE IN ALBANIA, 1990-2017

in Albania has doubled in the past three decades (from about 208 in 1990 to 426 by 2017), while the opposite is true when the standardised mortality rate is considered, as the age-standardised CVD mortality rate has declined from 400 in 1990 to 304 by 2017 (with an overall decrease of about 32%) (Figure 2.7).

Similar to the overall NCDs, compared with the other SEE countries, the age-standardised CVD mortality rate in Albania in 1990 was the lowest in the region, with the exception of Greece. Three decades later, the agestandardised CVD mortality rate in Albania remains among the lowest in the SEE region (except for Slovenia and Greece).



FIGURE 2.8. THE CVD STANDARDISED DEATH RATES IN ALBANIA AND SELECTED SOUTH EUROPEAN COUNTRIES, 1990 AND 2017



FIGURE 2.9. THE CRUDE AND STANDARDISED NEOPLASMS MORTALITY RATE IN ALBANIA, 1990-2017

There is evidence of a decrease in the CVD mortality rate in all SEE countries, but the pace of decline in Albania is among the lowest in the region (with only an 8% decrease from 1990 to 2017) whereas, for the same period, the CVD death rate in Slovenia has declined by 2.3 times, in Croatia by 1.8 times, and in North Macedonia by 1.6 times.

#### Mortality rates from neoplasms

According to the GBD estimates, the crude mortality rate from neoplasms (deaths per 100,000 population) in Albania has more than doubled in the past three decades (from about 78 in 1990 to 157 by 2017). On the other hand, the age-standardised death rate from neoplasms



FIGURE 2.10. THE NEOPLASM STANDARDISED MORTALITY RATES IN ALBANIA AND SELECTED SOUTH EUROPEAN COUNTRIES, 1990 AND 2017



FIGURE 2.11. THE CRUDE AND STANDARDISED DIABETES MORTALITY RATE IN ALBANIA, 1990-2017

has decreased from 122 to 106 (about a 15% decline) (Figure 2.9). This trend emphasises again the changes that have occurred within the age structure of the Albanian population over the past three decades, which were identified in Part 1 of this report.

In 1990, the age-standardised mortality rate from

neoplasms in Albania was the lowest in the SEE region. Three decades later, the mortality rate from neoplasms in Albania remains the lowest in the region, although with a negligible decline compared to the 1990 values. On the other hand, there is evidence of a significant decline in Slovenia and Croatia, but an increase in Bosnia and Herzegovina.



FIGURE 2.12. THE DIABETES STANDARDISED MORTALITY RATES IN ALBANIA AND SELECTED SOUTH EUROPEAN COUNTRIES, 1990 AND 2017





#### Mortality rates from diabetes

According to the GBD estimates, the crude mortality rate from diabetes (deaths per 100,000 population) in Albania has almost doubled (from 2.5 in 1990 to 4.9 by 2017). Instead, the age-standardised mortality rate from

diabetes has decreased from 4.3 in 1990 to 3.2 by 2017 (about a 35% decline). It is striking that both trends show an increase in diabetes in the early 2000s. This is a real increase, which is also reflected by the increased obesity in the adult population, according to data from the living





standard and measurement surveys published in 2002 and 2005 (LSMS 2002, LSMS 2005).

In 1990, the age-standardised mortality rate from diabetes in Albania was remarkably low and by far the lowest in the SEE region (Figure 2.12). Three decades later, the mortality rate from diabetes in Albania remains the lowest in the region, regardless of the trivial decline compared to 1990. Of note, several countries of the former Yugoslavia are currently experiencing relatively high death rates from diabetes, including Bosnia and Herzegovina (the highest), followed by North Macedonia and Serbia.

#### Mortality rates from chronic respiratory disease

A similar picture emerges when the crude and age standardised rates for respiratory disease are considered in Albania, based on the estimates of GBD. The crude mortality rate from chronic respiratory disease (deaths per 100,000 population) in Albania has increased only slightly during the past three decades (from about 24 in 1990 to 27 by 2017). On the other hand, the age-standardised mortality rate from chronic respiratory disease in Albania has declined considerably (from 45 in 1990 to 18 by 2017), with a decline of over 2.5 times.

In 1990, the age-standardised mortality rate from chronic respiratory disease in Albania was the highest among all countries in the SEE region, suggesting a lower level of economic development, as respiratory disease is highly correlated to the living conditions and level of poverty in the country. The major conditions in this group of diseases consist of COPD (chronic obstructive pulmonary disease), which is mainly influenced by smoking, and indoor air pollutants resulting from heating in wintertime. Both of these conditions have changed dramatically in Albania since 1990. The smoking pattern will also be analysed later, in Part 3. In 2017, the age-standardised mortality rate from chronic respiratory disease was highest in Serbia, followed by Bosnia and Herzegovina. In turn, Albania exhibits rates comparable with Croatia and Greece, suggesting rapid improvements in the living conditions of the country. The lowest death rate from chronic respiratory disease is found in Montenegro.

#### 2.5. Infant, Neonatal, and Child Mortality, and the Related Causes of Death

There is evidence of a consistent, steady decrease in the infant mortality rate (IMR) in Albania over the past three decades following the collapse of the state socialist regime and the transition towards a market-oriented system. The long-term trend in the infant mortality rate (Figure 2.15)



FIGURE 2.15. TRENDS IN THE INFANT MORTALITY RATES IN ALBANIA, 1990-2018

Source: Author's calculations based on data from INSTAT

reveals that there have been three significant moments of changes in the infant mortality rate since 1990, which require analysis. The first was the rapid increase in the infant mortality rate in the years immediately following the collapse of communism. Looking at the work carried out prior to this report, one finds two specific reasons for that increase. The first, possibly an artefact of the data, suggests that the infant mortality rate was raised to the actual value, since the corrected figures for the period prior to 1990 put the infant mortality rate at more than 40 infant deaths per thousand live births. There was systematic underreporting under the state socialist government with regards to infant and child mortality (Gjonca, A., 2001). Once the society opened up, the reporting of infant deaths might have improved. The second explanation might be a real increase in IMR, reflecting the immediate worsening of the health service provision and facilities following the collapse of communism. It took time for the system to readjust in the initial years after 1990, and infant mortality is a highly sensitive indicator of changes in the system.

The second significant variation in the linearity of the IMR curve is the reduction of the infant mortality rate in the early years following the civil unrest (1997-2000). Rather than undergoing a real improvement, which is difficult to justify in a society where the level of poverty increased, the health system deteriorated, and the whole country was in turmoil due to the civil unrest, so we believe this was an artefact of the data. There is sufficient evidence to suggest that, during this period, deaths overall were underreported, but particularly infant deaths. The civil registration reporting suffered, as did most of the country's administration.

The third important deviation from the trend is the stagnation of the curve in recent years, implying that infant mortality has not improved further in Albania during the last decade. Despite the fact that the country achieved a relatively low infant mortality rate at below 10 per 1,000 in since 2011 given its level of economic development, this unchanged trend requires further attention and analysis.

One way to approach this question is to examine the components of infant mortality, and the neonatal mortality rate is the first point to consider. The data show that, although the neonatal mortality rate has decreased along with the infant mortality rate, its weight within the infant mortality rate has increased over the years, from 48% in 1990 to 54% by 2013, suggesting that the pace of change in neonatal mortality is slower than that in mortality above the age of 28 days. The data in Table 2.5 show this trend. Clearly, the slowdown in the infant mortality rate is due to the slowdown in the improvements to the neonatal mortality rate, but the main question here is: why did the neonatal mortality rate stop improving during the past decade? We will attempt to answer this question in the next section, which presents a detailed analysis of the neonatal mortality rate.

#### 2.5.1. Neonatal Mortality

The neonatal mortality rate is the number of neonates who die before the age of 28 days per 1,000 live births in a given year. In 2018, the neonatal mortality rate in Albania was 6.5 deaths per 1,000 live births. The neonatal-to-infant mortality ratio in Albania was 73% in 2018, showing an increase compared with 2010 (60%) (Table 2.5). Of note, though, is the evidence of an inconsistent ratio in the past decade, which is characterised by significant fluctuations. The number of neonatal deaths is small in the case of Albania, so any yearly fluctuation should not be considered as a deviation. However, the trend has clearly stopped increasing and has possibly worsened in the past decade. This is reflected not just by the INSTAT data, but also estimates from different international organisations

Figure 2.16 plots the infant and neonatal mortality rates from different sources, including the INSTAT data. All estimates show clearly that, in the period since 2011, both the infant and neonatal mortality rates have stopped improving and, as the data in Table 2.5 suggest, it is NM that has affected the trend in IMR. Compared to low and middle income countries, Albania's level of economic development is admirable, but this is not the case where overall mortality is concerned – life expectancy at birth (Figure 7 in Part 1). In the ranking of 193 countries regarding their neonatal mortality rate, Albania is ranked 120th, which is relatively low for both its level of overall mortality and also its level of human development index, for which Albania is ranked 69th.

Apart from the vital registration date and other international estimates, an important aspect when analysing neonatal mortality rates is to examine the data from a number of specialist surveys in Albania. The ADHS 2008-09 reported an infant mortality rate of 18 deaths and a neonatal mortality rate of 11 deaths per 1,000 live births, respectively (the neonatal-to-infant mortality ratio is 61%). These two indicators were similar to the published figures arising from the vital registration system. On the other hand, according to the ADHS 2008-



#### FIGURE 2.16 THE INFANT AND NEONATAL MORTALITY RATES, 1990-2018

Source: Author's calculations based on data from INSTAT, WB and UNICEF

09 estimates, the infant mortality rates in Albania for the periods 1994-1998, 1999-2003, and 2004-2008 were 35, 20, and 18 deaths per 1,000 live births, respectively. Although it is well known that these data are incomplete, they clearly support our analysis regarding the changes in the infant mortality rate immediately after the collapse of communism and the unexpected lowering of the IMR in the aftermath of the civil unrest in Albania in 1996-1997 (see Figure 2.15). The first two estimates, 1994-1998 and 1999-2003. are what we would expect these figures to be if the infant mortality figures were to be reported completely. We believe that they support the assumption about issues with the quality of the statistics arising from vital registration in both periods - following the collapse

of communism and following the civil unrest in Albania in 1996-1997.

Apart from the ADHS 2008-09, estimates of the infant and under-5 mortality rates have been reported by three nationwide surveys in Albania: the 2005 and 2000 Multiple Indicator Cluster Surveys (MICS), and the 2002 Albanian Reproductive Health Survey (ARHS). The 2002 ARHS estimated infant mortality at 26 deaths and under-5 mortality at 32 deaths per 1,000 births, respectively, for the ten-year period 1992-2002. The accuracy of these data has been widely discussed, as this was the first reproductive health survey to be conducted in Albania following the collapse of the state socialist regime. Having

INDICATOR	2010	2011	2012	2013	2014	2015	2016	2017	2018
Infant mortality (deaths per 1,000 live births)	9.6	8.7	8.8	7.9	7.9	7.0	8.7	8.0	8.9
Neonatal mortality	5.8	5.8	5.9	5.9	5.9	6.1	6.2	6.4	6.5
deaths in the first 28 days per 1,000 live births)									
Ratio (neonatal/infant)	60%	66%	67%	75%	75%	87%	71%	80%	73%

#### TABLE 2.5. THE RATIO OF NEONATAL MORTALITY TO INFANT MORTALITY

Source: Author's calculations based on data from INSTAT

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Changes in mortality and causes of death

said that, the 2005 MICS estimated infant mortality at 18 deaths and under-5 mortality at 19 deaths per 1,000 births, respectively, for a period centred on 2002, which is what we would expect if there was no underreporting following the civil unrest in Albania. The 2000 MICS estimated infant mortality at 29 deaths and under-5 mortality at 33 deaths per 1,000 births, respectively, for a period centred on the beginning of 1996. It is striking that all of these sources of information confirm the declining trend in the infant and under-5 mortality rates in the country.

Unfortunately, the recent ADHS 2017-18 did not provide estimates for the infant and under 5-mortality rates. Therefore, the recent available data on the infant and under 5-mortality rates is based on the official information provided by INSTAT and the estimates reported annually by IGME (Inter-Agency Group for Child Mortality Estimation).

There are two further lines of investigation regarding the neonatal mortality rate; one is to see if this is an artefact of the data and whether the change is affected by the issue of data reporting in terms of underreporting either deaths or live births. The second line of investigation is to examine the factors affecting neonatal mortality to see if these have changed and may account for the stalling in the reduction. Under the first line of investigation, we examined the data on neonatal deaths by days for the whole period under investigation (from 2011 to the present day). The variation by age is plotted in Figure 2.17. Two issues are striking here. Firstly, the number of neonatal deaths is very low and any slight variation can be ignored and, secondly and most interesting for us, the curves for neonatal mortality by days vary relatively little, suggesting that they reflect the real figures relatively accurately. If there were any significant underreporting, we would have noted some variations occurring with this period. In fact, the curves show precisely the expected pattern with regard to neonatal death distribution.

The second line of investigation is to examine the possible determinants of neonatal mortality in Albania. This study would require further, more detailed analyses than this report requires. Having said that, according to an analysis published in The Lancet (Wang H et al., 2014), the key factors that contributed to the decrease of child deaths during 1990-2013 include the fertility rate, maternal education, HIV/AIDS, income, and secular trends. In Central Europe and Albania, secular trends, including new drugs, vaccines, diagnostic procedures, and public health campaigns, account for the biggest shift in the child mortality rates. The second most important influencing factor is fertility, followed by maternal education and income (Wang H et al., 2014). In the case of Albania, we



FIGURE 2.17 THE NEONATAL DEATH DISTRIBUTION BY DAYS SINCE BIRTH, ALBANIA 2012-2018

Source: Author's calculation based on data from INSTAT

have seen an unprecedented reduction in the fertility rate and the number of births has fallen dramatically. This will affect the change in the denominator of all of the under-5 mortality indicators. Further research might analyse the factors affecting this stagnation in the improvement in the neonatal mortality rate.

#### 2.5.2. Under-5 Mortality in Albania

Figure 2.18 displays the trend in the under-5 mortality rate in Albania for the period 1990-2018. The main message here is that, similar to infant mortality, there is also evidence of a steady decrease in the under-5 mortality rate in Albania over the past three decades. Of note, in light of the general declining trend of under-5 child mortality in Albania, it is observed that child mortality has declined to a greater degree than infant mortality. This rate of change is mainly due to the improvements in children's environments brought about by health interventions or general improvements in Albania's living standards. We know that infant and child mortality are more sensitive than neonatal mortality when the socio-economic context is considered.

In summary, in Albania, there is evidence of a sharp and significant linear decrease in both the mortality rate and the burden of disease due to the joint share of communicable diseases, mother and child health conditions, and nutritional deficiencies. Similar evidence regarding the monotonic decrease in the infant and under-5 mortality rates is also provided by the international estimates (either GBD or IGME reports). In fact, the estimates prepared by the international organizations (WHO, UNICEF and the WB) on infant mortality and under-5 mortality for Albania always exceed the figures reported by INSTAT. A possible explanation for this apparent data discrepancy between the international organizations and the Albanian institutions may be related to the underestimation of infant mortality in certain periods of time by the Albanian institutions due to the under-registration of deaths, and/ or miscoding of death certificates. This area requires further investigation. The stagnation in the infant and child mortality rates during the last decade is due to the neonatal mortality rate. This was proven in this section not to be due to data misreporting, but a real problem that requires further investigation.

#### Causes of infant Mortality

INSTAT recently reported on the main causes of infant mortality in Albania for 2018. According to the data (see Figure 2.19), the main cause of death in infancy in Albania



#### FIGURE 2.18. TRENDS IN THE UNDER-5 MORTALITY RATE IN ALBANIA OVER THE PAST THREE DECADES (SOURCE: INSTAT)



FIGURE 2.19. THE INFANT MORTALITY RATE IN ALBANIA IN 2010 AND 2018 BY MAIN CAUSES OF DEATH

Source: Author's calculations based on data from INSTAT

remains disease and conditions pertinent to the period around birth, plus those related to complications during pregnancy, birth and the postnatal period. This was the case in both 2010 and 2018. Hence, the neonatal conditions constituted at least 46.3% in 2010 and 69.2% in 2018 of the overall infant mortality rate. One issue to be noted here is that the composition of the causes of death changed from 2010 to 2018, with an increase in the influence of the conditions related to the neonatal period. Despite the fact that the rate has remained relatively stable, the composition of death has changed. This might bring into question, as mentioned above, the quality of the recording of the causes of death during the neonatal period.

## 2.6. Mortality and causes of death amongst children (5-18 years) and young adults (19-29 years)

This age group is characterised by a low overall mortality rate, as also shown in Figure 2.3. The main causes of death among children aged 5-18 years and young adults aged 19-29 years concern the external causes of death, with a main focus on road traffic accidents. This is the main reason why we analyse these two age groups together. Furthermore, suicide by both sexes is another major cause of death in this population group.

The mortality rates from selected causes of death within the Albanian population aged 5-29 years are presented in Table 2.6.

As the table shows, the rates of mortality by cause of death are very low. The sex-pooled mortality rate (number of deaths per 100,000 population) due to all external causes of death in Albania in 2018 was about 16, with a remarkably higher rate among males than females (24 vs. 8, respectively), as expected, similar to other countries. Specifically, for road traffic accidents, the mortality rate (number of deaths per 100,000 population) was 6.1 in males, but only 1.6 in females (overall rate: 3.9). Having said that that, it is striking that there is evidence of a decline in the death rate from road traffic accidents amongst Albanian males in the past few years. Similarly, the mortality rate (number of deaths per 100,000 population) from suicides was higher in males (6.3) than females (4.4). Apart from the suicide rates, all other causes of death for this age group show a significant reduction in mortality. The existing data do not allow a detailed analysis of the suicide rates over the years, so this area requires further investigation.

	2012	2013	2014	2015	2016	2017	2018					
External causes of death (number of deaths per 100,000 population)												
Males	33.0	42.6	30.4	28.0	22.9	21.4	23.8					
Females	13.3	13.1	12.4	11.2	8.4	8.8	8.5					
Total	23.6	28.5	21.8	20.0	16.0	15.3	16.3					
Road accidents (number of deaths per 100,000 population)												
Males	10.6	11.1	10.0	8.1	9.5	6.3	6.1					
Females	4.3	1.5	3.0	1.5	2.0	2.2	1.6					
Total	7.6	6.5	6.6	5.0	5.9	4.3	3.9					
Suicides (number of d	leaths per 100,000 popu	lation)										
Males	4.8	6.1	4.5	4.0	2.7	3.5	6.3					
Females	4.7	5.1	4.5	4.2	4.1	3.3	4.4					
Total	4.7	5.6	4.5	4.1	3.4	3.4	5.3					

#### TABLE 2.6. SPECIFIC MORTALITY RATES FOR SELECTED DISEASES 2012-2018 IN THE ALBANIAN POPULATION AGED 5-29 YEARS

Source: Author's calculations based on data from INSTAT

# 2.7. Adult Mortality and Causes of Death (30-69 years)

The late adult ages in this group are affected by the early onset of chronic disease (alias NCDs). Therefore, besides the overall (all-cause) mortality rate, it is crucial to report the mortality rates from the major NCDs that affect middle-aged people in Albania, a country characterised by a rapid socioeconomic transition coupled with lifestyle/ behavioural changes in the past three decades as it shifts from a centralised economy to a market-oriented system. Historically, the mortality rates in this age group have been low in Albania, which has been attributed to the Mediterranean diet and lifestyle patterns. Earlier, we showed that adult mortality is low compared to other Western Balkan countries.

The mortality rates from selected causes of death among the Albanian population aged 30-69 years are presented in Table 2.7.

The sex-pooled mortality rate from all causes in the Albanian people aged 30-69 years in 2018 was about 385 deaths per 100,000 people. There is evidence of a slight decline in the past seven years (in 2012, the allcause mortality rate for this age group was 404 deaths per 100,000 people). In 2018, the death rate from cardiovascular disease among those aged 30-69 years was almost double in males compared with females (210 vs. 113 deaths per 100,000 people, respectively). In both sexes, the mortality rate from cardiovascular disease was relatively stable during the period 2012-2018. On the other hand, ischemic heart disease alone exhibited a decline in males (about 88 deaths in 2012 compared with 67 deaths per 100,000 people in 2018), but less so in females (31 vs. 28 deaths per 100,000 people, respectively). Similarly, the mortality rate from strokes among those aged 30-69 years declined in males (about 47 deaths in 2012 compared with 34 deaths per 100,000 people in 2018), but remained unchanged in females (about 29 deaths per 100,000 people in both 2012 and 2018).

The mortality rate from all neoplasms among those aged 30-69 years in 2018 was 60% higher in males compared to females (160 deaths and 101 deaths per 100,000 people, respectively). In both sexes, the death rate from all tumours did not exhibit any significant change during the period 2012-2018. Moreover, the mortality rate from lung cancer has not been significantly affected

	2012	2013	2014	2015	2016	2017	2018
All causes (number of	deaths per 100,000 pop	oulation)					
Total	404.4	396.1	395.4	401.5	385.8	393.8	384.9
Cardiovascular disease	e (number of deaths per	100,000 popula	tion)				
Males	214.1	206.7	211.3	216.6	210.9	215.6	209.5
Females	104.5	108.6	102.1	109.9	108.1	115.7	112.9
Total	158.5	157.1	156.2	162.9	159.3	165.3	160.8
Ischemic heart disease	e (number of deaths per	100,000 popula	ition)				
Males	87.6	78.0	82.4	80.5	63.0	80.1	67.3
Females	31.4	31.5	28.6	27.1	24.8	31.3	27.6
Total	59.1	54.5	55.2	53.7	43.8	55.6	47.3
Strokes (number of de	aths per 100,000 popul	ation)					
Males	47.1	44.8	47.6	45.6	42.9	39.6	34.3
Females	29.3	32.7	28.0	31.3	27.5	33.6	28.7
Total	38.1	38.7	37.7	38.4	35.2	36.5	31.5
Neoplasms (number o	f deaths per 100,000 pc	pulation)					
Males	169.2	167.6	169.1	166.0	151.9	154.4	160.1
Females	107.6	99.7	108.2	104.7	102.9	101.9	101.2
Total	137.9	133.3	138.4	135.2	127.3	128.0	130.4
Lung cancer (number o	of deaths per 100,000 p	opulation)					
Males	49.3	54.0	48.5	50.6	44.5	47.4	49.6
Females	9.2	9.8	11.6	11.0	11.6	10.9	10.9
Total	29.0	31.6	29.9	30.6	28.0	29.1	30.1
Breast cancer (number	of deaths per 100,000	population)					
Males	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Females	27.1	22.3	24.7	23.1	20.5	23.9	23.6
Total	13.8	11.3	12.4	11.6	10.3	12.0	11.9
Diabetes (number of d	eaths per 100,000 popu	ulation)					
Males	6.1	6.0	4.4	5.1	4.6	4.4	5.6
Females	4.3	4.2	3.9	7.1	4.6	3.8	4.2
Total	5.1	5.1	4.2	6.1	4.6	4.1	4.9
Chronic respiratory dis	seases (number of death	s per 100,000 p	opulation)				
Males	5.3	4.0	3.7	6.4	4.9	4.2	3.7
Females	1.8	1.8	1.0	2.6	2.0	1.8	0.8
Total	3.5	2.9	2.3	4.5	3.5	3.0	2.3

#### TABLE 2.7. OVERALL AND SPECIFIC MORTALITY RATES FOR SELECTED DISEASES 2012-2018 AMONG THE ALBANIAN POPULATION AGED 30-69 YEARS

Source: Author's calculations based on data from INSTAT.

