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DENMARK

Country case study on the integrated delivery of long-term care

WHO Regional Office for Europe series on integrated delivery of long-term care

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Abstract

This report describes the current state of the delivery of long-term care services in Denmark. Overall, older people enjoy comprehensive high-quality health and long-term care. There is high coverage, low rates of preventable hospitalizations, short waiting times and high beneficiary satisfaction. There is high level of integration of care among providers, fostered also by an information platform. The provision of long-term care emphasizes enabling older people to remain living at home, independently, for as long as possible. Expenditure in health and long-term care is high which puts strain on the sustainability of the system.

Keywords

LONG-TERM CARE
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Abbreviations

EU	European Union
GDP	gross domestic product
IHME	Institute for Health Metrics and Evaluation

Acknowledgements

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Editors

Hector Pardo-Hernandez, WHO Regional Office for Europe
Juan Tello, WHO Regional Office for Europe

Contributors

The following individuals contributed to this document, in alphabetical order:

Erica Barbazza, WHO Regional Office for Europe
Stefania Ilinca, European Centre for Social Welfare Policy and Research
Kai Leichsenring, European Centre for Social Welfare Policy and Research
Ricardo Rodrigues, European Centre for Social Welfare Policy and Research

Series editors

Juan Tello, WHO Regional Office for Europe
Manfred Huber, WHO Regional Office for Europe
Isabel Yordi, WHO Regional Office for Europe

Publication productions

Erica Barbazza, design
David Breuer, text editing
Jakob Heichelmann, layout

Introduction

The European population is ageing rapidly *(1)*. Low fertility rates and higher life expectancy are the leading causes fostering this shift *(1)*. In the WHO European Region, births per woman have remained at around 1.7 between 2000 and 2019, below replacement level fertility *(2)*. Average life expectancy has increased from 73.0 years at birth in 2000 to 77.1 years in 2015 *(2)*. In the same period, life expectancy at age 65 years has increased from 16.4 to 18.4 years *(2)*, and the percentage of the population 65 years or older has increased from 13.3% to 15.5%. In European Union (EU) countries, the proportion of the population older than 80 years is 5.6%, which is expected to increase to 14.6% by 2100 *(3)*.

As the proportion and total number of older people increases, their needs and care should be considered. In 2017, cardiovascular diseases, cancer and nervous system disorders were the leading causes of death and disability-adjusted life-years among people 70 years or older, whereas musculoskeletal disorders, sense organ diseases and cardiovascular diseases were the leading causes of years lived with disability *(4)*. The re-emergence and persistence of communicable diseases is an added challenge. In the WHO European Region alone, an estimated 72 000 people die every year from seasonal influenza *(2)*. In EU counties in 2014, almost 50% of people 65 years or older reported long-term restrictions in daily activities, whereas more than two thirds reported physical or sensory functional limitations *(3)*.

As a result of these changing scenarios, health systems have been compelled to adapt to meet the needs of older people *(5)*. Meeting these needs is not limited to addressing the symptoms or disability associated with disease. It encompasses promoting the development and maintenance of the functional ability that allows well-being in older age, a process known as healthy ageing, and which enables people to live a fulfilling life in accordance with their values *(6)*.

As part of the response to addressing the needs of older people, the 2016 Global Strategy and Action Plan on Ageing and Health calls for every country to implement a sustainable and equitable system of long-term care *(1)*. Long-term care refers to "the activities undertaken by others to ensure that people with, or at risk of, a significant ongoing loss of intrinsic capacity can maintain a level of functional ability consistent with their basic rights, fundamental freedoms and human dignity" *(1)*.

Long-term care covers a wide range of health and social services that can be delivered in various settings, including the beneficiary's home, hospice and day-care facilities *(7)*. Fragmentation of services is not limited to the delivery of services; it also can be seen during needs assessment, when accessing benefits and packages, in data collection and in the diversity of quality improvement efforts *(8)*. Fragmentation of services has been linked to dual administrative procedures, hindrances in access to care and longer waiting times *(8)* and has been identified as a barrier to reducing hospitalization for ambulatory care sensitive conditions *(9)*.

In the European Region, the Strategy and Action Plan for Healthy Ageing in Europe 2012–2020 provides policy directions for ensuring healthy ageing *(10)*. The WHO European Framework for Action on Integrated Health Services Delivery aims to streamline efforts for strengthening people-centred health systems and to promote integrated care models of primary, hospital and social services that are effectively managed and delivered by a coordinated array of providers *(11)*. These efforts are in accordance with the recommendations of WHO's 13th General Programme of Work for integrated services delivery based on a primary health care approach *(12)*.

Addressing the needs of older people is underpinned by a strong gender component that goes beyond biological factors and their differential effect on ageing *(13)*. The multiple facets of gender, understood as the social norms, roles and relationships of and between women and men, influence the provision of long-term care services *(13)*. Older women report lower self-perceived health status and higher rates of unmet health needs *(3)* and are traditionally responsible for providing unpaid, informal care to older relatives at home *(14)*. Men are affected by higher rates of risky behaviour and lower overall and healthy life expectancy *(3)*. The Regional Office's strategies on health and well-being for women *(15)* and men *(16)* highlight the importance of incorporating the determinants of men's and women's health to design policies that are responsive to their specific needs.

Promoting the availability and quality of long-term care services that are integrated, people-centred and properly managed is a right step for ensuring healthy lives and well-being in old age, in accordance with the United Nations Sustainable Development Goals *(17)*.

Background

Denmark has developed its long-term care system along the principles of the public and universal service model, as an integral part of an encompassing welfare model. Access to long-term care services is ensured for all older individuals with support needs at no cost for home-based care or subject to a means-tested co-payment. This encompassing welfare model enjoys broad public support and older people broadly utilise long-term care without stigma.

The hallmark of the long-term care system in Denmark has traditionally been its high level of decentralization. Although national legislation sets a broad framework for service provision, municipalities maintain responsibilities for long-term care policies. These include establishing eligibility and entitlement criteria and the level and content of service delivery, regulating services delivery and organizing the public provision of services. The reform of local government in 2007 reduced the former 271 municipalities to 98, abolishing 13 counties and creating five administrative regions. The newly created municipalities are larger and better able to sustain the provision of welfare services while the regional authorities mostly organize health services. This reform mostly affected the health sector. The social services provision has retained its decentralized structure granting municipalities the responsibility for rehabilitation and related training.

The main law regulating social service provision and, implicitly, long-term care provision is the Social Services Act, which passed in 1998 and replaced the earlier Social Assistance Act. The Social Services Act emphasizes the users' right to influence social service provision and enshrines the highly decentralized nature of the system, putting municipalities in a key position to shape long-term care. The Act has been amended multiple times, most recent through the Consolidated Act on Social Services of 7 August 2019. In 1990, an increased focus on efficiency in service provision and quality of care led to increased marketization of long-term care provision (notably in-home care), culminating with the introduction of legislation on free choice of provider in 2003 *(18)*. The Act prohibits monopolies in service provision and constrains municipalities to ensure a choice between at least two providers, who compete based on quality and price. This change marked the creation of a private sector of providers.

Denmark was one of the first European countries to implement a policy of deinstitutionalization during the 1970s – culminating in the legal ban to construct traditional care institutions in 1984 – and has since championed community-based care solutions. Currently, over two thirds of older people who need long-term care receive support in their own homes *(19)*. In the past years, the long-term care system has undergone further transformation, with the introduction of reablement, initially as a pilot initiative but currently being rolled out as a national-level policy. Reablement emphasizes a user-centred, preventive and proactive approach to care by working towards maintaining and regaining the skills older people need to

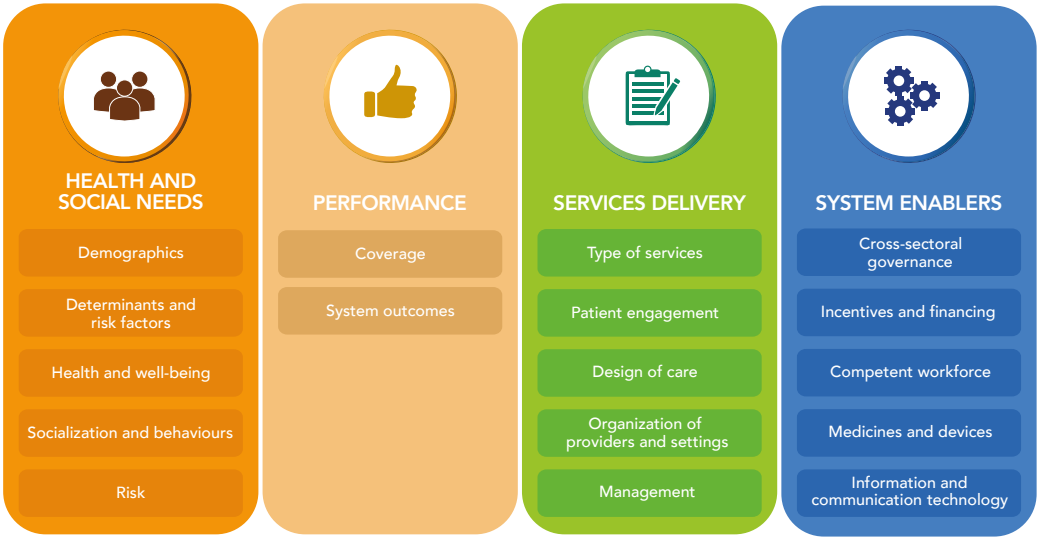
continue to live independently *(20)*. In a mid-term perspective, the new reablement approach is likely to change the criteria for defining and assessing need and the provision of appropriate services.

This report aims to assess the integration of health services delivery for long-term care. It assesses the health status of older people, their needs and the main causes of death and disability. This information is contrasted against the available health and social services, with special attention on the care mix design, the pathways to access care and the settings where services are provided. The system performance is analysed from different perspectives to identify strengths and potential areas for improvement. Lastly, the available system enablers are summarized. The report closes with actionable recommendations designed to reflect the collected evidence.

Methods

This assessment was completed following the principles of systems thinking *(21)*, people-centeredness and integrated care *(11,22)*, life-course approach *(23)*, healthy ageing *(6)*, human rights *(24)* and gender perspective *(25)*. The conceptual framework underpinning this assessment is the European Framework for Action on Integrated Health Service Delivery *(11)*. This policy framework calls for designing models of care based on the health and social needs and the alignment of the system enablers accordingly. Based on this, the assessment is developed along four domains: health and social needs, performance, services delivery and system enablers *(11,26)*. These domains and their respective features are illustrated in Fig. 1 and listed in Table 1.

Fig. 1. Framework for assessing integrated delivery of health and social services for long-term care



Source: Country assessment framework for the integrated delivery of long-term care *(26)*.

The assessment was structured in the following four domains.

- **Health and social needs**. This domain explores the main demographic and epidemiological trends at the country level, with an emphasis on people 65 years or older. The main determinants of health and lifestyle risk factors affecting people's health are listed, together with the underlying health needs of older people. The latter includes self-assessed outcomes and measures of disability and daily life limitations. The specific profile and needs of caregivers are investigated, together with measures to ensure older people's rights, dignity protection and support from the community.

- **Performance**. This domain encompasses an appraisal of long-term care services coverage. It also compiles information on quality of long-term care

using waiting times, hospital length of stay, hospitalization rates for ambulatory care sensitive conditions, safety incidents prevention and reporting, among other performance measures.

