Public Disclosure Authorized
Public Disclosure Authorized
Public Disclosure Authorized
Public Disclosure Authorized

10

Health and Long-Term Care Needs in a Context of Rapid Population Aging

Natalia Aranco Araújo [a] *and Gisela M. Garcia* [b]

[a] Independent Consultant
[b] IEG Human Development and Corporate Program, World Bank

INTRODUCTION

Population aging is a global phenomenon: people all over the world are living longer. Undoubtedly, this is good news. Extended longevity reflects the social and economic progress of societies; it is the result of innumerable advancements in medicine, nutrition, education, and technology, bringing increased opportunities for both individuals and countries alike.

One of the consequences of this aging process has to do with the challenges that an aging population poses for countries' health care and long-term care arrangements. A longer life increases the probability of disease, disability, and the loss of functional autonomy (WHO 2015). Thus, an increase in the share of older individuals put pressures on health care and long-term care systems, which need to adapt to a new pattern of demand, characterized by growth in the prevalence of chronic diseases and in the rates of functional dependency.

These pressures are even more critical in developing countries, given the unprecedented speed of their demographic transition and the resource constraints, limited-service coverage, barriers to access to services, and low-quality services that characterize many of these countries. Yet the predictability of the demographic and epidemiological changes provides governments with an unprecedented opportunity to intervene proactively to find effective and innovative solutions to address the needs of the elderly (UN 2015a, 2017a).

Ensuring that the elderly enjoy the best possible health is not only an aim in its own right but is also justified on economic grounds. Older people's contributions to societies, in the form of financial support to younger generations, help with childcare, participation in labor markets, and volunteerism, among others, can only materialize if gains in longevity are translated into years lived in good health (UN 2017a).[1]

This literature review identifies key challenges in health care and long-term care as populations age and provides relevant examples of how countries are responding. The study was developed as a background report for the Independent Evaluation Group evaluation "World Bank Support to Aging Countries." It focuses on developing countries that are aging fast, where anticipation and action are important, highlighting steps and policies that some countries have been adopting to address the challenges.

A comprehensive review of all health and long-term care policies and actions taken by countries is outside the scope of the study. Instead, we aim to highlight selected examples that illustrate diverse country responses to the different challenges posed by population aging.

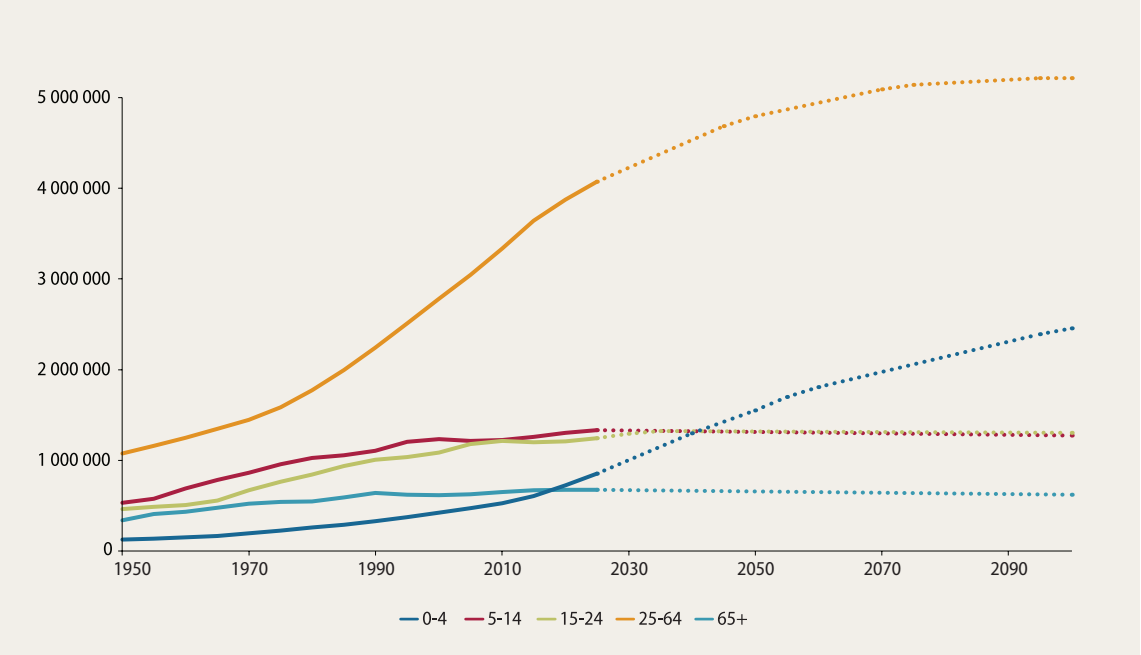
The chapter is organized as follows. The Main Trends in Longevity section provides a brief overview of the trends in increasing longevity observed in countries in different stages of the demographic transition over the last decades; it also shows where the gains in life expectancy have been translated into gains in healthy life expectancy. The Aging, Health, and the Challenges for Health Care Systems section focuses on the consequences of the demographic transition for the epidemiological profile of aging countries and the implications for health care systems; this section also provides some examples of how countries are responding to the challenges. Increasing Risk of Functional Dependency and Challenges for Long-Term Care Systems section discusses the implications of an aging population for long-term care services; this section also presents examples of countries' efforts to address rising long-term care needs in a context of shrinking families. The Final Remarks and Key Policy Consideration section concludes.

1 The need to promote the health and wellbeing of older people, and to make sure that they are considered in the development process, ensuring supportive environments that allow them to contribute fully to society, was recognized in the 2002 *Madrid International Plan of Action on Aging* (MIPAA), adopted at the Second World Assembly on Aging (UN 2002), and was further reinforced in the United Nations 2030 Sustainable Development Goals (Zaidi 2016).

MAIN TRENDS IN LONGEVITY

All over the world, people are living longer. As a result, the proportion of older people in the global population is increasing. Global average life expectancy at birth has risen from 47 years in 1950 to 72.6 years in 2019 (UN-WPP 2019). According to the United Nations medium variant projections,[2] average life expectancy at birth is expected to reach 77.1 years by 2050 and the share of people aged 65 years or more worldwide to rise from 9 percent in 2019 to 12 percent in 2030 and 16 percent in 2050. In 2018, for the first time in history, the number of individuals 65 years old or more surpassed that of children younger than five years old (UN 2019) (Figure 10.1).

FIGURE 10.1 Population by broad age group (thousands), estimates 1950-2020 and projections 2025-2100



Source: United Nations Population Highlights 2019, Figure 12.
Note: 2050 projections are based on the United Nations "medium variant" assumptions.

Life expectancy is also increasing at older ages. Thanks to progress made in disease management and control, global average life expectancy at age 60 increased almost three years between 1990-1995 and 2015-2020, rising from 18.1 to 20.7 (UNWPP 2019). Thus, the share of the "oldest old" is also increasing, and individuals aged 80 years or more went from representing 1 percent of the world's total population in 1990, to 1.9 percent in 2019, and an estimated 4.4 percent in 2050 (UNWPP 2019).

This trend is seen in all regions of the world, and it is expected to continue, albeit at different levels and rates, depending on the stage of the demographic transition in each country (see Box 10.1 for a definition of an aging country). Overall, the number of people 65 years old or more is projected to increase by almost 2 billion from 2020 to 2050; more than 60 percent of this increase will happen in middle-income countries (particularly lower-middle income). The population share of people older than 65 in middle-income countries is expected to double (from 8 percent to 16 percent). Countries in Latin America and the Caribbean, South Asia, and East Asia are expected to see the largest increases, more than doubling the percentage of people older than 65 in their populations from 2020 to 2050. In these three regions, that population share will rise from 9 percent to 19 percent, from 6.2 percent to 13.2 percent, and from 13.4 percent to 27.2

2 The medium variant projection is a probabilistic method that considers not only the historical fertility rates of each country but also the uncertainty regarding future trajectories, based on countries with similar past rates. For more details, see: "Definition of projection variants. World Population Prospects 2019," United Nations Department of Economic and Social Affairs, Population Dynamics. Available at: https://population.un.org/wpp/DefinitionOfProjectionVariants/#:~:text=Medium%2Dvariant%20projection%3A%20in%20projecting,of%20changes%20in%20each%20variable.

BOX 10.1 When is a country "aging"?

A country is usually defined as "aging" when the share of people ages 65+ is above 7 percent, "aged" when it is 14 percent or more, and "super-aged" when it exceeds 20 percent. Other definitions are also used, such as the median age, or the old-age dependency ratio, which is the ratio of older dependents (people older than 64) to the working-age population (people ages 15–64). Cut-offs are arbitrary, however, because they do not consider how healthy and functional the "elderly" under such definitions are. The Prospective Old Age Dependency Ratio (Sanderson and Scherbov, 2005, 2007, 2010) measures population aging based on remaining life expectancy instead of the number of years lived. This measure reflects improvements in life expectancy over time, instead of anchoring old age to a fixed threshold, and suggests a slower increase in dependency than the traditional old-age dependency ratio.

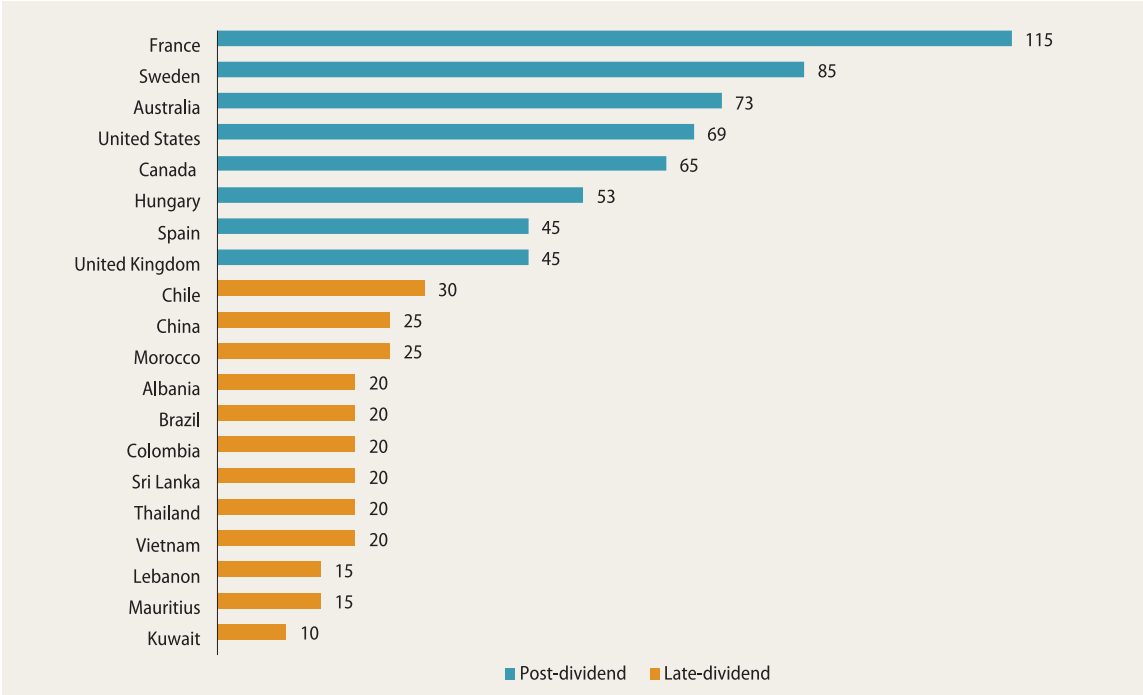
The 2015/16 Global Monitoring Report (GMR) (World Bank and IMF 2016) proposes a definition that combines trends in fertility and in the size of the working-age population. Based on these trends, countries are classified into four stages of the "demographic transition": pre-dividend countries (where fertility is greater than 4 births/woman); early-dividend countries (where fertility is lower than 4 births/woman, but the working-age population is still increasing); late-dividend countries (with a shrinking working-age population, but where fertility fell only recently); and post-dividend countries (with a shrinking working-age population and where fertility fell below replacement level, or 2.1 births/woman, three decades earlier). The last two stages characterize aging countries. This chapter adopts the GMR definition to select aging countries, although it may refer to other definitions when appropriate.

Source: World Bank (2021).

percent, respectively (UNWPP 2019).

In fact, the demographic change in developing countries is taking place at an unprecedented speed. While in some developed countries like France, Sweden, and the United States, it took 115, 85, and 69 years, respectively, for the share of people aged 65+ to rise from 7 to 14 percent, in some late-dividend countries, the same change is taking place at a considerably faster pace (in some cases, less than 20 years) (Figure 10.2).

FIGURE 10.2 Years required or expected for the population share aged 65+ to rise from 7 percent to 14 percent



Source: United Nations World Population Prospects 2019

Note: The graph shows the number of years needed for a country to transition from "young" to "old" (as measured by a rise in the share of its 65+ population from 7 percent to 14 percent of the total). For late-dividend countries, calculations are based on the "medium-variant" UN projections; it should be noted that UN estimations are published at five-year intervals.

The figures and trends shown so far lead to questions about the quality of the years of life expectancy gained in the past decades. In other words, are we living healthier or just longer? The extent to which gains in life expectancy translate into new opportunities for both individuals and countries depends largely on the quality of these additional years. The concept of healthy life expectancy, which reflects the number of years that a person can expect to live in good health, free of disease or disability, can shed some light on this question. From 1990 to 2019, globally, 83 percent of the years of life gained were years free of disability and disease, with the largest increases seen in countries that are less advanced in the demographic transition, as seen in Table 10.1 (GBD 2019).

At older ages, the gap between life expectancy and healthy life expectancy widens, indicating that most of the years lived in bad health or disability are concentrated later in life. On average, life expectancy at 65 years old is 17.6 years; 73 percent of those years are expected to be lived in good health. This proportion has remained stable since 1990, and does not show much variation across country groups, as depicted in Figure 10.3.

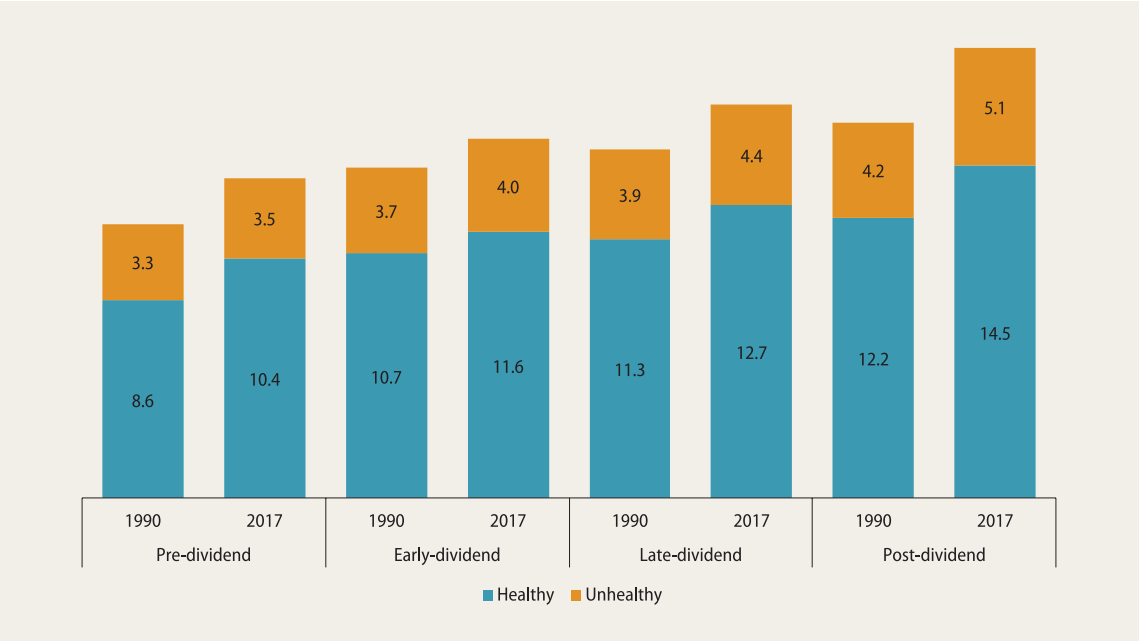
Women live longer than men in all regions of the world, but they also spend more years in poor health due to differences in risk factors and disease patterns. Women are more vulnerable than men to disabling non-fatal afflictions, while men are more affected by conditions that have high death rates (Luy and Minagawa 2014). Gender differences,

TABLE 10.1 Years gained in life expectancy and healthy life expectancy at birth, 1990-2017. Both sexes, by demographic group

	1990		2019		Variation 1990-2019		
	LE0	HALE0	LE0	HALE0	Years gained in LE0	Years gained in HALE0	(%) Years gained in good health
Pre-dividend	53.0	45.5	64.5	56.3	11.5	10.8	94.1%
Early-dividend	65.1	56.5	71.2	61.9	6.1	5.3	88.1%
Late-dividend	70.8	61.7	75.8	66.1	5.0	4.4	88.2%
Post-dividend	75.0	65.1	80.4	69.4	5.4	4.3	79.9%

Source: Authors' analysis based on GBD and collaborators Results Tool 2019.
Note: LE0: life expectancy at birth; HALE0: healthy life expectancy at birth. Values were computed as the unweighted average for the countries in each group.

FIGURE 10.3 Healthy and unhealthy life expectancy at age 65 years, 1990 and 2017



Source: Original analysis based on the Global Burden of Disease (GBD) Results Tool 2019.

both in life expectancy and healthy life expectancy, are narrower in younger countries. This discrepancy could be explained by a higher risk of mortality in both sexes, a high prevalence of infectious diseases at old ages (such as tuberculosis), a recent increase in the prevalence of behavioral risk factors (especially tobacco consumption), and low levels of health care coverage (GBD Collaborators 2017; Mathers et al. 2015). Over time, gender differences are expected to widen in developing countries as well (He, Goodkind, and Kowal 2016).

Some researchers argue that the definition of "old age" should not be based on a universal threshold, but instead should consider health status measures and, more generally, whether the aging of the population is achieved because of health improvements or not. When indicators of life expectancy and indicators of morbidity and mortality are combined, it is shown that, although older people's health is improving worldwide, as the fatality and severity of age-related diseases decreases, the onset of age-related diseases occurs at younger ages in relatively less-developed countries (Chang et al. 2019). This is reflected in the fact that, despite having lower levels of life expectancy, less-developed countries still experience a high burden of age-related diseases. For example, a 76-year-old individual in Japan is equivalent to a 46-year-old individual in Papua New Guinea, and in both cases, they show the same age-related burden of disease as the global average 65-year-old individual (Chang et al. 2019).

The discussion as to whether increasing longevity has been accompanied by increases in healthy life expectancy is closely linked to the debate on the compression or expansion of morbidity. In this sense, if, on the one hand, increments in life expectancy are led by a delay in the onset of illnesses, then, unhealthy years would be concentrated at the end of the life cycle, and we would be witnessing a compression of morbidity and an improvement in the health indicators of older people (Fries 1980). If, on the other hand, the rise in life expectancy is mainly led by a drop in death rates from fatal diseases, but the age-specific pattern of incidence remains stable, then we may witness an expansion of morbidity, as the average duration of disability increases (Gruenberg 1977; Olshansky 1991). A third alternative, the so-called dynamic equilibrium theory, posits that it is neither the postponement of the onset of disease nor the postponement of death from diseases, but the delay in the progression of disease, that characterizes the increases in life expectancy, so that people are living longer with mild/non-fatal conditions, but rates from fatal diseases remain stable (Manton 1982).

Evidence in this regard is not conclusive. Research in high-income countries seems to favor the hypothesis of a compression of morbidity when looking at severe disability rates, but results are contradictory when looking at mild disability and chronic disease prevalence among older people, with some studies pointing to an expansion of morbidity due to the improvements in secondary and tertiary prevention treatments that allow people with disabilities to live longer (Howse 2006; Chatterji et al. 2015; Rechel et al. 2009). Research for low- and middle-income countries is much scarcer and difficult to reconcile, as results vary depending on the methods and data used (Chatterji et al. 2015).

Last but not least, policy responses to population aging should consider the important distributional issues that come with population aging (World Bank 2021). These include gender gaps; intergenerational disparities; spatial (e.g., rural versus urban) differences; and socioeconomic inequalities. Gender inequalities that can be exacerbated by population aging are rooted not only in gender differences in life expectancy, but in differences in care responsibilities and their implications for women's own health and wellbeing, women's participation in the labor market and, ultimately, their income security in old age. As care demands increase in aging societies, care responsibilities usually fall to women. When unpaid, such demands further limit women's labor market participation or impose a double work burden, when women are responsible for both paid and domestic labor (World Bank 2015). Similarly, policies should consider that younger generations will face greater risks of inequality in old age than current retirees (OECD 2017). Spatial disparities are already reflected in large inequalities in access to health and social care between old people living in urban and rural areas. These gaps are expected to widen, as younger generations leave rural areas looking for better opportunities. Important socioeconomic inequalities are found among adults aged 50+ years in low- and middle-income countries when it comes to medical frailty. This has been measured using the Study on global AGEing and adult health (SAGE) data from China, Ghana, India, Mexico, Russia, and South Africa (Hoogendijk 2018). Such inequalities may widen further with changing gender norms and cohabitation patterns and increasing informality in these countries.

AGING, HEALTH, AND THE CHALLENGES FOR HEALTH CARE SYSTEMS

Highlights

- *Population aging inevitably comes with rising prevalence of chronic diseases, as well as geriatric neurological conditions, such as dementia and Alzheimer's disease. Depression and musculoskeletal disorders in older people are also major causes of disability.*

- *Several characteristics of the epidemiological transition in developing countries complicate the picture, including the double burden of communicable and non-communicable diseases; the increased risk of multimorbidity; under-diagnosis and lack of affordable, timely, and effective treatments; and the increased adoption of harmful habits such as smoking, alcohol use, lack of physical activity, and unhealthy diets.*

- *Thus, population aging comes with at least three main challenges for health care systems in developing countries: (i) guaranteeing coverage, access, and affordability of services in a context of increasing demand; (ii) shifting the service model from a curative-based approach towards a person-centered, holistic, and integrated approach that encourages a continuum of care through the life course, with greater emphasis on primary health care, including health promotion and prevention activities; and (iii) keeping costs under control without losing attention to quality.*

- *Health care systems need to adapt and prepare. How people age is, to a large extent, determined by their health earlier in life, and the choices they made when young. Countries should therefore promote healthy lifestyles throughout the entire life course and work towards better management of chronic diseases. Universal health coverage in countries with aging populations should consider that older adults not only have different health care needs than the younger population but are often also less able to afford care.*

Changing patterns of disease: the increase in chronic conditions and the importance of multimorbidity

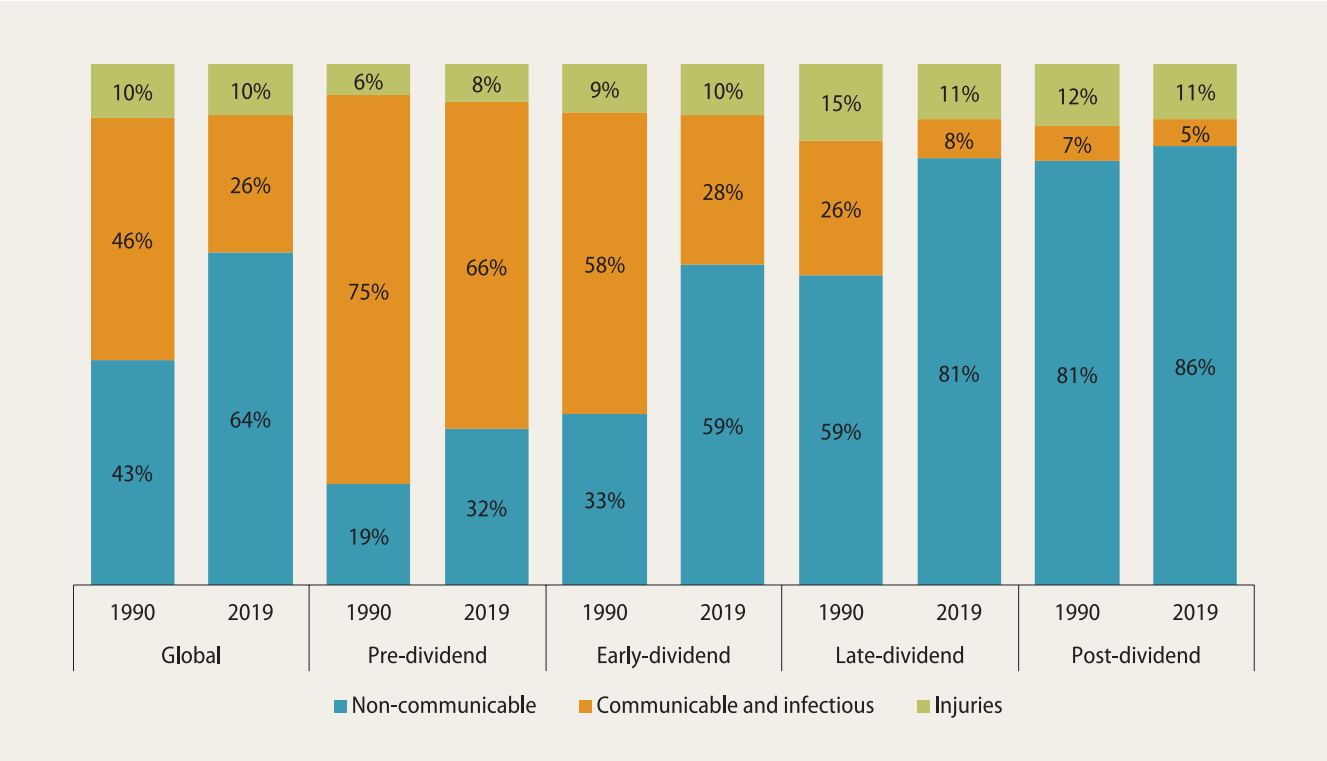
As people live longer, the main causes of mortality and morbidity shift from communicable or infectious diseases to chronic diseases,[3] in a process that is known as the *epidemiological transition* (Omran 1971). It is estimated that 15 percent of the increase in the global burden of mortality and disability from 1990 to 2016 could be explained by population aging (Gakidou et al. 2017). In 2019, chronic diseases explained 64 percent of the burden of disease, measured by Disability Adjusted Life Years (DALYs),[4] and are the first cause of disability globally (GBD 2019). As seen in Figure 10.4, while the burden of chronic diseases in 1990 was already high in post-dividend countries, in the last two decades the increase has been pronounced in late- and early-dividend countries. In late-dividend countries, chronic diseases already represent more than 80 percent of the total burden of disease, almost as much as in post-dividend countries.

Following current demographic projections, these trends are expected to accelerate during the coming decades. Among people aged 70 years or more, chronic diseases already explain more than 90 percent of the burden of disease in post- and late-dividend countries. The World Health Organization (WHO) estimates that, by 2060, 83 percent of global deaths will be caused by chronic diseases, an increase of more than 10 percentage points compared to 71 percent in 2016. This means an increase of almost 44 million people dying from chronic diseases in 44 years. More than 75 percent of that increase will take place in middle-income countries (WHO Global Health Estimates 2018).

3 In this chapter, the term chronic disease refers to conditions that are non-communicable, long in duration, and generally progress slowly.

4 The Disability Adjusted Life Years metric is used to measure the current health status of a population with respect to an ideal health situation, where everyone lives free of illness and disability to an old age. It is calculated as the sum of the Years of Life Lost due to Premature Mortality and the Years of Life Lost Due to Disability. A more detailed explanation can be found at: https://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/

FIGURE 10.4 **Burden of disease, by disease type, 1990-2017 (% of total DALYs)**



Source: Original analysis based on GBD Results Tool 2019.
Note: Country classification is based on the World Bank typology presented in Box 10.1.

The prevalence of behavioral risk factors for chronic conditions increases with age. Evidence shows that this is true for obesity, hypertension, insufficient vegetable and fruit intake, and insufficient physical activity (Wu et al. 2015; Rampal et al. 2007). The only risk factors that show a negative gradient with age are alcohol and tobacco consumption (Wu et al. 2015). In part, this might be a consequence of higher mortality among smokers (Storr et al. 2010). However, tobacco use affects disproportionately more older adults in developing countries, with prevalence higher among middle-aged persons than among the youngest (Storr et al. 2010).

The link between population aging and the rising prevalence of chronic diseases becomes more evident in those countries that are aging rapidly, as evidenced by the observed trends in conditions that are known to be strongly age-dependent, such as cardiovascular diseases, diabetes, dementia, or chronic obstructive pulmonary disease (Prince et al. 2015). Mortality and morbidity due to cardiovascular diseases has increased in China, India, and Russia in the latest years, due to an increase in the prevalence of elevated cholesterol, diabetes, and obesity (Prince et al. 2015). In Middle Eastern and North African countries, chronic diseases accounted for 69 percent of the total burden of disease and 78 percent of total deaths in 2019, due to the combination of rapid population aging and the evolution of chronic disease risk factors, such as rising obesity and the persistence of elevated rates of hypertension, which are among the highest in the world (GBD 2019; Sibai et al. 2017). The prevalence of hypertension among older adults increased 20 percent between 1995 and 2004 in Tunisia and almost tripled in Lebanon during the period 2000-2010 (Sibai et al. 2017). Similar trends are seen in other aging countries; in Malaysia, for example, the prevalence of hypertension among individuals aged 30 or more increased from 32.9 percent in 1996 to 40.5 percent in 2004 (Ramli and Taher 2008).