	2012	2013	2014	2015	2016	2017	2018
All causes (number c	of deaths per 100,000 pe	opulation)					
Total	6408.3	6069.3	6046.6	6637.4	6185.0	6312.8	5981.2
Alzheimer's Disease	(number of deaths per 1	00,000 populati	on)				
Males	21.7	21.8	21.2	31.1	24.5	28.7	23.0
Females	33.2	27.5	34.2	48.7	35.5	32.4	24.9
Total	27.8	24.8	28.1	40.3	30.3	30.7	24.0
Cardiovascular disea	se (number of deaths pe	r 100,000 popula	ation)				
Males	3857.9	3782.31	3529.4	3902.9	3644.5	3548.3	3411.9
Females	4040.4	3879.12	3763.6	4213.6	3844.6	3911.4	3595.2
Total	3955.0	3833.55	3652.6	4065.5	3748.9	3737.6	3507.3
Chronic respiratory o	lisease (number of death	ns per 100,000 p	opulation)				
Males	159.5	117.4	133.4	173.5	153.6	151.1	139.7
Females	71.4	57.5	45.4	90.3	79.6	80.0	68.0
Total	112.6	85.7	87.1	130.0	115.0	114.0	102.4
Neoplasms (number	of deaths per 100,000 p	opulation)					
Males	1144.7	1027.5	1083.4	1004.6	981.8	942.7	964.5
Females	506.2	478.3	490.5	484.7	460.6	489.7	431.7
Total	805.0	736.8	771.5	732.4	709.7	706.6	687.2

#### TABLE 2.8. OVERALL AND SPECIFIC MORTALITY RATES FOR SELECTED DISEASES DURING THE PERIOD 2012-18 AMONG THE ALBANIAN POPULATION AGED 70+ YEARS

Source: Author's calculations based on data from INSTAT.

in the past seven years; in 2018, it was almost five times higher in males than in females (about 50 and 11 deaths per 100,000 people, respectively).

In 2018, the death rate from breast cancer among Albanian females aged 30-69 years was about 24 per 100,000 people, with a negligible decline compared with the year 2012 (27 deaths per 100,000 people). The mortality rate from diabetes in 2018 was 5.6 and 4.2 deaths per 100,000 people in men and women aged 30-69 years, respectively. The 2015 estimate for women is inconsistent with the previous and subsequent years, however. Finally, the sex-pooled mortality rate from chronic respiratory disease in Albanians aged 30-69 years in 2018 was 2.3 deaths per 100,000 people (3.7 in men vs. 0.8 in women). For both sexes, the death rate from chronic respiratory disease appears to have declined in the past seven years of reporting, but there is evidence of inconsistencies, especially for the year 2015. The disease patterns and risk factors affecting the cause of death pattern of this age group will be analysed in greater detail in Part 3 of this report.

# 2.8. Mortality and Causes of Death amongst Older People (70+ years)

This age group is characterised by excess mortality in both sexes, especially due to chronic conditions such as cardiovascular disease and cancer. Furthermore, chronic respiratory disease and neurological disorders constitute another significant share of the mortality toll among older people. The mortality rates from selected causes of death in the Albanian population aged 70+ years for the period 2012-18 are presented in the table below. Cardiovascular disease constituted the main cause of death (the sex-pooled mortality was about 3,507 deaths per 100,000 people), followed by neoplasms (687 deaths per 100,000 people). The death rate from the latter (i.e., neoplasms) was more than double in men compared with women (about 965 vs. 432 deaths per 100,000 people, respectively). Similarly, the mortality rate from chronic respiratory disease was double in men compared with women (about 140 vs. 68 deaths per 100,000 people, respectively). Conversely, the mortality rate from Alzheimer's Disease was only slightly higher in women than in men (about 25 vs. 23 deaths per 100,000 people, respectively).

### 2.9 Concluding Notes

At the data level, the results of the analysis in this part suggest that it is important to use standardised data on mortality for Albania because of the dramatic changes in the population age structure that have occurred over the past 30 years. The time series comparisons should always use standardised data. Albania continues to have low levels of adult mortality compared to most of the other Western Balkan countries. While the adult mortality rate is very low, the infant mortality rate is higher than in these other countries, but also compared to Albania's own low overall mortality level. This finding for the latest decade supports the previous research that found that Albania continues to follow a paradoxical mortality pattern, with very low levels of adult mortality and high levels of infant mortality, which is similar to the pattern found in certain other southern European countries, including its neighbour, Greece, which has a very similar mortality pattern to Albania.

The infant and under-5 mortality rates in Albania have both decreased monotonically, in line with the improvements in the socio-economic status of the general population and gradual improvements in the healthcare system. The analysis here also showed that the slowdown in the infant and child mortality rates' improvement over the past decade is not a result of the data quality. In fact, it is a real stagnation, which has arisen mainly due to the relatively high, unchanged levels of neonatal mortality in the country. The neonatal-to-infant mortality ratio in Albania remains relatively high (more than 75%), highlighting the urgent need to strengthen especially the perinatal care services at the national level, but particularly in the underprivileged areas of the country, and target specifically the most vulnerable socioeconomic categories as well as certain marginalised and minority groups.

The main driver of the higher mortality rate (and shorter life expectancy) among men is their higher cancer mortality rate, particularly given that men's lung cancer mortality rate is five times higher than that for women. Also, the significantly higher cardiovascular preventable death rate in men aged 30-69 years is only reversed in old age, particularly by the increasing stroke risk among women aged 70+ years. This profile points to the necessity of insisting on a smoking control policy and other risk behaviour control policies.

The main causes of death among Albanian children aged 5-18 years and young adults aged 19-29 years centre on external causes of death, especially road traffic accidents. Furthermore, suicide in both sexes is another significant cause of death in this age group. Although seemingly low, the mortality rate for this age group is responsible for a high number of preventable healthy life years lost.

The overall mortality rate among Albanian adults aged 30-69 years has slightly decreased during the past decade, mainly due to a decline in the number of deaths from chronic respiratory disease and, to a lesser extent, ischemic heart disease and strokes (in males). Conversely, the cancer mortality rate in this age group has remained unchanged during the past decade, which highlights the necessity of strengthening the existing national programmes for early detection and primary prevention.

Similar to other countries worldwide, the mortality rate among older people aged 70+ years in Albania is mainly attributable to chronic conditions, including cardiovascular disease, cancer, chronic respiratory disease, and mental disorders.

# RECENT CHANGES IN THE MORBIDITY AND RISK FACTORS IN ALBANIA KEY FINDINGS

- In 2017, about 82% of the burden of disease in the Albanian population was attributed to NCDs, 7% to communicable, maternal, neonatal, and nutritional diseases, and 11% to injuries, supporting the previous finding that Albania is in an advanced stage of epidemiological transition.
- O Albania continues to experience a triple burden of malnutrition (at the population level), characterised by under-nutrition, which has significantly declined but remains evident especially in the disadvantaged population subgroups, over-nutrition (affecting all child categories), and micronutrient deficiencies (evident particularly among the disadvantaged groups).
- The double burden of malnutrition at the household level continuous to be present, with the coexistence of maternal over-nutrition (overweight or obesity) and child stunting or wasting.
- The peak observed in the past few years regarding the increased prevalence of hypertension and high blood sugar levels, rather than a worsening of these phenomena, reflects the improved diagnosis due to the introduction of a medical check-up programme that targets all Albanians aged 35-70 years.
- Regarding older people's morbidity rate, there is evidence of a high burden of NCDs, mainly cardiovascular disease, cancer, and chronic respiratory

disease, but particularly an increase in mental health problems, similar to most advanced societies in terms of epidemiological and demographic transition. The increase in mental health disorders is more prevalent amongst middle-aged and especially older people, with severe depression constituting a third of the overall mental episodes recorded by the PHC services.

- O The top five risk factors in Albania in 2017 were high blood pressure, dietary risk, smoking, high BMI, and hyperglycaemia. About 33% of all deaths and 17% of the overall disease burden in the Albanian population in 2017 was attributable to high systolic blood pressure alone, making this by far the most important risk factor in the country. Dietary risk was the second main risk factor, accounting for 27% of all-cause mortality and 15% of the overall disease burden. Smoking was the third leading risk factor, accounting for 19% of all deaths and 13% of the overall disease burden in the Albanian population. Having said that, the prevalence of smoking is decreasing.
- O Despite some promising results from the check-up programme and the improved control of grade 2 and 3 hypertension, there is also strong potential for the primary and secondary prevention of high blood pressure. While there is evidence of a decrease, smoking's prevalence among Albanian males remains relatively high compared to some Western populations.

## PART 3

# RECENT CHANGES IN MORBIDITY AND THE RISK FACTORS IN ALBANIA

## 3.1 MORBIDITY

It is far more challenging to assess and measure morbidity than mortality (which is considered as a "hard" measure). The available information on the morbidity patterns in Albania is mainly based on primary healthcare registers and hospital discharges.

#### 3.1.1. The All-cause Morbidity Rate

Based on the registers available from the Compulsory Health Insurance Fund (CHIF), the overall morbidity "rate" (number of disease episodes per 100,000 population) in the primary healthcare service in 2018 was 28,468 (see the table below). There is evidence of a significant increase in the morbidity rate in the past few years. The jump in the number of recorded episodes of several conditions in 2015 is probably a consequence of the introduction of the medical check-up programme, which targets individuals aged 35-70 years.

Regarding cause-specific morbidity, as indicated in the graph below, diseases of the circulatory system constituted the largest share in 2018 (48% of proportional morbidity according to the information recorded in the primary healthcare registers). This was followed by diseases linked to metabolism and the endocrine system (with 17% of proportional morbidity) and then diseases linked to the respiratory system (7%) and nervous system (6%).

Table 3.2 displays the trends in the cause-specific morbidity rates during the past decade. There is evidence of a gradual increase in the overall NCD morbidity rate (or, more accurately, episodes of illnesses addressed by the primary healthcare service), especially from 2015 (which coincides with the introduction of the medical check-up programme, which detects many more cases with chronic conditions in the adult population). Hence, in the past decade, the overall number of NCD cases recorded at the



#### FIGURE 3.1. PROPORTIONAL MORBIDITY IN 2018

Source: Primary Healthcare Registers

primary healthcare level in Albania has increased, from about 18,000 in 2008 to more than 28,000 by 2018, exhibiting an increase of 56%. However, such an increase in the past few years does not necessarily reflect the natural course of epidemiological transition. Instead, it points to a significant increase in the detection rate of the previously undiagnosed NCD burden due to the medical check-up programme. Ultimately, though, the positive impact of the check-up programme should be evaluated vis-à-vis the potential reduction of premature mortality within the adult population of both sexes.

In particular, there has been an increase in the morbidity rate attributable to diseases of the blood system (the rate of which has tripled), diseases of the urogenital system (the rate of which has doubled), tumours (an 88% increase), mental health problems (a 57% increase), cardiovascular disease (a 47% increase), and respiratory disease (a 36% increase).

#### TABLE 3.1. CUMULATIVE MORBIDITY: THE PRIMARY HEALTHCARE REGISTERS 2008-2018

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cases	536548	524480	562798	619415	629018	635321	641587	755681	780151	818746	816002
Rate (/100,000)	18205	17916	19320	21321	21687	21945	22207	26233	27125	28493	28468

Source: Author's calculations based on CHIF

## TABLE 3.2. CAUSE-SPECIFIC MORBIDITY RATES (CASES PER 100,000 POPULATION): PRIMARY HEALTHCARE REGISTERS FOR SELECTED YEARS

DISEASE	2008	ranking	2013	ranking	2018	Ranking
Circulatory system	9235	1	11212	1	13595	1
Endocrines and metabolism	2189	2	3104	2	4774	2
Respiratory	1472	3	1474	3	2007	3
Musculoskeletal system	1324	4	1128	4	1493	5
Nervous system	1157	5	1424	6	1775	4
Mental diseases	780	6	942	5	1222	7
Digestive system	736	7	782	7	841	8
Urogenital	649	8	876	9	1320	6
Neoplasms	345	9	510	8	647	9
Blood system	133	10	276	10	396	10
Skin diseases	92	11	68	11	82	11
Total NCD	18110		21795		28310	

Source: Author's calculations based on CHIF

## TABLE 3.3. RATE OF INJURIES AND INFECTIOUS DISEASES (CASES PER 100,000 POPULATION):PRIMARY HEALTHCARE REGISTERS, 2008-2018

DISEASE	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Injuries	16	15	12	29	24	24	25	46	50	63	95
Infectious and parasitic	79	78	98	89	124	126	128	166	145	154	222

Source: Author's calculations based on CHIF

At the same time, there has been an increase in the morbidity rate attributable to injuries as well as infectious and parasitic diseases in the past decade (table below). Hence, injuries increased from 16 to 95 cases per 100,000 people in 2008 and 2018, respectively (5.9 times higher), whereas infectious and parasitic diseases increased from 79 to 222, respectively (2.8 times higher).

Furthermore, according to the primary healthcare disease registers, the cumulative number of cases with hypertension, diabetes, and depression has gradually



FIGURE 3.2. HYPERTENSION, DIABETES AND DEPRESSION TRENDS 2011-2017 (PHC REGISTERS: PREVALENCE OF CASES)

Source: Author's calculations based on CHIF

increased in the past decade, indicating a higher prevalence year-by-year in each of these three frequent chronic conditions among middle-aged and older people of both sexes in Albania (Figure 3.2).

Regarding hospital discharges (Table 3.4), in the past four years, there has been an increase in the number

# TABLE 3.4. HOSPITAL DISCHARGES FOR SELECTED CONDITIONS

#### (EPISODES PER 100,000 PEOPLE) DURING 2015-2018

DISEASE	2015	2016	2017	2018
COPD	224	230	248	296
НВР	118	115	112	196
Angina	57	57	71	123
Heart failure	59	58	49	66
Depression	24	24	25	26
Pneumonia	449	498	534	502
Diabetes	120	129	134	138
Cancer	772	824	1164	1211

Source: Author's calculations based on CHIF

of hospitalizations due to angina pectoris (the rate of which doubled during 2015-2018), hypertension (a 66% increase), cancer (a 57% increase), and chronic obstructive pulmonary disease (COPD) (a 32% increase). On the other hand, there is no evidence of any increase in the hospitalization rates for such diseases as depression or heart failure. It is striking that, similarly to the primary healthcare considerations, the number of hospitalizations refers to episodes rather than "pure" cases (i.e., individuals).

#### 3.1.2 Child morbidity

The recent Albanian Demographic and Health Survey (ADHS 2017-18) has reported a range of diseases and conditions among children aged 0-5 years. According to this large nationwide survey, on the whole, 2% of Albanian children under-5 had symptoms of acute respiratory infection (ARI) in the fortnight preceding the survey. Of these, advice or treatment was sought for 82% of the children with ARI symptoms. There was evidence of an inverse relationship with maternal education: 6% of the women with a primary 4-year education or less reported ARI symptoms, compared with 2% of the women with a university or post-graduate education. Advice or treatment was sought for 74% and 9% of the children with ARI in the public and private sector, respectively (final report of the ADHS 2017-18).

Regarding fever, 6% of children aged 0-5 years had had a fever in the fortnight preceding the ADHS survey. Of these, advice or treatment was sought for 60% of the children with fever. it is striking that the proportion of children experiencing fever did not significantly change between the two ADHS rounds (i.e., 2008-09 and 2017-18), at 8% and 6%, respectively. However, the proportion of children with fever for whom advice or treatment was sought declined from 71% in 2008-09 to 60% by 2017-18.

As for diarrhoea, the mothers reported that 6% of the children aged 0-5 years had experience an episode of diarrhoea in the fortnight preceding the ADHS survey. Advice or treatment was sought for 64% of the children with diarrhoea. The prevalence of diarrhoea was lower in the urban than the rural areas (at 4% and 8%, respectively) [final report of the ADHS 2017-18].

Regarding the nutritional status of Albanian children, according to the ADHS 2017-18, there is evidence that 11% of Albanian children aged 6-59 months have stunted growth (are short for their age), 2% are wasted (thin for their height), 16% are overweight (heavy for their height), and 2% are underweight (thin for their age). Although the economic growth in Albania has improved food security and the overall nutritional status, malnutrition among children persists. It is striking that Albania continues to experience a triple burden of malnutrition, characterised by under-nutrition (which has significantly declined, but is still evident especially in the disadvantaged population subgroups), over-nutrition (overweight and obesity, affecting all child categories) and micronutrient deficiencies (evident particularly among the disadvantaged groups). The causes of micronutrient malnutrition in Albania include a combination of household food insecurity, poor infant and young child feeding and care practices, and inadequate access to quality health services (ADHS 2017-18).

Stunting (reflecting chronic under-nutrition) and other forms of under-nutrition (wasting, which reflects acute under-nutrition) reduce a child's chance of survival, hindering also optimal health and growth. On the other hand, overweight and obesity, as manifestations of over-nutrition, contribute significantly to diabetes and other NCDs in adulthood. Both under- and overnutrition have serious consequences for child survival, development, health outcomes in adulthood, and the economic productivity of individuals, communities, and nations (WHO, 2011). Furthermore, there is evidence of a double burden of malnutrition within households, characterized by the coexistence of maternal overnutrition (overweight or obesity) and child stunting or wasting (ADHS, 2017-18). The prevalence of stunting decreases with increased maternal education: from 22% for the children with mothers with no education or only a primary 4-year education to 8% for the children of mothers with a university or post-graduate education (ADHS 2017-18). In addition, there are wide differences in the prevalence of stunting across the prefectures, from only 3% in Berat to 26% in Dibër.

In addition, according to the ADHS 2017-18, infant and young child feeding practices exhibited the following trend: one in three (38%) children born in the two years before the survey were exclusively breastfeed, and 59% continued to breastfeed at one year of age. Almost a quarter of children (23%) received a prelacteal feed and 57% were breastfed within one hour of birth. Only 29% of children aged 6-23 months living with their mothers were fed a minimum acceptable diet in the 24 hours before the survey.

Regarding the anaemia level: one in four (25%) children aged 6-49 months were anaemic, and 23% of the women and 11% of the men aged 15-49 years were anaemic.

Arguably, assessing the nutritional status of young children is vital, as it enables the identification of subgroups of children who are at an increased risk of stunted growth, disease, impaired mental development, and death. It is well-recognised that the effects of unhealthy nutritional habits are manifested since early childhood. Therefore, a specific consideration of the dietary risk factors is of particular importance for Albanian children.

According to the ADHS 2017-18, three-quarters (75%) of children aged 12-23 months received all basic vaccines, a rate which is affected by the uptake of vaccines against Measles (79%); 98% received DPT, hepatitis B, and Haemophilus influenza type B vaccines; 96% received the polio vaccine; and 79% received the measles-containing vaccine. Less than 1% of children did not receive any vaccines (ADHS 2017-18). Regarding the socioeconomic patterns of vaccination coverage, according to the ADHS 2017-18, the vaccination coverage is far better in the rural than the urban areas (85% vs. 67%, respectively). As for gender differences, 82% of boys received all basic vaccinations compared with 67% of girls. Hence, gender does seem to influence the coverage of the completed series with DTP-containing vaccines and polio among Albanian children (ADHS 2017-18).

DISEASE	Males (N=6,142)		Females	(N=15,000)	Total (N=21,142)	
	ADHS rate	ADHS rate Total population		Total population	ADHS rate	Total population
		estimate		estimate		estimate
Any NCDs	7.5%	TBC	19.6%	TBC	16.1%	TBC
Heart disease	0.7%	TBC	2.0%	TBC	1.6%	ТВС
Diabetes	0.9%	TBC	2.2%	TBC	1.8%	TBC
Depression	0.3%	ТВС	0.7%	TBC	0.6%	TBC
Cancer	0.2%	TBC	0.5%	TBC	0.4%	TBC
Chronic fatigue	0.3%	TBC	0.7%	TBC	0.6%	TBC

#### TABLE. 3.5. THE PREVALENCE OF SELECTED DISEASES AND CONDITIONS IN INDIVIDUALS AGED 15-59 YEARS

Source: Author's calculations based on data from the ADHS 2017-18

#### 3.1.3 Morbidity in Middle-aged Individuals

The ADHS 2017-18 included a large nationwide representative sample of males and females aged 15-59 years. Among other survey objectives, the aim was to assess the prevalence and correlations of a wide range of chronic conditions among young adults and middleaged individuals within the Albanian population. The cause-specific morbidity from selected diseases among individuals aged 15-59 years is presented in the table below (ADHS 2017-18). According to this survey, the reported prevalence of any types of NCDs was about 20% in women, but only 8% in men. It should be noted that this rate does not represent the true morbidity rate within the population. As the instrument used by the ADHS filters only cases diagnosed by a doctor, the rate reflects the health system's utilisation level. All specific chronic conditions were more prevalent in women than men. Hence, heart disease was evident in 2% of the women but only 0.7% of the men; diabetes in 2.2% of the women and 0.9% of the men; cancer in 0.5% of the women and 0.2% of the men; and depression in 0.7% of the women and 0.3% of the men. These data confirm an international trend whereby women report more health issues than men.

