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01.2019

Farmafactoring Foundation Research Papers

Health of the population from the cradle to the grave:
the health of Italian adults

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Preface¹

Basic social security for citizens from the “cradle to the grave” was the main goal of the welfare system created in the United Kingdom following the Second World War (Beveridge Report, 1942). In today’s fast-evolving world, people’s lifecycles no longer conform with a linear sequence of phases directly connected with their age (birth, education and learning, marriage, work, ageing). On the contrary, they are increasingly affected by economic, social and spatial change, which in turn lead to changes in careers and responsibilities, requiring the complete recalibration of one’s life and expectations. Given their political, social and health impacts, the management of these phenomena without doubt represents one of the biggest challenges facing Italy.

Having already analysed these phenomena among the elderly and the young, the final year of the Foundation’s three-year project is focused on the adult population, i.e. the period of the lifecycle that goes from 18 to 65 years of age (often retirement age). A long period characterised by various events, which are responsible for many of the changes mentioned above.

The study seeks to analyse the challenges and polarities between “temptations and fears”, “conflicts and controls” and “desires and sacrifices”. In a nutshell, the temptations, conflicts and desires of today are far more pressing than they once were and lead to fears, control anxiety and push to sacrifices that generate a whole series of needs with important health impacts that the Italian national health service is not always equipped to deal with.

Cosmetic surgery, problems related to impotence, the boom in nutraceuticals, the spread of intolerances and allergies, problem gambling and the use of addictive substances are just a few examples. Temptations, conflicts and desires often impact on people’s lifestyles, generating harmful effects on the health status of the adult population and leading to an increase in healthcare spending, undermining the sustainability of the system in the process. Furthermore, in adult age gender plays a more important role than at any other time in life. Also due to the significant changes in the structure of the family and the job market, women have changed their relationships with their bodies and health to a far greater degree than men, adopting completely different behaviours and lifestyles compared with just a few decades ago.

In this area recent national and international epidemiological studies have shown that although life expectancy has generally increased, the issue of early onset of some chronic diseases like diabetes, cardiovascular diseases, respiratory problems and mental health problems has become more frequent with subsequent repercussions on both the healthcare system (care management) and the economy (reduction in productivity).

1 Vincenzo Atella, Federico Belotti, Joanna Kopinska and Andrea Piano Mortari contributed to drafting this section. All of the data provided in this preliminary version of the Report are based on information available at 30 September 2018, when the analysis contained herein was completed.

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Part 1.

The determinants of health in adult age

Introduction

One of our most important achievements in the modern age has been the constant reduction of global mortality rates over time. Unfortunately this trend has recently been questioned by Case and Deaton (2015) who have gathered evidence that shows an inversion in this tendency since the 1990s caused by the increase in the mortality rate of white non-Hispanic adult Americans. This new trend is partly the result of deaths caused by liver diseases, drugs, alcohol and suicide, and partly a consequence of the slowdown in the prevention of deaths caused by heart diseases and cancer. Similar trends have also been noted in other European countries (Atella et al., (2017), Hulsegge et al., (2013)) and Asian countries (Hu et al., (2014) and Li et al., (2017)).

Although relevant from an epidemiological and economic perspective, the inversion in mortality rate trends is just the tip of the iceberg in comparison to the growth in the prevalence of the main chronic diseases that many countries are currently witnessing. In fact, mortality is only the most serious effect of a wide range of health problems that individuals may suffer from before dying. Although information on the development of metabolic risk factors for the adult population is available, little attention has been focused on the fact that the "adult population" includes individuals between 18 and 35 years of age ("younger adults") and individuals of 50 to 65 years ("older adults") whose morbidity trends are markedly different.

On the basis of this evidence, the aim of this study is to analyse mortality and morbidity trends in Italy and the EU as part of an approach based on the lifecycle.

Improvements in life expectancy appear to have tailed off.

Figure 1. Life expectancy and years of life in good health at 50 years old.



Source: Our processing of EUROSTAT data

In this regard Eurostat shows that the prevalence of health problems and disabilities increases with age (Eurostat, 2016). In Europe, between 2006 and 2016 the average life expectancy of 50 year-old men and women increased by around two years (Figure 1). However, only 60% of men and 55% of women enjoy these gains in good health. On the plus side, the general improvement in standards of education and living among the population have helped improve health levels. Conversely, increasing disparities in income and the rise of various risk factors such as obesity are contributing to widespread and growing health and disability problems (Lin et al., 2016; Martin and Schoeni, 2014).

As reported by the OECD, economic growth in Italy was just 0.7% between 2000 and 2007, and generally speaking has remained largely stagnant ever since. The economic downturn has been keenly felt in all developed countries, but very heterogeneously, according to age range and the prevalent socio-economic conditions of the moment. Between 2007 and 2013 Italy's unemployment rate doubled from 6.1% to 12.2% (Eurostat, 2016). At the same time the economic recession has not been counterbalanced by social welfare programmes, which have not succeeded in providing adequate support for those in need (Atella et al., 2016).

Longer life expectancy is not always associated with years of good health.

1.2 Italian adults: who are they and why are they important?

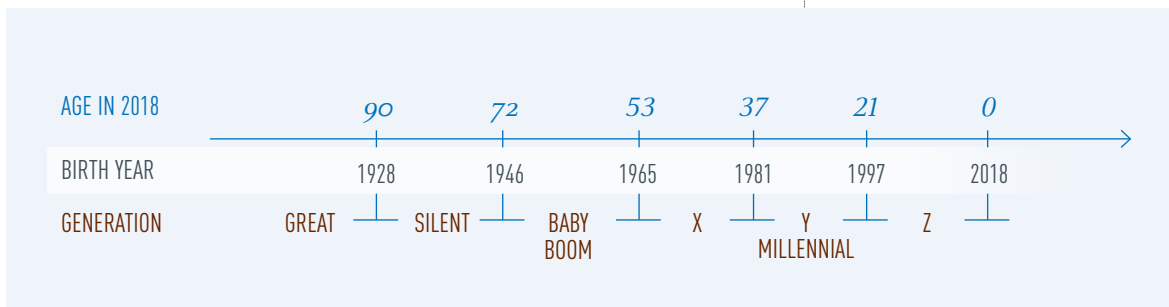
A “generation” can be defined as a group of people born in the same period that grew up around the same location.

Thanks to so-called *generation-shaping trends*, generations have similar characteristics, such as communication methods, shopping habits and reasons for their preferences because they experienced similar trends and experiences around the same time of life and through similar channels (e.g. internet, TV, mobile phones, etc.).

Figure 2 shows a schematic classification of the generations according to the PEW Research Institute (Pew Research Center, September, 2015).

Over time the generations of Italian people have changed and with them the demographic composition.

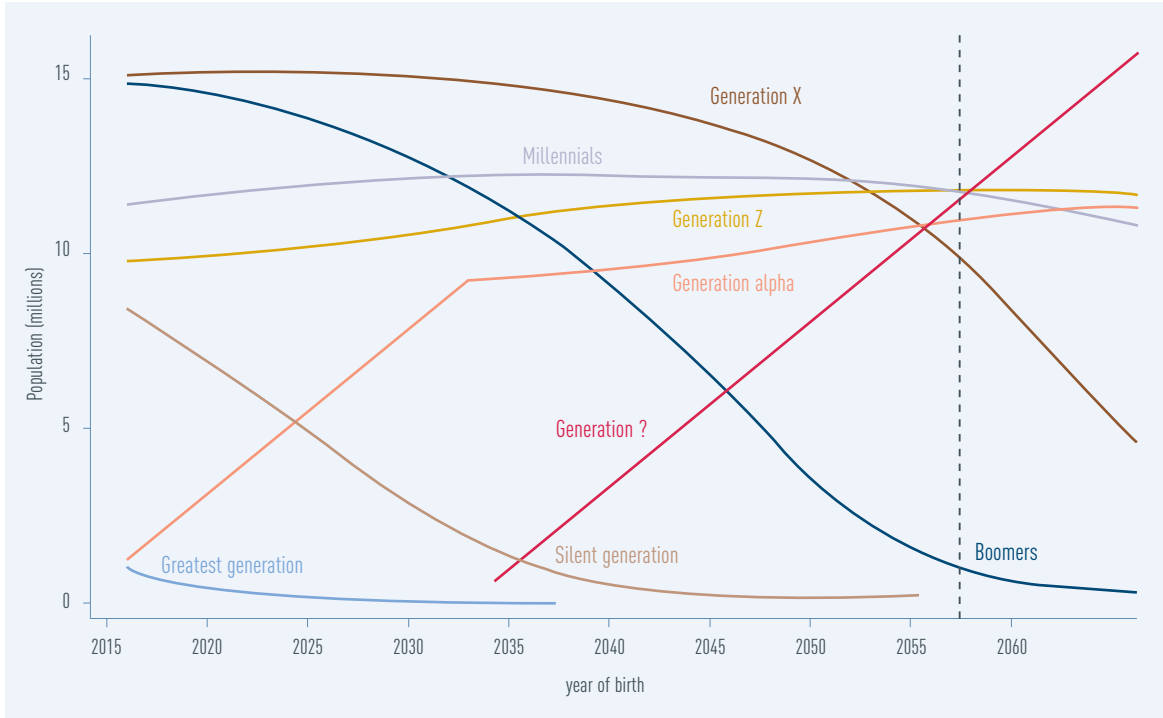
Figure 2. Definition of the generations by age and year of birth



Source: PEW Research, 2015

As we can see, the oldest living generation is the *Greatest generation*, those born before 1928 who were therefore over 90 in 2018. They are followed by the *Silent generation*, consisting of people born between 1928 and 1945 (between 73 and 90 years of age in 2018). *Baby boomers* are people born after the Second World War (the “*Baby Boom*” era) between the years 1946 and 1964 (between 54 and 72 years of age in 2018). The generation of cohorts that follows the *Baby boomers* is known as Generation X, born between 1965 and 1980 (between 38 and 53 years of age in 2018). The next generation is the *Millennials*, those born between 1981 and 1997 (aged between 21 and 37 in 2018), also known as Generation Y. Finally, the successors to the *Millennials* are known as Generation Z (born between 1998 and 2014) and consist of children and adolescents, in many cases the grandchildren of the *Baby boomers*. All in all, as outlined in *Figure 3*, Generation Z will become the largest generation among the population in 2057, overtaking the generation of the *Millennials*.