Rising prevalence rates of diabetes and chronic obstructive pulmonary disease are also associated with population aging. In the case of diabetes, the number of people living with the condition is projected to increase 51 percent from 2019 to 2045. Although in absolute terms most people with diabetes are concentrated in middle-income countries, the

largest relative increase is expected to take place in low-income countries, where the number of people living with the disease is expected to increase by 150 percent (International Diabetes Federation 2019).

In the case of chronic obstructive pulmonary disease, it is projected that the burden of disease will increase by 89 percent from 2004 to 2030 (Prince et al. 2015). The problem is particularly serious in South Asian countries, where chronic respiratory diseases rank second as cause of morbidity and premature mortality among older people, representing 17 percent of total DALYs. Population aging, deterioration of environmental conditions, and increased pollution due to rapid urbanization in some countries, as well as high rates of smoking, are behind these large figures (Bishwajit et al. 2017).

As the share of the older population rises, the importance of geriatric neurological conditions, such as dementia and Alzheimer's disease, also increases. While in 2017, neurological conditions explained only 4 percent of DALYs for the world population of all ages, the figure reaches 6 percent among those older than 70 years, and 9 percent among those older than 80 (GBD 2019). With the projected increases in the share of older adults in the population, the burden of dementia is expected to rise. In 2015, 58 percent of those with dementia lived in low- and middle-income countries, and it is expected that by 2050 this figure will reach almost 70 percent (ADI 2015).

Due to their debilitating effects and their contribution to disability, musculoskeletal disorders deserve special consideration. Even though their mortality rates are low, musculoskeletal diseases are one of the main causes of chronic pain and functional impairment, hence having important detrimental effects on quality of life among the elderly (Woolf et al. 2012). In fact, although they represent only 6 percent of DALYs, these diseases account for 17 percent of Years Lost due to Disability (YLDs) (GBD 2019).

Depression in older adults is a major cause of disability, although highly underdiagnosed and, as a result, left untreated. In fact, evidence shows that depression symptoms are more difficult to recognize in older adults, as they usually manifest in concurrence with other physical and neurological factors that are thought to be "part of the normal aging process", such as loss of mobility, chronic pain, or dementia (Rodda, Walker, and Carter 2011). In particular, the link between dementia and depression is well recognized, although the direction of causality and the mechanisms behind it are not yet fully understood (Byers and Yaffe 2011).

Older people are more likely to experience multiple health conditions at once (Afshar et al. 2015; He, Goodkind, and Kowal 2016). The epidemiological transition not only leads to an increasing burden of chronic diseases as causes of death and disability, but also to an increased prevalence of multimorbidity. In Colombia, a 2018 study found multimorbidity present in approximately half of patients of all ages with chronic diseases. This means that between 4. 5 and 6 million of the approximately 11 million patients per year who accessed health services in Colombia for at least one chronic disease were patients with multimorbidity. Yet programs for an integrated approach to multimorbidity are incipient or exist only as pilots (Alfonso-Sierra et al. 2018).

Comparable patterns appear to hold, irrespective of the region and the stage of demographic transition of the country. In Uruguay, 43 percent of adults 60 years old or more suffer from more than one chronic condition (Aranco and Sorio 2019); in Mexico the figure is 33 percent (Lopez-Ortega and Aranco 2019). Data for Asia show rates of multi-morbidity of more than 30 percent in India (for those aged 70 years or more), 40 percent in Viet Nam, and 58 percent in Bangladesh (for those aged 60 or more) (Khanam et al. 2011; Ha et al. 2015; Pati et al. 2014). Data for China show that the so-called metabolic risk syndrome, which is a combination of cardiovascular risk factors including abdominal obesity, high blood pressure, increased glucose level, and dyslipidemia rises from 14 percent among middle-aged adults to 46 percent among older people (He et al. 2009). Evidence for Kuwait also shows an increase in multimorbidity with age: the proportion of individuals who suffer from diabetes, hypertension, and heart disease simultaneously rises from 3.6 percent among those aged 50–59 to 9.4 percent among those 60–69, then surges to 20.9 percent among persons older than 70 (Boutayeb, Boutayeb, and Boutayeb 2013).

Common clinical practice and guidelines that focus on managing a single disease can negatively impact the quality of life and health of people suffering from multiple chronic conditions. The interactions, not only between the biological impacts of different conditions, but also among their recommended treatments and/or medications, can represent important health risks for individuals suffering them (WHO 2015). Different medications prescribed by different providers could trigger adverse drug reactions that are harmful for patients (van der Heide et al. 2015). The fragmented approach of multiple specialists treating single diseases separately not only increases the risk of drug inter-

actions but also reduces adherence to crucial treatments and impairs the percep-tion of safety.

The epidemiological transition in developing countries

Some characteristics of the epidemiological transition in developing countries could worsen the aging challenges ahead. First, many of today's older adults in developing countries were exposed to infectious diseases in their early childhood and survived thanks to medical advances that were not necessarily related to an improvement in their socio-economic conditions, a circumstance that may have unknown effects on older people's health during the coming years (Palloni, Pinto-Aguirre, and Pelaez 2002). Indeed, poor health conditions in early life have been shown to be linked to an increased risk of diabetes, obesity, and heart disease in adulthood (He, Goodkind, and Kowal 2016). This is especially true for older adults who were born in the 1930s and 1940s in countries that experienced rapid mortality reductions at that time (such as Brazil, Chile, Costa Rica, and Mexico, among others) (McEniry 2014; McEniry and McDermott 2015).

Second, although chronic diseases are the leading causes of mortality and disability among older people, the importance of infectious diseases should not be underestimated. This double burden of disease increases the risk of multimorbidity, with consequences for the morbidity and mortality patterns of older adults that are not yet fully understood (WHO 2015). Older people suffering from chronic diseases are more exposed to infectious diseases; type 2 diabetes, for example, is a known risk factor for the onset of tuberculosis, leading to serious health consequences (WHO 2011a). The recent pandemic generated by the spread of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has highlighted the vulnerability of older adults, particularly those with previous chronic conditions, in the face of the surge of new infectious diseases (or the upsurge of older ones).

Third, under-diagnosis of key medical conditions and the lack of affordable, timely, and effective treatments are still common problems in many developing countries (He, Goodkind, and Kowal 2016). Around half of the people with type 2 diabetes are unaware of their condition (International Diabetes Federation 2019). Rates of underdiagnosis show a clear income gradient across countries, ranging from 38.3 percent in high-income countries to 52.6 percent in middle-income countries and reaching 66.8 percent in low-income countries (International Diabetes Federation 2019). Data for Argentina, Brazil, Chile, Colombia, and Mexico show that 40 percent of hypertensive individuals are not diagnosed (OPS 2017; Arredondo and Recaman 2018). Similar figures have been found for Egypt and Viet Nam (37.5 percent and 48.4 percent, respectively) (Ibrahim and Damasceno 2012). International evidence shows that, even among those who are diagnosed with key chronic diseases, a very small fraction of people follows an appropriate treatment and have the condition under control (Ibrahim and Damasceno 2012). Data from China show that more than half of diabetes cases are undiagnosed and that, among those who are diagnosed, less than 40 percent have the recommended glycemic controls (Chen et al. 2018). In the case of high blood pressure, figures are even more worrisome: only 8 percent of diagnosed individuals in Egypt and 10.7 percent in Viet Nam have the disease under control with adequate theraapies (Ibrahim and Damasceno 2012).

Fourth, globalization and modernization, which have prompted widespread adoption of harmful habits such as smoking, alcohol use, lack of physical activity, and unhealthy diets, have unfolded faster in developing than in developed countries. This has fueled the increase in chronic diseases and epidemiological change (Miranda et al. 2009). Obesity, for instance, is an increasing global phenomenon, with 39 percent of adults aged 18 and over being overweight or obese in 2016, an almost three-fold increase from 1975. The World Bank estimates that more than three-quarters of obese or overweight individuals live in middle-income countries (Shekar and Popkin 2020). The percentage of deaths from all causes attributable to a high body mass index rose from 4.7 percent in 1990 to 8.9 percent in 2019 (GBD 2019). In upper-middle-income countries the reported increase was from 5.8 percent to 10.4 percent, and from 2.4 percent to 7.9 percent in lower-middle-income countries. The problem is particularly acute in Asia Pacific and in countries in the Middle East and North African region (Prentice 2006), where public policies have stimulated the consumption of highly energy-dense foods. This has led to a change in dietary habits that, in conjunction with increasingly sedentary lifestyles, has contributed to worrying levels of overweight and obesity in populations (Kilpi et al. 2013). Papua New Guinea, for instance, has an overweight/obesity prevalence of 60 percent (Shekar and Popkin 2020).

Prevalence rates of obesity among adults older than 18 years reach almost 30 percent in Egypt and Libya, 24 percent in Tunisia, and more than 20 percent in Algeria and Morocco (WHO 2018a).

Tobacco consumption, the single most important avoidable risk for chronic diseases, had been increasing in developing countries, particularly among men, until 2018, in stark contrast to the observed trends in developed countries. However, the most recent report on tobacco use estimates that tobacco consumption rates reached their peak in 2018, and projects a decreasing trend up to 2025 through all country income groups (WHO 2019). Only five countries globally are currently experiencing increasing trends in tobacco use: Congo, Lesotho, and Niger, in Africa, and Egypt and Oman in the Middle Eastern region (WHO 2019).

Yet disaggregating the data by sex shows quite a different picture, as in some places women are increasingly taking up smoking. For example, in Croatia, the share of women who smoke has increased by 9 percentage points in the past 20 years, from 27 percent in year 2000 to 36 percent in 2020; an increase of almost 5 percentage points was seen in the Slovak Republic and in Türkiye.[5] In Latin America, tobacco use prevalence was very similar among male and female adolescents aged between 13 and 15 years old (15 percent and 12 percent for young men and women respectively), with Chile showing the highest tobacco use among young women (26 percent), followed by Argentina (25 percent) and Mexico (18 percent) (OECD and WHO 2020).

Challenges for health care systems and countries' responses

The increasing number of people with chronic health conditions exerts pressures on health systems, which will need to adapt to satisfy not only a growing demand but also a different type of demand. In this section, we discuss what these challenges mean for health systems in rapidly aging countries and present some of the steps taken by developing countries to overcome them.

Population aging brings about at least three main challenges for health care systems in developing countries: (i) first, guaranteeing coverage, access, and affordability of services in a context of increasing demand; (ii) second, shifting their care model from a curative-based approach, designed to deal mainly with acute and infectious diseases, towards a holistic and integrated approach that encourages a continuum of care throughout the life course, with a greater emphasis on primary health care and health promotion and prevention activities; and (iii) last, but not least, keeping costs under control without losing attention to quality.

Effective health care coverage for older individuals in low- and middle-income countries is far from universal, signaling the existence of critical unmet needs and important gaps in access to and availability of health care services (Goeppel et al. 2014). Despite significant progress made during recent years, important inequalities still exist both between and within nations when it comes to timely and effective access to care (Bloom et al. 2019) (Box 10.2). Older people belonging to the lowest socioeconomic strata in Latin America and the Caribbean, for instance, are more likely to have difficulties accessing the health care services they need (Huenchan 2010).

Inequalities in coverage and access, and poor performance in terms of effectiveness and quality of care, are critically salient when looking at chronic disease management. Effective coverage rates among older people with chronic conditions range from 21 percent in Mexico to 48 percent in South Africa (Atun et al. 2015; Glassman et al. 2010). Similar results have been found elsewhere (see for example, Tham et al. 2 018 for Asia-Pacific; Atun et al. 2015; and Glassman et al. 2010 for Latin America; and Kujawska 2017 and Rechel et al. 2012 for Europe and Central Asia). Barriers to access in the form of unaffordability of services or lack of transportation are often cited by older adults in low- and middle-in-come countries as the main reasons for not being able to access health care when needed (Table 10.2).

The lack of formal coverage leads to the neglect of health or to high out-of-pocket expenditures when care is needed, imposing a heavy financial burden on individuals and households. In low- and lower-middle-income countries in Asia-Pacific, out-of-pocket expenditures in 2015 accounted for almost 50 per-cent of total health expenditures, increasing the risk of household impoverishment in the face of chronic and long-term illness (WHO 2018b; OECD and WHO 2018a). For example, in Viet Nam, more than one-quarter of older people are not insured, and more than half refrain from seeking medical treatment due to high costs (Hoang and Duong 2018).

5 See World Bank Open Data website, retrieved from: https://data.worldbank.org/

BOX 10.2 Health and socioeconomic status

The patterns of diseases and risk factors vary, not only across countries at different stages of development, but also across individuals in different socioeconomic strata within countries. Individuals from lower socioeconomic levels are usually exposed to a larger number of risk factors and have limited access to health care and to the resources that could allow them to follow a healthier lifestyle (Blas and Kurup 2010). These disadvantages develop in early childhood (sometimes, even in utero) and accumulate throughout the life course, widening the health gap between individuals from different socioeconomic strata (Blas and Kurup 2010; Wilkinson and Marmot 2003). This positive association between socioeconomic status and individual health has been widely documented in the literature and has been proved to hold for different countries and periods, regardless of the measures of health and socioeconomic status used (Goldman 2001).*

However, given differences in the access to and quality of health care, as well as in social, cultural, and economic environments, the degree (and in some cases even the sign) of the association may differ between developed and developing countries (Blas and Kurup 2010). In developed countries, individuals in higher socioeconomic groups were the first to adopt harmful behaviors such as smoking or unhealthy eating; soon lower socioeconomic groups followed their behavior, while prevalence among the higher socioeconomic groups started to drop as educated individuals learned the health consequences of these habits. The evidence for low- and middle-income countries is less clear, although recent evidence suggests that tobacco and alcohol consumption decrease with socioeconomic status while the reverse is true for physical inactivity. Results for dietary pattern are more mixed: individuals in higher socioeconomic groups tend to consume more fruits, vegetables, fish, and fiber but also more fats, salts, and processed foods (Allen et al. 2017). Yet the evidence suggests that, as country income increases, the burden of overweight/obesity shifts from the wealthy to the poor (Jones-Smith et al. 2011, 2012b; Shekar and Popkin 2020).

Differences in risky behaviors lead to differences in disease prevalence. Various studies in developing countries have shown a higher prevalence of cardiovascular diseases among lower socioeconomic groups (Vathesatogkit, Batty and Woodward 2014; Lustigova et al. 2018), and a study for Latin America shows that individuals with no education are twice as likely to suffer from Alzheimer's disease as individuals with some education (Nitrini et al. 2009). Similar results have been shown for Brazil, China, and India (Scazufca et al. 2008; Libre Rodriguez et al. 2008). The evidence for type 2 diabetes is not as clear: some studies find that, in developing countries, higher prevalence is associated with higher socioeconomic status, in stark contrast to the evidence in developed regions (Xu et al. 2017); however, other studies point in the direction of a negative socioeconomic gradient (see for example Sandoya 2016 for Uruguay and Suwannaphant et al. 2017 for Thailand). Multimorbidity prevalence is also shown to be negatively associated with education in the multi-country study from Afshar et al. (2015), even when adjusted for age and gender.

Note: Grossman (2015) provides an extensive review of recent studies carried out in this field.

Table 10.2 Reasons given by adults aged 60 years or older for not accessing health care services, by country income category

	High income	Upper-middle income	Lower-middle income	Lower income
Could not afford the visit	15.7	30.9	60.9	60.2
No transport	12.1	19.3	20.7	29.1
Could not afford transport	8.7	12.9	28.1	33.0
Health care provider's equipment inadequate	11.2	10.5	14.1	16.7
Health care provider's skills inadequate	19.0	8.3	7.8	13.1
Previously treated badly	23.8	8.7	7.9	8.3
Did not know where to go	12.2	9.7	9.8	7.8
Was not sick enough	21.5	31.8	27.3	25.8
Tried but was denied health care	20.0	16.2	8.3	8.5
Other	43.8	22.5	23.5	13.9

Source: WHO 2015, based on WHO World Health Surveys 2002-2004 (http://www.who.int/healthinfo/survey/en/)

Chronic diseases, common in old age, can result in catastrophic health expenditures. Older people with diagnosed chronic diseases face catastrophic health expenditure even in some of the wealthiest countries in Europe (Arsenijevic et al 2016). In developing countries, data from WHO's SAGE surveys shows that households with at least one member aged 50 years or more have a higher probability than those with only younger members of facing catastrophic health care expenditures, having to borrow money from relatives to afford health care services, or being impoverished by health care costs (He, Goodkind, and Kowal 2016). Similar results were found in Latin American and Caribbean countries (Knaul et al. 2011), in Asia (Somkotra and Lagrada 2009), and in a more recent global stocktake (Hoang-Vu Eozenou et al. 2021).

The path towards universal health care coverage should take distinctive characteristics in countries with aging populations, as older adults not only have different health care needs than the younger population but are often less able to afford care (Sadana, Soucat, and Beard 2018). The Universal Health Coverage Political Declaration from 2019 includes clear commitments to promoting healthy ageing. Specifically, it commits governments to *"scale up efforts to promote healthy and active ageing, maintain and improve quality of life of older persons and to respond to the needs of the rapidly ageing population, especially the need for promotive, preventive, curative, rehabilitative and palliative care as well as specialized care and the sustainable provision of long-term care."*[6] This implies adapting health care systems to a different and increasing demand through: (i) improving timely access to and affordability of health care services and medicines for conditions that are common in old age; (ii) delivering person-centered services that address older people's health needs, with an emphasis on primary and community care; (iii) improving the management of chronic conditions (including cognitive conditions, such as dementia) and multimorbidity; and (iv) the development of a trained workforce that responds to the needs of aging populations. Additionally, it will require efforts to ensure the financial sustainability of services, as well as adequate financial protection for older adults, especially the poorest and most vulnerable, without compromising the quality of services.

Within this context, countries have taken steps to improve the coverage, accessibility, and affordability of health care services for the older population. Some examples are presented below.

Improving coverage and effective access

a. Extended coverage or subsidized health care contributions

In most countries, health care coverage has been traditionally linked to formal employment, leaving those outside the formal workforce and who cannot afford private insurance (including informal workers but also pensioners and retirees) unprotected. During recent decades, countries have taken actions to correct this situation, improving population coverage, either as part of overall system reforms, or focusing on specific vulnerable groups.

Health care reforms in Latin American and Caribbean countries in the early 2000s were motivated by the need to address the institutional and financial fragmentation of systems that led to important gaps in coverage (Atun et al. 2015). For example, in Uruguay, the health care reform of 2007 extended insurance coverage to previously uncovered population groups, including retirees. By 2018, 83.5 percent of pensioners and retirees were covered by the system.[7] The reform also increased coverage to other population groups, including the children and spouses of formal workers, who were previously excluded from insurance. In Bolivia, special provisions to improve older people's coverage were adopted: in 2006, the country created the Health Insurance for the Older Adult (SSPAM), which covers adults 60 years old or more who have no other health insurance. Similarly, in Costa Rica, health care provision is free for older individuals (among other vulnerable groups), regardless of formal coverage (PHCPI Costa Rica n.d.; Montenegro Torres 2013).

In Asia, China has also taken steps to increase

6 United Nations General Assembly (UNGA), Political Declaration of the High-level Meeting on Universal Health Coverage "Universal health coverage: moving together to build a healthier world", September 2019. Retrieved from: https://www.un.org/pga/73/wp-content/uploads/sites/53/2019/07/FINAL-draft-UHC-Political-Declaration.pdf

7 Original calculations based on data from the Ministry of Public Health (2019) (retrieved from: https://www.gub.uy/ministerio-salud-publica/datos-y-estadisticas/datos/evolucion-afiliados-fonasa-2007-mayo-2019), and statistics from the Uruguayan Social Security Bank (retrieved from: https://www.bps.gub.uy/2692/principales-indicadores.html).

coverage for older people, with the establishment of two new health insurance schemes for urban and rural populations (Smith and Majmundar 2012). Subsidized or exempted contributions for the el-derly have been another instrument to facilitate their access to health care in the region. In Thailand, for example, before the introduction of free health care coverage for the entire population in 2006, vulnerable groups, including older individuals, were exempted from copayments for health services (Hughes and Leethongdee 2007). Viet Nam, a country that has made important efforts to achieve universal health care coverage through the creation of a social health insurance program, has compulsory affiliation but fully subsidized premiums for vulnerable groups, including older populations (Somanathan et al. 2014).

Examples in Eastern Europe can be found in Bulgaria, where older adults - among other vulne-rable groups - are covered for free by the national mandatory health insurance, or in Serbia, where individuals aged 65 years or above have free access to the public health care services (Pitheckoff 2017; Stokic and Bajec 2018).

In spite of these efforts, the lack of public re-sources can be a barrier for implementation of well-intended policies, as in the case of Lebanon, which had to block enrolment in its optional health care plan for older people (launched in the year 2000), due to underfunding (UN 2017b). In most Eastern European countries, health care systems are characterized by constrained resources, inadequate infrastructure, large out-of-pocket expenditures, and insufficient coordination between local and na-tional authorities, resulting in fragmented systems (Kujawska 2017; Rechel et al. 2012).

b. Improving affordability and accessibility

Regardless of coverage, evidence shows that a large share of older individuals faces affordability and access restrictions when it comes to the actual use of services. For example, in Peru, data from 2012 show that almost 14 percent of people over 80 years old say they do not have access to the health care they need due to cost or transport barriers (*Encuesta de Salud y Bienestar del Adulto Mayor de Perú 2012*); in El Salvador, 44 percent of individuals aged 80 or more face barriers related to the quality and timing of services, such as not getting an appointment in due time, lack of personnel, or being poorly treated at the institution (*Encuesta de Hogares de Propositos Múltiples de El Salvador 2018*). Increasing coverage is not a guarantee of effective access to services, particularly when health care systems are fragmented (Guanais et al. 2018).

Aiming at improving older people's access to health care services and medicines, some countries have established free or subsidized consultation and medicines for older adults, giving them priority in access and treatments, and even providing free transportation to health care facilities. Free or subsidized consultation and medicines for older people are provided both in countries that are advanced in the demographic transition, such as in Azerbaijan, Bermuda, the Czech Republic, Hungary, Jamaica, Kazakhstan, Oman, Tunisia, and Uruguay, but also in countries where the transition is less advanced, for example Iraq, Sudan, or Uzbekistan (UN ECE 2017; UN ECWA 2017; Bonilla-Chacín et al. 2018). In Uruguay, the 2007 reform sought to improve older people's access to services and medications through the subsidization of service fees and medications and the right to one or two free checkups per year (depending on the age of the older person) (UN and HelpAge International 2012). In Bermuda, hospitalization services are publicly covered for individuals older than 75, and in Jamaica user fees were eliminated at public health facilities (UN ECLAC 2017). Programs that provide free medications, checkups, and other benefits for senior citizens living with chronic disease are in place in many Latin American and Caribbean countries, such as Argentina, The Bahamas, Barbados, Belize, Bermuda, Brazil, Costa Rica, Cuba, Mexico, Paraguay, Saint Maarten, and Trinidad and Tobago (WHO 2015; UN ECLAC 2017; UN and HelpAge International 2012).

Since 2005, Chile has in place the Universal Access to Explicit Guaranteed Entitlements plan (AUGE as per its name in Spanish), that guarantees timely and quality access to treatment for 85 conditions and prevents beneficiaries from incurring catastrophic expenses (Aguilera et al. 2015; Superintendencia de Salud de Chile 2019). Many of these conditions relate directly or indirectly to older adults. The Seguro Popular in Mexico also has a special fund that covers catastrophic expenditures for complex illness (Atun et al. 2015). Similarly, the Catastrophic Medical Insurance scheme in China, implemented at the national level in 2015, provides extra reimbursement for individuals who incur excessive out-of-pocket medical expenses, providing extra financial protection to those who are at risk of catastrophic expenditure, including older people (Fang et al. 2019). The National Resources Fund

(*Fondo Nacional de Recursos*) in Uruguay has a similar aim, although its application is more restricted, covering health care expenses for high-complexity procedures and very expensive medicines.[8]

In many Asian countries, such as aging Viet Nam, but also relatively younger countries, such as Bhutan or Nepal, senior citizens are given priority in treatment, which allows them to shorten waiting times, and they have access to subsidized care (Williamson 2015). In 2012, Kuwait issued a "priority pass" card that gives preference to older citizens and reduces waiting periods for them at primary health centers (WHO 2015; UN ESCWA 2017). Bangladesh, Cambodia, China, India, Malaysia, Maldives, Mongolia, Nepal, Solomon Islands, and Tuvalu are among the countries that have provisions to ensure that older people in remote areas can access health care through, for example, providing free transportation to facilities (Williamson 2015).

However, and despite the efforts described above, older people in many settings still face barriers in seeking to access timely and quality health care. For instance, Armenia has offered free primary health care since 2006, and vulnerable groups in the country - including the elderly - are entitled to a package of basic health care benefits free of charge. However, the lack of resources means that sometimes these benefits cannot be provided; this has led to the development of a "shadow market" of paid medical services (WHO 2009; Tonoyan and Muradyan 2012). In other settings, such as Latvia, the administrative procedures required to be exempted from medical co-payments and to obtain other benefits could act as a barrier for older adults (European Commission 2019). Evidence for the Asia Pacific region also shows that access and affordability restrictions persist in many countries there (Lagomarsino et al. 2012; Van Minh et al. 2014; Zaidi et al. 2017).

Adapting health care systems to an older population and a new epidemiological profile without losing focus on quality

Improvement in health care delivery requires a deliberate focus on the quality of health services, which involves providing effective, safe, person-centered care that is timely, equitable, integrated, and efficient (Kieni et al 2018). In most developing countries, health care systems were designed to deal with acute and infectious diseases and hence focus on "finding the problem and fixing it" (WHO 2015, p.93). With the upsurge of chronic diseases, this approach is rapidly becoming obsolete. For people with chronic diseases, the ultimate goal of care should be to improve the quality of life and to enhance functional status through secondary prevention (Grumbach 2003).

Many health care systems around the world have failed to incorporate into their model of care the typical problems that matter to older people, such as frailty, chronic pain, and the loss of functional and sensory capacity. This leads to the onset of many health problems that could be prevented or reversed if they were identified in a timely manner (WHO 2018a). This is closely linked to the quality of services, which is defined by the WHO as *"the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with evidence-based professional knowledge."*[9] Although this problem is common worldwide, it is more pronounced in middle- and lower-income countries (WHO 2015). For example, it is estimated that the low quality of services (and not the lack of access) is responsible for almost 60 percent of amenable deaths in low- and middle-income countries (Kruk et al. 2018)

Few and poorly trained human resources, inadequate infrastructure, outdated technology and treatments, and insufficient material resources are common characteristics of health care systems in most developing settings, and these factors impact older people's access to effective, quality, and timely healthcare. This is reflected, for example, in long waiting lines, lack of affordable transportation options to health care centers, and physical barriers to access, among other obstacles (WHO 2018a).

The management of chronic diseases, a key component of any health care system that deals with an aging population, encounters many obstacles in low- and middle-income contexts. Best-practice recommendations that work in more developed countries usually fail in developing nations, due to: (i) little support for self-management of chronic conditions derived from a

8 See Fondo Nacional de Recursos Uruguay webpage at http://www.fnr.gub.uy/quienes_son_beneficiarios

9 World Health Organization Fact Sheet. "Quality Health Services". July 20th, 2020. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/quality-health-services

poor communication relationship between providers and patients, which in turn is often rooted in a lack of time, willingness, and appropriate training among providers and is exacerbated by patients' lack of health education, confidence, and motivation to change; (ii) the inability of providers to follow guidelines due to lack of awareness, time constraints, or practical considerations; (iii) poor follow-up care and information-recording protocols; (iv) absence of community support; (v) patients' inability to afford the costs and cover the distance to health care facilities; (vi) lack of resources, including medicines, equipment, laboratory supplies, and human resources; and (vii) lack of coordination across public, private, and alternative providers in contexts where patients seek care from multiple providers, according to their beliefs, their ability to pay, and the seriousness of their condition (Lall et al. 2018).