Table 3.6 presents the incidence rate of selected diseases among middle-aged men and women in 2018, according to information recorded in the NCD national registers available from the Institute of Public Health (IPH). The cancer incidence was somewhat higher in men than in women. In particular, the incidence of lung cancer was

significantly higher in men than in women (about 57 vs. 15 cases per 100,000 people, respectively). Furthermore, the incidence of heart attack was considerable higher in men than in women (about 220 vs. 60 cases per 100,000 people, respectively). Similarly, the stroke incidence was 72% higher in men than in women, as well as colorectal cancer (57% higher).

#### TABLE 3.6. MOST FREQUENT DISEASES AND CONDITIONS 2018 (INCIDENCE RATE: CASES PER 100,000 POPULATION) AMONG INDIVIDUALS AGED 30-69 YEARS; NCD NATIONAL REGISTERS

DISEASE	Males	Females	Total	
Cancers	278.6	263.2	280.8	
Lung cancer	57.4	15.4	36.3	
Breast cancer	0.4	85.5	43.3	
Colo-rectal cancer	24.5	15.6	20	
Cervical cancer	0	14.3	7.2	
Heart Attack	219.9	59.7	139.2	
Stroke	167.8	97.3	132.2	
Diabetes*	140.2	123.1	131.6	

Source: Author's calculations based on data from IPH, 2019 Note: \*Tirana region only.

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#### TABLE 3.7. DISTRIBUTION OF SELECTED CHRONIC CONDITIONS AND THEIR RISK FACTORS IN ALBANIAN MEN AND WOMEN AGED 40-65 YEARS (N=487,727), WHO ACCESSED THE CHECK-UP PROGRAMME IN JUNE 2015-DECEMBER 2016

VARIABLE	MEN		WOI	WOMEN		AL	P†
	(N=18	8,299)	(N=29	(N=299,428)		7,727)	
BMI:							<0.0001
<25 (normal weight)	39972	(21.4)*	59827	(20.2)	99799	(20.7)	
25-29.9 (overweight)	85595	(45.9)	115534	(39.1)	201129	(41.7)	
≥30 (obesity)	60964	(32.7)	120303	(40.7)	181267	(37.6)	
Self-reported hypertension:							<0.001
Yes	42344	(22.7)	91577	(30.8)	133921	(27.7)	
No	144408	(77.3)	205368	(69.2)	349776	(72.3)	
Measured hypertension:				<0.001			
SBP≥140 and/or DBP≥90	84742	(46.5)	140578	(48.4)	225320	(47.6)	
SBP<140 and DBP<90	97637	(53.5)	149957	(51.6)	247594	(52.4)	
Self-reported diabetes:							<0.001
Yes	13996	(7.5)	17421	(5.9)	31417	(6.5)	
No	172759	(92.5)	279471	(94.1)	452230	(93.5)	
Measured hyperglycaemia:							<0.001
Normal	157555	(85.1)	267285	(90.8)	424840	(88.6)	
Pre-diabetes	12200	(6.6)	12666	(4.3)	24866	(5.2)	
Diabetes	15338	(8.3)	14426	(4.9)	29764	(6.2)	
High triglycerides							<0.001
Yes	67406	(36.4)	80594	(27.4)	148000	(30.9)	
No	117760	(63.6)	213876	(72.6)	331636	(69.1)	
High cholesterol							<0.001
Yes	71176	(38.4)	139585	(47.4)	210761	(43.9)	
No	113991	(61.6)	154886	(52.6)	268877	(56.1)	
HDL cholesterol							<0.001
Low	71164	(38.4)	53504	(18.2)	124668	(26.0)	
Normal	114002	61.6)	240967	(81.8)	354969	(74.0)	
Blood in the stool							<0.001
Yes	1601	(0.9)	2879	(1.1)	4480	(1.0)	
No	170464	(99.1)	270738	(98.9)	441202	(99.0)	

Source: Author's calculations based on data from MoHSP, 2019.

Note 1: \*Absolute numbers and column percentages (in parentheses). Discrepancies in the totals are due to missing values. Note 2: † Fisher's exact test.
#### Prevalence of Chronic Conditions and NCD Risk Factors resulting from the Check-Up Program

One of the main achievements of the recent reforms within the Albanian health sector concerns the increased access to and guality of the healthcare services. Traditionally, there has been a low registered rate of several chronic diseases among the Albanian population which are detected essentially through periodic check-up programmes. Such conditions include especially hypertension, the early onset of various cardiovascular diseases, and diabetes. In this context, among the many efforts made to achieve universal health coverage in Albania, there has been a political commitment since 2014 to offer a nationwide medical check-up programme for all Albanian citizens of both sexes aged 40-65 years, which was expanded in 2017 to cover the 35-70 years age group, consisting of 1.2 million Albanian citizens who benefit from this unique programme on an annual basis.

In Table 3.7, selected findings pertinent to the population aged 40-65 years who were examined during the period June 2015-December 2016, are presented.

Overall, the prevalence of obesity (BMI≥30) was about 38%, whereas the prevalence of overweight was 42% (overweight+obesity≈79%). Hence, four out of five individuals who accessed the medical check-up were overweight or obese (with no significant sex difference), which is an issue of particular concern. The prevalence of overweight alone was higher in men than in women (46% vs. 39%, respectively), whereas the opposite finding was evident for obesity (33% vs. 41%, respectively).

According to the medical check-up programme's findings, about 28% of the examined men and women reported having established hypertension (23% of the men and 31% of the women, a difference which was highly statistically significant). Conversely, the overall prevalence of measured hypertension was 48% (47% in the men and 48% in the women), which is considerably higher than the self-reported figure, especially in men, who seem far less aware of the presence of this condition compared to women.

The prevalence of self-reported diabetes was 6.5%; it was significantly higher in men than in women (7.5% vs. 5.9%, respectively). On the other hand, the prevalence of measured high sugar level was substantially higher: 5.2% of the examined participants had pre-diabetes and a further 6.2% had diabetes (pre-diabetes+diabetes=11.4%). Thus, almost half of the

individuals with a high blood sugar level were unaware of the presence of this condition. The measured blood sugar level was significantly higher in men than in women (prediabetes+diabetes: 14.9% in men vs. 9.2% in women). Regarding the lipid profile, the prevalence of (measured) high triglyceride level was 31%, suggesting that almost one in three of the participants were at risk of a wide range of chronic conditions related to this risk factor. Men were at a significantly higher risk than women (36% vs. 27%, respectively).

The prevalence of a high cholesterol level was 44% (38% in men vs. 47% in women), whereas the prevalence of a low HDL-cholesterol level was 26% (38% in men vs. 18% in women). Finally, the prevalence of blood in the stool (rectal bleeding, suggesting colorectal cancer) was 1.0% (0.9% in men vs. 1.1% in women).

Based on these findings, it may be concluded that this type of medical check-up is rather unique in Albania and beyond as, to date, there has been no such exercise including the overall middle-aged population of a certain country. The information generated through the ongoing check-up programme has a unique value for the early detection of hypertension and pre-diabetes, particularly among "younger" Albanian adults. Early detection and the effective control and treatment of such chronic conditions are major prerequisites for a gradual reduction in premature mortality and the overall burden of disease in the general population.

More than 1,000 Albanian citizens benefit from this medical check-up per day, which screens for a wide array of chronic conditions, including cardiovascular disease, diabetes, chronic respiratory disease, and certain types of cancer. In addition, the check-up programme aims to assess and provide counselling about the control and prevention of a range of risk factors, such as smoking, excess alcohol consumption, unhealthy dietary habits, and a sedentary lifestyle.

### Hypertension: a traditional risk factor highly prevalent in Albania

An in-depth analysis of the medical check-up data was conducted in order to assess selected "predictors" (correlates) of hypertension among individuals who accessed the programme during the period June 2015-December 2016.

In order to address this research question, a binary

#### TABLE 3.8. CORRELATES OF MEASURED HYPERTENSION IN THE SAMPLE OF ALBANIAN MEN AND WOMEN AGED 40-65 YEARS (N=487,727) WHO ACCESSED THE MEDICAL CHECK-UP PROGAMME IN JUNE 2015-DECEMBER 2016

VARIABLE	Crude (unadjusted) models		Multivariable-adjusted models <sup>+</sup>	
	OR (95%CI)*	P*	OR (95%CI)	Р
Sex:		<0.001		<0.001
Men	1.00 (reference)		1.00 (reference)	
Women	1.08 (1.07-1.09)		1.20 (1.19-1.22)	
Age-group (years):		<0.001 (2)‡		<0.001 (2)
≤44	1.00 (reference)	-	1.00 (reference)	-
45-50	1.75 (1.72-1.79)	<0.001	1.65 (1.61-1.69)	<0.0.01
51-55	2.97 (2.91-3.03)	<0.001	2.69 (2.63-2.75)	<0.001
56-60	4.51 (4.41-4.61)	<0.001	4.05 (3.96-4.15)	<0.001
≥61	6.89 (6.74-7.05)	<0.001	6.26 (6.11-6.42)	<0.001
BMI:		<0.001 (2)		<0.001 (2)
<25 (normal weight)	1.00 (reference)	-	1.00 (reference)	-
25-29.9 (overweight)	1.71 (1.68-1.74)	<0.001	1.58 (1.55-1.61)	<0.001
≥30 (obesity)	3.30 (3.25-3.36)	<0.001	2.82 (2.77-2.87)	<0.001
Hyperglycaemia:		<0.001 (2)		<0.001 (2)
Normal	1.00 (reference)	-	1.00 (reference)	-
Pre-diabetes	2.03 (1.98-2.09)	<0.001	1.41 (1.37-1.45)	<0.001
Diabetes	2.49 (2.43-2.56)	<0.001	1.63 (1.59-1.68)	<0.001
High triglycerides		<0.001		<0.001
No	1.00 (reference)		1.00 (reference)	
Yes	1.75 (1.72-1.77)		1.28 (1.26-1.30)	
High cholesterol		<0.001		<0.001
No	1.00 (reference)		1.00 (reference)	
Yes	1.39 (1.38-1.41)		1.08 (1.08-1.10)	
HDL cholesterol		<0.001		<0.001
Normal	1.00 (reference)		1.00 (reference)	
Low	1.33 (1.31-1.35)		1.08 (1.06-1.09)	

Source: Author's calculations based on data from MoHSP, 2019.

Note 1: \*Odds ratios (OR: measured hypertension vs. no hypertension), their respective 95% confidence intervals (95%CI) and p-values (P) from binary logistic regression. Note 2: +Adjusted simultaneously for all variables presented in the table. Note 3: + Overall p-values and degrees of freedom (in parentheses).



#### FIGURE 3.3. SELECTED MENTAL HEALTH SYMPTOMS ACCORDING TO THE YRBS-IPH ALBANIA

Source: Author's calculations based on data from YRBS-IPH, 2009

logistic regression model was run, with hypertension as a dependent variable and the other risk factors introduced into the model as independent ("predictor" variables). The initial models were crude (unadjusted). Subsequently,



#### FIGURE 3.4. PREVALENCE OF MENTAL HEALTH PROBLEMS IN ALBANIA ACCORDING TO YRBS

all of the covariates were introduced simultaneously into the logistic regression model and, therefore, the multivariable-adjusted odds ratios were calculated and reported (the multivariate logistic regression models met

#### FIGURE 3.5. PREVALENCE OF DEPRESSION SIGNS\* AMONG INDIVIDUALS AGED 15-49 YEARS (ADHS 2017-18)



Source: Author's calculations based on ADHS, 2017-2018 Note: \*feeling a lot of time depressed during past 2 weeks.

Source: Youth Risky Behaviour Survey, CDC, USA

the goodness-of-fit criterion as measured by the Hosmer-Lemeshow test). The findings of these regression analyses are presented in Table 3.8.

In the unadjusted logistic regression models, there was evidence of a positive association between measured hypertension with female gender, older age, high BMI values, a high sugar level, high triglycerides, a high cholesterol level, and a low HDL-cholesterol level. Upon adjusting all of the covariates in a simultaneous fashion, the significant correlates of hypertension included (all p-values: <0.001): female gender (OR=1.2), older age [OR ( $\geq$ 61 years vs.  $\leq$ 44 years) =6.3], overweight and obesity (OR=1.6 and OR=2.8, respectively), pre-diabetes and diabetes (OR=1.4 and OR=1.6, respectively), high triglycerides (OR=1.3), a high cholesterol level, and a low HDL-cholesterol level (both OR=1.1).

In summary, our analysis of the medical check-up data provides evidence of a strong, consistent relationship between hypertension and the other conventional risk factors, including a high BMI, a high sugar level and an unfavourable lipid profile. These findings suggest that the co-prevalence of the major (classical) risk factors among Albanian adults of both sexes is an issue which should be considered carefully and addressed appropriately by healthcare professionals working especially at the primary healthcare level.

### Mental health among young and adult individuals in Albania

Mental health problems are said to be on the rise during the long transition of Albania, in line with the country's rapid structural, political and socio-economic changes. Mental health problems affect both men and women from all age groups. The findings from the Youth Risky Behaviour Survey (YRBS) in 2009 indicate that almost one in three young girls but only one in ten boys in Albania had felt hopeless for a period of a fortnight, a proxy indicator of depression (figure below).

Although the rates are comparably lower compared to the findings of the USA youth survey (Figure 3.4), almost one in three adolescent girls and almost one in four adolescent boys reported mental health problems. In both sexes, there was evidence of a significant increase in 2009 compared with the previous round of the survey, which was conducted in 2005 (Figure 3.4).

According to the ADHS 2017-18, the prevalence of reported depression among individuals aged 15-49 years was substantially higher among the least educated and poorest individuals of both sexes (figure below), which points to significant inequity issues regarding mental health problems within the Albanian adult population.

The ADHS 2017-18 measured also the prevalence



### FIGURE 3.6. RATES OF HOSPITAL ADMISSION IN SELECTED COUNTRIES INCLUDING ALBANIA

### FIGURE 3.7. VISITS TO OUTPATIENT CLINICS IN SELECTED COUNTRIES INCLUDING ALBANIA (SOURCE: WHO)



Source: Author's calculations based on WHO data

Source: Author's calculations based on WHO data

of depression diagnosed by a doctor. This was only 2% and the important difference compared to the depression reported by the population (around six times higher) demonstrates a low utilisation rate of health services, possibly influenced by the stigma attached to the condition. In the context of Albania, there is other evidence of an important contrast between the utilisation of services and the prevalence of mental health problems within the population. This and other sections of this report (mental health among older people) demonstrate a relatively high rate of reported depression in various age groups. In contrast, as indicated in Figures 3.3 and 3.7, Albania has the lowest healthcare utilisation rates for mental health in the European region (WHO data).

#### 3.1.4 Older people morbidity

Cause-specific morbidity among older people in Albania is mainly recorded in the national NCD registers (available from the Institute of Public Health).

On the other hand, periodic surveys targeting older people provide valuable information regarding the prevalence and distribution of a whole array of chronic and other conditions among older people. One such survey was also conducted in Albania; namely, the International Mobility Study on Aging (IMIAS), an international survey

#### TABLE 3.9. MOST FREQUENT DISEASES AND CONDITIONS AMONG INDIVIDUALS AGED 70+ YEARS IN 2018 (INCIDENCE RATE: CASES/100000)

DISEASE	Men	Women	Total
Cancer	832.7	417.8	616.8
Lung cancer	173.1	35.1	101.3
Breast cancer	0.0	50.5	0.0
Colo-rectal cancer	48.4	21.9	34.6
Cervical cancer	0.0	9.5	0.0
Heart Attack	727.9	468.2	592.8
Stroke	1066.1	867.7	924.8
Diabetes*	201.6	218.8	210.5

Source: Author's calculations based on data from IPH. Note: \*Tirana region only. covering four different countries (including Albania). Three waves of the IMIAS study were carried out in Albania (in 2012, 2014, and 2016, respectively). The distribution of socio-demographic characteristics and health profile of the study participants in the most recent wave of the survey in the four countries included is presented in Table 3.9.

However, population-based information on elderly people morbidity and general health status is scarce for Albania. Besides the IMIAS study, two other nationwide population-based surveys were conducted in this regard by MOSHA (a network of a wide range of NGOs providing services and care for older people in Albania). One of these studies (the first round) was conducted in 2008 and the other in 2017 (the second round). Both surveys employed a similar methodology, including the data collection instruments.

The cross-sectional study conducted in June-September 2017 included a representative sample of older men and women living in the urban areas, peri-urban areas and rural areas of three key districts of Albania (Tirana, Shkodra and Vlora). Overall, 974 older people agreed to participate and provided valid responses (the response rate=96%). The data collection consisted of trained interviewers administering a structured questionnaire to all of the older people who agreed to participate in the study. The questionnaire included the assessment of socio-demographic factors (age, sex, place of residence, and family size) and socioeconomic characteristics (income level, amenities at different levels, and self-perceived poverty) of the older people, their health status (self-perceived general health status, presence and type of chronic conditions/diseases or disorders, mental health status, use of medications/drugs, unmet need for medical care, reasons for not accessing health services if needed, and reasons for not taking medications if needed), and their degree of social participation (networks and contact with family members and/or friends, voluntary work in the community, provision of help and support to other older people and/or nephews/nieces, and participation in civil society organizations, political parties, religious groupings, or any other type of association).

The key findings of this study are summarised below:

#### *i.* Demographic characteristics of the sample

Overall, 505 (51.8%) women and 469 (48.2%) men were included in the survey. Overall, 493 (50.6%) participants were aged 60-70 years; 329 (33.8%) 71-80 years; and 152 (15.6%) 81+ years.

#### ii. Socioeconomic characteristics

About 35% of the older people included in this survey lived in houses and around 88% of them had running water in their house/apartment. There were, however, remarkable differences between the different areas: there was running water in about 97% of the urban areas as opposed to only around 71% in the informal areas and about 72% in the rural areas in all three districts included in the survey. Electricity was available in 93% of houses/ apartments (96% in the urban areas compared to about 87% in both the semi-urban and rural areas). Only about 78% of the participants reported having adequate heating in their home: about 84% in the urban areas, 69% in the semi-urban areas, and 65% in the rural areas.

Overall, about 91% of the participants reported having a refrigerator (around 94% in the urban areas compared to 85% in both the semi-urban and rural areas, respectively). Furthermore, about 89% of the older people reported having a TV at home (92% in the urban areas, 88% in the semi-urban areas, and 82% in the rural areas). Regarding self-perceived poverty, overall, about 37% of the older people reported being poor compared while 63% did not perceive themselves as poor. There were no significant differences in the (self-perceived) poverty levels by sex or place of residence. Conversely, there was evidence of a strong, significant relationship with the age group of older people: the prevalence of self-perceived poverty was only about 31% in individuals aged 60-70 years, about 40% among those aged 71-80 years, and 48% among individuals aged 81 years and above. Notwithstanding the relatively high levels of self-perceived poverty, only about 9% of older people reported having any kind of debt. Nonetheless, as in previous similar surveys, the older people may have underreported their debt due to issues related to stigma or other concerns.

#### iii. Health status

Overall, the prevalence of self-perceived poor general health status was about 36%. There were no significant sex differences in the prevalence of self-perceived poor health, but a strong positive relationship with age. Similarly, there was evidence of a significant association with place of residence, with the older people residing in the urban areas exhibiting a significantly lower prevalence of poor self-perceived general health (about 30%) compared with their counterparts living in the rural areas (around 46%), and particularly those living in the semi-urban areas (about 50%). Furthermore, there was evidence of a positive association between self-perceived poor health and self-perceived poverty: the poverty level was significantly higher among the older people who perceived their health status to be poor.

The prevalence of at least one chronic disease or condition was about 47%. There were no significant sex differences, but a strong, gradient relationship with age. Among the older people who reported having at least one chronic condition, the prevalence of cardiovascular disease was 65.4%; that of diabetes was 24.6%; that of diseases of the stomach and/or liver was 31.5%; and that of chronic lung diseases was 36.5%. Overall, about 41% of the older people reported some degree of visual impairment and about 24% of them reported hearing problems. Meanwhile, 52 individuals (5.3%) reported being bed-bound.

Regarding medical care, overall, about 16% of the older people reported having been able to access medical care/services when needed. The inability to access medical care when needed was higher in women than in men (17% vs. 14%, respectively) and linearly and positively associated with the age of older people. It was also higher among older people residing in the semi-urban areas (about 25%) compared with their counterparts living in the rural areas (16%), and especially those residing in the urban areas (around 14%). Among the individuals who reported an inability to access medical services when needed (N=154), the following reasons were stated as the main hindrances: difficulty in affording medical treatment (17.6%), a long distance to the medical facilities (12.3%), and an inability to access medical services due to the presence of severe illness/pain (11.4%).

Among the participants who were prescribed medication by their respective family physician, 24.7% reported that they could not receive such drugs mainly due to an inability to afford them. The level of the inability to pay for drugs prescribed by medical personnel was higher in women than in men (about 27% vs. 22%, respectively) and was linearly and positively associated with the age of the older people. Furthermore, it was higher among the older people residing in the rural and semi-urban areas (about 28% and 31%, respectively) compared with their counterparts living in the urban areas (around 19%).

Applying the WHO-5 index, the prevalence of mental health problems in this overall sample of older men and women in Albania was about 70%. There was evidence of a highly significant relationship with the age of the older people but not with their sex.