- **Services delivery**. This domain exhaustively explores the existing services available to older people and their caregivers and the procedures in place for completing needs assessment, for diseases and transition management and the available care pathways. Policies for fostering patient engagement are also covered. The profile of service providers, whether they are public, private for-profit or not-for-profit and the different settings in which services are provided are also compiled. There is consideration of the quality assurance efforts within settings and the initiatives to ensure information exchange among providers.

- **System enablers**. This domain includes those health system facilitators that intersect with health services delivery, including governance, financing of and allocation of resources for long-term care, the planning, production and update of dedicated workforce and the availability of information technology.

Table 1. Overview of the components of the assessment framework

Domain	Subdomain	Feature
Health and social needs (*)	Demographics	Population structure and dynamics
	Determinants and risk factors	Socioeconomic status of older people
		Lifestyle and risk factors
	Health and well-being	Health and social needs of older people
		Disability and well-being of older people
	Socialization and behaviours	Social inclusions and networks
		Gender behaviours when seeking care
	Rights	Rights of older people
		Rights and needs of carergivers
Performance	Coverage	Long-term care services coverage
	System outcomes	Quality of care for older people
Services delivery	Types of services	Health services for older people
		Social services for older people
		Services for caregivers
	Patient engagement	Self-management support for older people
		Shared decision-making with older people
		Peer-to-peer support and social inclusion
	Design of long-term care	Needs assessment
		Pathways and integrated services delivery
		Disease management
		Management of transitions
		Care/case coordination or management
	Organization of providers and settings for long-term care	Long-term care settings (public and private)
		Long-term care providers
		Out-of-hours services
		Cultural, social and gender patterns of caring
	Management	Facility management
		Autonomy and decision making
		Quality management including quality improvement mechanisms

System enablers	Cross-sectoral governance	Integrated long-term care priorities
		Governance and accountability arrangements
		Shared planning
		Allocation of resources
	Incentives and financing	Provider payments
		Financial coverage
	Competent workforce	Planning, recruitment and staffing
		Workforce composition (*)
		Continuous professional development
		Professionalization of long-term care roles
	Medicines and devices for older adults	Mechanisms for the responsible use and management of medicines
		Access to medical devices by older people
	Information and communication technology	Data capture in health and social sectors
		Application of new technology and online platforms
		Information exchange

Source: Country assessment framework for the integrated delivery of long-term care *(26)*.

Data sources

This report was constructed applying mixed methods, relying on qualitative data, literature searches, observational facility visits, semistructured interviews and round-table discussions with key informants. This design was adopted to consolidate a comprehensive view of long-term care in Denmark. The specific sources and process for data collection are described below.

Database data

An initial desk research was completed for existing, standardized indicators. Data were extracted from international databases: Eurostat *(3)*, the Institute for Health Metrics and Evaluation *(4)* and the Organisation for Economic and Co-operation and Development (OECD) *(27)* as well as Statistics Denmark *(28)*. These data have primarily informed an analysis of the current health context in the scope of depicting the health and well-being of older people in Denmark.

Scientific and grey literature

The literature search targeted scientific and grey literature on Denmark's long-term care services using the topics listed in Table 1 as keywords. Searches for grey literature included the WHO database WHOLIS for Denmark-specific reporting such as the Health Systems in Transition Series *(29)*. Other grey literature included reporting from such organizations as the European Commission and the OECD. Searches for scientific literature were conducted using MEDLINE (PubMed) and Google Scholar on the topic of health and social services. Literature was reviewed in English.

Field evidence

A five-day country visit took place in 2018. The country visit included facility site visits and semistructured expert interviews and group discussions with local experts and relevant stakeholders at the Ministry of Health, Local Government Denmark, the DaneAge Association, the Danish Alzheimer's Association and VIVE – Danish Centre for Social Science Research. In addition, a site visit to a senior centre (residential

housing for older people) in Greater Copenhagen was organized, including a tour of the facilities and an interview with the management and a representative of staff. To supplement the on-site data collection, a series of individual expert interviews was carried out by phone after the country visit. Altogether, more than 15 experts and representatives of relevant stakeholder groups contributed insights regarding recent developments and challenges for integration efforts in Denmark during the data collection phase (Fig. 2).

Fig. 2. Field evidence components and informants

Semi-structured interviews	Site visits	Telephone interviews
Semi-structured interviews and group discussions with: • Ministry of Health and Elderly Affairs • Local government Denmark • VIVE (Danish Centre for Social Science Research) • Ældre Sagen (DaneAge Association) • Danish Alzheimer Association	Site visits to instructions delivering long-term care • Seniorcenter Egegården	Individual semi-structured interviews with: • VIVE (Danish Centre for Social Science Research) • Ældre Sagen (DaneAge Association) • Centre for Rehabilitation and Palliative Care,a University of Southern Denmark

Health and social needs of older people

About this section

The demographic and epidemiological data presented in this section provide a snapshot of the main characteristics of the older population and their needs. Data are disaggregated by sex when available. Data were mostly obtained through initial desk research; country experts filled in information gaps and validated the findings.

The share of older people is increasing

Denmark's total population was 5.8 million in 2018, accounting for about 1.1% of the EU population *(28)*. The population has increased by about a quarter of a million during the past decade and is expected to grow to 6.0 million by 2030 *(28)* (Table 2).

Table 2. Main demographic indicators

Demographic measure	Total	Year
Total population[a]	**5 806 015**	2018
Female (%)	2 917 289 (50.2)	
Male (%)	2 888 726 (49.8)	
Population 65 years or older[a] (% of total population)	**1 132 006 (19.5)**	2018
Women (% of population 65 years or older)	611 517 (54.0)	
Men (% of population 65 years or older)	520 489 (46.0)	
Population 85 years or older[a] (% of total population)	**121 384 (2.1)**	2018
Women (% of population 85 years or older)	79 530 (65.5)	
Men (% of population 85 years or older)	41 854 (34.5)	
Net migration[b]	**24 285**	2017
Fertility rate (births per woman)[b]	**1.75**	2017
Median age (years)[b]	**41.6**	2015
Life expectancy at birth (years)[b]	**81.1**	2017
Female	83.1	
Male	79.2	
Life expectancy at age 65 years[d]	**19.5**	2017
Female	20.8	
Male	18.2	

Sources: [a]Statistics Denmark [online database] *(28)*; [b]Population statistics at regional level *(3)*; [c]Profiles of ageing 2019 *(31)*; [d]European core health indicators *(32)*.

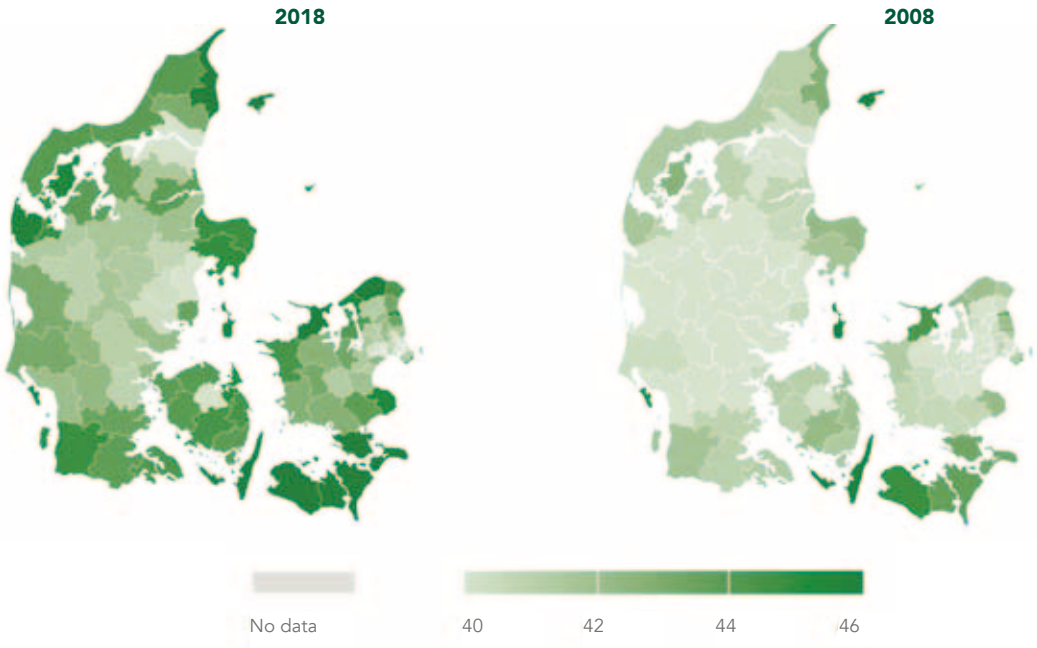
The expected population growth is due mostly to immigration. Fertility rates are higher than the EU average but still below replacement fertility rates *(3)*. The net

migration rate, 4.2% in 2017, is much higher than the 2.3% EU average for the same year *(32)*.

In 2018, more than 1.1 million people (19.5% of the total population) were 65 years or older *(3)*, of whom 54.0% were women (Table 2). The proportion of people 65 years or older is expected to increase to 22.6% by 2030 and to 24.2% by 2050 *(31)*. The total population 85 years or older is nearly 121 000, about 2.1% of the total population (Table 2); this population segment is expected to grow to about 188 000 by 2030 and 232 000 by 2050 (31). The median age was 41.6 years in 2015 and is expected to increase to 42.3 years by 2030 and 44.2 years by 2050 *(31)*.

Similar to other European countries, population ageing is more pronounced in rural areas. Smaller and more remote localities have the highest shares of residents 65 years or older and highest average age (Fig. 3); the areas with the highest percentage of older people are Bornholm (27.3%), Vest- og Sydsjælland (22.3%) and Nordsjælland (21.8%) *(28)*. Regarding absolute numbers, most older people reside in larger, more densely populated cities, which compensates for the lower proportion of older individuals. As a result, the larger metropolitan areas must respond to the needs of a larger group of older individuals.

Fig. 3. Average age of the population (years) by municipality, 2008 and 2018



Source: Statistics Denmark [online database] *(28)*.

Life expectancy continues to increase

Life expectancy at birth is 83.1 years for women and 79.2 for men in 2017 *(3)* (Table 2). The gender difference of 3.3 years is among the lowest in the EU. Although life expectancy is similar to the European average, it is lower than that registered in other Nordic countries, a more common comparison point. This can partly be traced back to higher-than-average mortality among middle-aged women and several risk factors related to health *(30)*.

Almost one fifth of the people older than 65 years live alone

The share of single households of people older than 65 years rose from 14.1% in 2008 to 18.2% in 2018 *(3)*, which is above the EU average of 14.5, in 2016. The average household size is 2, below the EU 2.3 average and slightly under the 2008 average of 2.2 *(3)*. Other than this, there are few data on household composition.

The old-age-dependency ratio in 2017 is 29.7 per 100 people 15–64 years old, about the same as the EU average *(32)*. This ratio has increased from 22.7 in 2005 and 24.9 in 2010.

Noncommunicable diseases are the leading causes of mortality and morbidity

Among people 70 years or older, cardiovascular diseases remain the leading cause of death and loss of disability-adjusted life-years, although Alzheimer's disease has become the top cause of both for women *(4)* (Table 3). The leading determinants of years lived with disability are low back pain, diabetes and age-related hearing loss, whereas the top risk factors associated with disability are mostly behavioural and metabolic, such as smoking, high fasting plasma glucose and high systolic blood pressure *(4)*. Table 3 shows data disaggregated by sex.

