Appendix to the Notice
of the Minister of Health
of 15 October 2021 (item 80)

Minister Zdrowia

NATIONAL TRANSFORMATION PLAN

for 2022-2026

Warsaw

2021

Unia Europejska
Europejski Fundusz Społeczny

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This document was created as part of the project *Maps of Health Needs – Database of System and Implementation Analyses* co-financed by the European Union from the European Social Fund as part of the Operational Programme Knowledge Education Development.

List of abbreviations

ABM – Medical Research Agency

OSC – outpatient specialist care

AOTMiT – Agency for Health Technology Assessment and Tariff System

R+D – Research and Development

CeZ – Centre for e-Health

CNPL – Night Medical Care Centre

DALY – *disability adjusted life-year*

DCWP – Day-Care Centre for Memory Support

DDOM – Day-Care Centre for Medical Care

DOM – home care

GIS – Chief Sanitary Inspector

GUS – Statistics Poland

IKP – Patient Online Account

JGP – homogeneous groups of patients

KPO – National Plan for Reconstruction and Strengthening of Resilience

KPRM – Chancellery of the Prime Minister of Poland

NTP – National Transformation Plan

MEiN – Ministry of Science and Higher Education

MSWiA – Ministry of Internal Affairs and Administration

MZ – Ministry of Health

NFZ – National Health Fund

NIK – Supreme Audit Office

NIK-PIB – Cardinal Stefan Wyszyński Institute of Cardiology – National

Research Institute in Warsaw

NIO-PIB – Maria Sklodowska-Curie National Institute of Oncology – National

Research Institute in Warsaw

NHHC – Night and Holiday Health Care

NIZP PZH-PIB – National Institute of Public Health – National Institute of Hygiene – National Research Institute

NPChUK – National Cardiovascular Disease Programme 2021-2031

NHP – National Health Programme

NOS – National Oncology Strategy

OECD – *Organisation for*

Economic Cooperation and Development

OECR – Expert Centers for Rare Diseases

PHC – primary health care

PRM – State Emergency Medical Services

REACT-EU – *Recovery Assistance*

for Cohesion and the Territories of Europe

ED – Emergency Department

EU – European Union

WHIH – *Warsaw Health Innovation Hub*

WHO – World Health Organisation

CTT – community treatment team

EMT – emergency medical team

1. Introduction

1.1. The concept of a transformation plan

In 2019, a report was commissioned by the European Commission to present proposals for solutions that improve the effectiveness of coordination of investments co-financed by the European Structural and Investment Funds in the health sector in the 2021-2027 programming perspective in Poland[1]. The report was prepared based on interviews with health sector stakeholders, i.e. MZ, NFZ, GIS, NIZP PZH-PIB, the minister responsible for regional development, the Public Health Committee of the Polish Academy of Sciences, local government units, and organisations for patients and employers.

The report in question provides several tips regarding the effectiveness of implementing investments co-financed by EU funds in the area of health and other elements of the health care system. Out of ten recommendations, the demand for an infrastructure model in maps of health needs and transformation plans seems to be the most important. This is because defining the target infrastructure base of the health care system defines transformation vectors and creates conditions to formulate a plan that would transform the system from its current state to the desired one, or at least would give direction to changes and related expenditure[2]. The transformation plan should address infrastructure, infrastructure-related intellectual resources and include all key types of care, not forgetting about long-term care. Moreover, the transformation plan must be developed based on a map of health needs.

In order to implement the recommendations included in the EC report, as well as in view of the experience of several years of functioning of maps of health needs, an amendment to the Act of 27 August 2004 on health care services financed from public funds (Dz.U. /Journal of Laws/ of 2021, item 1285, as amended) was prepared. The provisions of the Act of 20 May 2021 amending the Act on health care services financed from public funds and certain other acts (Dz. U. /Journal of Laws/, item 1292) introduced an element of strategic planning in health care. The provisions in question have made it possible to operate a system in which actions are planned in good advance, with a simultaneous indication of the time horizon and financial resources for their implementation. The basis for such actions must be based on actual (objectified) health needs of the population For them to function effectively, it is necessary to

[1] Mołdach R., *Wdrażanie Europejskich Funduszy Strukturalnych i Inwestycyjnych (EFSI) w sektorze zdrowia w Polsce*, Warsaw 2019, https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/implem_healthcare_pl_pl.pdf

[2] Ibid., p. 32

set priorities. Due to limited financial, time and personnel resources, it is not possible to perform all tasks simultaneously. Priority should be given to those actions that are expected to bring the greatest health value to the general public, where the health outcomes currently being achieved are furthest from those that are potentially achievable and achieved in other countries.

Amendment to the Act of 27 August 2004 on publicly financed health care services introduced the obligation to draw up national and provincial transformation plans, taking into account the recommended lines of action indicated in the map of health needs and resulting from other strategy documents in the health sector. The need to develop a nationwide transformation plan is due to the fact that actions in some areas can only be taken at the national level. This is the case, for example, with the coordination of medical staff training and networking of health services.

Transformation plans are to be prepared as implementation-oriented documents that provide for specific actions (with assignment of i.a. a responsible entity, a timetable, evaluation criteria) and help to implement the recommendations included in the map of health needs. The process adopted for their creation is intended to foster stakeholder consensus. Transformation plans are developed by provincial councils on health needs, in which representatives of many parties in the health care system participate. These plans are then subjected to extensive consultation.

1.2. Purpose of developing a transformation plan

The NTP aims to strengthen health care resources and processes and improve the efficiency of public spending on health care services and investments in the health sector, at both national and regional level, taking into account the health needs of the population.

1.3. Legal form

Pursuant to Art. 95b of the Act of 27 August 2004 on health care services financed from public funds, the minister of health shall announce the NTP, by way of a notice, in the Official Journal of the Minister of Health by 31 December of the year preceding the first year of the duration of this plan by one calendar year. The NTP is set for a period of 5 years and the period of its implementation coincides with the period of implementation of a map of health needs.

The first NTP shall be set by the Minister of Health for the period from 1 January 2022 to 31 December 2026,

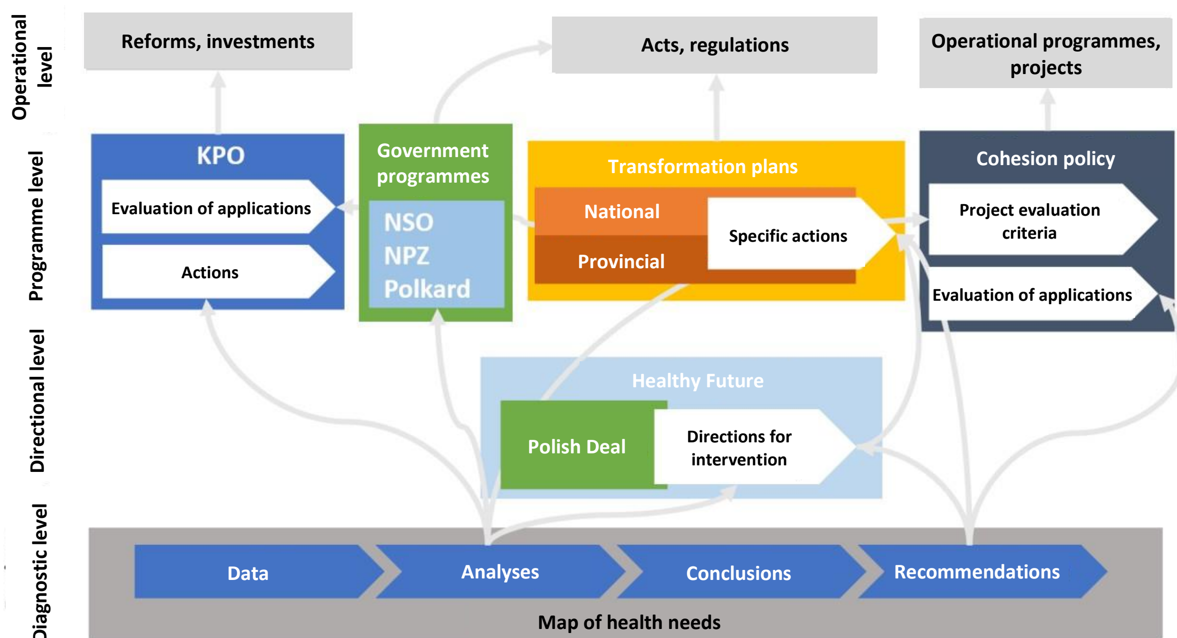
1.4. Other strategy documents

The NTP is an implementation document that sets out specific actions to be taken in order to ensure that citizens and residents of the country have access to high-quality health services. These actions are based on recommendations from the Map of Health Needs and other strategy documents in the health sector.

The Map of Health Needs is a diagnosis document, providing a detailed and structured understanding of the availability of care across the country and a diagnosis of the health system. The analysis and recommendations contained therein form the basis for other documents, also of a directional nature, such as *Healthy Future. Strategy framework for the development of the health system for 2021-2027, with an outlook to 2030*, as well as programme frameworks, i.a. KPO (National Plan for Reconstruction and Strengthening of Resilience) and operational programmes under the Cohesion Policy 2021-2027.

NTP actions, resulting directly from the recommendations included in the map of health needs, influence the identification of priority reforms and investments planned for implementation under the KPO and the Cohesion Policy, where they are used in determining the criteria for evaluating projects and applications for funding.

Figure 1. Relationships of strategy documents in the health sector



Source: MZ study

2. Main areas of action

2.1. Demography

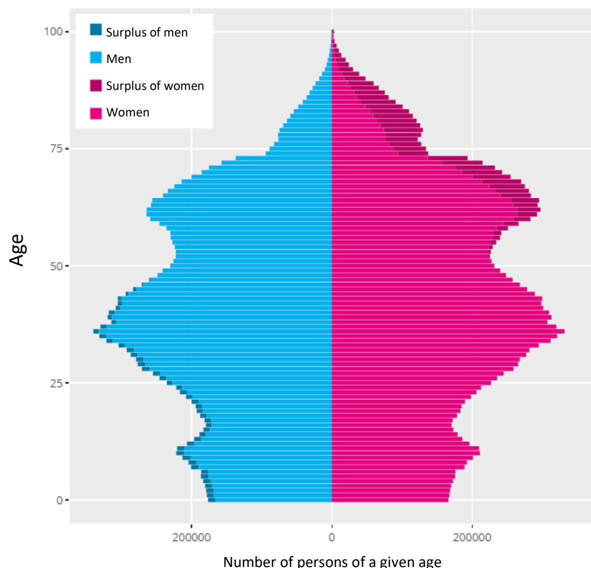
Diagnosis resulting from the map of health needs

The most important demographic changes that affect the organisation and operation of health care include the aging of the population, lack of generational replacement, and male excess death rate.

It is projected that by 2050, the population of Poland will fall to just under 34 million. The rapid ageing of the population and slower growth in health-adjusted life expectancy compared to overall life expectancy point to growing challenges for health care. These challenges will be primarily related to the increased demand for elder care and more difficult financing due to the shrinking working-age population.

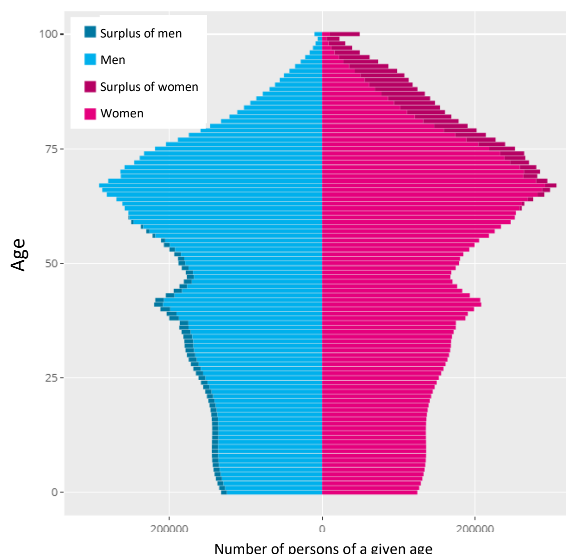
Regardless of the actions taken, the aging of the population in the Republic of Poland cannot be stopped in the near future. Representatives of the post-war baby boomers are already retired or will retire in a few years. In the perspective of the next 30 years, they will also be joined by the baby boomers of the 1970s and 1980s. At the same time, the median age of women giving birth to their first child is increasing – 28.2 years in 2019, which means an increase of 1.6 years over the last nine years. The birth rate in 2019 was negative and the lowest for the past 30 years. The birth rate was decreasing. It reached a negative value for cities and almost zero value for rural areas.

Figure 2. The age pyramid of Poland's population in 2019



Source: MZ study based on data from GUS

Figure 3. The age pyramid of projected Poland's population in 2050



Source: MZ study based on data from GUS

Information on life expectancy in 2019 by sex shows a significantly shorter life expectancy for men compared to women (74.07 years for men and 81.75 years for women). This is especially true for men living in rural areas (73.4 years).. The sex gap in life expectancy in the Polish population is significantly higher than that measured between different provinces for individual sexes. This implies that sex and, in particular, the sex-related lifestyle (i.a. type of work, less intensive preventive health care, more frequent addictions), rather than e.g. the availability of health care services, may be more likely to influence life expectancy outcomes observed.

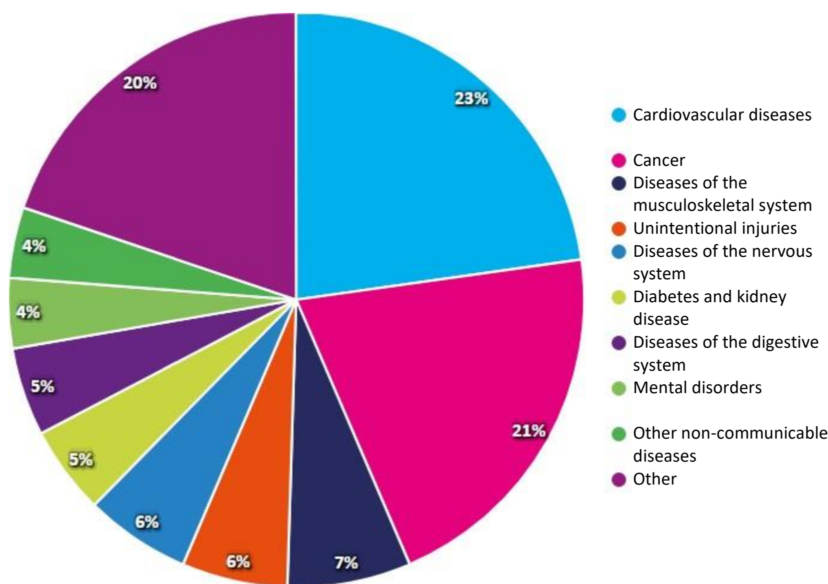
As a result, it is recommended that the areas related to geriatrics, long-term care and broader health care dedicated to the elderly or people who need support in their daily life be developed. These changes should be focused on organising health care services at a local level, as close to the patient as possible.