Figure 3. Evolution of the generations in Italy, 2015 to 2066



Source: Our processing of ISTAT data

Like in many industrialised countries, demographic development in Italy was characterised historically by a sharp increase in births after World War II. Until 2013 the *Baby boomers* were the biggest generation on the Italian demographic panorama. Only in 2013, when the first *Boomers* turned 67, did Generation X become the largest cohort, numbering 15 million people. This was also a result of rising immigration, particularly from 2004 onwards when the entry into the European Union of several Eastern European countries led to an increase in the number of individuals belonging to this generation. Since 2009 the generation of the *Millennials* has been the third largest in size, consisting of around 11 million people in 2011. Immigration also plays a particularly important role in determining the size of the *Millennials* generation. Generations differ from one another in terms of their vision and approach to life choices, like marriage or work, as a result of their different economic, sociological and cultural circumstances.

1.3 The determinants of the evolution of health status

There is a significant amount of literature - economic, medical and epidemiological - which analyses the way various types of shocks can have different effects on the health status of individuals in different phases of their lives. The first and most important phenomenon to study is the increase in the body weight of populations. In the US (King et al., 2010) and the UK (Allman-Farinelli et al., 2008), the generation of people born straight after the War (the *baby boomers*) have higher obesity rates than people of the same age in the previous generation, associated with a higher prevalence of disabilities and chronic conditions, such as diabetes and hypertension. In Canada (Badley et al., 2015), at the same age, the *baby boomers* seem to have a better health status than people born between 1965 and 1980 (*Generation X*). A similar finding is described by Pilkington et al., (2014) in Australia, where the self-reported health status of the two subsequent generations has worsened with higher rates of obesity and diabetes, and this despite the greater accessibility of higher education and the reduction in the number of smokers in the youngest generation. Furthermore, Lee et al., (2010) show that obesity presented in increasingly younger people in the US between 1976 and 2006 and that this early onset is responsible for the premature emergence of illnesses such as diabetes and arthritis.

Based on data gathered by general practitioners, Atella et al., (2015) show how the relationship between health expenditure and body mass index (BMI) is different across the various age ranges with more marked spending differences compared with people of normal weight in individuals between 45 and 65 years of age. In addition, analysing the channels through which body weight can influence health expenditure, the authors highlight that this difference can primarily be attributed to diseases like diabetes, hypertension and cardiovascular diseases.

In addition, according to Cain (2010), taking account of vulnerabilities connected with specific periods in life, our health status can be heavily influenced by nutritional and environmental factors. In terms of risks linked to nutrition, a poor diet, due to both the scarcity and the lack of quality of food, increases the risk of poor health status during adult life (Lucas, 1998). Processed foods, the habit of skipping meals, fizzy and sugary drinks - with an increasingly lower price per kilocalorie consumed carry considerable risks in terms of the prevalence of metabolic, cardiovascular and cancerous diseases, which in turn represent the major causes of death in developed countries (Cutler et al., 2003, Drewnowski, 2003). As Keith et al., (2006) highlight, the generations born after the War have also been subject to increasing levels of stress due to rapid socioeconomic changes, lack of sleep and other factors that interfere with the endocrine system, which may

People's health status can be influenced by different factors at different times of life.

have facilitated the development of metabolic illnesses and, therefore, also cardiovascular diseases. In terms of environmental factors, the increase in pollution is strongly connected with the increase in respiratory problems and allergies (SOER, 2015). In addition, exposure to environmental degradation in the early years of life increases the possibility of developing problems like obesity, diabetes, cardiovascular diseases, illnesses of the nervous system and various forms of cancer, as shown by the early onset of diseases at aggregate level (Balbus et al., 2013).

By virtue of the positive correlation between health status and the state of the economy (Propper, 2005), the recent deterioration in economic conditions, with falling job numbers and growing job insecurity, seems to have left an indelible mark in terms of health status. Since the start of the crisis in 2007 many workers have lost their jobs and many households have seen a stagnation or a decline in their levels of income and wealth.

The economic crisis has also posed the health sector a series of major challenges. Many OECD countries have cut public health spending or intensified citizen involvement in expenditure. In Greece, a country hit particularly hard by the recent economic crisis, Economou et al., (2011) and Madianos et al., (2011) point to a notable increase in mental problems, while Stuckler et al., (2011b) find a link between the economic crisis and suicide rates.

Even general self-declared levels of health status have deteriorated since the start of the crisis and there has been a significant increase in the number of people who have believed they needed healthcare but have been unable to access it (Kentikelenis et al., 2011). In several countries, the number of new cases of HIV amongst drug addicts rose dramatically, perhaps caused by the reduction in the provision of healthcare services (EMCDDA and ECDC, 2011). In Italy, ISTAT (2013) highlighted that following the crisis, there was a deterioration in health indicators amongst the categories most at risk (particularly the elderly and households with low income and education). Negative effects were also identified by Costa et al., (2012), who in the short term found “preliminary evidence of an increase in the occurrence of unfavourable mental health indicators (suicide, depression, forms of addiction) which could be explained in particular by the increase in job insecurity”.

For example, Case and Deaton (2005) clearly demonstrated that, up until retirement age, the health status of those in the bottom quartile of income declines more rapidly than that of those in the top quartile. In Glasgow, in the United Kingdom, the life expectancy of men in more disadvantaged areas is 54 years as opposed to 82 years in more well-to-do areas (Hanlon et al., 2006). In a recent JAMA study, Chetty et al., (2016) highlight health inequality based on income and social

The economic crisis that began in 2007 has had a major impact on the health of the Italian people.

class in the US: there is a 14.6-year gap in life expectancy between the wealthiest 1% and the poorest 1%. Furthermore, this inequality increased between 2001 and 2014: people in the top 5% of the income distribution saw an increase of roughly 2.5 years in their life expectancy, while there was basically no difference for the poorest 5%. Similar results were also obtained using other forms of measurement like education and wealth, and other health indicators like the onset of chronic diseases, disabilities and mortality (Adler et al., 1994; Marmot, 1999; Smith, 1999).

1.4 The evolution of risk factors

1.4.1 Drugs

According to the 2017 Annual Report to Parliament on the state of drug addiction in Italy, "in recent years the main characteristics of the national scenario in terms of drugs have radically changed, leading us to review also known phenomena in light of the new information available." (Department of Anti-Drugs Policies, 2017, p.VI).

The report highlights how, in terms of quantity, "cannabis" accounts for the biggest slice of the domestic market of illegal substances and is the most widespread psychoactive drug among both the adult population and the very young. A second important group of products is the "synthetic cannabinoids" (known as "Spice"), the largest class of substances monitored in Europe by national alert systems. These products are joined by "NPS - New Psychoactive Substances" (which include, for example, synthetic cathinones like mephedrone, ketamine, phenethylamine and synthetic opiates). Despite the spread of new substances and the increase in consumption, also observed among the very young, the majority of users provided with treatment by the Addictions Services receive care for the use of heroine and have an average age of 39.

One interesting fact is that the consumption of these substances is on the rise among women even if the perception of risk among females with regard to the use of substances is higher than it is among men.

According to the findings of the IPSAD® 2017 survey (*Figure 4*), it is estimated that around one in three people in Italy (33.5%) of between 15 and 64 years of age have used at least one illegal psychoactive substance in their lives and around 1 in 10 (10.3%) have done so in the last year. However, consumption is higher among people of between 15 and 35 years of age. Another interesting aspect is the fact that drug consumption has increased considerably since 2010.

Over the years there has been an increase in the use of drugs, particularly among young adults.

Figure 4. Consumption of drugs in Italy – (2005 – 2017)



Source: National IPSAD® survey
(Italian Population Survey on Alcohol and other Drugs)

Over a quarter of adults between 15 and 64 in the European Union, over 88 million people, have used illegal drugs at some point in their lives (see Figure 5). In most cases they have used cannabis but some have also used cocaine, amphetamines, ecstasy and other drugs (EMCDDA, 2016).

Figure 5. Use of cannabis and cocaine in the last 12 months among 15-34 year-olds in Europe. [2014 or most recent year]



Source: EMCDDA (2016), European Drug Report 2016: Trends and Developments

1.4.2 Physical inactivity in adults

Physical inactivity is a major risk factor for cardiovascular diseases as well as a series of other chronic diseases including diabetes, some forms of cancer, obesity and hypertension (Knight, 2012). The WHO recommends at least 150 minutes of moderate-intensity aerobic physical activity a week for adults between 18 and 64 years of age (WHO, 2011).

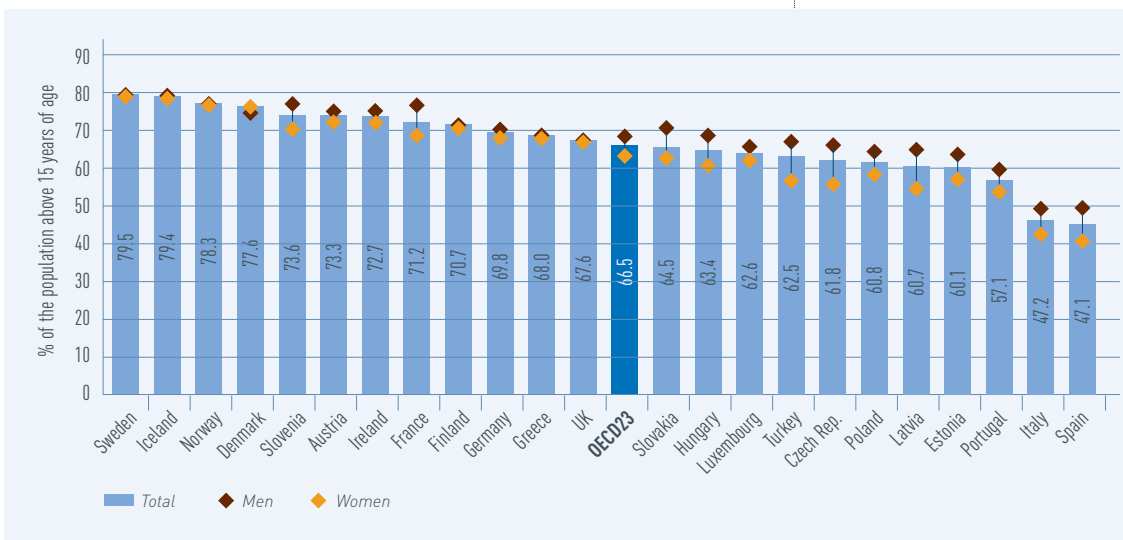
According to the OECD report on the health status of the population (OECD, 2017), physical activity among adults ranges from 38% in

Many Italians do little physical exercise.