Table 3. Causes of death and disability, 2017

Measure of death or disability	Female	Male
Top causes of death among people 70 years or older	Alzheimer's disease Ischaemic heart disease Stroke Chronic obstructive pulmonary disease Lung cancer	Ischaemic heart disease Chronic obstructive pulmonary disease Stroke Lung cancer Alzheimer's disease
Top determinants of disability-adjusted life years among people 70 years or older	Alzheimer's disease Chronic obstructive pulmonary disease Ischaemic heart disease Stroke Lung cancer	Ischaemic heart disease Chronic obstructive pulmonary disease Stroke Lung cancer Diabetes
Top determinants of years lived with disability among people 70 years or older	Low-back pain Diabetes Age-related hearing loss Falls Chronic obstructive pulmonary disease	Diabetes Low-back pain Age-related hearing loss Chronic obstructive pulmonary disease Stroke
Top risk factors associated with disability among people 70 years or older	Smoking High fasting plasma glucose High systolic blood pressure High body-mass index High LDL cholesterol	Smoking High fasting plasma glucose High systolic blood pressure High body mass index Alcohol use

Source: Institute for Health Metrics and Evaluation [website] *(4)*.

Alcohol consumption remains very high compared with the rest of the EU (Table 4). The smoking rates were among the highest in the EU at the beginning of the century but they have sharply declined due to aggressive public health campaigns. Lung cancer is the second most frequent cause of death overall, whereas chronic

obstructive pulmonary disease is a leading cause of death and disability among both women and men *(33)*. Table 4 presents further information on lifestyle-related risk factors.

Table 4. Selected measures of lifestyle-related risk factors and determinants of health

Determinant or lifestyle risk factor	Denmark (%)	EU 28 (%)	Year
People 65 years or older reporting hazardous alcohol consumption[a]	10.7	3.6	2014
People 65 years or older reporting high blood pressure in the past 12 months[a]	41.6	49.2	
Obese population 65 years or older, measured (%)[b]			
Women	15.2	20.7	2014
Men	16.5	18.8	
Daily smokers by age – 65–69 years[c]			
Women	16.0	11.0[d]	2015
Men	19.0	16.0[d]	
Daily smokers by age – 70–74 yearsc 16.0[d]			
Women	16.0	7.8[d]	2015
Men	17.0	11.0[d]	
Daily smokers by age – 75–79 years[c]			
Women	12.0	5.5[d]	2015
Men	13.0	8.4[d]	
Daily smokers by age – 80 years or older[c]			
Women	7.5	3.3[d]	2015
Men	10.0	5.6[d]	
Risk of poverty or social exclusion for people 65 years or older[b]			
Women	9.1	17.3	2015
Men	8.2	12.8	

Sources: [a]European core health indicators *(32)*; [b]Population statistics at regional level *(3)*; cInstitute for Health Metrics and Evaluation [website] *(4)*. [d]Western Europe only.

Poverty rates are low compared with the EU but inequalities in health remain

The rate of poverty or social exclusion for the entire population is 14.8%, significantly lower than the EU average. Among older people, this rate was 8.7%, about half the EU average. As elsewhere in the EU, women are more affected than men (Table 4) *(3)*.

In 2017, the income inequality, defined as the ratio between the total income received by the 20% of the country's population with the highest income and the total income received by the 20% of the country's population with the lowest income, was 4.4 against 5.3 for the EU *(32)*. Among older people, income inequality was 2.9 against 4.1 for the rest of the EU *(32)*.

Key points

Similar to other EU countries, the population is rapidly ageing. A sizeable proportion of life expectancy after age 65 years is lived in good health. Lifestyle risk factors need to be further reduced, especially among people with lower socioeconomic status.

Although Denmark is one of the European countries with the lowest income inequality and high coverage of social and health services, it still has pronounced socioeconomic inequalities in health *(34)*. Analysis of mortality data throughout the 1990s and the 2000s reveals that mortality gains have disproportionately accrued to more highly educated groups. Although mortality rates for those with high educational attainment have steadily improved over this period, they have remained constant for people who have completed vocational training. Similarly, life expectancy for higher-income individuals has increased more rapidly than that of lower-income groups. Between 1987 and 2009, the life expectancy of high-income men increased by 9.9 years, whereas men from lower-income groups gained only 5.5 years *(35)*.

Most older people self-report their health as being good or very good

Life expectancy in good health is about 59.7 years for women and men *(3)*. For women reaching age 65 years, life expectancy is 20.8 years versus 18.2 for men, both similar to the EU averages (Table 2). Healthy life expectancy at age 65 years is about 11.5 years for both women and men *(32)*.

In 2017, 40% of older people reported long-term restrictions in daily activities versus 49% in the rest of the EU *(32)*. The proportion of people 65 years or older

Table 5. Self-rated measures of perceived health among older people[1]

Measure	Denmark	EU 28	Year
People 65 years or older who assess their health as being very good or good (%)[a]	57.3	39.6	2017
Life expectancy (years) in good self-perceived health from age 65 years[a]			
Women	18.1	16.6	2016
Men	16.4	15.0	
People 65 years or older reporting any longstanding health problem (%)[b]			
Women	41.9	63.2[d]	2017
Men	40.3	60.3[d]	
People 65 years or older reporting severe or very severe body pain (%)[b]			
Women	9.1	19.0	2014
Men	7.2	10.2	
People aged 65 or over reporting severe physical and sensory functional limitations (%)[b]			
Seeing, women	2.4	6.8	2014
Seeing, men	1.9	4.0	
Hearing, women	11.7	12.0	
Hearing, men	12.9	12.4	
Walking, women	14.4	25.3	
Walking, men	9.6	15.7	
Overall, women	22.7	32.1	
Overall, men	20.2	24.3	

Sources: [a]European core health indicators *(32)*; [b]Population statistics at regional level *(3)*.

[1]Cross-population comparability of self-reported data should be interpreted with caution.

assessing their health to be good or very good in 2017 was considerably higher than the EU average (Table 5) *(32)*. Almost all the life expectancy at age 65 years is in good self-perceived health: 18.1 and 16.4 years for women and men, respectively, in 2016 *(32)* (Table 5). These averages mask income inequalities among high- and low-income people *(33)*.

The percentage of people living with dementia in 2012 was 1.53%, about the same as the 1.55% European average. This translates into 85 562 people, of which 65% are women *(36)*. Among people 60 years and older, the prevalence of dementia in 2018 was about 7%, similar to the rest of the EU *(37)*. The rates of depression for women and men 65 years or older, 7.3% and 5.2% respectively, were below EU levels *(3)*.

There are limited data on the oral health status of older people. About 1.4% of people of all ages in 2014 reported unmet needs for dental care services because of financial barriers, waiting times or travelling distances, which is half the 2.8% average for the EU as a whole *(32)*. About a quarter of older people reported poor social support, higher than the 18.2% EU average in 2014 *(3)*.

Many services to caregivers are available

The role of informal caregivers is reduced compared with most other European countries, especially considering high-intensity hands-on care *(38)*. Ever since the 1950s, there has been an emphasis on increasing women's participation in the labour market; a key measure to achieve this goal was transforming unpaid care work into paid employment. The availability, or not, of informal care is not considered as a criterion for assessing needs and entitlements. Unpaid caregivers can take part in the process of needs assessment. Municipalities consider the needs of co-residing caregivers for entitlements to respite services. Unpaid caregivers experience less burden and are less likely to report difficulties in reconciling work and caregiving compared with the rest of the EU *(39)*. See the chapter on Delivery of Services for further details on services available to unpaid caregivers under the chapter on Delivery of Services.

The 2016 European Quality of Life Survey revealed that 16% of the total population provides unpaid care for a relative, neighbour or friend at least once a week. By sex, these numbers are 20% of women and 13% of men. These percentages are similar to EU averages. Unpaid caregivers account for 7% of working-age people (18–64 years old) and 18% of people 65 years or older *(40)*.

Mechanisms for protecting older people's rights

Beneficiaries have the right to seek treatment anywhere if their administrative region does not provide a service delivered elsewhere *(33)*. They also have the right to participate in decision-making, to receive personalized services and to complain if they consider services to be suboptimal. Beneficiaries can access information on the waiting times and performance of hospitals and other providers from general practitioners or from specialized websites maintained by the Ministry of Health, the Danish Health Authority or the administrative regions. Regarding long-term care, beneficiaries have free choice of providers, including residences for older people, gated communities, assisted living units, nursing homes or day-care centres.

There are mechanisms for involving beneficiaries in decision-making bodies such as the Danish Medicines Council, where they can contribute in activities for determining priorities for pharmaceutical treatments *(33)*. The 2015–2018 healthcare agreements, one for each administrative region, identified key areas of action for reducing inequalities among regions and for promoting the engagement of beneficiaries and their families *(7)*. The newly established national quality goals, also include enhancing patient engagement as an objective *(7)*. Lastly, all municipalities partner with voluntary organizations to roll out community programmes to engage and reach out to older people *(29)*.

Information on victims of offences is regularly reported by age and sex (Table 6) *(28)*. Women are more affected by offences against property and by sexual offences, whereas men are more affected by crimes of violence. Overall, women, especially women over 70 years, are disproportionately affected by offences against the person.

Table 6. Victims of offences against the person by type of offence, age and sex, per 100 000 population, 2018

Measure	60-69 years	70 years or older
Sexual offences		
Women	11.0	8.1
Men	3.1	1.1
Crimes of violence		
Women	160.6	35.4
Men	209.2	73.7
Offences against property		
Women	694.8	971
Men	364.8	415.4
Other offences		
Women	21.6	2.7
Men	20.8	5.3
Total, women	**888.0**	**1017.2**
Total, men	**597.9**	**495.5**

Source: Statistics Denmark [online database] *(28)*.

Non-profit agencies promote community involvement in caring for older people

Non-profit actors play mainly a role in advocacy rather than in providing services, although some are active in nursing home care (Danish Deaconess Foundation and OK Foundation) while others are taking a lead role in organizing self-support and peer-support activities in the community (DaneAge Association and Danish Alzheimer Association). The DaneAge Association, a voluntary association with more than 825 000 members, has the most prominent role among civil society organizations. The DaneAge Association is heavily involved in advocating the rights and well-being of older people and is recognized as a stable partner in the political dialogue.

Non-profit organizations are important organizers and promoters of voluntary work, e.g. training volunteers and deploying them in support of long-term care.

The number of registered volunteers with the DaneAge Association has risen from 10 000 in 2010 to more than 18 000 in 2018. Since many volunteers are themselves 65 years or older, the organization of volunteering activities can also be seen as an investment in the community by promoting social activity and helping older individuals to stay engaged and active.

The Elders Help Elders network, a partnership among six older people organizations, is one of the most visible initiatives organizing older people volunteers for supporting other older people throughout Denmark. Most volunteering activities through the network focus on visiting services, mobility support, shopping, practical assistance in the home, sharing meals, exercise, walking, biking and telephone security services. Non-profit organizations also play a crucial role in organizing volunteers in nursing home, hospices and hospitals.

Highlights

Older people enjoy good health status. Lifestyle risk factors need to be reduced, including alcohol consumption and smoking. Inequalities in health remain especially among people with different incomes and educational attainment. Although crime rates are low, women are more often victims of violence.

Unpaid caregivers have benefits to reconcile work and caregiving. Unpaid caregivers can participate to the needs assessment and their needs are assessed for entitlements to respite services. Women are overrepresented among unpaid caregivers.

Performance

About this section

Long-term care services coverage and system outcomes such as amenable hospitalizations, falls and ulcers and other preventable adverse events, waiting times and barriers to access are indicators of long-term care system performance. The data presented in this section were obtained from international databases and registries that allow Denmark's system to be compared with those of other European countries.