2.2. Epidemiology and epidemiological forecasting

Diagnosis resulting from the map of health needs

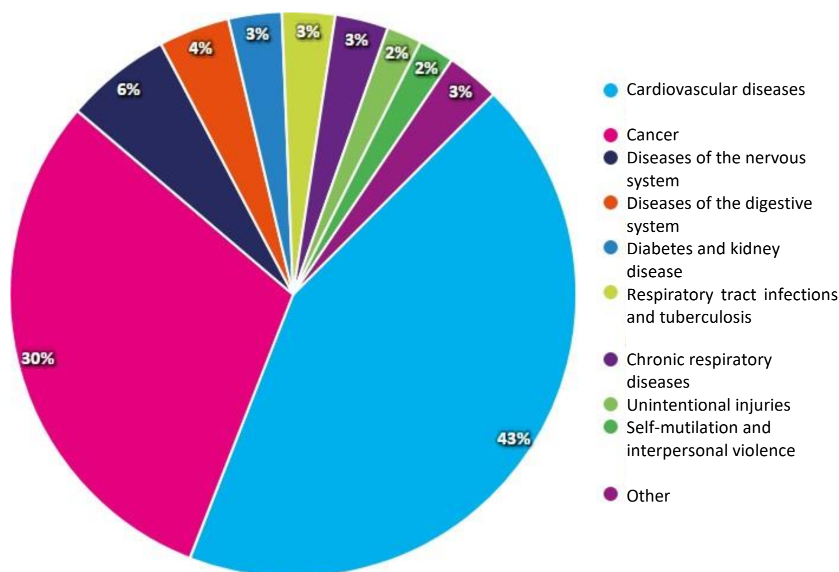
Cardiovascular diseases and cancer are responsible for almost 75% of all deaths and more than 40% of DALYs in the Republic of Poland. In terms of cardiovascular diseases, ischaemic heart disease is responsible for almost half of all deaths and accounts for 30% of DALYs. The number of patients and deaths caused by this health problem are projected to increase in the coming years.

Figure 4. The most important groups of health problems according to DALYs in 2019



Source: MZ study based on data from GBD IHME

Figure 5. The most important groups of health problems according to death rate in 2019



Source: MZ study based on data from GBD IHME

The death rate due to cancer has increased by as much as 25% since 1999. In this group, malignant tracheal neoplasm, malignant bronchial neoplasm, malignant lung neoplasm and malignant colorectal neoplasm account for approximately 12% of all deaths in Poland. According to projections, the death rate, prevalence and incidence of cancer are expected to increase until 2028, while in the EU, excluding the death rate, these indicators are expected to follow a downward trend.

Diseases of the nervous system also deserve attention. Strokes, which are the second most common cause of death, are at the same time responsible for twice as many Years lost due to disability (YLDs) compared to ischaemic heart disease. https://en.wikipedia.org/wiki/Years_lost_due_to_disability At the same time, the DALYs for Alzheimer's disease and other dementia-related diseases have more than halved in the Republic since 1999, and projections up to 2028
show that this health problem will cause an increasing death rate – by approximately 25%.

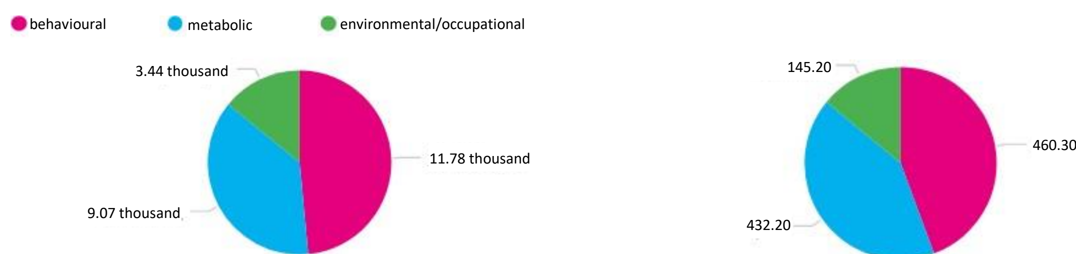
Consequently, early diagnosis (especially for cancer) and coordinated health care activities should be developed and supported for the most relevant health problems.

2.3. Risk factors and prevention

Diagnosis resulting from the map of health needs

In the Republic of Poland in 2019, the dominant group of risk factors affecting DALY loss and deaths were behavioural, i.e. lifestyle-related, factors. These factors were responsible for the loss of approximately 49% of years lived in health state and approximately 44% of deaths. The impact of behavioural risk factors on DALY loss in the EU was lower by approximately 26% than in Poland.

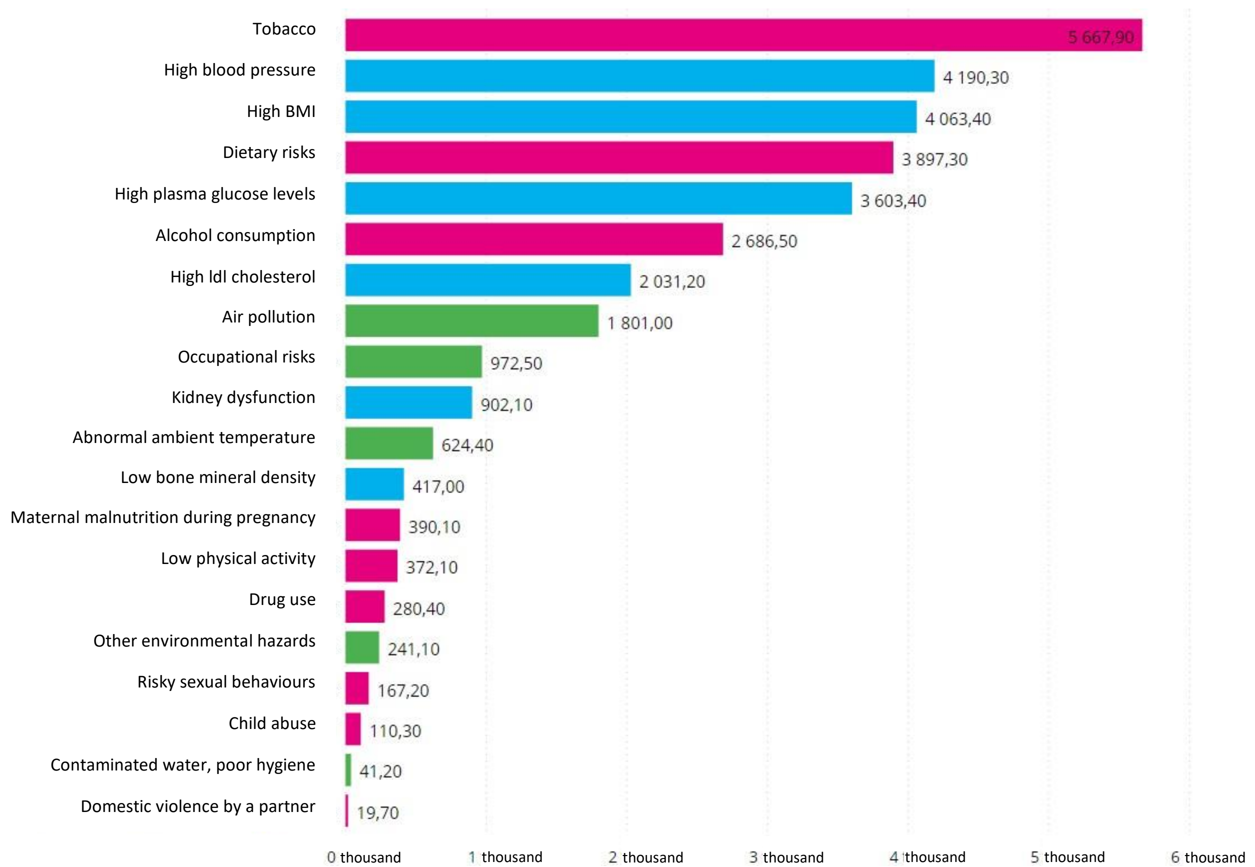
Figure 6. The proportion of major risk factor groups in Poland for men and women combined (DALYs and deaths per 100,000 population).



Source: MZ study based on data from GBD IHME

The risk factors responsible for the loss of the greatest number of years lived in health state for men and women combined was tobacco (approximately 5,700 DALYs per 100,000 population), high blood pressure (approximately 4,200 DALYs per 100,000 population) and a high BMI (approximately 4,100 DALYs per 100,000 population). Dietary risks are also quite an issue – they are the third most influential factor in deaths and the fourth most influential factor in DALYs.

Figure 7. The proportion of risk factors in Poland for men and women combined (DALYs per 100,000 population).



Source: MZ study based on data from GBD IHME

For men, tobacco smoking affects DALY loss and death rate more than twice as much as for women, and alcohol consumption is the third most dominant risk factor for DALY loss, exceeding the value for women by nearly eightfold. Since 2010, there has been an increase in impact of smoking on death rate by approximately 13% and on DALYs by approximately 9%.

In 2019, as part of the public health system, 17.3% of the annual population of women eligible for screening were screened for cervical cancer. Since 2017, this value has decreased by approximately 5%. As many as four times as many women were referred for in-depth diagnostics. Almost 64% of the annual population of women classified for breast cancer screening were screened. Since 2017, this value has decreased by approximately 1%.

Most implementers of public health-related tasks, i.e. local government units, sanitary-epidemiological stations and central units, identify these tasks as difficult to implement – most often due to limited financial resources, limited staff resources and insufficient interest of the target group[3].

[3] A survey by NIZP PZH-PIB, conducted in December 2019 as part of the National Health Programme (NHP) 2016-2020; operational objective: "Public health tasks: Monitoring of public health tasks under the Coordination, Evaluation and Research Tasks 2019-2020".

Preventive health measures are ones of essential public health measures. At the local level, there are noticeable gaps that limit the ability to provide equal access to preventive measures. In some provinces, no preventive measures are available to address regional health needs.

Key health needs and challenges of health system organisation

1. Providing evidence-based activities to promote healthy lifestyles and build health literacy to reduce the impact of behavioural risk factors and other groups of risk factors that affect both loss of years lived in health state and death rate. Aiming for lower values of the impact of behavioural risk factors on DALY loss in Poland (to the EU average level).
2. Taking actions to increase participation in screening tests as an important aspect of improving the effectiveness of preventive health care in Poland. First and foremost, it is essential to improve participation of women in both Pap and mammography screenings. Moreover, there is a need for preventive health care in men, whose life expectancy deviates negatively from that of women in Poland and EU averages.
3. Taking effective actions in the field of:
   a) tobacco smoking prevention (with particular attention to programmes targeting adolescents and women who are increasingly affected by this problem),
   b) prevention of excessive alcohol consumption (especially among social groups that are most at risk of this problem),
   c) promotion of good nutrition and prevention of overweight and obesity (especially among men, children and adolescents).
4. Strengthening the effectiveness of pro-health measures taken by the State Sanitary Inspectorate and local government units through the establishment of coordinating units or the creation of system mechanisms that enable better coordination of pro-health measures implemented at district and municipal levels.

Actions taken at supraregional level

Action 2.3.1.

Strengthening the development of research activities and the design of new solutions in the field of public health, particularly with regard to changing the health habits and attitudes of Polish people. These activities will be related to the implementation of the NHP objectives and objectives of the ABM team that develops epidemiological studies.

Expected results of the action: Implementation of innovative and high-quality public health measures.

Entities responsible for implementing the action: MZ, NIZP PZH-PIB, ABM, NIO-PIB.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of action: Not less than PLN 40.0 million (forty million zlotys); pursuant to Art. 18 of the Act of 11 September 2015 on Public Health (Dz. U. /Journal of Laws/ of 2021, item 183, as amended) (state budget) – PLN 80.0 million (eighty million zlotys) per year and not less than 10%.

Action implementation indicators:

1. Number of research activities and new solutions in the field of public health.

Action 2.3.2.

Development of a pilot programme and implementation of a health education model in schools and preschools, e.g. by introducing regular educational meetings for primary school and secondary school students on the promotion of a healthy lifestyle. These actions will be implemented as part of the NOS's task: conducting a pilot programme as part of educational activities for the prevention of cancer and the development of health-promoting attitudes in the field of school health education, promotion of healthy lifestyle and implementation of the Educational Health Programme in Schools.

Expected results of the action: Increased awareness among children and adolescents of lifestyle improvements and reduced impact of lifestyle risk factors in younger age groups.

Entities responsible for implementing the action: MZ and MEiN, NIO-PIB.

Planned period during which the action will be implemented: school year 2023/2024; materials will have been developed by the end of 2022 .

Estimated cost of the action: approximately PLN 5.0 million (five million zlotys).

Action implementation indicators:

1. Reduced contribution of behavioural risk factors to DALYs among children and adolescents.
2. Reduced contribution of behavioural risk factors to death rate among children and adolescents.

Action 2.3.3.

1. Social campaigns targeting men, breaking down barriers to active health care use.
2. Campaigns targeting the general public, encouraging people to get tested and activate their family in this regard.

Campaigns will be implemented, among others, as part of the NOS's tasks, i.e. "I plan to live a long life" campaign.

Expected results of the action: Increased awareness of preventive health care and improved reporting of preventive examinations (understood as examinations aimed at possible detection of disease at an early enough stage) among the public.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2030.

Estimated cost of the action for 2021: PLN 23.0 million (twenty-three million zlotys).

Action implementation indicators:

1. Number of men receiving health care.
2. Number of people enrolled for preventive examinations.

Action 2.3.4.

Support for activities that lead to reduced economic availability of tobacco and related products.

Expected results of the action: Systematic increase in the price of tobacco products, which reduces the availability of tobacco products, primarily to young people. **Entities responsible for implementing the action:** MF in cooperation with MZ and NIO-PIB.

Planned period during which the action will be implemented: 2021-2025.

Estimated cost of the action: no-cost legislative action, target costs to be specified after legislative work.

Action implementation indicator:

1. An increase in excise duty and thus an increase in the price of tobacco products compared to 2021

Action 2.3.5.

Amendment of the Regulation of the Minister of Health of 6 November 2013 on guaranteed services within health programmes (Dz. U. /Journal of Laws/ of 2020, item 2209) on the treatment and prevention of nicotinism.

Expected results of the action:

1) a gradual reduction in smoking rate;
2) achievement of efficiency and improvement of accessibility to comprehensive anti-smoking counselling and treatment of nicotine dependence syndrome.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of the action: No-cost legislative action; target costs resulting from the solutions adopted in the issued normative acts will be specified in the Regulatory Impact Assessments for these acts.

