



Ministry of Health
Republic of Poland

Comprehensive overview of opportunities for setting up long-term care facilities and geriatric wards in county hospitals in Poland

Milestone D1L
National Recovery and Resilience Plan



**KRAJOWY
PLAN ODBUDOWY**

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National Recovery and Resilience Plan

- Component:** D „Efficiency, accessibility and quality of the health care system”
- Reform:** D1.2. „Increasing the efficiency, availability and quality of long-term care services of health care providers at county level”
- Milestone :** D1L „Review of the potential for establishing long-term care and geriatric care units/wards in county hospitals in Poland”

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Executive summary

Long-term care needs in Poland are covered by the health system (medical benefits) and social assistance (social benefits). At the same time, there is an informal care sector, provided by families.

As part of the public health system, long-term care is provided on a home and inpatient basis. They are continuously being developed, including through the introduction of indirect forms of care provision. Services are provided by several groups of medical professionals (e.g. doctors, nurses, physiotherapists).

The demand for medical and care services for the elderly in the Polish population is mainly related to demographic changes and preventive and cultural patterns. These needs will grow in the future and potentially lead to the need to step up the implementation of different forms of systemic solutions.

Areas of operation of health care facilities that allow the conversion of existing resources into long-term care centres or geriatric wards have been identified. The maximum possible level has been estimated at around 17,000 beds, but due to the need to safeguard epidemiological needs, the estimated potential may not be fully converted.

Conversions cannot take place without support for equipment retrofitting, refurbishment, staff training, transferring benefits to lower levels of care, adjusting the level of funding for existing long-term care bed capacity, or changing the scope of contracting.

Conversion is only one of the measures that will contribute to increasing supply. The full provision of existing and future needs for medical long-term care will be realised through the launch of new (fixed and non-fixed) forms of care, including those of a deinstitutionalised nature, and the coordination of many forms of health care services, including non-sectoral services implemented by the Ministry of Family and Social Policy. Multidirectional measures aimed at optimising the structure of capacities, both in terms of strengthening preventive measures, redirecting care to lower levels, as well as shifting

the burden of care for the elderly to home-based and deinstitutionalised modes, will require a dynamic response.

Introduction

The analysis of demographic indicators in Poland indicates two main trends: a decrease in the population and a decrease in healthy life years. This increases the burden on the health system, especially for services related to the treatment, improvement and care of the elderly.

According to the diagnosis presented in the Map of Health Needs 2022-2026, the observed growing number of elderly, chronically ill people and those needing support in their daily functioning brings with it a number of challenges related to providing appropriate nursing and care for an increasing number of people with complex health problems. The current activities of the health system focus on safeguarding the current and future health needs of the population. They concern not only supporting the development of non-institutional care or reducing the staffing deficit, but also increasing the number of places in high-quality care facilities adapted to a diverse structure. Strengthening these measures is part of the planned investments under the NOP, which will result in the adaptation of the infrastructure of medical entities in the field of long-term and geriatric care.

In Poland, one of the forms of care for the elderly who experience reduced autonomy is informal care provided by the family. This is due to the cultural model of the family and to social conditions. Support from the family does not always meet the needs of the person being cared for, and further limits the carer's ability to work professionally and - in the long term - places a physical and emotional burden on the carer. Due to increasing labour force levels, as well as demographic and cultural changes, the number of informal carers will gradually decline. This indicates the need to support actions related to both the development of residential and deinstitutionalised care provided by professional medical and care staff.⁵

The aim of the review is to analyse in detail the possibility of converting part of the potential of county hospitals into long-term care centres or geriatric wards. In particular, the analysis examined possible actions leading to:

- an increase in the availability of long-term health care services based on a balanced supply of long-term care services, especially at the county level;
- the reduction of potential inequalities in access to inpatient long-term health care services;
- the improvement of the working conditions of the medical staff involved in the

⁵ „Deinstitutionalisation strategy. Health care for the elderly”, Annex to the Healthy Future. Strategic Framework for the Development of the Health System 2021-2027, with a view to 2030', Ministry of Health, pp. 38-39.

delivery of long-term care services;

- the improvement of the quality of inpatient long-term care.

The establishment of long-term care centres and geriatric wards in county hospitals is part of a broader reform process planned not only for inpatient care, but also for outpatient care and prevention, all of which will contribute to strengthening the care of the elderly.

The development of the review complements the achievement of the milestone D1L of the National Recovery and Resilience Plan. It will be an annex to the legal act supporting the selection process of the county hospitals eligible for support, which is the next metric (D2L). In the next steps, the Ministry of Health will prepare a strategic review of long-term care in Poland, the process of hospital restructuring and implement the quality law.

Assumptions made

The analyses were based on data for 2019.

This is the last year before the COVID-19 pandemic. The analysis of data from 2020-21 showed results with significant anomalies.

Data are shown at the level of counties (poviats) or voivodeships.

This has been adjusted in each case to the meaning and legibility of the information.

I and II degree hospitals in the hospital network were considered as county (powiat) hospitals.

These are usually the entities that provide health care at the local level and best fit the purpose of the report.

Benefits financed from the general health insurance were analysed.

Only those areas financed by the public payer were selected for transformation. The rest is subject to the economic freedom to provide services.

Persons aged 60 years and over were defined as the "elderly".

This is due to Art. 4 point 1 of the Act of 11 September 2015 on the elderly (Journal of Laws item 1705) and the threshold of old age adopted in the literature (WHO). Sometimes we show data for people aged 65 and over, which results from other definitions adopted in selected analyses (UN, Eurostat).

The analyses concern long-term care within the health care system

The analysis did not include services provided in psychiatric care as part of long-term health care. Benefits under the social welfare system and the social insurance system are considered to a limited extent, only to indicate the potential supply.

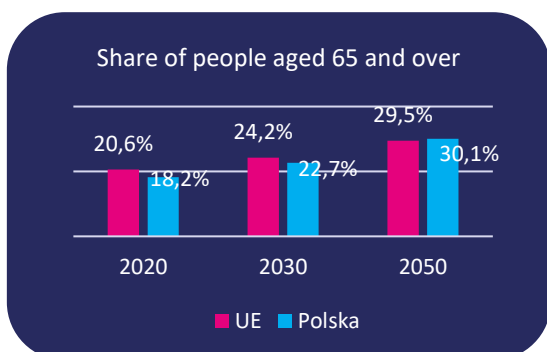
The diagnosis shows the most important and aggregated information

We present in-depth and consistent analyses of demographics, epidemiology and available resources in the map of health needs for 2022-2026 and in Annex 1 to the strategic document "Healthy Future. Strategic framework for the development of the health care system for 2021-2027, with a perspective until 2030".

The analysis covers the areas broken down into formal and informal care.

Informal care consists of unpaid care provided by the patient's family or relatives at home, while formal care consists of home care carried out by professionals, outpatient and inpatient services.

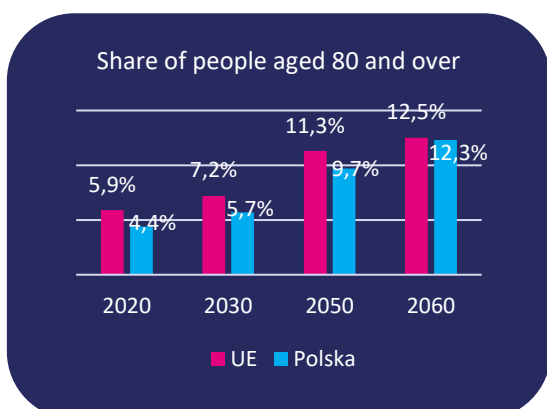
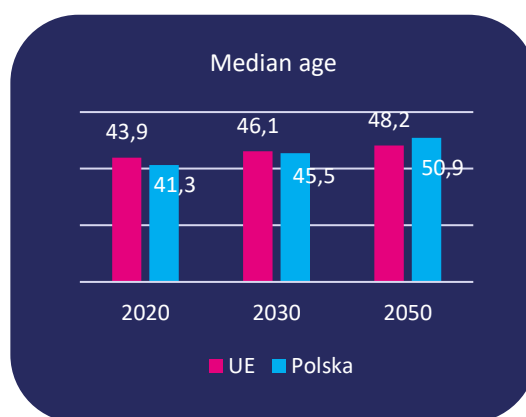
1. Outline of the problem



Similar demographic phenomena have been observed in Poland as in other developed countries, with some of them occurring with greater intensity.

The proportion of the elderly in the Polish population is increasing and will exceed the EU average in 2050⁶.

Our society is one of the fastest ageing in the EU. In just a dozen years (around 2035), the median age of Poles will exceed the median value for the 27 EU countries.⁷



An important aspect of population ageing is the progressive ageing of the oldest group. In Poland, the proportion of the oldest senior citizens in the population is still below the EU average, however, this group is growing the fastest. In about 35 years, this proportion will approach the EU average, and in further years it will exceed it.⁸

⁶ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Struktura_ludno%C5%9Bci_i_starzenie_si%C4%99_spo%C5%82ecze%C5%84stwa&oldid=364923 (dostęp w dniu 10.05.2022 r.)

⁷ https://ec.europa.eu/eurostat/databrowser/view/proj_19ndbi/default/table?lang=en (dostęp w dniu 16.04.2022)

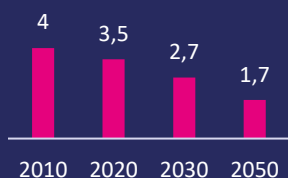
⁸ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_structure_and_ageing#Past_and_future_population_ageing_trends_in_the_EU (dostęp w dniu 10.05.2022 r.)

The values of the life expectancy of women and men are steadily increasing in all EU countries. However, both life expectancy and healthy life expectancy in Poland are below the EU average.⁹

Average life expectancy in 2019 (years)

	Poland	EU
Women:	81,75	84
Men:	74,07	78,5

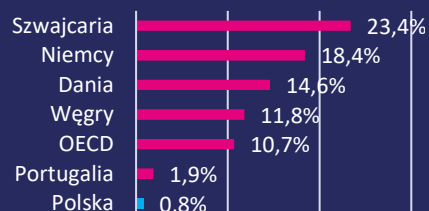
Number of potential carers per person aged 65 and over in Poland



At the same time, the number of potential carers is decreasing, which will have a significant impact on the ability to meet the care needs of the elderly on both a family and formal basis.¹⁰

The share of people over 65 years of age covered by institutional long-term care in Poland, understood as a health benefit, is more than ten times lower than the average for 25 OECD countries.¹¹

Share of people aged 65 and over in institutional long-term care in this population

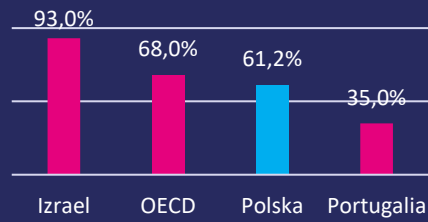


⁹ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Mortality_and_life_expectancy_statistics (dostęp w dniu 02.06.2022 r.)

¹⁰ <https://ec.europa.eu/eurostat/databrowser/bookmark/1be173e3-3d43-4331-bbd8-e4a54d217466?lang=en> (dostęp w dniu 16.04.2022) oraz <https://stat.gov.pl/obszary-tematyczne/ludnosc/prognoza-ludnosci/prognoza-ludnosci-na-lata-2014-2050-opracowana-2014-r-,1,5.html> (dostęp w dniu 1.06.2022 r.)

¹¹ *Health at a Glance, 2021* <https://www.oecd.org/health/health-at-a-glance/> The large differences in the values of indicators between OECD countries depend on several aspects that may make it impossible to compare them directly, i.e. the demographic structure of the population of individual countries, the adopted definition of long-term care and reporting errors. In the case of the value for the Republic of Poland (0.8%), long-term care provided at home was not taken into account.

Share of patients aged 65 and over in long-term care receiving home care



In contrast, household services account for a significant share of long-term care services in Poland, but their share of the total services remains below the average for OECD countries.¹²

2. Analysis of supply

2.1. Organisation of the provision of health services

2.1.1. Long-term care

Formal long-term care within the health care system in Poland is provided in two modes: inpatient and home care. Within the framework of each of them, benefits are provided in different scopes. They are provided to patients who score 40 points or less on the Barthel scale (an assessment of the level of independence).

1

Inpatient care, in institutions

What are the areas?

Nursing and residential care establishments for adults or children and adolescents until 18

¹² Data for Israel, OECD and Portugal: *Health at a Glance* <https://www.oecd-ilibrary.org/sites/ae3016b9-en/1/3/10/6/index.html?itemId=/content/publication/ae3016b9-en&csp=ca413da5d44587bc56446341952c275e&itemIGO=oecd&itemContentType=book>; data for Poland: Mapa potrzeb zdrowotnych na lata 2022-2026, s. 350.

years of age, including mechanically ventilated persons.

For which patients?

Patients requiring 24-hour nursing and care services, rehabilitation and continuation of treatment, but without hospitalisation in a hospital ward.

What are the exemptions?

Patients for whom the primary indication for care is advanced cancer, mental illness or addiction, even if the patient has scored 40 points or less on the Barthel scale assessment.

What benefits do I receive?¹³

- benefits provided by a doctor, a nurse and a psychologist,
- basic general rehabilitation,
- occupational therapy,
- pharmacological and dietary treatments,
- supply of medical devices,
- health education consisting of preparing the patient and his/her family or carer for self-care and self-care in home conditions,
- diagnostic tests and medicines.

How does the funding look like?

- partly from public funds,
- patient co-payment of up to 70% of the patient's monthly income to cover non-medical expenses, i.e. food and accommodation and 60% of the cost of travel by means of ambulance transport.

2

Home care

¹³ detailed in Art. 4 points 2-4 of the Regulation of the Minister of Health of 22 November 2013 on guaranteed services in the field of nursing and care services in long-term care (Journal of Laws of 2015, item 1658, as amended).

What are the areas?

- 1) long-term home care team for mechanically ventilated adults, children and adolescents,
- 2) nursing home long-term care.

For which patients?

- 1) first area:
 - chronic respiratory failure,
 - requiring the use of invasive or non-invasive mechanical, continuous or periodic ventilation,
 - not requiring hospitalisation in intensive care units or 24-hour care facilities,
 - requiring continuous specialised medical supervision, professional care and rehabilitation;
- 2) second area:
 - not cared for by a domestic hospice, another care institution or under the first category of home care,
 - patients not in the acute phase of mental illness.

What benefits do I receive?

- 1) in the first area:
 - benefits provided by doctors and nurses,
 - in addition, depending on the state of health, benefits provided by the physiotherapist, psychologist, speech therapist, occupational therapist, addiction therapist and, possibly, a medical guardian
(with exemptions),
 - diagnostic tests to enable appropriate breathing therapy;
- 2) in the second area:
 - benefits provided by a nurse,
 - preparation for self-care,

- nursing benefits,
- health education,
- helping to solve health problems related to living independently in the home environment,
- assistance in obtaining medical and rehabilitation equipment.

How does the funding look like?

Entirely from public funds under health insurance.

2.1.2. Geriatric care

Geriatric care services are not distinct in nature as in the case of long-term care. They are provided in different areas of the system, from POZ to hospital treatment.



primary care
(POZ)



ambulatory
geriatric clinics
(AOS)



geriatric wards
in hospitals

A healthcare provider providing healthcare services in the form of hospitalisation and scheduled hospitalisation is required to develop and implement a procedure for geriatric assessment of the patient.

Global geriatric assessment

What is it?

It is a diagnostic process to improve diagnostic precision, identify health and care problems, optimise treatment and plan care. It is carried out by a geriatric doctor or a consultative geriatric team.

What is its purpose?

- reduction of the re-capitalisation rate,
- reduction of polypharmacotherapy,
- detection and treatment of health problems to enable earlier therapy and prevent disability progression,
- reduction of adverse drug reactions,
- a holistic approach to health problems that promotes satisfaction and quality of life,
- longer life expectancy.

Who qualifies?

Patient aged 60 years and over with complex health problems, hospitalised in geriatric or non-geriatric wards, meeting all of the following criteria:

- 1) at least 3 points on the VES-13 scale¹⁴,
- 2) at least 3 comorbidities from different body systems.

The evaluation shall be carried out once per calendar year.

2.2. Analysis of infrastructure potential

2.2.1. Long-term care¹⁵

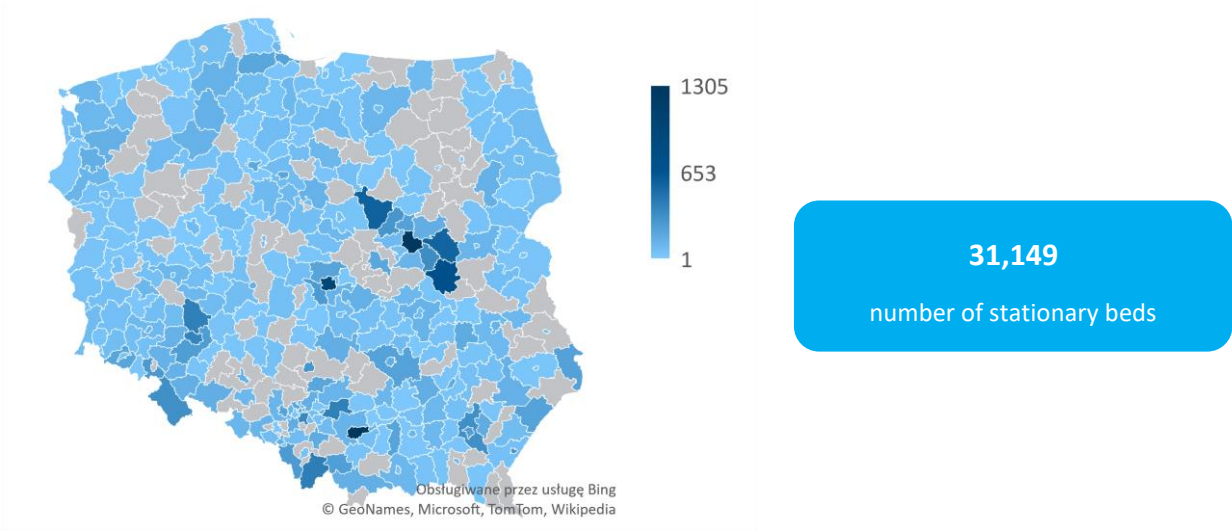
In 2019, there were a total of 1,999 long-term care centres, including 466 providing inpatient care and 1,614 providing home care. Some healthcare providers provided benefits in both ways .