## TABLE 3.9. DEMOGRAPHIC, SOCIOECONOMIC AND HEALTH CHARACTERISTICS OF INDIVIDUALS AGED 65-74 YEARS IN SELECTED SITES WITHIN FOUR DIFFERENT COUNTRIES INCLUDING ALBANIA (SOURCE: IMIAS)

		Site				
VARIABLE	Kingston	Saint-Hyacinthe	Tirana	Manizales	Natal	All(N=1982)
	(n=394)	(n=395)	(n=394)	(n=398)	(n=401)	
Age						
65-69	56.3	63.5	49.5	53.5	53.6	55.3
70-74	43.7	36.5	50.5	46.5	46.4	44.7
			p-value=0.002			
Sex						
Male	46.4	47.3	47.7	49.5	47.9	47.8
Female	53.6	52.7	52.3	50.5	52.1	52.2
			p-value=0.941			
Educational level						
Less than secondary	0.5	7.1	11.4	73.9	77.8	34.4
Secondary	21.8	42.3	26.4	15.1	17.7	24.6
Post-secondary	77.7	50.6	62.2	11.0	4.5	41.0
			p-value<0.001			
Income sufficiency						
Very sufficient	61.4	44.3	37.6	4.8	4.0	30.3
Sufficient	33.3	48.4	41.4	24.1	21.9	33.7
Insufficient	5.3	7.3	21.0	71.1	74.1	36.0
			p-value<0.001			
Diabetes						
No	86.6	80.8	71.3	86.4	71.3	79.3
Yes	13.4	19.2	28.7	13.6	28.7	20.7
			p-value<0.001			
Body Mass Index						
<25	32.0	29.6	17.0	40.2	30.2	29.8
25-29	39.3	37.7	46.7	43.5	43.4	42.1
≥30	28.7	32.7	36.3	16.3	26.4	28.1
			p-value<0.001			
Smoking						
Never	44.4	36.7	60.7	48.5	48.9	47.8
Former	51.0	56.7	26.9	41.5	43.6	44.0
Current	4.6	6.6	12.4	10.0	7.5	8.2
			p-value<0.001			

Alcohol intake						
Never	15.0	8.9	60.2	63.8	82.8	46.2
Rarely	40.9	57.7	28.4	35.7	14.5	35.4
frequently	44.2	33.4	11.4	0.5	2.7	18.4
			p-value<0.001			
Sedentary1						
No	35.7	27.7	44.6	23.0	12.2	28.5
Yes	64.3	72.3	55.4	77.0	87.8	71.5
			p-value<0.001			

Source: Author's calculations based on data from IMIAS

#### iv. Social participation

Overall, about 8% of older people reported having no contact at all with their family members and/or friends – indicating the complete social isolation of this category of older people. The degree of social isolation was somehow higher in women (8.7%) than in men (7.7%), and substantially higher among the very old participants compared with their younger counterparts. There were 317 (32.5%) participants who reported meeting no friends on a daily basis compared with 657 (67.5%) of the other individuals who reported to meet at least one friend on a daily basis. Regarding the participation of older people in civil society associations, religious groups, or any other type of organization, overall, only about 18% of participants reported engaging with one of these social structures. The degree of societal participation was significantly higher in men compared to women (about 21% vs. 15%, respectively), and considerably higher in younger people compared with their older counterparts.



### FIGURE 3.9. TRENDS IN MENTAL HEALTH CONDITIONS (ICD9 290-319) AT THE PRIMARY HEALTHCARE LEVEL (SEVERE DEPRESSION WAS A THIRD OF THE CASES)

Source: Author's calculations based on data from CHIF



#### FIGURE 3.10. THE PREVALENCE OF DEPRESSION AMONG OLDER PEOPLE

Source: Author's calculations based on data from IMIAS

About 12% of the older Albanian men and women included in this study reported that they had engaged in some type of voluntary work in their respective community during the past 12 months. The degree of voluntary work was higher in men (about 15%) compared to women (around 10%). Overall, about 19% of the study participants reported providing care and looking after their grandchildren.

The overall prevalence of some types of physical activities in this sample of older Albanian people was about 14%, and was significantly higher in men than in women (18% vs. 11%, respectively).

#### Mental Health among Older People in Albania

Data from the Compulsory Health Insurance Fund (CHIF) point to a gradual increase in the number of cases with mental health problems attending at the Primary Healthcare (PHC) level, as indicated in Figure 3.9. Of note, severe depression constitutes a third of the overall cases.

However, as described above in this report, the mental health conditions recorded in the primary healthcare registers constitute only a small fraction of the real problem in the community. Population-based studies of depression show a relatively high prevalence of the problem, as indicated in the figures below. IMIAS, a limited follow-up study based on a cohort of people aged over 65 years in Tirana demonstrates that, although there was an improvement compared to 2012, in 2016, around one in four older people reported/exhibited clinical signs of depression in the fortnight prior to the survey. The risk was consistently higher among women than men. Additionally, another larger population survey of older people (MOSHA 2017) showed that the majority of the participants had issues with mental health, with those older and living in informal suburban areas having the poorest score.

#### TABLE. 3.10. MENTAL HEALTH SCORE (EMPLOYING THE WHO 5 INDEX\*) INCLUDING A REPRESENTATIVE NATIONWIDE SAMPLE OF PEOPLE AGED 65+ YEARS

Residence	Median	95% CI (lower)	95% CI (upper)
Urban	42.4	39.5	45.4
Sub-urban	35.5	31.2	39.7
Rural	39	37.0	41.0
Total	39.5	37.9	41.0

Source: Author's calculations based on data from the MOSHA study, 2017. Note: \*A mental wellbeing Index. The lower the index, the poorer the mental health.

### 3.2 Burden of disease

### 3.2.1 Overall Burden of Disease in the Albanian Population

Disability-adjusted life years (DALYs) are a commonlyemployed measure of the total burden of disease at the population level. DALYs represent the overall costs, morbidity, and mortality related to all diseases/ conditions affecting the whole population for a given period of time (Murray CJ et al., 2004). Hence, DALYs are a time-based measure that combine the years of life lost due to premature mortality and due to time lived in health states less than ideal health, respectively (Murray CJ et al., 2004).

The use of DALYs is helpful, as the allow the combination of data on mortality, morbidity, and disability, providing combined estimates which may be used to assess the trends over time in a given country as well as cross-country comparisons. Furthermore, in the context of Albania, the use of disease burden estimates is an important source of information, given the scarcity of official (administrative) health information, especially regarding the morbidity and disability measures.

#### FIGURE 3.11. BURDEN OF DISEASE (CRUDE DALYS PER 100,000 POPULATION) FROM ALL CAUSES IN ALBANIA 1990-2017



Source: Author's calculations based on the GBD database

DALYs constitute the sum of two dimensions: (i) the present value of future years of lifetime lost through premature mortality; and (ii) the present value of years



FIGURE 3.12. THE OVERALL BURDEN OF DISEASE (AGE-STANDARDISED DALYS PER 100,000 POPULATION) IN SOUTH EASTERN EUROPEAN COUNTRIES IN 1990 AND 2017

Source: Author's calculations based on the GBD database

of future lifetime adjusted for the average severity (frequency and intensity) of any mental or physical disability caused by a disease or injury. The following graph presents the burden of disease trend in Albania (all-cause DALYs per 100,000 population) during the past three decades.

In 2017, the overall burden of disease (all ages, all causes) in Albania was about 27,820 DALYs per 100,000 people (32,096 in males vs. 23,503 in females). On the other hand, in 1990, the overall burden of disease was 28,593 DALYs per 100,000 people (31,357 in males vs. 25,661 in females). The highest peak was evident in 1997, which coincides with the collapse of the financial Ponzi schemes and the beginning of civil unrest in the country (sex-pooled: 30,511 DALYs per 100,000 people).

Compared with the other South Eastern European (SEE) countries, the overall age-standardised burden of disease among the Albanian population in 2017 was considerably higher than in Greece, followed by Slovenia and Bosnia-Herzegovina, but lower than in North Macedonia and especially Serbia (figure below). It is striking that, in 1990, the overall age-standardised burden of disease in Albania was similar to that in Slovenia. The burden of disease from all causes has

#### FIGURE 3.13. BURDEN OF NCDS (CRUDE DALYS PER 100,000 POPULATION) IN ALBANIA 1990-2017



Source: Author's calculations based on the GBD database

decreased in all SEE countries over the past three decades – less so in Greece, but far more so in Croatia and Slovenia.



#### FIGURE 3.14. NCD BURDEN (AGE-STANDARDISED DALYS PER 100,000 POPULATION) IN SOUTH EASTERN EUROPEAN COUNTRIES IN 1990 AND 2017

Source: Author's calculations based on the GBD database

#### 3.2.2 Burden of Disease from Specific Causes Non-communicable diseases (NCDs)

In 2017, the burden of all NCDs in Albania was about 22,690 DALYs per 100,000 people. On the other hand, on the breakdown of the communist regime in 1990, the crude NCD burden was only 15,686 DALYs per 100,000 people (with about a 45% increase at a crude level from 1990 to 2017). Figure 3.13 presents the trend in the burden of NCDs in Albania (DALYs per 100,000 population) for the period 1990-2017.

The figure below presents the age-standardised burden of NCDs in Albania vis-à-vis the other SEE countries. In 2017, the burden of NCDs (DALYs per 100,000 population) in Albania was higher than in Slovenia, comparable to that in Croatia, but lower than that in most of the former Yugoslavian Republics. Conversely, at the end of the communist regime in 1990, the NCD burden in Albania was lower than in all of the former Yugoslavian Republics.

#### FIGURE 3.15. BURDEN OF COMMUNICABLE, MATERNAL, NEONATAL, AND NUTRITIONAL DISEASES (CRUDE DALYS PER 100,000 POPULATION) IN ALBANIA 1990-2017



Source: Author's calculations based on the GBD database





Source: Author's calculations based on the GBD database

#### Infectious diseases

In 2017, the burden of communicable, maternal, neonatal, and nutritional diseases in Albania was about 2,000 DALYs per 100,000 people. Conversely, in 1990, it had risen to 9,300 DALYs per 100,000 people (4.6 times higher). Figure 3.15. presents the trend in the burden of communicable, maternal, neonatal, and nutritional diseases in Albania (DALYs per 100,000 people) for the period 1990-2017.

Compared to the other SEE countries, the burden of communicable, maternal, neonatal, and nutritional diseases in Albania (age-standardised DALYs per 100,000 population) in 2017 was the highest, whereas in Slovenia it was the lowest. However, the difference with the neighbouring countries was not considerable. On the other hand, in 1990, the difference with the other SEE countries was huge; i.e., the burden of communicable, maternal, neonatal, and nutritional diseases in Albania was substantially higher than in the neighbouring countries. As a matter of fact, Albania has experienced the most

#### FIGURE 3.17. BURDEN OF INJURIES (CRUDE DALYS PER 100,000 POPULATION) IN ALBANIA 1990-2017



Source: Author's calculations based on the GBD database



#### FIGURE 3.18. TRENDS IN THE BURDEN OF INJURIES (AGE-STANDARDISED DALYS PER 100,000 POPULATION) IN SOUTH EASTERN EUROPEAN COUNTRIES 1990-2017

Source: Author's calculations based on the GBD database

prominent decrease in this group of diseases compared with all of the other SEE countries during the period 1990-2017 (Figure 3.16).

#### Injuries

In 2017, the burden of injuries in Albania was 3,125 DALYs per 100,000 people. On the other hand, in 1990, it was about 3,600 DALYs per 100,000 people (15% higher). Figure 3.17 presents the trend in the burden of injuries in Albania (crude DALYs per 100,000 people) for the period 1990-2017. The peak in 1997 was related to the civil unrest and turmoil following the collapse of the "pyramid" saving schemes.

In 1990, the burden of injuries in Albania was comparable to the other SEE countries (where the highest injury burden on the breakdown of the socialist regime was evident in Slovenia). In 2017, the injury burden in Albania was also similar to that in most of the SEE countries (Figure 3.18).

#### FIGURE 3.19. PROPORTIONAL BURDEN (PERCENT DALYS) OF THE THREE MAIN DISEASE CATEGORIES IN ALBANIA 2017



Source: Author's calculations based on the GBD database



#### FIGURE 3.20. TRENDS IN THE BURDEN OF SELECTED MAJOR DISEASES (CRUDE DALYS PER 100,000 POPULATION) IN ALBANIA 1990-2017

Source: Author's calculations based on the GBD database

#### Proportional Burden of Disease

The proportional disease burden in Albania from the three main disease groups in 2017 is presented in Figure 3.19. About 82% of the overall burden of disease was attributable to the NCDs, and only 7% to communicable, maternal, neonatal, and nutritional diseases. Furthermore, 11% of the disease burden was attributed to all types of injuries.

### Trends in the Burden of Selected Major Diseases and Conditions

Figure 3.20. presents the trends in the crude burden of selected major diseases in Albania during the period 1990-2017.

At a crude level, there is evidence of a sharp increase in the burden of cardiovascular disease during the past three decades, followed by an increase in the burden of neoplasms. The diabetes burden has also increased at a crude level and, to a lesser degree, also the burden of mental disorders. On the other hand, the agestandardised estimates point to a decrease in the burden of cardiovascular disease in Albania for the period 1990-2017 (figure below), as well as for chronic respiratory disease. On the whole, the age-standardised burden of neoplasms has decreased slightly, whereas the burden of diabetes mellitus increased slightly during 1990-2017. In turn, the (age-standardised) burden of mental disorders in Albania has remained relatively stable during the past three decades of transition.

### 3.3 Risk factors

In line with the epidemiological transition taking place in Albania, it is clearly vital to address the major risk factors related to the burden of NCDs, including cardiovascular disease, cancer, diabetes and chronic respiratory disease.



#### FIGURE 3.21. TRENDS IN THE BURDEN OF SELECTED MAJOR DISEASES (AGE-STANDARDISED DALYS PER 100,000 POPULATION) IN ALBANIA 1990-2017

Source: Author's calculations based on the GBD database

#### TABLE 3.10. MAJOR RISK FACTORS IN THE ALBANIAN POPULATION IN 2017

Risk factor (year: 2017)	Attributable mortality:		Attributat	le burden of disease:
	percentage o	deaths, all causes (95%CI)	percentage D	ALYs, all causes (95%CI)
High systolic blood pressure	33.30%	(28.97%-37.72%)	16.94%	(14.6%-19.58%)
Dietary risks	27.28%	(24.41%-30.09%)	14.61%	(12.57%-16.79%)
Smoking	19.11%	(17.15%-20.90%)	13.25%	(11.73%-14.87%)
High BMI	12.11%	(6.98%-18.03%)	9.19%	(5.67%-13.06%)
Hyperglycaemia	13.76%	(8.74%-20.97%)	7.74%	(5.81%-10.43%)
High LDL-cholesterol	11.73%	(8.66%-15.02%)	6.26%	(4.94%-7.81%)
Alcohol use	6.82%	(3.63%-10.57%)	5.83%	(3.88%-8.12%)
Air pollution	7.53%	(6.35%-8.68%)	4.87%	(4.06%-5.76%)
Occupational risks	0.99%	(0.80%-1.23%)	3.76%	(3.17%-4.45%)
Malnutrition	0.98%	(0.66%-1.41%)	3.75%	(2.91%-4.71%)

Source: Author's calculations based on the GBD database

Besides the biological and constitutional factors (such as age, sex and genetic factors), most of the NCDs are known to be caused by behavioural/lifestyle risk factors, including cigarette smoking, excessive and harmful alcohol use, physical inactivity, and unhealthy dietary habits (characterised by a high fat intake in general and of saturated fat in particular, high sugar consumption, and/or a low intake of fresh fruit and vegetables). These behavioural risk factors are common for several NCDs, particularly CVD, cancer, and diabetes. These factors, in turn, are also related to other major risk factors, such as obesity, high cholesterol, and high blood pressure.

#### 3.3.1 Main Risk Factors for Mortality and Morbidity within the Albanian Population

According to the Global Burden of Disease (GBD) estimates, the top five risk factors in Albania in 2017 (the year for which we have the most recent reported estimates) were high blood pressure, dietary risk, smoking, high BMI, and hyperglycaemia (see Table 3.10 below).

About 33% of all deaths and 17% of the overall disease burden among the Albanian population in 2017 was attributable to high systolic blood pressure alone.

This was followed by dietary risk, as the second main risk factor, accounting for 27% of all-cause mortality and 15% of the overall disease burden, then smoking, as the third leading risk factor, accounting for 19% of all deaths and 13% of the overall disease burden among the Albanian population. Figure 3.22 presents the trends in attributable mortality and the burden of disease related to the top five risk factors in Albania for the period 1990-2017 (according to the most recent GBD estimates).

The proportion of crude all-cause mortality related to high systolic blood pressure increased from 23% in 1990 to 33% by 2017. To a lesser degree than high blood pressure, attributable mortality related to cigarette smoking nevertheless increased from 14% in 1990 to 19% by 2017. Similarly, attributable mortality related to high BMI and hyperglycaemia increased (from 7% to 12% and from 7% to 14% in 1990 and 2017, respectively). Conversely, the share of attributable mortality related to dietary factors (currently, the second leading risk factor) increased only slightly (from 25% in 1990 to 27% by 2017). On the other hand, at a crude level, the attributable burden of disease concerning each of the five main risk factors among the Albanian population increased from 1990 to 2017.



### FIGURE 3.22. CRUDE ATTRIBUTABLE MORTALITY (PERCENTAGE OF DEATHS) AND THE BURDEN OF DISEASE (PERCENTAGE OF DALYS) DUE TO THE FIVE MAJOR RISK FACTORS AMONG THE ALBANIAN POPULATION IN 2017

Source: Author's calculations based on the GBD database

The graphs below (Figure 3.23) present the agestandardised trends in attributable mortality and the burden of disease related to the top five risk factors in Albania for the period 1990-2017 (according to the most recent GBD estimates). The age-standardised attributable mortality from high systolic blood pressure increased considerably in Albania from the mid-1990s until 2005. Thereafter, there is evidence of a gradual declining trend. However, the age-standardised death rate attributable to high systolic blood pressure among the Albanian population in 2017 is higher than the level estimated for 1990 (32% vs. 28%, respectively). On the other hand, the attributable mortality related to smoking has increased to a lesser degree (age-standardised proportional deaths: 16.8% in 1990 vs. 17.3% in 2017). In turn, the agestandardised attributable mortality related to both high BMI and hyperglycaemia has steadily increased. It is striking, however, that the age-standardised attributable mortality related to dietary risks has decreased in Albania during the past three decades (from 29% in 1990 to 26% by 2017). Similar patterns and trends are evident regarding the attributable burden of disease concerning each of the top five risk factors among the Albanian population during the period 1990-2017.

To summarize, the proportional mortality and disease burden attributable to the five major risk factors among the Albanian population in 2017 is presented in the graph below (Figure 3.24).

The attributable mortality to high systolic blood pressure in Albania in 2017 was one of the highest in the SEE region, along with Montenegro, Serbia, and North Macedonia. It is striking that high blood pressure remains the main risk factor in all SEE countries, which is not the case for western European countries, where smoking accounts for the largest share of mortality (Figure 3.24). In turn, the attributable mortality to smoking in 2017 was the highest in Montenegro (26.5%), followed by North Macedonia (22.4%) and Bosnia-Herzegovina (22.9%). Albania was ranked somewhere in the middle (19.1%),



### FIGURE 3.23. AGE-STANDARDISED ATTRIBUTABLE MORTALITY (% DEATHS) AND THE BURDEN OF DISEASE (% DALYS) DUE TO THE FIVE MAJOR RISK FACTORS AMONG THE ALBANIAN POPULATION 2017

Source: Author's calculations based on the GBD database

# FIGURE 3.24. CRUDE PROPORTIONAL MORTALITY AND THE DISEASE BURDEN ATTRIBUTABLE TO THE FIVE MAJOR RISK FACTORS AMONG THE ALBANIAN POPULATION 2017





#### FIGURE 3.25. SELECTED RISK FACTORS FOR CRUDE MORTALITY (ALL CAUSES) IN SEE COUNTRIES 2017

Source: Author's calculations based on the GBD database

whereas Slovenia was associated with the lowest estimate (14.9%). The attributable mortality to excess body weight (a high BMI) in Albania in 2017 was 12.1%, which was lower than many SEE countries. Similarly, the attributable mortality related to hyperglycaemia among the Albanian population in 2017 (13.8%) was one of the lowest in the region, apart from Slovenia (11.8%).

#### 3.3.2 Hypertension - the general picture

The table below presents the prevalence of hypertension in different population groups in Albania, according to different sources of information (measured blood pressure, as well as the self-reported presence of hypertension). According to the hospital discharge data, the number of hypertension cases (per 100,000 population) has increased over the past two years, mainly due to improvements in treatment and better hospital care. Similarly, the registered number of cases diagnosed with hypertension in the primary healthcare services has increased too, mainly due to the nationwide medical check-up programme that targets all the adults aged 35-70 years.

Regarding the information generated by the different types of surveys, the prevalence of hypertension among the Albanian population was reported to be as low as 23%

in a population-based study conducted in 2018, including a sample of adult individuals aged 18+ years (the May Measurement Month initiative [MMM] implemented in Albania), and as high as 57% according to the IMIAS study conducted in Tirana in 2016 which included a sample of older people aged 69-79 years who were primary healthcare users. The recent ADHS 2017-18 provides stratified data for men and women aged 15-59 years. According to this large, nationwide survey, the prevalence of hypertension in men and women aged 50-59 years was 65% and 69%, respectively whereas, among men and women aged 45-49 years, it was 60% and 52%, respectively.

A comparison of the two ADHS surveys conducted in Albania in 2008-09 (first round) and 2017-18 (second round) shows that the prevalence of HBP increased in both men (from 28% to 38%) and women (from 20% to 24%). The graph in Figure 3.26 below shows the agespecific prevalence of hypertension among the Albanian men and women included in the ADHS 2017-18 survey. As expected, there is evidence of a positive age-gradient in the prevalence of hypertension among both sexes, with the lowest hypertension rate among the youngest agegroup (15-19 years) and the highest among the oldest individuals (aged 50-59 years).