Action implementation indicator:

1. Publication of the amended regulation.
2. Decrease in the number of tobacco smokers.

Action 2.3.6.

Development of system mechanisms to coordinate health promotion activities implemented at both district and municipal level. These activities will be related to the development of assumptions for system changes in the field of public health in Poland – Regulation of the Minister of Health of 20 July 2021 on the establishment of a team for system changes in public health (Dz. Urz. /Official Journal/ of the Minister of Health, item 53).

Expected results of the action: Improvement in the quality and relevance of the activities of public (local and government) institutions that plan and implement health-promoting policies (implemented under various regulations and financed from various sources).

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021 - development of assumptions regarding system changes; implementation in 2022-2027.

Estimated cost of the action: No-cost legislative action; target costs resulting from the solutions adopted in the issued normative acts will be specified once they have been finalised.

Action implementation indicator:

1. Regulatory changes in the Public Health Act of 11 September 2015 and possibly other regulations of law.

Action 2.3.7.

Entering into force and implementation of the tasks included in the NPChUK that identifies main challenges and directions of changes and development of the health care system in Poland in the field of cardiovascular diseases. The NPChUK is a multi-year reform agenda of Polish cardiology, cardiac surgery, vascular surgery, angiology and other cardiovascular disease-related fields, action-oriented in five main areas that are key to achieving synergies and improving epidemiological indicators:

1) investment in personnel;
2) investment in education, primary prevention and lifestyle;
3) investment in patients and secondary prevention;
4) investment in science and innovation;
5) investment in the cardiac care system.

Expected results of the action:

1) improving the staff situation and the quality of education in cardiology and related fields;
2) reducing the incidence of cardiovascular disease through risk reduction in primary prevention;
3) improving the effectiveness of secondary prevention;
4) increasing the potential of research and innovation projects to enable patients to benefit from the most effective diagnostic and therapeutic solutions;
5) improving the organisation of the cardiac care system by ensuring that patients have access to the highest quality diagnostic and therapeutic processes and comprehensive care throughout the "patient pathway".

Entities responsible for implementing the action: MZ, MEiN, MRiPS, MF, NIZP PZH-PIB, NFZ, ABM, NIO-PIB, AOTMiT, CMKP, CKPPiP, CDK.

Planned period during which the action will be implemented: 2022-2031.

Estimated cost of the action: under development.

Action implementation indicator:

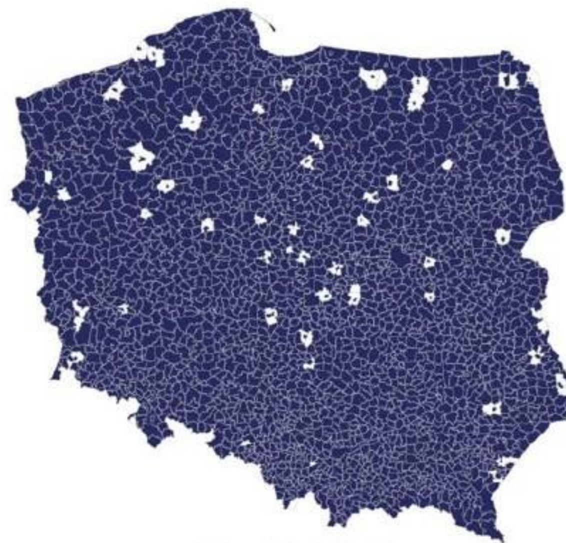
1.Entry into force of the NPChUK.

2.4. Primary health care

Diagnosis resulting from the map of health needs

In 2019, 88.82% of Poland's population were registered with health care providers of PHC services. Moreover, a regional analysis of accessibility showed that 59 municipalities (2.38% of the total) did not have a single health care provider providing PHC services. These were mainly separate city-adjacent rural municipalities.

Figure 8. Distribution of PHC clinics in Polish districts in 2019.



Source: MZ study based on data from NFZ and GUS

It should be noted that PHC services not only include treatment services. It should be emphasised that, in addition to these services, promotive and preventive services are also distinguished.

Relieving the burden on emergency departments by minimising the number of non-emergency health care services provided is one of the current challenges of efficient health care. The answer to this challenge is NHHC. In 2019,
1.75 times as many NHHC services were reported than ED services. However,

an analysis by the Supreme Audit Office shows that in extreme cases 80% of patients presenting to the ED were not in a life-threatening condition[4].

In 2019, visits made to PHC clinics most frequently (32%) concerned services related to issuing prescriptions and to other unspecified medical-related activities. These statistics can be used as a basis for recommendations to improve the quality of reporting as part of PHC, as well as changes in the provision of services using telemedicine. Data reported to the NFZ indicate a low proportion of preventive health care as part of PHC. The NIK also pointed to inadequate implementation of preventive health care (e.g. as part of PHC)[5].

As a result of the COVID-19 pandemic, the possibility of providing outpatient PHC services at a distance through ICT or communication systems was introduced as part of online consultation. The problems encountered by the health care system include the lack of adequate legal regulations, financial solutions and appropriate infrastructure. Another limitation is insufficient knowledge and skills of medical staff in terms of providing health care services using modern ICT systems or other communication systems.

According to the Act of 27 October 2017 on primary health care (Dz. U. /Journal of Laws/ of 2021, item 1050), it is the responsibility of a PHC physician to coordinate the treatment of patients, in cooperation with a PHC nurse and a PHC midwife, throughout the health care system. Analyses of health problems imply that cooperation with OSC is flawed.

Key health needs and challenges of health system organisation

1. Implementation of proactive care for patients as part of PHC and the development of an incentive-based system for providing PHC services to improve the frequency of ordering diagnostic tests by a PHC physician, expand diagnostic evaluation at the PHC level and relieve OSC and hospital services of diagnostic hospitalisations that are possible to be performed in an outpatient setting, appropriately adjusting the method of their financing.
2. Strengthening of the role of NHHC to improve demand for this form of care among patients and to relieve the EDs of cases that do not require life-saving treatment.

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[4]. Funkcjonowanie Systemu Ratownictwa Medycznego, NIK, Warsaw, 2020, available at https://www.nik.gov.pl/plik/id,23528,vp,26262.pdf.

[5] Profilaktyka zdrowotna w systemie ochrony zdrowia, NIK, Warsaw, 2017, available at https://www.nik.gov.pl/plik/id,13788,vp,16224.pdf; *Dostępność profilaktyki i leczenia chorób układu oddechowego*, NIK, Warsaw 2016, available at https://www.nik.gov.pl/plik/id,11909,vp,14281.pdf

Focusing the attention of ED staff primarily on patients
who most need their help.

3. Developing and disseminating modern forms of providing health care services that combine elements of telecommunications, IT and medicine (telemedicine) at the level of PHC.
4. Improvement of coordination mechanisms concerning the cooperation of PHC with OSC and hospital services, NHHC, occupational medicine, as well as mechanisms for the exchange of (electronic) medical records, information on the patient's health status and needs in connection with specialist treatment and hospitalisation or examinations for the employer's needs, and in the field of rehabilitation and long-term care.
5. Development and implementation of a system that enables effective and efficient cooperation between a PHC physician and a school nurse or between a school hygienist and a dentist.
6. Strengthening of the role and an increase in the activity of a PHC nurse and a PHC midwife by onward transfer of competencies of a PHC physician, an increase in the number of PHC nurses and PHC midwives with specialist training, prescribing medicines and issuing prescriptions by PHC nurses and PHC midwives, possibility of referring patients to examinations.

Actions taken at supraregional level

Action 2.4.1.

Raising awareness of the existence of NHHC through public awareness campaigns.

Expected results of the action: Reduction in waiting times for the provision of services by the ED and in the level of occupancy in the ED.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2022-2026**.**

Estimated cost of the action: PLN 2.0 million (two million zlotys).

Action implementation indicators:

1. Percentage of online consultations provided without further ED visits.
2. Percentage of ED visits following online consultations.

Action 2.4.2.

Increasing the competencies of PHC physicians and PHC nurses by:

1) taking action to increase the number of diagnostic services provided in the PHC clinic;
2) development of a protocol for consultations between a PHC physician and OSC staff, including consultations provided by means of ICT systems;
3) modification of the funding model for services provided as part of PHC by introducing a task-based fee;
4) rewarding continuing training and upskilling of PHC staff.

Expected results of the action: Improving the quality of the measures in terms of PHC competencies.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of the action: The cost of the action will be specified after 2022 (completion of conceptual work of the Team for changes in PHC, which was established based on the Regulation of the Minister of Health of 8 July 2021 on the establishment of the Team for changes in primary health care [Dz. Urz. /Official Journal/ of the Minister of Health, item 49) hereinafter referred to as the "PHC reform team").

Action implementation indicators:

1. Proportion of visits where diagnostic tests were ordered in relation to all visits made as part of PHC.
2. The number of diagnostic tests compared to the number of visits made as part of PHC.
3. The proportion of chronically ill patients referred for constant observation as part of OSC in relation to patients with a given disease, receiving constant treatment as part of PHC.

Action 2.4.3.

Strengthening of care coordination by:

1) introduction of a patient navigator and their public funding as part of PHC, as well as monitoring of a patient navigator in the health care system;

2) introduction of detailed reporting on diagnostic and other tests ordered from the PHC clinic and its monitoring;
3) development of a new model of care for chronically ill patients, taking into account i.a. digital solutions and experience of the "PHC PLUS" pilot programme.

Expected outcomes of the action: Improved quality of care for chronically ill patients

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of the action: The cost of the action will be provided after 2022 (completion of conceptual work of the PHC reform team).

Action implementation indicators:

1. Percentage of health care providers of PHC services who employ a navigator.
2. Number of hospitalisations of patients with selected chronic diseases.
3. Number of visits with reported laboratory tests.
4. Percentage and number of visits by patients as part of emergency aid provided by PHC clinics.
5. Development of monitoring standards for patients with chronic diseases.
6. Proportion of patients with met monitoring standards (e.g. an X-ray examination four times per year, once per year, etc.) among all patients diagnosed with a chronic disease.

Action 2.4.4.

Strengthening of patient home care using modern technology and enhancing the role of a nurse:

1) development of patient home care principles;
2) implementation of solutions that reward upskilling – advanced practice registered nurse;
3) recommendation for implementation of remote solutions (e.g. current pilot programmes, e-stethoscope, e-band).

Expected results of the action:

Improvement in the quality and accessibility of patient care as part of PHC.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of the action: the cost of the action will be provided after 2022 (completion of conceptual work of the PHC reform team).

Action implementation indicator:

1. Proportion of home visits and home advice compared to a total number of visits and advice.
2. Number of patients using remote solutions.

Action 2.4.5.

Strengthening of health care in rural areas to cover areas where PHC is not provided:

1) A study of the needs of PHC providers in rural areas, including identification of the reasons why PHC services are not provided in these areas;
2) development of a support system for rural PHC providers;
3) development of a model for additional funding for PHC from low population density areas.

Expected results of the action:

Preventing "terra incognita" within the availability of PHC by supporting small, rural PHC providers and levelling the playing field in terms of patient access to the health system.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of the action: the cost of the action will be provided after 2022 (completion of conceptual work of the PHC reform team).

Action implementation indicators:

1. Number of patients on lists of active PHC providers in rural areas (rural and urban-rural municipalities).
2. Number of additional places for providing PHC services in low-density rural areas.

Action 2.4.6.

Strengthening preventive measures in the PHC and creating health balances:

1) activities that activate programmes related to the prevention and early diagnosis of chronic diseases and cancer;
2) introduction of a rewarding approach for activities that affect the quality of health education and prevention;
3) development of a new prevention model taking into account, among other things, digital solutions and the experience of the PHC PLUS pilot programme;
4) continuation of 40+ prevention-type programmes.

Expected results of the action: Improving health awareness among Polish people through programmes implemented as part of PHC.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2021-2025**.**

Estimated cost of the action: the cost of the action will be provided after 2022 (completion of conceptual work of the PHC reform team).

Action implementation indicator:

1. Number of PHC providers who participate in health policy programmes and prevention health programmes.

Action 2.4.7.

Development of telemedicine by:

1) launching calls and concluding contracts with PHC service providers in Poland for pilot programmes related to the development of telemedicine;
2) developing a central DOM platform, aggregating data from telemedicine devices provided to PHC;
3) developing functionalities in the DOM platform to facilitate "teleconsultations", where medical specialists can exchange information and recommendations on a given patient's health needs, reducing the need to go from one health care provider to another for different types of treatment;
4) taking actions to increase the digital maturity of health care providers and to develop the digital competence of employees (an important element of any new service is the quality of the procedures provided by this solution, including telemedicine);

5) taking actions to equip the workstations of all PHC staff, including in the area of preventive health care provided to students by a school nurse, with equipment that enables the exchange of data in electronic form.

Expected results of the action: Reducing the number of visits to PHC facilities, especially for prescription renewals, and improving patient satisfaction due to time saved.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2022.

Estimated cost of the action:: PLN 16.0 million (sixteen million zlotys).

Action implementation indicators:

1. Number of pilot programmes implemented.
2. Number of remote patient monitoring devices provided to PHC clinics.
3. Number of patients monitored with innovative devices.
4. Number of teleconsultations conducted.

Action 2.4.8.

Developing and disseminating modern forms of providing health care services that combine elements of telecommunications, IT and medicine (telemedicine) at the level of PHC.

Expected results of the action: Reducing the number of visits to PHC facilities, especially for prescription renewals, and improving patient satisfaction due to time saved.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: telemedicine project: EUR 5.8 million (five million five million eight hundred euros).

Action implementation indicator:

1. Number of telemedicine models developed for use at the PHC level.

2. Number of medical employees who have improved their skills in telemedicine and e-health as a result of training courses.
3. Number of workshops promoting the results of telemedicine and e-health pilot projects.
4. Number of awareness-raising campaigns conducted in the area of telemedicine and e-health: 1

Action 2.4.9.

Improving the competence of PHC nurses and midwives to prescribe medicines, make out prescriptions and issue referrals for tests. These actions will be carried out under the prevention development subfund (strengthening the role of PHC nurses). The aim of the action is to strengthen the role of PHC nurses and midwives and to finance adjustment factors.

Expected results of the action: Increased availability of PHC services.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2022-2029.

Estimated cost of the action: PLN 900.0 million (nine hundred million zlotys – sub-funds for the development of prevention).