Within this context, health care systems need to adapt. Taking a person-centered, holistic approach that focuses on prevention, as well as on the integration and continuity of care across different services, with a renewed emphasis on primary care services, is paramount (He, Goodkind, and Kowal 2016; WHO 2015; WHO 2018a). Developing countries have taken decisive steps to transform their health care systems to deal with the new morbidity and mortality profiles of their populations. Some examples are presented below.

a. Better management of chronic disease through prevention and timely diagnosis

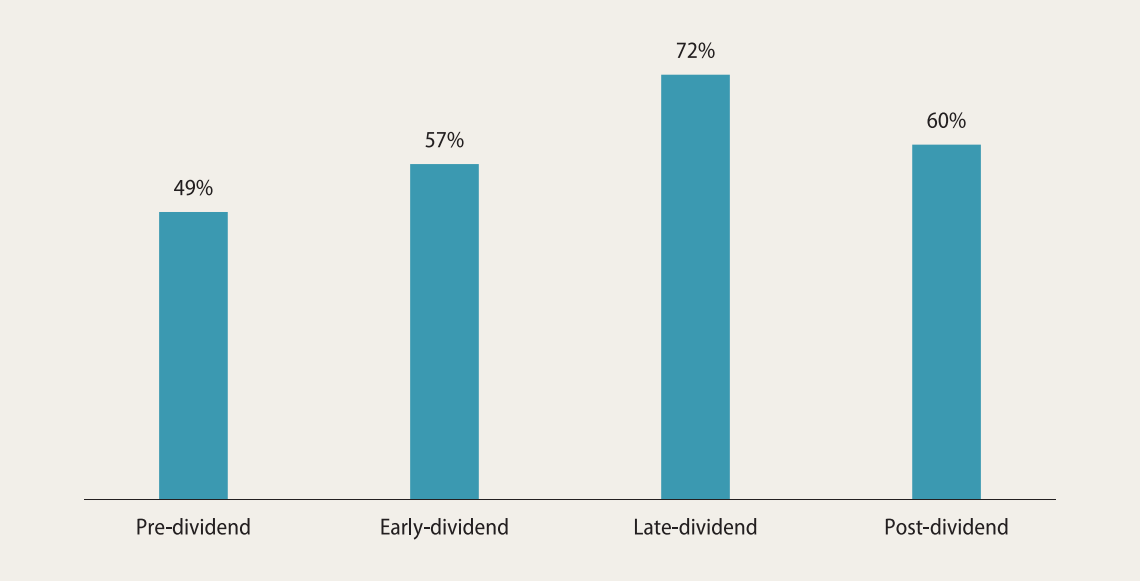
Evidence shows that cost-effective policies, implemented through coordinated and integrated efforts in which health care systems work in coordination with other sectors and actors, taking a comprehensive and horizontal approach, could reduce the mortality and morbidity burden of chronic diseases (Samb et al. 2010). Community, workplace, and school-based programs that encourage physical activity and healthy diets, and individual health care interventions aimed at the population who are at risk of developing chronic diseases (primary prevention) or at those who are already sick in order to prevent complications (secondary prevention) have proved to be effective (WHO 2017a). Up to 80 percent of heart disease, stroke, and type 2 diabetes and 40 percent of cancers could be prevented by eliminating the common risk factors behind these conditions, such as tobacco and excessive alcohol consumption, unhealthy diet, and lack of physical activity (WHO 2008). About 35 percent of dementia cases could also be prevented by tackling nine modifiable risk factors: education, hypertension, obesity, hearing loss, late-life depression, diabetes, physical inactivity, smoking, and social isolation (ADI 2019a).

WHO "best buys" are simple and cost-effective interventions to prevent death and disability brought by chronic diseases. These "best buys" include population-wide interventions, such as tobacco and alcohol consumption control and regulation (through the application of increased taxes, regulation of publicity, and laws that regulate consumption and purchase); the promotion of healthy diets (through, for example, actions to reduce salt and trans-fat consumption); mass media communications campaigns to increase awareness about the importance of healthy diets and physical activity; and timely screening for prevention of cardiovascular diseases, diabetes, and cancer (WEF and WHO 2011).[10] Countries can select cost-effective interventions from the list of best buys, considering affordability, implementation capacity, and feasibility, according to national circumstances, as well as the measures' impact on health equity.

Following these recommendations, countries all over the world are making important efforts to improve early diagnosis and management of chronic diseases and to reduce the costs of treatment. In fact, arguably, part of the observed increase in chronic disease prevalence rates documented in the previous section could be explained by better diagnosis. However, implementation of these type of policies has been uneven across the globe, particularly in developing countries, with recommended policies more prevalent in late-dividend countries (Figure 10.5). While some countries have taken a multisectoral approach (integrating health care systems with other sectors such as education), others have adopted a more compartmentalized approach, focusing on specific measures to improve the situation of those with chronic diseases. Still, 60 percent of countries worldwide have a national multisectoral strategy to manage chronic diseases and their risk factors (WHO Global Health Observatory Data Repository 2020).

10 Most updated information on the list of the "Best Buys" interventions recommended by WHO is available at World Health Organization (2017). "Tackling NCDs: 'Best Buys' and other recommended interventions for the prevention and control of non-communicable diseases". Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf

FIGURE 10.5 Percentage of countries that have a national strategy for chronic diseases and their risk factors, by demographic stage



Source: Authors' analysis based on data from the Global Health Observatory Data Repository (WHO 2020).
Note: Calculated as "Country has an operational, multisectoral national chronic diseases policy, strategy or action plan that integrates several chronic diseases and their risk factors." For more information on what this entails, see: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4680

As an example of the above, Uruguay reoriented its entire healthcare system to increase coverage and address the increasing prevalence of chronic diseases, strengthening primary care services and encouraging prevention. Broad system reforms that included measures to encourage prevention, timely diagnosis, and access to treatment for chronic diseases were also taken in other countries in Latin America, such as Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Mexico, Peru, or Venezuela (Atun et al. 2015). In 2015, Croatia launched a reorganization of hospitals that consists in reclassifying hospital beds from acute beds to palliative, chronic, prolonged, and day-care beds as part of a system-wide approach (European Commission 2019).

Efforts towards improving diagnosis, treatment, and control targeted at specific chronic diseases have taken place during recent years in all regions. In Europe and Central Asia, some aging countries such as Armenia, Belarus, Latvia, Lithuania, and Slovenia can be highlighted as examples. In some cases, these actions are specifically targeted at the elderly. Belarus, for example, created the so-called *health schools for the third age* to educate older people on common disease treatments and health promotion, while persons older than 40 in Albania are entitled to free annual checkups to identify risk factors and behaviors early (UN ECE 2017). Actions to encourage screening and early diagnosis among the elderly have also been taken in Armenia, Hungary, and Portugal (UN ECE 2017).

In Latin America, medications to control hypertension and diabetes were subjected to discounts and subsidies to guarantee access to adequate treatment in Uruguay (World Bank Independent Evaluation Group 2018). Similarly, in Brazil, medicines for diabetes control are subsidized (Kaselitz, Rana, and Heisler 2019). Among Middle Eastern countries, Morocco has made efforts in the treatment and control of diabetes by implementing a multidisciplinary strategy, in which a team of specialized professionals provides individualized treatments to patients; the program encourages self-management of the disease in collaboration with non-governmental organizations and subsidizes diabetes medication (Salhab et al. 2004).

The case of Sri Lanka, with the establishment of the Well Woman Clinics, is a noteworthy example in Asia. These clinics were introduced in 1996 with the objective of screening perimenopausal women for breast and cervical cancers, as well as other chronic diseases, such as diabetes and hypertension. Yet coverage levels fall short of the initial aim, reaching only 50 percent of women in the 35-year-old cohort, 30 percentage points below the target of 80 percent. A severe shortage of human resources for health, especially midwifes, who are expected to

visit homes and invite women to Well Woman Clinics, explains this result. (UNFPA WWP 2019).

Due to historically high rates of communicable diseases, efforts towards the prevention and treatment of chronic diseases in Africa have been meagre except in a few countries, among which two aging countries, Seychelles and Mauritius, and relatively younger South Africa and Tanzania stand out (Aikins et al. 2010). Management of chronic diseases is a priority in Seychelles, for example, where several initiatives have been adopted such as a multisectoral approach to manage chronic diseases and their risk factors, encouraging a person-centered approach, improving health care quality standards, and investing in the quality of human resources for the long term (WHO 2018c). The budget allocated to NCD prevention activities in the country almost doubled from 2009 to 2015, rising from 6.4 percent to 12.5 percent of general government spending, a clear sign of a shift in the healthcare paradigm from a curative to a health promotion perspective (Waleling et al. 2018). Targeted interventions, such as the approval of a tax on sweetened beverages and a diabetes management pilot program, have also been supported (Waleling et al. 2018). Mauritius has had a national program for the control and prevention of non-communicable diseases in place since 1987 and conducts focused surveys every five years.[11]

Stand-alone population-based interventions targeted at the prevention of the main risk factors for chronic diseases, such as consumption taxes applied to tobacco or unhealthy food products, have also proved to be cost-effective policies instruments to discourage harmful habits. Although there have been claims against their use based on equity reasons and the fact that consumption taxes are regressive in nature (i.e., their impact is proportionately larger on those at the lower end of the income distribution), these arguments are countered by evidence that shows that low-income consumers benefit most from these policies in terms of health gains (Sassi et al. 2018). If revenues stemming from these taxes are earmarked for health-related priority programs and actions targeted at individuals from low-income strata, potential health benefits could be even larger.

According to the latest data from WHO (2020), more than 80 percent of countries globally have policies aimed at discouraging unhealthy dietary habits and encouraging physical activity.[12] Although most of them are late or post-dividend countries, a few countries that are earlier in the demographic transition have taken steps in the same direction (Figure 10.6). Data show that between May 2016 and May 2018, 24 countries or local jurisdictions implemented taxes on artificially sweetened beverages (World Cancer Research Fund International 2018).

In Chile, for example, the Ministry of Health promoted measures that aim at controlling rising levels of obesity (and its related complications) among the population, such as the imposition of a tax on sweetened beverages, changes in food labeling, advertising restrictions, and school-based interventions (OECD 2019a). Uruguay has followed a similar path, restricting the selling of unhealthy foods at schools and salt consumption in restaurants and bars and approving legislation on food labeling, which came into effect in February 2021.[13, 14] Many countries in Asia have also approved taxes on sweetened beverages. Jurisdictions advancing on this front include rapidly aging countries such as Malaysia, Sri Lanka, and Thailand, although Sri Lanka took a step back in 2018 when it ordered a reduction in taxes. South Africa and Seychelles have also recently approved a tax on sweetened beverages.[15] Other regulatory measures used by countries to improve diet quality include the use of front-of-package labeling; nutrient profiling; school-based food regulations and education, market, and retail solutions; and marketing controls and regulations (Shekar and Popkin 2020). In Latin America, for instance, several countries including Chile, Mexico, Peru, and Uruguay have recently implemented

11 See World Health Organization, All Africa at https://allafrica.com/stories/201901070565.html

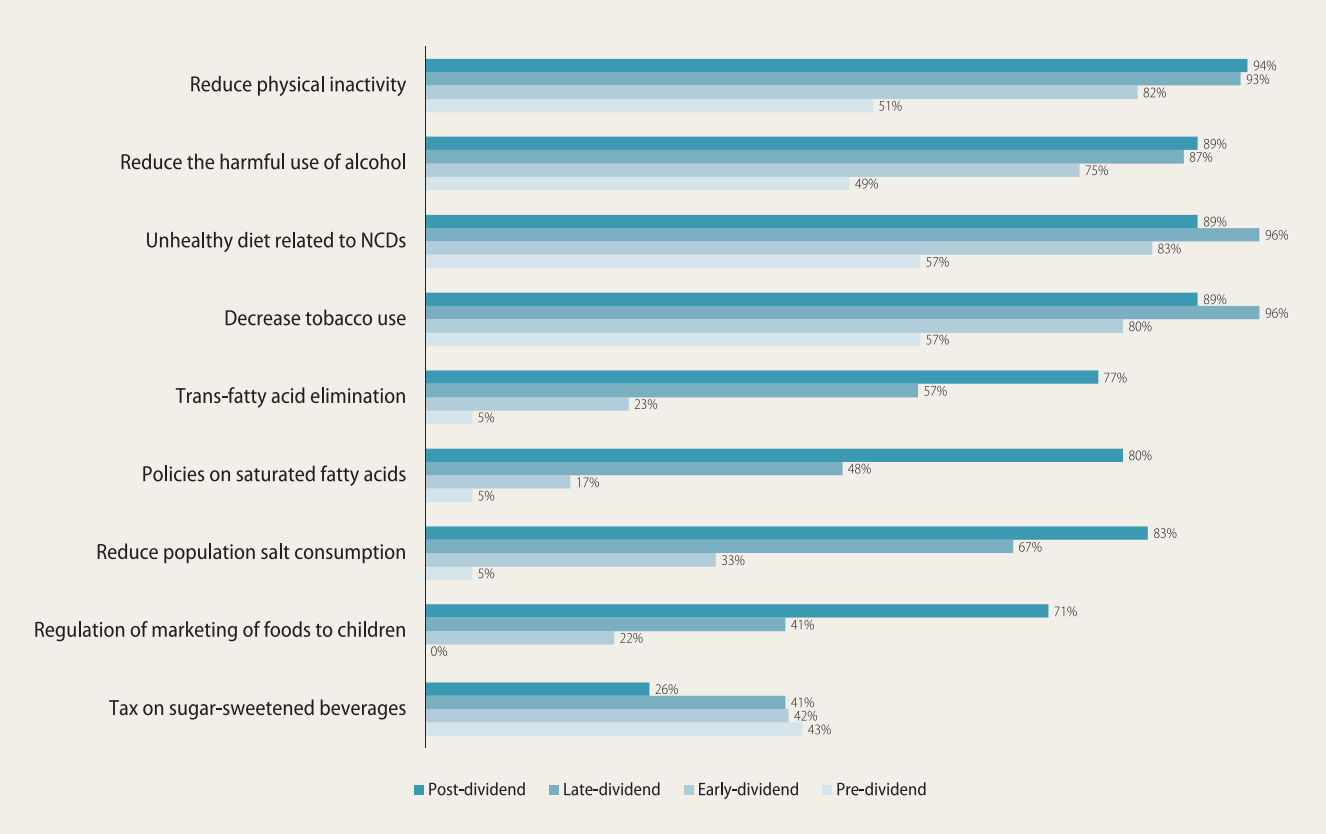
12 See preceding footnote

13 From 2007 to 2015, Uruguay also received the financial and technical assistance of the World Bank to implement a chronic disease prevention project, that focus on strengthening the country's capacities to detect chronic diseases on a timely manner, and to reduce exposure to selected risk factors across the population (World Bank PPA Uruguay).

14 See El País Newspaper. "Etiquetado de alimentos: cambian criterios y suben valores que definen cuándo un contenido es excesivo." January 28th, 2021. Available at: https://www.elpais.com.uy/informacion/salud/etiquetado-alimentos-cambian-criterios-suben-valores-definen-contenido-excesivo.html

15 See World Health Organization, Achievements in Seychelles website at http://open.who.int/2016-17/country/SYC

FIGURE 10.6 Percentage of countries with policies that target main chronic diseases risk factors, by type of policies and country's demographic stage



Source: Original analysis based on data from the Global Health Observatory Data Repository (WHO 2020).
Note: For selected policies.

front-of-package labeling with warning labels for excessive amounts of sugars, total fats, saturated fats, trans fats, and sodium.

Salt-reduction initiatives, ranging from consumer education to taxation on high-salt-content food, were first taken mostly by high-income European countries and have lately become a popular strategy to fight the rise of chronic diseases among countries of all income levels. Initiatives have shifted from voluntary to mandatory or legislative approaches worldwide (Trieu et al. 2015). There are suggestive examples of private sector involvement, as in Uruguay and Iran, where bakeries voluntarily agreed to lower the salt content in their products (Salhab et al. 2004; World Bank Independent Evaluation Group 2018).

Tobacco control policies, like banning smoking in enclosed places, increasing taxes, and requiring health warnings on tobacco packages, have been adopted at different paces and levels and with different results worldwide. Although the WHO recommends tobacco taxes of at least 75 percent of retail price, in 2018 only 32 countries met this criterion, an increase of only 10 countries since 2008; as a result, 90 percent of the global population lives in countries where tobacco taxation is deemed to be insufficient by international standards (WHO 2017b). In Latin America and the Caribbean, Uruguay is regarded as the regional leader in the fight against tobacco, while important advances have also been made in Brazil and Panama (Burki 2017); progress has been somewhat slower in Argentina, Chile, Peru, Guatemala, or Mexico (Burki 2017; Yamaguchi et al. 2017). Earmarked tobacco taxes or at least some strategic reinvestment of tax revenues towards health care and health promotion activities are present in at least 43 countries, most of them low- and middle-income countries.[16] The adoption of tobacco control policies has been sluggish in Eu-

16 See Tobacco-free Kids website at www.tobaccofreekids.org

rope and Central Asia countries, with the exception of Türkiye, and in Arab countries, where although legislation is in place, actual compliance is low; given the alarming rates of tobacco consumption among countries in the region, this lack of political commitment is worrisome (Smith and Nguyen 2013; Maziak et al. 2014).

b. Strengthening primary and community care

The role of primary care as a key strategy to achieve universal coverage and a person-centered and integrated approach to health services has been widely recognized, at least since the WHO and UNICEF Alma Ata Declaration of 1978.[17] Strengthening primary care means giving more prominence to health promotion and prevention, ambulatory and outpatient care, homebased interventions, community participation, and to coordination and integration between primary and higher care levels (WHO 2015).

A good primary care system should show the following characteristics: (i) be accessible and provide the first point of contact for the patient with the health system; (ii) be comprehensive, providing a range of services that extend from prevention and health promotion to timely detection of diseases, while avoiding unnecessary referrals to specialists; (iii) deliver person-, family-, and community-centered care, allowing for continuity of care throughout the life cycle and taking into account the specific characteristics and needs of individuals; (iv) coordinate services not only across different levels, but also across different service providers and different sectors outside the healthcare system; and (v) work longitudinally, in the sense that the relationship between the patient and the health care provider is sustained over time (Guanais et al. 2018).

Successful examples of strengthening primary care initiatives have been implemented in developing countries, often engaging the community. Although many of them concentrate on child and maternal health, initiatives that focus on chronic diseases and mental health management are also found (Kruk et al. 2010). Enhancing the capacity of the first level of care for prevention, risk factor detection, and timely diagnosis of chronic diseases is among the goals of such initiatives (Almeida et al. 2018).

Among developed countries, the case of Israel is probably one of the best-known examples of how an aggressive investment in primary care can improve population health in an efficient way. The country's primary care level is grounded on its large workforce (approximately 7,000 primary care doctors in 2017) and is strongly community-oriented, with an extended geographical network of primary care community clinics which also provide ambulatory specialist care (Rosen, Waitzberg, and Merkur 2015; Clarfield et al. 2017).

Also worth noting is the case of Canada, which has recently implemented an innovative person-centered primary care model in several provinces that focuses on health promotion and chronic disease management, including mental health services. The initiative – called My Health Teams – brings together teams of providers to care for patients with chronic conditions. These teams are comprised of health care workers who have different skills and expertise, usually a physician, a nurse practitioner, and other health professionals who may be in the same clinic, community, or even connected online. The aim of the teams is to be the first point of care for people with chronic conditions, even providing care after hours, while engaging patients in their own care and ensuring accessible, comprehensive, and coordinated person-centered care (Chateau et al. 2017; OECD 2019b).

Developing countries like Sri Lanka, Thai-land, or Viet Nam in Asia; Brazil, Chile, Costa Rica, and Uruguay in Latin American; and Seychelles in Sub-Saharan Africa have undergone a series of health care reforms that built on the expansion of primary care to achieve universal coverage, while at the same time adapting to the new epidemiological profile of the population through a reinforced emphasis on the prevention and management of chronic conditions (Atun et al. 2015; Waleling et al. 2018).

In Sri Lanka, as part of the government's strategy to manage the increase in chronic diseases, in 2011 the Ministry of Health established Healthy Lifestyle Centers. These centers function within the country's primary care units, with a twofold objective: detecting risk factors for chronic diseases through timely screening and improving access to specialized care for those diagnosed or at great risk of developing a chronic condition (Mallawaarachchi at al. 2016). Although initially the target pop-

17 See WHO (1978) "Declaration of Alma-Ata". Retrieved from: https://cdn.who.int/media/docs/default-source/documents/almaata-declaration-en.pdf?sfvrsn=7b3c2167_2

ulation comprised individuals aged 35 to 65 years, the age upper limit was later removed (UN ESCAP 2016), and by 2016 the country's 826 centers had screened 25.5 percent of the population aged 40 to 65 (Mallawaarachchi at al. 2016). Screening of younger people is also important when thinking about an aging population, as the prevention and timely management of chronic conditions earlier in life improve health at older ages.

Countries that are less advanced in the demographic transition, such as Peru and Mexico, have also invested in strengthening the primary care focus on chronic diseases. For example, the public health insurance under Peru's Seguro Integral de Salud includes an extensive primary care package that covers many chronic diseases; in Mexico, the Seguro Popular expanded beneficiaries' access to ambulatory health care services, including a benefits package that covers a set of primary care interventions, making them free at the point of delivery (Han 2012).

An important reliance on the community and the family are at the base of many of these programs. The role of community-driven initiatives is crucial, not only to reduce barriers to access, but also to provide timely and quality care at all levels, to help in the integration of primary, secondary, and tertiary care levels, and to raise awareness and education about the consequences of aging and the best ways to deal with them (HelpAge International 2014a). Because of cultural similarities with the community they care for, community health workers are seen as an important link between the formal health care system and those in need of care (Woldie et al. 2018). Community health workers are as good as, or sometimes even better than, formal health care workers in delivering preventive, promotive, and curative services, particularly when they are integrated with the formal health care system and work in settings that provide in-service training, financial incentives, adequate infrastructure and supplies, regular monitoring, supervision, and evaluation (Woldie et al. 2018).

In Brazil, the *Programa Saude da Familia* serves as a role model for a community approach to primary care. Multidisciplinary primary health teams, composed of a physician, a nurse, and four to six community health agents, are assigned up to 1,000 families each, acting as a point of entry to the health care system for them. The community health agents have a key role in the health delivery system: each of them is assigned up to 150 families and is responsible to visit them once a month to provide basic preventive care, including screening for diabetes and hypertension, health education, and, if needed, to help patients adhere to recommended treatments and stay motivated (Dmytraczenko and Almeida 2015; PHCPI Brazil n.d.). Given their close links to the families, these agents allow for continuity of care; moreover, they can refer families to other social and welfare programs, improving socio-sanitary coordination. Since 2006, the program has increased the attention given to the elderly, training health professionals in matters related to older adults' health, such as the assessment of functional status and frailty, and the establishment of self-help groups in the community that encourage healthy behaviors (WHO 2015).

Also, in Brazil, the example of Rocinha, the biggest slum (*favela)* in Rio de Janeiro, is worth mentioning. In 2012, a pilot project was launched to support the health of older people living in the city's largest slums through the design of individualized health plans and follow-up in close collaboration with three family health clinics in the communities. The evaluation of the program showed good results and was extended to the whole state of Rio de Janeiro (WHO 2015). Family-based models are also the foundation of the primary care delivery system in Costa Rica, El Salvador, and Estonia. In Costa Rica, multidisciplinary health teams (EBAIS as per the Spanish acronym) are responsible for providing care to 1,000 families each and pay home visits to the elderly; in Estonia, family doctors receive special training in the management of chronic diseases in order to reduce specialist care; moreover, any patient with a chronic disease has the right to get an appointment within three days of requesting it (PHCPI Estonia n.d.; PHCPI Costa Rica n.d.).

The role of the community in the delivery of primary care is also highlighted by successful examples in Asia, where the prevention and management of chronic diseases is increasingly gaining attention (HelpAge International 2014a). In Thailand, primary health care, with a prominent role for "village health volunteers," is considered the backbone of the health care system. These workers focus on prevention and health promotion and act as the first point of contact between primary care and the rest of the health care system (Tejativaddhana et al. 2018). As part of a strategic plan to reorient its health care system towards the management of chronic diseases, Malaysia has made an important investment in primary health care that focuses on prevention and screening for major chronic diseases at the community, workplace, and school levels, also relying on voluntary workers (Yiengprugsawan

et al 2017). In Viet Nam, intergenerational self-help clubs for the elderly promote healthy aging activities and provide health checkups and homecare support services, along with other services, such as self-care trainings, information on older people's rights, and help building social networks or generating an income. The project has the support of HelpAge International and works with volunteers, who are trained by paid retired health care professionals. More than 16,000 caregivers provide ongoing care for at least 10,000 people in the 3,000 clubs that exist in the country (AHWAIN 2020).

A few relatively younger countries have started to move in the same direction, in response to the recent increase in the prevalence of chronic conditions and foreseeing the demographic and epidemiological changes to come. In South Africa and rural Ethiopia, for instance, chronic disease clinics run by trained nurses have proved to be effective for the management of chronic diseases (Mamo et al. 2007; Coleman, Gill, and Wilkison 1998). In Bangladesh, the 13,000 community clinics that exist in rural areas have recently incorporated chronic disease screening as part of their functions. In India, chronic diseases and palliative care have become part of the remit of the country's "Accredited Social Health Activists," who serve as community health providers in rural areas (WHO 2018b). Also in India, the state of Kerala has made important advancements in strengthening primary care with a strong focus on community engagement. Although, until recently, efforts were mostly focused on maternal and child health, the state has started to plan for an aging population, with the development of geriatric wards and facilities.[18]

Faith-based organizations are an important part of community initiatives, although more data is needed to estimate their coverage (Kagawa et al. 2012). A 2015 report by The Lancet highlights the role of these organizations in Africa, particularly Christian and Islamic facilities (Olivier et al. 2015). In Asia, a recent study for Viet Nam finds that Catholic and Buddhist organizations are important in providing both short- and long-term support for older adults in need of health and social services, including medical screenings, healthcare counseling, psychological support, and even surgery funding aid (Hun et al. 2023). Anecdotal evidence also points to an important role of thee organizations in Latin America.

Evidence regarding the impacts of primary care approaches to managing chronic diseases in developing countries is scarce but promising (Kruk et al. 2010; Macinko et al. 2009; Macinko et al. 2016). There is evidence that community-based programs are effective for the prevention and control of chronic disease, particularly for tobacco cessation programs and diabetes and blood pressure control (Jeet et al. 2017). In South Africa, after the implementation of a nurse-run chronic disease program, disease control improved by 68 percent in the case of patients with hypertension, 82 percent in the case of patients with diabetes, and 84 percent in asthmatic individuals (Coleman, Gill, and Wilkison 1998). In Latin America, countries that have invested in building a strong primary care sector, like Chile, Costa Rica, and Uruguay, have seen an increase in the use of preventive screening services for breast and cervical cancer (Almeida et al. 2018). A recent study focusing on Brazil, Colombia, El Salvador, Jamaica, Mexico, and Panama shows that, along with multimorbidity rates, the quality of the primary care sector is a key variable in determining people's ability to pay for the medical services they need (Macinko et al. 2019). Community-led initiatives have proved to be effective in the management and control of diabetic patients (Kaselitz, Rana, and Heisler 2019). Different evaluations show that implementation of the *Programa Saude da Familia* program in Brazil has expanded home health care among the elderly, particularly among functionally dependent individuals from lower socioeconomic groups who have been hospitalized in the previous year, hence contributing to reducing health inequalities (Thumé et al. 2011; Honorato dos Santos de Carvalho 2013).

Despite the progress, there is still much to do. In many countries, primary care clinics are regarded by many individuals as low-quality care, leading them to bypass this level and go directly to the second level of care. Different studies have highlighted the public mistrust of primary care in Asian countries, such as China, Malaysia, Sri Lanka, and Viet Nam, for example, but also in richer countries like Japan or the Republic of Korea (Chen et al. 2019; Yiengprug-sawan et al. 2017; Lee et al. 2019; Gaál et al. 2015). Sometimes, particularly in lower-resource contexts, this perception is justified. A study for Viet Nam found that 35 percent of the more than

18 See Improving Primary Health Care Performing Initiative. Country cases and promising Practices. Retrieved from: https://www.improvingphc.org/country-case-studies-promising-practices

100,000 commune health clinics that exist in the country do not have doctors, and many of them suffer from a lack of medicines and equipment, hampering service delivery (Somanathan et al. 2014).

The lack of trust in primary care is also reflected in patients' unwillingness to follow physicians' recommendations about diets, physical activity, and screening (Yiengprugsawan et al. 2017). Improving patients' health literacy, but also the communication skills of providers, is crucial to overcome these problems. For example, a study done in six Latin American and Caribbean countries finds that a large percentage of primary care patients report communication problems with their providers, such as: not being given the opportunity to ask questions (28 percent of respondents), not having things explained clearly enough (26 percent), leaving with health problems unsolved (31 percent), and not receiving help to coordinate care (61 percent) (Macinko et al. 2015).