### TABLE 3.11. PREVALENCE OF HYPERTENSION AMONG THE ADULT ALBANIAN POPULATION BASEDON DIFFERENT POPULATION SAMPLES AND VARIOUS INFORMATION SOURCES

	2015	2016	2017	2018
Hospital discharges (registered incident episodes, all ages, cases per 100,000)	118	115	112	196
Registered cumulative prevalent cases, all ages (PHC)	267,280 cases	269,077 cases	281,857 cases	
Vulnerability study, self-reported, PHC users (≥18 years)				51.9%
MOSHA study, self-reported, general population (≥60 years)			43.1%	
Check-up, measured, PHC users (35-70 years)		46.5%		
ADHS 2017-8, measured, general population sample:				
40-44 years			53.8% in men;	36.1% in women
45-49 years			60.4% in men;	52.0% in women
50-59 years			65.1% in men;	68.8% in women
				22.8%
IMIAS 2016, measured, PHC users in Tirana (69-79 years)		56.6%		

The May Measurement Month (MMM) initiative, implemented in 2018 in Albania (for the second consecutive year), reported an increasing linear trend in systolic blood pressure with age in women whereas, in men, there was evidence of a plateau being reached after the age of 60 years, and even a slight decreasing trend after the age of 65 years (Figure 2.27). Conversely, regarding diastolic blood pressure, in men, there was



FIGURE 3.26. HYPERTENSION PREVALENCE (%) AMONG ALBANIAN MEN AND WOMEN AGED 15-59 YEARS

Source: Author's calculations based on ADHS, 2018-18



FIGURE 3.27. SYSTOLIC AND DIASTOLIC BLOOD PRESSURE LEVELS AMONG ALBANIAN MEN AND WOMEN AGED ≥18 YEARS

Source: Author's calculations based on MMM, 2018

evidence of a quadratic trend with an increase until the age of 60 years, followed by a decreasing trend whereas, in women, an increasing trend until the age of 60 years was followed by a plateau.

Furthermore, according to the MMM 2018, conducted in Albania, there was evidence of a statistically significant higher mean systolic and/or diastolic blood pressure between individuals with established hypertension, those taking antihypertensive medication, and individuals with diabetes (a finding which was only borderline significant for diastolic blood pressure). Conversely, there were no significant associations with previous stroke or previous myocardial infarction (Figure 3.28).

In addition, both the systolic and diastolic blood pressure was significantly higher among individuals who reported alcohol consumption, but lower among pregnant women (Figure 2.29). Smoking status was significantly related to higher mean values of diastolic blood pressure only, whereas the mean systolic blood pressure levels were higher among individuals whose blood pressure was measured in a fasting state (MMM, 2018). Also, overweight and/or obese participants exhibited higher mean values of both systolic and diastolic blood pressure. Conversely, thin (underweight) individuals displayed a lower mean value of systolic blood pressure (see Figure 3.30 below). The IMIAS study conducted in Tirana included a representative sample of older people aged 65-75 years, which consisted of a cohort that was followed-up from 2012 (first wave) until 2016 (third wave, by which time the individuals were aged 69-79 years). This panel study, consisting of monitoring the same population sample using the same methodology, provides us with a rare example of a comprehensive health investigation, at least in the context of Albania, which remains an under-researched population. In all three waves of the IMIAS study, blood pressure was measured in all participants, based on which individuals were diagnosed as hypertensive (if their systolic blood pressure was 140 mmHg and above and/or their diastolic blood pressure was 90 mm Hg and above).

Table 3.12 below presents the prevalence of measured hypertension in the three waves of the IMIAS study. The prevalence of measured hypertension was very high in this survey but, since 2014, this trend decreased, although the cohort had aged by four years. Meanwhile, the prevalence of very high blood pressure (grades 2 and 3) steadily decreased throughout the period, being by 2016 almost half the level it had been in 2012. This profile was also reflected in the control of hypertension, which improved over the course of the three survey waves.



### FIGURE 3.28. DIFFERENCE IN MEAN BLOOD PRESSURE (BP) LEVELS IN ALBANIAN MEN AND WOMEN AGED ≥18 YEARS BY PRESENCE OF DISEASES AND HYPERTENSIVE MEDICATION

Source: Author's calculations based on MMM, 2018

## FIGURE 3.29. DIFFERENCE IN MEAN BLOOD PRESSURE (BP) LEVELS IN ALBANIAN MEN AND WOMEN AGED ≥18 YEARS BY SMOKING STATUS, ALCOHOL INTAKE, ARM MEASUREMENT, FASTING AND PREGNANCY STATE



Source: Author's calculations based on MMM, 2018

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### FIGURE 3.30. DIFFERENCE IN MEAN BLOOD PRESSURE (BP) LEVELS IN ALBANIAN MEN AND WOMEN AGED ≥18 YEARS BY BODY MASS INDEX STATUS

Source: Author's calculations based on MMM, 2018

### FIGURE 3.31. DIFFERENCE IN MEAN BLOOD PRESSURE (BP) LEVELS IN ALBANIAN MEN AND WOMEN AGED ≥18 YEARS BY DAYS OF THE WEEK



Source: Author's calculations based on MMM, 2018

### TABLE 3.12. PREVALENCE OF HYPERTENSION IN THE THREE WAVES OF THE IMIAS STUDY CONDUCTED IN TIRANA

HBP	2012	2014	2016
Men	59.4	66.9	60.0
Women	59.4	65.3	53.5
Total	59.4	66.0	56.6
HBP Grade 2+3	29.2	22.1	14.8

Source: Author's calculations based on IMIAS Study

#### 3.3.3 Dietary risks

The ADHS 2017-18 provides useful information on a range of dietary practices and nutritional-related behaviour among adult Albanian individuals aged 15-59 years of both sexes. The prevalence of the consumption of sugary drinks (artificially-sweetened beverages) was significantly higher among poor women compared to their wealthier counterparts (62% vs. 53%, respectively),

#### FIGURE 3.32. PREVALENCE OF THE CONSUMPTION OF SUGARY DRINKS AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS BY WEALTH INDEX



Source: Author's calculations based on ADHS 2017-18

whereas the opposite finding was evident in men (55% vs. 59%, respectively) (Figure 3.32).

Overall, 9.3% of the women and 14.1% of the men aged 15-49 years and 9.9% of the women and 13.9% of the men aged 15-59 years usually use unhealthy oils and fats for cooking and baking. Figure 3.33 presents the prevalence of oil and fat consumption by wealth index category (poorest vs. richest).

Overall, 36.9% of the women and 14.0% of the men aged 15-49 years and 36.1% of the women and 14.0% of the men aged 15-59 years had consumed at least three servings of oils and fats during the day preceding the survey. Figure 3.34 presents the prevalence of fruit consumption by wealth index category (poorest vs. richest).

Overall, 7% of the women and 2.5% of the men aged 15-49 years and 6.8% of the women and 2.6% of the men aged 15-59 years had consumed at least four servings of fruit in the day preceding the survey. The graph below (Figure 3.35) presents the prevalence of vegetable consumption by wealth index category (poorest vs. richest).

#### FIGURE 3.33. PREVALENCE OF THE CONSUMPTION OF OILS AND FATS AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS BY WEALTH INDEX



Source: Author's calculations based on ADHS 2017-18

#### FIGURE 3.34. PREVALENCE OF FRUIT CONSUMPTION AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS BY WEALTH INDEX



Source: Author's calculations based on ADHS 2017-18

#### FIGURE 3.35. PREVALENCE OF VEGETABLE CONSUMPTION AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS BY WEALTH INDEX



Source: Author's calculations based on ADHS 2017-18

#### 3.3.4 Smoking

The information on smoking is based on periodic population-based surveys conducted in Albania that included different age-categories. Table 3.13 summarises the main findings from the largest surveys involving adult individuals of both sexes. Comparing the three large surveys employing the same methodology, namely the Reproductive Health Survey (RHS) and the two ADHS rounds, there is evidence of a gradual decrease in smoking prevalence in men aged 15-49 years (from 46% in 2002 to 36% in 2018), but a slight gradual increase in women (from 3% in 2002 to 5% in 2018) (Figure 3.36). The General Population Survey (GPS) conducted in 2014, that included a nationwide representative sample of individuals aged 15-64 years, reported a smoking prevalence of 43% in men and 11% in women.

Comparing different regions of Albania, according to the ADHS 2017-18, the prevalence of smoking was the highest (over 40%) in Tirana, Fier, Berat, and Vlora, and the lowest in Durres, Lezhe, Kukes and Korce (below 30%). Regarding the association with education, smoking prevalence was the highest among both men and women with the lowest educational attainment (<4 years of formal schooling) (ADHS 2017-18).

#### TABLE 3.13. PREVALENCE OF SMOKING AMONG THE ALBANIAN POPULATION BASED ON ESTIMATES BY DIFFERENT SURVEYS

GENDER	RHS 2002	ADHS 2008-09	GPS 2014	ADHS 2017-18
	(15-49 years)	(15-49 years)	(15-64 years)	(15-49 years)
Males	46%	43%	43%	36%
Females	3%	4%	11%	5%



#### FIGURE 3.36. SMOKING TRENDS AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS ACCORDING TO THREE LARGE-SCALE NATIONWIDE HOUSEHOLD SURVEYS

#### FIGURE 3.37. PREVALENCE OF SMOKING IN ALBANIA BY PREFECTURE AND EDUCATION LEVEL



Source: Author's calculations based on ADHS 2017-18

#### TABLE 3.14. SMOKING PREVALENCE IN THE THREE WAVES OF THE IMIAS STUDY

Smoking	2012	2014	2016
Males	20.1%	18.4%	16.1%
Females	12.7%	11.3%	9.4%
Total	16.1%	14.6%	12.6%

The IMIAS studies have reported a consistent decreasing trend in smoking prevalence in Albania (Table 3.14). Also, the average number of cigarettes smoked per day among smokers has also decreased, from 23 cigarettes in 2012 to 20 cigarettes in 2016.

#### 3.3.5 High BMI

Similar to smoking, the information on body weight is based on periodic population-based surveys conducted in Albania that included different age-categories. The table below summarises the main findings from the largestscale surveys involving adult individuals and children of both sexes.

#### FIGURE 3.38. PREVALENCE OF OVERWEIGHT AND OBESITY AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS BY EDUCATIONAL ATTAINMENT



Source: Author's calculations based on ADHS 2017-18



#### FIGURE 3.39. PREVALENCE OF THINNESS (UNDERWEIGHT), OVERWEIGHT AND OBESITY AMONG CHILDREN AGED 8-9 YEARS IN ALBANIA ACCORDING TO THE TWO COSI ROUNDS CONDUCTED IN 2013 AND IN 2016

### TABLE 3.15. PREVALENCE OF OVERWEIGHT AND OBESITY AMONG THE ALBANIAN POPULATION BASED ON ESTIMATES BY DIFFERENT SURVEYS

GENDER	COSI 2013	COSI 2016	ADHS 2008-09	ADHS 2017-18
	(8-9 years)	(8-9 years)	(15-49 years)	(15-49 years)
Males	24.9%	25.2%	53%	53%
Females	20.0%	18.0%	39%	45%

Comparing the two ADHS rounds, the prevalence of overweight or obese men has remained unchanged at 53%, whereas that of women has increased from 39% to 45%. According to the ADHS 2017-18, the prevalence of overweight and obesity was higher in men with a higher educational level, whereas in women, there was evidence that the opposite was the case (Figure 3.38).

Regarding the studies conducted on children (COSI surveys), that conducted in 2016 indicated that, according to the limit values of the WHO, 21.7% of the children aged 8-9 years in Albania were overweight and 9.2% were obese (figure below). The prevalence of overweight and obesity was clearly higher in the urban than in the rural areas, and higher among boys than girls.

The most important finding of the COSI study conducted in 2016 was a decreasing trend in overweight (including obesity) from 22.4% to 21.7%, but an increase in obesity alone (9.2% vs. 7.9%, respectively) compared with the data from the COSI 2013 round.

The increasing trend in BMI values among Albanian men and women is illustrated concisely by the following graph (Figure 3.40).

According to the IMIAS study, the prevalence of obesity among the older people residing in Tirana was very high (Table 3.16). Nonetheless, it seems that the increasing trend of obesity prevalence stopped in 2014. Overweight has been slightly decreased, from 47% in 2012 to 39% in 2014 and 42% in 2016.



#### FIGURE 3.40. BMI TRENDS AMONG ALBANIAN MEN AND WOMEN

Source: http://ncdrisc.org/country-profile.html

#### TABLE 3.16. PREVALENCE OF OBESITY IN THE THREE WAVES OF IMIAS STUDY

Obesity	2012	2014	2016
Men	25.1%	30.2%	29.0%
Women	45.9%	49.5%	51.5%
Total	36.0%	40.5%	40.7%

#### 3.3.6 Hyperglycaemia/Diabetes

The table below presents the prevalence of hyperglycaemia among various population groups in Albania, based on different sources of information. According to the hospital discharge data, the number of new cases (per 100,000 population) in Albania hospitalised with diabetes has slightly but gradually increased during the past few years. This is in line with the increase in the registered number of cumulative cases at the primary healthcare level.

According to the medical check-up programme, the prevalence of diabetes in 2016 was about 11%. According to the vulnerability study conducted in 2018 in Albania, that included a representative sample of adult primary healthcare users in the country, the prevalence of pre-diabetes and/or diabetes ranges from about 23% to 31% according to the IMIAS 2016 study that included a sample of older people in Tirana. The prevalence of hyperglycaemia during 2015-18, according to the checkup programme, was 18% among men and about 13% among women aged 60+ years, but only 6% among men and 2% among women aged <45 years (Figure 3.41).

On the other hand, the incidence of diabetes in Albania, retrieved from the new registry of the Institute of Public Health, exhibits a steady increase during the past few years (Figure 3.42). According to the information provided by the IMIAS study, the cumulative prevalence of diabetes has slightly increased over the course of the three waves of the survey, as the cohort aged. Hence, in 2012, the prevalence of diabetes was 28.7%, whereas in 2016 (the third and last wave of the survey), it was 30.8% (Table 3.18).

#### 3.3.7 Other Risk Factors

Other important risk factors regarding the health status of the Albanian population include alcohol consumption, physical activity, and lipid profile. Figure 3.43 presents the trend in alcohol consumption among Albanian men

### FIGURE 3.41. PREVALENCE OF HYPERGLYCAEMIA (SUGAR LEVEL >125 MG/DL) IN ALBANIAN MEN AND WOMEN AGED 35-70 YEARS (CHECK-UP PROGAMME 2015-2018)



#### TABLE 3.17. PREVALENCE OF HYPERGLYCAEMIA AMONG DIFFERENT POPULATION GROUPS IN ALBANIA

	2015	2016	2017	2018
Hospital discharges, registered incident episodes (all ages)	120 per 100,000	129 per 100,000	134 per 100,000	138 per 100,000
Registered cumulative prevalent cases, PHC (all ages)	65,550 cases	71,414 cases	72,926 cases	78,459 cases
				23%
 Check-up, measured, PHC users (35-70 years)		11.4%		
		30.8%		

and women according to the largest population-based surveys conducted. Between the two ADHS rounds, in men, the proportion of infrequent drinkers has almost doubled (from 17% to 33%), whereas the proportion of weekly drinkers has slightly decreased (from 23% to 20%). In women, likewise, the proportion of infrequent drinkers has doubled (from 12% to 25%), whereas the proportion of weekly drinkers has decreased (from 5% to 3%).

The following two figures present the levels of physical activity among Albanian men and women aged 15-49 years, as assessed by the recent ADHS 2017-18 survey.

#### TABLE 3.18. PREVALENCE OF DIABETES ACCORDING TO THE IMIAS STUDY

Diabetes	2012	2014	2016
Men	27.8%	27.2%	29.7%
Women	29.5%	30.9%	31.8%
Total	28.7%	29.2%	30.8%



#### FIGURE 3.42. INCIDENCE OF DIABETES (CASES PER 10,000 PEOPLE) IN ALBANIA 2014-2018



### FIGURE 3.43. TRENDS IN ALCOHOL CONSUMPTION AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS ACCORDING TO THREE LARGE NATIONWIDE HOUSEHOLD SURVEYS

FIGURE 3.44. ALCOHOL CONSUMPTION AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS BY EDUCATIONAL ATTAINMENT



Source: Author's calculations based on data from the ADHS 2017-18



#### FIGURE 3.45. PREVALENCE OF FREQUENT PHYSICAL ACTIVITY AMONG ALBANIAN MEN AND WOMEN AGED 15-49 YEARS

Source: Author's calculations based on data from the ADHS 2017-18



### FIGURE 3.46. PROPORTION OF ALBANIAN MEN AND WOMEN AGED 15-49 YEARS WHO DO NOT PERFORM ANY TYPE OF EXERCISE DURING THE WEEK

Source: Author's calculations based on data from the ADHS 2017-18

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#### FIGURE 3.47. PREVALENCE OF A HIGH LDL-CHOLESTEROL LEVEL AMONG ALBANIAN MEN AND WOMEN AGED 35-70 YEARS



Source: Author's calculations based on data from the "check-up programme" 2015-2018, MoH

Lipid profile is another risk factor for mortality and morbidity among the adult Albanian population. According to the medical check-up data, the prevalence of high LDLcholesterol among Albanian individuals aged 35-70 years examined during the period 2015-18 was about 26% (Figure 3.47), with a higher prevalence among women than men.

According to the IMIAS study conducted in 2012 (first wave of the survey), the prevalence of (measured) high total cholesterol level among older men and women residing in Tirana was as high as 85%. Furthermore, 78% of the study participants exhibited a high LDL-cholesterol level (Table 3.19).

#### TABLE 3.19. LIPID PROFILE AMONG OLDER MEN AND OLDER WOMEN ACCORDING TO THE IMIAS STUDY (2012 ESTIMATES)

Lipid profile	Prevalence
High total cholesterol (≥3.5)	85.4%
High LDL-cholesterol (≥130 mgdl)	77.9%

Source: Author's calculations based on data from IMIAS study 2012

### 3.4. Concluding notes

In line with the demographic transition, there is evidence of an epidemiological transition in Albania, characterised by a significant increase in NCDs and a gradual decrease in infectious diseases and malnutrition-related conditions especially in children. The last stage of this transition, which began in the early 1990s, is currently taking place. Regardless of the significant decline in child mortality and morbidity rates, however, Albania is still experiencing a triple burden of malnutrition (at the population level), characterised by under-nutrition, the prevalence of which has significantly declined but is still evident, especially among the disadvantaged population subgroups, over-nutrition (overweight and obesity, affecting all child categories), and micronutrient deficiencies (evident particularly among the disadvantaged groups). Furthermore, there is evidence of a double burden of malnutrition within households (a household level of DBM), characterised by the coexistence of maternal overnutrition (overweight or obesity) and child stunting or wasting (ADHS, 2017-18).

Regarding adult morbidity, besides the natural course of epidemiological transition, the peak observed in the past few years regarding the increased prevalence of hypertension and high blood sugar level reflects the introduction of the medical check-up programme, that targets all Albanian men and women aged 35-70 years. This programme, to our knowledge, is unique to Albania and beyond as, to date, there has been no such exercise including the overall middle-aged population of a certain country. The information generated through the ongoing check-up programme has a unique value for the early detection of hypertension and pre-diabetes, particularly among the young adult population. The early detection and effective control and treatment of such chronic conditions are the major prerequisites for a gradual reduction in premature mortality and the overall burden of disease in the general population.

Regarding older people morbidity, there is evidence of a high burden of NCDs, mainly cardiovascular diseases, cancer, chronic respiratory disease and mental health problems, similar to most advanced societies in terms of the epidemiological and demographic transition. In fact, there is evidence of a gradual increase in the number of cases with mental health problems among middle-aged and especially older people, with severe depression constituting a third of the overall mental episodes recorded in the PHC services. The risk is higher among women in the younger and older age groups alike. It is striking that mental health problems are far more frequent in the community than the healthcare-based data. The stigma about this condition and other issues related to healthcare may explain the observed difference. More research is required in this respect.

Regarding mortality and morbidity/disability combined (expressed as DALYs), in 2017, about 82% of the burden of disease among the Albanian population was attributed to the NCDs, 7% to communicable, maternal, neonatal, and nutritional diseases, and the remaining 11% to injuries, supporting the previous finding that Albania is in an advanced stage of epidemiological transition.

As for health determinants, the top five risk factors in Albania in 2017 were high blood pressure, dietary risks, smoking, a high BMI, and hyperglycaemia. About 33% of all deaths and 17% of the overall disease burden among the Albanian population in 2017 was attributable to high systolic blood pressure alone, making this by far the most important risk factor in the country. Dietary risk was the second main risk factor, accounting for 27% of all-cause mortality and 15% of the overall disease burden. Smoking was the third leading risk factor, accounting for 19% of all deaths and 13% of the overall disease burden among the Albanian population, although the prevalence of smoking is decreasing.

There is a large body of evidence corroborating the high prevalence of hypertension in Albania. Despite some promising results from the check-up programme for the improvement of the grade 2 and 3 hypertension, there is a high potential for the primary and secondary prevention of high blood pressure. Also, while there is evidence of a decrease, the prevalence of smoking among men in Albania remains relatively high compared to certain western populations. Many healthy life years could be gained by intensifying the smoking prevention efforts in the country.

HEALTH AND CARE PROVISION IN ALBANIA KEY FINDINGS

- The total health expenditure as a share of GDP in Albania has only slightly increased in the past two decades, from 6.4% in 2000 to 6.7% in 2016, making it not only the lowest in the Western Balkans, but also among the lowest in Europe.
- Public health expenditure, despite some evidence of an increase in the past five years, is the lowest in the Western Balkans and among the lowest in Europe, with an estimated percentage of about 50% in 2014, compared to Greece and Serbia (about 62% in both cases) or the European Union (an average level of 78%).
- Over 50% of the payments in the health sector are outof-pocket payments in Albania. The changes since 2003 have been minimal and, since 2010, there has been no change at all. The closest values to that of Albania are those of Montenegro (42.8%) and North Macedonia (36.7%). The reliance on out-of-pocket payments for a large proportion of the population affects more people on a lower income and the most vulnerable.
- O Regarding medical personnel, Albania performs better, with a higher number of GPs, then even Greece and lower only than Serbia in the region. More importantly, this trend has been constant over a difficult period for the country, when a large migration of health profession has taken place. There exists a huge inequality regarding medical personnel distribution in the country in terms of region and rural/urban areas.