Action implementation indicator:

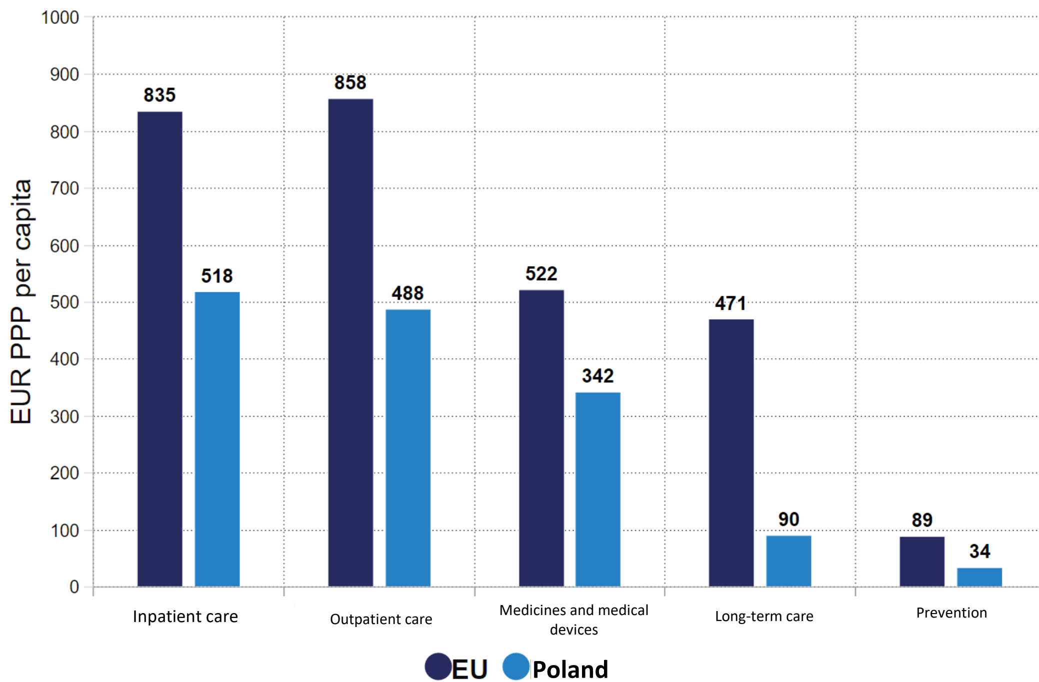
1. Number of consultations conducted by PHC nurses and midwives.

2.5. Outpatient specialist care

Diagnosis resulting from the map of health needs

Compared to health care systems in other EU countries, there is an imbalance in the structure of health care services in Poland: the treatment of patients relies excessively on inpatient care instead of outpatient care. This is reflected in the costs allocated to each type of care.

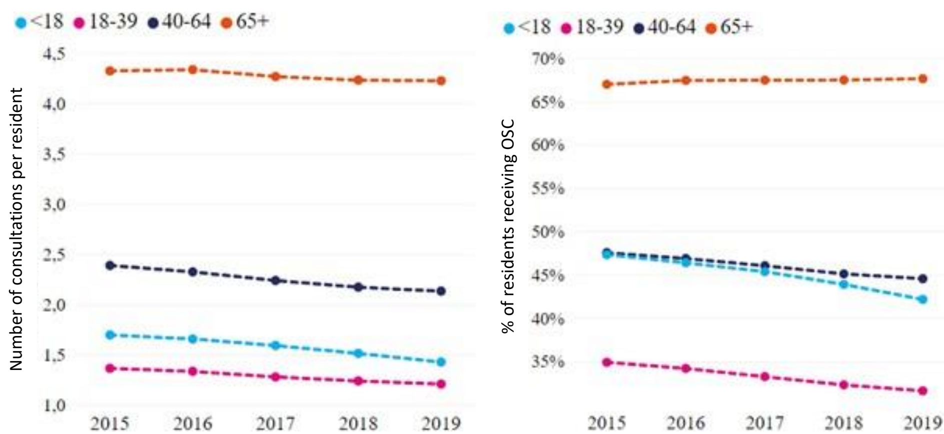
Figure 9. Expenditures on hospital treatment and other types of services in 2017.



Source: MZ study based on data from OECD

A decline in the share of OSC in the costs of health care services
incurred by NFZ and a decline in the number of patients receiving OSC have been observed for several years.

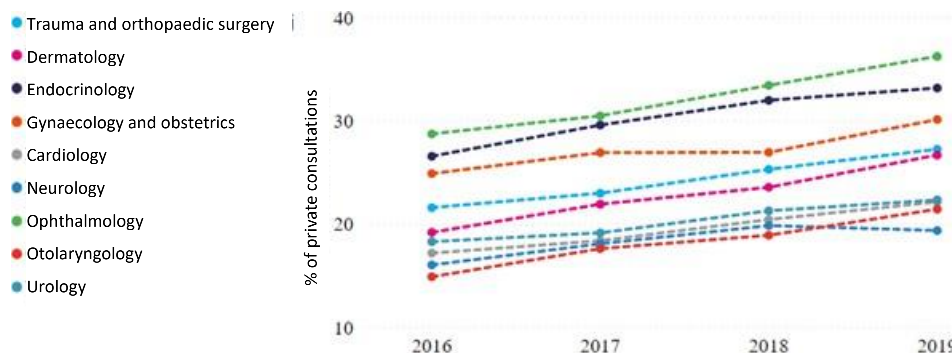
Figure 10. Number of consultations and patients receiving OSC between 2015 and 2019 per population by age groups.



Source: MZ study based on data from NFZ

The number of consultations carried out under NFZ decreased, whereas the number of consultations in private health care increased.

Figure 11. Percentage of private consultations (out of all consultations) between 2016 and 2019 for nine selected specialisations.

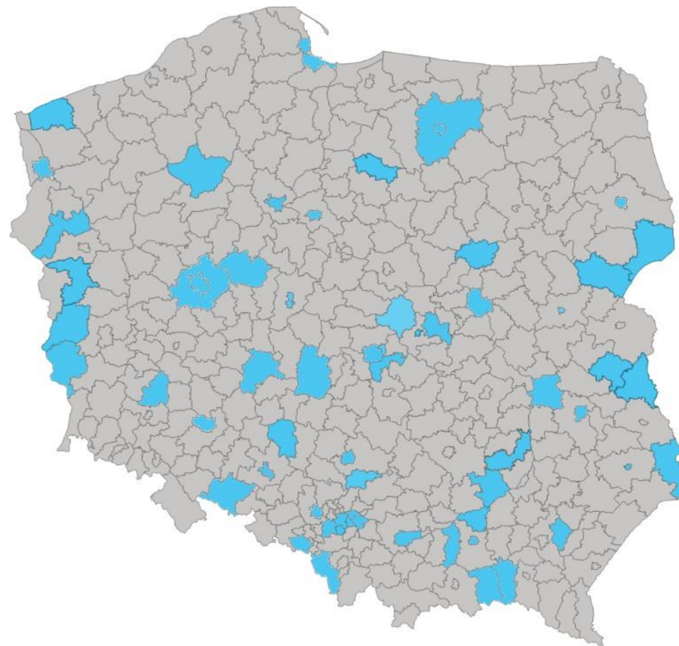


Source: MZ study based on data from GUS (ZD-3 reports) and NFZ

One of the main reasons why patients choose private services is the long waiting time for health care services. In February 2020, in four medical specialisations (cardiology, endocrinology, urology, and ophthalmology), the average waiting time for health care services was one of the longest, exceeding 100 days for stable cases and 50 days for urgent cases.

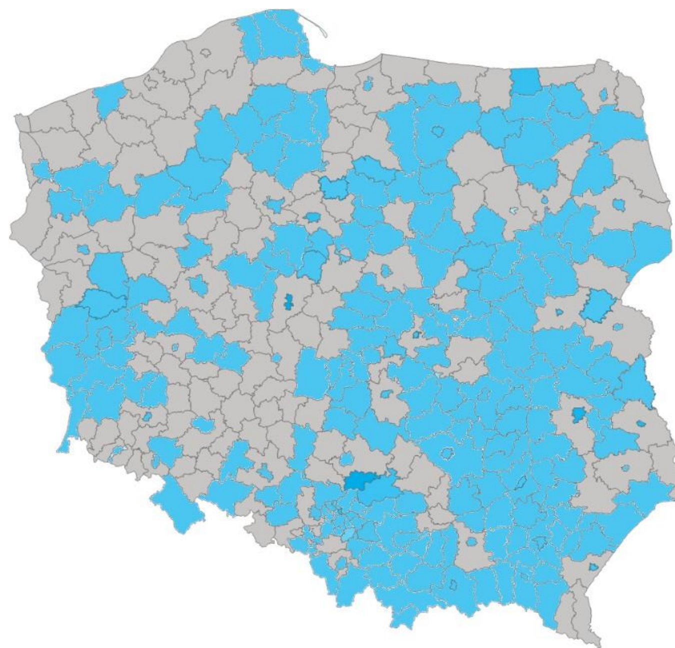
The following figures show the accessibility of OSC clinics (geriatrics, endocrinology, as well as obstetrics and gynaecology). The grey colour indicates districts with no such clinics. There are large differences in the accessibility of outpatient clinics. Very low accessibility of geriatric outpatient clinics is apparent, as compared to gynaecological and gynaecological and obstetric ones. Given the demographic trends, this should be taken into account when planning the provision of OSC, especially at the regional level, to meet the needs of Poles.

Figure 12. Districts with geriatric outpatient clinics in 2019.



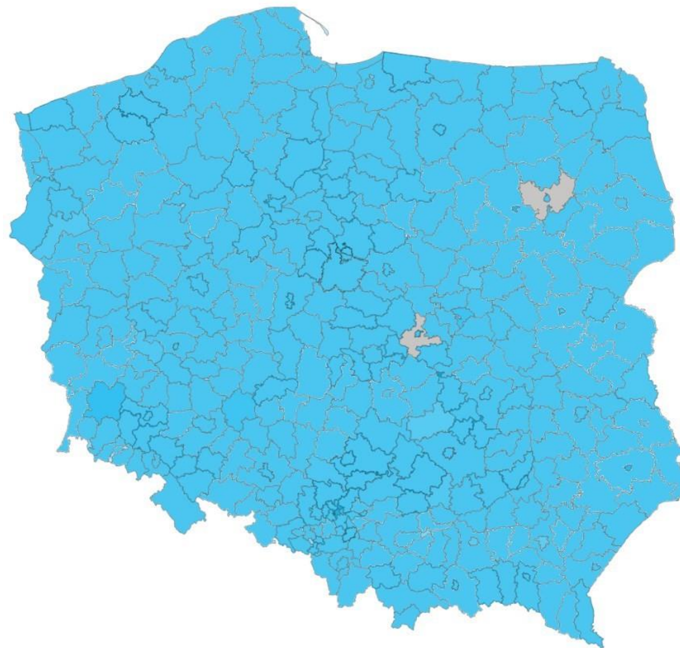
Source: MZ study based on data from GUS and NFZ

Figure 13. Districts with endocrinological outpatient clinics in 2019.



Source: MZ study based on data from GUS and NFZ

Figure 14. Districts with gynaecological and obstetric-gynaecological outpatient clinics in 2019.



Source: MZ study based on data from GUS and NFZ

Key health needs and challenges of health system organisation

1. Financing a system of services that motivates the OSC to provide treatment that does not require hospitalisation, but is often the basis for referral to hospital treatment (this applies particularly to in-depth diagnostics and less complex treatments).
2. Ensuring greater coordination between PHC and OSC for patients with chronic diseases (e.g. by introducing electronic medical records), which will increase the role of PHC in the treatment of this group of diseases and relieve specialist outpatient clinics.
3. Providing greater access to outpatient clinics in other specialisations characterised by extremely long waiting times for health care services, among other things, by developing tools to facilitate the process of making appointments and cancelling them and introducing solutions that will motivate patients to notify health care providers of the cancellation of appointments.
4. Providing fast, specialist night medical care by establishing CNPL.

Actions taken at supraregional level

Action 2.5.1.

Creating a three-tier system for providing night medical care:

1) Completing a health questionnaire or talking to a consultant. Availability of survey on IKP, moje IKP, DOM platform, automated hotline, contact with a consultant. A completed questionnaire or consultation is the basis for contacting CNPL;
2) Creating a network of district outpatient clinics and discontinuing the services provided by entities currently providing night and holiday health care;
3) Instructing the patient to call the EMT if the patient's history shows a suspected immediate life-threatening situation.

The new form of night medical care will be implemented after the pilot programme.

Expected results of the action:

1) Providing rapid, specialist, night and holiday health care;
2) Relieving EDs;
3) Establishing CNPL.

Entities responsible for implementing the action: MZ, CeZ, NFZ.

Planned period during which the action will be implemented: 2021-2022.

Estimated cost of the action: PLN 20.0 million (twenty million zlotys – the cost for implementation, without service).

Action implementation indicators:

1. Number of persons benefiting from NHHC.
2. The number of persons using online consultations with NHHC.
3. Percentage of ED visits following online consultations.

Action 2.5.2.

Developing a central e-registration system that will allow patients to register for selected medical services.

According to the current plan, e-registration will be launched for the following services from 1 January 2022:

1) in the field of orthopaedics and traumatology of bones and joints;
2) in the field of cardiology;
3) in the field of neurology;
4) in the field of endocrinology;
5) magnetic resonance imaging (MRI);
6) computed tomography (CT).

Expected results of the action: optimising the provision of services. The proposed solution will allow visits to be entered and cancelled via IKP.

Entities responsible for implementing the action: MZ, CeZ.

Planned period during which the action will be implemented: 2021-2027 (e-registration is expected to be operational from 2022).

Estimated cost of the action: PLN 25.0 million (twenty-five million zlotys).

Action implementation indicators:

1. Number of persons who cancelled an appointment in time for another patient to make use of this appointment.
2. Waiting times for individual services.

Action 2.5.3.

Implementation of the *Inverted Pyramid of Services* project concerning the development of assumptions
and implementation of system solutions aimed at:

1) Relieving the hospital system of the need to provide diagnostic and treatment services of an outpatient nature and providing them as part of OSC and PHC;
2) Introducing the *paying for performance* mechanism and differentiating payments depending on the complexity of the case;
3) Developing schemes of cooperation/communication between hospitals, OSC and PHC as part of diagnosis and treatment, including further development in the DOM platform;

4) Implementing diagnostic and therapeutic packages that enable the rationalisation of OSC resources by reducing the generation of visits;

5) Modifying and optimising the characteristics of JGP, including the inclusion of U07 diagnoses related to COVID-19 diagnosis and treatment.

Expected results of the action:

1) Increasing the quality and efficiency of services while organising care in a way that is more accessible to patients (outpatient care) and reallocating resources that are currently allocated redundantly to inpatient care;

2) Improving the efficiency of the use of resource potential in the case of hospitalisations and creating incentives to promote performance and quality;

3) Increasing the share of *outpatient* (and one-day) services;

4) Rationalising the use of OSC resources and reducing waiting times;

5) improving *patient experience*.