Long-term care services are comprehensive but coverage is decreasing

Denmark's Healthcare Access and Quality Index, a measure of health access and quality, was 92 in 2016 *(4)*. According to European-level data, 54 000 people received long-term care in an institution in 2016 versus 106 000 receiving care at home *(7)*. Data collected from Statistics Denmark suggest variations for institutionalized care (Table 7) *(28)*. Denmark remains one of the countries with the most comprehensive long-term care systems in the EU, however, the provision has declined in the past decade. The number of people in residential facilities and receiving home care has declined in both absolute and relative numbers in this decade (Tables 7 and 8) *(28)*.

Table 7. Beneficiaries of long-term residential care services aged 65 years or older: absolute numbers and as a percentage of the population, 2010–2018

Beneficiaries per type of long-term care	2010	2015	2018
Population 65 years or older	**927 368**	**1 070 063**	**1 132 006**
Residential care			
People 65 years or older in nursing homes	7845	4298	3349
People 65 years or older in protected dwellings	1454	823	673
People 65 years or older in nursing dwellings mainly for older people	32 228	35 825	35 846
People 65 years or older in general dwellings for older people	27 517	25 925	24 846
People 65 years or older in private nursing homes or private dwellings	436	624	859
Total people 65 years or older in residential care	**69 480**	**67 495**	**65 573**
% of population 65 years or older	**7.5%**	**6.3%**	**5.8%**

Source: Statistics Denmark [online database] *(28)*.

Long-term care strongly emphasizes prevention. More than 100 000 people 65 years or older, 9.1% of the population, received a preventive home visit to assess health status and functional ability in 2018 (Table 8) *(28)*.

Table 8. Beneficiaries of long-term home care aged 65 years or older: absolute numbers and as a percentage of the population, 2010–2018

Beneficiaries per type of long-term care	2010	2015	2018
Population 65 years or older	**927 368**	**1 070 063**	**1 132 006**
Population 75 years or older	**391 116**	**435 605**	**482 781**
Home care			
Women 65 years or older referred to home care	286 461	237 789	233 599
Men 65 years or older referred to home care	152 012	135 851	140 532
Total people 65 years or older referred to home care	**438 473**	**373 640**	**374 132**
% of population 65 years or older	**47.3%**	**34.9%**	**33.1%**
Women 65 years or older – Average number of hours of home care	3.0%	3.2%	3.0
Men 65 years or older – Average number of hours of home care	3.4%	3.6%	3.3%
Total people 65 years or older – Average number of hours of home care	**3.1**[a]	**3.3**	**3.1**
Preventive home visits			
Women 75 years or older who received a preventive home visit	NA	57 145[b]	57 166
Men 75 years or older who received a preventive home visit	NA	37 977[b]	37 626
Total people 75 years or older who received a preventive home visit	NA	**95 122**[b]	**94 792**
% of population 75 years or older	NA	**21.8%**[c]	**19.6%**[c]
Home food delivery			
People 65 years or older receiving home food delivery	46 546	39 491	37 048
% of population 65 years or older	**5.0%**	**3.7%**	**3.3%**

[a]Data for 2011.
[b]Data for 2016. NA: Not applicable.
[c]There is one mandatory visit for people reaching the age of 75 years, flexible visit distribution between the ages of 75 and 80 and one mandatory visit per year for those 80 years or older.
Source: Statistics Denmark [online database] *(28)*.

There are sex differences in the provision of services (Table 8). 38.2% of women 65 or older received a referral to home care, compared to 27.0% of men. Similarly, in 2018, 20.6% of women 75 or older received a preventive home visit, compared to 18.3% of men. Men received on average 20 minutes more of care at home than women *(28)*.

Amenable mortality and preventable hospitalization are low compared to the rest of EU

Amenable mortality, defined as avoidable deaths that could have been prevented by providing appropriate health interventions *(22)*, at 99 deaths per 100 000

people in 2014, is among the lowest in the EU. This number was 85 for women and 114 for men, both lower than the respective EU averages of 97.5 and 158 deaths *(33)*.

Key points

Coverage of long-term services is high, although care provision has declined during the past decade. While some of this decline may be the result of measures to reduce residential care provision, it may also indicate problems related to the sustainability of the system.

Longer hospital stays are financially burdensome, increase the risk of health care–associated infections and may accelerate functional decline *(37)*. In 2015, 4.1% of hospitalizations for common chronic conditions (diabetes, hypertension, heart failure, chronic obstructive pulmonary disease and asthma), equivalent to about 600 discharges per 100 000 population could have been avoided. These numbers are among the lowest in the EU, 5.5% of preventable hospitalizations for chronic conditions and about 1000 discharges per 100 000 population *(37)*. Inpatient average length of stay, 5.1 days for women and 5.8 for men, was also below the rest of the EU *(3)*.

The number of bed-days attributable to delays in hospital discharge, which often result from administrative delays or waiting lists for home-based or residential services, was 5 per 1000 population, also the lowest among countries reporting this data *(37)*. A high percentage of eligible high-volume surgical procedures is performed as day surgery, including 98.9% of cataract surgery, 84.8% of inguinal hernia repairs and 54.9% of tonsillectomies (37). Overall, hospital inpatient discharges were 15 per 100 population, about the same as the EU average *(7)*.

Diagnostic assessment or referral within 30 days is guaranteed by law. There are clinical guideline indicators for waiting times in some priority areas such as chronic disease prevention and treatment. There are few data on waiting times for specialist care; for cataract surgery, the average waiting time was 60 days in 2017.

Denmark fares better in cancer survival compared with the EU. Five-year age-standardized net survival percentages between 2010 and 2014 for breast, colon and rectal cancer were 86%, 62% and 65%, respectively, versus 83%, 61% and 60% for the rest of the EU *(37)*.

Patient satisfaction with care is high

National legislation enshrines the right of users to participate in decision-making about their care and to receive personalized services *(45)*. User satisfaction is routinely collected nationwide. The National Danish Survey of Patient Experiences collects data on the inpatient and outpatient satisfaction with hospital care through questionnaires are sent to beneficiaries a few months after discharge *(28)*. Regarding long-term care, the quality of user satisfaction is collected every two years from a representative sample of beneficiaries 67 years of age or older. Between 2009 and 2015, 2286 interviews were carried out with older individuals who received home help in their own homes or in nursing homes *(28)*.

Data on patient experience are used to inform activities related to providers' inspection, regulation and accreditation. These data are also used to provide feedback to practitioners and to inform quality assurance *(7,46)*. Data on beneficiary experience are collected via national surveys or provided directly by the beneficiary in their medical records through the sundhed.dk portal *(46)*.

Data from the National Danish Survey of Patient Experiences for the year 2017 revealed that more than half the beneficiaries responding were very satisfied with care, treatment and course of the visit or admission. The response rates were 68% for scheduled patients, 51% for urgently admitted patients and 62% for outpatients *(41)*. Older people receiving long-term care were very satisfied with personal and practical support at home and in nursing homes (Table 9) (28). Satisfaction with health providers was also high; according to 2016 data, the quality of primary care physicians was rated 7.9 of 10 versus 7.3 in the rest of the EU *(37)*.

Table 9. Percentage of older people reporting being satisfied or very satisfied with the quality of personal and practical support services, 2011 and 2015

Satisfaction with long-term care	2011		2015	
	Satisfied	Very satisfied	Satisfied	Very satisfied
Satisfaction with practical help at home	51	36	42	41
Satisfaction with personal care at home	52	39	46	42
Satisfaction with practical help in nursing home	54	33	47	39
Satisfaction with personal care in nursing home	56	36	51	35

Source: Statistics Denmark [online database] *(28)*.

Long-term benzodiazepines or related drugs were prescribed to 16.2 per 1000 older people. This number was 23.9 per 1000 for long-acting benzodiazepines. Both numbers are lower than those of other EU countries *(27)*.

Quality of long-term care

The rates of falls and prevalence of pressure ulcers are indicators of quality of care for older people and in the long-term care. A total of 439 fatal falls among older people were reported between 2010 and 2012: 53.3 per 100 000 people 65 or older *(42)*. Denmark has implemented the pressure ulcer prevention bundle, one of 12 programmes introduced in 2010 to improve hospital safety. The objective of the programme was to reduce the high incidence of pressure ulcers. A poll conducted among nursing homes found that up to 60% of residents had pressure injuries between 1999 and 2005. The programme, currently operating in 18 of the 98 municipalities, is credited with reducing the ulcer pressure incidence in nursing homes. After the programme was implemented in 125 facilities, about half registered at least 100 days without a new pressure ulcer *(43)*.

Once a person has been referred to a nursing home, the waiting time must not exceed two months unless the person wants to live in a nursing home of his or her choice or in another municipality, in which case delays could be longer *(44)*. Waiting times for nursing homes and care accommodation have remained stable in recent years, although municipalities differ greatly. The average waiting time nationwide in 2017 was 21.7 days, varying between 0 days in 9 municipalities to 109 in Stevns and 106 in Høje-Taastrup (Table 10). During the same year, the number of people on waiting lists varied between almost 1300 in Copenhagen to 15 or less in the Municipalities of Vallensbæk, Læsø and Fanø (Table 10). On average, 368 people were registered on each municipal nursing home waiting list in 2017.

Table 10. Average waiting times and number of people on waiting lists for nursing homes for selected municipalities, 2017

Municipality	People on waiting lists	Average waiting time (days)
Copenhagen	1282	27
Aalborg	807	29
Aarhus	670	15
Odense	597	0
Gentofte	527	49
Ærø	35	3
Samsø	31	0
Vallensbæk	15	42
Læsø	11	0
Fanø	10	20
Denmark average	**367.7**	**21.6**

Source: Statistics Denmark [online database] *(28)*.

Financial barriers to care are lower than in the rest of the EU

Financial barriers to care are generally lower than in the rest of the EU. Men seem to be more affected than women, especially regarding dental care and prescribed medicines (Table 11) *(3)*.

Table 11. Self-reported unmet needs for specific health care–related services for financial reasons among people 65 years or older, 2014

Type of care	Denmark (%)	EU 28
Medical care, female	2.9	6.1
Medical care, male	4.4	4.7
Dental care, female	6.1	10.1
Dental care, male	9.5	8.3
Mental health care, female	2.5	2.0
Mental health care, male	2.3	1.2
Prescribed medicines, female	4.0	5.6
Prescribed medicines, male	6.3	4.5
Total, female	8.8	13.4
Total, male	12.1	10.8

Source: Population statistics at regional level *(3)*.

Highlights

Amenable mortality and preventable hospitalizations are low while day surgery provision is high. Waiting time is low and patient satisfaction is high. Provision of long-term care has declined, although this may result from implementing measures to reduce institutionalization. There is some data on long-term care utilization disaggregated by sex, but information on satisfaction with care and waiting times for men and women is lacking.

Delivery of services

About this section

An important requirement to assess the integrated delivery of long-term care is understanding the services available to older people, the organization of providers and settings, the needs assessment process and the care pathways. Obtaining this information exclusively via desk research may not provide the entire picture. In this section, data obtained from the published literature were complemented with information from semistructured interviews and discussion with key informants, including government representatives, managers, health practitioners and unpaid caregivers.

Health services available to older people are comprehensive

Denmark's health system is characterized by wide coverage, a focus on in-kind benefits and public provision of services. Health coverage is universal regardless of contribution and is not tied to membership in any insurance scheme. People listed as residents in the Civil Registration System are entitled to health services; non-residents are entitled to acute treatment but not to elective treatment *(29)*. Residents can choose complementary or supplementary private insurance, the latter usually provided as an employment benefit. The basket of services is comprehensive.