Romania to 80% in Sweden. Over 70% of adults in Austria, Denmark, Finland, France, Iceland, Ireland, Norway, Slovenia and Sweden do at least 150 minutes of moderate physical activity each week. Conversely, less than 60% respect the recommendations of the WHO in Portugal, Italy and Spain (Figure 6).

According to ISTAT, in 2015 around 20.2 million people of 3 years and above in Italy did one or more sports in their free time, the equivalent of 34.3% of the population of three years of age and over, 24.4% of whom regularly and 9.8% of whom occasionally. However, those who lead sedentary lifestyles and do not do any sport or physical activity in their free time represent the largest group (over 23.05 million), equal to almost 40% of the population, and increase with age to constitute half of the population over 65 years of age.

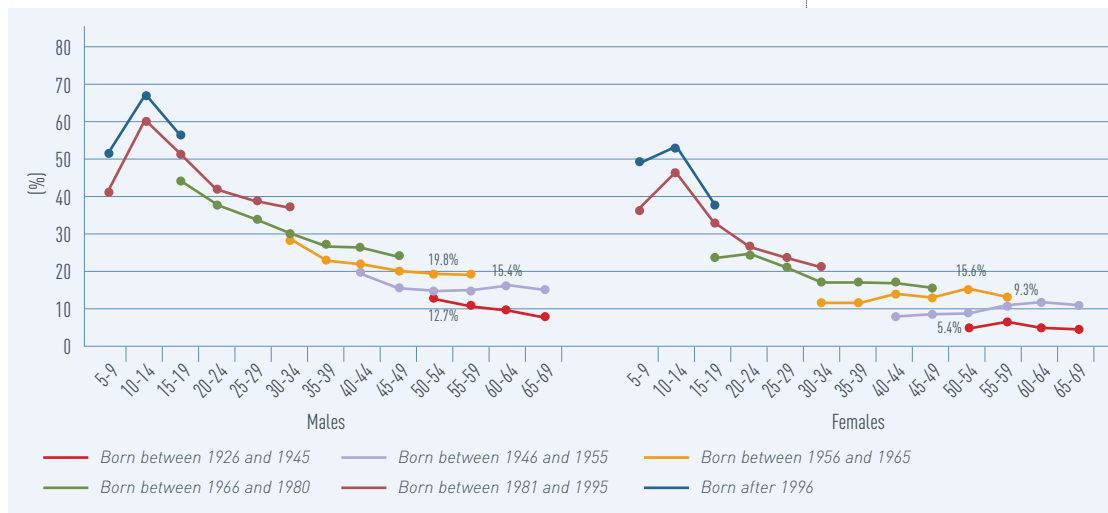
Figure 6. Moderate weekly physical exercise among adults, 2014



Source: EMCDDA (2016), European Drug Report 2016: Trends and Developments.

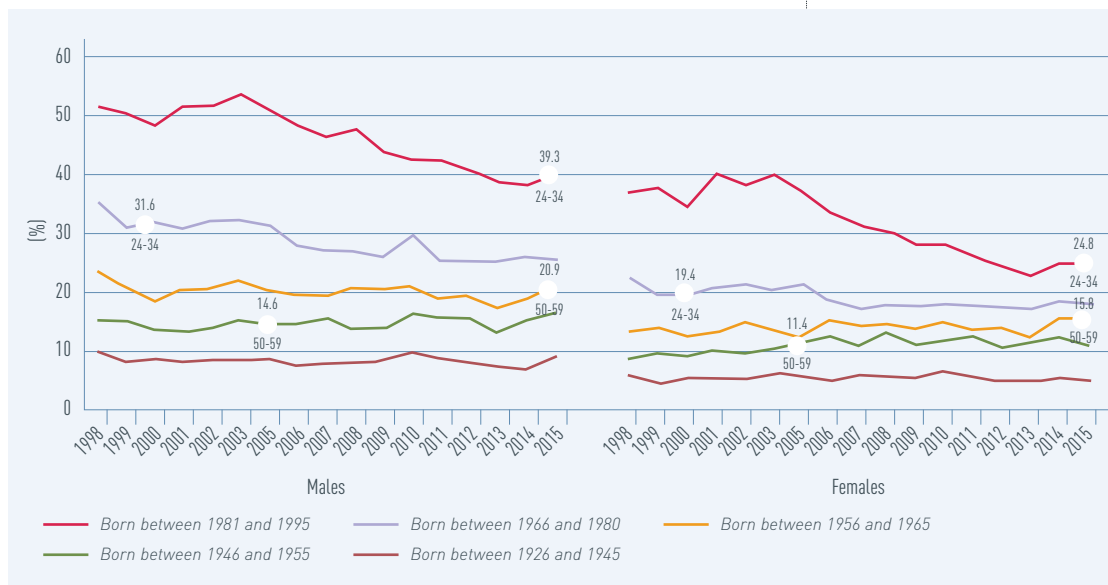
Another important aspect to consider regarding the practice of sport across the generations is the fact that there is an increasing trend up to 10-14 years of age followed by a gradual decline across the age ranges thereafter (Figure 7). Figure 8 takes a longer-term view, giving us a clearer picture of the dynamics of this phenomenon. In fact, over a period of around 20 years what we see is a fall in the percentage of people born between 1981 and 1995 (who in 2015 were between 24 and 34 years of age) practising sport, even if in 2000 people of the same age actually did less (31.6% vs. 39.3% for men and 19.4% vs. 24.8% for women).

Figure 7. People of 5 years and above that practice sport by gender, age group and year of birth (per 100 people with the same characteristics)



Source: ISTAT, *Aspetti della vita quotidiana*, various years.

Figure 8. People of 3 years and above that practice sport regularly by gender and year of birth between 1998 and 2015



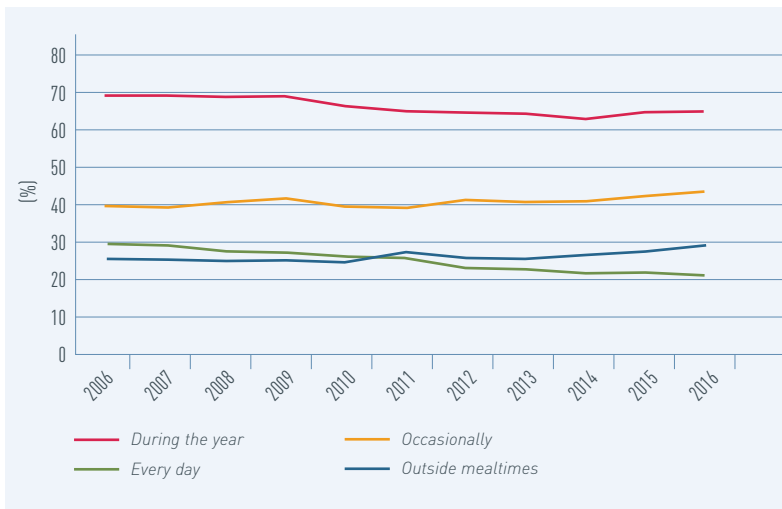
Source: ISTAT, *Aspetti della vita quotidiana*, various years.

1.4.3 Alcohol consumption

Alcohol is regarded as one of the ten main risk factors in terms of years of healthy life lost in OECD countries (Forouzanfar et al., 2016) and consumption in OECD countries remains well above the global average (OECD, 2015).

In 2015 there were around 2.3 million deaths due to the over-consumption of alcohol in OECD countries, mainly resulting from tumours, heart diseases and liver diseases.

Figure 9. Consumption of alcoholic beverages during the year, every day, occasionally and outside of mealtimes among people of 11 years of age and over. Years 2006-2016, per 100 people of 11 and over

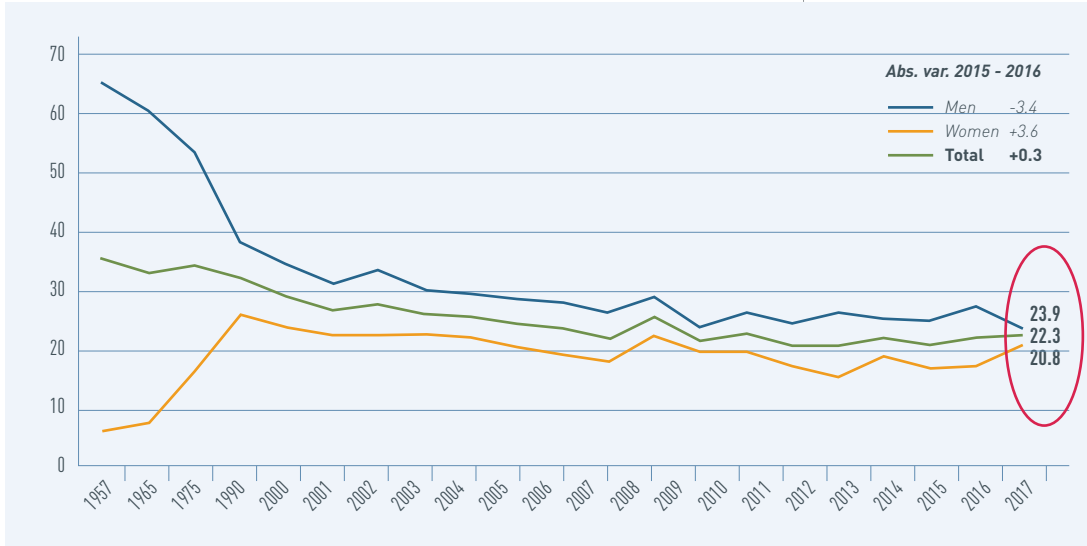


Source: ISTAT, *Aspetti della vita quotidiana*, various years.