Entities responsible for implementing the action: MZ and NFZ.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: PLN 45.0 million (forty-five million zlotys).

Action implementation indicators:

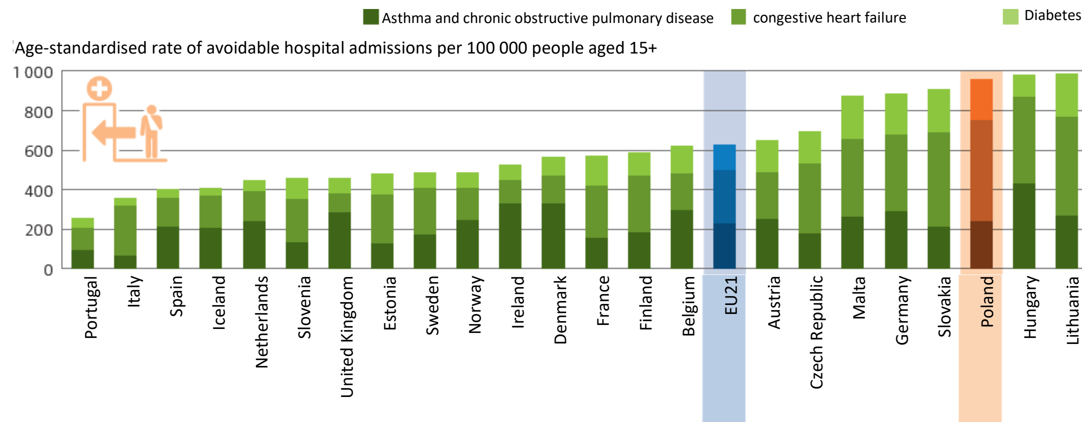
1. Rate of visits per patient in disease groups in OSC.
2. Number of one-day hospitalisations.
3. Average value of hospitalisation.

2.6. Hospital treatment

Diagnosis resulting from the map of health needs

The number of hospitalisations due to some chronic diseases is much higher than the aetiology of the disease would indicate. Among patients with chronic diseases, such as ischaemic heart disease and diabetes, a high rate of hospitalisation has been observed, which has not changed significantly since 2014. The level of avoidable hospitalisations for conditions that can be treated on an outpatient basis is one of the highest in Europe and reveals shortcomings in the services provided as part of PHC.

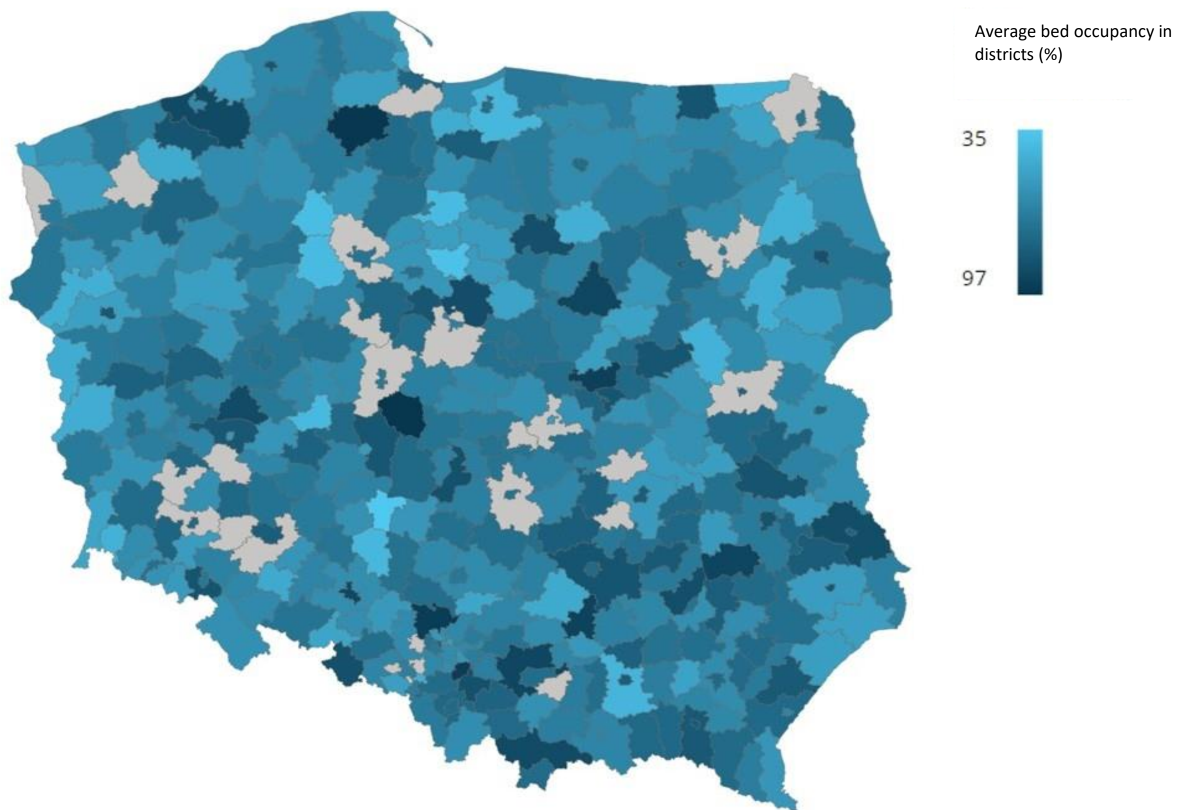
Figure 15. Rate of avoidable admissions to medical practitioners in selected EU countries



Source: 2019 OECD statistics concerning health (data for 2017 or the coming year)

It should also be noted that Poland has one of the highest rates of hospital beds per 100,000 population in Europe. In addition, the issue of their low occupancy in most areas of the country is a significant problem.

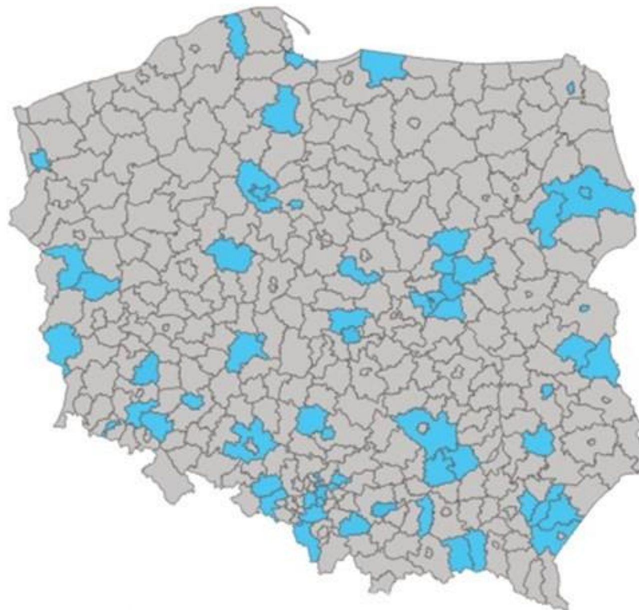
Figure 16. Average bed occupancy as a percentage in districts in Poland in 2019.



Source: study based on data from RPWDL and NFZ

Only approx. 1% of beds are beds in geriatric and psychogeriatric wards. Moreover, it can be observed that their availability varies strongly by region. In 2019, geriatric or psychogeriatric beds were available in only 81 entities (in 66 districts).

Figure 17. Districts with geriatric and psychogeriatric beds in 2019 (highlighted in blue)

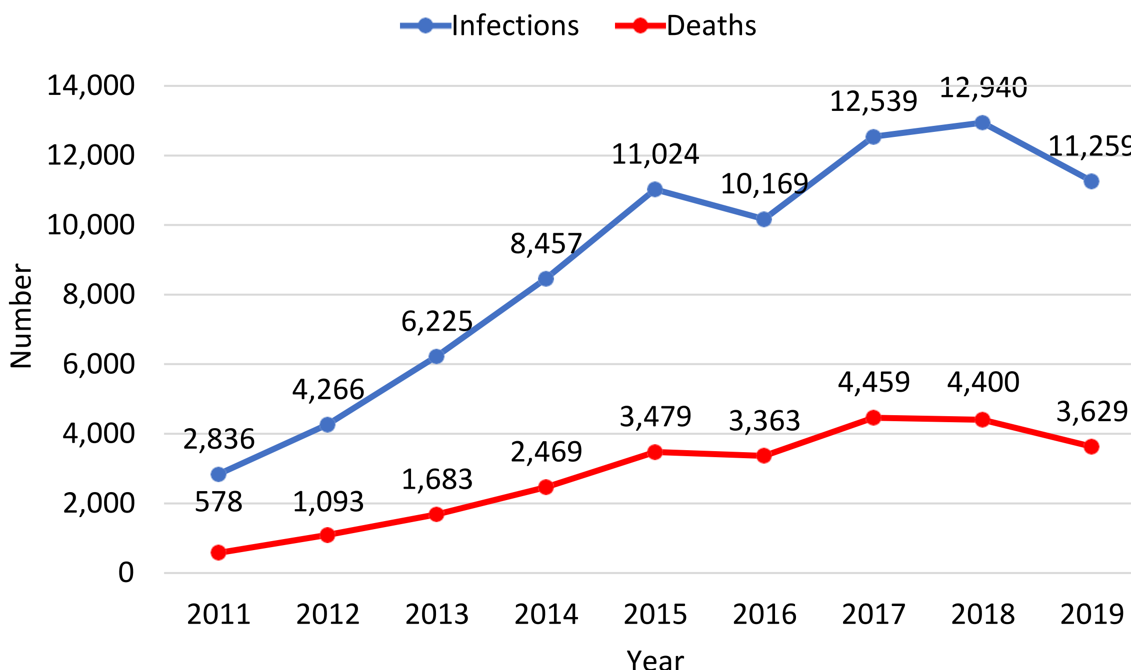


Source: MZ study based on data from RPWDL

With a view to optimising the use of resources, as the population ages, the development of the infrastructure of health care providers converting hospital wards or their parts into geriatric wards should be strongly supported. According to the Programme for the Modernisation of Health Care Providers, to meet current geriatric needs, at least 850 geriatric beds should be created by converting beds in other wards that are characterised by low occupancy. This is a recommendation that is an important vector of change at both the national and regional levels of health care rationalisation planning. In addition, it is also appropriate to provide access to services in other wards, especially internal medicine wards, considering that in practice, the profile of the patient in the internal medicine ward overlaps with the geriatric patient, and due to human resources.

Quality is also an important issue in hospital treatment. One of the indicators showing the need for improvement in this area is hospital-acquired infections. For example, an increasing number of patients with CDI and deaths caused by it has been observed in recent years.

Figure 18. Number of CDI infections and deaths within 90 days of CDI diagnosis from 2011 to 2019



Source: MZ study based on data from NFZ

Another challenge facing Polish hospitals is the further concentration of services in centres with appropriate facilities and experience for rare diseases and other diseases requiring complex and comprehensive treatment. The analysis shows that in 2019, as many as 16% of patients underwent complex treatment carried out in primary referral level hospitals or outside the network.

Key health needs and challenges of health system organisation

1. To reduce the excessive number of hospitalisations, which generates unsubstantiated costs, it is recommended to increase the availability of diagnostic tests in outpatient settings, in particular through regulations favouring the provision of these services in OSC (e.g. adequate valuation of services, quality indicators).
2. Along with an increase in the number of patients treated in OSC, there will be a decrease in the occupancy rate of beds in hospital wards; therefore, the number of beds in hospital wards should be rationalised or converted into long-term care beds according to demographic forecasts.

3. It is necessary to continue the process of centralisation and concentration of services in centres with appropriate facilities and experience for rare diseases and other diseases requiring complex and comprehensive treatment.

4. At the same time, scheduled and one-day forms should be developed to provide the population with treatment services whereas costs should be optimised.

5. It is also necessary to ensure more extensive use of indicators of the quality of services provided. These indicators should be analogous to those used in comparisons with other countries. It is also advisable to introduce indicators based on declarative measures from surveys completed by patients, assessing the procedures performed and the overall quality of services. The increase in the quality of services provided during hospital treatment should be further supported, among other things, by emphasising the role of accreditation in health care while ensuring that its standards are kept up to date, implementing a system of reporting adverse events not based on blame, as well as attributing greater importance to the quality indicator in the algorithm for calculating contract amounts, and consequently increasing the role of paying for the quality of services.

Actions taken at supraregional level

Action 2.6.1.

Introducing legal solutions that enable and support the modernisation and improvement of the efficiency of health care providers providing treatment in the form of inpatient services (hospital entities), including:

1) Improving the economic efficiency of hospital entities by evaluating them and assigning them to the appropriate category, which will determine the development and corrective actions to be taken in individual entities;

2) Adjusting the operations of hospital entities to the regional needs, taking into consideration the efficient and safe use of human resources in the health care system. Such an adjustment may involve the consolidation of medical functions and the need to reprofile some hospital entities (rationalisation of the pyramid of services);

3) Creating a system for overseeing the repair and development processes of hospital entities by establishing an institution that will be responsible for initiating, supporting and monitoring such processes. The institution will also have other tasks with respect to hospital entities, such as organising and coordinating joint purchases, as well as financial, substantive and expert support;

4) Improving the quality of hospital management through certification and development;

5) Introducing or improving the hospital entity management process model;

6) Updating the network of hospitals (system of basic hospital provision of health care services - PES) based on the following assumptions:

   a) Maintaining the non-competitive procedure for concluding contracts under PES,

   b) Creating local consortia to consolidate resources,

   c) Basing the qualification process on wards rather than hospitals, which will facilitate the inclusion of atypical hospitals that are important from the point of view of providing access to specialist services in the network,

   d) Putting emphasis on the more extensive use of indicators of the quality of the services provided,

   e) providing the basis for taking actions to rationalise the healthcare pyramid for hospitals, including by implementing the provisions of the Act of 27 October 2017 on primary health care on 1 October 2021,

   f) Implementing a hospital financing system that ensures an efficient, profitable and sustainable structure of service coverage (including the concentration of services),

   g) Transitioning to one-day forms of care.

Expected results of the action:

1) Optimisation of operations of hospital entities;
2) Adjustment of operations of hospital entities to regional needs;
3) Introduction or improvement of the hospital entity management process model;
4) Repairing of the operations of the hospital entity and restructuring of its debt;
5) Concentration of services, rationalisation of costs of operations, rationalisation of expenses of the public payer, improvement of the standard and quality of services;
6) Easier operation of a consistent policy for the provision of health care services.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2022.

Estimated cost of the action: the costs will be specified once the conceptual work has been completed.

Action implementation indicator:

1. Publication of the act in the Official Journal.

Action 2.6.2.