Vaccination. General practitioners, reimbursed by the administrative regions on a fee-for-service basis, carry out vaccination programmes *(29)*. In 2014, 48% of women and 48% of men 65 year or older were vaccinated against seasonal influenza (Table 12) *(32)*.

Preventive and public health services. Disease prevention and health promotion programmes are heavily funded. They are considered by authorities as instrumental to ensure the sustainability of the health system. One of the most successful initiatives to date has been the smoking-cessation and tobacco control policy, which included tobacco-cessation programmes, health warnings on cigarette packaging and public awareness campaigns. This initiative resulted in a remarkable decrease in smoking during the past 15 years *(33)*.

Dental care. Private practitioners provide dental care. The health system subsidizes preventive services and some other interventions, the rest being paid for out-of-pocket *(7,29)*.

Eye care. The health system subsidizes visits with ophthalmologists *(7,29)*.

Diagnostic services. The participation rates in screening for breast and colorectal cancer are higher than in the rest of the EU (Table 12) *(32)*. Other screening programmes include cervical cancer and a primary screening modality of the human papillomavirus *(33)*. In general, the health system covers diagnostic and laboratory services.

Mental health. The health system covers mental health care. Outpatient visits to psychologists and psychotherapists require an out-of-pocket payment *(33)*.

Medication. Drug prescriptions at hospitals are free whereas those prescribed by a physician require an out-of-pocket contribution. Beneficiaries exceeding the threshold of medication spending (€470 in 2019) or with assets below a certain amount receive 85% reimbursement for all drugs *(33)*.

Medical devices. Out-of-pocket payments are required for hearing aids. As of 2016, Denmark had 39 computed tomography devices per million people versus 22 in the rest of the EU *(37)*. The number of magnetic resonance imaging examinations was 82 per 1000 population (76 for the EU), and the number of computed tomography examinations was 161 per 1000 population (122 for the EU) *(37)*.

Rehabilitation. Rehabilitation services can be accessed free of charge within the hospital setting or via the municipalities. Municipalities offer training in the beneficiary's home or in rehabilitation centres. Rehabilitation services are included in the mandatory healthcare agreements between the administrative regions and the municipalities, thus ensuring cooperation between the various actors providing services.

Palliative care. Palliative services are comprehensive and include access to care, medication, physiotherapy, psychological assistance and support with daily activities. These services are provided by general practitioners, municipal home, hospitals and by palliative teams in hospices and palliative units *(29)*.

Table 12. Screening and vaccination rates among older people, 2014

Screening and vaccination measure	Denmark (%)	EU 28 (%)
Women 50–69 years old reporting a mammography in the past two years	**81.5**	**68.7**
People 50–74 years old reporting colorectal cancer screening in the past two years	**34.8**	**31.3**
Female	34.3	31.4
Male	35.2	31.3
People 65 years or older reporting influenza vaccination in the past 12 months	**48.0**	**45.9**
Female	48.1	44.5
Male	47.9	47.7

Source: European core health indicators *(32)*.

Social services focus on ensuring that older people can remain living independently in their homes

Older people can access a wide array of social services that enable them to remain in their homes even if they are chronically or terminally ill. These services include day care services, extensive home help and nursing care. Home help is available for those who need support for activities of daily living *(29)*. Municipalities provide social services for older people. Nursing homes are classified as social services and are therefore under the jurisdiction of municipalities.

Services available to unpaid caregivers facilitate combining work and caregiving

Many services are available to unpaid caregivers. A person can request to a municipality to become a caregiver of a close relative. To be eligible, the municipality ascertains that the alternative to the caregiver is care provided outside home or hiring a full-time caregiver. The potential caregiver must certify that is suitable to provide the needed care, is under pensionable age and that there is an agreement with the beneficiary *(29)*. If eligible, the caregiver gets employed by the municipality, up to six months, with a prespecified salary calculated based on the national yearly income. Alternatively, municipalities can compensate for lost earnings individuals caring for close relatives with a terminal illness.

Unpaid caregivers are entitled to respite from care obligations from a few hours to several days. Respite care can be organized either through temporary placement in a care facility or in the beneficiary's home with the help of formal caregivers. Respite support is well developed and offered by all municipalities but, since the assessment is local, access to and availability of services varies.

Additional services include training and education programmes, often focused on improving knowledge and ability to provide the needed support and on attaining coping skills, such as self-help and peer groups. The National Dementia Action Plan has allocated almost €5 million to 13 new counselling centres for people with dementia. The Danish Health Authority allocated a similar amount for respite services (day care). Further, a nationwide roll-out of courses for the relatives of people with dementia (Learn to Cope) was organized as were parts of the government's funding of more than €130 million to support municipalities in adopting measures to ensure dignified care for older people. Several nongovernmental organizations, especially the DaneAge Association, the Danish Alzheimer Association and Carers Denmark have increased their efforts to raise awareness of the realities of caregiving and their underrecognized needs for support.

Entitlements are based exclusively on need

Eligibility for long-term care is based entirely on needs assessment carried out by the municipalities. There are no thresholds or minimum dependence required for in-kind or cash benefits *(7)*. Access is based on the principle of free and equal access, regardless of income, wealth, age or household situation. Municipalities are responsible for responding to the needs of dependent older people *(47)*.

Needs assessment for long-term care is multidimensional in nature and generally captures a wide range of aspects related to an older person's situation

and well-being. These include an assessment of functional impairments (using the Barthel index), of general welfare and social and family context, material and home conditions and an overview of needs for medication, rehabilitative support and referrals to health providers *(47)*. There is no standardized national needs assessment process since each municipality follows its own protocols. The type and intensity of services depends on the services provided by each municipality and the discretion of those carrying out the needs assessment.

Key points

Eligibility for long-term care is entirely based on need. There are several ways of assessing needs, including preventive visits, primary care or during hospital discharge. Enabling older people to remain in their homes is strongly emphasized. The reablement programme seeks to promote autonomy of older people in their home.

Local Government Denmark has published a set of common terms for standardizing the categories of care services and care needs among all municipalities. The Common Language system describes four levels of functional ability, ensuring that beneficiaries receive equal treatment (at least in terms of time allocation) regardless of the municipality in which they reside and the care professional carrying out the assessment *(48)*. Despite its voluntary character, 82% of all municipalities had implemented the Common Language by 2015 *(48)*.

The needs of older people are assessed not only as part of a beneficiary's request for services but also through a national programme of preventive home visits *(49)*. These visits are an opportunity for assessing the functional ability and potential needs for support of older people and for offering guidance to enable older people to remain independent for longer *(47,49)*. There is one mandatory visit for people reaching the age of 75 years, flexible visit distribution between the ages of 75 and 80 and one mandatory visit per year for those 80 years or older. For vulnerable and frail individuals, preventive visits can start as early as 65 years, and their frequency is established flexibly up to age 79 years. In 2018, 94 792 older residents received preventive visits, 19.6% of people 75 years or older *(28)*.

The reablement programme aims to enable older people to regain autonomy in their home

In January 2015, a new legislation came into force mandating that all municipalities consider first whether a person applying for home support could instead receive reablement services *(50)*. This everyday rehabilitation programme provides training focusing on regaining independence, functionality and physical ability. Reablement is often offered in the form of a 12-week exercise training course, in which the older person together with the care worker identifies and works towards achieving one or more specific goals such as, showering alone or carrying out basic home cleaning activities. Multidisciplinary teams provide reablement services. Users receive home support only after the reablement failed to help them regain the capacity to function independently *(50)*. Exceptionally, older people who are not physically or mentally able to participate in reablement activities can directly access home support. Box 1 provides further information.

Box 1. Reablement – from a pilot project in Fredericia to national policy

An interesting example of new forms of multiprofessional cooperation in health and social services and of substantive reform in long-term care has been establishing reablement as a new way of working in service delivery. Originating from a medium-sized pilot project in the Municipality of Fredericia, this concept aims at reducing costs and improving the autonomous living of people who had hitherto been assisted in their support needs rather than being activated (reabled) in living their everyday life at home.

This paradigmatic change required consistent investment in organizational development and training of professional staff, in particular regarding the new approach of training people to avoid (further) functional decline and to regain autonomy in their home, such as after being discharged from hospital following acute intervention. In this context, the involvement of physiotherapists in home-based care has been of major importance. Staff in hospitals, primary care and in the municipality had to develop new forms of collaboration, since people need to be identified as soon as possible after hospital admission to prepare for intensive reablement training after discharge. In this perspective, reablement is a focused, time-limited (typically 4–12 weeks) intervention provided in people's homes or in community settings, often multidisciplinary in nature and integrated across the social and health sectors, that aims to help people regain as much functional independence as possible following a period of ill health, an admission to hospital or a decline in function *(51)*.

The state and most municipalities have adopted reablement to a large extent. The programme has been rolled-out over the past few years and accompanied by further evaluation research. Eligible beneficiaries who had previously received permanent home support, on average about nine hours per week, are now provided about 70 hours of intensive reablement services during a period of about a month. Many municipalities reported a success rate of up to 60% among people who did not need permanent home support after the intervention *(50)*.

Sources: expert opinion; Rostgaard *(50)*; Aspinal et al. *(51)*.

Services are based on the role of general practitioners as gatekeepers

Beneficiaries are required to register with a general practitioner, who plays a gatekeeping role. Referrals are required for specialist and hospital care *(33)*. Patients can choose among any of the available hospitals with the advice of the general practitioner. If waiting times for examination or treatment exceed one month, the beneficiary can be treated at a private facility that has agreements with the administrative region *(29)*.

There are different ways for accessing long-term care. General practitioners can initiate the process. They refer the patient to a social worker for initiating the appropriate paperwork. Nurses or community nurses can contact a general practitioner, a community centre or a private office. Patients in hospital care who need long-term care can be referred to a general practitioner, who receive discharge summaries directly from hospitals and is responsible for following up with beneficiaries *(29)*. Alternatively, beneficiaries discharged from hospitals can receive follow-up home visits from general practitioners or nurses. These visits take place one week from discharge and repeated at three and eight weeks after discharge if additional support is considered necessary. Each visit lasts about one hour and covers medication review, a general health and functional check-up and needs assessment for follow-up care such as home support or rehabilitation *(52)*.

Most long-term care staff members work in multidisciplinary teams and interact regularly with practitioners from the health sector. Multidisciplinary work is a characteristic of the system and is increasingly expected in all settings. Hospital-based multidisciplinary teams and community-based workers, provide post-discharge follow-up. These arrangements emphasize home-based care to reduce the length of stay in hospitals and lower readmission rates *(52)*. Multidisciplinary work has also been featured in the reablement programme which includes physiotherapists, occupational therapists and social helpers or assistants.

Key points

Denmark has invested in promoting integrated services delivery. Besides re-concentration efforts to streamline governance, regional and local authorities can enter into agreements to promote the collaboration of actors. General practitioners play an important role as gatekeepers for long-term and specialized services. Multi-disciplinary work is a feature in the provision of services.

The legal framework for integration of care

Coherence and coordination in service delivery is a stated goal of the Danish Health Act of 2005 and one of the key drivers behind the major reform of local government of 2007. In reducing the number of municipalities and administrative regions, the reform effectively represented a large step towards centralizing health and social services and has actively pursued the reduction of geographical inequalities in access and quality of care and the facilitation of coordination between the administrative regions and municipalities in providing care *(57)*.