¹⁴ The Vulnerable Elders Survey-13 (VES-13) scale was proposed in 2001 by Debra Saliba to screen elderly people living in the home environment who are at risk of functional decline or death. The VES-13 scale can be self-completed by the patient, but is also easily scored after a brief interview with the patient by someone appropriately trained to do so. The VES-13 scale includes scores for age, self-assessment of health status and questions about physical and functional capacity. A score of 3 or more on this scale qualifies seniors for COG. This scale is also an important prognostic indicator of functional decline. The higher the score, the higher the risk of disability, as well as death.

¹⁵ The analysis assumes that the care institution (ZOL/ZPO) is an entity carrying out medical activities defined on the basis of the code of the healthcare provider providing services under the NFZ in a given county. This means that if the same healthcare provider provided NFZ services in two counties, it was counted twice.

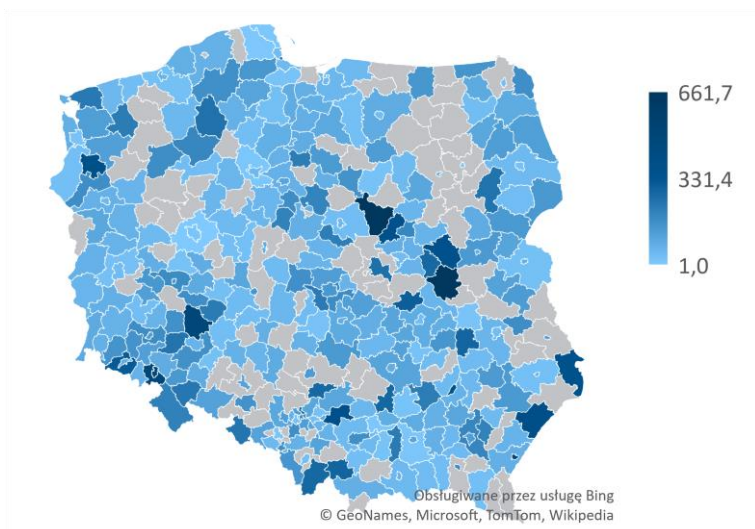
In 89 counties there was no inpatient care (however, home care was available). The largest number of such counties was in Wielkopolskie Voivodeship (12), and the smallest in Lubuskie and Dolnośląskie Voivodeships (2 each). Among these counties, only 5.6% were cities with county rights, i.e. with the highest population density. Approximately one in four of these counties (22 counties) is a unit with a population below 50,000 inhabitants.

Figure 1. Number of long-term residential care beds in the counties (poviats) in 2019.



Source: Map of health needs 2022-2026.

Figure 2. Number of beds in long-term inpatient care per 100,000 population in the counties (poviats) in 2019.



81
number of stationary beds per 100 thousand population

87.6% (320 days)
national bed occupancy rate for nursing homes (ZPO)¹²

91.2% (333 days)
national bed occupancy rate for nursing homes (ZOL)¹²

Source: Map of health needs 2022-2026.

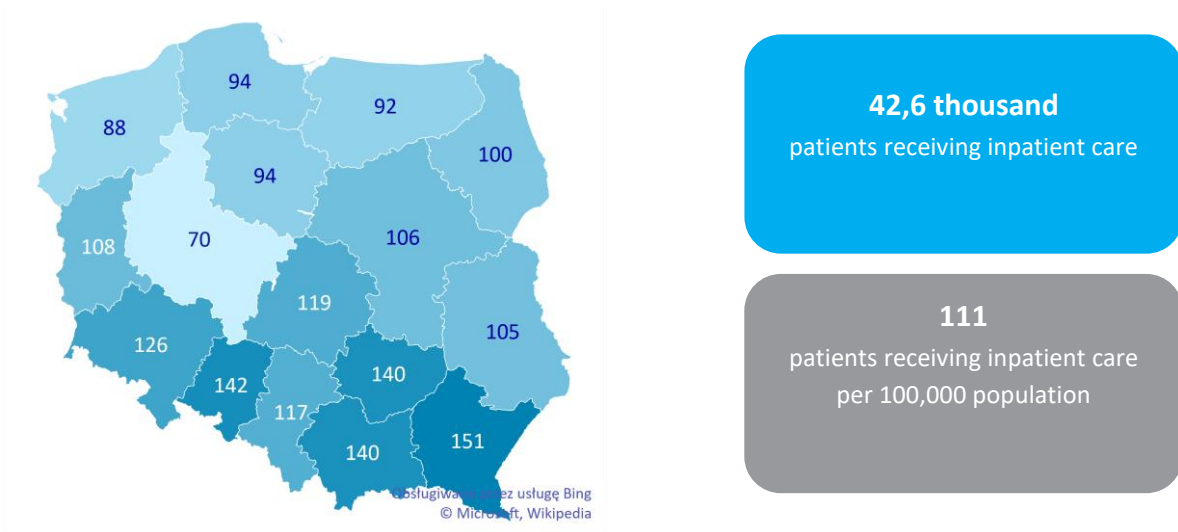
The highest number of available beds in inpatient long-term care per 100,000 population was in Płock and Garwolin counties (both in the Mazowieckie Voivodeship), while the lowest was in Poznań (Wielkopolskie Voivodeship).

The city of Przemyśl, which has the highest ratio of medical personnel employed in inpatient long-term care under contract with the National Health Fund, is ranked 3rd in terms of the number of long-term care beds per 100,000 people. In contrast, Wejherowo County, which has the lowest ratio of medical personnel employed in inpatient long-term care under contract with the National Health Fund, is ranked 3rd from the bottom in terms of the number of long-term care beds per 100,000 people. The correlation between these indicators is therefore notable.

The highest number of patients covered by inpatient long-term care per capita was recorded in Podkarpackie, Opolskie and Świętokrzyskie Voivodeships, and the lowest in Wielkopolskie, Zachodniopomorskie and Warmińsko-Mazurskie Voivodeships. The difference between the extreme voivodeships was more than 50%.¹⁶

¹⁶ „Zdrowie i ochrona zdrowia w 2019”, GUS, Warszawa, Kraków 2020

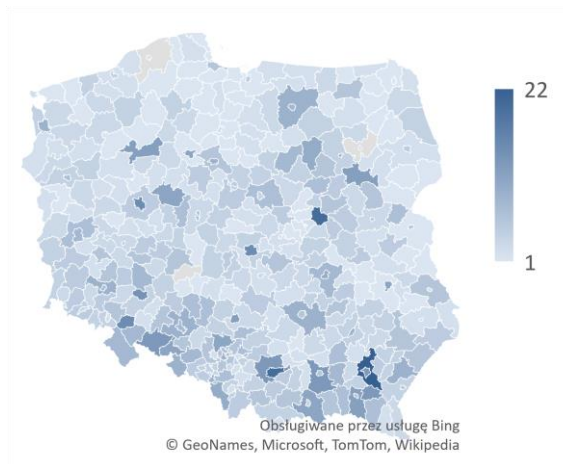
Figure 3. Number of inpatient long-term care patients per 100,000 population in 2019.



Source: Map of health needs 2022-2026.

The largest number of home long-term care centres in 2019 was located in the Mazowieckie and Śląskie Voivodeships, the smallest in the Pomorskie and Podlaskie Voivodeships. The difference between extreme voivodeships was more than seven times. There were no home long-term care facilities in 3 counties. Rzeszów County (outside the city of Rzeszów) had the largest number of medical operators, twice as many as in the city of Warsaw and Kraków.

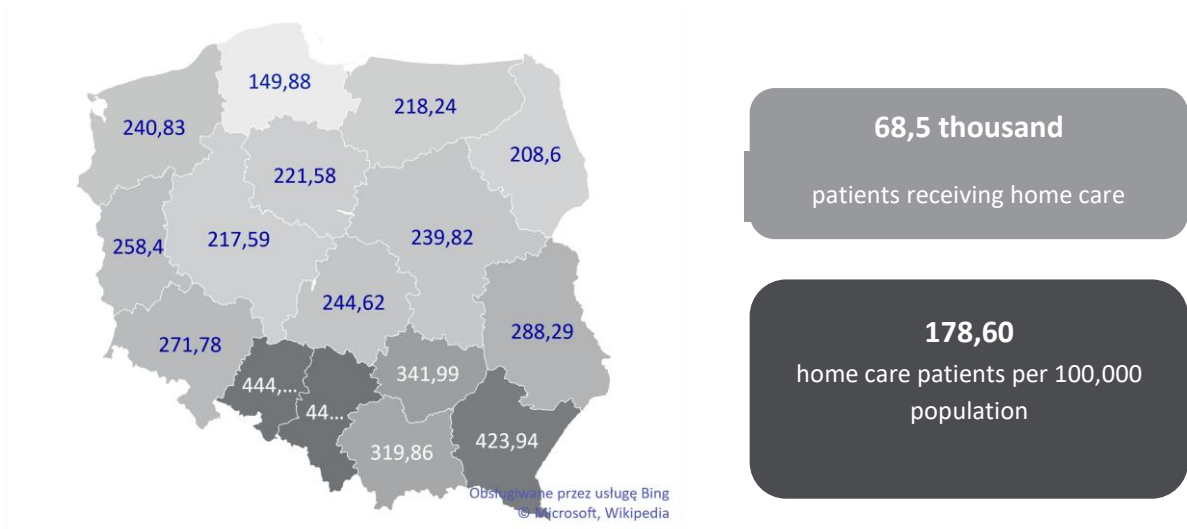
Figure 4. Number of residential long-term care centres in counties in 2019.



Source: Map of health needs 2022-2026.

The largest number of patients covered by domestic long-term care was recorded in the Śląskie and Opolskie Voivodeships and the lowest in the Pomorskie and Podlaskie Voivodeships. The difference between extreme voivodeships was three times.

Figure 5. Number of long-term care patients per 100,000 population in 2019.



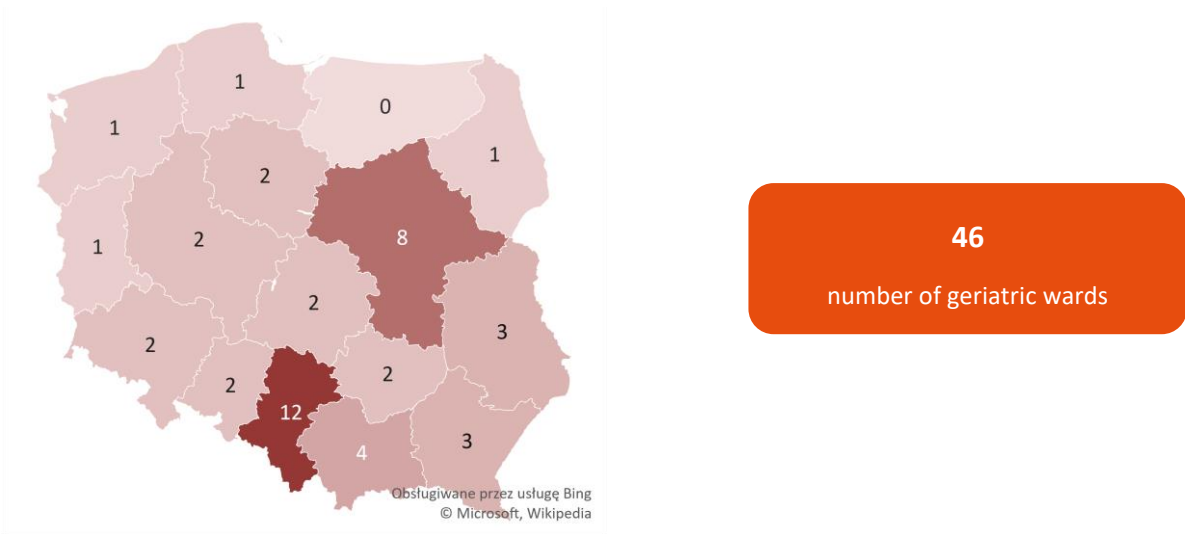
Source: Map of health needs 2022-2026.

2.2.2. Geriatric care

The largest number of geriatric wards was found in the two most populous voivodeships, namely Śląskie and Mazowieckie voivodeships, and the smallest - just one each - in Pomorskie, Lubuskie, Podlaskie and Zachodniopomorskie voivodeships. In the Warmińsko-Mazurskie Voivodeship, there was no geriatric ward in any hospital¹⁷.

¹⁷ Map of health needs 2022-2026

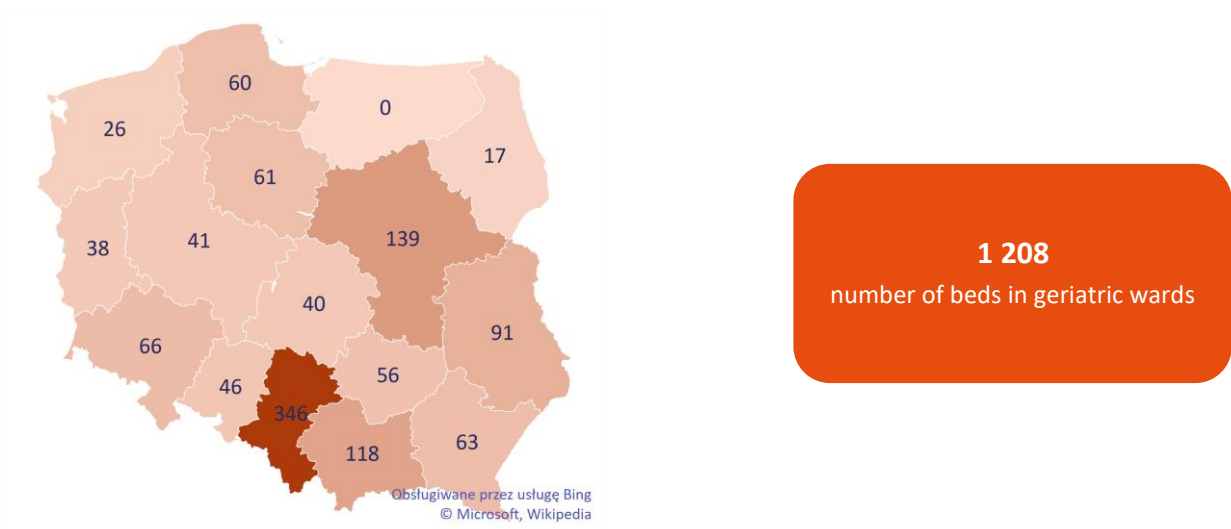
Figure 6. Number of healthcare providers on a fixed basis per voivodeship in 2019.



Source: Map of health needs 2022-2026.

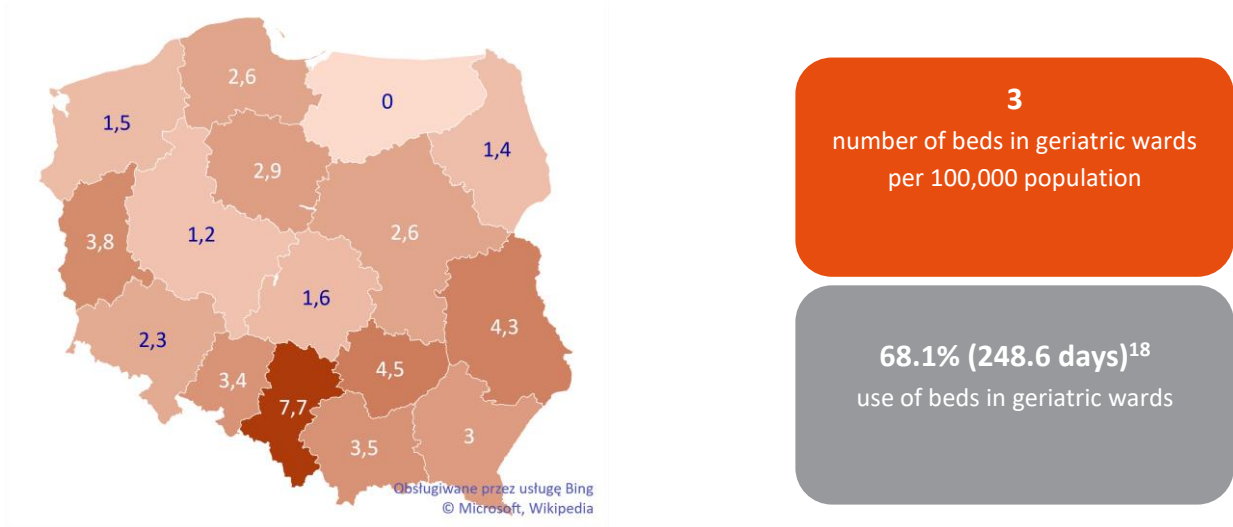
The largest number of geriatric wards was located in Śląskie, Mazowieckie and Małopolskie voivodeships, while the lowest number was in Podlaskie, Zachodniopomorskie, Pomorskie and Lubuskie voivodeships. This indicator had a direct bearing on the number of beds in the wards - their distribution between regions was similar.