Creating conditions for the development of specialist centres and taking actions to improve the concentration of services: National programme for the treatment of patients with haemophilia and related haemorrhagic diathesis for 2019-2023

Expected results of the action:

Improving the quality of treatment for patients requiring specialised treatment, including:

1) Reducing the number of people who are unable to study or work due to haemorrhagic strokes and who go on disability pension early;
2) Reducing the number of patients suffering from lack of proper treatment of haemophilia or related haemorrhagic diathesis;
3) Improving the quality of life of patients;
4) Providing a maximum number of patients with care in haemophilia and related haemorrhagic diathesis treatment centres;
5) Improving the knowledge of medical staff on the treatment of haemophilia and related haemorrhagic diathesis.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2019-2023.

Estimated cost of the action:

1. 2021 PLN 356.5 million
2. 2022 PLN 372.0 million
3. 2023 PLN 384.3 million

In total, in the period from 2019 to 2023 - PLN 1,713.6 million (one billion seven hundred and thirteen million six hundred thousand zlotys).

Action implementation indicators:

1. Number of patients of haemophilia and related haemorrhagic diathesis treatment centres.
2. Number of haemophilia and related haemorrhagic diathesis treatment centres with medical personnel trained under the Programme.
3. Number of deposits of clotting factor concentrates with Programme funds.

Action 2.6.3.

Creating conditions for the development of specialised centres and taking actions to improve the concentration of services: Plan for Rare Diseases.

Expected results of the action:

Improving access to modern diagnostics and multidisciplinary coordinated medical care for patients with rare diseases in line with the state of the art and technological capabilities.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2023.

Estimated cost of the action:

In the Plan for Rare Diseases, the cost of 3 out of 5 planned tasks was estimated:

1. Establishment of specialist OECR in a procedure of recognising competence - no estimate of financial impact.
2. Development of national recommendations for the establishment of OECR - PLN 1.0 million.
3. Establishment of specialist OECR in a competitive procedure - no estimate of financial impact.
4. Development of recommendations for the diagnostic management of genetically determined rare diseases in OECR - PLN 1.5 million.
5. Development and implementation of a model for the settlement of services provided to a patient with a rare disease on an inpatient and outpatient basis - the cost of the task will be determined after the qualification process for healthcare services in the field of genetic diagnosis has been completed.

Action implementation indicators:

1. Implementation of legislation establishing criteria, rules and procedures for the establishment of OECR in Poland.
2. Number of eligible OECR established by the minister of health.
3. Number of OECR belonging to European reference networks for rare diseases.
4. Number of patients undergoing diagnosis and treatment in OECR.
5. Number of large-scale genomic tests performed that were commissioned under the competence of OECR and financed according to established rules from public funds (annual analysis, voivodeship consultants and national consultants).

6. Number of rare disease reports entered by OECR into the Polish Register of Rare Diseases.
7. Number or percentage of diagnosed diseases entered in the Polish Register of Rare Diseases.

Action 2.6.4.

Implementing the objectives of the Act on Quality:

1) Strengthening the role of accreditation;
2) Ensuring that standards are updated;
3) Introducing authorisations to hospitals;
4) Creating a register of adverse events;
5) Records and quality as components of entity financing.

Expected results of the action: Increased quality of patient treatment.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2022-2030.

Estimated cost of the action: PLN 363.8 million (three hundred sixty-three million eight hundred thousand zlotys).

Action implementation indicator:

1 Number of hospitals preparing quality reports.

Action 2.6.5.

1. Support for the development of infrastructure of health care providers converting hospital wards or their parts, in which inpatient geriatric and long-term care services will be provided with public funds.
2. Support for the development of infrastructure of health care providers establishing long-term care units.

Expected results of the action:

1) Improving the quality of care for the elderly and those requiring hospital treatment in the field of geriatrics;
2) Eliminating differences in regional access to services and ensuring that each voivodeship has an adequate number of places in health care providers in the field of hospital treatment - geriatrics;
3) Equipping health care providers with specialist equipment;
4) Reducing waiting times for hospital treatment - geriatrics;
5) Improving patient safety and comfort.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2029.

Estimated cost of the action:

1. 2022 – PLN 5.9 million
2. 2023 – PLN 52.7 million
3. 2024 – PLN 79.2 million
4. 2025 – PLN 69.9 million
5. 2026 – PLN 76.5 million
6. 2027 – PLN 76.5 million
7. 2028 – PLN 76.5 million
8. 2029 - PLN 0

In total - PLN 437.2 million (four hundred and thirty-seven million two hundred thousand zlotys). Support will be provided under the Subfund for Modernisation of Healthcare Entities separate from the Medical Fund.

Action implementation indicators:

1. Number of modernised and upgraded health care providers in the field of hospital treatment - geriatrics and long-term care.

2. Number of new geriatric and long-term care beds converted/created in health care providers.

Action 2.6.6.

Defining the basic regions to cover, taking into consideration assumptions regarding the operation of district hospitals.

Expected results of the action:

1) Reducing inequalities in access to services for patients;
2) Improving the satisfaction of health needs;
3) Improving indicators (DALYs) up to the level of European average indicators;
4) Improving care in disadvantaged areas (rural areas with difficult access to services and in areas at risk of poverty);
5) taking into consideration the specific nature of the region and disadvantaged areas/groups in determining the desired target state of the health care system.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2024-2027.

Estimated cost of the action: PLN 60.1 million (sixty million one hundred thousand zlotys).

Action implementation indicator:

1. Developing a tool to identify the basic regions to cover.

2.7. Mental health care and addiction treatment

Diagnosis resulting from the map of health needs

The share of expenditure on mental health care in Poland was relatively low and amounted to 3.05% of public expenditure on mental health care (according to financial plans for 2019[6]) compared to the average value in EU countries (6%).

Mental health care and addiction treatment have changed in recent years. In the case of mental health care for adults, in 2018, Mental Health Centres were established to provide access to coordinated and comprehensive care provided at a local level. The reform of child and adolescent psychiatry, implemented in 2019, provides for the establishment of treatment centres at three referral levels with access to primary referral level psychological and psychotherapeutic care

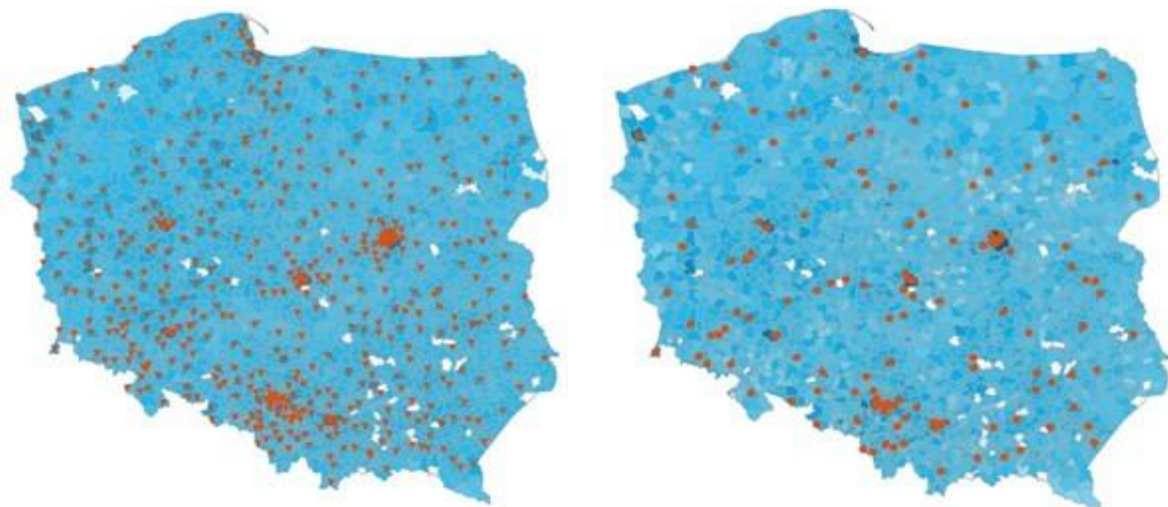
[6] https://www.politykazdrowotna.com/33851,plan-nfz-na-2019-r-ile-dokladnie-wyda-na-swiadczenia

in each district or group of districts. Currently, work is underway on the assumptions of the addiction treatment reform.

In 2019, the range of various forms of treatment differed. According to the analysis, Poland has the largest number of mental health clinics, and the patients residing in 98% of all municipalities in the country benefitted from them. The number of psychiatric wards was considerably smaller, but the treatment range also covered 98% of municipalities all over Poland - inpatient care does not need to be as close to home as other forms of psychiatric treatment. Day wards were used by patients residing close to service providers providing this form of treatment, but, as in the case of the CTTs, access to these forms of care was limited. Three per cent of patients received care in CTTs and two per cent in psychiatric day wards. Both CTTs and day wards allow patients to receive comprehensive treatment[7] that prevents exacerbations of certain disorders (e.g. schizophrenia[8]) and significantly reduce the likelihood of hospitalisation[9].

Figure 19. Location of mental health clinics along with the place of residence of their patients in 2019.

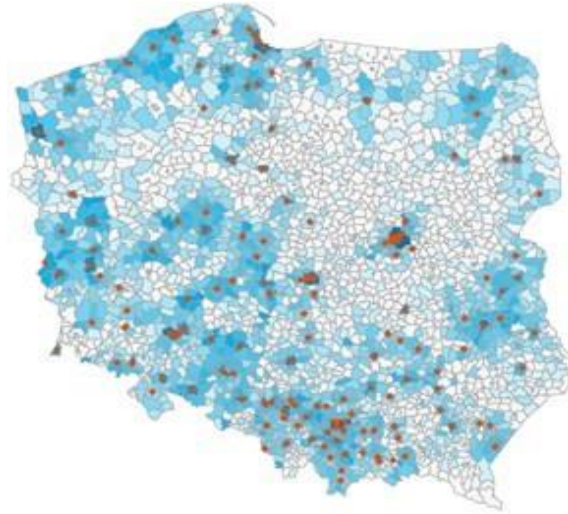
Figure 20. Location of hospital wards along with the place of residence of their patients in 2019.



[7] According to the National Mental Health Protection Programme for 2017-2022, comprehensive care consists of outpatient care, mobile/community care, day care, and 24-hour care.
[8] Health problem analysis: schizophrenia, http://analizy.mz.gov.pl:8080/app/schiz/
[9] http://www.psychoterapiaptp.pl/uploads/PT2009n3s43Cechnicki.pdf

Figure 21. Location of day wards along with the place of residence of their patients in 2019.

Figure 22. Location of community treatment teams, along with the place of residence of their patients in 2019.



Source: MZ study based on data from NFZ and GUS

Patients under the age of 18 often use forms of mental health care and addiction treatment intended for adults (11% of the consultations provided to such patients in outpatient clinics and by CTTs in 2019 took place in units dedicated to adults), as well as other types of health care services. The number of patients with a primary diagnosis of mental disorder (ICD-10 in the range F00-F99) in paediatric wards (4,100 patients) was equal to almost half the number of patients in paediatric psychiatric wards. In the age groups 0-5 years and 6-11 years, more patients received care in the form of OSC services than in the form of mental health care and addiction treatment (considering only services with a primary diagnosis of mental disorders).

In the case of psychiatric treatment of children and adolescents, there was very limited access to every form of treatment in 2019. In 2019, in Poland, there were only three CTTs for children (in Wrocław, Kraków, and Żory). There was not a single hospital ward of this type in the Podlaskie Voivodeship.

In 2019, in Poland, there were 426 paediatric psychiatrists (7.7 per 100,000 people aged 0-14). The median in EU countries in 2016 was 10 medical practitioners specialising in paediatric psychiatry per 100,000 people aged 0-14[10]. The

[10] https://gateway.euro.who.int/en/indicators/cahb_survey_39-rate-of-practicing-child-psychiatrist-per-100000-population-aged-0-14-years/visualizations/#id=34022&tab=graph

number of paediatric psychiatrists per 100,000 people, recommended by national consultants, is 2.0, while the actual number in Poland was 1.1.

Key health needs and challenges of health system organisation

1. For adult treatment: disproportion of services provided in the form of inpatient care compared to outpatient and day care (higher financing costs for the former) and difficult access to comprehensive and coordinated care. It is required to take actions aiming to develop a community model of mental health care that guarantees well-coordinated mental health care close to home.
2. In the case of treatment of children and adolescents: failure to meet population needs for psychiatric services for children and adolescents, difficult access to comprehensive and coordinated care. It is necessary to include community therapy in care and to coordinate care with the patient's family and school.
3. Insufficient number of psychiatrists in relation to demand - difficult access to services the prerequisite for which is a specialist medical practitioner in psychiatry or a medical practitioner who has a first-degree specialisation in psychiatry or a specialist registrar in psychiatry.

Actions taken at supraregional level

Action 2.7.1.

Developing entities providing coordinated mental health care based on the assumptions of the community model (Mental Health Centres).

Expected results of the action:

Increase in the number of entities providing coordinated mental health care based on the assumptions of the community model.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2022-2027..

Estimated cost of the action: PLN 1,780 million (one billion seven hundred and eighty million).

Action implementation indicators:

1. Number of districts with access to entities providing coordinated mental health care based on the assumptions of the community model and municipalities included in the area of responsibility over the years.

2. Number of hospitalisations, including the length of the patient's stay in the ward, the number of outpatient consultations, including community consultations.

Action 2.7.2.
Disseminating a new model of child and adolescent mental health care, including:

1) increasing the number of primary referral level centres - creating new service providers and transforming current service providers into secondary and tertiary referral level entities;
2) increasing the number of specialist medical practitioners, especially in the areas of smaller municipalities;
3) developing organisational and treatment standards.

Expected results of the action:

Increased number of service providers providing health care services in the field of mental health care for children and adolescents, thereby improving access to such services.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2022-2027..

Estimated cost of the action: Contract values for providing psychiatric services dedicated to children and adolescents:

1) 2021: PLN 478.4 million (four hundred and seventy-eight million four hundred thousand zlotys);
2) 2022: PLN 555.7 million (five hundred and fifty-five million seven hundred thousand zlotys).

Action implementation indicators:

1. Number of (secondary and tertiary referral level) mental health care centres for children and adolescents as provided for in the new model.
2. Number of services in the field of mental health care provided to children and adolescents (including the number of community services and the number of hospitalisations, including the duration of the patient's stay in the ward).