The 2007 reform of local government also introduced an important innovation in the coordination mechanism between regional and municipal authorities. Healthcare agreements are political and administrative documents agreed on by each municipality and the corresponding administrative region at the beginning of each election cycle and are renewed every four years. The goal of these agreements is to provide a platform for negotiation between the main stakeholders and a framework for the practical collaboration of actors at different government levels. These agreements include six mandatory thematic areas: hospitalization and discharge processes, rehabilitation, devices and aids, disease prevention and health promotion, mental health and follow-up on adverse events and feedback mechanisms. Healthcare agreements have proven to be an effective form of vertical integration and show how soft regulation can be successfully applied to increase coordination in highly complex interactions between decentralized authorities *(58)*.

The transfer of responsibilities for regulation and oversight of care for older people from the Ministry of Social Affairs and the Interior to the Ministry of Health in 2015 represents another clear step towards integrating central and strategic decision making for health and social services. In 2016, a position of Minister for Senior Citizens was created within the Ministry of Health, transferring to it a portfolio that was previously under the control of the Minister for Health.

Practical measures to ensure seamless services provision

Several disease management programmes have addressed the challenges of coordination and integration across related pathways *(54,55)*. The Danish

Health Authority has also established chronic disease management strategies that bring together efforts by the administrative regions and the municipalities under a single model *(29)*. These strategies are based on the chronic care model *(56)*, which provides a framework for optimizing the provision of services for chronic conditions and the general prerequisites for integrated care, including self-management support, an adequate delivery system design and strong and interoperable clinical information systems.

There is a fair level of integration of care across providers. For beneficiaries who need long-term care on discharge, the hospital discharge management team communicates and works closely with the general practitioner and local home services. It is at this interface between health and social services that providers have made a range of efforts to improve seamless service delivery, focusing on identifying the needs for and potential of systemic prevention. Measures have focused on improving collaboration between primary and secondary care, including the implementation of pathway coordinators and the enhancement of communication among providers through information platforms *(29)*.

The Ministry of Health has made it a priority to promote integrated services delivery by strengthening the role of general practitioners in the care of older people and of chronically ill patients. Measures to achieve this goal include continuing professional development and promoting group practices instead of solo practices. There are initiatives to clarify the role of general practitioners as case managers for these beneficiaries *(29)*. An additional area targeted for ensuring the integrated delivery of services is rehabilitative and intermediate care. These services are provided by different actors.

Municipalities and administrative regions must agree on detailed descriptions and practical proposals for how they will ensure timely discharge and the clarification of patient needs after hospital discharge (Box 2). Discharge management is currently organized primarily at the local level and with a specific focus on complex cases. About one third of municipalities employ discharge management teams of four to five members who split their working time between the hospital and the community. Discharge managers are primarily nurses, although an increasing number of rehabilitation specialists and therapists have been participating after the reablement policy was introduced. Some hospitals also employ on-site discharge managers, who act as the primary link of the community-based discharge management team in the hospital. This makes collaboration and communication between hospitals and community-based care practitioners much easier, but also most costly. In the absence of a direct point of contact in the hospital, the discharge management team relies on data from the Danish Health Care Data Network to identify complex patients who are potential beneficiaries for discharge management.

Discharge practices became more efficient after healthcare agreements were introduced. Data show a significant decline in the average length of stay for specific clinical pathways and lower readmission rates for complex patients.

Box 2. SAM:BO – a model of good practice in the Region of Southern Denmark

The SAM:BO initiative is based on an agreement in the Region of Southern Denmark involving four hospital units, 22 municipalities and about 800 practitioners. This formal framework of collaboration aims to support treatment and intersectoral collaboration. It facilitates the exchange of experience and guideline development, supports the development of new national projects, such as the shared medical record, the Shared Care Platform, and promotes standards of information technology communication. The SAM:BO initiative defines guidelines on how to discharge patients from hospitals and how to transfer the information about their treatment to general practitioners, nurses and home care providers to ensure continuity of care.

The key emphasis of the SAM:BO initiative is integrating service delivery focused on patient's needs. All the providers involved share the same view of the care process through predefined and structured care pathways. Services are provided through specific task assignments, protocols for inpatient and outpatient treatments and for the organization of health-related information flow across primary and secondary health providers and social services. Information is transferred via electronic messages based on the Danish Health Care Data Network standard.

The SAM:BO agreement is applicable to all processes offered to residents in the Region of Southern Denmark. However, its practical implementation currently targets people with chronic diseases and vulnerable subgroups such as people with complex illnesses and people with disabilities. The initiative has contributed to the transformation of the regional health system from hospital-centred to person-centred. SAM:BO is still being implemented and it does not yet cover all diseases and health and social services fully. The Region of Southern Denmark's health system suggests better performance than regions *(59)*.

Municipalities are responsible for delivering long-term care

Universal health coverage is ensured via a tax-based, decentralized system *(7)*. The system provides full coverage, and primary, specialist and hospital care are free of user charges for most services *(7)*. Children, older people, people with disabilities and those reaching a maximum amount of out-of-pocket expenditure are exempt from co-payments *(7)*.

There are two modalities of coverage. Those in group 1, the most common option, can choose a general practitioner in their vicinity or authorize one to conduct home visits. People in this group have access to general preventive, diagnostic and curative services as well as emergency wards, chiropractors, ear, nose and throat specialists or ophthalmologists without referral. General practitioner referral is required for all other medical specialties, physiotherapy or hospital treatment *(29)*. Individuals in group 2 can visit any general practitioner or any specialist without referral and are reimbursed up to the corresponding amount of those in group 1 *(29)*.

Individuals can choose complementary or supplementary private insurance. Non-profit organizations provide the former, covering out-of-pocket expenditure for drugs and dental care. An estimated 33% of the population had private health insurance coverage in 2016 *(57)*. This is often provided as an employment benefit and covers expanded and faster access to private providers *(33)*.

Primary care is provided in private practices, whereas outpatient care is provided in hospital-based ambulatory clinics or private practices. Whenever waiting time for specialist care is exceeded, private providers can receive patients from the public sector and be reimbursed for services through prespecified healthcare agreements with the administrative regions *(33)*, which own the hospitals *(7)*.

Long-term care can include home care, residential care and limited forms of cash benefits

Long-term care can assume different delivery modalities, home care, residential care and community services. There are no cash benefits, although some exceptions apply.

Home care. Services are available around the clock and seven days per week. Entitled clients receive permanent home care free of charge, although temporary home care may be subject to co-payment above a defined income level of about €18 000 for single households and €25 000 for couples. The average number of hours provided per beneficiary per week varies between one and six, generally increasing with the beneficiary's age.

Three main categories of services are available to older dependent individuals in their own homes (home care): practical assistance (help with instrumental activities of daily living tasks such as cleaning, shopping and laundering), personal care (help with activities of daily living tasks such as bathing and getting in and out of bed) and food service (meals on wheels). Food service requires payment up to a maximum monthly amount *(60)*.

Municipalities are also responsible for funding the necessary home adaptation and the extra expenses incurred for medication or nursing supplies. All these measures are subject to needs assessment and are not means-tested, i.e. not subject to the financial situation of the beneficiary and/or the caregiver. In addition, municipalities organize home nursing services for individuals who require temporary care at home after an acute episode or who are chronically or terminally ill. To delay institutionalization, nursing, extensive support and healthcare are, often simultaneously, provided to chronically or terminally ill older people in their homes.

Since 2003, free choice of provider was introduced, banning public monopolies in service provision. Although the provision of home help remains free of charge, regardless of who provides the care or how many hours are provided, private providers can offer and charge for extra services such as gardening or window cleaning. Municipal councils have been required by law to ensure private offers in each municipality, based on contracts with accredited companies.

If the municipality cannot ensure the provision of services, the beneficiary can hire a helper and will be reimbursed by the municipality.

Residential care. Denmark is the only country in the EU in which the construction of traditional old-age and nursing institutions has been legally banned. Early in the 1980s, the government phased out large institutions with multiple beds in each room and infrastructure for long-term care that resemble hospital environments, replacing them with nursing homes to ensure that users have individual living spaces. In addition, to ensuring privacy and control over one's

living space, modern nursing home facilities legally consider their residents as tenants and offer them a range of supplementary services such as cleaning and food delivery. This contrasts with the traditional approach to residential care in which a place in an institution implied full service provision to all residents. By 2011, the vast majority of older individuals living in residential care were housed in modern nursing home facilities.

There are five types of residential care facilities: nursing homes, which are institutions with permanent staff and service areas; sheltered housing, which are connected to nursing homes with associated staff and service areas; housing for older people, which are dwellings for older people with associated staff and service areas; general homes for older people, which are suitable for older people and people with disabilities but without permanent staff or service areas; (5) private care accommodation, which provides rental facilities for people with extensive disabilities, including personal staff and service areas outside the municipal sector. Beneficiaries select based on their preferences and needs. Beneficiaries choosing to live with their spouse or partner must be offered a facility suitable for two people *(60)*.

The waiting time for residential care must not exceed two months *(44)*. Free choice of provider, which compels municipalities to ensure a choice between at least two providers, has also been introduced in residential care. Private for-profit nursing care remains marginal, although a few non-profit private providers have managed to establish themselves in a primarily publicly operated sector; e.g. Danish Deacon Homes and the Mariehjemmene Foundation. The share of people who opt for free choice to select a provider averages 60% but reaches almost 100% in some municipalities.

Once beneficiaries have moved into a residential facility, they decide during an assessment process with health practitioners what types of services to receive and which activities they want to participate in. Beneficiaries pay the agreed rent and charges according to the size of the apartment as well as meals and private expenses from their pension. Nursing and other care costs are free of charge *(44)*. During the past decade, however, the Danish Alzheimer Association has challenged this concept as not being particularly specialized to deal with the specific needs of people with Alzheimer's disease and other forms of dementia.

Private non-profit providers have introduced alternative approaches to housing and provision of services to foster self-determination and self-reliance. Noteworthy are initiatives to bridge generational divides by housing students and older people in the same building, proposed by the Danish Deaconess Foundation and senior communal living, recreating the community environment of a small village.

Community care. Community care consists of day homes and day centres. Both types of facilities are usually attached to nursing homes. Day homes offer the same services nursing homes would but only during the day, enabling beneficiaries to remain in their homes and retain a strong connection with their local communities. Day centres, in contrast, focus primarily on social and educational activities such as language courses, day trips and social and cultural events. Both public and private providers can operate day homes

and day centres but admission to day home services is subject to needs assessment, whereas day centres are open to all older people, regardless of their functional status.

Cash services. The Act on Active Social Policy guarantees income support in the form of cash benefits for individuals who cannot cover their needs from personal financial resources. About 4400 older people living in senior centres receive income support to pay their rent. A public transport subsidy is available to older people. This subsidy is funded by municipalities and subject to means-testing.

Services provision is mostly public

Statistics Denmark provides valuable information on the number of residential facilities available countrywide (Table 13). The number of dwellings includes those owned by the municipality and those owned by private in agreement with the municipality. The number of people is counted as users visited by the municipality.

Table 13. Capacity of residential care facilities, 2018

Type of facility	Permanent dwellings	Temporary stay or respite care
Nursing homes	2684	424
Protected dwellings	812	0
Nursing dwellings mainly for older people	32 502	2727
General dwellings for older people	32 219	0
Private nursing homes and private dwellings	908	0
Total	**69 125**	**3151**

Source: Statistics Denmark [online database] *(28)*.