- The same cannot be said for hospital resources in the healthcare system. Compared to other Western Balkan countries, Albania clearly has a lower capacity in terms of the number of hospitals, hospital beds, and acute care beds.
- Inequality in healthcare continues to be an issue, with the most vulnerable groups and the poorer categories more affected.
- O The ADHS 2017-18 shows sharp inequalities in a number of areas, including family planning: sharp differences in unmet needs, ranging from 9% in Tirana to 31% in Lezhe, mainly among women with a lower education; the proportion receiving antenatal care from a skilled provider increases with education, from 76% among low-educated women to 92% among highly-educated women; Household wealth strongly determines the presence of serious problems preventing access to healthcare: 62% of the women in the lowest wealth quintile mention at least one serious problem compared with only 10% of the women in the highest one.
- Strikingly, the vaccination coverage is markedly better in the rural than in the urban areas: 85% compared with 67%, respectively supporting the wider evidence found in other low and middle income countries. This area requires further research in order to gain a fuller understanding of it.
# PART 4

### HEALTH AND CARE PROVISION IN ALBANIA

#### 4.1. Introduction The Health System in Albania

In parts 2 and 3 of this report, we analysed the health and mortality of the Albanian population and concluded that the country has a relatively high life expectancy at birth given its level of development. In terms of disease pattern, this appeared similar to that of most advanced societies, where NCDs are the major cause of death, and the country is experiencing the advanced stage of epidemiological transition.

Albania inherited from its socialist past a run-down, underfinanced healthcare system, that had not received any investment for a very long time. Incapable of meeting the needs of the population, it was based on universal health coverage, where the service was free at the point of delivery. The system was similar to that of most of the East European countries that emerged from socialist rule and was supply-based, consisting of a large number of local health centres and hospitals, with a large number of beds, but run-down, and using outdated medical technology. In particular, the tertiary care could not provide some of the main procedures required by a population with a life expectancy at birth of 70+ years.

The financing of the health system was a significant issue at the end of socialist state rule and remains an important issue for the government at present. The health system is underfunded, with Albania having the lowest healthcare expenditure per capita in the region and one of the lowest in Europe, with a healthcare expenditure per capita of US\$615 in 2014, compared to a European Union average of in excess of US\$3,500 (World Bank, 2020).

The healthcare system was fully funded from the general taxation at the level of 84% in the early 1990s (Nuri, B., 2002), which fell to 58% in 2000 and less than 26% by 2013. This change has accompanied the introduction of the Health Insurance Institute, which by 2013 covered 76% of the public health expenditure

in healthcare (Tomini, S.M., et al., 2015). The Health Insurance Institute covers the cost of public health consultations for patients and the reimbursement of medication as well as partially covering tertiary care costs. Its budget is distributed as 24% for primary healthcare, 27% for outpatient care and medication reimbursement, 48% for tertiary care, 2% for prevention (the check-up system), and 2% for administrative costs (WHO, 2018). Despite this change in the way in which public health has been financed during the past three decades, there are two important aspects rooted in the Albanian system at present that need to be addressed. The first is the introduction of the private sector, which has recently developed quickly and covers not only primary but also tertiary care, with a number of private hospitals offering care across the country. The second and most important aspect of the healthcare provision in Albania is the increased out-of-pocket payments during this transition period. By 2014, the out-of-pocket payments in Albania constituted almost 50% of the overall health expenditure (World Bank 2020), which is by far the highest in the region and Europe.

While the system is organised into three tiers, offering primary, secondary and tertiary healthcare, a degree of centralisation is found amongst every part of the system. While the decentralisation of healthcare to local government have been seen as a priority for some time by different governments, it remains highly dependent on the central government and the Institute of health Insurance, through which the majority of the funding has been channelled. One factor that affects the level of autonomy at the local level is, firstly, the lack of financing and, secondly, the fact that health sector financing must abide by the government financing regulations, which makes it difficult to have any level of autonomy when selecting providers in due time and leads to a rigid financing system. The healthcare Insurance Fund should find new, more flexible mechanisms for financing healthcare in the country. The same level of autonomy is lacking regarding hospital management, and both factors mentioned above are relevant to autonomous financing.

#### 4.2. Healthcare expenditure

#### 4.2.1 Health-related Household Expenditure in Albania

Based on household surveys, the health expenditure in Albania in 1999 constituted 4.1% of household expenditure. Exactly the same share of household expenditure was spent on health in 2007. Subsequently, there was evidence of an increase in health expenditure for Albanian families, amounting up to 4.8% in 2014. In the following two years, however, the spending on health as a proportion of total household expenditure decreased to 3.6% in 2015 and to 3.4% in 2016. These data are presented in Table 4.1.

Pharmaceutical expenditure constituted 70% of total family health expenditure in 1999 and subsequently increased slightly in the following years, rising to 75.4% by 2016. Regarding the per capita monthly total expenditure in Albanian Leke (ALL), there was evidence of an increase from 7800 ALL in 1999 to 19,600 ALL in 2016. In 2016, there were a total of 768,311 households (families) containing an average of 3.7 individuals each. To estimate the country health out of pocket expenditures, we have dane the following calculations:

The average monthly consummator expenditure per family was 73,143 ALL. The overall consumption expenditure was estimated to be 56.1 billion ALL per month, and the average consumption costs for an individual were estimated at 19,591 ALL per month, of which 8,861 ALL was spent on food consumption and 10,730 ALL on other expenses (non-food consumption). Based on the above data, it can be calculated that the total family (out-of-pocket) yearly health expenditure in Albania was 22.9 billion ALLoverall. Albanians paid out-of-pocket an overall amount of 17.3 billion ALL per year for medicine (pharmaceuticals).

#### 4.2.2. Health Expenditure in Albania: International Estimates and Comparisons

When analysing the health system performance in Albania, one finds several different statistics from a number of international institutions. In Table. 4.2 below is presented a selection of the indicators related to health expenditure in Albania, based on two main sources of information: WHO and the Institute for Health Metrics and Evaluation (IHME).

According to the WHO reports, the total health expenditure as a share of GDP in Albania has increased only slightly during the past couple of decades (from 6.4% in 2000 to 6.7% by 2016). In fact, there has been an inconsistent trend in the overall health expenditure, with a decline up to 6% in 2011 (WHO, 2014). In 2017, the IHME published its annual report on Financing Global Health, presenting selected estimates for most countries worldwide, including Albania. According to this valuable report, the total health expenditure in 2015 was estimated to account for 7.1% (95%CI=6.6-7.6) of GDP in Albania. If the current trend continues, the expected value for the year 2030 is estimated at 7.7% (95%CI=5.7-10.5). When Albania is compared to other countries in the Western Balkans region, the extent of the underfunding of its public health system becomes clear. Figure 4.1. shows the total healthcare expenditure as a percentage of GDP in Albania in two dimensions: over time since 1995, and compared to its neighbouring countries in the Western Balkans.

#### TABLE 4.1. INDICATORS OF HEALTHCARE EXPENDITURE IN ALBANIA IN SELECTED YEARS

INDICATOR	1999	2007	2014	2015	2016
Health expenditure as a share of total family expenditure	4.1%	4.1%	4.8%	3.6%	3.4%
Pharmaceutical expenditure as a proportion of total health expenditure in the household	70.0%	71.4%	75.7%	77.9%	75.4%
Monthly total expenditure per capita in the household (in ALL)	7800	17000	18000	18600	19600

Source: Various government publications

#### TABLE 4.2. HEALTH EXPENDITURE INDICATORS IN ALBANIA FOR SELECTED YEARS

Indicator	Amount		
Total expenditure on health as a percentage of GDP:			
2000 (WHO)	6.4		
2011 (WHO)	6.0		
2016 (WHO)	6.7		
2015 (IHME)	7.1		
2030 (IHME)	7.7		
Government expenditure on health as a percentage of total expenditure o	n health:		
2000 (WHO)	36.1		
2011 (WHO)	47.9		
2015 (IHME)	41.6		
Out-of-pocket expenditure on health as a percentage of total expenditure	on health:		
2000 (WHO)	63.9		
2011 (WHO)	52.1		
2015 (IHME)	58.4 (95%CI=57.0-59.7)		
2030 (IHME)	49.2 (95%CI=40.1-60.2)		
Government expenditure on health as a percentage of total government e	xpenditure:		
2000 (WHO)	7.1		
2011 (WHO)	9.8		
2016 (WHO)	9.5		
Per capita total expenditure on health at average exchange rate (US\$):			
2000 (WHO)	70		
2011 (WHO)	243		
2016 (WHO)	272		
Per capita total expenditure on health (PPP\$):			
2000 (WHO)	248		
2011 (WHO)	534		
2015 (IHME)	848 (95%CI=796-908)		
2030 (IHME)	1410 (95%CI=1039-1923)		

Per capita government expenditure on health (PPP\$):		
2000 (WHO)	89	
2011 (WHO)	256	
2015 (IHME)	383 (95%CI=356-430)	
2030 (IHME)	704 (95%CI=470-1021)	
Population with household expenditures on health >10% of to	otal household expenditure or income (%):	
2009-2015 (WHO)	16.7	
Population with household expenditure on health >25% of to	tal household expenditure or income (%):	
2009-2015 (WHO)	5.0	

Source: WHO and IHME

Clearly, the healthcare expenditure in Albania is not only the lowest in the region but also among the lowest in Europe. By 2014, the share of Albanian's healthcare expenditure as a percentage of GPD was 5.9%, compared to Greece's 8.1% and Serbia's 10.4%. The graph does not show a continuous trend for most of these countries, mainly due to the many changes that were implemented in these countries' healthcare systems during the period under investigation. Another factor is the continuous political and economic crises that these countries have witnessed during the past three decades. Having said that, as a percentage of GPD, healthcare financing has fallen in Albania during the past two decades, with a slight increase since 2013.



FIGURE 4.1. HEALTHCARE EXPENDITURE AS A PERCENTAGE OF GDP IN ALBANIA AND SELECTED COUNTRIES 1995-2015

Source: Author's calculations based on data from the World Bank, WDI, 2020

Universal health coverage is a priority of the Albanian government, as integrated into Pillar 3 of the National Strategy for Development and Integration II (NSDI-II) and the current Albanian National Health Strategy (ANHS, 2016-2020). This commitment was implemented in January 2017, since which time all Albanian citizens have been entitled to access free-of-charge services at the primary healthcare centres. Moreover, in order to contribute to the universal health coverage goal, the private household out-of-pocket expenditure as a proportion of total health expenditure in Albania has decreased by 15%, according to the Financing Global Health 2016 report (IHME, 2017)

For Albania, however, the target for the indicator on private household out-of-pocket expenditure as a proportion of total health expenditure is 35% for the year 2020, which a number of scholars believe is impossible to achieve, including the authors of this report. Yet, the figure below exhibits a gradual annual increase in health expenditure per capita in Albania, with an estimated figure of about US\$615 by 2014. While this represents a three-fold increase since 1995 (US \$ 197), it is still far lower compared to all its neighbouring countries in the Western Balkans (3.5 times lower than Greece, 2.1 times lower than Serbia, and about 5.7 times lower than the European Union average).

Hence, the current government has increased the public funding of healthcare services, notwithstanding the population's needs, which are not being fully met at present. Therefore, in order to meet the population's needs, the aim is for the public funding of healthcare to constitute at least 70% of total health expenditure in Albania by the year 2025. The Albanian MHSP is committed to realising major changes in several directions with the goal of achieving Universal Health Coverage (UHC), by changing the financing method for health services from a contribution system to a general taxation system, controlling NCDs, shifting the focus towards preventive services, strengthening the role of family medicine, reforming the emergency services, reducing medication prices, and increasing access to high quality, safe medicine. Figure 4.3 presents the trends in public expenditure as a share of the overall healthcare expenditure in Albania. In 2014, the estimated figure was about 50%, but there has been no evidence of an increasing trend in the past five years, which is a cause for concern.

Here, again, we see a drastic difference between Albania and its neighbouring countries. The closest low level that we can find to Albania is that of Greece and Serbia, at about 62% in both cases. However, when compared to the average European Union of about 78% publically-funded healthcare, Albania's level of 50%



FIGURE 4.2. HEALTHCARE EXPENDITURE IN ALBANIA AND SELECTED REGIONAL COUNTRIES 1995-2015

Source: Author's calculations based on data from the World Bank, WDI, 2020



FIGURE 4.3. PUBLIC EXPENDITURE ON HEALTHCARE (%) IN ALBANIA AND SELECTED REGIONAL COUNTRIES 1995-2015

Source: Author's calculations based on data from the World Bank, WDI, 2020

is very low and so the government needs to increase the level of public funding as well as reduce the out-ofpocket payments. The increased access to and quality of the healthcare services for the general population is considered one of the most remarkable achievements of the recent reforms pertinent to the health sector in Albania. Nonetheless, the achievement of the public health expenditure indicator is obviously lagging far behind the envisaged target, which contradicts the serious commitment of the MHSP to achieving universal health coverage for all Albanian citizens.

The potential reasons and hindering factors may be related to public trust and perceptions about the health services provided in the public sector, as well as technological advancements and the related rising costs. At present, the main challenge regarding changing the public's perception about and building trust in the Albanian health system is to increase access to and decrease the inequities within it, provide financial protection for the low-income population group, expand the range of health services offered, and increase the overall preparedness of the health system.

# 4.2.3. Out-off-pocket Payments in Albania and the Affordability of Healthcare

The issue of the sustainability of the health services can also partially explain the relatively high out-of-pocket health expenditure in the country. The continuous and frequent adjustments to health system financing in general in Albania, including the establishment of new structures at the central and local levels, HIF, and the decentralisation process, as well as new legislative measures and regulations, have caused confusion and delays. In this framework, the out-of-pocket payments remain high in Albania, which may have catastrophic consequences for households and increase the poverty gap, exerting an impoverishing effect that is greater among the poorest individuals. In addition, corruption within the Albanian health sector remains widespread, with 33.5% of the respondents declaring that they had offered a bribe to healthcare staff in 2010 (Tomini S, et al., 2013).

Figure 4.4 shows the out-of-pocket payments in Albania and its neighbouring countries as a percentage of overall healthcare costs. This component refers to direct expenses paid by individuals and households to healthcare providers, including gratuities and in-kind payments, which have been traditionally prevalent in Albanian culture (and remain widespread currently). - Health and care provision



FIGURE 4.4. OUT-OF-POCKET EXPENDITURE AS A PERCENTAGE OF HEALTHCARE IN ALBANIA AND SELECTED REGIONAL COUNTRIES 1995-2015

Source: Author's calculations based on data from the World Bank, WDI, 2020

The fact that 50% of the payments are out-of-pocket in Albania is a staggering reality that the government should address. The changes since 2003 have been minimal and, since 2010, there has been no change at all. The closest higher values to that of Albania are those of Montenegro (42.8%) and North Macedonia (36.7%). The affordability of healthcare costs by the population is threatened by a range of factors, including the rising cost of health and medical services, the ageing population in Albania (similar to most of the countries in the European region as Part 1 of this report showed), and the availability of expensive modern technology and medical devices, as well as the continuous increase in the citizens' well-being and expectations of quality health and medical services.

On the other hand, according to another estimate based on IHME data, the out-of-pocket expenditure on health as a percentage of the total expenditure on health in Albania in 2015 was estimated at 58.4% (95%CI=57.0-59.7), which is about 8% higher than the World Bank estimate. Assuming a similar trend, the expected value for the year 2030 is estimated to be 49.2 (95%CI=40.1-60.2). Whatever the source of the estimates, these figures are staggeringly high. This is not a positive projection for a government that is expected to provide universal healthcare coverage to a population that is placing growing demands on the healthcare system as a result of population ageing. Having said that, there is evidence of increased total health expenditure over the past five years (by 0.8% of the Albanian GDP) (World Health Statistics, 2018). The target for this indicator is 7% (for 2020). In all likelihood, this target will be achieved but, as noted above, there remain serious concerns regarding the share of out-of-pocket payments.

The reliance on the out-of-pocket payments by a large proportion of the population affects more people in the lower income group and the most vulnerable. These marginalised population groups are not protected from the burden of out-off-pocket payments but, more importantly, their health access as well as health outcome are more deeply affected. This automatically leads to health inequalities in society (Tomini SM, et al., 2013, INSTAT, 2005). In addition, there is evidence of a small increase in public health expenditure over the past five years (overall, 0.31% of GDP) (MHSP, 2017). It should be noted that the health financing remains low, however, compared to the population needs in Albania. Indeed, according to a fairly recent report (MAPS mission Albania, 2018), the funding and staffing are inadequately allocated to implement the ANHS activities fully at the national and local levels.

Although the health budget is increasing in the country, accounting from over 10% of the state budget



#### FIGURE 4.5. HEALTHCARE EXPENDITURE AND GPD PER CAPITA 2014

Source: Author's calculations based on data from the World Bank, WDI, 2020

in 2017 (ANHS, 2016-2020), Albania still spends considerably less on health than other countries with a comparable level of income, as shown in previous graphs (WB, 2020). Consequently, regardless of the gradual decrease, the out-of-pocket payments remain relatively high. Of particular concern is the suggestion that a fair proportion of these out-of-pocket payments are used to bribe health professionals.

### 4.2.4. Healthcare Expenditure, National Income, and Government Tax Revenue

As expected, at a cross-country level, the most important factor associated with healthcare spending constitutes the national income (Figure 4.5). As displayed in the figure below, the linear association between the national income and healthcare expenditure is remarkable: countries with a higher (per capita) income level spend a significantly larger share of that income on healthcare services, compared with their lower income counterparts. The linear association between GDP per capita and healthcare expenditure is very strong and highly statistically significant.

In certain low income countries, especially in Africa, the international development assistance constitutes a substantial proportion of the income that is available to finance healthcare. There is evidence, however, of an inverse (negative) linear association (correlation) between development assistance for health provided to governments, and government health funding by autonomous sources. According to the figure below, Albania represents a middle income country with modest overall healthcare expenditure. In low and middle income countries, the tax revenue is an important statistical determinant of progress towards universal health coverage (Figure 4.6).

From this perspective, low and middle income countries with higher tax revenues tend to spend more on healthcare services. Based on this argument, all else being equal, the evidence suggests that increased domestic tax revenues make an important contribution to the achievement of universal health coverage, particularly in countries with low tax bases. Reeves et al. (2015) have suggested that pro-poor taxes on profits and capital gains may support the expansion of health coverage without the adverse associations with health outcomes observed for higher consumption taxes.

These arguments should be carefully considered in the context of transitional Albania which, according to the figure below, represents a country with a moderate tax revenue and modest public expenditure on health. Health and care provision





#### 4.2.5. Health Financing Challenges for Albania

The ANHS target for the end of 2020 was to increase public health spending in Albania to 4.5% as a share of GDP. However, in order to meet this aim, adequate funding should be sought and secured in the context of the prolonged transition and rapid changes in all sectors of the economy and society. Currently, the sources for generating adequate funding are unclear. The transition of the compulsory national health insurance system to a general taxation system, an issue envisaged for implementation during 2020, is a crucial turning point in this matter, because the Health Insurance Fund currently finances approximately a quarter of the health system in Albania.

Given the lack of earmarking mechanisms for health financing in Albania, the transition towards a general taxation system for financing the health system in Albania raises serious concerns. At best, the envisaged shift should occur only if adequate revenue is generated at both the national and local levels, a process which should be conducted in parallel with the implementation of the fiscal decentralisation reforms in Albania.

Another issue of concern in this transitional process relates to the risk of fragmentation and a recent report convincingly argues about the need for keeping pooling arrangements at the central government (MAPS mission Albania, 2018). Also, the budget allocation should correspond to the population's health needs rather than being based on historical budgets, which are no longer applicable in Albania. More importantly, the exact cost of implementing the ANHS as envisaged for the 2019 budget remains unclear.

The continuous and frequent adjustments to the financing of the health system in general in Albania, including the establishment of new structures at both the central and local levels, HIF, the decentralisation process, as well as new legislative measures and regulations, have caused confusion and delays. In this respect, the outof-pocket payments remain an unsolved issue within Albania's healthcare system.

The main reasons for the existence of informal payments within the Albanian health sector include sociocultural norms (a way to express gratitude to medical staff), low medical staff salaries, and a lack of effective control and accountability in the health sector (World Bank, 2014). However, in recent years, within the framework of the comprehensive measures and reform undertaken in the health system, there is a general perception that informal payments in the health sector have somehow declined. In brief, the salient challenges for Albania concern the following two areas:

- the adequacy and sustainability of the health financing mechanisms in transitional Albania within the framework of the continuous, multifaceted reforms, whose effects are, at times, unpredictable and which, hence, may jeopardise the sufficient financing of the health sector;
- o out-of-pocket payments still constitute almost half of the overall health expenditure in Albania and exert significant impoverishing effects upon the poorest and most vulnerable/marginalised population categories.

#### 4.3. Heath workforce

#### 4.3.1. An Overview of Human Resources in Albania

Historically, Albania, like most socialist state systems, had a health system which was supply-orientated, with a large number of medical personnel employed at all levels. In some analyses, the health system was also characterised as having unused capacities, where there is a need to re-profile some of the public health facilities (EGHI-EC, 2015). Table 4.3 presents the distribution of

### TABLE 4.3. HUMAN RESOURCES IN THE PRIMARYHEALTHCARE SECTOR IN ALBANIA 2018

Overall number of PHC physicians (GPs and family doctors) Physicians for children Physicians for adults	1550 191 470 181
Physicians for children Physicians for adults	191 470 181
Physicians for adults	470
	181
Physicians for all ages (urban areas)	
Physicians for all ages (rural areas)	708
Physicians working at children counselling centres	69
Physicians working at women counselling centres	40
Laboratory physicians	13
Specialists working at Health Centres	67
Specialists working in policlinics in Tirana	141
Nurses/midwifes/laboratory technicians	6789

Source: Health Insurance Fund

physicians and nurses in the Primary Healthcare (PHC) sector in Albania in 2018.

The total number of physicians working in the PHC services in Albania in 2018 was 1,550 (including GPs and physicians specialising in family medicine). Of these, 191 specifically dealt with children and 470 with the adult population. Conversely, the remaining physicians (181 in the urban and 708 in the rural areas, respectively) were dealing with all age-groups in the populations in their respective coverage areas. On the whole, there were 69 physicians operating at children's counselling centres and a further 40 physicians working at women's counselling centres. Most of the specialised PHC physicians were based in polyclinics in Tirana (n=141), whereas a further 67 specialist doctors operated in different health centres. Overall, 6,789 nurses, midwives, and laboratory technicians were operating in the PHC services in Albania in 2018, according to the official information available from the Health Insurance Fund. There is evidence of an increasing trend in the number of both physicians and nurses operating in the PHC services in Albania, as indicated in the table below, which displays the figures pertinent to the previous year (i.e., 2017).