Another issue is the lack of integration between primary care and other levels of care, which compromises the continuity of care, a crucial aspect of the management and prevention of chronic diseases (Dmytraczenko and Almeida 2015; Singh, Cassels and Travis 2018). Although some efforts have been made in this direction, integration initiatives in low- and middle-income countries generally focus on specific diseases or conditions, evidencing the lack of a horizontal, system-wide vision that considers the multiple health conditions that affect older adults and the need to integrate health and social services (Druetz 2019; Mounier-Jack, Mayhew, and Mays 2017).

c. Managing dementia and mental health

The management and prevention of cognitive and neurological degenerative diseases, like Alzheimer's disease and other dementias, is a priority in the agenda of health systems in most developed countries. However, even in OECD countries, plans and priorities are not always put into practice: there is still a large degree of underdiagnosis, and the quality of life among people with dementia is poor, with higher-than-recommended prescription levels of antipsychotic drugs and a lack of adequately trained medical personnel (OECD 2018b).

The situation is even more acute in developing countries, although some progress has been made during recent years, particularly in rapidly aging countries. In 2017, only 32 countries worldwide had adopted a national dementia plan, most of them high-income countries that are already advanced in the demographic transition, except for Chile, Costa Rica, Indonesia, and Mexico (ADI 2017).[19] By 2019, 30 more countries had national plans in development (ADI 2019) (Figure 10.7). Some countries, such as China, Kuwait, Lebanon, Morocco, Tunisia, and Uruguay, have recently launched national mental health programs that include older people as part of their target populations (UN ESCWA 2017; UN ESCAP 2017; MSP Uruguay 2020).

The lack of a clear commitment regarding public funds sometimes prevents plans from advancing and being put into practice (ADI 2019a). For example, the Uruguayan government approved a Mental Health Plan that includes dementia in 2017, but until 2020 no resources had been allocated, preventing its implementation.[20] Peru approved a national law to develop a national plan for dementia in 2013; while the plan was supposed to be developed in 90 days, six years later it had not been approved.[21] Similar experiences have been reported in Argentina, India, Slovenia, and Türkiye (ADI 2019a).

Relatively younger countries have also made important progress, albeit outside the framework of a National Dementia Policy. In Nepal, for example, Alzheimer treatment is provided at no cost for the elderly (Williamson 2015). Early detection of cognitive decline in adulthood is encouraged in Indonesia as part of a life-course approach to mental health (WHO 2015). In the Middle East and North Africa, some countries that are less advanced in the demographic transition, such as Iraq and Sudan, offer mental health programs for older people in mental institutions or long-term residences, rather than as part of their national health policies (UN ESCWA 2017).

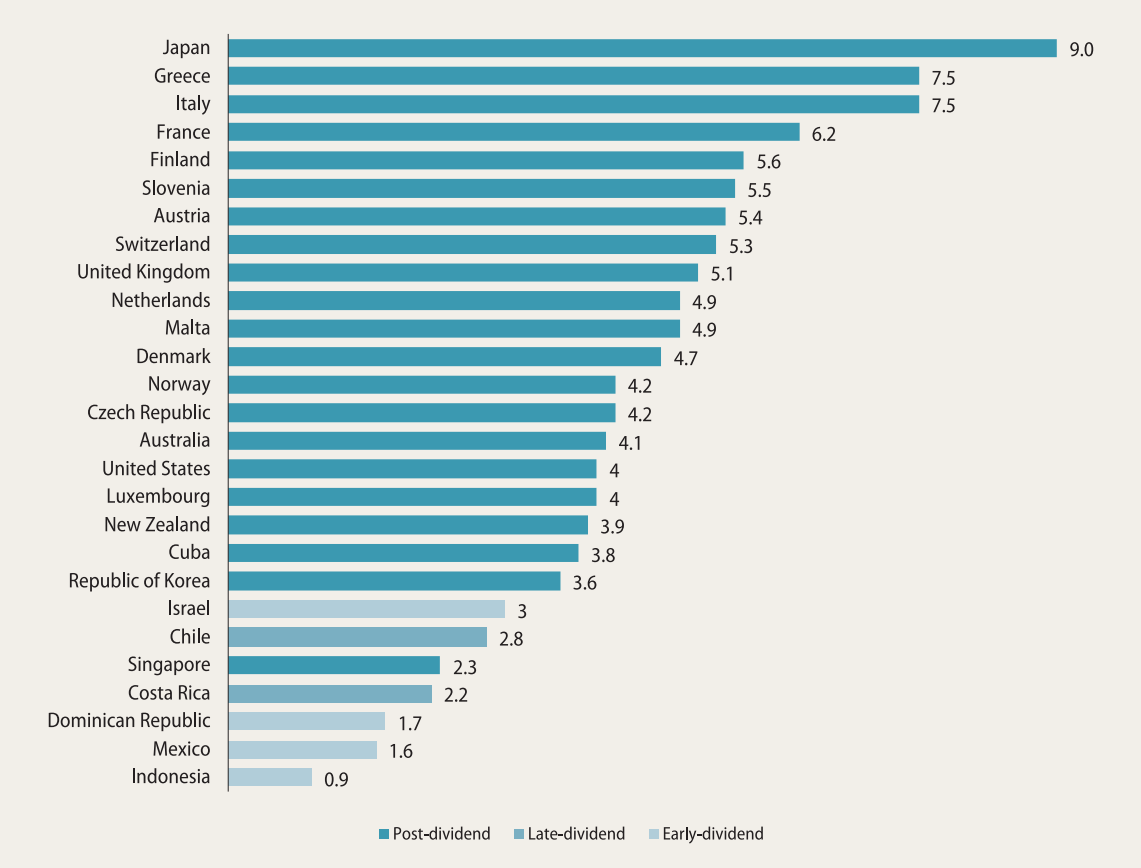
A large degree of misinformation and cultural stigma about dementia still prevails in many countries. For example, 66 percent of people worldwide think that developing dementia is a natural part of the aging process, while 63 percent and 67 percent of people living with dementia in Asia and Africa,

19 See Alzheimer's Disease International website at https://www.alz.co.uk/dementia-plans ;

20 See Uruguay Presidencia. Press Release July 22nd, 2020. Retrieved from: https://www.presidencia.gub.uy/comunicacion/comunicacionnoticias/salud-mental-presupuesto

21 See Alzheimer's Disease International website at https://www.alz.co.uk/news/national-dementia-plan-confirmed-for-peru

FIGURE 10.7 Countries that have national dementia plans in place, and percentage of their populations aged 80 and above



Source: Alzheimer's Disease International (2020) (https://www.alz.co.uk/dementia-plans).

respectively, were targets of jokes (ADI 2019b). Mechanisms to ensure accurate and timely diagnosis are also needed. Even in OECD countries, underdiagnosis reaches almost 50 percent (OECD 2018b). This figure is expected to be much higher in lower- and middle-income countries.

The development of dementia-friendly communities [22] in different parts of the world is a powerful tool to raise awareness about the issue. Among the most successful examples of such initiatives is the Dementia Friends movement that comprises 16 million volunteers in 50 countries, following a model first implemented by the UK and Japan. The model is simple, consisting of face-to-face or online training sessions that educate people about dementia in order to change the way people think about the disease and defeat main misconceptions. The aim is that those who attend the training session become a support for people with dementia within their families and communities.[23] The Alzheimer Café initiative, first developed in the Netherlands and then replicated in 15 countries around the world, is another example of a simple and easy-to-implement approach to a dementia-friendly initiative. The aim is to provide a safe social setting where people with dementia and their caregivers can meet to share their experiences.[24]

Among developing countries that are advanced in the demographic transition, the case of China is worth highlighting as an example of the development of dementia-friendly communities: the campaign "Memory Health in the Community," where

22 These are defined as "a place or culture in which people with dementia and their careers are empowered, supported and included in society, understand their rights and recognize their full potential." See Alzheimer's Disease International. Dementia Friendly Communities webpage at https://www.alz.co.uk/dementia-friendly-communities/principles

23 See preceding footnote

24 See Alzheimer's Disease International. Alzheimer's Cafés webpage a https://www.alz.co.uk/dementia-friendly-communities/alzheimer-cafe

memory specialists, social workers, and community advocates give lectures to increase awareness and understanding of the disease and encourage memory screening, is present in 50 cities. Also, the Yellow Bracelet Project distributes free GPS-guided bracelets to ensure the safety of people with dementia, preventing them from getting lost. The project was implemented in 233 cities, distributing 500,000 bracelets between 2012 and 2016 (ADI 2017).

Although the most common initiatives in developing countries are concentrated on raising awareness about the condition, there are examples of policies in other areas, as well. For example, Bermuda and Jamaica established training programs for formal caregivers of people with dementia (UN ECLAC 2017), while Trinidad and Tobago has set up special provisions for people with dementia in its disaster relief national program (UN ECLAC 2017). The pilot project "Forget Me Not," carried out by HelpAge International and European donors between 2013 to 2015 in Bolivia, Colombia, and Peru, is also worth mentioning. The program aimed to improve diagnosis and care for people with dementia, as well as providing support for caregivers and increasing awareness within the population (HelpAge International 2015a). International consensus exists that this is one of the areas in which countries are further behind when it comes to preparing for an aging population.

Finally, there are few support programs for family members, who usually bear the main responsibility of caring for people with dementia, as discussed below, in paragraphs 4.16 and 4.17 (Manes 2016). The Italian Up-Tech program is a successful initiative that aims at reducing family caregivers' burden through the training and hiring of social workers who provide continuous support to the caregivers of persons with dementia in the form of face-to-face counseling sessions and follow-up telephone calls, among others. The social worker acts as a care manager and can coordinate care between different care settings and between hospitals (Amelung et al. 2014). Some developing countries have taken steps in this direction, but more needs to be done.

For example, in Chile, the Ministry of Health gives financial support to local governments for the implementation of daycare centers for people with dementia, which function as respite services for caregivers. However, as per information from 2016, these centers covered only 0.3 percent of the population with low or moderate dementia in the country (Molina et al. 2020). In China, Dementia Caregiver Support groups, where volunteers previously trained by professionals organize training and recreational activities for caregivers, is a good initiative that works in 10 cities (ADI 2017). Following the example of Goa, in India, community-based interventions to support caregivers of people with dementia were established in Russia, providing caregivers with basic information about the disease, advice on how to manage it, and information on the availability of public services. A similar initiative was implemented in Peru, a relatively younger country (WHO 2015).

d. Adapting human resources

Health care professionals of all types, including doctors, nurses, community workers, and other health care support staff, will need to adapt to meet the challenges of an aging population. Health care workers need not only to understand which are the main ailments that affect the elderly, their comorbidity patterns, and their main risk factors, but also to recognize signs of frailty that could lead to functional dependency, and to identify warning signals of abuse and neglect. They also need to be able to engage older people in health promotion activities and understand how to communicate effectively with them (WHO 2015).

Despite the increasing recognition of population aging as a challenge that health care systems need to address, the training and adaptation of human resources is still an area in which progress has been sluggish. Training is needed at all levels of care, from nurses and caregivers (see Section 4, paragraphs 4.56 to 4.61) to medical doctors. Ageism, i.e., negative attitudes towards older people and towards people because of their age, is not rare in health care settings. It is observed in the use of a patronizing tone; dismissing health problems and associating them with the supposed natural process of aging; not involving older people in consultations or decisions; spending less time in consultations; and even not performing some diagnostic procedures. Evidence across a variety of settings has shown how ageism negatively impacts older people's quality of life and the quality of care they receive (Levy et al. 2020; Ben-Harush et al. 2016). Ageism also raises the question of what it means to provide adequate care for older patients.

In most developing countries (and in many developed ones), the number of geriatricians is insufficient, and medical personnel, in general, lack the necessary training to treat older adults. In many cases, medical curricula do not even include gerontolog-

ical or geriatric training (WHO 2015). A survey from 1999, comprising 36 countries, showed that, at that time, 19 percent of medical schools in high-income countries, 43 percent in transitional economies, and 38 percent in middle- and lower-income countries did not have any training in geriatric medicine (WHO 2015). More recent research done in Latin America and the Caribbean suggests little change (López and Reyes-Ortiz 2015). Data from Uruguay, one of the oldest countries in Latin America, shows that, in 2014, there were only 81 geriatric doctors in the country (Aguirre 2014). A similar situation can be seen in the Middle East and North Africa, where only in Kuwait, Lebanon, Morocco, Oman, Sudan, and Tunisia is geriatrics considered a separate specialty in medical school (UN ESCWA 2017). As a result, the ratio of geriatricians is less than one per 100,000 older persons in most Arab countries, except for Bahrain, Lebanon, and Tunisia (Sibai et al. 2017).

The progress made in this area has been meager (WHO 2015), although some efforts are worth highlighting. In Latin America, as a response to the workforce shortage, the Pan-American Health Organization, the Inter-American Centre for Social Security Studies, and the Latin American Academy of Medicine for Older Persons have designed a specialized course in the management of health services for the elderly (UN and HelpAge International 2012). Aging countries in the Caribbean, such as Jamaica and Barbados, have taken steps to include formal geriatric and gerontological training in schools (UN ECLAC 2017). In Asia, there have been efforts to improve the quality and quantity of human resources in the area of older people's health, such as the inclusion of geriatric care in the medical curriculum in Bangladesh and Pakistan, the integration of geriatric medicine and services in hospitals in Malaysia, and the establishment of geriatric training programs in Armenia, Pakistan, Sri Lanka, and Thailand (Williamson 2015; UN ESCAP 2017; Yiengprugsawan et al. 2017). In Middle Eastern countries, geriatrics is still considered a relatively new field, although recently it has started to be recognized as a specialty of its own, particularly in rapidly aging countries, such as Kuwait, Lebanon, Morocco, and Tunisia, but also in relatively younger countries such as Oman or Sudan (UN ESCWA 2017). Despite the efforts made to extend and improve gerontological and geriatric trainings, making these specialties an attractive option for young professionals remains a challenge (UN ESCWA 2017; UN ESCAP 2017).

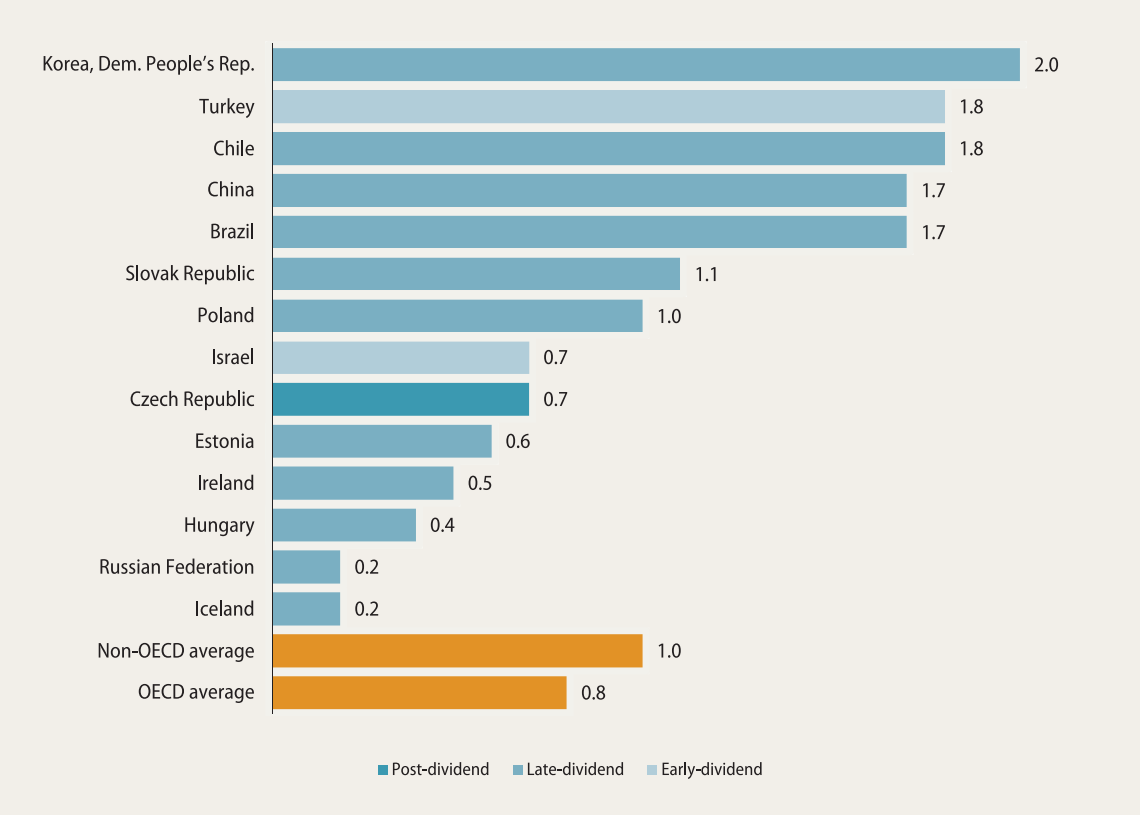
Financial pressures and the challenge of keeping costs contained

Developing countries are facing these challenges under restrictive fiscal constraints. Although more than 80 percent of the world's population lives in low- and middle-income countries, they account for only 20 percent of global health spending (WHO 2018b). An analysis of trends for the period 2000-2016 shows that this situation might be changing, as total health expenditure has been growing faster in low- and middle-income countries when compared to their higher-income counterparts (WHO 2018b).

Projected demographic changes are expected to exert additional pressures on health care expenditure, as older people account for a large share of health care utilization, both measured as health expenditure and as utilization of bed-days (Rechel et al. 2009). Moreover, the shift of the burden of morbidity from infectious to chronic diseases pushes costs upwards, as the latter usually require more expensive treatments and follow-up for extensive periods of time (Guanais et al. 2018). There is some debate, however, about the extent of the impact of population aging on health care costs, as some argue that factors such as technology and proximity to death have a much larger impact than age per se (Rechel et al. 2009.).

The costs of aging in terms of health care resources could be largely contained by promoting a healthy aging approach. Lifetime health care costs for obese individuals or smokers are significantly higher than for their healthier counterparts (Yang and Hall 2008; Sloan et al. 2004). However, estimates by the OECD show that, even under a healthy aging scenario that assumes that all gains in life expectancy are translated into healthy life years, population aging alone will make total health expenditure increase from 5.5 percent of GDP in 2010 to 6.3 percent of GDP in 2060 in OECD countries, and from 2.4 percent to 3.4 percent of GDP in the so-called BRIICS countries (Brazil, Russia, India, Indonesia, China, and South Africa) (de la Maissoneuve and Martins 2013). A recent study of Latin American countries estimates that health care expenditures attributable to people aged 65 or more are expected to increase from 2.2 percent of GDP in 2020 to 4.8 percent in 2050 (Aranco et al. 2022). A closer look shows that in late-dividend and some early-dividend countries that are aging at a relatively faster speed, for example Türkiye and Israel, the impacts of demographic change on health care expenditures are expected to be larger (Figure 10.8).

FIGURE 10.8 Projected increase in health care expenditures due to demographic effects, 2010-2060 (in percentage points)



Source: Adapted from de la Maissoneuve and Martins (2013), Table 3.
Note: The non-OECD average and the OECD average include countries not shown in the graph

These results are in line with recent IMF projections that estimate that health expenditure will increase in all regions in the world from 2015 to 2100 due to population aging. Latin America will be the region that experiences the largest increase, moving from a total health expenditure of 4.4 percent of GDP to 13.5 percent during the period. For emerging European countries, the increase will be from 5 percent to 11.9 percent, and in emerging Asian countries health expenditures are projected to rise from 2.3 percent to 7.1 percent of GDP over the period (Flamini et al. 2018). Another study for the Asia Pacific region estimates that, from 2015 to 2030, health care expenditure per capita could experience a 9-fold increase in Viet Nam, and almost a 5-fold increase in China. The factors behind the projected trends are the projected increase in the population older than 65, the projected increase in medical costs, and the projected increase in the demand for long-term care (Hedrich et al. 2016). For countries where health care insurance is funded through contributions linked to participation in the formal labor market, as is the case in almost all Latin American countries, the fiscal outlook is even worse as the increase in old-age dependency ratios shrinks the contributory base for funding.

The economic costs of chronic diseases are also well documented. Assuming that no efforts are made to control the rising trends in prevalence, it is estimated that in low- and middle-income countries cumulative losses due to cardiovascular disease, diabetes, cancer, and chronic respiratory diseases could reach up to US$ 7 trillion during the period 2011-2025. In developing countries, estimates show that cardiovascular disease, cancer, chronic respiratory disease, diabetes, and mental health disorders are going to be responsible for a reduction in economic output equal to $27.6 trillion in China and India from 2012 to 2030 (Bloom et al. 2014).

INCREASING RISK OF FUNCTIONAL DEPENDENCY AND CHALLENGES FOR LONG-TERM CARE SYSTEMS

Highlights

- *In rapidly aging countries, rates of functional dependency are expected to rise with the expected increase in the share of older people in the population and the prevalence of chronic diseases.*
- *Thus, an increase in expenditures related to long-term care is expected, given the increasing demand for long-term care and the need to provide support to informal caregivers.*
- *The rising demand emerges in a context of reduced availability of traditional informal and family care and in the absence of other affordable, good-quality care options in many countries.*
- *The provision of long-term care services for people with diminished functional abilities needs immediate attention, given changes at the societal and family levels and the current scarcity of affordable and high-quality private services.*
- *The role of the government is crucial. Important gaps still exist in meeting the needs of functionally dependent older adults. Progress towards the development of long-term care services has been slow, and little is known about implementation, especially in low- and middle-income settings.*
- *Key challenges for long-term care services include: (i) achieving accessibility and affordability while ensuring adequate quality, (ii) developing a person-centered approach to care, respecting older people's dignity and rights; (iii) encouraging - whenever possible - the provision of home care services; (iv) supporting informal caregivers as needed. Investing in the training and professionalization of human resources and the improvement of their work conditions is essential to improve the quality of care that older people receive.*
- *Coordination and integration between the social care and health care sectors is central to achieve a continuum of care for the older person and to obtain much-needed efficiency gains.*

Rising long-term care needs

a. More people with functional dependency

Increased age is usually associated with physical impairment and a decline in sensory and cognitive functions, as well as with a debilitation of the immune system (WHO 2015). While in some cases the changes are linked to the onset of chronic conditions and diseases of old age, in others, they are simply the result of a "lifelong accumulation of molecular and cellular damage" (WHO 2015, p. 52). These transformations may have important consequences for a person's autonomy and ability to function independently.

BOX 10.3 How is functional dependency measured?

The loss of functional capacity is usually measured through difficulties and/or the need of assistance in performing a set of activities of daily living, which are classified as basic activities of daily living (ADL) or instrumental activities of daily living (IADL) (WHO 2015). The former are basic activities that are necessary for survival and self-care, like eating, dressing, using the toilet, or bathing (WHO 2004). The latter are more complex activities that involve some degree of cognitive function and interaction with the external world, such as cooking, shopping, using public transport, managing personal finances, and taking care of one's own health (WHO 2004). Abilities are lost in the inverse order in which they are gained, so instrumental activities are usually the first to be affected (Katz et al.1983; Dunlop et al. 1997).

Cross-country differences in the share of the older population reporting difficulties with basic or instrumental activities of daily living (Box 10.3) can be substantial, with lower- and middle-income countries showing higher rates of functional dependency at old ages than higher income countries, probably due to differences in subjacent health status (WHO 2015). Results from the Study on global AGEing and Adult Health (SAGE) show that, in China, around 35 percent of people 75 years old or more need some type of assistance for at least one basic activity of daily living; this figure reaches 45 percent in South Africa, more than 60 percent in Mexico, and around 80 percent in India and Russia (WHO 2015). In Thailand, almost 25 percent of people older than 80 need help with basic activities of daily living, and the figure reaches 70 percent in the case of instrumental activities (Knodel et al. 2015). In contrast, fewer than 20 percent of people aged 75 or more have difficulties with basic activities in Denmark, the Netherlands, or Switzerland (WHO 2015).

The series of Longitudinal Surveys of Social Protection, carried out in various countries in Latin America, show that the prevalence of difficulties in performing basic activities of daily living among people 80 years old or more reaches 30 percent in Chile (2015) and around 12 percent in El Salvador (2014), Paraguay (2015), and Uruguay (2013), while the Costa Rican Longevity and Healthy Aging Study (2009) shows a prevalence of more than 40 percent. Figures for instrumental activities of daily living, when available, are much larger, and reach 23 percent in Uruguay and 60 percent in Costa Rica (Aranco et al. 2018). Data based on the Mexican Health and Aging Study (2015) show somewhat lower degrees of dependency both on basic and instrumental activities than the SAGE survey, both around 40 percent for individuals aged 80 or more (Aranco et al. 2018).

In rapidly aging countries, rates of functional dependency are expected to increase following the rise in the share of older people in the population. It is estimated that by 2050, due only to demographic pressures (i.e., maintaining functional dependency rates constant), the number of persons with difficulties in basic daily activities could triple in countries in Latin America and the Caribbean, rising from 8 million today to 23 million or, its equivalent, 15.7 percent of the population aged 65 years or more (Aranco, Ibarrarán, and Stampini 2022). Similarly, the proportion of elderly with difficulties in basic activities of daily life is projected to increase by 169 percent in Thailand from 2014 to 2050; when future increases in education levels are considered, the figure is estimated at 127 percent (Loichinger and Pothisiri 2018). Increases are also projected in other developing regions, such as Europe and Central Asia (World Bank 2015).

Results could be even more problematic if the prevalence of chronic diseases increases, in which case increasing rates of functional dependency are expected to be seen even when comparing the same age groups over time. Some evidence already points in this direction. Data from Mexico shows that the proportion of people 80 years old or more with difficulties in performing basic activities of daily life increased from 30 percent in 2001 to 44 percent in 2015; in the case of difficulties with instrumental activities, the share rose from 31 percent to 39 percent during the same period (López-Ortega and Aranco 2019). Data for China also show an increase in the rates of disability for the "younger old" (people from 60 to 74 years old) between 1987 and 2006, although the trend is reversed for individuals 75 years old or more (Liu et al. 2009).

Long-term care services are services provided with the objective of assisting functionally dependent individuals with the performance of their daily activities. Services offered can be varied, and their suitability usually depends on the level of dependency of the beneficiary. Services that are often part of the menu include: long-term residential care, home care, daycare centers, tele-assistance services, and support to informal caregivers (Table 10.3).

It is argued that, unlike the case of health care services, for which increases in projected demand due to aging are more uncertain, the increase of long-term care expenditures is certain to happen as the share of older individuals in the population increases (Rechel et al. 2009).

Table 10.3 Long-term care services by type

Residential care	Services provided in institutions and that include housing, meals, help with daily activities, and basic health care services. These services usually focus on individuals with severe degrees of dependency.
Home care services	Services provided in the house of the dependent person. Usually includes a personal assistant who helps with daily activities, but can also include a wider array of services, such as meal delivery or help with household chores. These services are suitable for individuals with all levels of dependency.
Day centers	Services offered at facilities for a number of hours a day but not including accommodation. These usually focus on preventive activities and promoting healthy aging, so their target population is autonomous individuals or people with only mild levels of dependency.
Tele-assistance services	Information technology-based services that monitor and assist the dependent person remotely (emergency hotlines, fall detectors, and others.). They usually focus on autonomous individuals or individuals with mild levels of dependency.
Services for caregivers	Support services for unpaid caregivers, which may include training, counseling, respite services, and special work leave.

Source: Adapted from Cafagna et al. (2019)

b. Reduced availability of informal care networks

Traditionally, the role of caregiver has been mainly a responsibility for the family, especially women, who receive no payment for these tasks. Cultural reasons explain the overarching role of the family, particularly women, when it comes to caregiving responsibilities. Traditional values regarding filial responsibilities towards older people are strongly embedded in many cultures, sometimes hindering the development of other public and private solutions to cater to the needs of older people. Children's obligation to take care of their parents is even regulated by law in several countries in Asia, including Cambodia, India, Singapore, Sri Lanka, and Viet Nam (HelpAge International 2015b; UN ESCAP 2017). Some Eastern European countries (for example, Serbia and Latvia) also stipulate through legislation the obligation of children to take care of their parents (Stokic and Bajec 2018; Rajevska 2018). Care for older adults is also seen mainly as the responsibility of the family in Middle Eastern countries (Hussein and Ismail 2017).

This is also the case in many countries in Latin America. In Uruguay, for instance, almost half of the population younger than 70 agrees that older people should be taken care of exclusively by family mem-bers, while around 30 percent think that the best option is collaboration between a family member and a formal personal assistant. Only around 20 percent consider formal care (either through a paid assistant or through institutionalization) to be the best option (Batthyány, Genta, and Perrota 2012). Individuals of lower socioeconomic status are more likely to believe that the responsibility of taking care of older people should lie mainly with the family instead of with the market or the state (Batthyány, Genta, and Perrota 2012). This may partly explain why older people from lower socioeconomic strata are more prone to live in extended family households.

Yet changes in female labor participation and family structures are shrinking the network of available family caregivers and posing additional challenges for countries when it comes to developing sustainable long-term care strategies. Female labor participation rates have increased markedly in Latin American and the Caribbean; increases have also been seen Sub-Saharan Africa and South-Eastern Asia and the Pacific (ILO 2016). Consequently, women have less time to dedicate to non-remunerated activities, such as caring for older members of the family. And when women do provide such care, the opportunity costs are higher.