In 2017, Denmark had 320 private for-profit home care agencies operating, ranging from 14 in Copenhagen to one in the relatively small municipalities of Tårnby and Stevns but also in Esbjerg, the fifth largest city in Denmark. Three municipalities did not report any private provider *(28)* (Table 14).

Table 14. Providers of home care, nationwide and selected municipalities, 2010–2018

Municipality	2010	2013	2015	2018
Denmark (total)	413	459	375	320
Copenhagen	60	52	15	15
Frederiksberg	18	28	22	7
Gladsaxe	7	13	9	8
Slagelse	7	18	15	25
Odense	10	13	14	14
Fredericia	8	14	10	3
Vejle	8	20	7	2
Aabenraa	8	11	6	13
Aalborg	17	19	18	9

Source: Statistics Denmark [online database] *(28)*.

The reduction of for-profit home care providers after 2013 has been the result of change in legislation with respect to public procurement of home care. The new law aimed to increase real competition among providers and to reduce the number of contracted providers to a level that would render choice more manageable for people. To remain in the market, for-profit providers lowered prices too much and, consequently, a string of bankruptcies followed. The Danish Union of Public Employees estimates that the number of beneficiaries affected by the bankruptcies of for-profit providers exceeded 10 000 between 2013 and 2016 *(61)*. A new law has recently been enacted to reduce the number of bankruptcies and ensure better continuity of care for the beneficiaries of for-profit home care.

The administrative regions have the jurisdiction to decide on hospital and equipment capacity and to recruit health practitioners within their budgetary allocations *(7)*. Private hospitals can do this without this oversight when they comply with quality and safety requirements.

Data flows and information exchange structures are state of the art

A fully operational system including electronic medical records and electronic prescribing is available in general practitioner offices, hospitals and municipalities. Laboratory, pathology and pharmacy information is also available *(7,33,62)*. Software is state of the art and uptake and interoperability are optimal, with 100% of general practitioners, hospitals and medical specialties using electronic medical records *(7,46)*. Physicians can access patient records, order and receive laboratory work and results and send prescriptions. They can also communicate with hospitals and with other practitioners.

Beneficiaries can access their medical records via the sundhed.dk portal. Launched in 2003 as a partnership between the Ministry of Health, the five administrative regions and municipalities, this platform integrates information from 85 different sources and aims to improve communication between patients and the health systems. Beneficiaries can consult laboratory results, prescription information and scheduled visits and enter or complement data on patient-reported outcomes. Hospitals share discharge summaries and outpatient notes, laboratory work, and medical imaging results with other hospitals, general practitioners and other medical specialists. A national medication database includes data on dispensed products in public and private (non-hospital) pharmacies *(46)*.

The administrative regions are investing heavily in implementing telemedicine programmes. The goal is to establish pilot projects that can enhance patient communication and treatment and to facilitate contact among practitioners. Pilot projects comprise actions for pre-hospital attention, intra- and inter-hospital care and coordination between hospitals and the beneficiary's home and in mental health care *(29)*.

An around-the-clock call centre provides guidance to patients

The administrative regions are responsible for coordinating after-hours care. The first contact with beneficiaries after hours is via a devoted phone line staffed by a physician or a nurse. Based on algorithms, the practitioner decides whether to refer the patient to a home visit or an after-hours clinic. After-hours clinics are usually nested within or next to a hospital emergency department *(37)*.

Quality standards and quality assurance

Data on hospital and provider clinical outcomes, use of appropriate resources and patient satisfaction are publicly available *(7)*. The Danish Institute for Quality and Accreditation in Healthcare oversees safety and quality standards for private hospitals, primary care practices and pharmacies. Measures assessed include risk management, hygiene, patient involvement, medication safety and adherence to guidelines and protocols *(33)*. Most pharmacies are privately owned but subject to state regulation; there is emphasis on ensuring that residents have access to pharmacies even in areas where it may not be profitable *(29)*.

Table 15. Indicators listed in the agreement on care for older people

Type	Indicator
Impact indicators	Quality of the support
	Stability of assistance
	Number of assistants
	Knowledge of free choice
	Knowledge of flexible home support
	Average number of hospital days for people older than 67 years
Background indicators	Number of visits and delivered hours of home support for free-choice beneficiaries
	Number of hours spent on home help for beneficiaries in care homes or nursing homes
	Number of beneficiaries of practical assistance and personal care subject to free choice
	Number of care homes
	Number of older people receiving rehabilitation or training
	Number of preventive home visits
	Share of home care beneficiaries and share of first-aid home care beneficiaries using a private provider
	Number of home care beneficiaries switching provider
	Number of older people who use free housing offers
	Home care benefits, for older people, free choice
	Costs for nursing homes or care homes for people older than 67 years
	Expenditure on aids
	Expenses for training and rehabilitation
	Percentage of total time used on meeting users' needs
	Number of home help visits carried out on a planned basis
	Average waiting time for care homes and nursing homes

Recent legislation has placed greater emphasis on transparency in quality assurance. The transparency reform aims to build a new national and up-to-date platform for collecting health data that will allow good practices and priorities in quality assurance to be identified and promoted *(7)*. In addition, the national, regional and municipal governments established eight national goals for the health system. The programme aims to improve quality and efficiency by implementing quality improvement teams, enhancing beneficiary involvement and monitoring further performance *(7)*.

Quality standards for long-term care apply to public and private providers. The municipalities must ensure full transparency and clear separation between their function as providers and as the authority supervising quality. The municipal quality standards describe in detail the services available at the local level and are intended to be sufficiently objective and transparent to allow users to evaluate the performance of the provider themselves *(47)*. Since the free choice of provider was introduced for nursing homes, waiting times have been closely monitored.

For general monitoring, municipal governments and the Ministry for Social Affairs and the Interior have developed 23 impact and background indicators as part of the agreement on care for older people. Most indicators are monitored through administrative data and, every two years, user surveys (Table 15) *(28)*. Providers are also subject to pre-announced or unannounced inspections from municipal representatives. In addition, officers representing the Danish Health Authority carry out yearly unannounced visits to long-term care facilities.

The municipalities are responsible for service and quality assurance but need to comply with standards set by national framework legislation. The Social Services Act does not stipulate minimal standards but requires that the care needs of older individuals be met and states that older people remain in their homes for as long as possible. Beneficiaries have the right to complain if they consider the quality of care or eligibility assessments to be unsatisfactory. Municipal authorities need to respond within four weeks. Appeals can be pursued through the National Social Appeals Board. Municipalities review about 20 000 decisions per year. About 500 are appealed, attesting to the high standards of quality applied by municipalities.

Highlights

The basket of services available to older people is comprehensive. The system is set up to ensure seamless provision of services, including primary care, discharge management, supportive information system to facilitate communication among providers and to promote quality.

There are several access points to long-term care, including assessment in primary care, before hospital discharge or preventive home visits. Home care is largely available, mostly free of charge. Residential care is designed around the principle of ensuring privacy and control over one's living space. Information on long-term care–-related services utilization, including use of benefits available to unpaid caregivers and data related to clinical pathways, is not disaggregated by sex.

System enablers

About this section

Integrated services delivery is fostered by implementing measures that enhance governance, funding, adequate staffing and information technology platforms. This section describes these system enablers. The data was collected from published evidence, databases and from consultation with stakeholders.

Governance of the health system is highly decentralized

The Ministry of Social Affairs and the Interior is traditionally the national authority in charge of regulating services and support for older people. Since June 2015, this responsibility has been transferred to the Ministry of Health.

Governance of the health system is highly decentralized. The national government, through the Ministry of Health, is responsible for regulating, overseeing and planning health system performance, including supervising care delivery. In consultation with multiple stakeholders, the Ministry of Health determines and implements national health policies and designs legislation on a wide variety of aspects related to the functioning and organization of the health and long-term care systems. The Ministry is also in charge of setting the overall financial framework in which the two systems operate and plays an important role in health funding.

The five administrative regions determine the funds to be allocated to general practitioners, specialists and hospitals, establish collective agreements with the providers of ambulatory care and have overall responsibility for providing health services. Each administrative region owns the public hospitals and specialized mental health care units on its territory and contracts directly for services provided by private care practitioners, such as general practitioners, specialists, dentists and pharmacists, and private hospitals.

Municipalities are responsible for providing and ensuring the quality of social services and certain health services such as disease prevention, health promotion and rehabilitation, home nursing, school health services and alcohol and drug abuse treatment. Municipalities also provide long-term care services and purchase services from private providers. They are autonomous regarding the provision of long-term care, including needs assessment and care pathways, resulting in variations across Denmark *(7)*.

Expenditure on long-term care is among the highest in the EU

Denmark spent 2.5% of GDP on long-term care in 2016, almost twice the EU average (Table 16) *(63)*. Long-term care expenditure was 25% of overall health expenditure versus 13% for the EU *(37)*. Municipalities are responsible for allocating resources; they obtain funding from the national government, local taxes and equalization money from other municipalities *(7)*.

Health expenditure per capita is €3831, comprising 10.2% of the country's gross domestic product (GDP). Both numbers are among the highest in the EU *(37)* (Table 16). Public spending in health was 9.2% of the GDP in 2015 and health represented 15.3% of the total government spending. These percentages are close to the respective 8.0% and 15.0% EU averages *(7)*. The public system is funded mostly via taxation at the national and municipal levels; regions are not allowed to levy taxes and receive funding for health from the government and the municipalities *(7)*. Of total health expenditure in 2015, 83.6% came from government sources versus 78.4% for the EU. The remaining 16.4% of the spending was private; 13.7% was out of pocket. These are lower than the EU averages of 21.6% and 15.9%, respectively *(7)* (Table 16). Out-of-pocket payments are required for some outpatient care such as physiotherapy and psychotherapy, some dental care procedures, some medical devices such as hearing aids and prescription drugs up to a maximum expenditure according to the income of the beneficiary *(33)*.

No co-payments are applied for using long-term home-based care services (cleaning and personal care), although users who choose private providers can purchase additional optional services. Care in residential facilities is, however, subject to fees. Beneficiaries pay rent for the units they inhabit, which can be quite considerable depending on the municipality. In addition, residents in nursing homes pay fees to cover the costs of some services such as laundry, meals and medication. Help with personal care and domestic tasks are not subject to fees.

Table 16. Selected system enablers: health expenditure and workforce

Measure	Denmark	EU 28	Year
Expenditure in health (euros per capita, adjusted per purchasing power)[a]	3831	2773	2017
Expenditure on health (% of GDP)[a]	10.2	9.6	2017
Expenditure in health as a percentage of total government expenditure (%)[b]	15.3	15.0	2015
Out of pocket (% of total expenditure on health)[b]	13.7	15.9	2014
Public expenditure on long-term care (% of GDP)[c]	2.5	1.3	2016
Expenditure on long-term care as a percentage of total health expenditure (%)[a]	25.0	13.0	2016
Number of physicians (per 100 000 population)[b]	366	344[d]	2014
Number of primary care physicians (per 100 000 population)[b]	71	78[d]	
Number of nurses (per 100 000 population)[b]	1670	833[d]	

Source: [a]OECD *(37)*; [b]Joint report on health care and long-term care systems & fiscal sustainability. Country documents – 2019 update *(7)*, [c]The 2018 ageing report: economic and budgetary projections for the 28 EU Member States (2016–2070) *(63)*; [d]Data for 2015.

Outpatient care comprised 29.4% of health expenditure versus 26.3% for inpatient care. Denmark is one of the few EU countries to spend more on outpatient care than inpatient care *(7)*. Expenditure on pharmaceuticals comprised 6.8% of health expenditure, one of the lowest among EU countries.