Figure 7. Number of geriatric beds in geriatric wards in voivodeships in 2019.



Source: Map of health needs 2022-2026.

Figure 8. Number of beds in geriatric wards per 100,000 population in voivodeships in 2019.

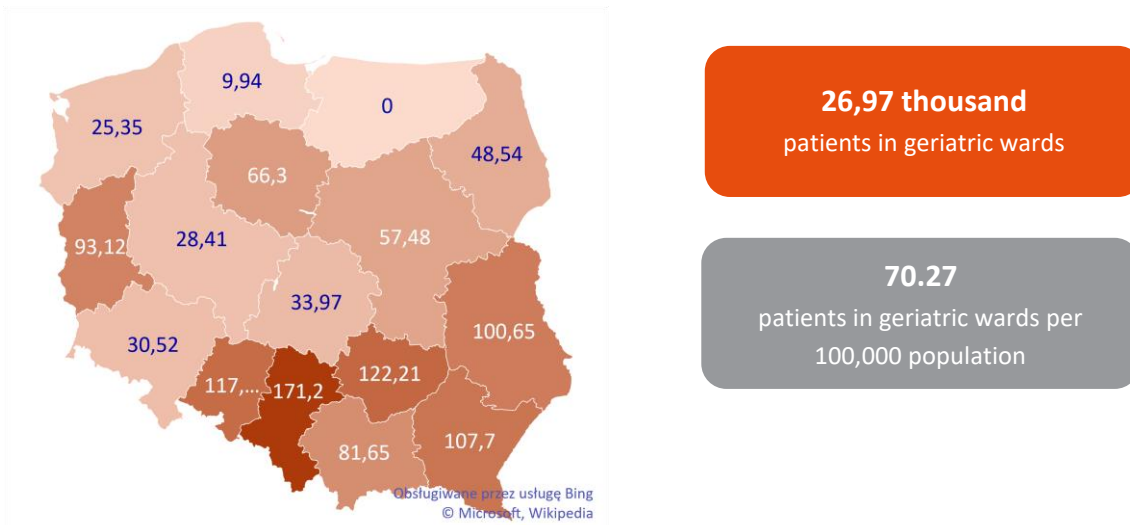


Source: Map of health needs 2022-2026.

Differences between voivodeships in the ratio of the number of beds in geriatric wards per 100,000 population in the provinces are significant - from 0 in the Warmińsko-Mazurskie Voivodeship to 7.7 in the Śląskie Voivodeship.

The Śląskie Voivodeship, which has the highest ratio of medical staff employed in inpatient geriatric care under contract with the National Health Fund, is ranked first in terms of the number of geriatric care beds per 100,000 population. On the other hand, the Wielkopolskie Voivodeship, which has the lowest ratio of medical staff, is ranked fifth from the bottom in terms of the number of geriatric care beds per 100,000 population. Thus, the availability of services is moderately affected by the size of the staff in the case of geriatric care.

Figure 9. Number of patients in geriatric wards per 100,000 population in 2019.



Source: Map of health needs 2022-2026.

The highest number of geriatric ward patients per population was recorded in Śląskie, Opolskie and Świętokrzyskie voivodeships, and the lowest in Pomorskie, Wielkopolskie and Zachodniopomorskie voivodeships. The difference between the extreme provinces, excluding the Warmińsko-Mazurskie Voivodeship, where there was no such ward at all, was very high - in Śląskie Voivodeship the rate was more than 17 times higher than in Pomorskie Voivodeship.

2.3. Analysis of human resources capacity

2.3.1. Long-term care

The number of nurses, doctors and physiotherapists employed in long-term care totaled 33,528. Some of them worked in more than one medical establishment. The vast majority provided services to adult patients.

Table 1. Number of medical staff employed in long-term care in 2019.

Scope of services provided	Nurse	Doctor	Physiotherapist	Total
Nursing home long-term care	13,851	1	12	13,864
Nursing and care institution (ZOL)	7,466	2,376	2,399	12,241
Long-term home care team	1,633	1,073	1,733	4,439
Care and nursing establishment (ZPO)	2,505	819	787	4,111
Long-term home care team for children	569	590	681	1,840
Children's nursing and care institution (ZOL)	316	99	114	529
Children's care establishment (ZPO)	46	13	12	71

Source: Own material based on data from the Map of health needs 2022-2026.

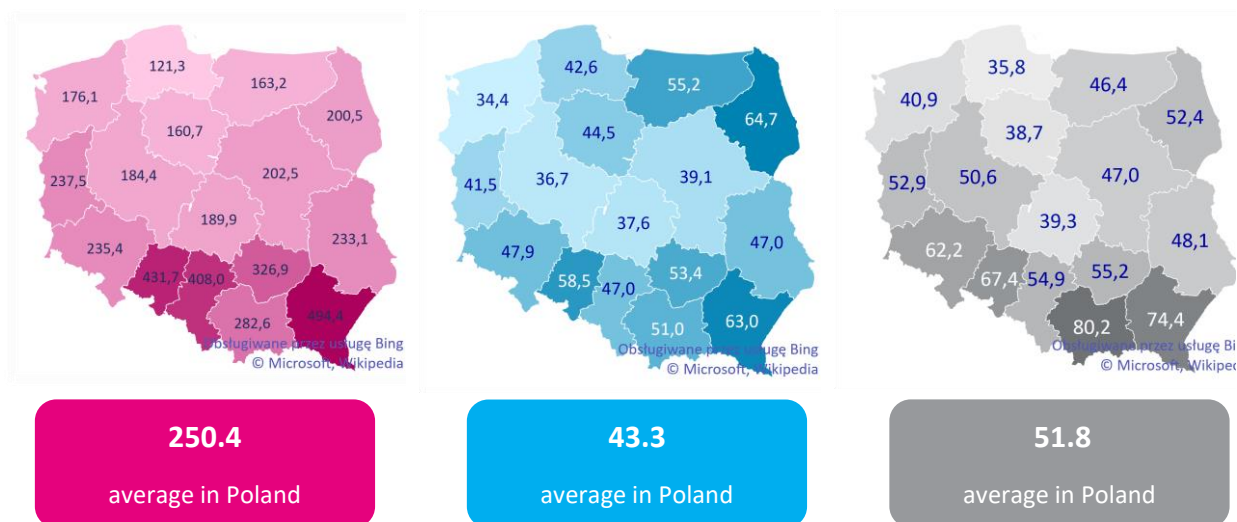
Nurses are the dominant professional group employed in long-term care. This is true for home-based long-term care nursing as well as inpatient care, including with providers who provide services for children.

24,300
number of nurses in long-term care

4,197
number of doctors in long-term care

5,031
number of physiotherapists in long-term care

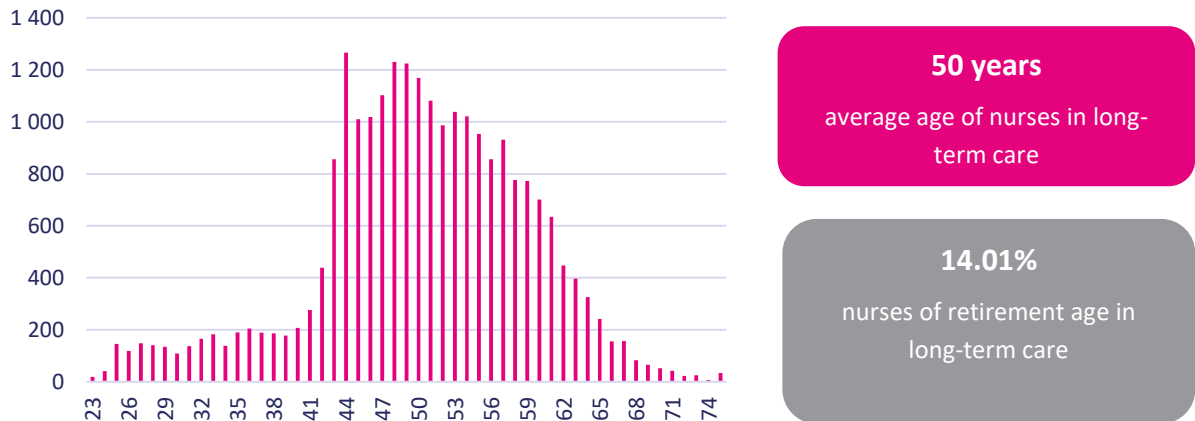
Figure 10. Number of medical staff employed in long-term care per 100,000 inhabitants aged 60 and over in 2019 (from left: nurses, doctors, physiotherapists)



Source: Map of health needs 2022-2026.

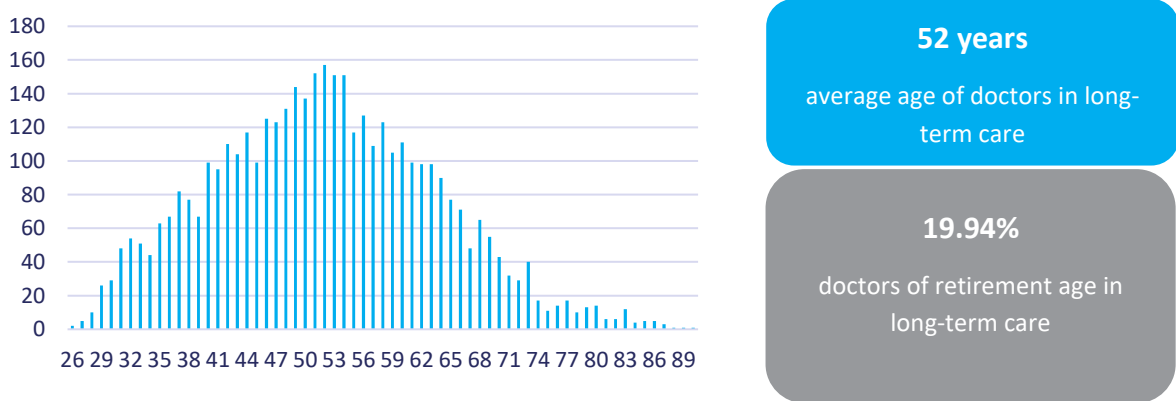
The highest rate for nurses per 100,000 inhabitants aged 60 and over was in the Podkarpackie province, for physicians in the Podlaskie province, and for physiotherapists in the Małopolskie province. In contrast, the lowest rates for nurses and physiotherapists were in the Pomorskie Voivodeship, and for physicians in the Zachodniopomorskie Voivodeship. Differences between voivodeships with extreme values of the parameter were most evident in the case of nurses: there is relatively four times more of them in the Podkarpackie Voivodeship than in Pomorskie Voivodeship. For the other two professional groups, the difference was about twice as high.

Figure 11. Age structure of nurses providing long-term care in 2019.



Source: Map of health needs 2022-2026.

Figure 12. Age structure of doctors providing long-term care in 2019.



Source: Map of health needs 2022-2026.

In the next few years, a significant portion of long-term care staff will move into retirement age. Although the average age of nurses is lower than that of doctors, the age pyramids indicate a potentially greater shortage of the former professional group in the future.

2.3.2. Geriatric care

In number of nurses, doctors and physiotherapists employed in geriatric wards totalled 1,577. Some of them worked in more than one medical unit. The largest number of employees consisted of nurses, followed by doctors and physiotherapists.

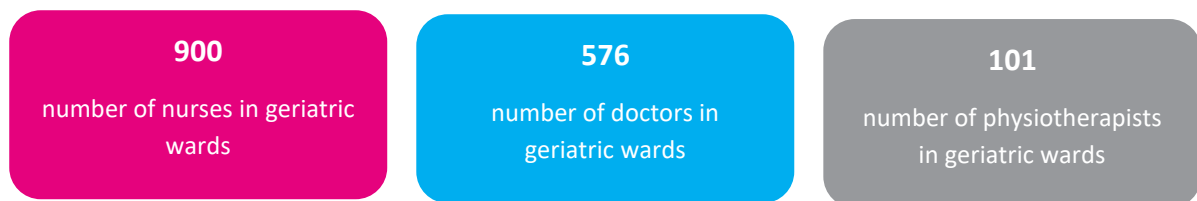
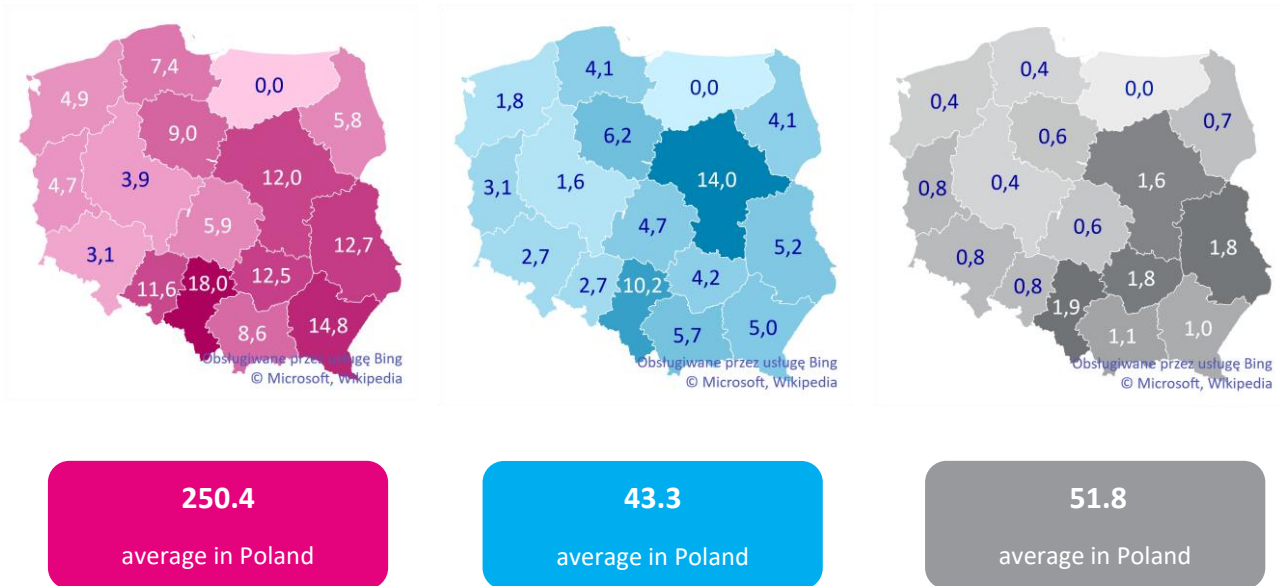


Figure 13. Number of medical staff employed in geriatric wards per 100,000 inhabitants aged 60 and over in 2019 (from left: nurses, doctors, physiotherapists).

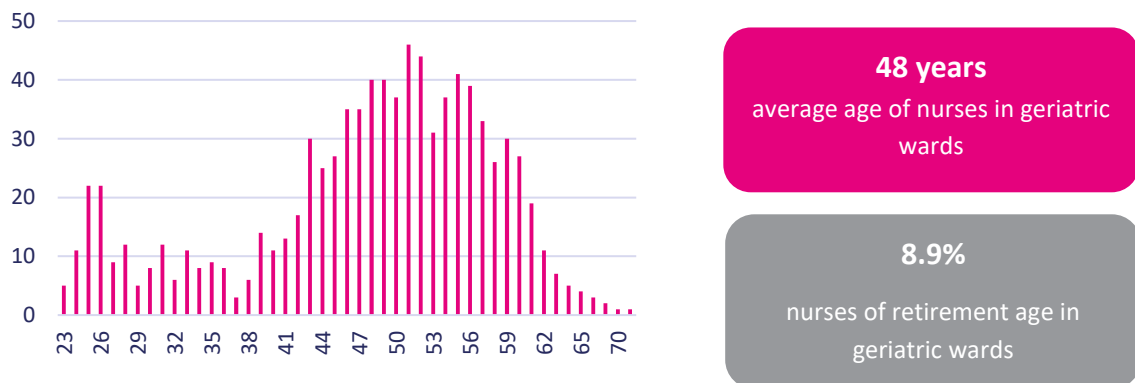


Source: Map of health needs 2022-2026.

The highest rate for nurses and physiotherapists per 100,000 residents aged 60 and over was in the Śląskie Voivodeship, and for doctors in the Mazowieckie Voivodeship. In contrast, the lowest rate for nurses was in the Dolnośląskie Voivodeship, and for doctors and physiotherapists in the Wielkopolskie Voivodeship. Differences between voivodeships with extreme values of the parameter were most apparent in the case of doctors: in the Mazowieckie Voivodeship the rate is more than eight times higher than in the Wielkopolskie Voivodeship, and there are relatively six times more nurses in the Śląskie Voivodeship than in the Dolnośląskie Voivodeship. In the case of physiotherapists, the difference was about twice as high.