Declining fertility rates and migration flows have reduced the typical family size. As a result, a greater number of older people are living alone, with fewer close relatives to rely on. In Latin America and the Caribbean, on average, the proportion of older people living alone went from 9 percent circa 1990 to 13 percent circa 2010 (UN 2017c). In Uruguay, for instance, 26 percent of people older than 65 live alone, and more than 30 percent live only with their spouse. These figures are also high among the functionally dependent population, 24 percent of whom live alone, and another 24 percent only with their spouse (Monteiro and Paredes 2016). Similar patterns are seen in other Latin American countries, with the percentage of

people living alone being high even for the "oldest old." Evidence from other regions also points to a reduction in family size (Bongaarts and Zimmer 2002; United Nations 2017). In Asia, the proportion of older people living alone increased from 18 percent in 1990 to 27 percent in 2010, and the proportion living with children decreased from 73 percent to 64 percent in the same period (UN 2017c). In Thailand, for instance, the percentage of older people living with children declined from 77 percent in 1986 to 55 percent in 2014 (Knodel et al. 2015). Similar trends were seen in Eastern Europe and in Middle Eastern countries.

In general, the probability of living alone or living only with a partner is higher the higher the person's socioeconomic status, as people of higher socioeconomic status tend to have fewer children, they are usually in better health (and hence, less dependent on help), and they can more easily afford to hire good-quality private care in case of need.

At a time when the demand for care is rising in developing countries, the reduction in the availability of informal care brought about by these changes leads to a large share of elderly people with functional limitations not receiving any help whatsoever. In fact, it is estimated that, in Thailand, among the population aged 60 years or more, 36 percent of those needing assistance do not receive any (Knodel et al. 2015), while in Uruguay this percentage reaches almost half of those requiring help with either basic or instrumental daily activities (Aranco and Sorio 2019). Evidence for China shows that only around 50 percent of older individuals requiring help in using the toilet have someone to assist them (Glinskaya and Feng 2018).

c. Women are still the main unpaid caregivers for older people

In the absence of public solutions for long-term care in many aging countries, families, and particularly women, are still the main unpaid caregivers for older dependent people. This situation forces many caregivers—again, principally women—to either forego participation in the labor market altogether or to endure excessive working hours, when combining paid and unpaid work. This is true in most countries, regardless of their level of development, but it is even more acute in developing countries, where both public and private alternatives to long-term care are limited.

A study conducted in China, Mexico, Nigeria, and Peru (Mayston et al. 2014) shows that in these countries most of the help is provided by either the recipient's spouse or a child and that—except in rural China, where care responsibilities seem to be shared equally between genders—caretakers are mostly women. The study also shows that only in the urban regions of China and Peru are care responsibilities shared with paid workers. In Uruguay, data from 2013 show that among older adults who receive help with their daily activities, almost 76 percent rely on unpaid family members to provide such care; in most cases the help comes from a woman (Aranco and Sorio 2019). In Chile, the percentage of functionally dependent older adults who receive family help is 70 percent, exclusively (46.4 percent); with estimates showing that between 70 percent and 90 percent of this unpaid help is provided by women (Molina et al. 2020). In Colombia, the 2015 SABE survey shows that 84 percent of those providing care to the elderly are women, and only 7 percent receive some kind of payment for the task, either in cash or in kind (UN 2017d). Similarly, in Thailand, 90 percent of older people receiving assistance with their daily activities report getting it from a family member, daughters being the main caregivers, followed by spouses (Knodel et al. 2015).

Globally, unpaid care work is estimated at approximately 3 percent of economic output; most unpaid caregivers are family members, usually women; and a large proportion of this care work is associated with non-communicable disease-related care (The Lancet Commission on Women 2015).[25] In some countries the contribution of unpaid work to GDP is even larger. For example, in many Latin American countries it has been estimated to reach 20 percent, with women responsible for 70 percent of this contribution (ONU Mujeres 2018; Vaca 2021).

The consequences that care responsibilities have for family members' (very often women's) health, wellbeing, and labor market participation are well documented. More than 48 percent of caregivers in rural China were forced to give up or reduce paid working time to fulfill their caregiver responsibilities; this number reaches almost 40 percent in Nigeria and rural Mexico (Mayston et al. 2014). In Poland, around 66 percent of caregivers do not participate in the labor market, while in Slovakia 28 percent of inactive women declare

25 https://www.thelancet.com/commissions/women-health-2015

caregiving responsibilities (either towards children or towards older individuals) as one of the main reasons behind not seeking a job (Sowa-Kofta 2018; Gerbery and Bednárik 2018). A study that includes data from Chile, Colombia, Costa Rica, and Mexico shows that women taking care of parents are less likely to participate in the labor market and that, when they do, they work for a smaller number of hours (Stampini et al. 2020; cf. Gatti et al. 2024).

The burden of caregiving responsibilities toward family members also takes its toll in terms of the emotional and physical health of the caregivers. A multi-country survey conducted in 11 countries in Latin America, India, and China highlights the emotional strains suffered by caregivers of people with dementia (Prince et al. 2012). Research from Chile (Flores, Rivas and Seguel 2012; Villalobos 2018), Colombia (Giraldo and Franco 2006), and Philippines (Varona et al. 2007), among others, also confirms this.

Country responses in long-term care

a. General context

As a result of the increasing demand for long-term care services and the shrinking network of family caregivers, there is a gap between the needs for and the supply of care. This gap will widen as populations age if no actions are taken (Glinskaya et al. 2024). Given the barriers to developing a private long-term care insurance market, and the prohibitive costs of financing older-adult care out-of-pocket (Barr 2010), public intervention is critical to ensure that individuals have the support they need to continue living as autonomously as possible as they grow old (Caruso, Galiani and Ibarrarán 2017; Glinskaya et al. 2024).

The development of national long-term care systems is relatively new on the political agenda globally. While some countries (particularly high-income OECD countries) have well-developed national systems in place, in low- and middle-income countries the provision of long-term care services is – at best – characterized by a multiplicity of small-scale interventions with limited coordination and integration. Even in countries where public solutions do exist, coverage is low and institutional factors often affect accessibility. According to a study done for 46 developed and developing countries in 2015, 48 percent of older adults were not legally covered for their long-term care needs, and an additional 46 percent were excluded from coverage due to restrictive means-testing accessibility rules (Scheil-Adlung 2015).

In developing countries, the lack of state-organized services, coupled with barriers to accessibility and affordability of services, leads to extremely low levels of coverage, issues of poor quality, and long waiting lists (Glinskaya et al. 2024). A recent review of the state of the art in 26 Latin American and Caribbean countries shows that the region performs poorly when it comes to coverage and quality of services. The countries that perform better in terms of coverage are Argentina and Costa Rica, but even in these countries only 20 percent of dependent people older than 65 receive some public long-term care services (Aranco et al. 2022). Small and relatively richer countries like Barbados achieve just 15 percent coverage, while Uruguay has 11 percent and Chile only 7 percent. Most of the other countries studied have an estimated coverage of less than 5 percent. Regarding quality, the report shows that, despite most countries having quality standards for residential care in place, the level of compliance is very low, and challenges are even starker in the case of home care (Aranco et al. 2022). Results also show that the bulk of human resources working in the field do not receive proper training for the tasks they are expected to perform.

In countries where no formal long-term care system is in place, like Serbia, the problem is particularly acute: waiting lists for admission to institutional and daycare centers are long and the level of coverage very low. In 2016, only 8.5 percent of older individuals in Serbia received some kind of long-term care service, in the form of residential care, home and day care, or cash allowances (Stokic and Bajec 2018). In Hungary the figure reaches 10.2 percent (Gal 2018). High levels of out-of-pocket payments could also be a barrier to effective coverage: for instance, such payments represent around 50 percent of relevant costs in the Czech Republic (Maly 2018), while in Latvia, 90 percent of the older person's pension is used to cover the cost of institutional care (Rajevska 2018).

Efforts should be made to design and implement long-term care systems that are affordable, accessible, ensure minimum quality, and are person-centered, respecting older people's dignity and rights and, whenever possible, improving their functional abilities (WHO 2015). In what follows, we provide examples of some actions taken in that direction by developing countries.

b. Development of national long-term care policies in developing countries

Many countries have started to raise the issue of long-term care on the political agenda, either with the aim of addressing the problems posed by current systems – when they exist – and/or designing new solutions to ensure that older people receive the care they need. In 2021, Costa Rica approved a 10-year policy program to implement a care system at the national level. Colombia is in the process of designing a national long-term care system, as is Saint Maarten (UN ECLAC 2017), while relatively younger countries such as Paraguay and Ecuador have recently included the subject on their public agenda.

The process of designing and implementing a long-term care system is not easy and one size does not fit all (Glinskaya et al. 2024). Countries need to consider at least four factors when planning such a system (Medellin, Ibarrarán, and Stampini 2018): (1) Who are the beneficiaries? (2) Which benefits will the system cover, and how will they be delivered? (3) Which mechanisms should be used to ensure the quality of services? and (4) How will the system be financed?

In Latin America and the Caribbean, the case of Uruguay is worth highlighting. As one of the countries with the oldest populations in the region, Uruguay has also been the first to design and implement an integrated national long-term care system, the *Sistema Nacional Integrado de Cuidados*. This is a tax-funded system, which came into operation at the end of 2015. The system covers children and persons with functional dependency due to aging or disability. Due to budget constraints, the system focuses on the most vulnerable populations, with the aim to progressively increase its coverage over time (cf. Glinskaya et al. 2024). Those aged 80 or more (or younger than 30) with severe dependency are entitled to 80 hours a month of home care; those 65 and older with mild levels of dependency can go to publicly funded day centers and have the right to access a basic teleassistance service after they turn 70 years old. In the case of homecare services and telecare, the percentage of the cost financed by the government depends on household income, with individuals of higher socioeconomic status being subjected to higher copayments.

Given that functional dependency is usually concentrated at older ages and that it correlates negatively with socioeconomic status (Aranco et al. 2022), targeting the most vulnerable sectors of the population – i.e., the oldest and the poorest – could be a good strategy when, due to budget limitations, universal coverage is not possible (WHO 2015). Yet, these restrictions could leave an important share of the dependent population uncovered (Villalobos 2018). In Chile and Costa Rica, for example, there are systems in place, but their geographical coverage is limited. The Chilean system *Chile Cuida*, which started in 2017, covered only 22 of the 360 counties in the country by 2020. The system targets the most socioeconomically vulnerable population aged 18 years or more with moderate to severe levels of dependency. One of its main objectives is to coordinate the fragmented and uncoordinated public supply of long-term care services in Chile. The case of Costa Rica is similar: the country's long-term care program (*Red de Atención Progresiva para el Cuido Integral de las Personas Adultas Mayores*) is implemented at the local level, in counties/communities that express interest and that meet certain prerequisites in terms of financial resources and management capacities. The program covers functionally dependent people over 65 years old from low socioeconomic settings who have no other support networks available. The benefits are provided in the form of cash subsidies to purchase services/goods that range from home care help to home adaptations, transportation, food, and medicines, among others.

Progress has been slower in developing countries in Asia, despite their advanced stage in the demographic transition. The heterogeneity of both the stage of economic development and the stage of the demographic transition across Asian countries explains, in part, the different state of long-term care policies in the region (Esquivel and Kaufmann 2017). While high-income countries such as Japan, Korea, and Singapore have integrated and coordinated long-term care policies, the situation is different in low- and middle-income countries. Although in some countries governments are stepping in to close the gap between the growing demand for long-term care services and the declining support from informal caregivers, the implementation of national long-term care policies is still at early stages. In China, some local governments (for example, the cities of Qingdao, Wuxi, and Suzhou) have launched experimental long-term care insurance schemes that cover home, institutional, and hospital care, but a national coordinated policy is still not in place (UN ESCAP 2017).

The situation is highly heterogenous in Eastern European countries. Bulgaria approved a national strategy for long-term care in 2018 (Bogdanov and

Georgieva 2018), while Slovakia is currently working on the design and approval of an integrated and coordinated national system (Gerbery and Bednárik 2018); steps to integrate social and health care services, and to transform long-term care services into an independent policy field, are being taken in Hungary (Gal 2018). Some countries have taken actions to improve long-term care service coverage for populations living in rural areas. These include Russia, with the construction of new nursing homes, and Poland, with its Care 75+ program, which provides partial financial support to local authorities for the provision of services (Sowa-Kofta 2018).

Despite the existence of stand-alone initiatives in countries such as Ghana or Tanzania, the only three countries that have developed national efforts to implement national long-term care policies in Sub-Saharan Africa are Mauritius, Seychelles, and South Africa (WHO 2017c).

Efforts to design and implement long-term care systems reflect countries' commitment to bridge the gap between increasing demand and shrinking supply of long-term care. However, in most cases more needs to be done. Financing is, most of the time, one of the main constraints for further progress (Glinskaya et al. 2024). Budgets devoted to long-term care services are often inadequate, resulting in low levels of coverage and limited services.

In Uruguay, for example, the cost of the system in 2017 amounted to 0.04 percent of GDP, a figure that was estimated to be five times lower than what would be necessary to achieve the explicit objective of the system of reaching 60 percent coverage by 2020 (SNIC 2018; Matus-Lopez 2017). In fact, data from 2018 show that the system covers only 6 percent of the country's dependent elderly (SNIC 2019). Similarly, initial projections in Chile were for the system to cover 70 municipalities in 2018, 181 in 2019, 263 in 2020, and 345 in 2021. The lack of financial resources and political commitment have made it impossible to reach these aims, and in 2020 the system was in place in only 22 municipalities (Barraza 2017).

An alternative to the lack of resources is to fund the system through compulsory insurance, as is the case in some developed countries, such as France, Germany, Japan, Korea, or the Netherlands (Aranco and Ibarrarán 2020). Among developing countries, this source of financing has not taken hold, despite some recent discussions in the context of the pension reform in Chile (Macías Muñoz 2019).

c. Strengthening home care and community services

All over the world, in recent years, there has been a tendency towards deinstitutionalization of care, while home and community care services are increasing in importance (Aranco and Ibarraran 2020). In addition to being aligned with older people's preferences, "aging in place," when possible, has advantages both in terms of economic costs for governments and of older adults' mental and physical health (WHO 2015; Boland et al. 2017).

Several countries have undertaken initiatives to improve the care of the elderly, with or without the framework of a national and integrated system. In many OECD countries, the emphasis has been on policies that encourage an aging-in-place approach, promoting home and community services that allow older people to live independently as long as possible (UN ECE 2017; Spasova et al. 2018; Colombo et al. 2011). The 2015 long-term care system reform in the Netherlands, for example, limited the option of institutional care to those cases where home care is not feasible; similarly, reforms in Germany (2015-2017) and in Japan (in the late 1990s) favored the utilization of home care services by making them more attractive than institutional services (Aranco and Ibarraran 2020).

Following these global trends, developing countries have taken steps to strengthen the importance of home-based long-term care services. In Latin America and the Caribbean, for instance, home care services are the backbone of the newly created systems in Uruguay and Chile, and in Argentina the government subsidizes the hiring of a personal assistant for older adults who need help in their daily activities. While in Argentina and Chile the benefit is targeted at the economically vulnerable population, in Uruguay it covers all severely dependent older individuals, but cost-sharing is means-tested (Aranco and Ibarraran 2020).

Development of home care programs and services has also been seen in many Caribbean countries: in Antigua and Barbuda and Barbados, the public sector runs a free home care program that assists older people with basic daily activities, while in Trinidad and Tobago means-tested home care services are provided; a home health care service for those who have been released from hospital has recently been launched in Guyana (UN ECLAC 2017).

Other Caribbean countries that have taken steps in this direction are Anguilla, Bermuda, Cayman Islands, Dominica, Jamaica, Saint Lucia, and Saint Vincent and the Grenadines. In Bermuda, the government not only provides a home care subsidy but also offers services that help older adults to remain in their home for as long as possible, such as meal deliveries and handyman services (UN ECLAC 2017).

Within Middle Eastern economies, home care programs are available in Jordan, Kuwait, Oman, and the West Bank and Gaza, while in Lebanon such services are provided mainly by the private sector (Hussein and Ismail 2017; UN-ESCWA 2017). In Kuwait, services are provided for free (Hussein and Ismail 2017).

The development of home care services seems to be somewhat more advanced across Eastern European countries, regardless of the existence of a comprehensive national system. In 2013, Lithuania implemented a home care program (Integral Assistance Development Programme) that offers nursing and social home services for dependent people and advice to family caregivers (UN ECE 2017). A mobile team of specialists (social workers, psychologists, and others) that provide at-home services to the older population has been developed as a solution to cover populations in rural areas in Latvia (Rajevska 2018); because of this and other efforts toward de-institutionalization, expenditure for home-based long-term cares services increased 27 percent between 2014 and 2016 (Rajevska 2018). Bulgaria has also taken action to discourage institutionalization and promote community and family-based home services by expanding the range of services provided by its public system, while Slovakia approved a strategy for the de-institutionalization of social services (including long-term care services) in 2011 (European Commission 2019).

In Sub-Saharan Africa, the case of Seychelles is worth noting: a home care scheme has been in place in the country since 1987, where the older person can choose the caregiver, including a family member, but no standards for quality are set (i.e., the caregiver does not receive any kind of training). In addition, the fact that the program is funded by government revenues alone puts its fiscal sustainability in jeopardy (WHO 2017c).

It is important to highlight that the range of benefits included as home care services is not limited to the help offered by a personal assistant with daily activities; home care can include a wide array of other services that, even if they do not involve the assistance of a professional caregiver, can help older people to remain in their homes as long as possible (Aranco and Ibarraran 2020). Countries such as Estonia, Israel, Italy, or Ukraine help with errands and daily chores (UN ECE 2017). In Latvia, where municipalities have the obligation to provide home care in cases where the dependent person does not have any other family support, home services include not only assistance services but also laundry, meal delivery, and teleassistance (European Commission 2019). In Chile, local governments have the freedom to decide which services to include as part of the system's benefits through the so-called Specialized Services (Servicios Especializados), depending on the specific needs of the local older-adult population. Other countries, such as Myanmar and Sri Lanka, provide loans for home adaptations and encourage the construction of dwelling units for parents adjacent to the family's main house (Williamson 2015). Other programs, such as home delivery of meals for older people, are available in Lebanon and the West Bank and Gaza (Hussein and Ismail 2017).

Alternative solutions to support older people in remaining in a home-like context have been developed for cases in which staying at home is not possible; in Belarus, Estonia, and Russia, for instance, foster families that provide accommodation for older persons in exchange for a monthly state payment are common (UN ECE 2017; European Commission 2019). Foster care for older people is also a standard practice in Croatia and has been encouraged since the approval of the country's Foster Families Act in 2012; however, the number of adults in foster care increased only marginally from 2011 to 2015, rising from 1,409 to 1,581 over the period (Stubbs and Zrinščak 2018; European Commission 2019). In Tunisia, the government pays a modest sum to families that are willing to host older persons in their homes through a Surrogate Family program (UN ESCWA 2017).

The role of community care has been particularly important for the promotion of home care in Asian countries (UN ESCAP 2017). Within the Association of Southeast Asian Nations (ASEAN) countries,[26] volunteer-based home care programs for the elderly have proliferated as a way to help older people remain in their homes for as long as possible.

26 ASEAN countries include Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

Through a joint initiative, HelpAge International, ASEAN, and the Republic of Korea have collaborated with NGOs, government ministries, community volunteers, families, and older people to implement a volunteer-based home care model across ASEAN countries. The model is based on the Korean experience and adapted to the local context of each country (HelpAge International 2014b). The implementing NGOs are responsible for selecting and managing the volunteers. Volunteers receive basic training before they start working, and their tasks range from providing companionship and support to help with daily activities; in countries with weak health care systems (Myanmar, Laos, and the Philippines) the provision of basic health services can also be arranged (HelpAge International 2014b). The criteria for selecting participants vary across countries, but usually services are targeted to dependent older people from low-income settings. Volunteers and beneficiaries are matched, considering not only the needs of the older person but also the skills and preferences of the unpaid volunteers. Aims of the project include fostering an institutional status for home care ser-vices and encouraging the development of guidelines and policies in the countries where the services are implemented. This was accomplished in Cambodia, Indonesia, Malaysia, Myanmar, the Philippines, and Viet Nam. Policies and guidelines already existed in Singapore and Thailand (HelpAge International 2014b).

Community care services are also important outside ASEAN countries. In China, for example, the development of so-called "time banks" in some provinces is an example of an innovative way of organizing community-based care. Under this scheme, time is used as a currency: relatively younger persons care for their older peers and receive, in exchange, a time credit that allows them to use an equivalent number of hours of care when they need it (UN ESCAP 2017). Another popular model of home-based care in the country is the Virtual Elder Care Home, where local governments maintain an information hotline and service center, which acts as a referral for older people in need of services. Providers are reimbursed by the government for services provided to vulnerable dependent people (Feng et al. 2012). The Happiness Homes are a community-based solution for older people living in rural areas. They consist of village homes in which older adults live together and help each other. Housing and utilities are provided free by the government, as are living expenses for those who have no source of income; those who can do so must pay their living expenses out of pocket. By 2014, the initiative covered around 12 percent of villages in the country (Glinskaya and Feng 2018).

Community-based care is also being encouraged by the government and international organizations in Sri Lanka (UN ESCAP 2017). Some community initiatives encourage integration between health and social care, as in East-Timor, Singapore, and Thailand (HelpAge International 2013). Community care has also been gaining momentum in Europe. In the Netherlands, nurses are the main pillars of a model that has proved successful for many years and is now well known worldwide. The so-called Buurtzorg approach (meaning "neighborhood care"), run by a not-for-profit organization, relies on self-managed teams of (no more than 12) highly qualified nurses that are responsible for between 40 and 60 patients in each geographic area. Working closely with general practitioners and other health care professionals, the nurses provide comprehensive and personalized care to patients in their own homes, with services that can range from administering medications to help with basic activities or preparing a simple meal (Kreitzer et al. 2015).

Less-developed countries in Eastern Europe have followed the same path. For example, in Bulgaria, an Action Plan for the implementation of a national long-term care system over the period 2018-2021 anticipated the completion of 100 new community-based social services (European Commission 2019). Community day and home-based care is also a distinctive feature of the provision of long-term care services in Serbia, while in Lithuania community services are expected to take a leading role by 2030 under the country's "Guidelines for the Deinstitutionalization of Social Care Homes for the Disabled, Children Deprived of Parental Care, and Adult Disabled Persons" (Lazutka, Poviliunas, and Zalimiene 2018).

As in the case of health care, faith-based organizations also play a role in the delivery of long-term care, particularly when it comes to residential and nursing services. Information regarding the importance of these institutions in terms of coverage and services provided is, however, limited, and more research is needed in order to quantify their contribution,

The establishment of day centers is another way to enable older adults to stay in their homes for as long as possible, although usually this type of service targets individuals with lower levels of dependency (Cafagna et al. 2019). In many countries in Eastern Europe, such centers are usually provided and fund-

ed by local governments, as is the case in Bulgaria, Poland, and Serbia (Slavina et al. 2018), and with the aid of not-for-profit organizations (UN ECE 2017).

Another example of day centers developed at the local level is seen in Brazil. Under the program "*Brasil, Amigo do Idosso*" (Brazil, Friend of the Elderly), which encourages local governments to carry out elder-friendly initiatives, the state of São Paulo has expanded the number of day and community care centers for older adults as a way to promote their levels of autonomy and social participation.[27] In Uruguay, nine day-centers were built under the new long-term care system for adults who are moderately dependent (SNIC 2020). In Chile, the Ministry of Health runs day centers dedicated to people that have been diagnosed with dementia.

Despite this progress, home and community services are still under-developed in many countries, hindering the process of deinstitutionalization. More than 50 percent of public expenditure on long-term care in Estonia, for example, is devoted to institutional care (Paat-Ahi and Masso 2018); evidence for Latvia shows that, despite efforts toward deinstitutionalization, demand and funding for institutional care has remained stable (Rajevska 2018). Romania has witnessed an important increase in both public and private residential homes since 2006 (Pop 2018). Similarly, in Poland, where the number of daycare centers has increased recently as part of the government initiative Senior+, lack of funding has prevented further progress and challenges the sustainability of the program (Sowa-Kofta 2018).

While encouraging aging in place and community-led alternatives may be an interesting policy option, it still requires strong government stewardship and regulatory oversight to ensure that quality standards are met (Glinskaya et al. 2024). Investing in the proper training of human resources, as highlighted in the following paragraphs, is also of paramount importance to guarantee a person-centered approach to care in these settings and ensure that older people are protected from abuse and neglect.

d. Improving the quality of services and investing in human resources

Developed countries use several mechanisms to guarantee the quality of services provided. These include control and inspection-based mechanisms, the disclosure of information by public agencies to encourage competition, and the professionalization of the long-term care workforce (Mor, Leone, and Maresso 2014). Irrespective of the approach adopted, the role of the government in setting quality standards and enforcing their compliance is crucial.

In developing countries this might be a critical challenge. In fact, the evidence shows that in many low- and middle-income countries, private care services are often not regulated, compromising quality standards, and allowing situations of abuse to take place (WHO 2015). Even when private or public solutions do exist, the quality of services is often poor and unregulated. This is true for all regions. The 2017 Madrid International Plan of Action on Ageing progress report for the Middle East region, for example, highlighted that, in most countries in the region, the lack of a legal framework to regulate and control these institutions undermined their quality (UN ESCWA 2017). Lack of monitoring and regulation can lead to situations of abuse, especially in institutional settings. Recent global reviews document that 64 percent of the staff working in long-term care institutions have admitted to engaging in abusive practices, while the figure is 15.7 percent in community settings (Yon et al. 2017; Yon et al. 2019).

Within this context, efforts to improve the quality of services have been undertaken, whether through the inspection and control of facilities and providers, the training of caregivers, or both. However, these agendas are particularly challenging. Regulations regarding quality standards, such as infrastructure and personnel requirements in institutional facilities, are more prevalent across countries, as – by law – most require institutions to meet certain criteria to operate. In some countries, these regulations are relatively new. For example, quality standards for residential and daycare facilities in Lithuania were first approved in 2006 (Romas, Poviliunas, and Zalimiene 2018) and in Romania in 2012 (Pop 2018). In Trinidad and Tobago, actions are being taken to strengthen the control and inspection of care facilities, and Uruguay has also set new standards for institutional residences and reinforced inspection mechanisms (UN ECLAC 2017; Aranco and Sorio 2017).

Nevertheless, the gap between what is stated in the legislation and actual practice is sometimes

27 See Governo do São Paulo. Press Release: "Conheça as ações do Programa São Paulo Amigo do Idoso" 22nd December, 2015. Retrieved from: https://www.saopaulo.sp.gov.br/ultimas-noticias/conheca-as-acoes-do-programa-sao-paulo-amigo-do-idoso/

large. In Uruguay, for example, data from 2019 show that fewer than 2.7 percent of long-term care institutions have the social and sanitary authorization required by law to operate.[28] Lack of supervision is a widespread problem across developing countries in all regions. A review of the country reports in the ESPN *Thematic Report on Challenges in Long-term Care* from 2018 highlighted this as a common problem in most Eastern European countries.

Closely related to the quality of services is the need to ensure an adequate workforce, both in terms of quantity and quality. Nearly a decade ago, it was already estimated that the shortfall of formal caregivers had already reached about 13.6 million globally (Scheil-Adlung 2015). Recent estimates for Latin America and the Caribbean show that the need for caregivers for older adults in that region alone could reach 14 million by 2050 (Villalobos et al. 2022). Improving pay and working conditions could make the sector more attractive for potential workers (WHO 2015). In developing countries, where levels of labor informality are high, this represents an important challenge (Cafagna et al. 2019). Also, it is important to ensure that caregivers have the necessary skills by requiring that they engage in proper education and training courses. In most countries, this would imply updating the educational curriculum and even the development of specialized educational institutions (WHO 2015).

Given the intrinsic characteristics of the task at hand, caregivers need not only to have technical skills (how to move or bathe a bedridden person, for example), but they also need to be trained in a wide array of softer skills such as patience and interpersonal communication, particularly in the case of patients with cognitive decline. They also need to be able to identify when the dependent person might need other services, such as health care or additional social care services.

Even in cases in which care is paid, it is often provided by workers with no formal training or expertise (WHO 2015). Women are more likely to work in the care sector, and female occupations tend to pay less well than typical male occupations. Paid care jobs are characterized by low wages, informality, work overload, poor career prospects, and, in general, a lack of recognition of the work done. In many countries, especially in relatively more developed ones, the sector attracts many migrant workers, who must often accept lower wages and worse working conditions given the lack of alternative opportunities (Addati et al. 2018). Paid care workers may also suffer from emotional stress that could affect their mental and physical wellbeing. For those providing home care, the isolated nature of the job and the existence of conflicts with family members due to privacy issues or delimitation of responsibilities can make the situation even harder. Poor working conditions make it challenging to recruit and retain workers in the sector, compromising the viability of services (Addati et al. 2018).