2.8. Medical rehabilitation

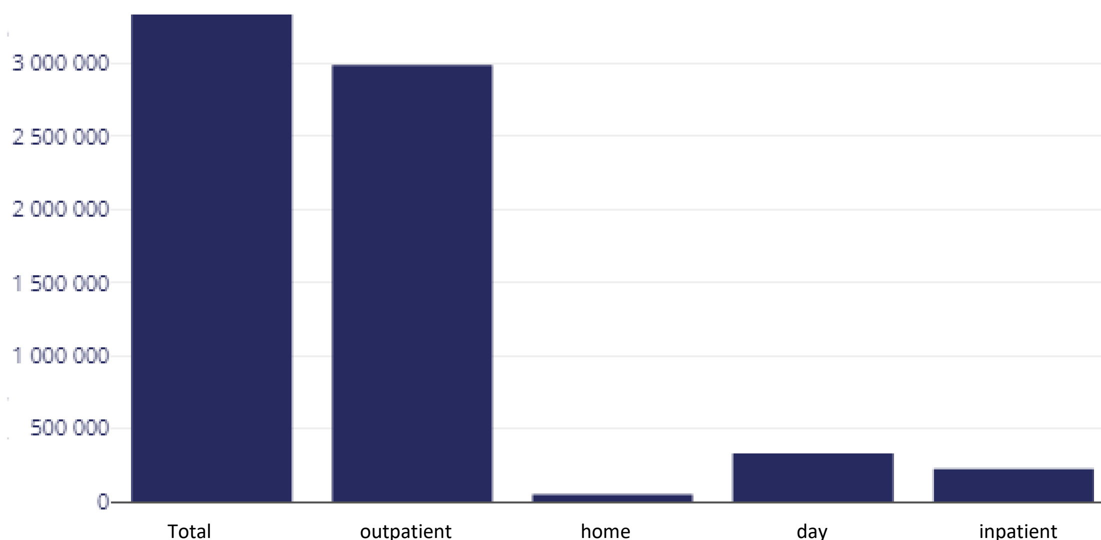
Diagnosis resulting from the map of health needs

The number of rehabilitated patients in the period from 2016 to 2019 was similar and amounted to 3,360,000 in 2016 and 3,340,000 in 2019, despite an increase in NFZ expenditure on this purpose in the same period from PLN 2.24 billion to PLN 2.99 billion. Due to demographic changes, it is projected that the demand for such services will increase. It is estimated that the number of persons requiring rehabilitation will increase by 4.5% by 2025, by 6.4% by 2030, and by 7.1% by 2040 compared to 2019.

Already, demand for rehabilitation services exceeds supply and results in long waiting times. In February 2020, 905,000 people waited for outpatient physiotherapy services, 169,000 people for inpatient general rehabilitation services and 134,000 people for admission to rehabilitation outpatient clinics. The average waiting time for urgent cases was 102 days, 160 days and 69 days, respectively. Long waiting times result in rehabilitation being undertaken late, which has a negative impact on the health of patients.

Rehabilitation provided by NFZ is mainly carried out on an outpatient basis (90% of all rehabilitated patients), less frequently in day care facilities, on an inpatient basis and at home.

Figure 23. Number of rehabilitated patients by type of services in 2019.



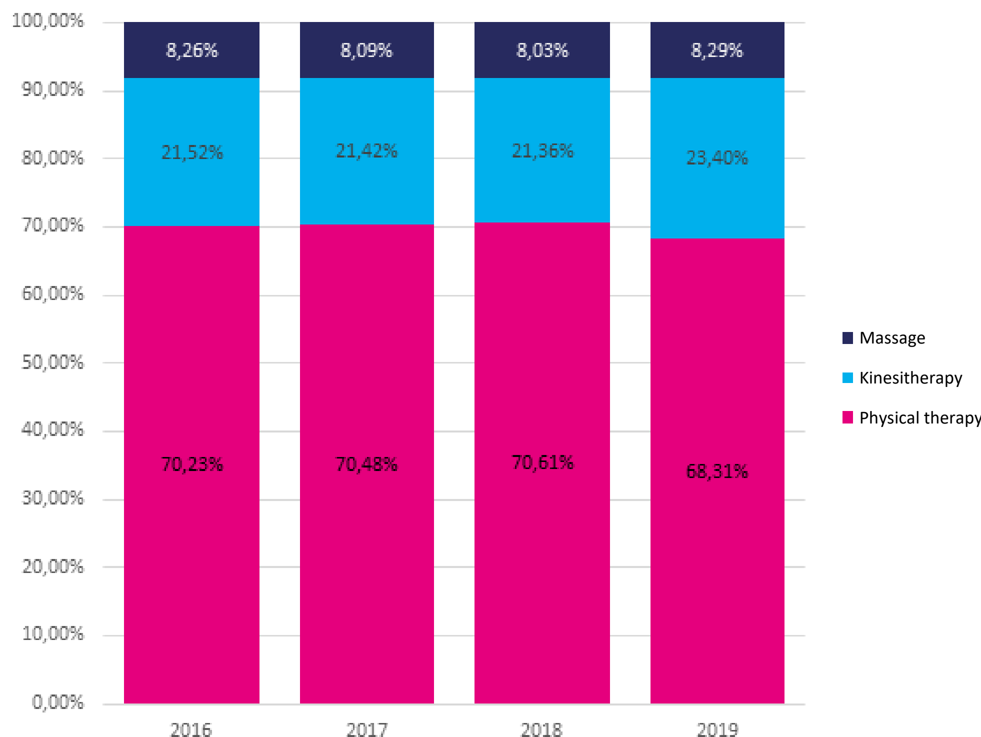
Source: MZ study based on data from NFZ

During the period under review, there was a dynamic increase in the number of services provided at home from 4,700 patients and 600,000 treatments in 2016 to 48,500 patients and 7,900,000 treatments in 2019.

There are significant reservations concerning the performance of rehabilitation procedures, especially on an outpatient basis. In particular, many physiotherapy procedures are performed (68.3%) compared to kinesitherapy (23.4%), while the effectiveness of kinesitherapy is more thoroughly documented. Despite physiotherapists gaining the ability to set a treatment plan, there was little change in the structure of services provided. The increasing number of physiotherapy sessions from 37,000

in 2018 to 2,230,000 in 2019 only slightly translated into adjusting services to individual patients' needs.

Figure 24. Structure of services in outpatient physiotherapy



Source: MZ study based on data from NFZ

Attention is also drawn to the growing problem of lower back pain in Poland. According to the DALY methodology used in mapping health needs, this health problem accounted for 4.52% of the disease burden, ranking fourth behind ischaemic heart disease, stroke and lung cancer. Unlike the above-mentioned diseases, back pain does not contribute to premature mortality, but due to the prevalence and long duration of the ailment over the life cycle, it has a very strong impact on the quality of life. This justifies the promotion of the accessibility of such services, as insufficient funding may result in physiotherapists moving to the non-public sector, where accessibility is mainly determined by patient wealth.

In addition, based on the diagnosis derived from the map of health needs in the area of rehabilitation services, a large regional variation and migration are observed. Therefore, all actions supporting the accessibility of rehabilitation care at the regional level are recommended.

Key health needs and challenges of health system organisation

1. Aiming to improve the availability of services, especially in outpatient physiotherapy, inpatient general rehabilitation and rehabilitation clinics.
2. In addition, demographic changes resulting in an increase in the number of elderly people should be taken into account, which may predict an increase in the number of patients undergoing rehabilitation procedures in the following years.

Actions taken at supraregional level

Action 2.8.1.

Update of the Regulation of the Minister of Health of 6 November 2013 on guaranteed services in the field of therapeutic rehabilitation (Dz.U. /Journal of Laws/ of 2021, item 265), with particular emphasis on outpatient physiotherapy services for "severe" patients. In addition, an evaluation of the tariffs of physiotherapy procedures is assumed.

Expected results of the action:

1) restoring the persons covered by the support to full or maximum attainable physical or mental fitness, as well as the ability to work and to take an active part in social life;
2) increasing access to rehabilitation services.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2022-2023.

Estimated cost of the action: no-cost legislative action.

Action implementation indicator:

1. Announcement of the regulation of the Minister of Health amending the regulation on guaranteed services in the field of therapeutic rehabilitation.

Action 2.8.2.

1. New organisation of the therapeutic rehabilitation system, including revision of the valuation of individual health services.
2. Work on the separation of basic physiotherapy care, including early childhood physiotherapy and physiotherapy for the elderly.
3. Development of coordinated post-surgical and post-covid care.

Expected results of the action:

Creating a model for optimal rehabilitation care.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2022-2023.

Estimated cost of the action: at no cost (conceptual work).

Action implementation indicator:

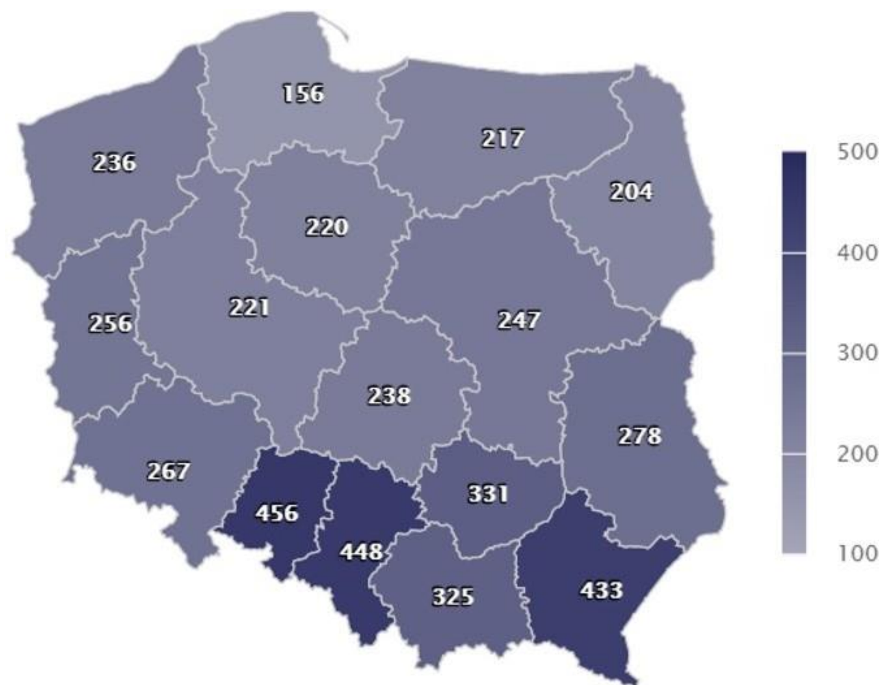
1. Model of rehabilitation care in Poland.

2.9. Long-term care

Diagnosis resulting from the map of health needs

The number of patients covered by long-term care services per 100,000 population is unevenly distributed in terms of location across the country. In the southern voivodeships, a higher percentage of the population receives long-term care compared to the northern voivodeships.

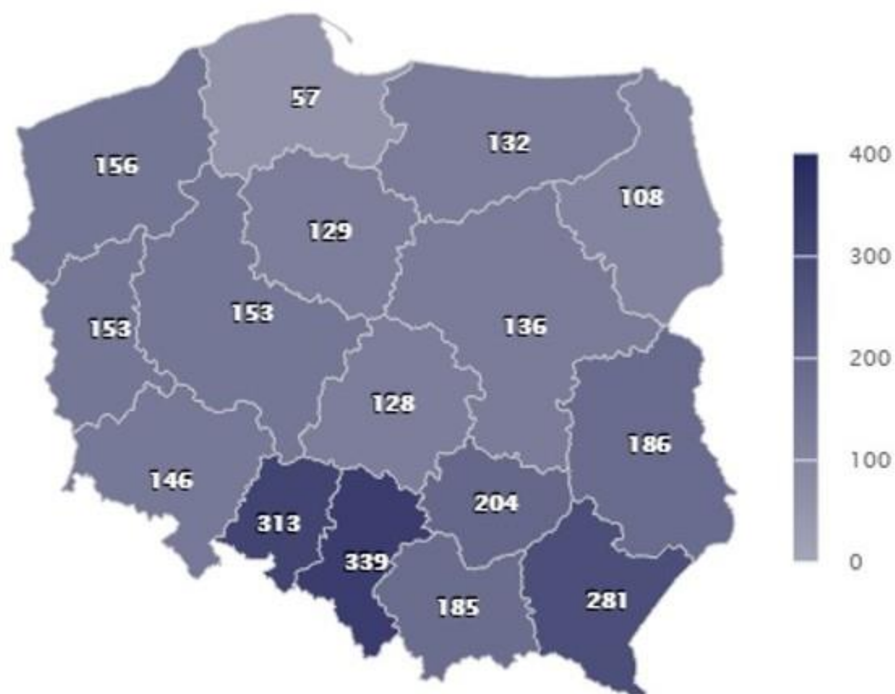
Figure 25. The number of patients who received long-term care services in 2019 by voivodeship, per 100,000 population of the given region.



Source: MZ study based on data from NFZ and GUS

Most of the health care services provided as part of long-term care are based on home care. However, the share of patients receiving formal home care in total long-term care is still too low. At the level of the entire country, it is 61.2%, and among patients over 65 years of age, it is 60% (the OECD average is 67.5%).

Figure 26. The number of patients covered by long-term home care per 100,000 population by place of service provision in 2019.



Source: MZ study based on data from NFZ and GUS

The Polish health care system still lacks a sufficient number of long-term day care services tailored to the individual needs of patients and their relatives, combining some specific features of organised institutional care and home-based care.

In Poland, informal care for people who need support in daily functioning is provided primarily by family members, friends or neighbours — mainly women in mid to late adulthood[11].

It is expected that as a result of changes in the traditional family model and lifestyle of society, informal care will become a less significant form of care for people requiring support in their daily functioning than it is today. Moreover,

[11] World Bank, 2015. The Present and Future of Long-Term Care in Ageing Poland, http://www.niesamodzielnym.pl/uploads/Bank%20%C5%9Awiatowy%20Opieka_dlugoterminowa.pdf, accessed on 2 June 2020.

due to the ageing population, the age of informal caregivers will also increase, thus affecting their ability to provide care. These changes will result in increased demand for long-term care services, including publicly funded nursing and care services.

Key health needs and challenges of health system organisation

1. Increasing the share of formal community health care provided in the vicinity of the patient's place of residence in relation to institutional care by increasing the number of services provided under home-based or day care settings, particularly in the voivodeships with a low share of these forms of care in relation to the national level.
2. Equalising differences in access to long-term care in voivodeships with lower than the national average number of persons covered per 100,000 population, with particular emphasis on the population over 65 years of age. Ensuring that each voivodeship has adequate access to long-term care for people over 65, provided in home and day care settings, according to health needs. years of age.
3. Creating means of support and assistance for informal caregivers (predominantly women) of people in need of support in daily functioning, thus limiting the negative impact of caregiving on the health and health-related quality of life of caregivers.

Actions taken at supraregional level

Action 2.9.1.

Including medical caregivers among the personnel that provides guaranteed services in long-term care and palliative and hospice care in the home setting.

Expected results of the action:

Increasing the availability of guaranteed services in long-term care and palliative and hospice care provided in the home setting through their implementation by medical caregivers.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2023.