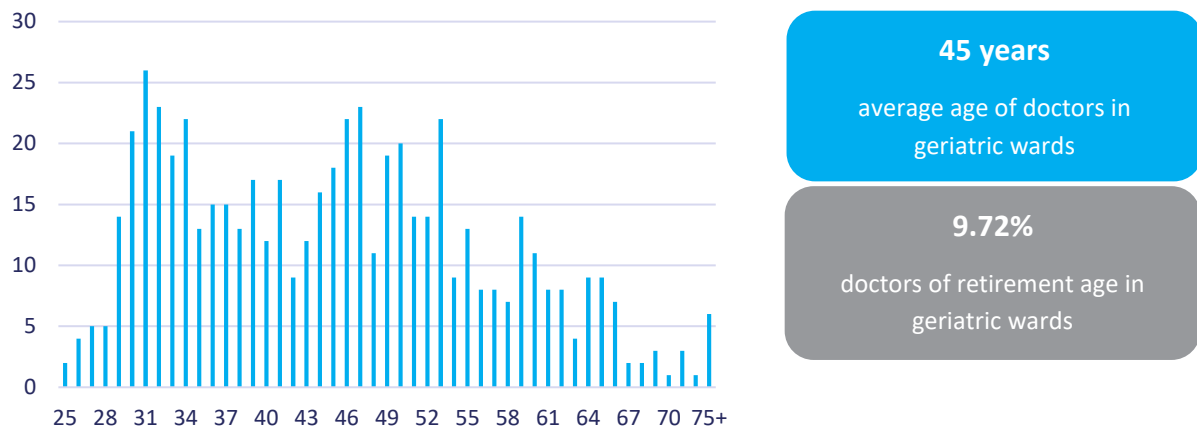
These indicators are clearly correlated with the number of patients and geriatric wards — the more patients and wards in a given region, the relatively more staff as well.

Figure 14. Age structure of nurses employed in geriatric wards in 2019.



Source: Map of health needs 2022-2026.

Figure 15. Age structure of all doctors employed in geriatric wards in 2019.



Source: Map of health needs 2022-2026.

2.4. Conclusions

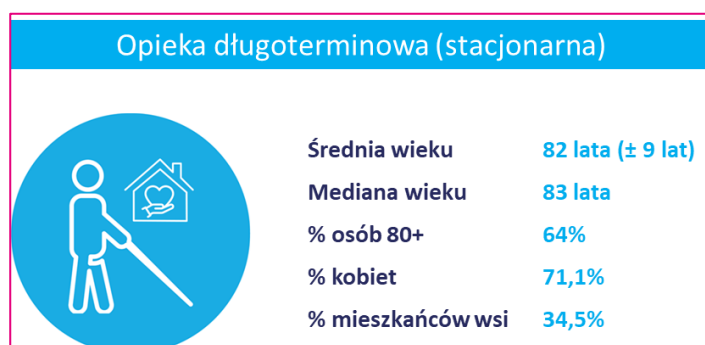
- The supply of long-term care services requires support to meet growing needs, as evidenced by, inter alia, high bed utilisation rates. The ageing of the population indicates the **need to increase the number of places in inpatient long-term care facilities**.
- In 89 counties there were no inpatient long-term care units, but in the case of home care, this occurred in only 3 counties. **Apart from the Łomża County in the Podlaskie Voivodeship, where there was no therapeutic entity providing long-term care in any form, there were home-care facilities in the counties without institutions.**
- There is a noticeable variation in the number of inpatient long-term care patients per population in the voivodeships. The difference between the region with the highest ratio (Podkarpackie Voivodeship) and the one with the lowest (Wielkopolskie Voivodeship) is more than double (151 and 70 respectively, with the national average of 111). This demonstrates **the disparity in the supply of benefits in these voivodeships**. These differences are even more pronounced in the case of geriatric wards. Here, the difference between the extreme provinces was threefold. It is worth noting that patients can benefit from treatment in the area where their families live in order to maintain contact and ties.
- The differences in the supply of services are evident for geriatric wards. The difference between the voivodeship with the lowest patient-to-population ratio (Pomorskie) and the one with the highest (Śląskie) is more than 17 times. On the other hand, bed occupancy in geriatric wards reaches just over 68% on average in Poland. This may indicate, on the one hand, unequal access to services and, on the other hand, under-utilisation of its potential. **It is therefore necessary to adapt to**

the proper use of existing potential.

- There are noticeable differences in the number of medical staff in long-term care in relation to the population. The correlation of the number of patients with the number of staff is more pronounced than with the number of providers. **Human resources are also a factor in the supply of benefits, which again may be indicative of inequalities in this area.**
- The average age of a nurse in long-term care is 50 years and in geriatric wards 48 years, of which 14.01% and 8.9% respectively are already of retirement age. A strong ageing dynamic of nurses in geriatric wards is evident. On the contrary, the age structure of doctors employed in these wards shows a high proportion of young and middle-aged doctors. **The shape of the age pyramid indicates an ageing of the nursing workforce and a potential decline in its numbers in the future. Therefore, preventive action shall be taken.**
- A large group of doctors aged 75 and over are employed in long-term care. This may be due to the relatively lower time burden, which encourages older doctors to take up employment there. A strong ageing dynamic of nurses in geriatric wards is evident. On the contrary, the age structure of doctors employed in these wards shows a **high proportion of young and middle-aged doctors.**

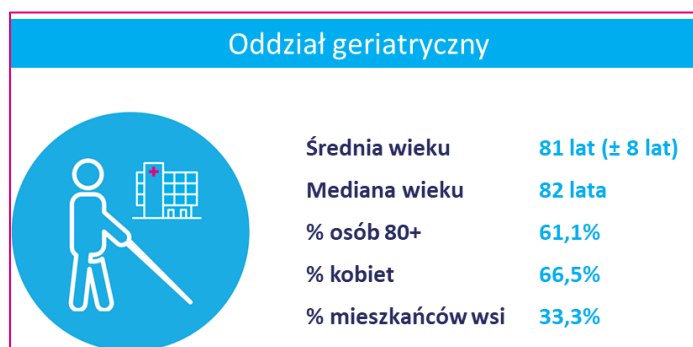
3. Analysis of demand

3.1. Patient profile



Out of patients aged 60 and over receiving long-term care services in 2019, 39.8% were in inpatient care. The proportion of people aged 80 and over among patients aged 60 and over was higher for inpatient care than for home care, but the difference was insignificant. By analysing the gender distribution, we can observe a female predominance in both cases (slightly higher for inpatient care). One in three long-term care patients is a rural resident¹⁸.

More than half of the patients in the geriatric wards in 2019 were aged 80 years and over. When analysing the gender distribution, we can observe a predominance of women. Similarly to long-term care, one in three patients is a rural resident¹⁹.



The prevalence of women in long-term and geriatric care is higher than the demographic structure of the population would suggest (in 2019, women accounted for 58.1% of persons aged 60 and over). The percentage of rural residents receiving long-term and geriatric care is in line with the demographic structure (in 2019, rural residents accounted for 34.8% of persons aged 60 and over)

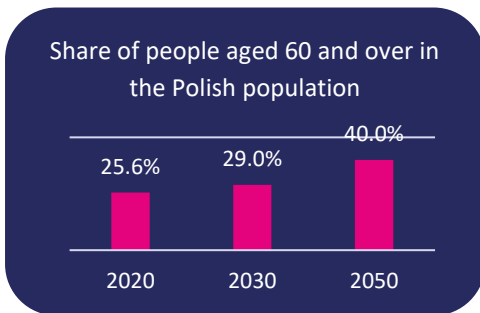
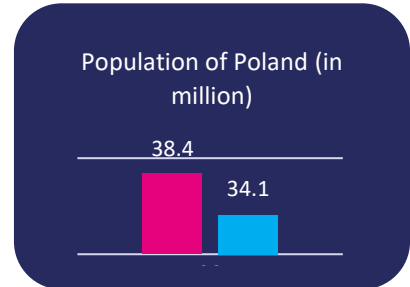
¹⁸ Material of the MoH on the basis of the National Health Fund (NFZ) data

¹⁹ as above

3.2. Analysis of demographic and social factors affecting demand

3.2.1. Demographic factors

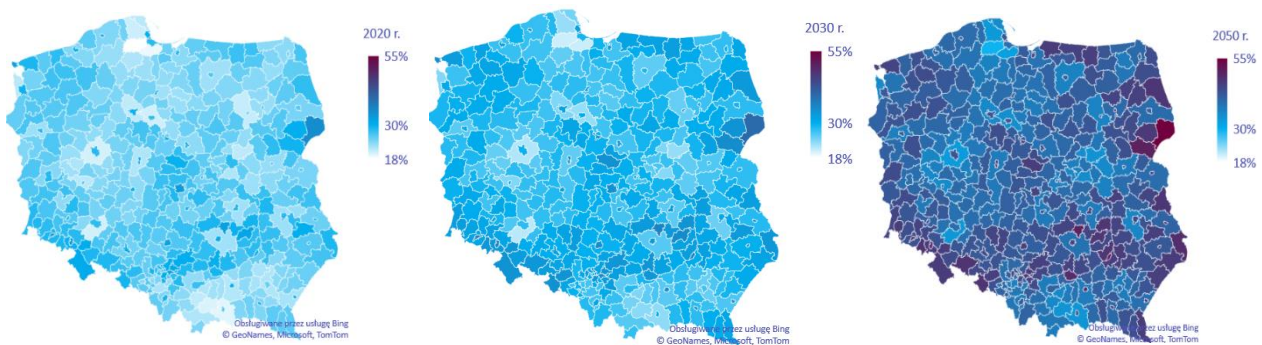
For several decades, Poland has been experiencing a continuous, progressive process of demographic slowdown caused by falling birth rates, an ageing population and increasing life expectancy with a concomitant reduction in healthy life expectancy. According to Eurostat forecasts, Poland's population will continue to decline.²⁴



The share of older people in the population of Poland is steadily increasing. According to the CSO's forecast, it will continue to increase despite the decreasing population.

county terms, the population of people aged 60 and over will increase in counties surrounding voivodeship cities, and decrease in the cities themselves and in counties distant from urban centres. This is mainly due to migration from cities to suburban areas and a decrease in the urban population (so-called suburbanisation).²⁵

Figure 16. Share of people aged 60 and over in the total population by county in 2020, 2030 and 2050.



Source: Map of health needs 2022-2026.

²⁴ Map of health needs 2022-2026 on the basis of CSO (GUS) data.

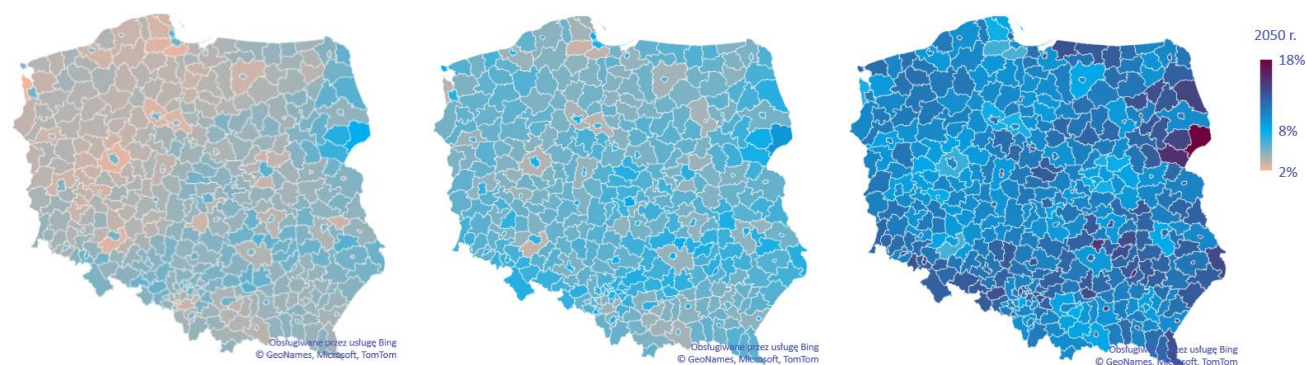
²⁵ as above., p. 47

There is also an increase in the proportion of people aged 80 and over.²⁶ This is important because in this age group, the proportion of people suffering from several chronic diseases increases, while at the same time the ability to function independently decreases.

In the forecast years, there will be a significant increase in the proportion of oldest seniors in urban areas. The projected increases will exceed 7 percentage points in urban areas and 5 percentage points in rural areas. An increase in the percentage exceeding the average level is projected in cities in the eastern Voivodeships (Lubelskie, Podlaskie, Podkarpackie, Świętokrzyskie) and Opolskie Voivodeship, as well as in rural areas in Opolskie, Warmińsko-Mazurskie and Śląskie Voivodeships.²⁷

Year	Share of people aged 80 and over in the Polish population	Share of people aged 80 years and over among the population aged 60 and over in Poland
2020	4%	17%
2030	6%	20%
2050	10%	26%

Figure 17. Share of people aged 80 and over in 2020, 2030 and 2050.



Source: Map of health needs 2022-2026.

3.2.2. Life expectancy and healthy life

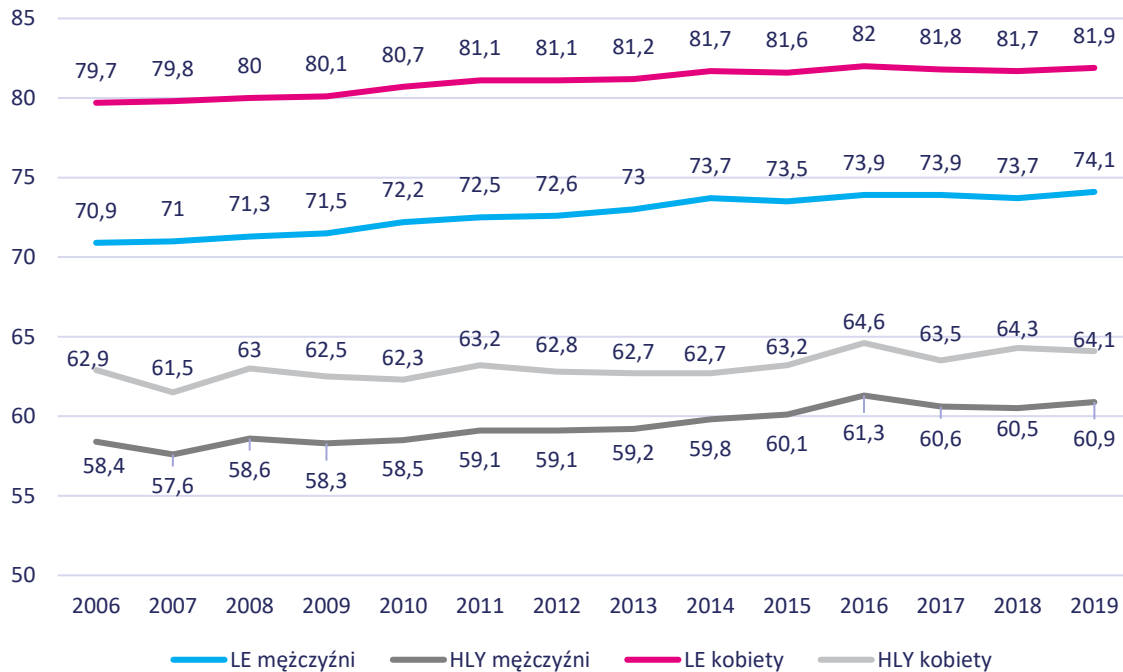
The systematic increase in life expectancy rates is not tantamount to an increase in the average number of healthy life years. The health of Poles, both declared and real, is not improving as fast as life expectancy in successive years. Although men's average life expectancy increased by 3.2 years between 2006 and 2019, the average healthy life expectancy increased by only 2.5 years over the same period. In contrast, for women, the corresponding changes were 2.2 years and 1.2 years respectively.

²⁶ Demographic situation of older people and the consequences of an ageing population in Poland in the light of the 2014-2050 forecast, Central Statistical Office, Warsaw, 2014

²⁷ Population forecast for 2014-2050, GUS, 2014

However, since 2016, there has been a halt in the long-standing trend of improving the health of the population, measured, inter alia, by healthy life expectancy.²⁸

Figure 18. Life expectancy (LE) and expected healthy life expectancy (HLY) at birth in Poland between 2006 and 2019.



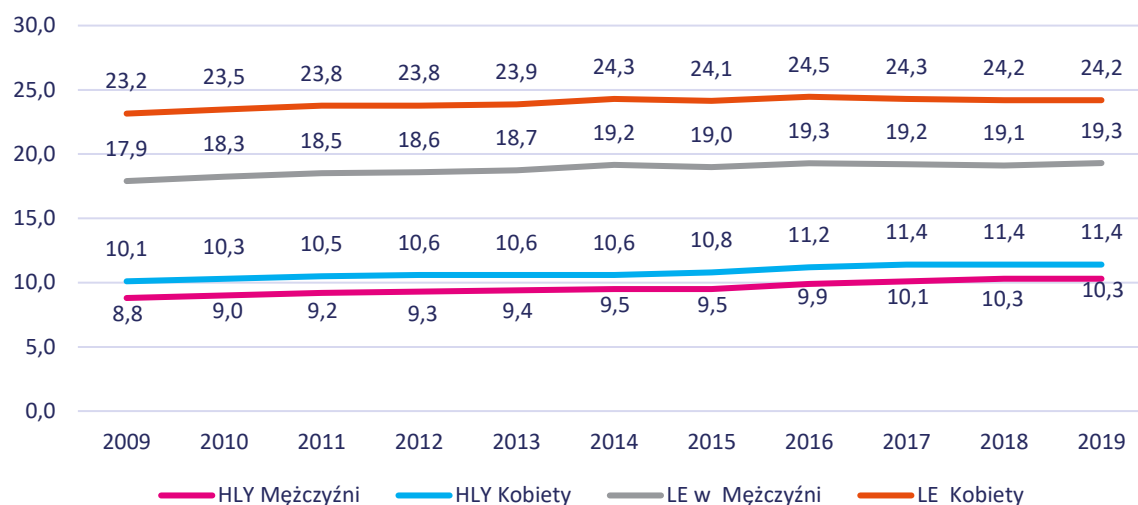
Source: Eurostat.