Investing in the training of human resources in the care sector not only improves the quality of care, but also gives recognition and value to the caregiving task, opening opportunities for career paths, increasing salaries, and hence attracting more people to the sector, creating a virtuous cycle. Given the overrepresentation of women in this sector, with adequate policies, population aging can increase women's opportunities in the formal labor market in low- and middle-income countries, and equip women with knowledge, skills, professional careers, and business opportunities.

Some countries have started to invest in the training and certification of formal caregivers, although there is still much to be done. Even in OECD countries, educational requirements for long-term care workers are low, and only Canada, Denmark, Germany, and Korea have a career structure for formal caregivers (OECD 2020). In developing countries, some examples are worth noting. Uruguay has made important efforts in this regard, as training and accreditation of formal caregivers have become compulsory since 2015 (SNIC 2015). Formal training is also required in Chile (UN and HelpAge International 2012; Molina et al. 2020). In Asia, aging countries such as Thailand and China are among the countries that require a formal certification course for those working as caregivers (HelpAge International 2015b), while other countries such as Fiji, Sri Lanka, and Viet Nam encourage voluntary training for community caregivers (Williamson 2015).

However, as in the case of institutional care, sometimes these requirements are not enforced. For example, in China, data from 2015 show that, at that time, two-thirds of the workers in the sec-

28 Based on interview with Adriana Rovira from INMAYORES published in La Diaria newspaper article, June 2019. Retrieved from: https://salud.ladiaria.com.uy/articulo/2019/6/solo-25-de-los-940-residenciales-para-ancianos-tienen-habilitacion-del-msp/

tor lacked the required formal training (Glinskaya and Feng 2018). A similar situation has been reported in Serbia. There, while licensed home and daycare services are required to employ properly trained staff, the lack of a regulated labor supply forces many families to rely on the informal labor market (Stokic and Bajec 2018). In other cases, such as Uruguay, the lack of an adequate supply of educational opportunities prevents caregivers from engaging in the necessary trainings, forcing the government to relax the requirements initially set regarding the accreditation of care workers; data from 2017 show that, while 18,000 people had applied for the caregiver training course given by the government, only 1,000 had been able to attend and complete it (Aranco and Sorio 2019).

e. The provision of cash benefits

An important aspect to consider when defining the combination of services to be offered is how they are going to be delivered. One of the main decisions is whether services are going to be delivered in the form of direct benefits or in the form of cash transfers.

Cash transfers have the advantage of providing users with increased flexibility and freedom (as they allow the dependent person or their family to buy the services they choose), and they are usually less expensive to deliver (Cafagna et al. 2019). On the other hand, the use of cash can be difficult to monitor. Hence, cash transfers can generate distortions and inefficiencies within families, particularly when their use is discretionary (Costa-Font et al. 2018; Costa-Font and Vilaplana 2017). In Serbia, for example, 72 percent of those who receive the benefit do not use it to buy care services (Hirose and Czepulis-Rutkowska 2016). Also, when transfers are not tied to the specific purchase of care services, it is not possible to monitor the quality of such services.

Moreover, when cash transfers are used to pay the main caregiver, it is argued that they tend to reinforce gender roles and hence are a poor instrument when one of the aims of the long-term care system is to liberate women from the social mandate that assumes they are responsible for caregiving (Cafagna et al. 2019; Geyer and Korfhage 2015; Brimblecombe et al. 2018). Conversely, others argue that paying women for the care they provide at least gives recognition to a job they would be doing anyway (Holmes et al. 2010; Esser, Bilo, and Tebaldi 2019). The cases of Uruguay and Chile in Latin America provide excellent examples of these tradeoffs. In Uruguay, where one of the main benefits provided by the system is a subsidy to hire a formal caregiver at home, the system does not allow family members to apply for this subsidy (i.e., the person hired should be external to the family). In the policy discussions preceding the implementation of the system, the argument was explicitly made that paying family members would reinforce traditional gender roles. This is not the case in Chile, where family caregivers who are socioeconomically vulnerable can apply for a monthly stipend. While the aim of both systems is to recognize and value the work of caregivers and ultimately to release women from the unpaid obligation of caring, the path to get there is different. While in Uruguay the main objective is to professionalize and formalize the caregiver's task, in Chile the main objective is to provide some monetary relief and recognition to those doing the job, regardless of whether they are family members or not.

Most developed countries have opted for the use of conditional transfers, which are determined based on a personal-care plan that considers the specific needs of the dependent individual and allows for the purchase of the services established in that plan, making it easier to monitor the use of the funds. This is the case in France, the Netherlands, Scotland, and Spain, for example (Aranco and Ibarrarán 2020).

Cash allowances paid either to the dependent person or to the main family caregiver are used in many countries in Eastern Europe, such as Bulgaria, Croatia, the Czech Republic, Estonia, Poland, Serbia, Slovakia, and Ukraine (Slavina et al. 2018; Gerbery and Bednárik 2018; Stubbs and Zrinščak 2018; Maly 2018; Praat-Ahi and Masso 2018; Hirose and Czepulis-Rutkowska 2016; European Commission 2019). Russia approved a compensation benefit for caregivers of older people who cannot participate in the labor market, providing some financial security to family caregivers (UNECE 2017). While in a few countries the cash can be used in the way that best suits the beneficiary or their family (Austria, Lithuania, Serbia, Slovenia, and Slovakia, for example), in most cases the payment is linked to the purchase of care services.

The use of cash benefits to support dependent adults and their families in lower-and middle-income countries is not as common and, when such programs do exist, they are generally focused on the socioeconomically vulnerable population. In Chile, for example, informal caregivers of severely dependent adults that belong to the poorest segments of the population are entitled to a monthly stipend, if

they do not participate in the formal labor market (Molina et al. 2020). In Argentina, economically vulnerable families with a dependent elderly member receive a monetary subsidy to hire a caregiver; the amount of the subsidy depends on the economic and medical evaluation of each situation (Oliveri 2020).[29]

Monetary benefits to dependent people or their caregivers exist in a very few countries in the Middle East and North Africa, such as Iraq, where a cash transfer program for older people with disabilities has recently been implemented, or Tunisia, where a program of government subsidies is in place. As another way to provide additional monetary support to potential caregivers, in most Arab countries the value of pensions increases if the beneficiary has surviving parents (Hussein and Ismail 2017).

Cash transfers for dependent older individuals or their caregivers are not common in Asia, although in some cities in China monthly vouchers are given to the dependent person so that he/she can buy care services. Tax incentives for family caregivers are provided in India, Malaysia, the Philippines, Singapore, and Thailand, while allowances for low-income families with a dependent elder are also given in Sri Lanka (HelpAge International 2015b; Williamson 2015). In Sub-Saharan Africa, the government of Mauritius offers a monthly cash benefit to family caregivers of people with severe loss of functional capacity (WHO 2017c).

f. Other forms of support to informal caregivers

Acknowledging the fact that most caregiving responsibilities are borne by the family, even in countries where long-term care systems provide accessible and high-quality services, many nations have made provisions to support unpaid caregivers, ranging from the delivery of cash benefits (as discussed above) to flexible working conditions, training, or counseling services. A long-term care system that supports informal caregivers by providing training, respite care, labor flexibility, counseling, or cash transfers might help to mitigate the negative effects that care responsibilities can have on caregivers' physical and emotional health and ensure the quality of care (WHO 2015).

Support to informal caregivers is more widespread in developed countries, where an iconic example is that of Scotland, where the needs of unpaid caregivers are formally assessed by the government and a support plan is elaborated depending on the care burden and the age of the caregiver.[30] Benefits in terms of labor flexibility (Canada, France, Germany, Spain), counseling services (Austria, France, Germany, the Netherlands, Spain), or respite services (Denmark, Finland, Germany, Japan, Korea, the Netherlands) are among the most common ways in which developed countries support informal caregivers (Aranco and Ibarraran 2020).

In developing countries, other than cash benefits (discussed in the previous sub-section), informal caregivers' support relies almost exclusively on counseling and training services. Among Asian countries, counseling services are provided in India, Iran, and Sri Lanka, while training courses are given in China, Fiji, India, Iran, the Democratic People's Republic of Korea, Myanmar, Sri Lanka, and Viet Nam (Williamson 2015). Examples from other regions include Chile, Latvia, and Slovenia (European Commission 2019).

Labor flexibility legislation generally does not include those who care for an elderly person, although in Costa Rica those who care for a terminally ill patient have the right to unpaid leave from work and to receive a monetary subsidy from the state.[31] A law project that aims at recognizing the work of family caregivers by entitling them to a cash allowance, subsidizing their contributions to the health care and pension systems (under specific conditions), and providing them with counseling and training services is currently being discussed in Colombia. In Chile, the pension system reform project, currently under discussion, includes a social security contributions' subsidy for caregivers of people with moderate or severe dependency, for a maximum of two years.[32]

29 See Instituto de Seguridad Social Salud y Préstamos, Argentina, webpage at https://www.insssep.gob.ar/Coberturas/Index/daafa79f-a7a9-40b4-8d51-a7ae00954052

30 See "The Carers Scotland Act 2016" at https://www.legislation.gov.uk/asp/2016/9/contents

31 Law 7756 of Costa Rica. Retreived from: https://www.pgrweb.go.cr/scij/.

32 See Ministerio de Trabajo y Protección Social Chile. Press Release, November 2nd, 2022. Retrieved from: https://www.pensionesparachile.cl/noticia-02-11-2022.html

Actions to promote social and health care integration

A person-centered and integrated approach to care is paramount to achieving the shift in the care paradigm that is necessary to tackle the challenges of an aging society. According to the WHO, *"integrated care refers to services that span the care continuum, are integrated within and among the different levels and sites of care within the healthcare and long-term care systems (including within the home) and are offered according to people's needs throughout the life course"* (WHO 2015, p. 103).

The coordination between health and social care services is key to ensure the continuity of care along the life cycle and its multiple health states, and to prevent as much as possible older adults' loss of functionality. Integrated care not only entails the integration of the various medical steps involved in the treatment of a given disease, but also the consideration of the person as a central part of the community and the acknowledgment that, in most cases, the need for care exists even after the person leaves the health care system (Amelung et al. 2014). A comprehensive approach to care that situates the individual in their social context and considers not only acute care but also preventive, rehabilitative, long-term, and palliative care is needed.

The aim of social care, of which long-term care is part, is to *"improve quality of life and subjective well-being of individuals, groups, and communities who are in need or at risk of being in need"* (Amelung et al. 2014, p.10). As such, the distinction between health and social care is sometimes vague, as health and social care needs could affect and reinforce each other (Amelung et al. 2014).

However, the integration of these two dimensions of care is particularly challenging, because they usually depend on different institutions and are subject to different regulations and legislation (Slavina et al. 2018). Moreover, in many countries, social care is underfunded, organized at the local level, and is characterized by a large degree of participation of the community and informal networks, making coordination and integration with the health care system even more challenging, even for developed countries (Genet et al. 2012).

A lack of coordination, both within health care services and between health and social care services, poses problems for the treatment of older people, particularly given the increasing prevalence of multimorbidity and risk-factor clustering (WHO 2018a; He, Goodkind, and Kowal 2016). Multimorbidity poses particularly complex challenges when it comes to health care delivery and calls for a patient-centered integrated and coordinated system that brings together not only the different levels of health care but also different care systems, such as health and social systems (van der Heide et al. 2015).

The absence of solutions for long-term care also affects health care systems, as sometimes older people who are admitted to hospitals for acute or short-term conditions end up staying longer than necessary because they lack other care alternatives (WHO 2015). In fact, evidence shows that the implementation of long-term care systems could lead to a reduction in health care costs in the form of fewer hospital admissions and re-admissions, fewer emergency entries, and shorter hospital stays (Costa-i-Font et al. 2018; Cho and Kwon 2020; Holland et al. 2014; De Souza and Peixoto 2017).

Some successful examples of integration initiatives are worth highlighting, both at the community (local) level and at the national level. Among developed countries, the System of Integrated Care for Older Persons (SIPA) in Quebec, Canada, is a community-based care program for older people whereby self-managed multidisciplinary teams of physicians, nurses, social workers, therapists, home care workers, and, sometimes, nutritionists and pharmacists, are responsible for 160 patients each, with the aim of minimizing functional decline and allowing aging at home for as long as possible (Amelung et al. 2014). In the United States, a similar initiative exists, called the Program of All-inclusive Care of the Elderly (PACE) (Amelung et al. 2014). The Dutch Buurtzorg model described earlier is also a well-known example of a community-led integration approach that has proved to be successful.

The example of Japan, where the government has set an agenda for a "Community-based Integrated Care System" for older people, also merits attention. The aim is to fully integrate long-term care, health care, and community-provided care services by 2025. The country has been working towards this aim since 2012 (Morikawa 2014). The model is based on a decentralization approach in which responsibility is gradually shifted from the central government to local authorities, and where prefectures have responsibility for designing care policies that allow for the most efficient allocation and coordination of the different models of care (Tomita 2017).

In Sweden, the implementation of the "Esther Model" in Jönköping county (named after the real experience of an older patient) shows how a model

that aligns different care providers in the definition of what is best for the patient could have positive impacts on the quality of care. The implementation of the model has been linked to a 30 percent reduction in emergency department admissions between 1998 and 2013 and a 9 percent reduction in the 30-day readmission rate for patients aged 65 years or more.[33] Collaboration and coordination between providers is encouraged through: (1) quarterly Esther Cafes: cross-sectional meetings where providers share stories from patients; (2) a yearly steering group, which consists of a committee of community care managers from municipalities, hospitals, and primary care facilities to discuss challenges across organizations; (3) an annual "strategy day," where nurses, doctors, coaches, and managers come together for team-building exercises and to create a vision for the network; and (4) ongoing inter-organizational training (Tomita 2017). Due to its proven success, the model is being replicated in Singapore and the United Kingdom.

Besides some community-led initiatives, in developing countries, efforts to better integrate health and social care services are still incipient. Examples include the "Bangkok 7 model" and the "Community-Based Integrated Services of Health Care and Social Welfare" from Thailand, implemented as pilot programs and involving the collaboration of local authorities, volunteers, and older adults themselves (HelpAge International 2013). Another example is a pilot project in four municipalities of the *Litoral Norte* region in the State of Sao Paulo, Brazil, that took place from November 2018 to November 2019 in collaboration with the International Center for Integrated Care. The project, called "Transforming Together," took an integrative, collaborative, and interdisciplinary approach in which each municipality identified the objectives that were more important to them in the context of integrated care and worked towards them (Integrated Care Foundation 2019).

In some countries, such as Chile and Brazil, the health care system has the capacity to make referrals to social services (including long-term care services), but integration does not go much further than that. Moreover, sometimes, even when integration is an explicit goal in legislation or government plans, these efforts have not succeeded, as is the case in Bulgaria and the Czech Republic (European Commission 2019).

In spite of these efforts, much more is needed to ensure that older people receive continuous and integrated care that encompasses all dimensions of care, both at the medical and at the social level.

FINAL REMARKS AND KEY POLICY CONSIDERATIONS

Population aging is good news; it is a consequence of a myriad of social, economic, and technological advances that allow people to live longer. It is not, however, exempt from challenges. Health care and long-term care systems are particularly affected, as the demographic transition brings about an epidemiological transformation, leading to an increasing prevalence of chronic diseases and rising functional dependency rates.

Countries should consider the epidemiological characteristics underlying their own demographic transformation to shape policy responses. If countries observe a compression of morbidity, it would be important to focus on increasing the opportunities for older people to continue to contribute actively to their communities, adapting labor and pension markets accordingly, and providing them with access to life-long learning and training opportunities, promoting active and healthy aging (UN 2017). If, on the contrary, countries are witnessing an expansion of morbidity (whereby people are living more years with a particular disease or ailment), the priority should be to adapt and prepare health care and long-term care systems, guaranteeing timely access and quality of care, while promoting prevention and healthier lifestyles, to ease the financial burden that inevitably results from increasing demand.

Yet, even in an optimistic scenario, in which older people are living healthier lives than in the past, the absolute increase in the number of older people means an absolute increase in the need for care resources (Parker and Thorslund 2007). Population aging comes with a rising prevalence of chronic diseases, as evidenced by the increasing trends in conditions that are known to be strongly age-dependent, such as cardiovascular diseases, diabetes, dementia, or chronic obstructive pulmonary

33 See "The Esther Model: How one patient redefined an entire system vision in Sweden", Advisory Board blog post, June 21, 2018. Available at:https://www.advisory.com/blog/2018/06/esther-model

disease (Prince et al. 2015). As the share of older adults in the population increases, the importance of geriatric neurological conditions, such as dementia and Alzheimer's disease, also grows. Depression and musculoskeletal disorders in older adults are also major causes of disability.

Several characteristics of the epidemiological transition in developing countries create additional pressures. These include the following facts: (i) Many of today's older adults in developing countries were exposed to infectious diseases in their early childhood, with unknown effects on their health as older adults; (ii) The double burden of disease common in developing countries increases the risk of multimorbidity; (iii) Under-diagnosis of key medical conditions and lack of affordable, timely, and effective treatments are common problems in many developing countries; and (iv) The adoption of harmful habits such as smoking, alcohol use, lack of physical activity, and unhealthy eating has fueled the increase in chronic diseases and the speed of the epidemiological change.

Thus, population aging comes with at least three main challenges for health care systems in developing countries: (i) first, guaranteeing coverage, access, and affordability of services in a context of increasing demand; (ii) second, shifting the care model from a curative-based approach towards a person-centered holistic and integrated approach that encourages the continuum of care throughout the life course, with a greater emphasis on primary health care and health promotion and prevention activities; and (iii) third, keeping costs under control without losing attention to quality.

How people age is, to a large extent, determined by their health earlier in life and the choices they made when young. Countries should therefore promote healthy lifestyles, like physical activity and healthy eating, through the entire life course (Rechel et al. 2009). Adaptation of health care systems is critical to anticipate and successfully manage the consequences of an aging population, especially given the challenges of coverage, accessibility, adequacy and quality of services, and financing outlined in previous sections of this chapter. Moreover, for the appropriate management of chronic diseases, a person-centered model focused on adequate attention to comorbidities is crucial (Grumbach 2003).

Health care systems need to adapt and prepare. Universal health care coverage should adopt distinctive characteristics in countries with aging populations, as older adults not only have different health care needs than the younger population but are often less able to afford care. In the absence of cost containment policies, an increased demand for health care services exerts upward pressure on costs, challenging the fiscal sustainability of systems. Countries need to invest in the efficiency of health care systems, focusing on prevention and primary care, without compromising the quality of care.

The provision of long-term care services for people with diminished functional abilities needs immediate attention. Given the changes that are taking place at the societal and family levels, and the lack of affordable, high-quality private services in many settings, the role of the government in providing the long-term care services that functionally dependent people need becomes crucial (Caruso, Galiani, and Ibarrarán 2017).

Besides being accessible and affordable, long-term care services should be person-centered, encouraging - whenever possible - the provision of home care services, as aging in place has proved to be the preferred option for older people and their families. Aging in place has also been shown to deliver the best results in terms of older people's mental and physical health and to be cost-effective for governments (WHO 2015; Boland et al. 2017). Coordination and integration between the social care and health care sectors is of paramount importance both to achieving a continuum of care for the older person and securing needed efficiency gains.

The training and adaptation of human resources is an area in which progress has been slow. In most developing countries, the number of geriatricians is insufficient, and medical personnel, in general, lack the necessary training to treat older adults. The professionalization of human resources in the long-term care sector is even less developed. Investing in the training of human resources, their professionalization, and the improvement of their working conditions is essential not only to improve the quality-of-care older people receive but also to narrow the important gender gaps that still exist in terms of labor participation, financial autonomy, and the burden of care responsibilities.

As this review has shown, several developing countries have designed and implemented some of the key policies described above. In the case of health care, promising policies have aimed at increasing coverage, adapting health care systems to new epidemiological profiles, focusing on the prevention of chronic diseases, and promoting healthy aging. Attention has also been given to the devel-

opment or reinforcement of mental health policies, an area that was until recently somewhat neglected.

Long-term care policies and programs aimed at assisting those with difficulties in performing their daily activities have also been part of the policy agenda in some countries, although important gaps still exist in covering the needs of functionally dependent older adults. Despite efforts, progress has been slow and uneven (Zaidi 2018; UN 2017b). The scope and depth of policies vary, and, in some cases, little is known about their actual implementation (Williamson 2015).

Future policy responses to population aging should also consider the important distributional issues that come with population aging. These include gender gaps; intergenerational disparities; spatial differences (e.g., rural vs. urban); and socioeconomic inequalities (World Bank 2021). This will require paying more attention to the unequal burdens faced by women both in accessing services and in providing health and social care to others across the life course. Notable are the unpaid care responsibilities women often have to bear and the consequences that these have both for women's mental and physical health and their income-generation capacity.

There are important limitations regarding data related to aging and health (Box 10.4). These gaps may complicate the design of effective policies. Data limitations were found in: (i) the determinants of healthy aging; (ii) the evolution of health and functionality as people age; (iii) the variation of health inequalities among older adults over time and across and within countries; and (iv) the needs and preferences of older adults regarding health care and long-term care services. These are areas where granular and specialized data are needed to enable the changes required in health care and long-term care systems. Examples include data on disability, functional dependency, cognitive status, and mental health, as well as health care service utilization (World Bank 2021).

BOX 10.4 The importance of timely and sound data

To facilitate evidence-based policy decisions, data need to be comparable across countries and time, yet consensus does not exist on key definitions or on which data should be prioritized. As early as 2001, a seminal report from the National Research Council [NRC] highlighted the need for improved data on aging and stressed the importance of comparable cross-national and longitudinal data (Moore 2001). This has been echoed more recently in the milestone WHO report on Ageing and Health (2015) and subsequent work. Attention is needed to the harmonization and standardization of data collected across countries (Boersch-Supan 2016).

Despite notable efforts made in countries, longitudinal, good-quality, and comparable information regarding the health status of the elderly is either lacking or difficult to access, particularly in developing countries. Data on health status (either self-reported or through medical diagnosis) is more commonly available than data on disability, functional dependency, risk factors, cognitive status, mental health, and health care service utilization. Health data come from different sources (ranging from censuses or nationally representative household surveys to administrative records, vital statistics, and specific/targeted surveys, among others), but none of these sources is without limitations.

Few countries have specific health surveys targeted at older adults. The Health, Ageing and Retirement Surveys are an example of such surveys. They are available in China, Costa Rica, England, India, Ireland, Israel, Japan, Korea, the United States, and 27 European countries. Multiple waves have been conducted, which allows for longitudinal analysis. The WHO Surveys on Ageing and Health, carried out in several developing countries during 2006/2007 and later in 2014, offer another example of such efforts. In Latin America, the Longitudinal Social Protection Surveys (ELPS as per the acronym in Spanish, standing for "Encuesta Longitudinal de Protección Social") are another group of surveys with specific focus on the elderly, available in Chile, Colombia, El Salvador, Paraguay, and Uruguay.

Even when surveys were designed to enable comparability, differences in methodology can prevent cross-national comparisons or generalizations. Even when the same "type" of questions are included in health-specific surveys, the exact questions are often different, making comparisons difficult. For instance, the section on functional dependency in the Uruguay ELPS survey makes it the only country administering an ELPS survey to include both basic and instrumental activities of daily living.

Source: World Bank (2021).

BOX 10.4 The importance of timely and sound data *(continued)*

The other ELPS countries only include basic activities, yet these activities are not standardized in ELPS surveys across countries.

Census and National Household Surveys sometimes (but not always) include a health section, but in those cases, cross-country comparison is even more difficult. Administrative and medical records, which usually span the entire life of the individual, are also rich sources of information; however, harmonization across countries may require addressing issues of format and software compatibility (Moore 2001). Privacy concerns also usually surround the use of administrative records. Being able to link administrative and medical records to survey data would open immense research possibilities useful for evidence-based policy (Moore 2001).

The National Research Council recommends that countries follow a system of "hierarchy of data collection modules," where minimum sets of data are defined for each module, from basic data to increasingly elaborated datasets, that guarantee comparability across countries. These datasets should include, at least, "the frequency and rates for: (1) deaths and their main causes, (2) main medical conditions, (3) self-reported health status, (4) population levels of physical, social, and mental function, (5) preventive and health promotional behaviors, and (6) disabilities. Regarding health care utilization data, the minimum information should include: (1) utilization rates for important types of health services, along with the use of long-term care services; (2) personal and family expenses for formal health services; (3) rates of use of medications and devices; (4) major cultural influences on the concept of health and the use of health services (such as gender, ethnicity, geographic residence, and socioeconomic status); and (5) the use of informal and alternative and complementary health care services" (Moore 2001).

Source: World Bank (2021).

Finally, several issues not considered in this chapter are part of the pressures placed by population aging on health and long-term care systems and countries' responses to them. These include: the importance of technology, the role of the private sector in the delivery of services, the need to strengthen palliative care services, the importance of investing in more resilient health care and social care systems, and the need to educate not only health and long-term care workers but the whole of society to fight ageism and discrimination towards the elderly. Also, the impacts of the pandemic generated by the spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in 2020 were not part of this review.

Undoubtedly, the COVID-19 pandemic presents a unique set of age-related challenges to health care and long-term care services. In many countries, COVID-19 has highlighted the weaknesses of systems, as the lack of adequate resources and protocols has led to unprecedented strains on health care systems. Long-term care services unprepared for such a shock have also been disrupted, leaving many older adults without the assistance they need. Although the impacts of the health and economic crisis generated by the pandemic are not yet fully understood, one thing is sure: the consequences will be unprecedented, and all countries will need to revise their social protection matrix (including health care and long-term care systems) in order not only to deal with the consequences of the current coronavirus, but to be prepared for other potential crises in the future (Twigg et al. 2021).