According to ISTAT, 64.7% of the population of 11 and over declared that they had consumed at least one type of alcoholic drink over the past year in 2016. As outlined in [Figure 9](#), between 2006 and 2016 in particular the percentage of people that consumed alcohol every day fell (from 29.5% to 21.4%) but there was a rise in the number of people that consume alcohol occasionally (from 38.8% to 43.3%) and outside of mealtimes (from 26.1% to 29.2%). Above all, the behaviour of women has changed. It is the young that drink most outside of mealtimes, at least once a week. Analysing the geographical maps, the distribution of non-moderate daily consumption and binge drinking mirrors that of general risky behaviour. But the Autonomous Province of Bolzano and Sardinia, the regions with the highest levels of binge drinking, are towards the bottom when it comes to excessive habitual consumption; the positions occupied by Emilia Romagna and Tuscany are the exact opposite ([Figure 10](#)).

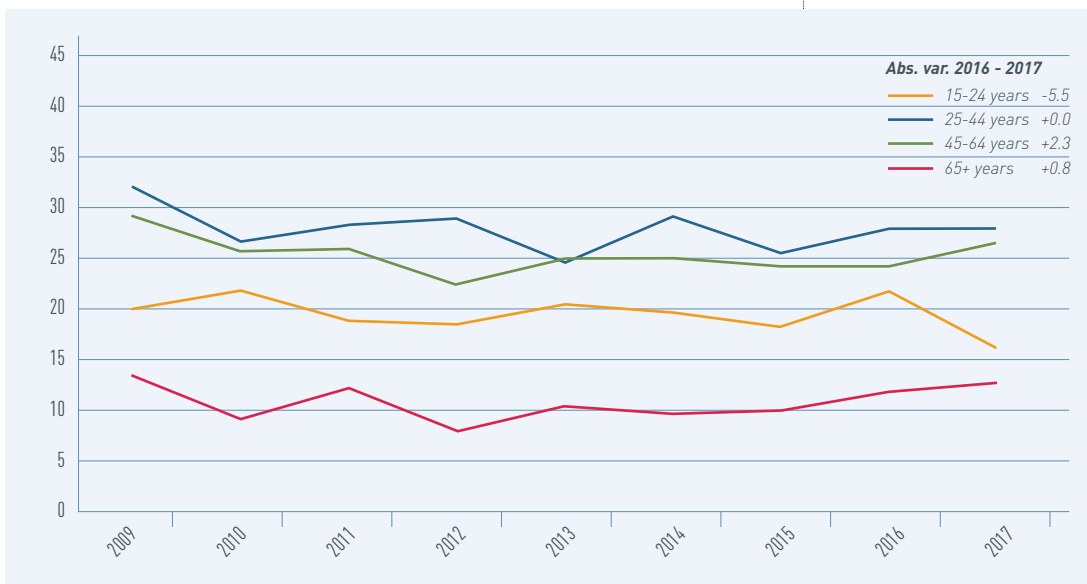
Alcohol consumption has remained largely stable but has increased among young women.

Figure 11. Prevalence of cigarette smoking according to the DOXA surveys carried out between 1957 and 2017



Source: OSSFAD – DOXA-ISS survey 2017

Figure 12. Prevalence of smokers according to the DOXA surveys carried out between 2009 and 2017 by age group.



Source: OSSFAD – DOXA-ISS survey 2017

In terms of the costs incumbent on the Italian national health service, according to Atella et al., (2015) one obese person costs the national health service up to twice as much as someone with a normal BMI: in the period 2006-2009 the average spending per capita in Italy on medicine, tests and specialist check-ups was 511 euro for men with normal BMI (476 for women) but almost 950 for men with severe obesity (884 for women).

On average, a young adult of normal BMI between 25 and 34 years of age has a 2.21% chance of developing hypertension; an individual of the same age but seriously obese has a 18.54% probability of developing hypertension and even in cases of normal obesity this percentage does not fall below 13.5%. Another disease linked to the BMI is diabetes, because the risk of developing it also becomes higher as our bodyweight increases. For example, among 25-34 year-olds with regular BMI the likelihood of developing diabetes is 0.97% while among those with obesity this percentage increases to 2.17% and in severe cases rises to 6.64%, almost seven times the lowest value.

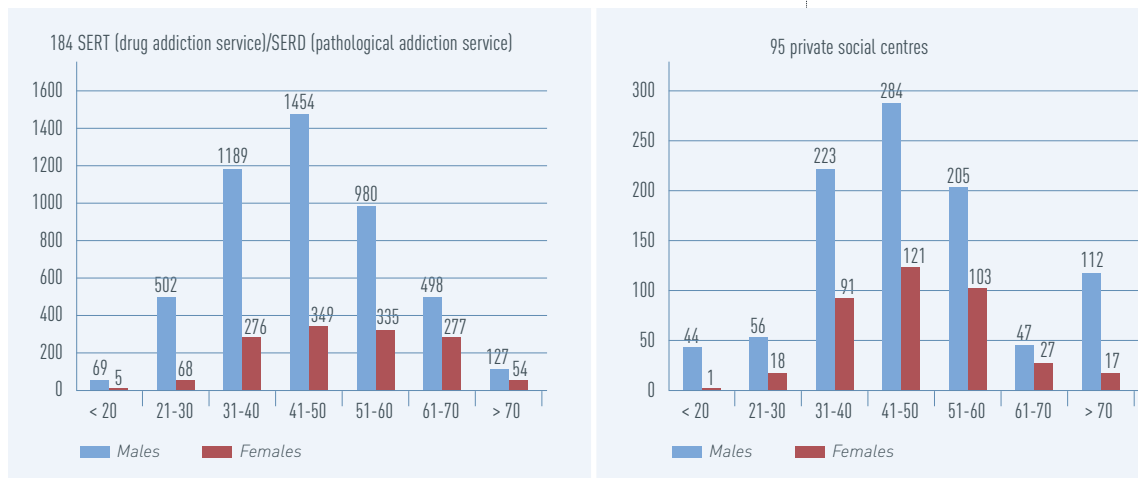
1.4.6 Problem gambling

According to the Azzardopoli Dossier produced by the Libera Association in 2012, in Italy it is estimated that there are 800,000 people addicted to gambling and almost 2 million players at risk and that they spend around 1,260 euro per capita on video poker, slot machines, scratch cards and bingo in an attempt to make the winning that will change their lives. It is "the third biggest Italian business, the only one that continues to make a profit and that is not affected by the recession that has blighted our country". Italy is the biggest gambler in Europe and the third biggest in the world. Gambling is a particular problem among the young, involving almost 50% of upper secondary school pupils.

According to the findings of a Ministry of Health CCM project entitled "Survey on the characteristics and operation of services and structures to treat problem gambling", in 2014 the total number of patients treated was 6,297 while the new cases reported for the same year totalled 2,924 (Figure 14). The distribution by age range of the users of the 184 services of the Italian national health service in 2014 shows how the majority of users are concentrated in the 41-50 age range, followed by the 31-40 bracket.

There has been a sharp increase in problem gambling.

Figure 14. Distribution of users being treated for gambling addiction by age range and gender, 2014



Source: OSSFAD, Survey on the characteristics and operation of services and structures to treat problem gambling. Available at: http://old.iss.it/binary/ogap/cont/Indagine_sulle_caratteristiche_e_sull_operativita_768_.pdf

1.4.7 Socioeconomic gradient in risk factors

It is fairly well documented that the frequency of unhealthy lifestyles and behaviours in adults (smoking, alcohol, obesity, physical inactivity, etc.) is inversely proportional to socioeconomic status (SES). On the following pages we discuss the socioeconomic gradient, represented by levels of education, in terms of characteristics connected with lifestyles, such as the prevalence of obesity and smoking habits, as established by ISTAT data in the multi-purpose “Aspetti della vita quotidiana” (Aspects of daily life) surveys.

As regards levels of obesity, in 2016 the greatest degree of prevalence (around 13%) was seen among people in their 60s that did not receive university education. The same year, the prevalence among university graduates in the same age group was much lower at just over 7%. In addition, in terms of trends it is possible to see how in the 10 years analysed the increase has been particularly marked among non-graduates with an average difference of 5 percentage points across all cohorts. As a corollary to this, the differentials in terms of education have increased throughout the decade, suggesting a significant increase in health inequality on the basis of level of education.

The socioeconomic gradient in risk factors remains very high.

Another very important aspect to underline is that the composition by birth cohort shows how the younger generations (from 20 to 40 years) have demonstrated positive growth rates which, 10 years later, have resulted in each generation having higher obesity rates than those of the same generation 10 years earlier. There is a growing body of evidence to show that subsequent cohorts are developing obesity and associated chronic conditions earlier in life (Leville et al., (2005), Lee et al., (2010), Robinson et al., (2013), King et al., (2013)). At the same relative age there was a greater prevalence of obesity among the baby boomers in the US (King et al., 2013) and the UK (Rice et al., 2010) when compared with the previous generation (born in 1926-1945), and this is associated with more disabilities and chronic conditions like diabetes and hypertension. Analysing individuals born in the US between 1971 and 2006, Lee et al., (2010) demonstrated that in younger cohorts obesity develops earlier in life and is accompanied by the premature onset of conditions like type II diabetes and arthritis, which are usually associated with ageing. Furthermore, an Australian study which examined age, period and cohort effects on the prevalence of overweight and obesity in adults concluded that more recently born cohorts may be at increased risk of overweight (Allman-Farinelli et al., (2008)).

In addition, it is also possible to observe a close negative relationship between smoking rates and level of education with better educated individuals showing a significantly lower smoking rate, one that continued to fall between 2006 and 2016 with the exception of those born between 1982 and 1988. We can therefore point to a major generational improvement in terms of the reduced likelihood of smoking over the years although it is important to underline how the adoption of healthier lifestyles does not appear to apply to the youngest generations.