Per capita expenditure on pharmaceuticals was €203 in 2016, the lowest in the EU. Of this, 51% was paid out of pocket, significantly higher than the 34% EU average *(37)*. Several measures are in place to control medication expenditure. The government and the pharmaceutical industry have agreed on a pricing scheme for price reductions in lieu of direct price regulation *(7)*. Generic substitution is mandatory and the share of generics was 60% of total pharmaceutical spending *(7,33,37)*. The administrative regions coordinate initiatives to ensure the cost-effective use of expensive medicines in hospitals and to reduce expenditure through procurement *(7)*. Cost containment measures are complemented by initiatives aimed at promoting the responsible use of medicines through clinical guidelines, monitoring of prescription behaviour. Compliance with guidelines is coupled with financial incentives and with education and information campaigns *(7)*. Health technology assessments are used to determine the coverage of medicines, high-cost equipment and procedures *(7)*.

Health services are funded through fixed grants and activity-based funding

The national and municipal governments fund health services using a combination of fixed grants and activity-based funding. Municipalities are involved in the funding scheme to encourage health promotion and disease prevention activities, which fall under the jurisdiction of municipalities and result in cost containment *(7,33)*. Activity-based funding, which includes a 2% productivity increase requirement for hospital services, is credited with raising overall system productivity *(7)*. About 20% of the funding for the administrative regions is activity-related; spending depends on budgetary caps set by the Folketing (parliament).

The regions reimburse general practitioners based on a mix of capitation and consultation fee within a spending cap *(7)*. Performance-based payment takes into account health promotion and disease prevention activities, among other kinds of consultation *(7)*. Specialists outside hospitals work in private practice and are reimbursed on a fee-for-service basis by the administrative regions. Outpatient and inpatient hospital specialists are salaried and employed by the administrative regions, which pay all health providers based on agreements with trade unions *(7)*. Hospitals are reimbursed based on activity-related payments for diagnosis-related groups definedat the national and regional level and on prospective global budgets *(7)*.

The long-term care workforce has increased in home care and decreased in residential facilities

Denmark had 366 physicians per 100 000 inhabitants in 2014, of which 71 were general practitioners *(7)* (Table 16). The number of nurses per 100 000 population in 2015 was 1670, more than twice the EU average of 833 *(7)*. As elsewhere in Europe, recruitment challenges remain in rural areas and specialised care is concentrated in urban areas *(29)*.

Table 17. Human resources in health and social services, personnel employed per year, 2010, 2015 and 2016

Type of facility	2010	2015	2016
General medical practice	10 556	10 272	10 366
Specialist medical practice	5 071	5 035	4 961
Health care: activities of visiting nurses and midwives	7 483	8 479	8 533
Physiotherapists and occupational therapists	8 107	11 011	11 449
Nursing homes	78 274	68 790	68 154
Residential nursing care facilities	667	1 073	1 124
Sheltered dwellings	4 549	579	553
Home help	39 772	44 677	43 684
Day-care centres	5 874	4 446	4 545
Rehabilitation institutions	10 980	10 708	10 462

Source: Statistics Denmark [online database] *(28)*.

Social and health helpers and assistants represent most of the long-term care workforce. Physiotherapists and occupational therapists have grown in numbers and in influence during the past decade, especially after the reablement programme was implemented (Table 17). In most residential settings, the number of personnel has stagnated or even declined while personnel employed in home help has increased by almost 10% (Table 17).

The NORDCARE project aimed to assess the working conditions in the long-term care system via two waves of polling in 2005 and 2015–2016 among long-term care providers (64). According to this project, the main shift in these years has been the increase in part-time working: 49% of practitioners employed in home care worked 30–35 hours per month in 2016 versus 21% in 2005. Greater professionalization of the workforce was also observed, 46% of the practitioners in residential care facilities held relevant qualifications that require training of more than two years in 2016 versus 33% in 2005. With greater professionalization and the increasing care needs of residents, nursing home personnel also experienced an increase in health- and nursing-related tasks. Personnel also reported higher work intensity in both home and residential care, especially related to administrative and documentation workload. Although more than 75% of those interviewed still perceive their work in long-term care as highly meaningful, about 40% have considered switching jobs because of deteriorating working conditions, especially less autonomy, less support from superiors and insufficient training.

Key points

Long-term care expenditure and health personnel ratios are among the highest in the EU. Several mechanisms promote continuing professional development for physicians and nurses as well as accreditation procedures for social and health helpers. There are performance-based mechanisms for reimbursing health providers.

Professionalization in long-term care roles

The Danish Health Authority provides accreditation and licensing services for practitioners, including physicians, nurses, dentists, clinical dental technicians, dental auxiliaries, social and health care assistants, physiotherapists, chiropractors, midwives and optometrists *(29)*. Licences can be withdrawn in case of malpractice and there is no reaccreditation procedure. The national government plans the supply of health practitioners through the system of public education and training *(29)*. The Ministry of Higher Education and Science regulates the training and qualifications required for practitioners together with various councils. The Ministry of Health and the Danish Health Authority regulate postgraduate training programmes for medical specialties and the number of new practitioners in each category *(29)*.

The Ministry of Health is committed to support continuing professional development for general practitioners to foster more proactive and quality primary care. This, together with initiatives for promoting group as opposed to solo practices and for further clarifying how general practitioners collaborate with the rest of the system, promote more integrated care delivery, specifically for older people and chronically ill beneficiaries *(29)*.

Regarding long-term care, social and health helpers can become accredited after 1.5 years of training, including a basic course of 20 weeks and a period of alternating practical and theoretical courses. Social and health helpers can perform tasks related to support with personal care and hygiene as well as household chores. A further module of 32 weeks of theoretical training and 48 weeks of practice leads to the next level as social and health assistants. These can carry out nursing functions, including planning of activities. Social and health assistants may choose the traditional nursing education that, following the Bologna process, encompasses 3.5 years for a university bachelor's degree *(65)*.

The update of health workforce competencies is ensured through a varied portfolio of clinical guidelines. The Danish Health Authority, under the Ministry of Health, oversees the planning, development and updating of clinical guidelines. The portfolio of guidelines is varied and evidence-informed. There are ongoing research projects to measure the implementation of and adherence to guidelines *(53)*.

Information technology platforms are interoperable among providers

Electronic medical records and electronic prescribing are available in general practitioner offices, hospitals and municipalities with complete uptake among providers. Although several platforms are currently in use, interoperability standards facilitate information exchange across settings, including laboratory and medical imaging results and prescribed medications and hospital discharge information. There are plans to introduce a new eHealth strategy for developing a common information technology infrastructure that will allow sharing even more information among providers *(7,33)*.

The Danish Health Care Data Network is owned and funded by the Ministry of Health and connects general practitioners with specialists, pharmacies, laboratories and hospitals via clinical messaging systems *(44)*. By 2010, about 90% of communication between primary and secondary care providers was electronic,

as the Network reached over five million clinical messages per month *(29)*. The Network receives personal and clinical data from laboratories, pharmacies, general practitioner offices, municipal authorities, regional authorities (who themselves aggregate data from hospitals on their territory) and central authorities. All data flows are protected, and data privacy and security have been top priorities throughout the development of the system.

There are several health registries, mostly concerning population health. These include the Danish National Patient Registry, the Danish Psychiatric Central Registry, the Danish Medical Birth Registry and the Danish Registry of Legally Induced Abortions. Registries for specific diseases, such as the Danish Cancer Registry and the Danish Registry of Congenital Malformations also operate *(29)*. Data from these registries are highly regarded and widely used for health research and health statistics. Most registries contain individual identification codes that enable linkage between the databases, although personal data pooling from different sources is strictly controlled and regulated *(29)*.

Highlights

Several system enablers promote the integrated delivery of health and social care. Governance is highly decentralized. Expenditure on long-term care is among the highest in the EU. National and municipal authorities fund health services using a combination of fixed grants and activity-based funding. There are avenues to promote continuing professional development and the professionalization of the provision of long-term care. An information technology platform is interoperable across providers.

Policy pointers

The following policy recommendations are pointers to address needs, coordinate providers and align system components towards more integrated delivery of health and social services.

Strive efforts to further reduce inequalities

There are persistent geographical inequalities marked by the differences in municipal spending on long-term care. To ensure more equal access to services across the country, the standardization of the needs assessment could help. Inequalities among people with different income and education attainment should be addressed in primary care tailoring preventive activities and health promotion to people of low socioeconomic status.

Strengthen mechanisms to address gender-based needs

Data on gender equality is regularly collected and reported, as well as health measures disaggregated by sex *(28)*. However, data on utilization of and satisfaction with the services is not always disaggregated by sex. Women are disproportionately affected by poverty and are more likely to report physical and sensory functional limitations. Men have a lower life expectancy, engage more often in lifestyle-related risk behaviours and report more financial challenges to access care. Men are proportionally less referred to home care, this is probably because men live with a partner or relatives while there are more women living alone. Women, especially older women, are more likely to be victims of violence. Gender-based needs should further inform policies and programmes.

Increase transparency on the outcomes of the reablement programme

Reablement strives to maintain and regain the skills older people need to continue to live independently. Its implementation has entailed considerable organizational reforms and strengthening joint working across the health and social services divide. The reablement programme is credited with reducing the number of people requesting home care. This and other preventive approaches, such as the preventive home visits, focus on reducing potential demand. However, it is plausible that the reduction in residential and home care capacity is also linked to increases in the stringency of eligibility for care. It is unclear to what extent the reduction in users and the numbers of service hours provided can be attributed to simple cuts in service levels or to these preventive approaches. Municipalities resists to sharing data on reablement because of fear of benchmarking and of its negative impact in funding negotiations with the national government. The ongoing research should determine the outcomes of the enablement programme and highlight potential improvements towards more integrated and person-centred services delivery.

Address potential personnel shortages in long-term care

The strong tradition of collaboration and trust among health providers has made multidisciplinary work a standard characteristic of the long-term care system. Most long-term care personnel work in multidisciplinary settings and interact regularly with professionals from the health sector. Since many long-term care workers are approaching retirement age and the need for increasing human resources in the sector intensifies, the system needs to implement measures to prevent personnel shortages. Being aware of this challenge, the government and other stakeholders have developed various strategies ranging from restructuring services delivery; recruiting personnel from abroad; rediscovering family care to utilizing new technologies and devices. These measures need to be reconciled with the need to guarantee that the system remains sustainable.

Further measures to promote recruitment and retention of long-term care practitioners include promoting better working conditions by limiting work intensity and administrative burden; developing strategies to reduce personnel turnover and ensure that providers remain motivated. Additionally, it may be considered the systematic recruitment and integration of qualified workers from abroad.

Review payment mechanisms of long-term care

The main payment mechanism of long-term care is fee-for-service. The possible higher spending derived from this mechanism is compensated with a reduction in the number of hospital beds (resulted in challenges for primary care, non-acute services and long-term care) and fines to municipalities that do not guarantee services for beneficiaries who could be discharged from hospital. Alternative, outcome-oriented mechanisms such as bundled budgets and/or population-based funding should be explored.

Strengthen outcome data collection for quality assurance purposes

The information technology infrastructure is at the forefront in health digitization, data sharing and the implementation of electronic medical records. This platform could be further exploiting to collect data on performance and outcomes for quality assurance and health policy planning.

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World Health Organization
Regional Office for Europe
UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01
E-mail: contact@euro.who.int
Website: www.euro.who.int