REFERENCES

1. Addati, L., U. Cattaneo, V. Esquivel, and I. Valarino (2018). *Care work and care jobs for the future of decent work*. International Labour Office, Geneva.
2. ADI (Alzheimer's Disease International) (2015). *World Alzheimer Report 2015: The global impact of dementia: An analysis of prevalence, incidence, cost and trends*. London, England. ADI.
3. ADI (Alzheimer's Disease International) (2017). *Dementia Friendly Communities Global developments, 2nd Edition.* London, England. ADI.
4. ADI (Alzheimer's Disease International) (2019a). *From plan to impact II: the urgent need for action.* London, England. ADI.
5. ADI (Alzheimer's Disease International) (2019b). *World Alzheimer Report 2019: Attitudes to dementia*. London, England. ADI.
6. Afshar, S., PJ. Roderick, P. Kowal, BD. Dimitrov, and AG. Hill. (2015). "Multimorbidity and the inequalities of global ageing: a cross-sectional study of 28 countries using the World Health Surveys." BMC Public Health 15(1): 776.
7. Aguilera, I., A. Infante, H. Ormeño, and C. Urriola. Improving

health system efficiency: *Chile: Implementation of the Universal Access with Explicit Guarantees (AUGE) reform*. WHO/HIS/HGF/CaseStudy/15.3. World Health Organization.
8. Aguirre, M. (2014). *La institucionalización de la vejez en Uruguay*. Paper presented at the XIII Research Seminar of the Faculty of Social Ciences, Public Uruguayan University, UdelaR, Montevideo, September de 2014.
9. AHWAIN (Asia Health and Wellbeing Initiative) (2020). "The Intergenerational Self-Help Club (ISHC) Development Model". Available at: https://www.ahwin.org/helpage-vietnam-ishc/.
10. Aikins, A, N. Unwin, C. Agyemang, P. Allotey, C. Campbell, and D. Arhinful (2010). "Tackling Africa's chronic disease burden: from the local to the global." *Globalization and Health* 6(1): 1-7.
11. Alfonso-Sierra, E.; Arcila Carabalí, A.; Bonilla Torres, J.; Latorre Castro, M.L.; Porras Ramírez, A. and Urquijo Velásquez, L. 2018. Situación de multimorbilidad en Colombia 2012 -2016. Ministerio de Salud y Protección Social. Estudios Sectoriales. Bogotá, Colombia. https://documents1.worldbank.org/curated/en/801401550612917615/pdf/134506-SPANISH-WP-P164632-OUO-9-Multimorbilidad-en-Colombia-sin-formato.pdf.
12. Allen, L., J. Williams, N. Townsend, B. Mikkelsen, N. Roberts, C. Foster, and K. Wickramasinghe (2017). "Socioeconomic status and non-communicable disease behavioural risk factors in low-income and lower-middle-income countries: a systematic review." *The Lancet Global Health* 5(3): e277-e289.
13. Almeida, G., O. Artaza, N. Donoso, and R. Fábrega (2018). "La atención primaria de salud en la Región de las Américas a 40 años de la Declaración de Alma-Ata." *Revista Panamericana de Salud Pública* 42: e104.
14. Amelung, V. E., A. Reichert, D. Urbanski, L. Matejevic, E. O'riordan, and E. Blatt. (2014). "Integrating Health and Social Care A global perspective of experience, best practices and the way forward." *INAV–Institute for Applied Health Services Research*.
15. Aranco, N., M. Stampini, P. Ibarrarán, Medellín, N. (2018). "Panorama de envejecimiento y dependencia en América Latina y el Caribe". *Resúmen de Políticas IDB-PB-273. Banco Interamericano de Desarrollo.*
16. Aranco, N. and R. Sorio (2019). "Envejecimiento y atención a la dependencia en Uruguay". Nota Técnica IDB-TN-1615. *Banco Interamericano de Desarrollo*.
17. Aranco, N. and Ibarrarán, P. (2020). "Servicios de apoyo personal para personas con dependencia funcional: Antecedentes, características y resultados". Nota Técnica IDB-TN-1884. *Banco Interamericano de Desarrollo*.
18. Aranco, N., Ibarrarán, P., Stampini, M. (2022). "Prevalencia de la dependencia funcional entre las personas mayores en 26 países de América Latina y el Caribe". Nota Técnica IDB-TN-2470. *Banco Interamericano de Desarrollo*.
19. Aranco, N., Bosch, M., Stampini, M., Azuara, O., Goyeneche, L., Ibarrarán, P., Oliveira, D., Reyes, M., Savedoff, W., Torres, E. (2022*). Envejecer en América Latina y el Caribe: protección social y calidad de vida de las personas mayores.* Banco Interamericano de Desarrollo. Arsenijevic J, Pavlova M, Rechel B, Groot W (2016) Catastrophic Health Care Expenditure among Older People with Chronic Diseases in 15 European Countries. PLoS ONE 11(7): e0157765. https://doi.org/10.1371/journal.pone.0157765.
20. Arredondo, A., and A. L. Recaman (2018). "Determinants of uncontrolled hypertension in the context of universal health coverage in middle-income countries." *American Journal of Hypertension* 31(11): 1175-1177.
21. Atun, R., L. O. Monteiro De Andrade, G. Almeida, D. Cotlear, T. Dmytraczenko, P. Frenz, P. Garcia, O. Gómez-Dantés, F.M. Knaul, C. Muntaner and J.B. De Paula (2015). "Health-system reform and universal health coverage in Latin America." *The Lancet 385*(9974): 1230-1247.
22. Barr, N. (2010). "Long-term care: a suitable case for social insurance" *Social Policy and Administration* 44(4): 359-374.
23. Barraza, M. (2017). "Dependencia y apoyo a los cuidados, un asunto de derechos humanos" en Forttes, P. (ed) *Subsistema Nacional de Apoyos y Cuidados*: Un desafío país: 60-67. Gobierno de Chile. Dirección Sociocultural, Presidencia de la República.
24. Batthyany, K., N. Genta and V. Perrotta (2012). "La población uruguaya y el cuidado: persistencias de un mandato de género. Encuesta nacional sobre representaciones sociales del cuidado, principales resultados". *Serie Mujer y Desarrollo 117*, CEPAL.
25. Ben-Harush A, Shiovitz-Ezra S, Doron I, Alon S, Leibovitz A, Golander H, Haron Y, Ayalon L. Ageism among physicians, nurses, and social workers: findings from a qualitative study. Eur J Ageing. 2016 Jun 28;14(1):39-48. doi: 10.1007/s10433-016-0389-9.
26. Bishwajit, G., S. Tang, S. Yaya, and Z. Feng (2017). "Burden of asthma, dyspnea, and chronic cough in South Asia". *International journal of chronic obstructive pulmonary disease* 12: 1093-1099.
27. Blas, E., and A. S. Kurup, eds. (2010). *Equity, social determinants and public health programmes*. World Health Organization.
28. Bloom, D. E., E. Cafiero-Fonseca, M.E. McGovern, K. Prettner, A. Stanciole, J. Weiss, and L. Rosenberg (2014). "The macroeconomic impact of non-communicable diseases in China and India: Estimates, projections, and comparisons". *The Journal of the Economics of Ageing* 4: 100–111.
29. Bloom, G., Y. Katsuma, K. D. Rao, S. Makimoto, J. DC Yin, and G. M. Leung (2019). "Next steps towards universal health coverage call for global leadership." *Bmj* 365.
30. Boersch-Supan (2016). "Enhancing the Comparability of SHARE with HRS and ELSA". Max Planck Institute/Social Law/Social Policy, Muenchen, Germany.
31. Bogdanov, G. and L. Georgieva (2018). ESPN *Thematic report on challenges on long-term care: Bulgaria*. The European Social Policy Network, European Commission.
32. Boland, L., F. Légaré, M. Becerra Perez, M. Menear, M. Garvelink, D. McIsaac, G. Painchaud Guérard, J. Emond, N. Brière, and S. Dawn (2017). "Impact of home care versus alternative locations of care on elder health outcomes: an overview of systematic reviews". BMC Geriatrics 17(1): 20.
33. Bonilla-Chacin, M.E., G. Afandiyeva, and A. Suaya (2018). "Challenges on the path to universal health coverage: the experience of Azerbaijan". *Universal Health Care Coverage Series* 28, World Bank Group, Washington, DC.
34. Boutayeb, A., S. Boutayeb, and W. Boutayeb (2013). "Multi-morbidity of non-communicable diseases and equity in WHO Eastern Mediterranean countries." *International journal for Equity in Health* 12.1 (2013): 1-13.
35. Brimblecombe, N., J.L. Fernandez, M. Knapp, A. Rehill and R. Wittenberg (2018). "Review of the international evidence on support for unpaid carers". *Journal of Long-Term Care* September: 25 - 40.
36. Burki, T.K. (2017). "Latin America makes progress on tobacco control." *The Lancet Respiratory Medicine* 5(6): 470.
37. Byers, AL., and K. Yaffe (2011). "Depression and risk of developing dementia." *Nature Reviews Neurology* 7(6): 323-331.
38. Cafagna, G., N. Aranco, P. Ibarrarán, M.L. Oliveri, N. Medellín, and M. Stampini (2019). *Envejecer con cuidado: atención a la dependencia en América Latina y el Caribe*. Inter-American De-

velopment Bank.
39. Caruso Bloeck, M, S. Galiani, and P. Ibarrarán (2017). "Long-term care in Latin America and the Caribbean? Theory and policy considerations". *IDB Working Paper Series* Nº IDB-WP- 834.
40. Vaca, I. (2021). "Valorización económica del trabajo no remunerado de los hogares". División de Asuntos de Género, Comisión Económica para América Latina y el Caribe.
41. Chang, A. Y., Skirbekk, V. F., Tyrovolas, S., Kassebaum, N. J., and Dieleman, J. L. (2019). "Measuring population ageing: an analysis of the global burden of disease study 2017." *The Lancet Public Health*, 4(3), e159-e167.
42. Chateau, D., A. Katz, C. Metge, C.C.M. Taylor, and S. McCulloch (2017). *Describing Patient Populations for the My Health Team Initiative.* Manitoba Centre for Health Policy.
43. Chatterji, S., Byles, J., Cutler, D., Seeman, T., and Verdes, E. (2015). "Health, functioning, and disability in older adults—present status and future implications". *The Lancet* 385: 563–75.
44. Chen, Y., H. Ding, M/. Yu, J. Zhong, R. Hu, X. Chen, C. Wang, K. Xie. and K. Eggleston (2019). "The Effects of Primary Care Chronic-Disease Management in Rural China" *National Bureau of Economic Research* w26100.
45. Cho, Y. M., & Kwon, S. (2022). Effects of public long-term care insurance on the medical service use by older people in South Korea. *Health Economics, Policy and Law*, 1-18.
46. Clarfield, A. M., O. Manor, G. Bin Nun, S. Shvarts, Z. S. Azzam, A. Afek, F. Basis, and A. Israeli (2017). "Health and health care in Israel: an introduction." *The Lancet* 389(0088): 2503-2513.
47. Coleman, R., G. Gill, and D. Wilkinson (1998). "Noncommunicable disease management in resource-poor settings: a primary care model from rural South Africa." *Bulletin of the World Health Organization* 76(6): 633-640.
48. Colombo, F., A. Llena-Nozal, J. Mercier, and F. Tjadens (2011). "Help Wanted? Providing and Paying for Long-Term Care" OECD *Health Policy Studies*. OECD Publishing.
49. Costa-Font, J., S. Jimenez-Martin, and C. Vilaplana-Prieto (2018). "Thinking of incentivizing care? The Eefect of demand subsidies on informal caregiving and intergenerational transfers". *IZA Discussion Papers* 11774.
50. Costa-Font, J. and C. Vilaplana-Prieto (2017). "Does the expansion of public long-term care funding affect saving behaviour?. *Fiscal Studies*, 38(3): 417-443.
51. Costa-Font, J., Jimenez-Martin, S., & Vilaplana, C. (2018). Does long-term care subsidization reduce hospital admissions and utilization? *Journal of health economics*, 58, 43-66.
52. De la Maisonneuve, C. and J. Oliveira Martins (2013). "Public spending on health and long-term care: a new set of projections." *OECD Economic Policy Papers.*
53. Dmytraczenko, T. and G. Almeida (eds.) (2015). *Toward universal health coverage and equity in Latin America and the Caribbean: evidence from selected countries*. The World Bank.
54. Druetz, T. (2019). "Integrated primary health care in low-and middle-income countries: a double challenge." *BMC medical ethics* 19(1): 89-96.
55. Dunlop, D. D., S. L. Hughes and L.M. Manheim (1997). "Disability in activities of daily living: patterns of change and a hierarchy of disability". *American Journal of Public Health*, 87(3): 378-383.
56. Esquivel, V.R., and A. Kaufmann. *Innovations in care: New concepts, new actors, new policies*. Friedrich Ebert Stiftung.
57. Esser, A., C. Bilo, and R. Tebaldi (2019). "How can cash transfer programmes work for women and children? A review of gender-and child-sensitive design features" *International Policy Centre for Inclusive Growth.* Working Paper 178.
58. European Commission 2019. *Joint report on health care and long-term care systems & fiscal sustainability. Country Documents* 2019 Update. Institutional Paper 105.
59. Fang, H., K. Eggleston, K. Hanson, and M. Wu. (2019)"Enhancing financial protection under China's social health insurance to achieve universal health coverage." *bmj* 365: l2378.
60. Feng, Z., C. Liu, X. Guan, and V. Mor (2012). "China's rapidly aging population creates policy challenges in shaping a viable long-term care system." Health Affairs 31(12): 2764-2773.
61. Flamini, V., M. Galdamez, F. Lambert, M. Li, B. Lissovolik, R. Mowatt, J. Puig, A. D. Klemm, and M Soto. *Growing Pains: Is Latin American Prepared for Population Aging?* International Monetary Fund, 2018.
62. Flores, E., E. Rivas, and F. Seguel. "Nivel de sobrecarga en el desempeño del rol del cuidador familiar de adulto mayor con dependencia severa." *Ciencia y Enfermería* 18(1): 29-41.
63. Fries, J. F. (1980). "Aging, natural death, and the compression of morbidity". *New England Journal of Medicine* 303(3): 130–135.
64. Gaál P., M. Csere, A. Conklin, et al. (2015). "Hungary. In: Nolte E, Knai C, editors. Assessing Chronic Disease Management in Euroa pean Health Systems: Country reports". *Copenhagen (Denmark): European Observatory on Health Systems and Policies* 29(8.)
65. Gakidou, E., A. Afshin, A. A. Abajobir, K. H. Abate, C. Abbafati, K. M. Abbas, F. Abd-Allah et al. (2017). "Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016". *The Lancet* 390(10100): 1345-1422.
66. Gal, R.I. (2018). ESPN *Thematic report on challenges on long-term care: Hungary.* The European Social Policy Network, European Commission.
67. Garg, S. et al. (2020). "Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019—COVID-NET, 14 States, March 1–30, 2020." Center for Disease Control and Prevention. Morbidity and Mortality Weekly Report 69.
68. Gatti Roberta, Daniel Halim, Allen Hardiman and Shuqiao Sun. 2024. "Gendered Responsibilities, Elderly Care, and Labor Supply: Evidence from Four Countries," in Unlocking the Power of Healthy Longevity: Compendium of Research for the Healthy Longevity Initiative. Washington D.C.: World Bank.
69. GBD DALYs and HALE Collaborators (2017). "Global, regional, and national disability-adjusted life-years (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017". *The Lancet* 392: 1859–922.
70. Genet, N., W. Boerma, M. Kroneman, A. Hutchinson and R.B. Saltman eds. (2012). *Home care across Europe: current structure and future challenges*. European Observatory on Health Systems and Policies, World Health Organization.
71. Gerbery, D. and R. Bednárik (2018). *ESPN Thematic report on challenges on long-term care: Slovakia*. The European Social Policy Network, European Commission.
72. Geyer, J. and T. Korfhage (2015). "Long - term care insurance and carers' labor supply: a structural model". *Health Economics* 24(9):1178-1191.
73. Giraldo Molina, C.I and G.M. Franco Agudelo. "Calidad de vida de los cuidadores familiares: Life Quality among Family Carers." *Aquichan* 6(1): 38-53.

74. Glassman, A., T. A. Gaziano, C.P. Bouillon Buendia, and F. C. Guanais de Aguiar (2010). "Confronting the chronic disease burden in Latin America and the Caribbean." *Health Affairs* 29 (2): 2142-2148.
75. Glinskaya, E., and Z. Feng (eds) (2018). *Options for aged care in China: Building an efficient and sustainable aged care system*. The World Bank, Washington D.C.
76. Glinskaya, Elena, Xiaohui Hou, Zhanlian Feng, Marco Angrisani, Guadalupe Suarez, Jigyasa Sharma, Drystan Phillips, et al. 2024. "Demand for and Supply of Long-Term Care for Older persons in Low- and Middle-Income Countries," in *Unlocking the Power of Healthy Longevity: Compendium of Research for the Healthy Longevity Initiative*. Washington D.C.: World Bank.
77. Goeppel, C., P. Frenz, P. Tinnemann, and L. Grabenhenrich (2014). "Universal health coverage for elderly people with non-communicable diseases in low-income and middle-income countries: a cross-sectional analysis." *The Lancet* 384: S6.
78. Goldman, N. (2001). Social inequalities in health. *Annals of the New York Academy of Sciences* 954(1):118–139.
79. Gruenberg, E. (1977). "The failure of success". *Milbank Memorial fund Quarterly/ Health and Society* 55: 3–24.
80. Grumbach, K. (2003). "Chronic illness, comorbidities, and the need for medical generalism". *Annals of Family Medicine* 1(1): 4-7.
81. Guanais, F., F. Regalia, R. Pérez-Cuevas, M. Anaya. eds. (2018). *From the patient's perspective: experiences with primary health care in Latin America and the Caribbean*. Inter-American Development Bank.
82. Han, W. (2012) "Health care system reforms in developing countries." *Journal of public health research* 1(3): 199.
83. He Y, Lam TH, Jiang B et al. (2009). "Combined effects of tobacco smoke exposure and metabolic syndrome on cardiovascular risk in older residents of China". *Journal of the American College of Cardiology* 53: 363–71.
84. He, W., D. Goodkind, and P. Kowal (2016). "An aging world: 2015, international population reports." *Washington: US Government Printing Office*. Washington DC.
85. http://www.census.gov/library/publications/2016/demo/P95-16-1.html.
86. Hedrich, W., J. Tan, B. Chalmers, and J. Yeo. "Advancing into the Golden Years: Cost of Healthcare for Asia Pacific's Elderly." *Marsh & McLennan Companies Asia Pacific Risk Center: Singapore.*
87. HelpAge International (2013). "Care in old age in Southeast Asia and China: situational analysis".
88. HelpAge International (2014a). "Why health systems must change: Addressing the needs of ageing populations in low- and middle-income countries".
89. HelpAge International (2014b). "Home care for older people: The experience of ASEAN countries".
90. HelpAge International (2015a). *Forget Me Not. Improving dementia care in Andean countries. Project Summary.* HelpAge International. Regional Development Centre for Latin America and the Caribbean.
91. HelpAge International (2015b). *Community-based social care in East and Southeast Asia* HelpAge International. East Asia and Pacific Regional Office.
92. Hirose, K. and Z. Czepulis-Rutkowska (2016). "Challenges in Longterm Care of the Elderly in Central and Eastern Europe." *ILO DWT and Country Office for Central and Eastern Europe, Budapest.*
93. Hoang, V.M. and H.Y. Duong (2018). "Health and health care for older people in Vietnam". Healthy Aging Research 7:15
94. Hoang-Vu Eozenou, P.; Neelsen, S. and Smitz, M.F. 2021. Financial Protection in Health among the Elderly – A Global Stocktake. Published in Health Systems & Reform 2021, vol. 7, no. 2, e1911067 https://doi.org/10.1080/23288604.2021.1911067.
95. Hoang, H. T., Nguyen, T., & Medina, C. K. (2023). Faith-based organizations' support for older adults in Vietnam: A comparison of Catholic and Buddhist efforts. *Social Work and Social Sciences Review*, 24(1).
96. Hoogendijk, E.; Rijnhart, J. Kowal, P.; Pérez-Zepeda, M.; Cesari, M.; Abizanda, P.; Flores Ruano, T.; Schop-Etman, A.; Huisman, M.; Dent, E. (2018) Socioeconomic inequalities in frailty among older adults in six low- and middle-income countries: Results from the WHO Study on global AGEing and adult health (SAGE), Maturitas, Volume 115, 2018: 56-63, ISSN 0378-5122, https://doi.org/10.1016/j.maturitas.2018.06.011.
97. Holmes, R. and N. Jones (2010). "Cash transfers and gendered risks and vulnerabilities: lessons from Latin America." *Overseas Development Institute.*
98. Holland, S. K., Evered, S. R., & Center, B. A. (2014). "Long-Term Care Benefits May Reduce End-of-Life Medical Care Costs." Population Health Management, 17(6), 332–339.
99. Honorato dos Santos de Carvalho, V.C., Rossato, S.L., Fuchs, F.D. et al. (2013). "Assessment of primary health care received by the elderly and health related quality of life: a cross-sectional study". BMC Public Health 13 (605).
100. Howse, K. (2006). "Increasing life expectancy and the compression of morbidity: a critical review of the debate". *Oxford Instute of Ageing. Working Paper* 206.
101. Huenchan, S. ed. (2010). *Ageing, human rights and public policies*. CEPAL. Serie Libros de la CEPAL – Desarrollo Social 100.
102. Hughes, D, and S. Leethongdee. (2007). "Universal coverage in the land of smiles: lessons from Thailand's 30 Baht health reforms." *Health Affairs* 26 (4): 999-1008.
103. Hussein, S., and M. Ismail (2017). "Ageing and elderly care in the Arab region: policy challenges and opportunities." *Ageing International* 42(3): 274-289.
104. Ibrahim, M. M, and A. Damasceno (2012) "Hypertension in developing countries." *The Lancet* 380 (9841): 611-619.
105. International Labour Office (ILO) (2016). *Women at work: trends 2016. Geneva*: ILO.
106. International Diabetes Federation. (2013). *IDF Diabetes Atlas. 6th Edition*.
107. International Diabetes Federation. (2019). *IDF Diabetes Atlas. 9th Edition*.
108. Jeet, G., J. S. Thakur, S. Prinja, and M. Singh (2017). "Community health workers for non-communicable diseases prevention and control in developing countries: evidence and implications." *PloS One* 12(7): e0180640.
109. Kagawa, R. C., Anglemyer, A., & Montagu, D. (2012). The scale of faith-based organization participation in health service delivery in developing countries: systemic review and meta-analysis. *PloS one,* 7(11), e48457.
110. Kaselitz, E., G. K. Rana, and M. Heisler (2017). "Public policies and interventions for diabetes in Latin America: a scoping review." *Current Diabetes Reports* 17 (8): 65.
111. Katz, S. (1983). "Assessing self-maintenance: activities of daily living, mobility, and instrumental activities of daily living". *Journal of the American Geriatrics Society* 31(12): 721-727.
112. Khanam, M. A., P. K. Streatfield, Z. N. Kabir, Qiu, C. Cornelius, and Å. Wahlin (2011). "Prevalence and patterns of multimorbidity among elderly people in rural Bangladesh: a cross-sectional study". *Journal of Health, Population, and Nutrition* 29(4): 406-414.
113. Kieny, M.P.; Evans,T.; Scarpetta, S.; Kelley, E.T.; Klazinga, N.; Forde,

I.; Veillard, J.; Leatherman, S.; Syed, S.; Kim, S.; Nejad, S.; Donaldson, L. 2018. "Delivering quality health services: a global imperative for universal health coverage." Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/482771530290792652/Delivering-quality-health-services-a-global-imperative-for-universal-health-coverage.

114. Kilpi, F., L. Webber, A. Musaigner, A. Aitsi-Selmi, T. Marsh, K. Rtveladze, K. McPherson, and M. Brown. (2014). "Alarming predictions for obesity and non-communicable diseases in the Middle East." *Public Health Nutrition* 17 (5): 1078-1086.
115. Knaul, F.M., R. Wong, H. Arreola-Ornelas, O. Méndez, R. Bitran, A. Carlos Campino, C.E. Flórez Nieto, U. Giedion, D. Maceira, M. Rathe and M. Valdivia. (2011). "Household catastrophic health expenditures: a comparative analysis of twelve Latin American and Caribbean Countries". *Salud Pública de México* 53: s85-s95.
116. Knodel, J., B.P Teerawichitchainan, V. Prachuabmoh, and W. Pothisiri (2015). "The situation of Thailand's older population: An update based on the 2014 Survey of Older Persons in Thailand." *Research Collection School of Social Sciences 1948*. Institutional Knowledge at Singapore Management University.
117. Kreitzer, M.J., K. A. Monsen, S. Nandram, and J. De Blok (2015). "Buurtzorg Nederland: a global model of social innovation, change, and whole systems healing." Global Advances in Health and Medicine 4(1): 40-44.
118. Kronfol, N.M. (2012). "Access and barriers to health care delivery in Arab countries: a review". *Eastern Mediterranean Health Journal* 18 (12): 1239-1246.
119. Kruk, M.E., D. Porignon, P. C. Rockers, and W. Van Lerberghe (2010). "The contribution of primary care to health and health systems in low-and middle-income countries: a critical review of major primary care initiatives." Social Science & Medicine 70(6): 904-911.
120. Kruk, M. E., Gage, A. D., Joseph, N. T., Danaei, G., García-Saisó, S., & Salomon, J. A. (2018). Mortality due to low-quality health systems in the universal health coverage era: a systematic analysis of amenable deaths in 137 countries. *The Lancet*, 392(10160), 2203-2212.
121. Kujawska, J. (2017) "The Efficiency of Post-Communist Countries' Health Systems." *Advances in Health Management* 23: 93-111.
122. Lagomarsino, G., A. Garabrant, A. Adyas, R. Muga, and N. Otoo. "Moving towards universal health coverage: health insurance reforms in nine developing countries in Africa and Asia." *The Lancet* 380 (9845): 933-943.
123. Lall, D., N. Engel, N. Devadasan, K. Horstman, and B. Criel. "Models of care for chronic conditions in low/middle-income countries: a 'best fit'framework synthesis." *BMJ Global Health* 3 (6): e001077.
124. Lee, H.Y, Juhwan Oh, J. R. Moon, and S. V. Subramanian (2019). "Use of high-level health facilities and catastrophic expenditure in Vietnam: can health insurance moderate this relationship?" *BMC health services research* 19(1): 318.
125. Levy BR, Slade MD, Chang ES, Kannoth S, Wang SY. Ageism Amplifies Cost and Prevalence of Health Conditions. Gerontologist. 2020 Jan 24;60(1):174-181. doi: 10.1093/geront/gny131.
126. Llibre Rodriguez, JJ., C. P. Ferri, D. Acosta, M. Guerra, Y. Huang, K. S. Jacob, E. S. Krishnamoorthy, A. Salas, Sosa, A.L., I. Acosta and M.E. Dewey (2008). "Prevalence of dementia in Latin America, India, and China: a population-based cross-sectional survey." *The Lancet* 372 (9637): 464-474.
127. Liu, J., G. Chen, X. Song, I. Chi and X. Zheng (2009). "Trends in disability-free life expectancy among Chinese older adults." Journal of Aging and Health 21(2): 266-285.
128. Loichinger, E. and W. Pothisiri (2018). "Health prospects of older persons in Thailand: the role of education." *Asian Population Studies* 14(3): 310-329.
129. López-Ortega, M. and Aranco, N. (2019). "Envejecimiento y atención a la dependencia en México". Nota Técnica IDB-TN 1614. *Banco Interamericano de Desarrollo*.
130. López, J. H. and C. A. Reyes-Ortiz (2015). "Geriatric education in undergraduate and graduate levels in Latin America." *Gerontology & Geriatrics Education* 36(1): 3-13.
131. Lustigova, M., D. Dzurova, H. Pikhart, R. Kubinova, and M. Bobak (2018). "Cardiovascular health among the Czech population at the beginning of the 21st century: a 12-year follow-up study." *Journal of Epidemiology and Community Health* 72(5): 442-448.
132. Luy, M. and Minagawa, Y., 2014. "Gender Gaps-Life expectancy and proportion of life in poor health." *Health Reports* 25(12): 12.
133. Macías Muñoz, O. (2019). "Reforma al sistema chileno de pensiones". XVII *Convención Anual de la Asociación de Administradoras de Fondos Mutuos de Chile (AAFM)*.
134. Macinko, J., B. Starfield, and T. Erinosho (2009) "The impact of primary healthcare on population health in low-and middle-income countries." *The Journal of ambulatory care management* 32(2): 150-171.
135. Macinko, J., F.C. Guanais, P. Mullachery, and G. Jimenez (2016). "Gaps in primary care and health system performance in six Latin American and Caribbean countries." *Health Affairs* 35(8): 1513-1521.
136. Macinko, J., F.C.D Andrade, B. P. Nunes, and F. C. Guanais (2019). "Primary care and multimorbidity in six Latin American and Caribbean countries." *Revista Panamericana de Salud Pública* 43: e8.
137. Mallawaarachchi, DS V., S.C. Wickremasinghe, L.C. Somatunga, V.T.S.K Siriwardena, and N.S. Gunawardena (2016). "Healthy Lifestyle Centres: a service for screening noncommunicable diseases through primary health-care institutions in Sri Lanka." *WHO South-East Asia journal of public health* 5(2): 89-95.
138. Maly, I. (2018). ESPN *Thematic report on challenges on long-term care: Czech Republic*. The European Social Policy Network, European Commission.
139. Mamo, Y., E. Seid, S. Adams, A. Gardiner, and E. Parry (2007). "A primary healthcare approach to the management of chronic disease in Ethiopia: an example for other countries." Clinical Medicine 7(3): 228-231.
140. Manes, F. (2016). "The huge burden of dementia in Latin America." *The Lancet Neurology* 15(1): 29.
141. Manton, KG. (1982). "Changing concepts of morbidity and mortality in the elderly population". *Milbank Memorial Fund Quarterly/Health and Society* 60: 183–244.
142. Mathers, CD., Stevens, GA., Boerma, T., White, R. A., & Tobias, M. I. (2015). "Causes of international increases in older age life expectancy." *The Lancet* 385(9967): 540-548.
143. Matus-López, M. (2017). "Análisis prospectivo de los servicios de cuidado a la dependencia en Uruguay". Unpublished. Inter-American Development Bank.
144. Mayston, R., M. Guerra, Y. Huang, A.L. Sosa, R. Uwakwe, I. Acosta, P. Ezeah, S. Gallardo, V. Montes de Oca, H. Wang, M. Guerchet, Z. Liu, M. Sanchez, P. Lloyd-Sherlock and M. J. Prince (2014). "Exploring the economic and social effects of care dependence in later life: protocol for the 10/66 research group INDEP study." Springerplus 3 (1): 379.
145. Maziak, W., R. Nakkash, R. Bahelah, A. Husseini, N. Fanous, and T. Eissenberg. "Tobacco in the Arab world: old and new epidem-