Life expectancy and healthy life years in older people aged 60 and over (men and women) are increasing, but not systematically. A deceleration of this trend was also observed in this age group between 2016 and 2019.²⁹

²⁸ National Institute of Public Health PZH — National Research Institute, Health situation of the Polish population and its conditions, <https://www.pzh.gov.pl/sytuacja-zdrowotna-ludnosci-polski-i-jej-uwarunkowania-raport-za-2020-rok/>

²⁹ j.w.

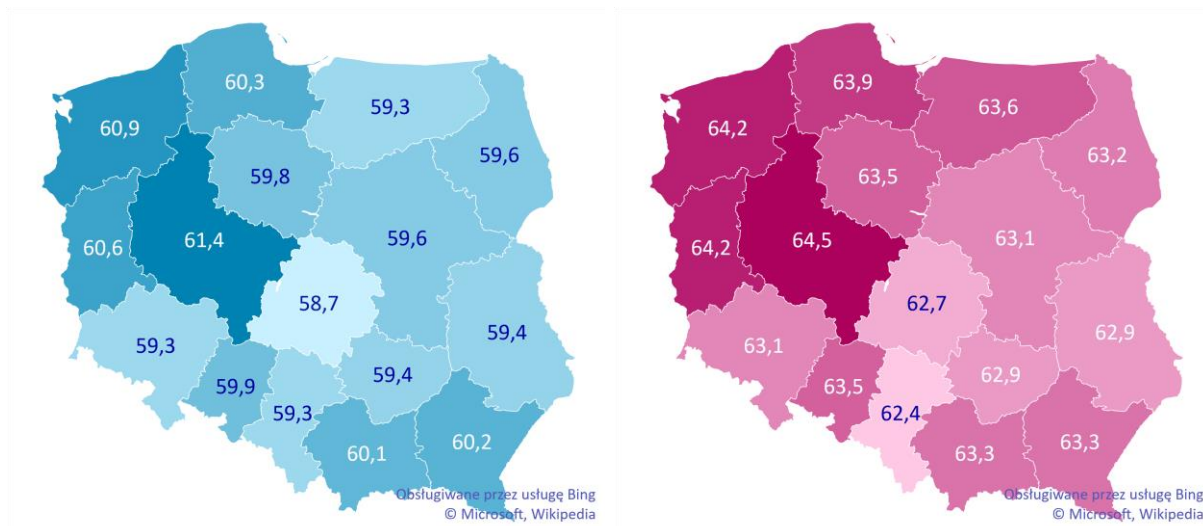
Figure 19. Life expectancy (LE) and expected healthy life years (HLY) in Poland in 2009-2019 for people aged 60.



Source: CSO (GUS).

In addition, there is a large spatial variation of the HLY coefficients. The longest healthy life in 2019 was observed for women and men living in the Wielkopolskie Voivodeship. In contrast, the shortest healthy life for men was observed in the Łódzkie Voivodeship and for women in the Śląskie Voivodeship. Residents of western Poland's Voivodeship live more healthy lives (i.e. the proportion of healthy life expectancy is higher than in eastern Poland).³⁰

Figure 20. Expected healthy life years for men (left) and women (right) by Voivodeship in 2019.

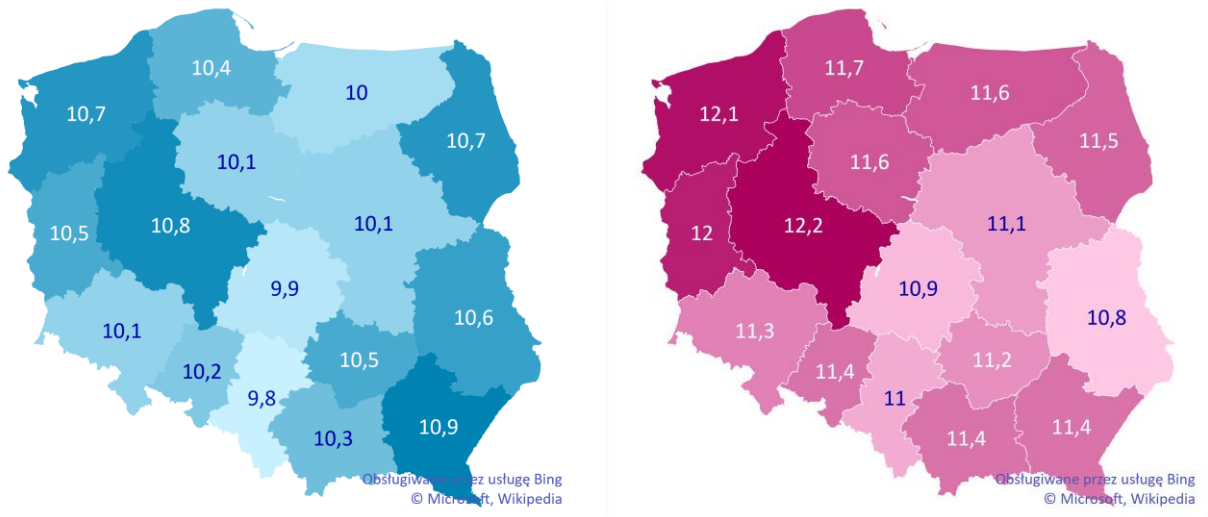


Source: CSO (GUS).

³⁰ Healthy life in Poland 2009-2020 <https://stat.gov.pl/obszary-tematyczne/ludnosc/trwanie-zycia/trwanie-zycia-w-zdrowiu-w-2020-r-5,1.html> (dostęp w dniu 11.05.2022 r.)

The same is true of the HLY indicator for persons aged 60, with the difference that the gap between the healthy life expectancy of women and men is narrowing. Although a shorter life expectancy is projected for men, they will live most of it in good health.

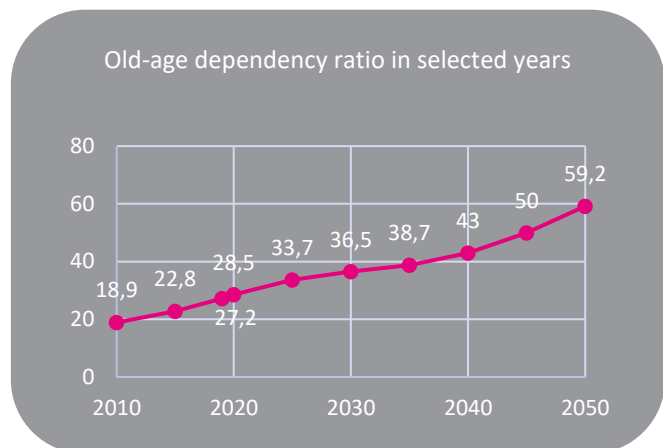
Figure 21. Average healthy life expectancy of men (left) and of women (right) aged 60 years in Poland in 2019.



Source: CSO (GUS).

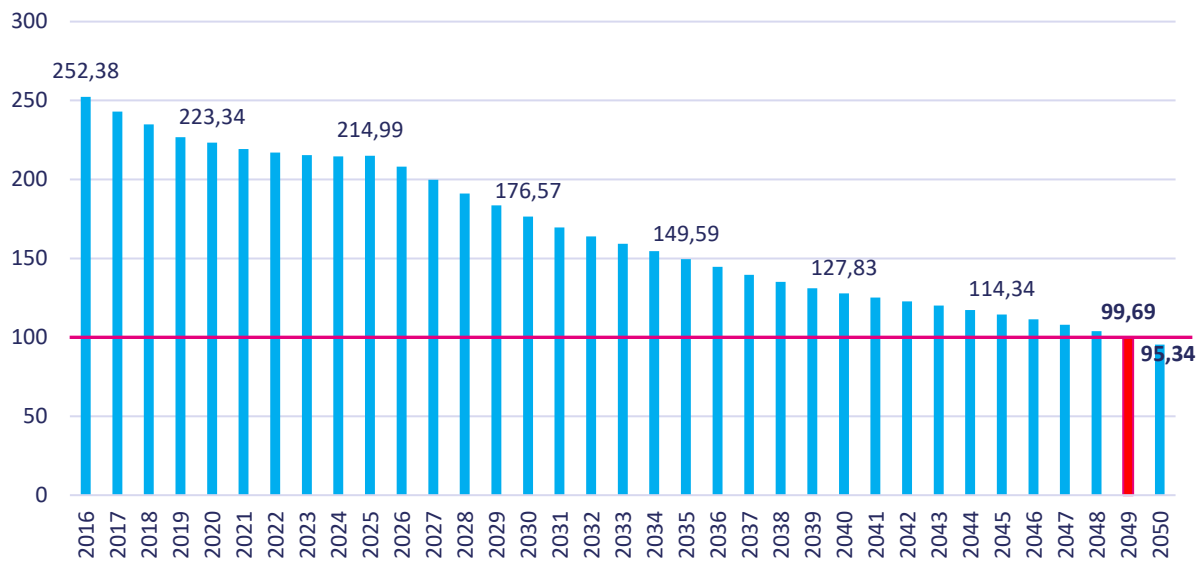
3.2.3. Care potential

Factors determining care potential, i.e. the family's ability to provide support to the elderly, are important in analysing the situation of older people. In Poland, the provision of care for the elderly by family members is declining. The dynamic growth in the number of the elderly means that, at the same time as the fertility rate is falling, the number of people in post-working age is increasing. This results in unfavourable changes in the old-age dependency ratio, defined as the ratio of the number of people aged 65 and over to the number of people aged 15-64, and the care potential factor.³¹



³¹ The care factor is calculated by dividing the number of women aged 50-64 (i.e. potential carers) by the population aged 80 and over per 100 people.

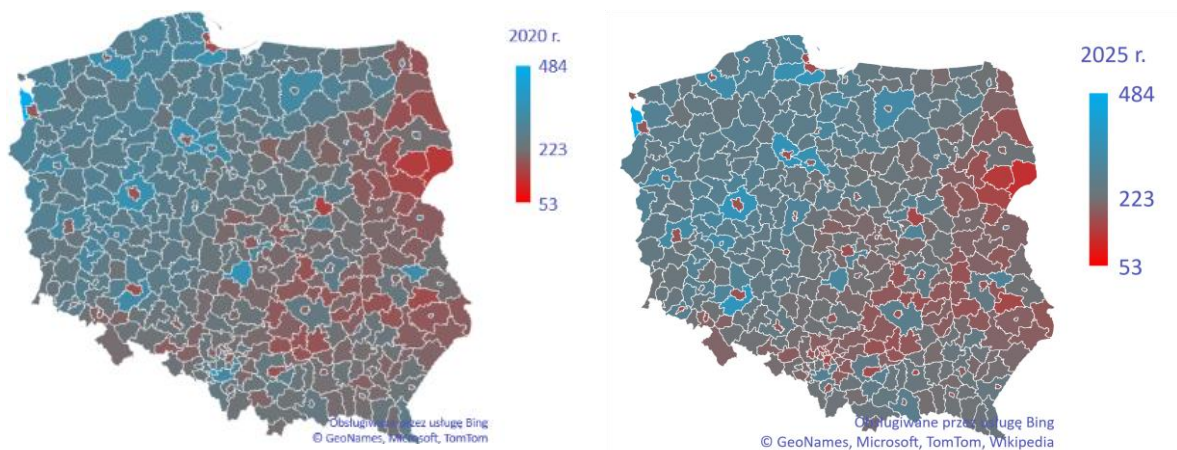
Figure 22. Care potential factor — average values for Poland in subsequent years.

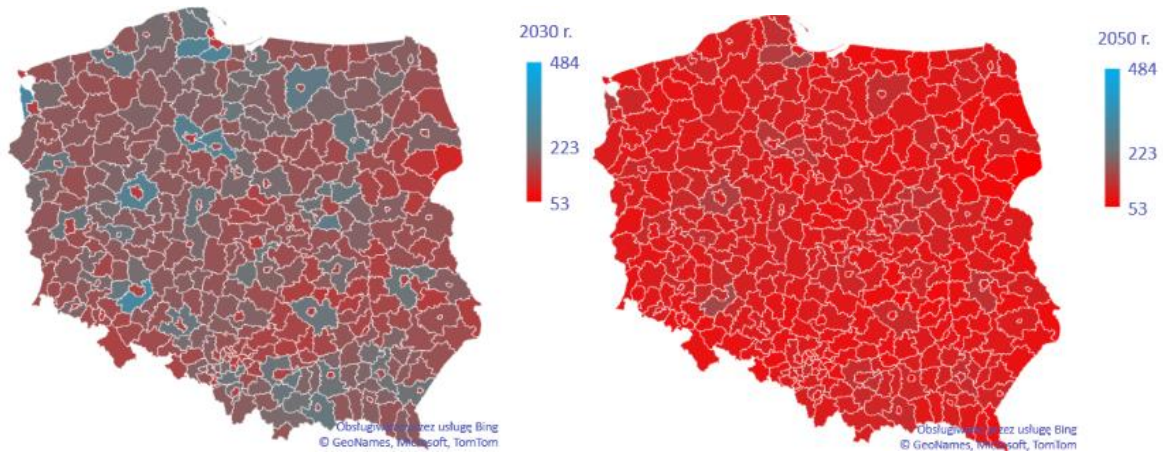


Source: Map of health needs 2022-2026.

A care potential ratio of less than 100 means that there will be more people aged 80 and over than their potential carers. In Poland, this situation is projected to occur in 2049. However, this phenomenon will not occur evenly across the country. In the first analysed period, i.e. by 2025, these values will be reached in the eastern counties. In subsequent years, they will already be significantly reduced in all counties in the country.

Figure 23. Care factor by county in 2020, 2025, 2030 and 2050.



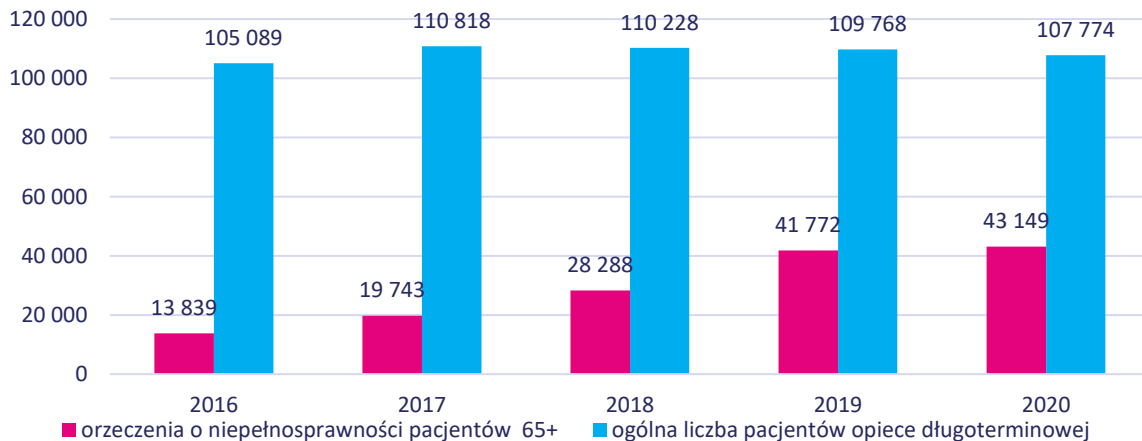


Source: Map of health needs 2022-2026.

3.2.4. Degree of disability and dependency

For several years, there has been a systematic increase in the proportion of persons with a disability certificate among long-term care patients (legal disability). This increase is particularly noticeable among people aged 65 and over.

Figure 24. Share of patients aged 65 and over with a recognised degree of disability among the total number of long-term care patients between 2016 and 2020.

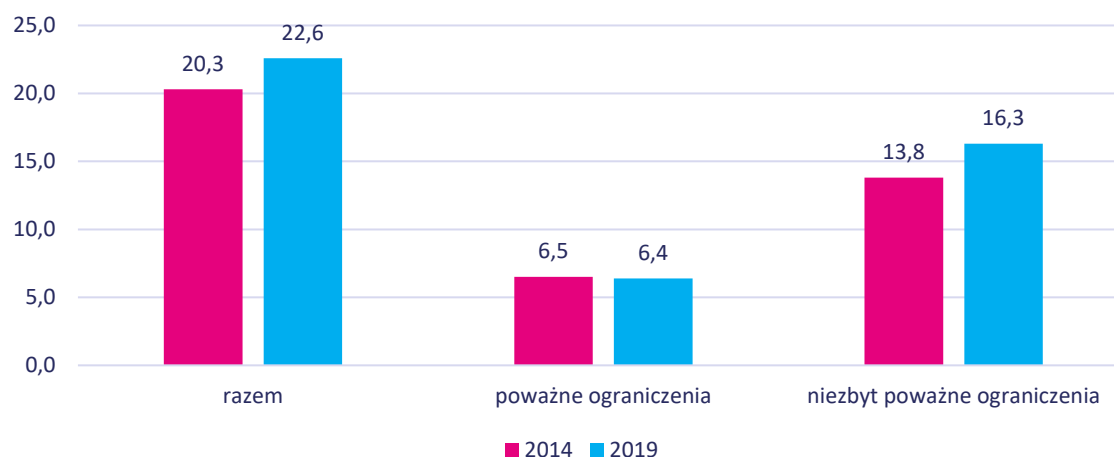


Source: Map of health needs 2022-2026.