The biggest differences are seen between the youngest generations.

1.5 The evolution of socioeconomic conditions

The time interval between 1990 and 2016 was an era of major events that had notable repercussions on the economies of all countries, particularly those in Europe. In fact, the early 1990s was notable for a series of currency crises in Europe which led to the closure of the fixed exchange rate system between EU countries, welfare systems went into crisis also following the signing of the Maastricht Treaty, the foundations were laid for the introduction of the Euro, digital technologies completely revolutionised the functioning of production processes as well as the markets, the dot.com bubble took hold, globalisation became increasingly prominent and China changed the international trade panorama. Early in the new millennium, the Euro was introduced, the geopolitical panorama was shaken by the attacks on the Twin Towers and the housing bubble developed and led to the financial crisis of 2007, resulting in a period of *austerity* in Europe. Looking back, the world in 1990 was perhaps more different from today's world as 1990 was from the early twentieth century.

According to data from the *Luxembourg Income Study* (LIS), in seven major economies in North America and Europe the average income growth of a couple between 20 and 30 years of age was lower than at any time over the last 30 years. Conversely, pensioners have seen their income increase: *i)* for the first time in France new pensioners generated more disposable income than families whose head is under 50 years old, *ii)* Italian families whose head is over 35 have become poorer than families of pensioners whose head is over 80 and *iii)* in 2013, at the end of the crisis, American families whose head is under 30 had less income than families of 65-79 years of age.

If we accept the hypothesis that socioeconomic shocks can influence health status indicators (e.g. morbidity, mortality and life expectancy), this new socioeconomic scenario could lead to major changes in the lifecycles of various generations with unknown micro and macro effects on their health. Economic conditions began deteriorating in Italy in 2006 and employment variation rates among people in their thirties and forties are negative. There was also a reduction in the percentage of people in their thirties and forties with an employment contract in the 2006-2016 period and an increase among those in their 50s and 60s.

The socioeconomic panorama in Italy and Europe changed considerably between 1990 and 2016.

1.6 The evolution of health conditions

The technological progress since the Second World War has led to a major delay or postponement of mortality, but this has been partially counterbalanced by the increase in the prevalence of chronic diseases, which increasingly form part of people's lives. Whereas initially the increases in life expectancy stemmed from the reduction of infant deaths, in recent decades the biggest contributing factor has been the longer lives enjoyed by the over-65s.

To better understand the current situation in Italy and the dynamics that characterise the generations covered by the 18-65 year-old population, we examine the results of a series of analyses conducted on a number of important health indicators, taken from the ISTAT *Aspetti della vita quotidiana* survey, which show how these changed between 1996 and 2016. The most notable element, which is shared by nearly all the indicators, is the visible worsening of health status in the 2006-16 sub-period, observed more markedly among 30- and 40-year-olds.

An analysis of individuals with cardiovascular diseases, diabetes, cancer, asthma and allergies shows how there has been an increase in these diseases in the last decade, most notably among the youngest cohorts (20 to 30 year-olds). Particularly alarming are the increase in the number of 30 year-olds that suffered heart failure in 2016 and the prevalence of tumours among the youngest age group (20 year-olds).

However, there is a substantial body of evidence to show how health status is largely determined by people's social class and socioeconomic position: wealthier and better educated people have healthier lifestyles, better healthcare, less demanding jobs from a physical perspective and less dangerous and stressful work conditions (Geyer et al., (2006), Torssander and Erikson (2010), Chauvel and Leist (2015)).

Another interesting aspect is that it is not only an individual's current socioeconomic position that determines their state of health but also their socioeconomic position during childhood and adolescence, i.e. at the time of their growth and psycho-physical evolution. For example, those who experience poverty during childhood may continue to be negatively affected by it for the rest of their lives in terms of their nutrition and health status and, therefore, personal development and opportunities connected with learning, self-esteem, activities and access to the job market: the low socioeconomic status of parents may therefore be transmitted to the next generation through these channels (Laaksonen et al., 2005, Osler et al., 2009).

There appears to have been a deterioration in the health status of the population and in particular that of the younger generations who have also felt the impact of the economic crisis more heavily.

Again by analysing the ISTAT data deriving from the Aspetti della vita quotidiana survey, it is interesting to note how the highest prevalence of diabetes (8%) is found among 60 year-olds that did not go to university.

The same year, the prevalence among university graduates in the same age group was much lower at just over 5%.

The situation is similar with regard to the prevalence of cancer. There is also a generational decrease in heart attacks among 60 year-olds for both levels of education and, in general, a less accentuated trend among university graduates and the employed. For asthma sufferers it is important to underline an increase, in 2016, among graduates in their twenties compared with the same age range in 2006, while numbers among unemployed people in the older age range (50-60 year-olds) fell between 2006 and 2016. As for the prevalence of hypertension, there has been a growing trend due to ageing and, generally speaking, this trend is less marked for those that are highly educated or employed.

In conclusion, through an observation of socioeconomic gradients we can say that over the years there has been a negative generational effect for the younger cohorts who have experienced an increase in some diseases (asthma, cardiac arrest, cancer, illnesses of the nervous system). Conversely, over time there has been a reduction in the prevalence of some diseases like diabetes, asthma, cancer and cardiac arrest among the older generations.

Finally, in a recent study Atella et al., (2017) proposed an indicator that measures the average age at which any chronic disease manifests itself in the population. Compared with the past, in recent years the age at which individuals develop their first chronic ailment has lowered. The average age at the onset of the first chronic condition was 52.2 in 2004 and this fell to 47.3 in 2014 without taking the ageing factor into account. Looking at the adjusted indicator (i.e. net of ageing), the average age at the onset of the first chronic condition fell more quickly over the years to reach its low point (46 years) in 2014. This trend suggests that, on average, in 2014 Italians developed their first chronic condition 4.9 years earlier compared with 2004, and this also means 4.9 more years of healthcare (rising to 6.2 if we take account of ageing).

Between 2004 and 2016 the average age at the onset of the first chronic disease fell by around 4.9 years.

Conclusions

The stability, prosperity and sustainability of a society depends on the healthy growth of its population from childhood onwards. For an individual to grow and develop in a healthy and balanced way they must receive assistance and support throughout their lives in a coordinated way at both family and community level. Individuals are complex systems that interact with the exterior in very precise ways and at very specific times.

Unfortunately, some of the clinical and socioeconomic data that we have commented on in this Report seem to indicate that we are increasingly seeking to undermine the foundations of health of the future generations. The worsening of some lifestyles and the simultaneous economic crisis of 2007 seem to have created strong synergies that have negatively impacted on the younger age groups of the adult population. It is difficult to envisage if and how the effects we see today will manifest themselves in terms of health outcomes in the future even if we do have a few clues. Nevertheless, biological processes and the laws of biochemistry already tell us that young adults could be more at risk of developing chronic diseases and disabilities.

It will therefore be down to policymakers to mitigate these effects in the future by introducing policies that make the lives of the individuals that belong to this generation more healthy.

Part 2.

Regional clinical governance
tools for the management
of chronic diseases: level
of proliferation and main
characteristics

Introduction²

The social impact of chronic diseases is recognised all over the world: according to some forecasts, 87% of deaths in industrialised countries are connected with chronic conditions (Suhrcke et al., 2006; Mathers et al., 2003); in terms of the global population this figure is around 70% (WHO, 2017). According to ISTAT (2017), 39.1% of the Italian population (23.7 million people) suffer from at least one chronic illness and 20.7% from at least two (12.5 million people). This is the context in which chronic diseases have to be managed, a problematic issue with far-reaching social and health impacts. It is therefore natural to ask how we can best manage these worrying and apparently irreversible trends. In response to the demographic dynamics in act and considering the levels of prevalence outlined at the start of the paragraph, particularly in recent times the issue of chronic care has often been associated with the movement of treatment from the hospital into the community. This inclination has been associated with at least three distinct dimensions (Borgonovi et al., 2012):

- *in terms of the clinical-health characteristics of healthcare demand, chronic diseases require particular attention to be focused on the phases of prevention, continuity of care and compliance monitoring of the patient (activities that should not be carried out in hospitals, an inappropriate healthcare setting);*
- *as regards the social profile of demand, patients are often elderly, and sometimes fragile from both a physical and relational point of view, and require specialised professionals who are able to cater for their needs in a 'holistic' way;*
- *in terms of the feasibility of the healthcare model, being primarily activities of medium-low clinical complexity it was possible to envisage a certain degree of standardisation of the care process and, therefore, the creation of clinical governance tools (such as diagnosis and treatment planning - referred to as "PDTA" in Italian).*

In general there is a widespread acknowledgment of the need to pay particular attention to the implementation of tools, organisational and political models that seek to strengthen the ability to manage the care of chronic patients. In the Italian context, with specific reference to the last of the dimensions mentioned above, the choice of target diseases is often made at regional level. Despite this, the design methods and the concrete application of clinical governance tools are defined at Local Health Authority level (or in any case at community level) in order that best care practices established at national and international level can be adapted to specific local healthcare requirements.

Chronic diseases represent one of the biggest medical and economic problems in the world.

² Elio Borgonovi (scientific director) and Francesca Lecci (coordinator) contributed to drafting this section. All of the data provided in this preliminary version of the Report are based on information available at 30 September 2018, when the analysis contained herein was completed.

2.1 Working method and goals

The above summary shows to what degree this kind of system can offer different types of treatment plans and tools to meet the requirements associated with chronic diseases mainly suffered in adult age. In this regard, such a system makes it difficult to produce a general national overview of the clinical governance tools implemented and their effectiveness in meeting the health needs of chronic patients in care. A significant degree of complexity in this differentiation process comes from the potential involvement of different levels of authority (Government, the Regions and LHAs). In this sense, the Piano Nazionale della Cronicità (National Chronic Care Plan) of 2016 is the national framework of reference, with regional policies that make it possible to independently design local chronic care management systems and take local health authority organisational decisions that can also be different within the same regional context.