ics amidst policy paralysis." *Health Policy and Planning* 29(6): 784-794.
146. McEniry, M. (2013). "Cross-national comparisons of health disparities among aging populations in Latin America, the Caribbean, Asia and Africa". *Population Studies Center, University of Michigan*.
147. McEniry, M., and J. McDermott (2015). "Early-life conditions, rapid demographic changes, and older adult health in the developing world." *Biodemography and social biology* 61 (2): 147-166.
148. Medellin, N., Ibarrarán, P. and Stampini, M. (2018). "Cuatro elementos para diseñar un sistema de cuidados". Banco Interamericano de Desarrollo, Nota Técnica IDB-TN-1438.
149. Miranda, J. J, S. Kinra, J. P. Casas, G. D. Smith, and S. Ebrahim (2008). "Non-communicable diseases in low-and middle-income countries: context, determinants and health policy." *Tropical Medicine & International Health* 13 (10): 1225-1234.
150. Molina, H., L. Sarmiento, N. Aranco and P. Jara (2020). "Envejecimiento y atención a la dependencia en Chile". Nota Técnica IDB-TN-2004. Inter-American Development Bank.
151. Monteiro, L., and M. Paredes. "Arreglos de convivencia en la vejez en Uruguay: perfiles específicos para una política de cuidados." *Papeles de Población* 22(87): 133-160.
152. Montenegro Torres, F. (2013). "Costa Rica Case Study: Primary Health Care Achievements and Challenges within the framework of the Social Health Insurance". *UNICO Studies Series 14, The World Bank,* Washington D.C.
153. Mor, V., T. Leone and A. Maresso eds. (2014). *Regulating long-term care quality: an international comparison*. Cambridge University Press.
154. Morikawa, M. (2014). "Towards community-based integrated care: trends and issues in Japan's long-term care policy." *International Journal of Integrated Care* 14: e005.
155. Mounier-Jack, S., S. H. Mayhew, and N. Mays. "Integrated care: learning between high-income, and low-and middle-income country health systems." *Health policy and planning* 32(4): iv6-iv12.
156. Moore, E. (2001). "Preparing for an aging world: the case for cross-national research". Panel on a Research Agenda and New Data for an Aging World, National Research Council. Washington, DC, National Academy Press.
157. Ministerio de Salud Pública (MSP) Uruguay. Plan Nacional de Salud Mental. 2020-2027.
158. Nitrini, R., C. Bottino, C. Albala, N. Santos Custodio Capunay, C. Ketzoian, J. J. Llibre Rodriguez, G. E. Maestre, A.T. A. Ramos-Cerqueira, and P. Caramelli (2009). "Prevalence of dementia in Latin America: a collaborative study of population-based cohorts." *International Psychogeriatrics* 21(4) : 622-630.
159. Olivier, J., Tsimpo, C., Gemignani, R., Shojo, M., Coulombe, H., Dimmock, F., ... & Wodon, Q. (2015). Understanding the roles of faith-based health-care providers in Africa: review of the evidence with a focus on magnitude, reach, cost, and satisfaction. *The Lancet*, 386(10005), 1765-1775.
160. Organization for Economic Co-operation and Development (OECD) (2017), *Preventing Ageing Unequally*, OECD Publishing, Paris, https://doi.org/10.1787/9789264279087-en.
161. Organization for Economic Co-operation and Development and World Health Organization (OECD and WHO) (2018a). *Health at a Glance: Asia/Pacific 2018: Measuring Progress towards Universal Health Coverage*. OECD Publishing, Paris.
162. Organization for Economic Co-operation and Development and World Health Organization (OECD and WHO) (2018b). "Renewing priority for dementia: Where do we stand?" *OECD Policy Brief.*
163. Organization for Economic Co-operation and Development and World Health Organization (OECD and WHO) (2019a). "Chile: A healthier tomorrow. Assessments and recommendations". *OECD Reviews of Public Health*.
164. Organization for Economic Co-operation and Development and World Health Organization (OECD and WHO) (2019b). "Realising the full potential of primary health care". *OECD Policy Brief*.
165. Organization for Economic Co-operation and Development and World Health Organization (OECD and WHO) (2020). *Who Cares? Attracting and retaining care workers for the elderly.* OECD Health Policy Studies, OECD Publishing, *Paris, https:*//doi.org/10.1787/92c0ef68-en.
166. Organization for Economic Co-operation and Development and World Bank (OECD and WB)(2020), Health at a Glance: Latin America and the Caribbean 2020, OECD Publishing, Paris, https://doi.org/10.1787/6089164f-en.
167. ONU Mujeres (2018). "El trabajo de cudados: una cuestión de derechos humanos y políticas públicas". *ONU Mujeres, Entidad de las Naciones Unidas para la Igualdad de Género y el Empoderamiento de las Mujeres*.
168. Organización Panamericana de la Salud (OPS)(2017). "Día mundial de la hipertensión: Conoce tus números".
169. Oliveri, L. (2020). "Envejecimiento y atención a la dependencia en Argentina". *Nota Técnica IDB-TN-2044*. Inter-American Development Bank.
170. Olshansky, S. (1991). "Trading off longer life for worsening health". *Journal of Aging and Health 3:* 194–216.
171. Omran, AR. 1971. "The epidemiologic transition. A theory of the epidemiology of population change". *The Milbank Memorial Fund Quarterly* 49(4): 509-538.
172. Palloni, A., G. Pinto-Aguirre, and M. Peláez. (2002). "Demographic and health conditions of ageing in Latin America and the Caribbean". *International Journal of Epidemiology* 31(4): 762-771.
173. Parker, MG. and M. Thorslund. (2007). "Health Trends in the Elderly Population: Getting Better and Getting Worse". *The Gerontologist* 47 (2):150–158.
174. PHCPI Brazil (Primary Healthcare Performance Initiative Brazil). n/d. "Brazil: A community-based approach to comprehensive primary care".
175. PHCPI Costa Rica (Primary Healthcare Performance Initiative Costa Rica). n/d. "Costa Rica: Universal health coverage and community-based health teams create effective care".
176. PHCPI Estonia (Primary Healthcare Performance Initiative Estonia). n/d. "Estonia: Establishing family medicine as a specialty to strengthen primary health care".
177. Pitheckoff, N. (2017). "Aging in the Republic of Bulgaria." *The Gerontologist* 57 (5): 809-815.
178. Pop, L. (2018). *ESPN Thematic report on challenges on long-term care: Romania*. The European Social Policy Network, European Commission.
179. Praat-Ahi, G. and M. Masso (2018). *ESPN Thematic report on challenges on long-term care: Estonia.* The European Social Policy Network, European Commission.
180. Prentice, A. M. (2006). "The emerging epidemic of obesity in developing countries." International Journal of Epidemiology 35(1):93-99.
181. Prince, M., H. Brodaty, R. Uwakwe, D. Acosta, C.P. Ferri, M. Guerra, Y. Huang, K.S. Jacob, J.J. Llibre Rodriguez, A. Salas, and A.L.

Sosa (2012). "Strain and its correlates among carers of people with dementia in low-income and middle-income countries. A 10/66 Dementia Research Group population-based survey." *International journal of geriatric psychiatry* 27 (7): 670-682.
182. Prince, M. J., Wu, F., Guo, Y., Robledo, L. M. G., O'Donnell, M., Sullivan, R., and Yusuf, S. (2015). "The burden of disease in older people and implications for health policy and practice". *The Lancet,* 385(9967): 549-562.
183. Rajevska, F. (2018). *ESPN Thematic report on challenges on long-term care: Latvia*. The European Social Policy Network, European Commission.
184. Ramli, A. S., and S. W. Taher. (2008). "Managing chronic diseases in the Malaysian primary health care–a need for change." *Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia* 3 (1): 7.
185. Rampal, L., Rampal, S., Khor, G.L., Zain, A.M., Ooyub, S.B., Rahmat, R.B., Ghani, S.N. and Krishnan, J., (2007). "A national study on the prevalence of obesity among 16,127 Malaysians". *Asia Pacific journal of clinical nutrition*, 16(3).
186. Rechel, B., Doyle, Y., Grundy, E. and McKee, M. (2009). *How can health systems respond to population ageing*. Copenhagen: WHO Regional Office for Europe. World Health Organization.
187. Rechel, B., M. Ahmedov, B. Akkazieva, A. Katsaga, G. Khodjamurodov, and M. McKee (2012). "Lessons from two decades of health reform in Central Asia." *Health Policy and Planning* 27(4): 281-287.
188. Romas L., A. Poviliunas and L. Zalimiene (2018). *ESPN Thematic report on challenges on long-term care: Lithuania*. The European Social Policy Network, European Commission.
189. Rodda, J., Z. Walker, and J. Carter (2011). "Depression in older adults." *BMj* 343.
190. Rosen, B., H. Samuel, and S. Merkur (2009) "Israel Health system review". *Health Systems in Transition* 17(6): 253-253.
191. Sadana, R., A. Soucat, and J. Beard (2018) "Universal health coverage must include older people." *Bulletin of the World Health Organization* 96 (1): 2.
192. Salhab, N., J. Yartey, S. Rawaf, P. Musgrove, M. Claeson, I. Kickbusch, C. Jenkins, D. Robalino, A. Downing, B. Sadrizadeh, and A.M. Pierre-Louis (2004). *Public health in the Middle East and North Africa: meeting the challenges of the twenty-first century*. WBI Learning Resources Series Washington, D.C.: World Bank Group.
193. Samb, B., N. Desai, S. Nishtar, S. Mendis, H. Bekedam, A. Wright, J. Hsu, A. Martiniuk, F. Celletti, K. Patel and F. Adshead (2010). "Prevention and management of chronic disease: a litmus test for health-systems strengthening in low-income and middle-income countries." *The Lancet* 376 (9754): 1785-1797.
194. Sandoya, E. (2016). "Diabetes y enfermedad cardiovascular en Uruguay". *Revista Uruguaya de Cardiología* 31: 505-514.
195. Sassi, F., A. Belloni, A. J. Mirelman, M. Suhrcke, A. Thomas, N. Salti, S. Vellakkal, C. Visaruthvong, B. M. Popkin, and R. Nugent (2018): "Equity impacts of price policies to promote healthy behaviours." *The Lancet* 391(10134): 2059-2070.
196. Scazufca, M., P. R. Menezes, H. P. Vallada, A. L. Crepaldi, M. Pastor-Valero, L. MS Coutinho, V. D. Di Rienzo, and O. P. Almeida (2008). "High prevalence of dementia among older adults from poor socioeconomic backgrounds in Sao Paulo, Brazil." *International Psychogeriatrics* 20(2): 394-405.
197. Scheil-Adlung, X. (2015). *Long-term care protection for older persons: a review of coverage deficits in 46 countries.* UNECE Working Group on Ageing, Geneva, Switzerland, ILO.
198. Shah, N. M., H. E. Badr, K. Yount, and M. A. Shah. "Decline in co-residence of parents and children among older Kuwaiti men and women: What are the significant correlates?" *Journal of Cross-Cultural Gerontology* 26(2): 157-174.
199. Shekar, M. and Popkin, B. eds. 2020. Obesity: Health and Economic Consequences of an Impending Global Challenge. Human Development Perspectives series. Washington, DC: World Bank. doi:10.1596/978-1-4648-1491-4.
200. Sibai, A. M., Semaan, A., Tabbara, J., and Rizk, A. (2017). "Ageing and health in the Arab region: Challenges, opportunities and the way forward". *Population Horizons* 14(2): 73-84.
201. Singh, P.K., A. Cassels, and P. Travis (2018). "Primary health care at forty: reflections from south-east Asia." World Health Organization. Regional Office for South-East Asia.
202. Sloan, F. A., J. Ostermann, D. H. Taylor Jr, C. Conover, and G. Picone (2004). *The price of smoking*. MIT press, 2004.
203. Smith, J.P, and Majmundar, M. eds. (2012). *Aging in Asia: Findings from new and emerging data initiatives.* Committee on Population, Division of Behavioral and Social Sciences and Education, National Research Council. Washington, D.C.
204. Smith, O. and S.N. Nguyen. (2013*). Getting better: improving health system outcomes in Europe and Central Asia*. The World Bank.
205. SNIC (Sistema Nacional Integrado de Cuidados) (2015). *Plan Nacional de Cuidados* 2016-2020. Ministerio de Desarrollo Social, Uruguay.
206. SNIC (Sistema Nacional Integrado de Cuidados) (2018). *Informe Anual* 2017. Ministerio de Desarrollo Social, Uruguay.
207. SNIC (Sistema Nacional Integrado de Cuidados) (2019). *Informe Anual 2018.* Ministerio de Desarrollo Social, Uruguay.
208. SNIC (Sistema Nacional Integrado de Cuidados) (2020). *Cuidados rinde cuentas: informe mensual, marzo 2020.* Ministerio de Desarrollo Social, Uruguay.
209. Somanathan, A., A. Tandon, H. Lan Dao, K. L. Hurt, and H L. Fuenzalida-Puelma. (2014). *Moving toward universal coverage of social health insurance in Vietnam: assessment and options*. The World Bank, Washington, D.C.
210. Somkotra, T., and L. P. Lagrada (2009). "Which Households Are At Risk Of Catastrophic Health Spending: Experience In Thailand After Universal Coverage: Exploring the reasons why some households still incur high levels of spending—even under universal coverage—can help policymakers devise solutions." *Health Affairs* 28 (1): w467-w478.
211. Souza, D. K. de, & Peixoto, S. V. (2017). "Estudo descritivo da evolução dos gastos com internações hospitalares por condições sensíveis à atenção primária no Brasil, 2000-2013." Epidemiologia e Serviços de Saúde, 26(2), 285-294.
212. Spasova, S., R. Baeten, S. Coster, D. Ghailani, R. Peña-Casas and B. Vanhercke (2018). *Challenges in LTC in Europe: a study of national policies*. European Commission.
213. Sowa-Kofta, A. (2018). *ESPN Thematic report on challenges on long-term care: Poland*. The European Social Policy Network, European Commission.
214. Stampini, M., Olivieri, L., Ibarrarán, P., Londoño, D., Rhee, H. J., James, G. M. (2022). "Working les to take care of parents? Labor market efects of family long-term care in Latin America". *Working Paper Series* IDB-WP-1105. Inter-American Development Bank.
215. Stokic, L.P. and J. Bajec (2018). *ESPN Thematic report on challenges on long-term care: Serbia*. The European Social Policy Network, European Commission.
216. Storr, Carla L., Hui Cheng, Jordi Alonso, Matthias Angermeyer, Ronny Bruffaerts, Giovanni De Girolamo, Ron De Graaf et al. (2010). "Smoking estimates from around the world: data from

the first 17 participating countries in the World Mental Health Survey Consortium." *Tobacco control* 19(1): 65-74.
217. Stubbs, P. and S. Zrinščak (2018). ESPN Thematic report on challenges on long-term care: Croatia. The European Social Policy Network, European Commission.
218. Suwannaphant, K., W. Laohasiriwong, N. Puttanapong, J. Saengsuwan, and T. Phajan. "Association between socioeconomic status and diabetes mellitus: The National Socioeconomics Survey, 2010 and 2012." *Journal of Clinical and Diagnostic Research* 11 (7):LC18-LC22.
219. Tejativaddhana, P., D. Briggs, O. Singhadej, and R. Hinoguin (2018). "Developing primary health care in Thailand." *Public Administration and Policy*.
220. Tham, T.Y., T.L. Tran, S. Prueksaritanond, J. S. Isidro, S. Setia, and V. Welluppillai (2018). "Integrated health care systems in Asia: an urgent necessity." *Clinical interventions in aging* 13: 2527-2538.
221. Thumé, E., L.A. Facchini, G. Wyshak, and P. Campbell (2011). "The utilization of home care by the elderly in Brazil's primary health care system." American journal of public health 101(5): 868-874.
222. Tomita, K. (2017). "Japanese healthcare at a crossroads (1): toward integrated community care". *The Tokyo Foundation for Policy Research*.
223. Tonoyan, T., and L. Muradyan (2012). "Health inequalities in Armenia-analysis of survey results." *International Journal for Equity in Health* 11(1): 32.
224. Trieu, K., B. Neal, C. Hawkes, E. Dunford, N. Campbell, R. Rodriguez-Fernandez, B. Legetic, L. McLaren, A. Barberio, and J. Webster (2015). "Salt reduction initiatives around the world–a systematic review of progress towards the global target." *PloS ONE* 10(7): e0130247.
225. Twigg, J., Bardasi, E., Garcia, G. (2021). Covid-19 has exposed the fragilities of aging countries. World Bank blog. Available at: https://ieg.worldbankgroup.org/blog/covid-19-has-exposed-fragilities-aging-countries
226. United Nations (UN). 2002. *Political Declaration and Madrid International Plan of Action on Ageing.* Second World Assembly on Ageing, Madrid, Spain.
227. United Nations (UN). 2015a. *World population ageing report 2015*. New York: Department of Economic and Social Affairs, United Nations 2015.
228. United Nations (UN). 2017a. *World population ageing 2017: Highlights*. New York: Department of Economic and Social Affairs, United Nations.
229. United Nations (UN). 2017b. *Population ageing and policy options in the Arab region*. United Nations Population Fund, Arab States Regional Office.
230. United Nations(UN). 2017c. *Living arrangements of older persons: a report on an expanded international dataset*. New York: Department of Economic and Social Affairs. Population Division, United Nations.
231. United Nations (UN). 2017d. Una Mirada sobre el envejecimiento ¿Dónde están varios países latinoamericanos a 15 años del Plan de Acción Internacional de Madrid? Population Division, United Nations.
232. United Nations (UN). 2019. *World Population Ageing 2019: Highlights*. New York: Department of Economic and Social Affairs, United Nations.
233. United Nations (UN) and HelpAge International (2012). *Overview of available policies and legislation, data and research, and institutional arrangements relating to older persons - Progress since Madrid*. United Nations Population Fund and HelpAge International.
234. UN ECA (United Nations Economic Commission for Africa) (2017). *The Third Review and Appraisal Cycle of the implementation of the Madrid International Plan of Action on Ageing in Africa for the period 2012 – 2017*. United Nations.
235. UN ECE (United Nations Economic Commission for Europe) (2017). *Synthesis Report on the implementation of the Madrid International Plan of Action on Ageing in the ECE region between 2012 and 2017. United Nations,* Working Group on Ageing.
236. United Nations Economic Commission for Latin American and the Caribbean (UN ECLAC) (2017a). *Caribbean Synthesis Report on the implementation of the Madrid International Plan of Action on Ageing and the San Jose Charter on Rights of Older People in Latin America and the Caribbean*. United Nations.
237. United Nations Economic Commission for Latin American and the Caribbean (UN ECLAC) (2017b). *Fourth Regional Intergovernmental Conference on Ageing and the Rights of Older Persons in Latin America and the Caribbean*. United Nations.
238. United Nations Economic Commission and Social Commission for Asia and the Pacific (UN ESCAP) (2017). *Government actions towards the implementation of the Madrid International Plan of Action on Ageing, 2002: Achievements and remaining challenges*. United Nations.
239. United Nations Economic and Social Commission for Western Asia (UN ESCWA) (2017). *Third review and appraisal of the Madrid International Plan of Action on Ageing*. United Nations.
240. United Nations Population Fund Well Woman Programme (UNFPA WWP) (2019). National Strategic Plan 2019-2023. Family Health Bureau, Ministry of Health, Sri-Lanka.
241. United Nations General Assembly (UNGA). 2019. Political Declaration of the High-level Meeting on Universal Health Coverage "Universal health coverage: moving together to build a healthier world", September 2019 https://www.un.org/pga/73/wp-content/uploads/sites/53/2019/07/FINAL-draft-UHC-Political-Declaration.pdf.
242. Van der Heide, I, S. Snoeijs, M. Gabriella Melchiorre, S. Quattrini, W. Boerma, F. Schellevis, and M. Rijken. (2015). "Innovating care for people with multiple chronic conditions in Europe: An overview." ICARE4EU. *Health Programme of the European Union*.
243. Van Minh, H., N. S. Pocock, N. Chaiyakunapruk, C. Chhorvann, H.A. Duc, P. Hanvoravongchai, J. Lim, D.E. Lucero-Prisno III, N. Ng, N. Phaholyothin and A. Phonvisay (2014). "Progress toward universal health coverage in ASEAN." *Global Health Action* 7 (1): 25856.
244. Varona, R., T. Saito, M. Takahashi, and I. Kai (2007). "Caregiving in the Philippines: A quantitative survey on adult-child caregivers' perceptions of burden, stressors, and social support." *Archives of Gerontology and Geriatrics* 45(1): 27-41.
245. Vathesatogkit, P, G. D. Batty, and M. Woodward (2014). "Socioeconomic disadvantage and disease-specific mortality in Asia: systematic review with meta-analysis of population-based cohort studies." *J Epidemiol Community Health 68* (4): 375-383.
246. Verity, R., L.C. Okell, I. Dorigatti, P. Winskill, C. Whittaker, N. Imai et. al. (2020). "Estimates of the Severity of Coronavirus Disease 2019: A Model-Based Analysis." *The Lancet Infectious Diseases* 20(6): 669-677.
247. Villalobos, P. 2018. Long-term care systems as social security: the case of Chile. *Health Policy and Planning, Volume 33, Issue 9, November 2018, Pages 1018–1025*, https://doi.org/10.1093/heapol/czy083
248. Villalobos, P. "Is aging a problem? Dependency, long-term care, and public policies in Chile." *Revista Panamericana de Salud Pública* 42: e168.

249. Villalobos, P., Oliveira, D., Stampini, M. (2022). "Estimación de las necesidades de recursos humanos para la atención de personas mayores con dependencia de cuidados en América Latina y el Caribe". Nota Técnica IDB-TN-02556. *Banco Interamericano de Desarrollo.*
250. Wang, B., R. Li, Z. Lu, and Y. Huang (2020). "Does comorbidity increase the risk of patients with COVID-19: evidence from meta-analysis." *Aging (Albany NY)* 12(7): 6049-6057.
251. Wilkinson, R. G., and M. Marmot, eds. (2003). *Social determinants of health: the solid facts.* World Health Organization.
252. Williamson, C. (2015). "Policy mapping on ageing in Asia and the Pacific: Analytical report". *HelpAge International, East Asia/ Pacific Regional Office, Chiang Mai, Thailand*.
253. Woldie, M., G.T. Feyissa, B. Admasu, K. Hassen, K. Mitchell, S. Mayhew, M. McKee, and D. Balabanova (2018)."Community health volunteers could help improve access to and use of essential health services by communities in LMICs: an umbrella review." *Health Policy and Planning* 33(10): 1128-1143.
254. Woolf, AD., J. Erwin and L. March (2012). "The need to address the burden of musculoskeletal conditions." *Best practice & research Clinical rheumatology* 26(2): 183-224.
255. Workie, N.W., E. Shroff, A. S. Yazbeck, S.N, Nguyen, and H. Karamagi. "Who Needs Big Health Sector Reforms Anyway? Seychelles' Road to UHC Provides Lessons for Sub-Saharan Africa and Island Nations." *Health Systems & Reform* 4(4): 362-371.
256. World Bank. 2015. "World Bank Group Gender Strategy (FY16–23): Gender Equality, Poverty Reduction and Inclusive Growth." World Bank, Washington, DC.
257. World Bank. 2021. World Bank Support to Aging Countries: An Independent Evaluation. Independent Evaluation Group. Washington, DC: World Bank.
258. World Bank and International Monetary Fund (2016). *Development goals in an era of demographic change*. Global Monitoring Report 2015/2016.
259. World Bank Independent Evaluation Group (2018). Project performance assessment report. Oriental Republic of Uruguay. Non-communicable diseases prevention project (IBRD-74860).
260. World Cancer Research Fund International (2018). *Building momentum: lessons on implementing a robust sugar sweetened beverage tax*.
261. World Economic Forum and World Health Organization (WEF and WHO) (2011). From Burden to "Best Buys": Reducing the Economic Impact of Chronic Diseases in Low- and Middle-Income Countries.
262. World Health Organization (WHO) (2008). *Preventing Chronic Diseases: A Vital Investment: WHO Global Report 2008*. Geneva: World Health Organization.
263. World Health Organization (WHO) (2009). "Armenians struggle for health care and medicines". *Bulletin of the World Health Organization 87(7)*: 485-564.
264. World Health Organization (WHO) (2011a). *Global Health and Aging*. WHO; US National Institute of Aging.
265. World Health Organization (WHO) (2011b). *Global status report on noncommunicable diseases* 2010. WHO; US National Institute of Aging.
266. World Health Organization (WHO) (2015). *World report on ageing and health*. World Health Organization.
267. World Health Organization (WHO) (2017a). Tackling NCDs: *'best buys' and other recommended interventions for the prevention and control of noncommunicable diseases*. World Health Organization.
268. World Health Organization (WHO) (2017b). *WHO Report on the global tobacco epidemic 2017: monitoring tobacco use and prevention policies*. World Health Organization.
269. World Health Organization (WHO) (2017c). Towards long-term care systems in sub-Saharan Africa. *WHO Series on Long-Term Care*.
270. World Health Organization (WHO) (2018a). *The state of food security and nutrition in the world 2018: building climate resilience for food security and nutrition*. Food & Agriculture Organization.
271. World Health Organization (WHO) (2018b). *Public Spending on Health: A Closer Look at Global Trends*. World Health Organization.
272. World Health Organization (WHO) (2018c). Country cooperation strategy at a glance: Seychelles.
273. World Health Organization (WHO) (2019). *Global report on trends in prevalence of tobacco use 2000-2025, third edition*. Geneva: World Health Organization.
274. World Health Organization (WHO) (2020). *"Obesity and overweight – Key facts"*. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight.
275. Wu, F., Guo, Y., Chatterji, S., Zheng, Y., Naidoo, N., Jiang, Y., ... and Manrique-Espinoza, B. (2015). "Common risk factors for chronic non-communicable diseases among older adults in China, Ghana, Mexico, India, Russia and South Africa: the study on global AGEing and adult health (SAGE) wave 1". BMC *public health*, 15(1), 1-13.
276. Xu, F., X. M. Yin, M. Zhang, E. Leslie, R. Ware and N. Owen (2006). "Family average income and diagnosed type 2 diabetes in urban and rural residents in regional mainland China". *Diabetic Medicine* 23(11): 1239-1246.
277. Yamaguchi, N., N. Pilnik, J. De La Garza, L. Ashton, A. Garcia, E. Bianco, and G. Kevorkof. "Tobacco Control Policies in Latin America". *Journal of Thoracic Oncology* 12(1): S56-S57.
278. Yang Z., Hall A. (2008). "The financial burden of overweight and obesity among elderly Americans: the dynamics of weight, longevity, and health care cost". Health Services Research 43(3):849–868.
279. Yiengprugsawan, V., J. Healy, H. Kendig, M. Neelamegam, P. Karunapema, and V. Kasemsup. "Reorienting health services to people with chronic health conditions: diabetes and stroke Services in Malaysia, Sri Lanka and Thailand." (2017). *Health Systems & Reform* 3(3): 171-181.
280. Yon, Y., C. R. Mikton, Z. D. Gassoumis, and K. H. Wilber. "Elder abuse prevalence in community settings: a systematic review and meta-analysis." *The Lancet Global Health* 5(2): e147-e156.
281. Yon, Y., M. Ramiro-Gonzalez, C. R. Mikton, M. Huber, and D. Sethi. "The prevalence of elder abuse in institutional settings: a systematic review and meta-analysis." *European Journal of Public Health* 29(1): 58-67.
282. Zaidi, A. (2016). "Sustainable Development Goals have put ageing back onto the agenda". *Global AgeWatch Index Blogs*, 08 June 2016.
283. Zaidi, S., R. Bennet and R.C. Summer (2017). The Madrid International Plan of Action on Ageing: *Where is Eastern Europe and Central Asia region fifteen years later*? United Nations Population Fund.
284. Zaidi, S., P. Saligram, S. Ahmed, E. Sonderp, and K. Sheikh. (2017). "Expanding access to healthcare in South Asia." *bmj* 357 (j1645): 1-4.
285. Zaidi, A. (2018). "Implementing the Madrid Plan of Action on Ageing: What have we learned? And, where do we go from here?". *Human Development Reports*. United Nations Development Programme.

CONSULTED SURVEYS AND DATABASES

i. Encuesta de Hogares de Propósitos Múltiples de El Salvador (2018). Retrieved from: https://onec.bcr.gob.sv/encuesta-de-hogares-de-propositos-multiples-ehpm/

ii. Encuesta Longitudinal de Protección Social (ELPS), Chile (2015). Available upon request.

iii. Encuesta Longitudinal de Protección Social (ELPS), El Salvador (2013). Retrieved from: https://onec.bcr.gob.sv/metadatos/index.php/catalog/12

iv. Encuesta Longitudinal de Protección Social (ELPS), Paraguay (2013). Retrieved from: https://www.stp.gov.py/v1/encuesta-longitudinal-de-proteccion-social-elps/

v. Encuesta Longitudinal de Protección Social (ELPS), Uruguay (2013). Retrieved from: https://www.elps.org.uy/

vi. Encuesta de Salud y Bienestar del Adulto Mayor en Perú (2012). Retrieved from: http://webinei.inei.gob.pe/anda_inei/index.php/catalog/584

vii. United Nations World Population Prospects (2019). Retrieved from: https://population.un.org/wpp/

viii. GBD (Global Burden of Disease and Collaborators Results Tool) (2019) Retrieved from: http://ghdx.healthdata.org/gbd-results-tool

ix. United Nations. Department of Economic and Social Affairs. World Population Prospects (UNWPP) (2019). Retrieved from: https://population.un.org/wpp2019/

x. World Health Organization (WHO) (2004). "A glossary of terms for community health care and services for older persons". WHO Centre for Health Development, Ageing and Health Technical Report, 5

xi. World Health Organization Global Health Estimates. Global Burden of Disease (2018). Retrieved from: https://www.who.int/healthinfo/global_burden_disease/en/

xii. World Health Organization Global Health Observatory Data Repository (2020). Retrieved from: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4680

xiii. World Bank Open Data website. Retrieved from: https://data.worldbank.org/