As Table 4.4 shows, the overall number of PHC physicians in 2017 was 1,322 (548 in the urban and 778 in the rural areas, respectively), whereas the total number of nurses and midwives was 5,949 (3,095 operating in different health centres and 2854 in ambulances/health posts).

### 4.3.2. Human Resources from a Regional Perspective

The data on the provision of healthcare, and particularly the human resources, vary from one source to another and also from country to country. In order to gain a better

### TABLE 4.4 PHYSICIANS AND NURSES OPERATING WITHIN PHC IN ALBANIA 2017

INDICATOR	Total	Urban	Rural
Physicians in Health Centres	1322	548	778
Nurses/midwifes in Health Centres	3095	1245	1851
Nurses/midwifes in Ambulances	2854	317	2537

Source: Health Insurance Fund, 2020

#### TABLE 4.4. HUMAN RESOURCES IN THE HEALTHCARE SECTOR IN ALBANIA

INDICATOR	Number per 100,000 population
Physicians	
2006-2013	115
2009-2018	120
Nurses and midwives	
2006-2013	399
2009-2018	360
Pharmacists	
2011	43
2009-2018	84
Nurses graduated	
2010	34
2013	43
Midwives graduated	
2010	6.0
2013	9.3

comparative picture of the human resources in Albania, we employ WHO's European office data in order to use a similar basis for comparison. One issue we faced with these data, however, is that they are incomplete and so it was difficult to build time series in order to gain a better understanding of the changes occurring within the health workforce. Table 4.4 shows the human resources for Albania for the years for which data are available. The overall number of physicians working at all levels of care (PHC and hospital care) in recent years has slightly increased (from 115 to 120 per 100,000 population), whereas the number of nurses has decreased (from 399 to 360 per 100,000 population).

On the other hand, the number of pharmacists has almost doubled (from 43 to 84 per 100,000 population). Similarly, the number of both nurses and midwives graduated has increased, although not all of these graduates necessarily work in Albania. It is striking that regional disparities exist in terms of health workforce distribution in Albania, with a remarkable difference between urban Tirana and the large cities compared to the small districts, rural areas, and particularly the remote mountainous areas of the country.

Figure 4.7. shows the number of physicians per 100,000 people in the Western Balkans. The graph shows that Albania scores fairly highly regarding its number

Source: WHO Regional Office for Europe 2020



#### FIGURE 4.7 THE NUMBER OF GPS IN ALBANIA AND SELECTED COUNTRIES 2003-2015

Source: WHO Regional Office for Europe 2020



FIGURE 4.8. THE NUMBER OF DENTISTS PER 100,000 POPULATION IN ALBANIA AND SELECTED COUNTRIES 1990-2015

Source: WHO Regional Office for Europe 2020

of doctors. More importantly, this trend has remained constant during a difficult period for the country, which has witnessed large-scale emigration, particular among professional people. Albania has a higher number of GPs compared to even Greece, and a lower only to Serbia in the region. While the number of physicians per 100,000 people is relatively high in Albania, the same claim cannot be made for either dentists or pharmacists. Figures 4.8 and 4.9 show respectively the number of dentists and pharmacists per 100,000 people in Albania in a regional comparison.



FIGURE 4.9. THE NUMBER OF PHARMACISTS PER 100,000 POPULATION IN ALBANIA AND SELECTED COUNTRIES 1990-2015

Source: WHO Regional Office for Europe 2020

The number of dentists per 100,000 people is roughly average for the Western Balkan countries, where Albania has a higher rate compared to Bosnia and Herzegovina, Serbia, and Montenegro, but a lower one compared to Greece, Croatia, and Slovenia. The data on the number of pharmacists per 100,000 people are incomplete and the time series is difficult to construct. However, there is sufficient data for the whole period of 1990-2014, which show that the number of pharmacists has increased only in the past few years. A similar picture emerges regarding the number of dentists per 100,000 people, where Albania has a higher rate compared to Bosnia and Herzegovina, Montenegro, North Macedonia. and Serbia, but lower one compared to Slovenia, Croatia, and Greece.

In order to address this inequality regarding medical personnel distribution across Albania, the MoHSP has already launched a "patronage" programme, which aims to support the neglected areas of the country. This patronage programme consists of sending (on a rotation basis) renowned specialists and other health professionals out from Tirana into other districts of Albania.

Nonetheless, further and more vigorous efforts should be made by the Albanian MoHSP to increase drastically the health financing as well as the recruitment, development, capacity building, training, and retention of the health workforce at all levels, especially in the least developed regions and remote areas of Albania. It is even more important to develop policies to maintain the medical personnel in the country and shield them from emigration. Having said that, the establishment and effectiveness of the continuing education system for health professionals (physicians, dentists, pharmacists) marks a major achievement in Albania. The completion of the first cycle provided an opportunity to improve this practice and expand the ongoing education among nurses, too. Further efforts are envisaged that will standardise their professional level, motivation, and distribution, according to their skills and competence in the workplace.

The demographic trend and epidemiological profile of the Albanian population require a workforce of health professionals equipped with up-to-date knowledge and skills. Moreover, filling in the gaps in health-care professionals that have arisen over the years as a result of both poor planning and emigration, is an effective human resources strategy that should ensure the restoration of authority and dignity among health professionals. Particular effort should be devoted to ensuring the fair distribution of the health workforce across all regions of Albania, improving their training, qualifications, and continuing long-term residency training, and also meeting the need for specialists in the regional hospitals.

Another key concern is the training of human resources to handle the new technology which is gradually being introduced in Albania. Indeed, the system needs to provide sufficient, skilled human resources, whose training matches the gradual modernisation of health technology in the country. WHO has argued that ensuring efficiency and making health service provision more costeffective and efficient is crucial for all countries in order to guarantee universal health coverage, as well as the adequate, sustainable financing of healthcare systems.

Based on these basic principles, it is suggested that the Albanian government, particularly the MoHSC, might undertake the following steps and measures (MAPS mission in Albania, 2018):

- To guarantee a suitable referral system by enabling 0 the PHC services to fulfil their gate-keeping role. In order to make significant progress, concrete steps should be taken, including enhancing the skills and competences of human resources, improving the technology and equipment, and delegating responsibilities and decision-making, as well as carefully considering the overall financial aspects involved. These steps will make it possible to fulfil the basic prerequisites for the complete, effective management of disease cases within PHC centres in Albania. In parallel, incentives and disincentives for patients and also for PHC professionals and specialists for bypassing the PHC referral rules should also be considered, in order to discourage unnecessary referrals to hospital care.
- To take a national decision on the uniform family medicine model with the inclusion of all PHC organisations. This should include ensuing an adequate workforce skill mix, defining guidelines for PHC services delivery, assessing the laboratory and the equipment needs, and strengthening the role of PHC nurses in terms of competence in health promotion and prevention.
- o To increase PHC facility managers' decision latitude regarding financial, service delivery, quality, and HR issues, coupled with an assessment of the training needs of PHC managers, and develop and implement management training programmes to ensure that this group is equipped with the required capacities and competencies through, for example, the Albanian School of Public Administration (ASPA).

#### 4.4. Healthcare services

#### 4.4.1. An Overview of the Healthcare Infrastructure in Albania

As an important aspect of the healthcare system, analysing the healthcare services, particularly the healthcare resources, will produce a clearer picture of the health system's readiness and effectiveness in Albania. Table 4.5 presents selected indicators of the health infrastructure and health technology in Albania according to the information provided by WHO. In 2014, the overall number of hospitals was 1.5 per 100,000 people. Furthermore, the total number of hospital beds in 2013 was 289 per 100,000 people, most of which consisted of acute care hospital beds (263 per 100,000 people). On the other hand, the number of primary healthcare units was about 76 per 100,000 people in 2009. Regarding health technology in Albania, in 2013, the number of computed tomography units and radiotherapy units was 5.4 and 0.3 per one million people, respectively. In 2014, the number of mammography units was 54.4 per million females aged 50-69 years.

Compared to other Western Balkan countries (Figures 4.10 and 4.11), Albania clearly has less capacity in terms of hospitals, hospital beds, and acute care beds. Figure 4.10 shows the number of hospital beds in Albania compared to selected Western Balkan countries for the period 1990-2015. Two important points emerge from this comparison. The first is the fact that the number of hospitals has fallen in Albania, which reflects, not a failure to invest in increasing the capacities in tertiary care, but the closure of some of the regional hospitals in the country. The second point is that Albania has the lowest number of hospital beds per 100,000 population compared to the rest of the Western Balkans and has half the capacity existing in the European Union.

When the number of acute care hospital beds is considered, the situation is little better. In this time series, the same trend of no improvements over the past three decades is noted or, at most, a very little improvement in particular years. The rate is the lowest compared to the rest of the western Balkans, similar to that of Montenegro, and again less than half of the average European Union provision for this indicator.

#### TABLE 4.5 HEALTH INFRASTRUCTURE AND HEALTH TECHNOLOGY IN ALBANIA

INDICATOR	Amount	Year
Hospitals (per 100,000 population)	1.4	2013
	1.5	2014
Hospital beds (per 100,000 population)	260.0	2006-2012
	289.0	2013
Acute care hospital beds (per 100,000 population)	236.2	2012
	263.0	2013
- Psychiatric beds (per 100,000 population)	21.0	2006-2010
	26.0	2013
Primary healthcare units (per 100,000 population)	76.2	2009
 Computed tomography units (per million population)	5.4	2013
	0.3	2013
Mammography units (per million females aged 50-69 years)	54.4	2014

Source: WHO European Regional Office, 2020

- Health and care provision



FIGURE 4.10. THE NUMBER OF HOSPITAL BEDS PER 100,000 PEOPLE IN ALBANIA AND SELECTED COUNTRIES 1990-2015

Source: WHO Regional Office for Europe 2020

#### 4.4.2. A Description of the Public Health Services in Albania

Table 4.6 presents the distribution of selected public health services in Albania according to the information provided by WHO and the two rounds of ADHS (conducted in 2008-09 and 2017-18). Apparently, the use of modern contraception among currently married women in Albania decreased from 11% in 2008-09 to 4% by 2017-18 (ADHS 2017-18). This finding deserves further investigation due to the fact that knowledge about family planning is nearly universal in Albania, with 97% of all women and 96% of all men aged 15-49 years being aware of at least one method of contraception (ADHS 2017-18). Among women currently using a modern method of contraception, 56% obtain this from the private sector (ADHS 2017-18). The main reason for discontinuing contraception, according to the fairly recent ADHS 2017-18, is the desire to become pregnant (42%).

The total demand for family planning among currently married women decreased from 82% in 2008-09 to 61% in 2017-18. Nonetheless, only 4% of demand is satisfied by modern methods (ADHS 2017-18). As for the unmet need for family planning, according to the ADHS 2017-18, 15% of currently married women and 11% of all women have an unmet need for family planning. According to the ADHS 2017-18, of all births in the past five years and current pregnancies in Albania, 89% were planned at the time of conception, 4% were mistimed, and 7% were unwanted. Regarding abortion, there is evidence of a gradual decrease in the abortion rate from 2010 to 2017, followed by a slight increase in 2018 (IPH, 2019). It is striking at the recent ADHS 2017-18 reported that 9.2% of all pregnancies in Albania (involving women aged 15-49 years) resulted in abortions.

In Albania, antenatal and postnatal care is integrated into the PHC system, and all women have free access to this level of care. In the urban areas, care is offered at women's consulting centres and outpatient centres located in maternity hospitals. In the rural areas, it is provided by family doctors or GPs and nurses and midwives in health centres. The delivery of this care is mainly provided by the public maternity hospitals at the district level, as well as specialised (tertiary) healthcare facilities, such as the Tirana Obstetrics and Gynaecology Hospital. According to the recent ADHS 2017-18, about 88% of Albanian women received antenatal care from a skilled provider for their most recent birth. The majority of the women (70%) received antenatal care from an obstetrician or gynaecologist, 16% from a family doctor, and 2% from a nurse or midwife (ADHS 2017-18). Conversely, the proportion of Albanian women who had

4



#### FIGURE 4.11. THE NUMBER OF ACUTE CARE HOSPITAL BEDS PER 100,000 POPULATION IN ALBANIA AND SELECTED COUNTRIES 1990-2015

Source: WHO Regional Office for Europe 2020

#### TABLE 4.6. COVERAGE LEVEL FOR SELECTED KEY PUBLIC HEALTH SERVICES IN ALBANIA

PUBLIC HEALTH SERVICES	Prevalence (as a percentage)	Year (Source)
Total demand for family planning	82%	2008-2009 (ADHS 2008-09)
	61%	2017-2018 (ADHS 2017-18)
Satisfied demand for family planning	84	2008-2009 (ADHS 2008-09)
	75	2017-2018 (ADHS 2017-18)
Unmet need for family planning	13	2006-2012 (WHO)
	13	2008-09 (ADHS 2008-09)
	11	2017-2018 (ADHS 2017-18)
Contraceptive use	69	2006-2012 (WHO)
Modern methods of family planning	11	2008-2009 (ADHS 2008-09)
	4	2017-2018 (ADHS 2017-18)
Abortion rate	1.1	2010 (IPH 2011)
	0.9	2013 (IPH, 2014)
	0.8	2018 (IPH 2019)
	0.9	2017-2018 (ADHS 2017-18)

Health and care provision

Antenatal care:		
≥1 visit	97	2006-2013 (WHO)
≥ 4 visits	67	2006-2013 (WHO)
≥1 visit	88	2017-2018 (ADHS 2017-18)
≥ 4 visits	78	2017-2018 (ADHS 2017-18)
Births attended by skilled health personnel	99	2006-2013 (WHO)
	100	2009-2018 (WHO)
	100	2017-2018 (ADHS 2017-18)
Caesarean sections	19	2008-2009 (ADHS 2008-09)
	31	2017-2018 (ADHS 2017-18)
Postnatal visit within two days of birth	83	2008-09 (ADHS 2008-09)
	88	2017-2018 (ADHS 2017-18)
Administration of neonatal tetanus	87	2012 (WHO)
	99	2017 (WHO)
Immunisation for measles among 1-year-olds		
	88	1990 (WHO)
	95	2000 (WHO)
	99	2012 (WHO)
	96	2017 (WHO)
Immunisation for DTP3	99	2012 (WHO)
	99	2017 (WHO)
Immunisation for HepB3	99	2012 (WHO)
	99	2017 (WHO)
Immunisation for Hib3	99	2012 (WHO)
	99	2017 (WHO)
Under 5-year with ARI symptoms taken to a health clinic	70	2008-09 (ADHS 2008-09)
	82	2017-2018 (ADHS 2017-18)
Under 5-year with suspected pneumonia receiving antibiotics	60	2006-2013 (WHO)
Under 5-year with diarrhea receiving ORT	68	2008-09 (ADHS 2008-09)
	60	2017-2018 (ADHS 2017-18)
Case-detection rate for all forms of tuberculosis		
	81	2000 (WHO)
	81	2012 (WHO)
Smear-positive tuberculosis treatment-success rate	93	2011 (WHO)

Sources: Various sources in the country and international organisations

at least four antenatal visits has increased from 67% in 2008-09 to 78% in 2017-18. Over the same time period, the proportion of women who received antenatal care in the first trimester of pregnancy increased from 78% to 82% (ADHS 2017-18).

In Albania, 100% of births are delivered by a skilled healthcare provider: 88% by an obstetrician or gynaecologist, 10% by a nurse or midwife, and 2% by a family doctor (ADHS 2017-18). About 31% of the live births in Albania are delivered by Caesarean section, representing an increase from 19% in 2008-09 (ADHS 2017-18). According to the ADHS 2017-18, 76% of women with live births had their postnatal check less than four hours postpartum, and 88% received a postnatal check during the first two days after giving birth. Only 6% of the mothers did not receive any form of postnatal check. The proportion of mothers who received a postnatal check less than four hours after their most recent confinement has increased from 59% in 2008-09 to 76% by 2017-18. The proportion of mothers who did not receive any postnatal check has fallen half, from 12% in 2008-09 to 6% by 2017-18 (ADHS 2017-18).

Regarding general access to healthcare, 34% of the women aged 15-49 years reported at least one problem in

### TABLE 4.6. ENVIRONMENTAL AND SANITATION CONDITIONS AMONG THE ALBANIAN POPULATION

Prevalence
(as a percentage)
es:
96
96
79
84
91
38
80

Source: WHO Regional Office for Europe 2020

accessing healthcare for themselves. The most frequently mentioned problem was obtaining money for treatment (25%), followed by the distance to the health facility (14%), not wishing to attend alone (13%), and failing to obtain permission to go (5%) (ADHS 2017-18).

According to the ADHS 2017-18, 2% of children aged <5 years had symptoms of acute respiratory infection (ARI) in the fortnight preceding the survey, and advice or treatment was sought for 82% of the children with these symptoms. Conversely, 6% of children aged <5 years had a fever in the fortnight preceding the survey, and advice or treatment was sought for 60% of these children. Also, 60% of children with diarrhoea either received oral rehydration therapy (ORT) or were given more liquid than usual (ADHS 2018-19).

Finally, Table 4.6 presents selected indicators regarding the environmental and sanitation conditions in Albania based on official information provided by WHO.

#### 4.4.3. Health System Changes in Albania – the way forward

An integrated healthcare system is urgently needed in order to meet the population's needs and provide highquality services, making efficient use of the available (scarce) resources pertinent to Albania. In particular, a strong PHC system is required in order to address the disease burden and the main issues related to the general health status of the Albanian population. The movement of patients within the Albanian health system is formally regulated by the referral system, but the implementation may not be uniform nationwide. Usually, patients are referred by the PHC to secondary or tertiary care, with a second opinion request form for cases where a diagnosis is not reached or completed. Referrals are made even when the required treatment cannot be provided by the primary healthcare and include communication with the primary healthcare physician after the treatment has been received in hospital.

A recent WHO mission report (Kluge H, 2018) describes the main findings and recommendations regarding a rapid assessment of the current conditions of primary healthcare in Albania. It highlights the progress made so far to scale up preventive services for targeted populations in Albania, yet concludes that system barriers remain to transforming the PHC in o a family medicine-based model of care. Among other recommendations,

the role of health practitioners need to be revised and agreed with the key stakeholders, the clinical guidelines and protocols updated, managers empowered to make decisions that will tailor policies to suit actions, and the inter-sectoral actions reinforced (Kluge H, 2018).

All in all, the improvement in the health system in Albania requires significant strengthening in terms of its integration level, accountability and the rational use of services in order to improve the management, control, and prevention of diseases among the general population.

# 4.4.4. Strengthening Childcare – An imperative for the Future

While the number of neonatal disorders has decreased significantly over the past three decades in Albania, the last decade has witnessed a stagnation regarding this improvement. There is still even an increasing trend in the specific weight of neonatal mortality within infant mortality; hence, currently, it accounts for 75% of the infant mortality rate (INSTAT, 2019). This situation requires the prioritisation of the interventions to improve new-borns' health.

The burden of diseases among children aged 1-4 years has decreased significantly in Albania. There is a decreasing trend in acute respiratory infections (ARI) and diarrhoea, which have traditionally been among the leading causes of the under-5 mortality and morbidity rates. The increasing prosperity has also improved the security and general nutrition of children. However, malnutrition among children continues to some extent.

Notwithstanding the considerable decrease in child mortality and morbidity in Albania, there is still room for further improvement if it is to catch up with its European counterparts. Indeed, malnutrition is still evident among Albanian children, especially in the disadvantaged rural areas and the lower-income groups. The evidence of inequity in child health and nutrition calls for the prioritisation of the most vulnerable mothers and children in the process of planning for universal health coverage.

Albania needs to prepare a specific programmatic response to address the dual problems of under- and over-nutrition. Specific interventions are needed to promote good infant and young child feeding practices that support linear growth without causing excessive weight gain. As indicated by UNICEF, WHO, and WB, economic growth alone is insufficient to address the double burden of malnutrition. A combination of nutritionspecific interventions (through the health sector) and nutrition-sensitive interventions (through other sectors including agriculture), as well as other broad multi-sectoral interventions, are required to address this significant public health problem (UNICEF, 2015).

#### 4.4.5. Health Information System – A Modernised Path for the Future

The health information system needs serious revitalisation to promote the proper management of the Albanian health system. A major prerequisite for this consists of strict policy compliance and the undertaking of essential steps regarding healthcare reform. More reliable statistics, regular health surveys, and improved healthcare administrative data will facilitate further research into the quality of the Albanian health system and the related policy compliance, which, in turn, may promote better evidence-based health policy-making and priority-setting. Indeed, at least for Albania, there is little information on the patterns of lifestyle characteristics and other health determinants among the general population. Therefore, there is a pressing need for regular health interview surveys to be carried out in Albania as well as occasional in-depth studies in the form of health examination surveys. These studies should be conducted in close collaboration with the universities and other scientific and research institutions in order to strengthen further the epidemiological capacity of the Albanian research community.

At a broader level, the reduced capacity to use information for policy-making and decision-making leads to significant inefficiency within the Albanian health sector. There is a considerable degree of misunderstanding and duplication regarding the data collection procedures, methodologies, and responsibilities. This is reflected by a significant gap in the systematic use of data for policymaking. The government of Albania should strive to integrate and standardise the data from the civil registry and statistical offices in the country, paying particular attention to systematising vital statistics (especially the number of births and causes of death).

Recently, with technical and financial support from WHO, a roadmap for the implementation of ICD-10 in Albania has been developed. Furthermore, WHO has recently supported the revision of the death certificate, abortion form, and congenital malformation reporting form, the amendment of the birth certificate, and the

drafting of a separate perinatal death certificate in the context of Albania. At the same time, selected key healthcare professionals (or "master trainers") have been trained to oversee the proper implementation of ICD-10 in Albania. On the other hand, efforts should be made to improve the analysis, feedback on data on the input indicators, morbidity data, and mortality data collected by PHC, the hospital services, and other public health authorities. In particular, there is an urgent need for the integration of the national health information system and the use of electronic medical records. At the same time, there is need for the development of a single digital patientfocused system and the increased use of digital systems for health accounts, e-prescriptions, and e-referrals, as well as hospital management information systems.