Against this backdrop, the study seeks to map and analyse the structure of Italy's chronic care system. In particular, this work aims to provide a concise overview of current regional regulations in this area and then analyse the spread and the main features of the clinical governance tools in individual LHA contexts with regard to five diseases of high social impact (diabetes, hypertension, heart failure, obesity and neoplasms). Finally, in a second phase, we will attempt to assess the effects of their introduction on the hospitalisation rates connected with the five diseases examined at LHA level. Consistent with Borgonovi et al., (2012) and in order to understand the evolution that has characterised the system in recent years, the study aims to respond to the following research questions:

1. Do regional regulations make allowances for the introduction of clinical governance tools? With what characteristics?
2. With regard to the five aforementioned diseases, to what extent are clinical governance tools used by Italian LHAs and what do these tools consist of?
Are there any incentives for their implementation? Are there systems to monitor their activities and how are they structured? What is the impact on the consumption of hospital services?

Consistent with these goals, the research will be developed along two lines:

1. Analysis of regional regulations in force with regard to the forecasts, the introduction and the development of clinical governance tools in the reference context;

The many different ways of responding to the needs of the population are difficult to summarise in a few words.

2. Issuing of an electronic questionnaire to all local health authorities (ASL, AUSL, ASST... - 120 units in total at national level) with a specific focus on the definition, implementation and characteristics of clinical governance tools for five chronic diseases of high social impact (diabetes, hypertension, heart failure, obesity and neoplasms).

As regards the analysis phase, the research firstly concentrated on examining the Piano Nazionale della Cronicità (2016 - National Chronic Care Plan), hereinafter known as the PNC. This was followed by a second more analytical process designed to understand the evolution that individual regional bodies have undergone *(i)* in terms of implementing the guidelines of the PNC and *(ii)* in terms of regional comparisons regarding the degree of differentiation between authorities of the same level.

This method was followed by a second one, focused on directly examining individual health authorities to establish which organisational methods they use to manage chronic care. More specifically, consistent with Borgonovi et al., (2012), we decided to analyse the characteristics of the clinical governance tools they have designed and implemented to manage five specific chronic diseases (diabetes, hypertension, heart failure, obesity and neoplasms). To do this we issued an electronic questionnaire to all of the local public health authorities (ASL, AUSL, ASST, ASP, for a total of 120 units) in the country. Given the chosen working method, this phase of the study takes the form of a survey as the researcher gleaned the information directly from the units that they were observing.

The questionnaire took the form of 19 questions, divided into four sections aimed at analysing: *(i)* general aspects (questions 1 to 4), *(ii)* the proliferation of clinical governance tools for the aforementioned diseases (questions 5 to 9), *(iii)* the specific nature of the tools in question (questions 10 and 11), *(iv)* the stakeholders involved in the process (questions 12 to 14), the mechanisms for strengthening their efficacy and the subjective self-reported assessment of LHA representatives of the level of efficacy already achieved (questions 15 to 19).

Analysis of the National Chronic Care Plan.

Analysis of organisational methods at LHA level.

2.2 Current national and regional regulations

With the agreement between the State, the Regions and the Autonomous Provinces of Trento and Bolzano the Italian Ministry of Health published its National Chronic Care Plan (Piano Nazionale della Cronicità) with the aim of harmonising the measures taken until now in the field of chronic care, defining shared guidelines and contributing to improving the protection guaranteed to chronic patients and their families.

The document begins with a series of facts pertaining to the ageing of the population and the consequent rise in chronic diseases, which account for an estimated 70-80% of overall health expenditure today. The epidemiological context is further complicated by evidence showing how social inequality is a determining factor in influencing health conditions, generating major social disparities and inequity. Faced with a context that views chronic diseases as the new epidemics of the third millennium, a new system and a new culture are being shaped which have the goal of radically altering the role and involvement of all stakeholders: professionals, patients and their caregivers. In fact, to address a systemic challenge it is necessary to involve and empower all of its constituent parts, i.e. the entire "health macro system".

The Plan is founded on a number of priority health policy goals, first and foremost the rebalancing and the general integration of hospital and community care: in the Plan hospitals are identified as highly-specialised nodes within the chronic care system that interact with other healthcare settings but that have to develop appropriate new organisational solutions. These include intensive care hospitals and "assisted discharges" to reduce the level of drop-out from the healthcare network, often the cause of rehospitalisation and negative results.

Another fundamental goal of the PNC is the preference for home treatment over institutionalisation, a choice that empowers patients but which must be accompanied by increasingly intense assistance so as to prevent the onus for healthcare treatment from falling on patients themselves.

The Plan also further incentivises the reorganisation of the activities of general practitioners (GPs) and primary care paediatricians, who are responsible for the care management of chronic patients and the implementation of measures to guarantee more effective primary and secondary prevention.

The operational and tangible application of the plan involves the development of the key tools, the treatment plans, which make it possible to highlight all of the main treatment variables and integrate them. The goals and the main principles of the PNC are developed

The National Chronic Care Plan.

transversally along the macro process that involves the plan for the chronic patient and is composed of 5 phases:

1. Stratification and targeting of population

In line with the established *Population Health Management* (PHM) approach, the first activity in the process of managing chronic patients is the identification and stratification of the affected population not only according to clinical criteria but also on the basis of individual, family and socio-demographic characteristics that might impact on the ability to effectively treat the disease.

2. Promotion of health, prevention and early diagnosis

To contain the future impact of chronic diseases a crucial part of the process is the joint action of multiple policies, not only strictly pertaining to the healthcare sphere, aimed at combating and preventing changeable common risk factors and intermediate risk factors. The need for collaboration across sectors may facilitate the pursuit of the early diagnosis of behavioural and intermediate risk factors.

3. Care management of patient

This phase of the chronic patient macro management process touches on three different areas:

- Organisation of services
- Sociomedical integration
- Organisation of hospital care

4. Care management of patient

The following step entails the care management of the patient, regarded as a healthcare product based on shared evaluation criteria that involves appropriate dialogue tools for reiterating the centrality of the patient. The patient's level of involvement goes from mere compliance to genuine empowerment: to emphasise the central role of individuals, and those responsible for their healthcare, the term "*Patto di cura*" ("Treatment pact") has been coined to indicate a process that begins with education in order to make the patient feel as if they are the focal point of their treatment plan.

5. Valuation of the quality of the treatment provided

The macro process concludes with the evaluation phase, a strategic tool for judging the inner workings of the national health service: to emphasise again the centrality of the patient it is necessary to develop structured tools to assess public satisfaction with their transversal relationship with the national health service and with the various access points and services that chronic patients come into contact with during their plan. These tools must be closely integrated with the treatment plans and also permit an evaluation solely on the basis of intermediate result indicators.

The five phases of the chronic patient care plan.

2.3 Clinical governance tools in the Italian public health authorities: the findings of an electronic survey

This paragraph outlines the main findings of the electronic questionnaire submitted to local public health authorities in Italy. It presents some general data on the respondents, the type of clinical governance tools introduced with regard to the five chronic diseases referred to previously, the content and main features of these tools, the professional figures involved in developing and implementing them and, finally, the mechanisms for making them more effective, also in light of the perceptions of LHA representatives regarding some quality parameters of the service supplied.

All in all, 35 authorities replied out of a total of 120 local public health authorities in Italy, a response rate of 29%. The respondent authorities come from 11 different regional areas and are mostly concentrated in the north of the country (73%). The remainder (27%) are equally distributed between the regions of central and southern Italy (13.5%). Taking into account the large amount of structural planning, an analysis of the value of production in the 2017 financial year shows how almost half of these authorities (47%) reported a value of over 700 million euro while 33% of local authorities had a production value of under 300 million euro. The remaining authorities fell into the intermediate range: 7% between 300 and 500 million; 13% between 500 and 700 million euro. As such, the sample is fairly diverse in terms of dimensions.

2.3.1 Main tools introduced

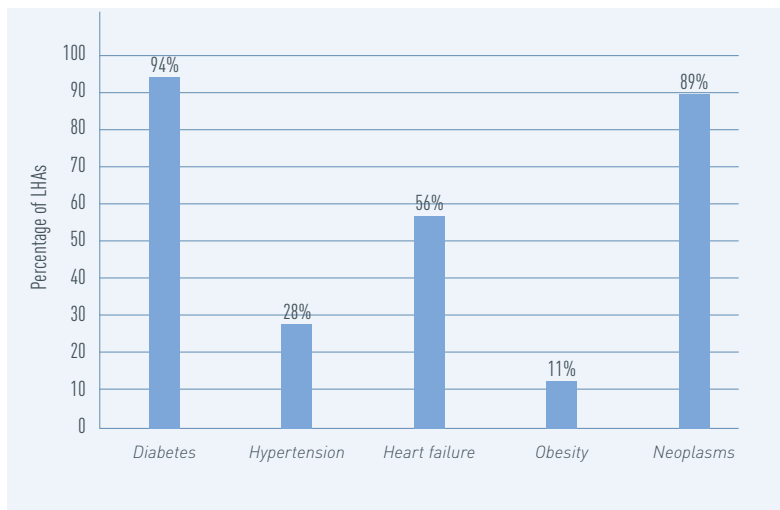
Although referring to a sample of 35 authorities, the descriptive analysis below enables us to make a number of interesting considerations with regard to the introduction and use of clinical governance tools for the management of the five chronic diseases analysed in the study. First of all, as demonstrated by *Figure 15*, diabetes and neoplasms (in both cases 93% of the sample) are the chronic diseases most affected by the introduction of clinical governance tools. Their introduction appears to be more limited for heart failure (60%), while the percentages registered for hypertension (27%) and obesity (13%) are significantly more modest. If, rather than referring to each individual chronic disease, we look at the mix of tools introduced by individual respondent LHAs, we see how one in three authorities has designed itself clinical governance tools associated exclusively with diabetes and neoplasms (33% of the sample). As well as for diabetes and neoplasms, other authorities have developed tools for the management of heart failure (20% of the sample) or heart failure and hypertension. In none of the cases examined were tools developed for the governance of all of the diseases in question. It is also interesting to note how in the majority of cases (80% of the sample, not reported in the graphic) authorities have configured

The results of analyses performed on 35 LHAs.