The 2019 *European Health Interview Survey (EHIS)* study of limitations in performing daily activities regardless of having (legal disability) or not having a disability certificate (biological disability) also showed an upward trend compared to the previous 2014 edition. The percentage of people indicating severe limitations in performing daily activities remained at a similar level as 5 years earlier. A noticeable increase occurred in the area of basic activities.

These values indicate that care needs increase with age, especially in the oldest group of people aged 80 and over.³²

Figure 25. Share of people with limitations in performing daily activities by degree of limitation in 2019 and 2014 (EHIS study).



Source: CSO (GUS).

The fitness level of seniors was also measured by the ability to perform activities of daily living (ADLs)³³ and instrumental instrumental activities of daily living (IADLs)³⁴ as part of the *PolSenior 2* project study³⁵. The results of studies using these scales show a steadily decreasing proportion of people who are fully independent in day-to-day activities with age, which is particularly noticeable for IADLs in the group of persons aged 75 and over. In addition, significantly higher IADL deficits were recorded in people with lower education, especially with primary or incomplete primary education, and among rural residents.³⁶

³² <https://stat.gov.pl/obszary-tematyczne/zdrowie/zdrowie/stan-zdrowia-ludnosci-polski-w-2019-r-,26,1.html>

³³ The dichotomic ADL scale (*Activities of Daily Living*) assesses independence (1 point) or lack (0 points) in six basic daily activities, such as: washing, dressing, eating, moving, controlling physiological needs and using the toilet (Katz et al., 1963; Katz et al., 1970). Based on the total scores obtained, respondents were ranked according to the usual interpretation in Poland. The percentage of people with at least one primary activity deficit was also calculated. (*PolSenior 2*, p. 183)

³⁴ The IADL (*Instrumental Activities of Daily Living*) scale assesses not only the ability to carry out complex daily activities independently, but also the ability to plan and organise them (Lawton and Brody, 1969). The areas assessed include: using telephones, using public transport or taxis, shopping, preparing meals, performing domestic work, laundry, taking medication and financial management. Each of these eight activities is assessed in three categories: executed without assistance (3 points), carried out with the assistance of a second person or with special technical facilities (2 points), not executed (1 point). According to the score used, the range of possible results ranges from a maximum of 24 points (fully fit) to 8 points (disabled person). (*PolSenior 2*, pp. 183-184)

³⁵ *PolSenior 2: Study of individual areas of the health status of older people, including quality of life associated with health*²⁸, carried out under the National Health Programme 2016-2020 with funds from the Ministry of Health by a research team from the Gdańsk Medical University (GUMed), led by Professor Tomasz Zdrojewski.

³⁶ *PolSenior 2*, p. 196

Table 2. Degree of fitness according to the ADL scale in people aged 60 years and over in the PolSenior 2 study (excluding people with oncological diseases).

	Full fitness (ADL: 6-5 points)	Moderate disability (ADL: 4-3 points)	Severe disability (ADL: 2-0 points)
60-64 years	98.6%	0.5%	0.9%
65-69 years	98,7%	0,2%	1.1%
70-74 years	97.1%	1.9%	1%
75-79 years	95.3%	3.2%	1.5%
80-84 years	92.4%	4%	3.6%
85-89 years	81.2%	9.1%	9.6%
90 years and over	65.8%	15.7%	18.5%

Source: Results of the *PolSenior 2 study*.

With age, the proportions of those with both moderate and severe disability also increase. In the 85-89 age group, the percentages of respondents with these degrees of disability were significantly higher than in younger age groups. In addition, among those aged 85 and over, women were significantly more likely than men to have difficulties performing basic daily activities independently. Also, the proportion in the able-bodied group with primary education was significantly lower compared to those with vocational, secondary and tertiary education in both the older female and male populations. The results of the ADL scale also indicate territorial variations in functional capacity - the least able-bodied persons were found in northern, eastern and central Poland, and the most in the north-western region and the Mazowieckie Voivodeship.

3.3. Conclusions

- Long-term care and geriatric care in the healthcare system mainly covers people aged 60 and over, who account for around 90 % of patients. They are mostly women, but the predominance is greater than that resulting from the demographic structure of the population. This may indicate an **increase in the use of formal care by women**.
- The average and median age of patients aged 60 and over in long-term care were close to the average and median age of patients in geriatric wards. This shows a **similar age structure for older people in receipt of long-term care and geriatric care services**.
- **The use of long-term or geriatric care is not dependent on the place of residence.** Two out of three patients in long-term and geriatric care lived in cities, corresponding to the structure of people aged 60 and over living in urban areas.

- Poland's population is ageing dynamically (the share of older people in the population, including the oldest aged 80 and over, is increasing), with an additional decrease in the population. Projections of the share of people aged 60 and over in the population in counties by 2050 show the largest increases in cities and in counties distant from urban centres. **Demand for long-term care services will therefore increase the most in these areas and intensive care provision will be required there.**
- Despite an increase in life expectancy, the healthy life expectancy rate is increasing proportionally slower. For this measure, the situation is also theoretically differentiated. Inhabitants of the voivodeships of western Poland live a greater proportion of their lives in good health compared to the voivodeships in the east of the country. This also suggests **territorial differences in demand for benefits now and in the coming years.**
- Typically, the first people to provide support when dependency arises are spouses, followed by children and distant relatives. The human resources available to support older people in their daily lives are projected to decrease significantly over the years. Moreover, not only will the number of family carers decline, but also the number of people able to act as professional carers for the elderly. **Demand for formal long-term care services will therefore increase, which will at the same time translate into demand for care staff.**
- Human resources able to support older people in their daily lives will also be severely reduced over the years. In Poland, the care factor is projected to fall below 100 in 2049. This means that there will be more people in their 80s than there will be their potential carers. The systematic decline in this ratio contributes to a reduction in the potential for informal care and the need for an increased role for long-term and geriatric care. **This will translate into a greater burden on organised forms of healthcare and social assistance and will require the necessary systemic adjustments in this regard. However, taking into account the uneven nature of demographic change at the county level over time, changes will have to be implemented gradually.**
- All measures and studies determining the level of disability and dependence (i.e. disability certificates, EHIS, PolSenior 2, ADL, IADL) point to similar conclusions: disability is increasing with age and Poland has seen an increase in the number of dependent persons in recent years. They also point to a worse situation in this area for women, less educated people, rural residents and eastern regions of Poland. **These conclusions imply the necessity to undertake measures in the scope of responding to the increasing demand for long-term care services (social and health care) and emerging needs in this area, with particular consideration of disadvantaged groups, both socially and geographically.**

4. Comparison of demand and supply

4.1. Forecast demand for inpatient and home-based long-term care

Forecast assumptions

- ✓ It was based on projections of the population of the Central Statistical Office (GUS) for the period 2022-2050 and the proportion of persons according to ADL efficiency from the PolSenior 2 study, broken down by age group and gender, excluding cancer patients.
- ✓ The forecast does not take into account the needs of cancer patients due to the different nature of their health services. The percentage of people aged 60 and over without cancer, broken down by age group and sex, was obtained from the PolSenior2 study.
- ✓ Age-group analyses took into account the study's division into five-year cohorts (60-64, 65-69, 70-74, 75-79, 80-84, 85-89 and ≥90 years).
- ✓ The assumption was that long-term care (health or social) or geriatric care should be provided to persons with significant disability, i.e. persons scoring 2-0 on the ADL scale.
- ✓ It was assumed that there was a social care infrastructure in place to safeguard 61,533 patients aged 60 and over.

Based on assumptions, the number of people aged 60 and over in need of long-term or geriatric care was 171.6 thousand in 2019.

As the population continues to age, an increasing number of people aged 60 and over will require support in their daily living. According to the forecast carried out, **in 2030, the estimated number of the elderly in need of long-term or geriatric care will be more than 197.6 thousand, in 2040 more than 275.6 thousand and in 2050 more than 317.2 thousand.** It should be remembered that long-term forecasts are burdened with uncertainty related to social, economic and health factors that are difficult to predict. This will also be influenced by other sectoral measures assumed in strategic documents for health care.

4.2. Determination of the level of equilibrium

In order to assess the viability of converting some county hospitals into long-term care units or geriatric wards, it is necessary to identify long-term and geriatric inpatient care needs.

The needs are calculated from the following formula:

$$\text{Needs} = D \times S / r - Q_z$$

where:

D – demand, i.e. an estimate of the number of the elderly in need of long-term care (substantial disability on the ADL scale)

S – the share of patients in inpatient long-term care in the total number of patients aged 60 and over in long-term care

r – rotation coefficient, i.e. the number of patients divided into beds in inpatient long-term care

Q_z – Supply in healthcare, i.e. number of beds in ZOL/ZPO with a general profile in 2019

The rotation rate was set at 1.36, ZOL/ZPO with a general profile had 31,000 beds in 2019 and the share of patients in residential care was 38 %.

Under the adopted assumptions, the need for inpatient long-term or geriatric care in 2019 amounted to 47,900 places, compared to the 31,000 beds currently in operation.

5. Assessment of the possibility of converting hospital units

5.1. Estimation of conversion potential

5.1.1. Untapped potential

This section shows the results of an analysis of the untapped potential in county hospitals, which is convertible into long-term care centres or geriatric wards. The analysis was based on an estimate of the number of beds which, based on empirical data from 2019, remained unused against the number of beds guaranteeing optimal occupancy of hospital units. To this end, two metrics have been defined and combined:

- 1) the nominal number of convertible beds, as the number of beds whose occupancy should be close to the optimal level of 85% after conversion. This number is estimated according to the formula:

$$\text{Number of beds} \times (1 - \text{empirical occupancy/optimal occupancy})$$

The empirical occupancy is the average occupancy for 2016-2019, ensuring that the transformation potential does not depend on the results of a single, potentially weaker year. The indicator can be interpreted as the maximum estimated number of beds to be converted in an administrative unit. It should be borne in mind that geriatric and long-term care are by no means the only areas that may require an increased number of beds in the future, but the volumes converted in the analysis have been reduced by the bed requirements of the analysed wards, which require an increased bed base;

- 2) the percentage of the number of beds convertible in total beds in selected wards in county hospitals (determined at voivodeship and county level).

The purpose of the analysis is to determine the approximate scale and overall feasibility of conversions.

Assumptions

- ✓ The scope of the analysis included hospital wards in county hospitals, excluding selected types of wards (anaesthesiology and intensive care, geriatric, same-day emergency care, radiotherapy, rehabilitation and ED).
- ✓ Number of beds with conversion potential estimated on the basis of data on the number of beds at the end of the year according to the RPWDL register and data on benefits reported by units to the National Health Fund for 2019.
- ✓ 85% was used as the reference value for occupancy.

- ✓ The empirical occupancy is the average occupancy for 2016-2019, ensuring that the conversion potential does not depend on the performance of a single, potentially underperforming year.

At the end of 2019, county hospital departments had **61,900 beds**, of which, according to estimates made, **24% (14,900) represent the maximum convertible bed base**.

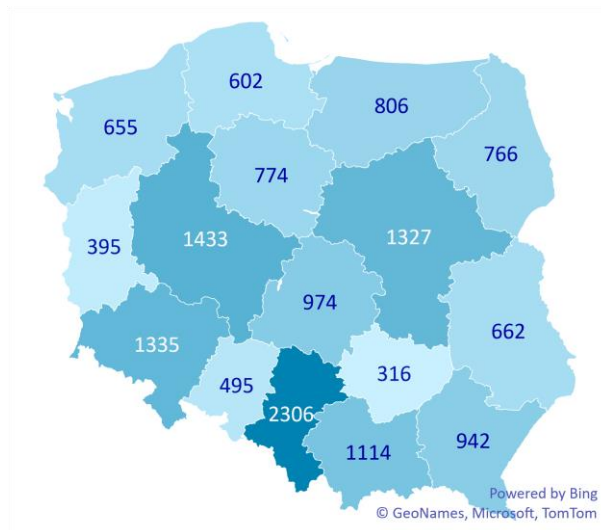
The voivodeships were characterised by significant differences both in terms of the nominal number of beds to be converted and their share in the base number of beds. The highest number of beds for conversion (over 2,300) was recorded in the Śląskie Voivodeship, the lowest (less than 500) in Opolskie, Lubuskie and Świętokrzyskie Voivodeships.

The highest conversion potential in relation to the base number of beds exists in the Kujawsko-Pomorskie, Dolnośląskie, Zachodniopomorskie and Lubuskie Voivodeships (31-36%). On the other hand, the lowest potential exists in the Małopolskie and Świętokrzyskie Voivodeship.

The largest nominal number of beds for conversion comes from internal medicine wards, general surgical wards and obstetrics-gynaecology wards. The latter, due to strategic measures aimed at increasing the fertility rate in Poland, will be converted at a later stage or will not be converted at all. The situation varies from voivodeship to voivodeship.

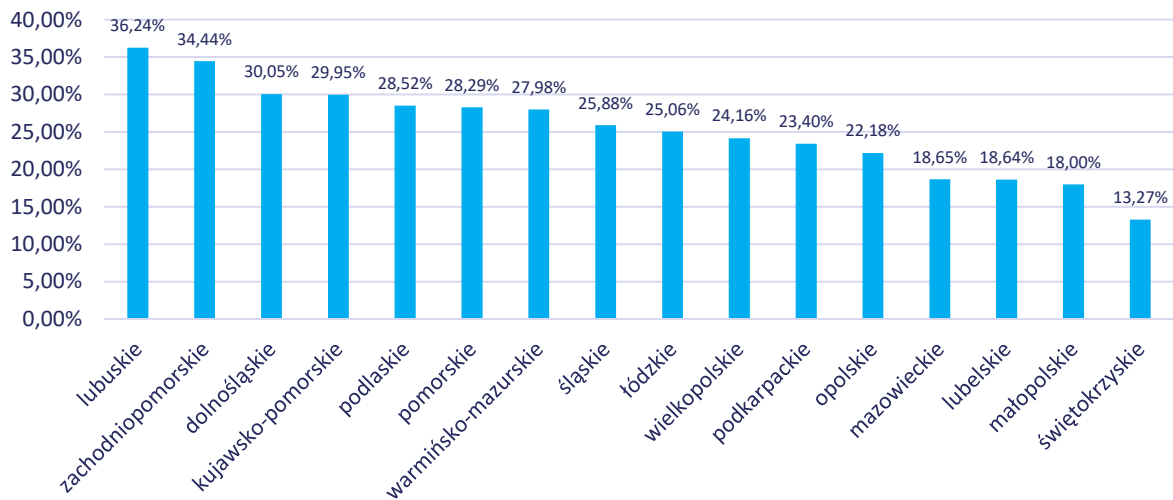
There is no possibility of bed conversion in 77 counties. This may be due to a lack of units in the analysed group or an insufficient bed base in the analysed wards. This may result in a need for special support in the discussed regions. Among counties with conversion possibilities, larger cities (Kraków, Bytom, Poznań, Gliwice, Katowice) are in the first place, although smaller counties (Zgorzelec county, Kłodzko county, Lubin county) are also at the forefront of this category. In relation to the existing bed base, counties such as Mogileński, Nakielski and Moniecki stand out (over 55% of beds). At the other extreme are Opole, Starachowice, Kielce, Krotoszyński and Białogardzki counties, where there are shortages of beds in the analysed wards.

Figure 26. Number of potential beds for conversion of selected wards of county hospitals by average annual number of beds in 2019 by voivodeship.



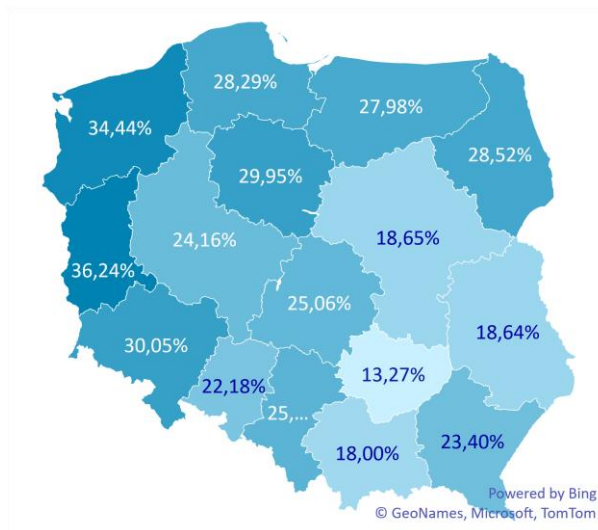
Source: Development of the MZ on the basis of NFZ and RPWDL data.