#### 4.4.6. Strengthening Governance for Health and Wellbeing: Inter-sectorial Collaboration

The determinants of health and wellbeing extend far beyond the public health system. Hence, investment in health and wellbeing by all sectors and, especially, a commitment to solid inter-sectoral governance are central for addressing Albania's health and wellbeing challenges. The EU process, SDG agenda, as well as Health 2020 represent a huge impetus for strengthening the governance of health and wellbeing in Albania. The core principles and values stemming from all of these processes, which should lie at the heart of health governance in Albania, include universal access to quality healthcare, the efficient use of health resources, and a high degree of responsiveness to citizens' concerns and expectations about their health and wellbeing. From this perspective, the inter-sectoral governance and policies that contribute to these goals should span the entire breadth of the policy areas and activities in Albania.

Serious efforts are required to improve the intersectoral governance and inter-sectoral cooperation in Albania in order to address the root causes of ill-health and the multifaceted nature of a wide array of diseases and conditions. From this perspective, the role of the MHSP is pivotal in terms of health promotion and health protection and the establishment of an appropriate, effective governance framework, as well as ensuring the prompt, efficient use of all available resources through the active, successful coordination and inter-sectoral cooperation regarding all activities conducted and programmes implemented in Albania. Overall, improving the inter-sectoral governance in Albania is vital for enhancing the coverage and quality of essential healthcare services for all population categories.

#### 4.4.7. The Decentralisation and Integration of Health and Social Services - improving the Pace of Implementation of the Current Policy

Given that the responsibility for social services has been transferred to the local and municipal authorities in Albania, it is essential to ensure that they possess an adequate capacity to fulfil their extended duties regarding the social sector. At the same time, it is also necessary to extend coverage to include sexual and reproductive health services, and make use of settings such as the "youth centres" in the municipalities to increase the health literacy of the population.

In order to ensure the adequate implementation of their extended responsibilities, it is advised that the role of the municipal authorities should be strengthened and their role within decision-making made more systematic. Therefore, the local authorities are encouraged to recognise the role that the municipalities play in disease prevention and health promotion, as well as the need to address the social, environmental, cultural, behavioural, commercial, and political determinants of health and well-being at the local level.

#### 4.5. Health inequity

Despite the fact that access to healthcare services has been considerably expanded due to the provision of free PHC services for the whole Albanian population, including the uninsured, more efforts are needed, particularly in order to meet and satisfy the needs of vulnerable populations (especially people with disabilities and the vulnerable Roma and Egyptian communities). Analysing inequalities in health within a society is a major task that requires different dimensions and more space than this report allows. However, we could not write about health and healthcare without mentioning the health inequality that existed within Albanian society in the second decade of the new millennium. Due to the diversity of this topic, we will focus on health inequality alone, based on data from two recent studies, the ASDHS 2017-18 and Health Vulnerability Study in Albania 2018-19, neither of which has not been analysed to date.

#### 4.5.1. Inequality in the ADHS 2017-2018

Several of the most significant inequality considerations arising from the analysis of the data from the ADHS 2017-18 are summarised below:

- There are sharp differences in the unmet need for family planning across the various prefectures in Albania, ranging from 9% in Tirana to 31% in Lezhe. The unmet need is greater among women with a low education, whereas there is no association with household wealth.
- O The proportion receiving antenatal care from a skilled provider increases with education, from 76% among low-educated women to 92% among highly-educated women. A similar pattern is observed for household wealth: 86% of the women in the lowest wealth quintile received antenatal care from a skilled provider compared with 97% of the women in the highest quintile. The proportion of Albanian mothers who received at least four antenatal visits is 82% in the urban areas compared with 73% in the rural areas. Similarly, the proportion who received their first visit during their first trimester of gestation is 84% in the urban areas but 78% in the rural areas.
- The proportion of births occurring in private health facilities tends to increase with maternal education and household income.
- The Caesarean section rates are higher among highlyeducated mothers (41%), and those in the highest wealth quintile (38%).
- O The proportion of women who received a postnatal check less than four hours postpartum is higher in the urban areas (81%) than in the rural ones (70%). The proportion of women who received a postnatal check less than four hours postpartum varies widely across the different prefectures, from 56% in Lezhe and Shkodër to 93% in Durrës. Access to postnatal checks is directly associated with education and household wealth: 71% of the women with a primary 4-year education or less had a postnatal check less than four hours postpartum, compared with 81% of the women with a university or post-graduate education. Similarly, 67% of the women in the lowest wealth quintile received a postnatal check compared with 85% of those in the highest quintile.
- Access to healthcare: household wealth strongly determines the presence of serious problems preventing

access to healthcare: 62% of the women in the lowest wealth quintile mention at least one serious problem compared with only 10% of the women in the highest quintile. Education is an important factor also: 66% of the women with a primary 4-year education or less reported at least one serious problem, compared with 15% of the women with a university or post-graduate education.

- The vaccination coverage is markedly better in the rural than the urban areas, at 85% compared with 67%, respectively.
- O Acute Respiratory Infections (ARI) symptoms are closely associated with maternal education: 6% of the women with a primary 4-year education or less reported ARI symptoms, compared with 2% of the women with a university or post-graduate education. Advice or treatment was sought for 74% and 9% of the children with ARI in the public and private sectors, respectively.
- O Physical abuse: the proportion of children subjected to physical or psychological aggression declines with the improved education of the head of the household, from 53% of children in households in which the head has a primary 4-year or less education to 35% of children in which the head of household had a university or post-graduate education. The proportion of children subjected to physical or psychological aggression also declines as household wealth increases, from 53% in the lowest wealth quintile to 35% in the highest one.
- Inadequate care: the proportion of children left with inadequate care is somewhat higher in the rural areas, at 8% compared with 6% in urban areas. About 11% of the children with low-educated mothers were subjected to inadequate care, compared with 6% of the children with highly-educated mothers. About 9% of the children in the lowest wealth quintile received inadequate care.

#### 4.5.2. The Health Vulnerability Study in Albania 2018-19

Vulnerability regarding healthcare services consists of the risk of exposure to a lack of access and/or poor quality healthcare services received by vulnerable individuals and/or entire vulnerable groups, and the lack of resources to cope successfully with such situations and episodes. Vulnerable people and even whole vulnerable

#### TABLE 4.7 PRESENTS SEVERAL SELECTED HEALTH INEQUITY INDICATORS BASED ON THE FINDINGS OF THE RECENT ADHS 2017-18

Indicator	Prevalence (percentages)
Contraceptive use (any method):	
- Urban	46.3
Rural	45.6
Contraceptive use (modern methods):	
- Urban	3.7
Rural	3.6
Contraceptive use (any method):	
Lowest wealth quintile	41.8
Highest wealth quintile	55.8
Contraceptive use (modern methods):	
Lowest wealth quintile	3.7
Highest wealth quintile	4.5
Contraceptive use (any method):	
	27.0
University and postgraduate education	51.4
Contraceptive use (modern methods):	
≤4 years of formal schooling	5.5
University and postgraduate education	5.0
No antenatal care:	
Urban	10.1
Rural	13.3
No antenatal care:	
Lowest wealth quintile	14.1
Highest wealth quintile	3.4
No antenatal care:	
≤4 years of formal schooling	23.9
University and postgraduate education	8.1
At least four visits for antenatal care:	
Urban	81.9
Rural	72.7

Health and care provision

No postnatal check:	
Urban	4.8
Rural	6.6
No postnatal check:	
≤4 years of formal schooling	10.9
University and postgraduate education	3.5
No postnatal check:	
Lowest wealth quintile	8.0
Highest wealth quintile	4.1
Children 24-35 months, all age-appropriate vaccines:	
Urban	75.7
Rural	73.1
Children 24-35 months, all age-appropriate vaccines:	
Lowest wealth quintile	82.0
Highest wealth quintile	80.7
Children aged <5 years who are stunted:	
Male	3.9
Female	4.0
Children aged <5 years who are stunted:	
Rural	10.5
Urban	12.2
Children aged <5 years who are stunted:	
Lowest wealth quintile	17.1
Highest wealth quintile	9.2
Children aged <5 years who are stunted:	
≤4 years of formal schooling	21.9
University and postgraduate education	8.2
Children aged <5 years who are wasted:	
Male	1.8
Female	1.2

1.5
1.5
2.4
0.7
1.3
0.6

population groups are far more exposed to health risks and also the least protected categories from the negative consequences of the various health risks involved. Hence, risk exposure has a direct negative impact on the health and well-being of vulnerable individuals, leading to poor health, including the occurrence or exacerbation of a whole range of diseases, or worsening individuals' health status in general.

In the context of transitional Albania, a consensus meeting held in November 2018, involving 35 representatives from different key institutions and agencies working with vulnerable populations, identified the following vulnerable groups relevant for Albania (in priority order): i) older people; ii) disabled individuals; iii) ill people; iv) women; v) children; vi) Roma and Egyptians; vii) people living with HIV/AIDS; viii) commercial sex workers; ix) problematic drug users; x) prisoners; and xi) members of the LGBT community.

A quantitative (cross-sectional) study and 15 focus group discussions were conducted during the period December 2018-January 2019 in five regions of Albania (Tirane, Shkoder, Diber, Fier, and Vlore) in order to identify and characterise vulnerable groups regarding the PHC services in the country. The cross-sectional study included 1553 PHC users (704 men and 849 women, with an overall mean age of 54.6±16.4 years). Overall, 33% of the study participants were aged 65+ years; 42% were rural residents; 43% had a low educational attainment; 29% were unemployed; and 30% were poor. About 28% of the survey participants reported having been unable to access medical services in the past year, when needed. This inability to access healthcare services was considerably more prevalent among: women (31%), members of the Roma and Egyptian communities (76%), and poor individuals (58%). The main reasons for the inability to access healthcare services included financial constraints. poor health status, the distance to the health centres, and a lack of trust in the healthcare system. Furthermore, one in five of the PHC users included in this study did not receive the medications prescribed by the family physician, a condition which was considerably more prevalent among rural residents, low-educated individuals, unemployed participants, and particularly poor people. In addition, the members of the Roma and Egyptian minority groups had a considerably lower degree of satisfaction with the communication of the health professional staff operating at their respective PHC centre. About 9% of participants (12% of the women vs. 5% of the men) reported having to pay during their last health visit to the PHC centres. Conversely, 13% of the participants (23% of the women and 10% of the men) were not satisfied with the overall services received during their last visit to the PHC centres.

The focus groups revealed a lack of doctors in many rural and remote areas of Albania. In the urban areas, despite the presence of medical staff, the health centres have large inflows of patients and, hence, the number of doctors is insufficient to cover the needs of the community. Another problem that emerged from the focus group discussions concerned the organisational barriers within the healthcare system in Albania. Participants with disabilities argued that, in many of the health centres, the infrastructure conditions are inappropriate, hindering physical movement and the right to access healthcare. The obstacles in these health centres range from architectural barriers to the violation of privacy, which prevent or impede access to health services by disabled individuals.

The focus groups also indicated a large degree of variability in the perceptions about the infrastructure and technical capacities of healthcare equipment. However, almost all of the focus group participants in the districts apart from Tirana perceived major deficiencies in the quality of the labs and/or diagnostic equipment within the public health facilities. A serious problem that emerged from every focus group was the shortage of pharmaceutical supplies. A large proportion of the chronically ill participants claimed that the medicine they needed was often unavailable. All of the focus groups participants claimed that medication is guite expensive in Albania and people often lack sufficient funds to buy the prescribed medicine. Most of the focus group discussions raised issues related to the financial barriers to accessing healthcare. A significant proportion of the participants stated that they had initially tried to stay at home in order to recover and only visited a health centre when their health condition grew serious, mainly due to economic difficulties.

In general, according to both the quantitative study and the focus group discussions, the health risks and their related negative impact are related to different components and dimensions of the health status of vulnerable groups in Albania, such as: health-seeking behaviour, the access to and utilisation of preventive services, the early detection of diseases, as well as the treatment and rehabilitation services. On the whole, all of the various components of this study provide an overview and characterisation of health vulnerability in the Albanian context by identifying the most salient vulnerable groups regarding a wide range of health issues and access to healthcare services and, thereby, offering concrete recommendations and specific suggestions about the best practices and tailored interventions for reaching such vulnerable groups, mainly by PHC personnel and other key stakeholders.

It should be noted that these recommendations for improving access to and the quality of the primary

healthcare services for the vulnerable population groups in Albania apply at: i) the individual-level (including the personal characteristics, knowledge, awareness, attitudes, beliefs, and behaviour of vulnerable people); ii) the interpersonal-level (including family, friends, and healthcare providers); iii) the organizational-level (including the healthcare institutions in terms of rules, regulations, and general attitudes); iv) the communitylevel (including local cultural attitudes, access barriers, neighbourhoods, and religion); and v) the national-level (including national policies, and interest groups).

#### Concluding remarks

In order to reduce health inequality, several policy areas should be pursued, which consist of concrete examples of solid evidence of a high-return on investment and effective means for reducing the inequity gap in society. One of the most effective approaches by far consists of ensuring the best start in life by implementing a sound child protection system.

It is striking that the EU has made the rights of the members of the Roma and other vulnerable groups a priority during the accession negotiations. Within this framework, it is necessary to avoid establishing structures that may marginalise further these vulnerable populations by creating alternate structures for providing services, and to ensure that their needs are adequately reflected in the implemented activities and strategies (MAPS mission in Albania, 2018).

For Albania, the implications of this approach would encompass the following measures: designing and implementing comprehensive childhood development programmes, especially integrating the underprivileged, rural areas; offering child benefits, birth grants, and employment protection and rights for parents and caregivers; providing parenting and family support; ensuring gender equality regarding access to services and education; and ensuring the quality of healthcare during pregnancy, birth, and early childhood (MAPS mission Albania, 2018).

# HEALTH AND DEMOGRAPHIC CHALLENGE IN ALBANIA POLICY RECOMENDATIONS

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# PART 5

### HEALTH AND DEMOGRAPHIC CHALLENGE IN ALBANIA POLICY RECOMENDATIONS

# 5.1. Should we worry about population numbers?

The main feature of the Albanian demographic changes over the past three decades is that the population is shrinking and negative population growth has been observed in every decade. The analysis in this report showed that this phenomenon was due to the large migration flows outside the country. Another feature is the fact that the country's population structure is shifting towards an ageing population which, again, is occurring at a fast pace, due to both migration and the low level of fertility. The government's population response to these demographic changes has been to focus on fertility reversal, through offering financial bonuses. This policy, which focuses solely on offering financial rewards to mothers and the introduction of paternity leave, shows little understanding of the population dynamics in the country, particularly the fact that this negative growth is mainly due to migration rather than low fertility. Today's level of fertility will affect the population age over 60 years in 60 years' time. It is also unfitting as a policy, as the financial incentives will affect only the marginalised groups in the population – the very poor in society, who also exhibit the highest fertility rate, and so thus the effect will be insignificant. These groups do not represent the majority of women's cohorts who have decided either to either remain childless or to postpone fertility to a later period.

An integrated policy is needed, that focuses on women's empowerment and rights in terms of employment opportunities, a guarantee of a return to previous employment, equal opportunities, and progressing their role in society, as well as in the household decision-making. The level of fertility in Albania decreased not due to modern contraception but via the traditional means of birth control, which require males' decisionmaking, too. In this respect, the policy should also focus on male emancipation, particularly gender equality, and women's positions at all levels of society, including the household. Only through adopting gender-focused and gender-sensitive policies associated with financial rewards will Albania see changes in the level of fertility in the coming decades. The policymakers and decision-makers should understand that changing the fertility trends and patterns is not a "quick fix". On the contrary, this will require long-term gender equality policies and the considerable empowerment of women, which will change the mentality as well as emancipation of society, which at present is semipatriarchal with regards to gender roles.

Focusing on young people is vital for policymaking at different levels. It is the migration of the younger population that contributes to the large migration flows that have caused the negative population growth over the past three decades. It is the young people who will become the parents in the next decades, so focusing on their needs and aspirations is also of utmost importance regarding fertility rate changes, too. Research in countries that have experienced long term trends of very low fertility, such as Spain and Italy, suggests that one of the main reasons for their low levels of fertility is the unstable labour market and uncertainty arising from the very high unemployment rates among the younger population. Thus, focusing on sustainable development and employment policies for young people has the potential to resolve the two most significant population issues faced by Albania today: the long term low levels of fertility and the migration flows.

A way forward for the Albanian government would be to adopt a multi-sectorial, multidisciplinary integrated policy, focusing on youth and gender. This will have lasting, significant effects on the demographics and development of the country, as has been successfully demonstrated elsewhere.

### 5.2. Focusing on children and mothers– an agenda for improving neonatal and perinatal mortality

One of the main findings of the report is that, while over a long period of time, the infant and child mortality rates have improved substantially, the past decade has seen a stagnation of both indicators. This was attributed to neonatal mortality, which has stopped improving in the past decade and, in fact, has slightly increased in the past couple of years. Another finding of the report is that children are suffering from the so-called triple burden of malnutrition, characterized by under-nutrition, which has significantly declined but remains evident especially among the disadvantaged population subgroups, over-nutrition (overweight and obesity, affecting all child categories) and micronutrient deficiencies (evident particularly among the disadvantaged groups). Both of these findings suggest that a more dedicated focus is required on children and women's health during pregnancy and after birth, with a special emphasis on the marginalised, vulnerable population groups, including the poorest, as well as the Roma and Egyptian communities. Here, again, an integrated, multisectorial approach to policymaking is required, that not only addresses the changes in the health system, with a focus on improving the delivery facilities and medical care, including essential equipment and devices, which are important for saving the lives of new-born infants, but also focuses on mothers' health and nutrition during pregnancy as imperative for protecting the health of both mother and child. This should involve periodic health promotion campaigns, improvements in primary health care with regards to women's health checks during pregnancy and after, and better nutritional bases in nursery facilities as well as at the household level.

While not the main focus of this report, as this issue has been addressed in several UNFPA reports and academic works, the report finds that the imbalanced sex ratio at birth continued to be at unaccepted levels by 2017. As the report concludes, this is due to the application of selective abortion in the country, which is widespread, despite being illegal. Despite previous governments addressing this health and human rights issue, the fact that the sex ratio at birth continuous to show a biological imbalance, which can only be explained by sex selective abortion, is an issue which requires addressing by policymakers. Again, this may be monitored via an integrated policy for mothers and children's health in the country.

The report examined the data quality and availability regarding the aforementioned phenomena. One thing that was evident and needs addressing is the provision of data on children and mothers' health, not just through the civil registration offices, which record deaths and their causes, but also through data that is routinely collected from the health service providers by both the local and central governments. This source of information may be more accurate, given the tradition of high-quality data collection and reporting by the local health care units.

# 5.3. Focusing on the elderly – a new agenda for health and social care

The report revealed that the Albanian population is ageing and, in the next 15 years, the country will see an unprecedented increase in the population aged over 65 years. This becomes critical in terms of health and social care for two main reasons. First, the traditional values of care for the elderly at the household level have been undermined by the demographic changes. The migration of the younger population and very low levels of fertility mean that there are no offspring or siblings in the country to look after the elderly at the household level. In this respect, in a society where institutional care is neither widespread nor accepted, the government should pursue alternative approaches to the care of the elderly. The second important reason is that, with an increased elderly population, the health system will be challenged in terms of health care provision due to an increase in chronic diseases, multiple morbidity, and the need for long-term care associated with old age. This will require a change in the paradigm of care and thinking towards a more integrated strategy for healthcare provision in the country. It is not too early for the government to considering how to integrate health and social care for the elderly as, the sooner this is achieved, the more lives will be saved and the better the standard of living provided for the elderly in society. Another focus regarding the health of the elderly is to adopt a balanced approach to the treatment vs prevention of chronic diseases, with the latter taking priority due to the lack of investment in the system.

#### 5.4. Mental Health – Lost in the System

It is estimated that mental health issues will be one of the main burdens of disease in the 21st century, with an estimated prevalence of about 25% across the whole population, in both developed and developing countries (WHO, 2019). Albania is no different, as the analysis in this report has shown. While the data are scarce on mental health in Albania, the little information that is available and was analysed in this report shows, first, a high prevalence of mental health issues among the elderly and younger populations. Secondly, the prevalence of mental health issues among young people is increasing. While it is difficult to reach a firm conclusion regarding the prevalence of mental and neurological disorders among the whole population, it is clear that the data available or analysing mental disorders are poor and so is the mechanism for providing information within the system.

As a first step, the country should adopt better mechanisms for collecting data and more efficient diagnostic tools for assessing mental health disorders. Traditionally, this has been the responsibility of hospitalbased care but, more recently, this has begun to change. The government should improve and support the decentralisation of mental health facilities at the local level: by supporting primary care to screen promptly and better diagnose mental health disorders; by the better training of family doctors; by creating more facilities at the local and community levels to deal with mental health issues; by improving the training for social workers, psychologists, and nurses on how to treat mental health disorders at the community level; and by improving the mechanisms for data collection, either through national representative sample surveys or/and improving the routinely-collected data from local health care facilities via a continuous, permanent system. Another policy focus should be the education of the whole population, particularly younger people, where the prevalence of mental health issues has increased. This is vital, in order to remove the stigma that exists in society about mental health disorders. This again requires a multi-sectorial approach, where not only the health institutions but also the educational ones as well as other key sectors are involved.

# 5.5. Who should pay for healthcare in Albania?

The analysis contained in this report, while detailing the many shortcomings of the healthcare system in Albania, focused on two main aspects that require immediate attention through government policies. The first is the lack of investment in the public healthcare system in Albania, which represents a mere 50% of the total healthcare spending. While this is very poor by any standard, what it implies is that the out-of-pocket payments are very high in the country, which is the second important aspect that needs addressing. Since the opening up of the society in the early 1990s, a parallel private health care has flourished but, more recently, this has developed even further and now covers tertiary care, too. The lack of policy by different governments to create a balance between the public and private provision has created a basis for large inequalities in terms of the affordability for healthcare. This has been exacerbated by a lack of investment in public healthcare. While the investment in public health sector increased slightly recently, it requires much more funding in order to match the changes that the population is experiencing in terms of its epidemiological transition and the associated health needs and demands for care. This is even more imperative since the most vulnerable population groups struggle to afford healthcare, whereby the goal of universal access and universal coverage is being undermined. Thus, the government should adopt an integrated approach to the healthcare system, with stronger regulatory legislation between the private and public providers and a muchneeded increase in spending on public healthcare.

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