Diabetes and Neoplasms are the chronic diseases most affected by the introduction of clinical governance tools.

and developed clinical governance tools for diseases not covered by this study, ranging from a minimum of one additional disease to a maximum of 53 diagnosis and treatment plans developed by a local health authority; in addition to those analysed by the questionnaire, on average 10 diseases are addressed by the introduction of this type of tool. As is to be expected, the design of the tool (i.e. when the tool's development process begins) is not always immediately followed (in the same calendar year) by its implementation. With this in mind, Table 1 shows how the first chronic diseases to be addressed by clinical governance tools for their management were diabetes, hypertension and heart failure (2008, 2009 and 2013 respectively), even though some authorities have only designed their characteristics in the last two years.

Figure 15. Dissemination of clinical governance tools by disease



Source: *CERGAS SDA Bocconi survey 2018*

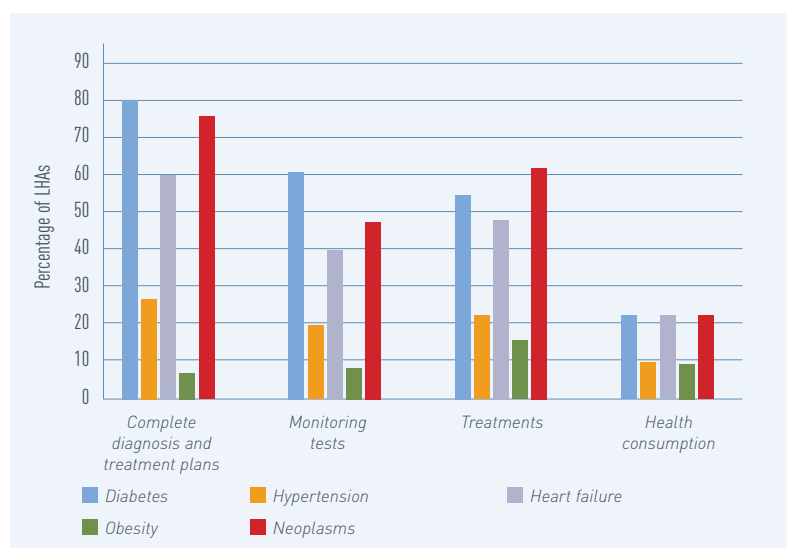
Tools dedicated to neoplasms and obesity (2014 and 2015 respectively) are of more recent origin. As regards implementation, respondent authorities have shown a decent ability to activate and implement these tools within 12 months of their design on average.

Table 1. Period and timeframe of implementation of clinical governance tools by respondent LHAs

	Tool designed			Tool implemented			Years for implementation		
	Least recent	Most recent	Average	Least recent	Most recent	Average	Min.	Max.	Average
Diabetes	2008	2018	2014	2008	2018	2015	0	8	1
Hypertension	2009	2017	2013	2009	2018	2014	0	2	1
Heart failure	2009	2018	2014	2009	2018	2014	0	2	0
Obesity	2015	2018	2017	2015	2015	2015	0	0	0
Neoplasms	2014	2018	2016	2014	2018	2016	0	2	0

Source: CERGAS SDA Bocconi survey 2018

Figure 16. Type of clinical governance tools introduced by respondent LHAs by disease



Source: CERGAS SDA Bocconi survey 2018

However, in one case, for the management of diabetes, there was a gap of around 8 years between the two stages; with regard to neoplasms, in one case there was a delay of around two years. More specifically, in the case of diabetes percentages vary between 53% of protocols related to treatments and 80% to diagnosis and treatment plans; as for neoplasms, percentages range from 47% of authorities that have implemented specific protocols for monitoring tests and 73% that have introduced “complete” diagnosis and treatment plans. The disease that is afforded least attention is obesity. In terms of tools, recourse to health consumption goals appears quite infrequent while no authority declares that it employs patient budget targets.

2.3.2 Nature of clinical governance tools

The spread of the clinical governance tools observed in the previous paragraph is also reflected in their specific characteristics. In particular, *Figure 17* shows how there is a series of specific features that typically characterise the clinical governance tools defined by local authorities (service packages, expected clinical results of monitoring tests, pharmacological treatments, tasks and responsibilities of the various professional figures involved, frequency and method of check-ups and monitoring tests and methods for patient monitoring of compliance with the diagnosis and treatment plan). Consistent with their proliferation per disease, these tools are used most frequently for the management of diabetes (with peaks of 80% in the case of packages of diagnostic and specialist services and 73% regarding the definition of the roles, functions and responsibilities of the professionals involved) and neoplasms (73% of respondent authorities report the presence of measures regarding pharmacological treatments and 67% of tools cover expected clinical results and the division of roles and duties).

If, rather than looking at the sample as a whole, we focus on the dissemination of clinical governance tools per single disease examined, the results are even more interesting: at all authorities where there is a tool for the management of obesity there are service packages, the clinical results of the treatments are analysed, the roles and responsibilities assigned to professionals are consolidated and priority is given to the frequency of monitoring tests (100% of answers in all four areas). Furthermore, it is interesting to see how in those authorities where clinical governance tools for heart failure and hypertension were designed and implemented the percentages relating to the diffusion of the measures discussed previously remain much the same. The only partial exception is the modest attention dedicated by authorities to the expected clinical results of monitoring tests with regard to hypertension (25% of cases).

Clinical governance tools have their own specific characteristics.

Figure 17. Main characteristics of the clinical governance tools introduced by respondent LHAs by chronic disease investigated

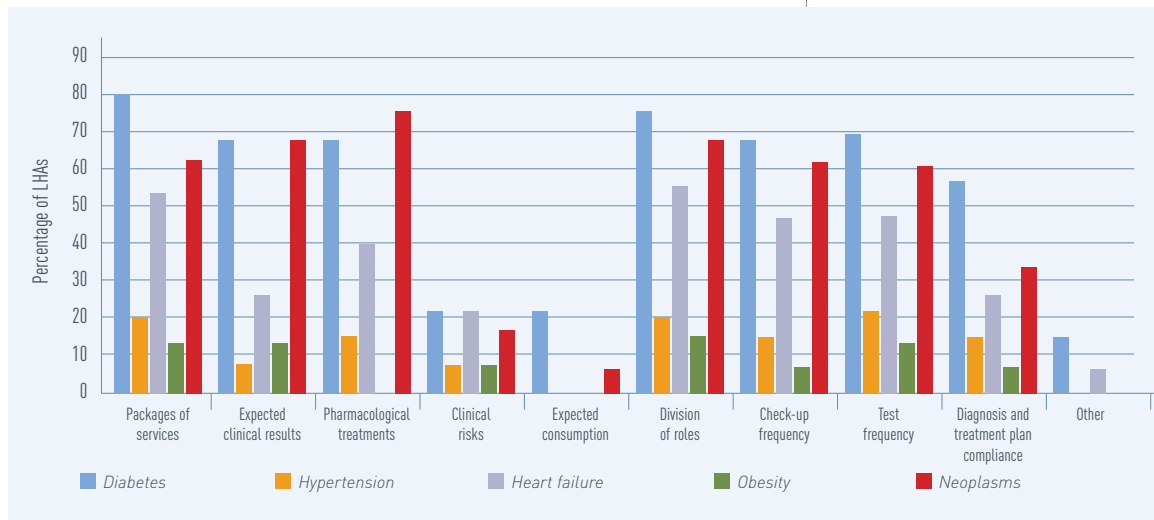
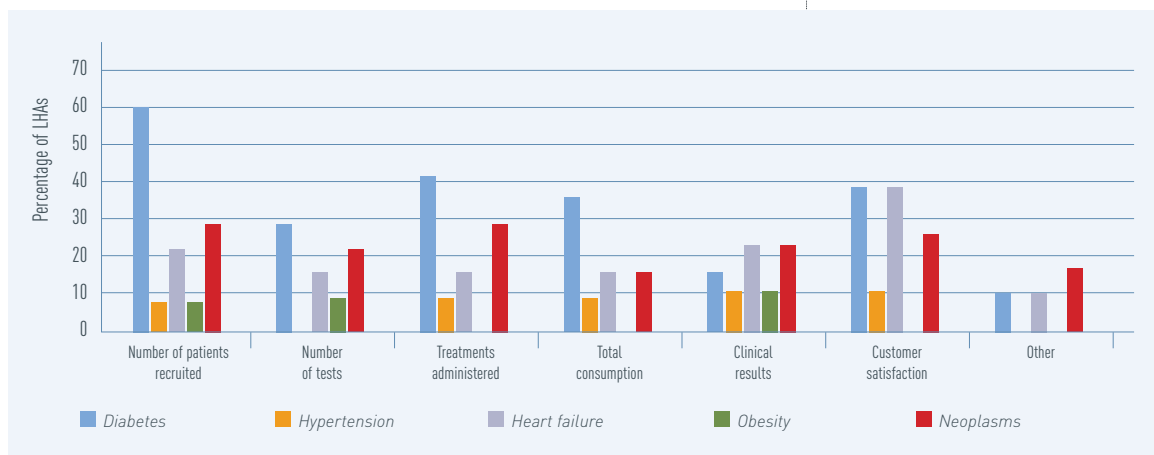


Figure 18. Content of monitoring reports on clinical governance tools in respondent LHAs by chronic diseases investigated



In general, the monitoring tools used (*Figure 18*) do not appear to be very widespread. Those reported by respondent authorities mainly concern information on the number and the compliance of patients recruited (60% in the case of diabetes, 27% for neoplasms).

The periodic reports on treatments provided and patient satisfaction are the most widely-used reporting systems even if the numbers relating to the authorities in the sample are very modest. We can also see how diabetes is the disease most subject to monitoring reports on the progress of managing the disease. Considering this evidence, the lack of alignment observed between the characteristics of the tools and the content of the monitoring systems that should control their activities could represent an important area of focus.