Figure 27. Percentage of potential beds in total beds of selected wards of county hospitals by average annual number of beds in 2019.



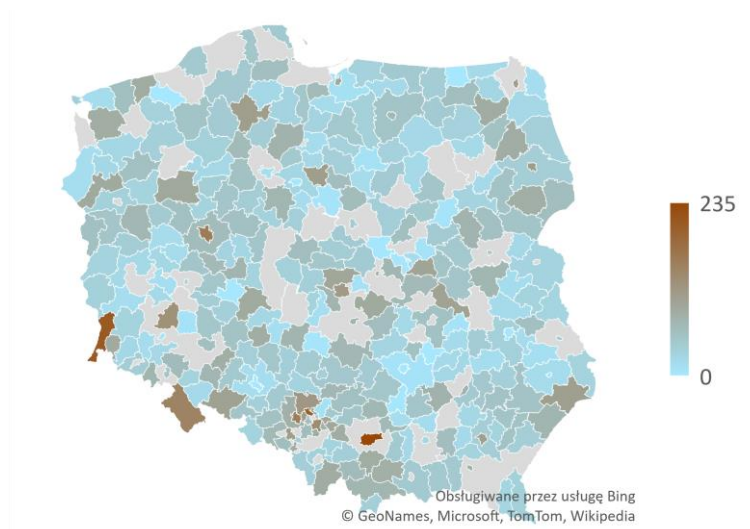
Source: Development of the MZ on the basis of NFZ and RPWDL data.

Figure 28. Percentage of potential beds in total beds of selected wards of county hospitals by average annual number of beds in 2019.



Source: Development of the MZ on the basis of NFZ and RPWDL data.

Figure 29. Number of potential beds for conversion of selected county hospital wards by average annual number of beds in 2019 by county.



Source: Development of the MZ on the basis of NFZ and RPWDL data.

5.1.2. Inefficiently exploited potential

This subchapter analyses the possibility of converting some county hospitals into long-term care centres and geriatric wards based on the diagnosed inefficient use of currently available hospital beds. For this purpose, two metrics have been defined and calculated:

- 1) number of long hospitalisations, i.e. permanent hospitalisations of 60-year-olds and over 4 weeks,

- 2) number of diagnostic hospitalisations, i.e. hospitalisations lasting less than two days, during which only diagnostic non-procedures have been reported, regardless of the patient's age.

The purpose of the analysis is to determine the approximate scale and overall feasibility of conversion. In the case of long hospitalisations, it would be advisable to consider shifting them precisely to the newly created units, which will reduce the costs of their provision (see chapter 5.2.2.). On the other hand, by shifting diagnostic hospitalisations to AOS, this potential can be used effectively by creating new places for long-term care patients. The actual number of convertible beds may be lower due to some statistical simplifications.

Long hospitalisations - assumptions

- ✓ Conservative hospitalisations lasting more than 4 weeks for people aged 60 years and over in county hospitals in 2019 were assumed as long hospitalisations. These were assumed to result from an insufficient supply of long-term and geriatric care services. As the conclusions of the Health Needs Map 2022-2026 indicate, the infrastructure is inadequate to meet the current and future needs of people requiring long-term care²⁹. As a result, some patients are being cared for at the inpatient level.
- ✓ Intensive care, same-day treatment, ED, geriatric, radiotherapy and rehabilitation wards were omitted from the analysis.
- ✓ Scopes for oncology diagnosis and treatment, haematology, toxicology and obstetrics and gynaecology were excluded.
- ✓ The number of potential beds to be converted was calculated as the number of man-days of hospitalisation divided by the number of 365.

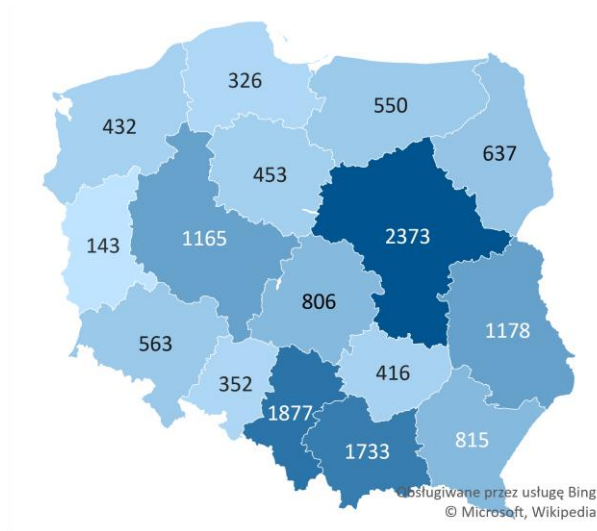
A total of **13,819 hospitalisations** in line with the assumptions were identified, resulting in **1,449 potential conversion beds**.

Potential conversion beds represent **2.34 % of the average number of beds** in 2019. The lowest percentage was recorded in Dolnośląskie (1.36%) and the highest in Lubelskie (3.54%).

The highest number of potential beds for conversion was identified in **internal medicine wards (786) and neurology wards (293)**.

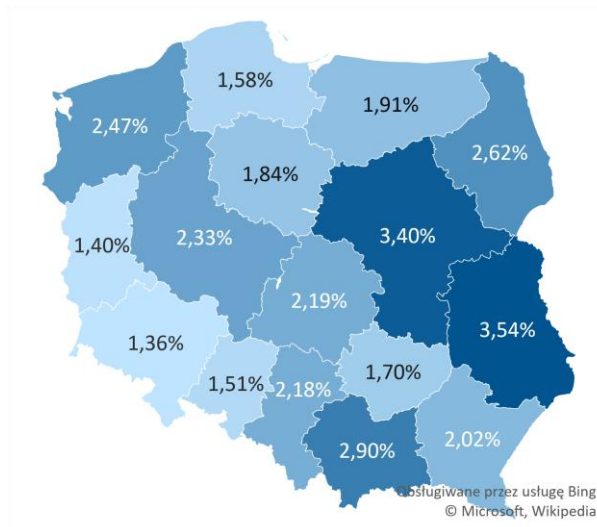
²⁹ Map of health needs 2022-2026

Figure 30. Number of long hospitalisations by voivodeship in 2019.



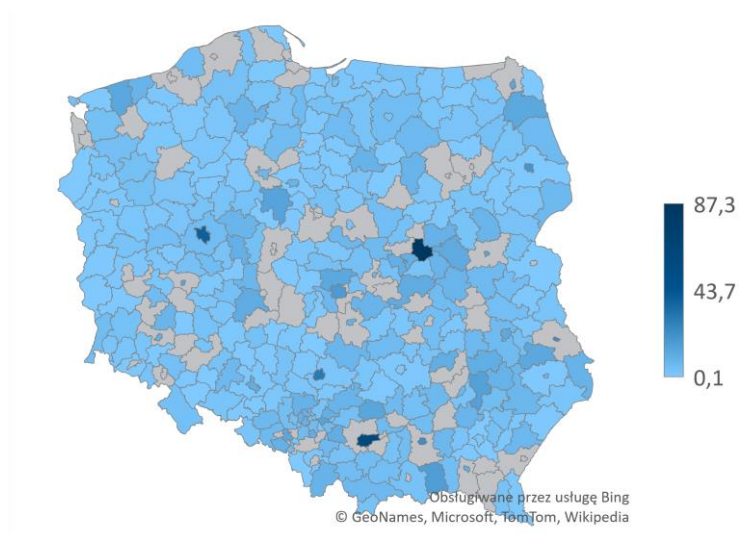
Source: Development of the MZ on the basis of NFZ.

Figure 31. Share of potential beds to be converted in relation to average number of beds in voivodeships in 2019.



Source: Development of the MZ on the basis of NFZ and RPWDL data.

Figure 32. Number of potential beds to be converted by county.



Source: Development of the MZ on the basis of NFZ.

Diagnostic hospitalisations – assumptions

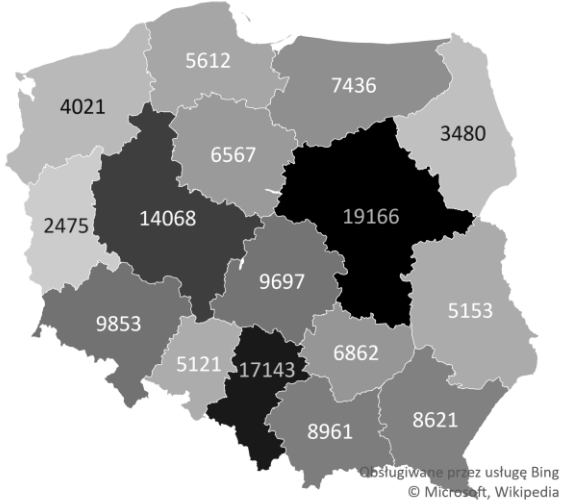
- ✓ In 2019, hospitalisations in county hospitals lasting less than 2 days were accepted as diagnostic hospitalisations, during which only diagnostic, non-surgical procedures were reported. These were considered as services that could be provided on an outpatient basis. This assumption is in line with the conclusions of the Health Needs Map 2022-2026. According to them, the healthcare system is characterised by an imbalance in the structure of healthcare services: the treatment of patients is excessively based on inpatient care instead of outpatient care. Moving diagnostic services to lower-level care facilities would make more efficient use of the potential of county hospitals.
- ✓ Intensive care units, same-day treatment, ED, geriatric, radiotherapy and rehabilitation wards were omitted from the analysis.
- ✓ Hospitalisations related to drug and chemotherapy programmes were omitted.
- ✓ The number of potential beds to be converted was calculated as the number of person-days divided by 365.

In total, **134,236 hospitalisations** were identified that fit the assumptions, which equated to **367 potential beds for conversion**.

Potential beds for conversion represent **0.59 % of the average number of beds in 2019**. The lowest percentage was recorded in the Podlaskie Voivodeship (0.35%) and the highest in the Świętokrzyskie Voivodeship (0.79%).

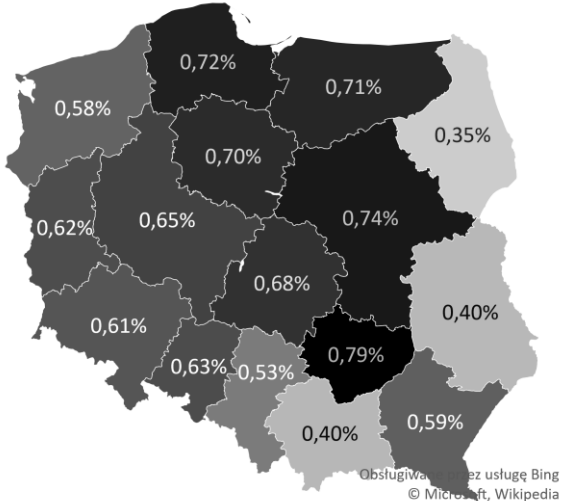
The highest number of potential beds for conversion was identified in the **obstetrics and gynaecology (91), general surgery (71) and internal medicine (65) wards**.

Figure 33. Number of diagnostic hospitalisations per voivodeship.



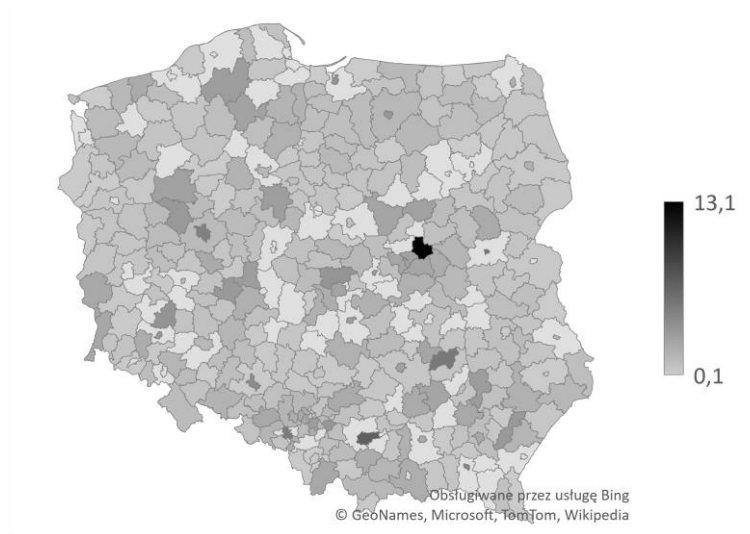
Source: Development of the MZ on the basis of NFZ data.

Figure 34. Percentage of potential beds for conversion in relation to the average number of beds in voivodeships in 2019.



Source: Development of the MZ on the basis of NFZ data.

Figure 35. Number of potential beds for conversion per county.



Source: Development of the MZ on the basis of NFZ data.

5.2. Boundary conditions of the analysis

5.2.1. Current structure

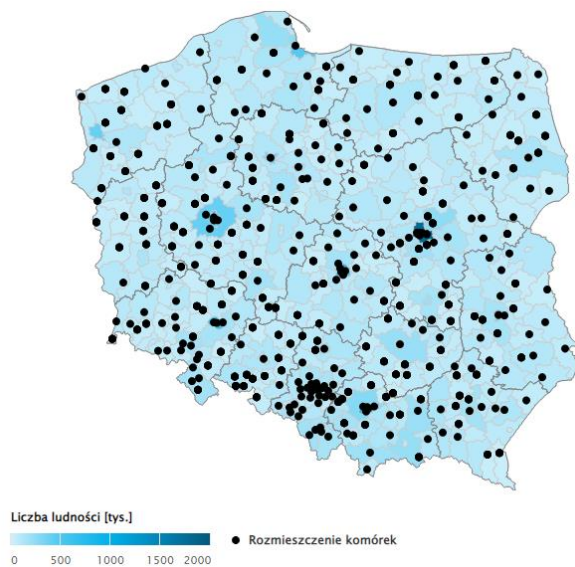
County hospitals are distributed fairly evenly across the country, with the greater number concentrated in urban agglomerations. The maximum number of hospital cells³⁰ in a county was 20 (in Warsaw); Cieszyn County, Katowice, Kraków and Poznań also had more than 10 cells.

In order to analyse territorial accessibility to county hospitals, 35 km was used as a cut-off point. Distances above this value were recorded in 9 counties in the country: Biała, Bieszczady, Ryki, Ostrołęki, Gryfino, the city of Ostrołęka, Kaliska, Sieradz and Słupsk³¹.

³⁰ One healthcare provider who reported benefits in one municipality is counted as one cell (if one provider has cells in several municipalities they count several times).

³¹ The maximum distance to a hospital is calculated as the distance in a straight line from the centroid of the municipality concerned to the centroid of the municipality in which the hospital is located.

Figure 36. Distribution of Hospital I and II cells by centroid of the municipalities in which they are located in 2019.

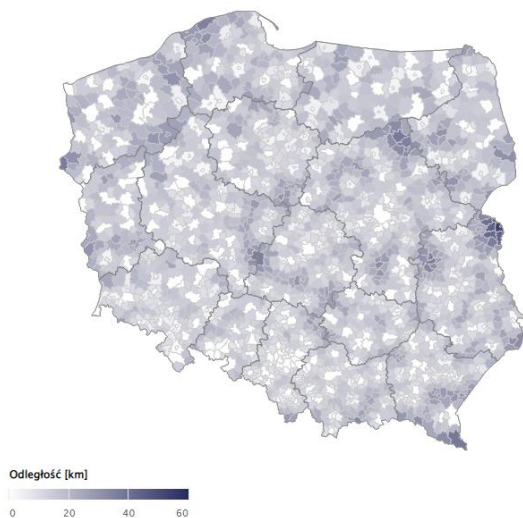


436
Number of hospitals of the reference I and II level in Poland

315 of 380
counties in Poland with hospitals of the reference I and II level

Source: Development of the MZ on the basis of NFZ data.

Figure 37. Distance of municipalities from the nearest municipality where the Hospital Care Cell is located — level I or level II hospitals — in 2019.



12.6 km
median of the straight line distance of municipalities to a county hospital

23 min
median travel time to the nearest county hospital

Source: Development of the MZ on the basis of NFZ data.

The largest number of county hospitals had an internal medicine ward, a general surgery ward and an obstetrics and gynaecology ward. These three types of wards also had the highest number of hospitalisations.

The highest number of hospitalisations of patients aged 60 and over was carried out in the internal medicine ward, general surgery ward, cardiology ward and trauma and orthopaedic surgery ward.

The proportion of hospitalisations of patients aged 60 and over among all hospitalisations in a given ward, apart from the geriatric ward, was recorded as highest in the ophthalmology ward (89%). The stroke unit and the vascular surgery ward had a high percentage of such hospitalisations, but each only carried out more than 2,000 hospitalisations. The cardiology and internal medicine wards had a high proportion of hospitalisations of patients aged 60 and over, and were among the wards with the highest number of hospitalisations of this age group.

5.2.2. Comparison of formal requirements

Assumptions

- ✓ Formal requirements for geriatric and inpatient long-term care wards were compared with wards where the largest group of inpatients was people aged 60 years and over, taking into account several additional variables (total number of patients, nature of the ward, etc.).
- ✓ For the purpose of the analysis, the wards of internal medicine, general surgery and obstetrics-gynaecology were included. Three examples were chosen to test the possibilities of conversion identified in the previous chapters, bearing in mind the structure of wards in county hospitals.
- ✓ The analysis thus boils down to a comparison of the requirements for hospital treatment with those for inpatient long-term care.
- ✓ The conditions for the provision of guaranteed benefits in the field of hospital treatment and nursing and care services in the context of long-term care, as laid down in the regulations of the Minister of Health, were analysed^{32 33}.
- ✓ The conditions of healthcare delivery in terms of staffing and organisation were compared.