2.3.3 The professionals involved

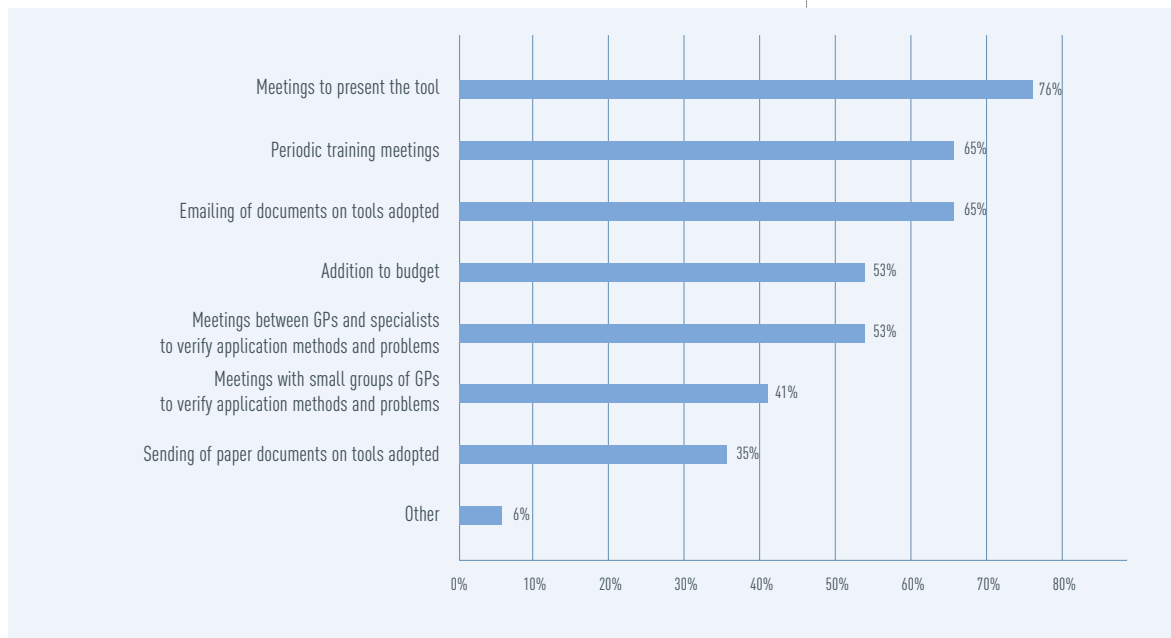
The fourth section of the questionnaire aims to investigate the type of stakeholders involved in the definition and implementation of clinical governance tools, also to understand the diversity and therefore the level of openness and participation achieved in terms of process. The design and development of clinical governance tools for the chronic diseases analysed mainly involved GPs and professional nurses (87% of authorities in the sample in both cases). Specialists (in hospitals or at community level) are also sufficiently engaged in the process in the person of individual professionals (80%), members of the LHA Department of Primary Care (60%) and patient associations (47%). Highly indicative evidence that demonstrates a good level of openness and the significant representation of the main stakeholders involved, underlining the pivotal role played by individual authorities in the development and organisation of this type of service and the centrality of GPs. On the contrary, and not that unexpectedly, regional officers, scientific companies and union representatives are involved far less in the process.

Similarly, the stakeholders most involved in the implementation phase (not reported in the graphic) are GPs (93%), specialists in the form of individual professionals (87%) and professional nurses (80%), with an inversion between the two professional figures compared with the findings for the design phase. Also in this case, representatives of the LHA Department of Primary Care (60%) and patient associations (53%) generally played a central role. These findings demonstrate a certain degree of continuity between the two phases of the process with the same professionals involved in both designing the tools and putting them into practice.

Many professionals are involved even if GPs and nurses do the lion's share.

Having observed the professional figures involved, it is particularly interesting to examine how the clinical governance tools were disseminated in order to identify any “organisational rituals” used for their communication. *Figure 19* shows how there wasn't one single dominant method.

Figure 19. Methods of communicating and disseminating information on the clinical governance tools of respondent LHAs to stakeholders



Source: *CERGAS SDA Bocconi survey 2018*

In fact, multiple methods were used in parallel to engage stakeholders in the process and communicate the goals and characteristics of the clinical governance tools. Meetings to present the individual tools were held in almost three out of four authorities (73% of the sample). These were variously accompanied by their addition to the budget (60%), by meetings between GPs and specialists to verify application methods and problems (60%), by sharing through the electronic mailing of technical documents on the tool adopted (60%) and by periodic training meetings (60% - mainly aimed at GPs).

2.3.4 Mechanisms for strengthening the effectiveness of clinical governance tools and LHA perceptions of their true effectiveness

Closely connected with the results of monitoring activities (the propensity of the sample authorities in this regard was observed previously – see *Figure 18*), the various instruments designed to strengthen the effectiveness of clinical governance tools can vary in form. More specifically, it is possible to note how various mechanisms are used for the management of diabetes. The most common of these are disease training for GPs (73% of all authorities in the sample), periodic meetings between GPs and authority representatives (63%) and the periodic updating of diagnosis and treatment plans on the basis of clinical evidence (63%). Looking at neoplasms, the trend observed is that of orienting behaviour towards the periodic updating of diagnosis and treatment plans (53%), screening programmes (47%) and the post-discharge care management of “critical” patients (40%). As regards the management of heart failure, the attention is mostly focused on periodic meetings between GPs and authority officials (40%) and the post-discharge care management of “critical” patients (40%). Consistent with the contained spread of the tools, the mechanisms for improving their efficiency also have decidedly low and insignificant values for obesity and hypertension. As just partially observed, the most common mechanisms generally involve the figure of the GP both in terms of training on individual diseases and periodic meetings with authority representatives. Finally, there is very little use of economic incentives, only used in the management of diabetes and by just 4 authorities in the sample.

Further to this last point, it is interesting to observe how previous studies (see Borgonovi et al., 2012) had marked down economic incentives as the main mechanisms for improving the effectiveness of clinical governance tools. This may suggest that acquired knowledge, the growing spread of these tools and more established procedures compared to the past may have contributed to reducing recourse to economic forms of incentive. In terms of the efficacy and quality of clinical governance tools, the representatives of respondent LHAs were finally asked to express a self-reported opinion on the areas of analysis reported in Table 2, with particular reference to their perceptions on (i) the effective coverage of needs in the local community, (ii) patient satisfaction and (iii) the greater effectiveness of clinical governance tools compared with care management approaches adopted prior to their introduction. Looking at perceptions expressed on the coverage of needs, the average values are nonetheless fairly modest also for the management of diabetes, heart failure and neoplasms. However, if we look at patient satisfaction, for the three chronic diseases

Different mechanisms are used to improve the effectiveness of clinical governance.

just mentioned the average values recorded are generally high (respectively 5.3 out of 7; 4.9; 5.4). It is very interesting to note the widespread conviction regarding the improvements brought about by the introduction of clinical governance tools for the general care management of chronic patients, with very high values observed for diabetes (5.5), heart failure (5.6) and neoplasms (6.0).

Table 2. Perception of LHA representatives on three assessment areas of the tools investigated

	Coverage of needs			Patient satisfaction			Greater efficiency than in the past		
	Min.	Max.	IC 95%	Min.	Max.	IC 95%	Min.	Max.	IC 95%
<i>Diabetes</i>	1	6	4.4 ± 0.9	4	7	5.3 ± 0.6	2	7	5.5 ± 1.0
<i>Hypertension</i>	1	4	3.0 ± 1.1	1	6	4.0 ± 1.8	1	7	4.7 ± 3.0
<i>Heart failure</i>	1	7	4.2 ± 0.9	3	6	4.9 ± 0.7	4	7	5.6 ± 0.8
<i>Obesity</i>	1	6	3.0 ± 2.4	1	6	3.5 ± 3.5	3	6	4.5 ± 2.1
<i>Neoplasms</i>	1	7	5.0 ± 1.0	4	6	5.4 ± 0.9	4	7	6.0 ± 0.7

Source: CERGAS SDA Bocconi survey 2018

Notes: Respondents were presented with a Likert scale of 1-7 where 1 is the lowest score that can be assigned to individual answers and 7 is the highest

Conclusions

The CeRGAS – SDA Bocconi study first of all confirmed the central role played by clinical governance tools in regional and LHA policies. Plans and specific protocols on diseases traditionally managed in the community, with a stronger healthcare profile (diabetes, hypertension, heart failure), are now widespread. Efforts to develop and introduce these tools are driven by the Regions and by Local Health Authorities, but there are many stakeholders involved in these processes. As representatives of the national health system, GPs are the most heavily involved figures and in a position to influence the type, characteristics, impact and affordability of the tools introduced. From this point of view, the survey confirms the central importance of the doctors' trade unions in the three negotiating phases. The unions are tasked with the function of actively involving GPs, an indispensable segment for guaranteeing the effectiveness of any mechanism that seeks to modify treatment processes in the world of Primary Care. However, the prevalence of the union component of the profession, more frequently involved and more capable of making an impact than other representative bodies (associations, scientific societies) risks excessively focusing negotiations on mainly contractual aspects. The monitoring tools used focus primarily on data on the number and compliance of patients recruited, while the level of monitoring outcomes and patient satisfaction is generally poor. It is important to recognise that the monitoring of clinical results is an activity that presents critical issues: the responsibility of individual professionals for the health status of the patient is often easily questionable. However, speaking of tools which should be associated with the concept of *pay for performance*, even if only partially, the introduction of the dimension of the effectiveness of the treatment process appears indispensable. The risk is that of fuelling the discrepancy between the content of the tools and the content of the monitoring systems to the point of nullifying the impact of the tools themselves.

Although the study focused on local health authority level, the role of the Region is confirmed as crucial. In particular, the effectiveness of the introduction of clinical governance tools at local level may be considerably facilitated if the Region decides to invest in local chronic care management. For example, we can point to precise indications (or genuine diagnosis and treatment plans) on the diseases requiring closest attention, or the development of broader policies for the reorganisation of local services, such as the 'Case della Salute' (Healthcare Homes) in Emilia-Romagna and Tuscany or care management models like the Tuscan Chronic Care Model.

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