Requirements for personnel

In the context of hospital treatment, the number of staff necessary for the provision of care shall be determined by the healthcare provider taking into account:

³² Regulation of the Minister for Health of 22 November 2013 on guaranteed benefits in the field of hospital treatment (Journal of Laws 2021, item 290)

³³ Regulation of the Minister for Health of 22 November 2013 on guaranteed benefits for nursing and care benefits in the context of long-term care (Journal of Laws 2022, item 965)

- 1) the conditions for staff laid down in the Regulation of the Minister for Health,
- 2) profiles, specificities and work intensity (use of beds) of organisational units,
- 3) the number and current use of beds,
- 4) the size and premises of the organisational units (clinics, doctor's offices, patient rooms, utility and office space, etc.).

In inpatient long-term care, the number of doctors is specified per number of beds, but the requirements for the number of nurses are not indicated. The nursing requirements indicate that 25% of nurses should have the training specified in the Regulation.

Table 3. Minimum number of full-time or part-time equivalents of doctors and nurses in selected hospital wards and inpatient long-term care.

		Long-term care					
		Internal diseases ward	General surgery ward	Obstetric and gynaecological ward	Geriatric ward	Care establishments (for other patients than ventilated mechanically)	Care establishments for patients ventilated mechanically
doctors		2 FTEs			1 FTE	1 FTE per 35 beds	1/8 FTE per bed
nurses		At least 0.6 FTE per 1 bed,	At least 0.7 FTE per 1 bed,	At least 0.7 FTE per 1 bed,	At least 0.6 FTE per 1 bed,	unspecified	
		Incl. at least 2 FTEs – specialist listed in the Regulation				25% of the working time of all nurses – a specialist listed in the Regulation	

Source: Own preparation on the basis of the Ministry of Health Regulations.

In the case of both inpatient and long-term care benefits, the terms and conditions only specify the minimum number of FTE doctors of the selected speciality who must be employed in the selected units.

Guaranteed benefits for hospital treatment and long-term care can be provided by doctors:

- specialists,
- with the 1st degree of specialisation, and

- a specialist trainee who has received a positive opinion by the specialist manager to provide services themselves and to perform on-call duty.

If the organisation fulfils the minimum staffing conditions, the services may also be provided by doctors authorised to practise for an indefinite period as additional medical staff.

Table 4. Comparison of medical specialisations required in selected hospital wards and inpatient long-term care..

	Internal diseases ward	General surgery ward	Obstetric and gynaecological ward	Geriatric ward	Residential institutions for adults	Care facilities for children and adolescents up to the age of 18	Care facilities for mechanically ventilated care recipients
Specialist doctor in the field of:							
anaesthetics and intensive care							•
general surgery		•			•		
lung diseases							•
internal diseases	•				•		
infectious diseases					•		
gynaecological endocrinology and reproduction			•				
geriatrics				•	•		
general medicine					•		
family medicine					•		
neurology					•	•	•
paediatricians						•	
perinatology			•				
obstetrics and gynaecology			•				
psychiatry					•		
medical rehabilitation						•	•
Doctor with 1st degree specialisation in the field:							
anaesthetics and intensive care							•
general surgery		•			•		
lung diseases							•
internal diseases	•				•		
infectious diseases					•		
geriatrics					•		

gynaecological endocrinology and reproduction			•				
general medicine					•		
neurology			•		•	•	•
paediatricians						•	
perinatology			•				
obstetrics and gynaecology			•				
psychiatry					•		
medical rehabilitation						•	•

Doctor in the course of his/her specialisation in the field:							
anaesthetics and intensive care							•
lung diseases							•
internal diseases					•		
infectious diseases					•		
geriatrics					•		
general medicine					•		
neurology					•	•	•
paediatricians						•	
psychiatry					•		
medical rehabilitation						•	•

Source: Own preparation on the basis of the Ministry of Health Regulations.

Similar to the formal requirements for doctors, the formal requirements for nursing staff only stipulate a minimum number of full-time nurses. In hospital treatment and long-term care, services can be provided by nurses:

- with completed specialisation,
- in the course of their specialisation,
- who have completed a qualification course,
- who are undergoing a qualification course.

Table 5. Comparison of the required specialisations of nurses.

	Internal diseases ward	General surgery ward	Obstetric and gynaecological ward	Geriatric ward	Residential institutions for adults	Care facilities for children and adolescents up to the age of 18	Care facilities for mechanically ventilated care recipients
Nurse with completed nursing specialisation:							
anaesthetic and intensive care							•
surgical		•					
diabetes	•						
geriatric	•			•	•		•
gynaecological			•				
gynaecologic obstetrics			•				
internal medicine	•			•			
cardiological	•						
neurological							
long-term care	•			•	•	•	•
palliative care				•	•	•	•
antenatal and perinatal care			•				
paediatrics						•	
chronically ill and disabled				•	•	•	•
family			•		•	•	•
community					•	•	•
community and family					•	•	•
conservative	•			•	•	•	•
Nurse specialising in nursing:							
anaesthetic and intensive care							•
surgical		•					
geriatric	•			•	•		•
gynaecologic obstetrics			•				
internal medicine	•			•			
long-term care	•			•	•	•	•
palliative care				•	•	•	•
paediatrics						•	
chronically ill and disabled					•	•	•
family			•		•	•	•
community					•	•	•
community and family					•	•	•
conservative					•	•	•

Following a training course in nursing:							
anaesthetic and intensive care							•
surgical		•					
geriatric				•	•		•
internal medicine	•			•			
cardiological	•						
long-term care	•			•	•	•	•
palliative care				•	•	•	•
paediatrics						•	
chronically ill and disabled				•	•	•	•
family					•	•	•
community					•	•	•
community and family					•	•	•
conservative	•			•	•	•	•

During the course of the nursing qualification course:							
anaesthetic and intensive care							•
surgical		•					
diabetes	•						
geriatric				•	•		•
internal medicine	•			•			
cardiological	•						
long-term care	•			•	•	•	•
palliative care				•	•	•	•
paediatrics						•	
chronically ill and disabled					•	•	•
family					•	•	•
community					•	•	•
community and family					•	•	•
conservative					•	•	•

Source: Own preparation on the basis of the Ministry of Health Regulations.

Requirements for the organisation of the provision of benefits

Significant differences can be seen in the conditions for organising the provision of benefits. Providing medical care to patients in hospital wards requires more doctors (24-hour care on all days of the week) than providing long-term care services (examination no less than twice a week and call-out when needed) to the same number of patients. Long-term care and

geriatric wards require additional staff than just doctors and nurses, e.g. a speech therapist or an occupational therapist.

Table 6. Comparison of recruitment requirements for other staff.

	Internal diseases ward	General surgery ward	Obstetric and gynaecological ward	Geriatric ward	Residential institutions for adults	Care facilities for children and adolescents up to the age of 18	Care facilities for mechanically ventilated care recipients
physiotherapist				1 FTE	2 FTEs per 35 beds		¼ FTE per bed
psychologist				½ FTE	½ FTE per 35 beds		
speech therapist					indeterminate number of FTEs		
occupational therapist					1/2 FTE per 35 patients taking part in the treatment per week		
addiction therapist							

Source: Own preparation on the basis of the Ministry of Health Regulations.

In addition, the provision of services by a medical carer is permitted.

Medical equipment requirements

The conditions for the provision of long-term care services define the minimum requirements for medical equipment. They are much more detailed than for hospital treatment services.

Table 7. Comparison of equipment requirements (inpatient long-term care equipment included).

	Internal diseases ward	Residential institutions for adults	Care facilities for children and adolescents up to the age of 18	Care facilities for mechanically ventilated care recipients
ECE apparatus	•	•	•	•
infusion pumps	•	•	•	•

electrical/vacuum suction device	•	•	•	•
hospital beds with barriers or rehabilitation equipment		•	•	•
equipment to prevent the formation of debris		•	•	•
equipment to facilitate the care of the recipient		•	•	•
equipment for a rehabilitation centre		•	•	•
equipment of occupational therapy office		•	•	•
oxygen concentrator or other oxygen source		•	•	•
inhalers		•	•	•
glucose meters		•	•	•
blood pressure measuring apparatus		•	•	•
resuscitation kit		•	•	•
balls, walking sticks, walking sticks, wheelchairs, whether or not with head support		•	•	•
stethoscopes		•	•	•
respirator				•
defibrillator				•
set with single-use equipment for the care of tracheostomy, gastrostomy		•		•
pulse oximeter		•		•
self-discharge breathing bag with unidirectional valve and face mask		•		

Source: Own preparation on the basis of the Ministry of Health Regulations.

Requirements for accommodation conditions

In addition, the conditions for the provision of long-term care services lay down housing conditions in the structure of establishments which are not listed as necessary for the provision of hospital treatment services.

Care establishments

- rehabilitation room,
- psychotherapy suite,
- occupational therapy room,
- day room.

Care facilities for mechanically ventilated patients

- 1-2 bed rooms with direct access to a bathroom and access to a light switch for the patient,
- doctor's office,
- treatment and nursing room,
- rehabilitation room,
- battery-operated light source activated in the event of a power failure.

Summary

- 1) Long-term care needs in Poland are covered by the **health system** (medical benefits) and **social assistance** (social benefits). Due to the separation of tasks, the report mainly analyses the area related to medical-care provision of needs, however the share of patients covered by social care is also highlighted.
- 2) Within the public health system, long-term care benefits are provided in two modes: **home and inpatient**. An overwhelming number of patients benefit from the former. Geriatric care, on the other hand, is provided in POZs, outpatient clinics and geriatric wards. Due to the scope of the report, only inpatient care was examined. In both scopes, medical services are provided by **several groups of medical professionals** (e.g. doctors, nurses, physiotherapists). The most numerous of these are nurses, who in long-term care alone account for 72% of all staff.
- 3) **The supply of long-term care requires reinforced multidirectional action to fully safeguard the increasing needs and territorial disparities:**
 - practically all counties in Poland offer **home care** (except 3). 89 counties were functioning without an inpatient **long-term** care facility;
 - the difference between the voivodeship with the highest ratio of **patients** in terms of population (Podkarpackie) and the lowest (Wielkopolskie) is more than double (respectively 151 and 70 respectively, with a national average of 111).
- 4) Service needs and expected future developments were analysed:
 - long-term and geriatric care in the healthcare system **are predominantly provided to people aged 60 and over**. The patient characteristics in long-term care, both inpatient and home care, and geriatric wards are very similar. The main factor influencing demand will therefore be demographics;
 - **Poland's population** is ageing dynamically and, in addition, the population is shrinking. These processes mainly affect cities and counties distant from urban centres;
 - **healthy life years increase** proportionally at a slower pace, despite increasing life expectancy. In the case of this measure, the situation is also differentiated territorially. Inhabitants of the provinces of western Poland live a greater part of their lives in good health compared to the provinces in the east of the country;
 - the demographic situation will affect not only the number of patients, but also **potential carers**, both formal and informal. The human resources available to support the elderly in their daily lives will also be reduced over the years;

- all **measures and studies determining the level of disability and dependency** point to similar conclusions: the level of disability increases with age, and in Poland there has been an increase in the number of dependent persons in recent years, which is related to the demographic situation. They also indicate a worse situation in this respect for women, less educated people, inhabitants of rural areas and eastern regions of Poland.
- 5) All of the above-mentioned aspects may have the effect of increasing demand, which will put a **greater strain on organised forms of health care and social assistance**. This will require necessary system adjustments, especially in terms of disadvantaged groups and areas. However, taking into account the unevenness of demographic changes at the county level over time, the changes can be introduced gradually.
 - 6) The demographic processes taking place in Poland, affecting long-term and geriatric care, are **similar in nature to those observed in other developed countries** (EU, OECD). Some of them are progressing with noticeably greater intensity, resulting in exceeding average values in the coming years. It can therefore be said that Poland is catching up with demographic trends seen in other countries. This makes it possible to track healthcare measures implemented abroad, assess their effectiveness and, on this basis, propose solutions to be implemented in Poland.
 - 7) **The results of the demand model indicate that 171.6 thousand people aged 60 and over will require long-term and geriatric care in 2019, of which 65.2 thousand will require inpatient care. This translates into 47.9 thousand beds in long-term care, taking into account the current patient turnover rate of 1.36. Given the current level of the bed base (31,000) and the assumption of the possibility of converting half of the estimated potential gained through bed conversions in district hospitals, 8,500 beds in long-term care are still to be secured.** To ensure an optimal level of security, comprehensive multi-directional measures are planned to optimise the structure of the potential, both in terms of strengthening preventive measures, redirecting care to lower levels and shifting the burden of care for the elderly to a home-based and deinstitutionalised mode. However, for the elderly with a significant degree of disability, the most appropriate type of long-term care is inpatient care.
 - 8) **When estimating the required capacity and possible transformations, it is necessary to take into account both the actions currently implemented and those planned for the next years.** A number of them, identified in strategic documents at different levels, address problems affecting the demand for long-term and geriatric care services. These include, in particular, preventive measures to improve health levels, the transfer of services to lower levels of care, deinstitutionalisation and more efficient management of available resources. The social component of long-term care is also being developed.

- 9) When analysing opportunities for conversion, two aspects were looked at: sub-optimal capacity utilisation in hospitals, i.e. bed occupancy rates of less than 85%, and potentially inefficiently utilised capacity, i.e. long and diagnostic hospitalisations. On this basis, the maximum level of **possible conversions of beds in county hospitals into places of long-term or geriatric care was set at 16,712 beds** (26.93 % of all beds in county hospitals). Virtually all of these were identified as part of the unused potential (89%).
- 10) **The potential for conversion will therefore allow the majority of current needs to be met.** The remaining needs will be covered by other forms of long-term care, in particular home and deinstitutionalised care.
- 11) **The current distribution of county hospitals shows their high availability.** The median distance was 12.6 km and only 9 counties had a hospital more than 35 km away. Distance is not the only measure indicating accessibility, **commuting time is also important.** The median of this indicator was 23 min. **This indicates the possibility of using the existing infrastructure to carry out the conversions.** It will also allow for better coordination and communication of care, facilitating the decision to end hospital care and start long-term care in one building or under a single management.
- 12) County hospitals are characterised not only by good geographical accessibility, but also by a **wide range of basic wards**: 80% had an internal medicine ward, 74% a general surgery ward, 68% a gynaecology and obstetrics ward, and 58% an anaesthesiology and intensive care unit. Some of these had high proportions of patients aged 60 and over: 89.45% in the ophthalmology ward, 83.87% in the stroke unit, 83.86% in the vascular surgery ward, 80.17% in the cardiac surgery ward and 78.02% in the internal medicine ward. **This thus confirms the potential for the conversion of some places into long-term or geriatric care.**
- 13) When examining the feasibility of conversions, it is very important to carry out comparisons in terms of formal requirements for personnel, organisation of benefits, medical equipment and premises conditions. The results of the comparisons indicate that it is possible to provide medical care to **a wider range of patients in long-term care than in hospital treatment, while employing the same number of doctors.** The requirements in this respect are lower, with a wider spectrum of possible specialisation. In the case of internal medicine, for example, it is possible to transfer a doctor with this specialisation from a ward to long-term care. In this case, it will not be necessary for him or her to provide care around the clock, on all days of the week, which will translate into a more efficient use of the potential of the medical staff, while maintaining the requirement to carry out examinations no less than twice a week and to be available on call if necessary. The issue of specialisation and training stage will remain the same.

- 14) A comparison of formal requirements shows **the greatest differences requirements for premises and equipment**. For the implementation of long-term care services, the requirements are defined in more detail. They include aspects related to the working conditions of the medical staff (e.g. equipment to facilitate the care of the recipient) and to improving the quality of care for the patient (e.g. the need for a rehabilitation room or day room).
- 15) A comparative analysis of the formal requirements has therefore confirmed the possibility of carrying out conversions, especially in the area of long-term care. It is also possible, to some extent, to **optimise the use of current resources**.
- 16) The conversion of existing resources should mainly take place in the **direction of different areas of long-term care, also taking into account geriatric care tasks**, because:
- the shortage of geriatric specialists will hinder the opening of new wards (a geriatric ward requires a 24/7 specialist in this area). As a first step, according to the supply analysis and its conclusions, it is necessary to territorially match the current capacity, which remains partly unused;
 - long-term care is also more comfortable for the patient because of the wider range of services and greater possibilities for home and day care from the perspective of a geriatric patient;
 - in addition to the efficiency of patient care, long-term care is also more cost-effective. The safety net is based on fewer staff, in a more efficient working time structure.
- 17) The process of converting sites in county hospitals will be a cost-intensive process, in particular because it should be based on:
- the provision of geriatric consultations in hospital wards for the elderly,
 - support for the retrofitting of equipment to facilitate care activities in accordance with ward requirements and other generally accepted standards,
 - renovation in line with standards,
 - staff training aimed at retraining,
 - transfer of diagnostic services to lower levels of care,
 - adjusting the level of funding of existing bed capacity in long-term care by matching the value of contracts to the number of beds at the provider's disposal,
 - changing the scope of contracting from current ranges (e.g. internal medicine) to long-term care.