Estimated cost of the action: it is not possible to estimate its amount at this stage**.**

Action implementation indicators:

1. The percentage of patients receiving long-term care and palliative and hospice care in a home setting in relation to the total number of patients receiving long-term care services.
2. The percentage of patients receiving palliative and hospice care in a home setting in relation to the total number of patients receiving palliative and hospice care services.
3. The number of medical caregivers providing home care services in long-term care.
4. The number of medical caregivers providing home care services in palliative and hospice care.
5. The number of person-days in long-term care provided in the home setting.
6. The number of person-days in palliative and hospice care provided in the home setting.

Action 2.9.2.

Supporting the operation or creation of new DDOM day care places in accordance with the developed standard and the inclusion of these services in the guaranteed long-term care benefits.

Expected results of the action:

1) change in the scope of publicly guaranteed services (legislative action);
2) inclusion of public funding for healthcare services provided in DDOMs among the guaranteed services.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2022-2030.

Estimated cost of the action: Cost estimates will be possible once the design of the services provided in the DDOM has been developed.

Action implementation indicator:

1. The number of DDOMs that have received public funding for the provision of guaranteed long-term care services.
2. The number of patients receiving care at DDOMs under the system of guaranteed long-term care services.

Action 2.9.3.

Creating a system of day care support for people with dementia disorders and other chronic brain diseases resulting in memory disorders, as well as for the caregivers of such people, by establishing a network of DCWPs, operating based on a developed standard, in each of Poland's 16 voivodeships, and their ultimate inclusion in the system of guaranteed long-term care services.

Expected results of the action:

1) developing a standard for the operation of the DCWPs;
2) establishing at least 16 DCWPs in total; at least 1 per each voivodeship of the country;
3) improving health and psychophysical functioning in people with dementia and other chronic brain diseases resulting in memory disorders who receive care under the DCWP programme;
4) improving health-related quality of life in the informal caregivers of such persons who receive support under the DCWP programme;
5) integration of the positively validated forms of support implemented under the DCWP programme into the system of guaranteed long-term care services.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2022-2030.

Estimated cost of the action: DCWP pilot programme – PLN 50 million (fifty million zlotys).

Action implementation indicators:

1. The number of DCWPs established under the pilot that comply with the adopted standard.
2. The number of persons aged at least 65 and suffering from dementia disorders or other chronic brain diseases resulting in memory impairment supported using long-term day care services provided under the DCWP programme.
3. The number of DCWPs established.
4. The number of informal caregivers of persons with dementia disorders and other chronic brain diseases supported by DCWPs.
5. The number of people with dementia and other chronic brain diseases resulting in memory impairment whose health-related quality of life,

particularly that related to mental health, has improved as a result of the support received through the DCWPs established in the pilot.

Action 2.9.4.

1. Developing a framework training programme for informal caregivers of elderly people who need support in daily functioning, and conducting local training for them on this basis — by the end of 2022.
2. Developing a pilot psychological support and mental and physical health prevention programme for caregivers of the elderly and others who require support in daily functioning — by the end of 2022; this includes caregivers of people with dementia disorders.
3. Conducting a pilot psychological support and mental and physical health prevention programme for at least 1,000 caregivers of the elderly and others requiring support in daily functioning — by the end of 2025.
4. Evaluating the results of the conducted pilot programme and determining the possibility of incorporating the tested solutions into the system of guaranteed services — by the end of 2026.
5. Integrating the positively validated forms of support, as tested in the psychological support pilot programme for informal caregivers of the elderly and others requiring support in daily functioning, into the public health care system — by the end of 2030.
6. Developing assumptions for piloting an information and psychological support hotline for informal caregivers of persons with dementia disorders and those under their care; carrying out piloting of support for these persons on this basis, evaluating the results of the pilot and determining the possibility of further financing and maintenance of the hotline with public funds.

Expected results of the action:

1) Improving the competencies of informal caregivers of elderly people in need of support in their daily functioning as regards the proper care of such people;
2) Improving psychological and physical health, health-related quality of life and coping skills in informal caregivers of the elderly who need help in daily functioning, including in caregivers of people with dementia disorders;

3) Improving the quality and duration of informal care provided within the community.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2022-2030.

Estimated cost of the action:

1) Developing a programme and conducting training for informal caregivers PLN 20,000 (twenty thousand zlotys);
2) psychological support pilot programme — PLN 4 million (four million zlotys);
3) Developing assumptions and piloting a phone support hotline for informal caregivers of people with dementia disorders and those under their care — the cost of this activity will be determined once its implementation period has been planned.

Action implementation indicators:

1. The development by experts of a framework training programme for informal caregivers of the elderly requiring support in daily functioning and its transfer for use in regional activities.
2. The number of informal caregivers of the elderly and those requiring support in daily functioning who have been provided with psychological support under the pilot.
3. The development by experts of a pilot psychological support and mental and physical health prevention programme for caregivers of the elderly and others who require support in daily functioning, including caregivers of people with dementia disorders.
4. The number of positively validated forms of psychological support for informal caregivers of the elderly and those requiring support in daily functioning that have been integrated into the public health care system.
5. The establishment of an information and psychological support hotline for informal caregivers of people with dementia disorders and those under their care.
6. The number of counselling sessions provided to informal caregivers of persons with dementia disorders and those under their care through the dedicated information and psychological support hotline.

Action 2.9.5.

1. Supporting the development of the infrastructure of health care entities that opt to convert hospital wards or their parts into long-term care structures, where publicly funded inpatient nursing and care services will be provided.
2. Supporting the development of the infrastructure of health care entities through the modernisation or the establishment of new hospital wards or structures in which inpatient long-term care in the form of nursing and care services will be provided and financed with public funds.

Expected results of the action:

1) Improving the quality of care for the elderly and those requiring long-term care in an inpatient setting;
2) Bridging the gap in regional access to services and ensuring that each voivodeship has an adequate number of places in health care entities providing long-term care;
3) Equipping health care entities with specialised medical equipment necessary for the provision of long-term care services in an inpatient setting;
4) Reducing waiting times for long-term care services provided in an inpatient setting;
5) Improving the comfort of patients who receive long-term care in an inpatient setting.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2029.

Estimated cost of the action: a total of PLN 3,569.95 million (three billion, five hundred and sixty-nine million, nine hundred and fifty thousand zlotys).

Broken down by year:

1. 2022 – PLN 69.75 mln
2. 2023 – PLN 449.65 mln
3. 2024 – PLN 657.15 mln
4. 2025 – PLN 565.20 mln
5. 2026 – PLN 648.12 mln
6. 2027 – PLN 736.56 mln
7. 2028 – PLN 221.76 mln
8. 2029 – PLN 221.76 mln

The activities will be supported under the Subfund for Modernisation of Healthcare Entities separate from the Medical Fund.

Action implementation indicators:

1. The number of modernised and upgraded health care entities.
2. The number of converted or newly created beds for inpatient long-term care.

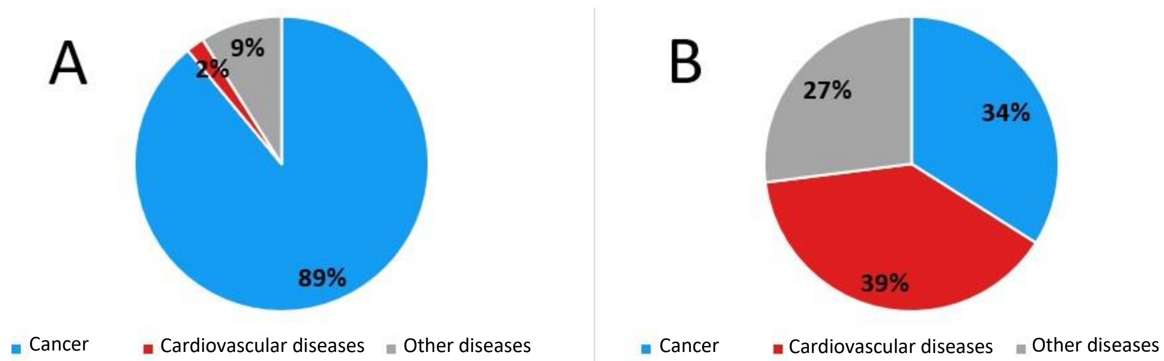
2.10. Palliative and hospice care

Diagnosis resulting from the map of health needs

In 2019, a total of 96,400 patients in Poland received palliative and hospice care services. Estimates indicate that about 146,000 palliative and hospice care places should be provided as of today, 97.4% of them in home care (about 142,000). Due to the changing age structure of the population and the increasing number of cancer patients, by 2050, the expected increase in demand for palliative and hospice care beds will be 38%. Poland will need around 202,000 places, including about 198,000 in hospices and about 3,400 in inpatient hospices/palliative medicine wards.

According to the Regulation of the Minister of Health of 29 October 2013 on guaranteed benefits in the field of palliative and hospice care (Dz. U. /Journal of Laws/ of 2018, item 742, as amended), such services may be provided to persons suffering from incurable, progressive and terminal neoplastic and non-neoplastic diseases. However, for adults, the list of diseases eligible for palliative and hospice care services is currently very narrow. In 2019, 89% of palliative and hospice care patients over 18 years of age had an oncology diagnosis. This distribution differs fundamentally from the estimates adopted by the WHO.

Figure 27. The distribution of disease types in patients covered by palliative and hospice care in Poland (A) and globally according to WHO estimates (B) in 2019.



Source: MZ study based on data from NFZ (A) and WHO estimates[12]

According to the Ministry of Health analyses, the diseases eligible for treatment should first be expanded to include heart failure and chronic renal failure.

In 2017, perinatal palliative care has been added to the package of guaranteed services, unifying the standard for providing such care and making it possible to finance it with public funding; however, access to this type of care remains unequal across Poland. In 2019, no such care was available in 5 voivodeships (Kujawsko-Pomorskie, Lubuskie, Świętokrzyskie, Wielkopolskie and Zachodniopomorskie), forcing patients and their families to migrate to neighbouring voivodeships.

Key health needs and challenges of health system organisation

1. People with incurable, progressive and terminal illnesses require health care adjusted to their needs, e.g. palliative care, hospice care or care provided under other types of guaranteed services. In order to guarantee patient comfort, it is advisable to shift the focus from inpatient wards to services provided in non-institutional conditions.
2. Supporting perinatal palliative care by providing opportunities for family psychological care and dignified dying conditions for children with fatal birth defects.

[12] https://www.who.int/nmh/Global_Atlas_of_Palliative_Care.pdf (B)

Actions taken at supraregional level

Action 2.10.1.

Analysing and completing the list of disease entities eligible for palliative and hospice care services.

Expected results of the action:

Streamlining the list of disease entities eligible for palliative and hospice services.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2023.

Estimated cost of the action: no-cost legislative action.

Action implementation indicator:

1. A completed analysis of the list of disease units eligible for palliative and hospice services.

Action 2.10.2.

Implementation of the activity "Palliative and hospice care" of the family support programme "For Life".

Expected results of the action:

1) Increasing the availability of palliative and hospice care services for children who need it, including services provided to children with fatal birth defects;
2) offering psychological care, provided by a qualified team of psychologists, to mothers of children with fatal birth defects, both during pregnancy and after delivery.

Entities responsible for implementing the action: MZ, NFZ.

Planned period during which the action will be implemented: 2022-2026**.**

Estimated cost of the action: PLN 2.85 million (two million eight hundred and fifty thousand zlotys).

Action implementation indicators:

1. The number of patients who received perinatal palliative care services.

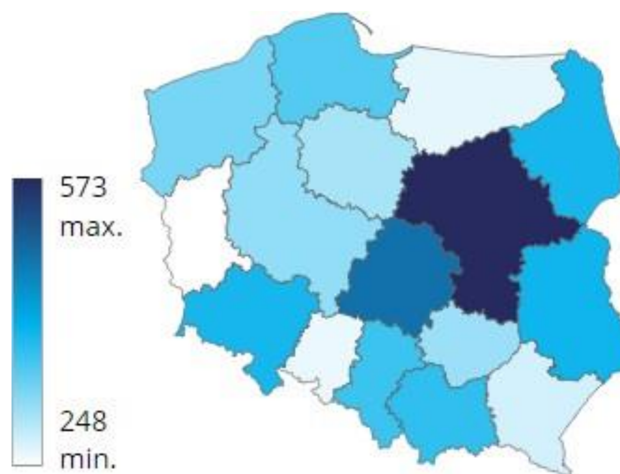
2. The number of service providers providing perinatal palliative care services.

2.11. Medical staff

Diagnosis resulting from the map of health needs

In 2019, the number of medical practitioners in Poland amounted to 131,000; this yields a figure of 342 such practitioners per 100,000 population. This is 10% lower than the OECD36 average as of 2017.[13]. At the same time, the distribution of the number of medical practitioners in Poland varies strongly by region. The Mazowieckie Voivodeship had the highest number of medical practitioners (573), whereas the Lubuskie Voivodeship had the smallest (248), indicating inequalities between the voivodeships as regards access to medical care.

Figure 28. The number of medical practitioners per 100,000 population by province

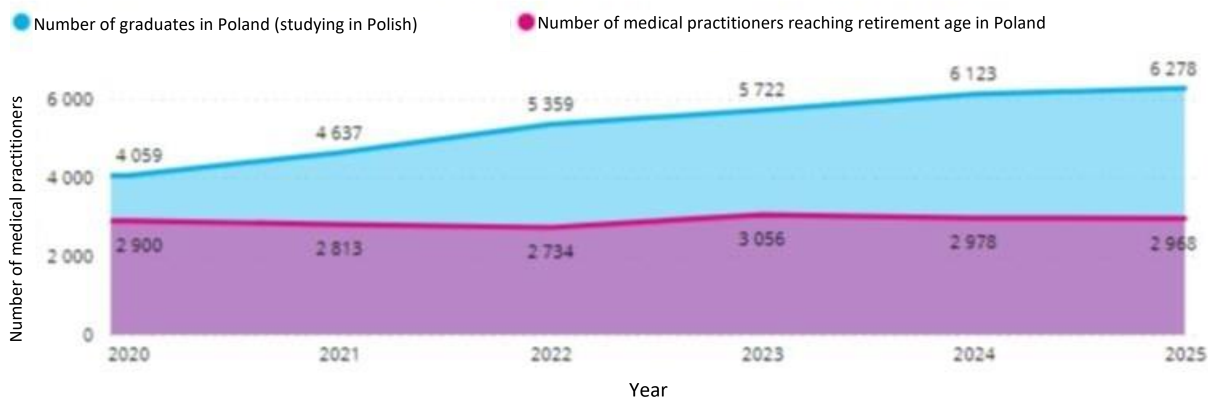


Source: MZ study based on data from CRL, NFZ, GUS

An analysis of the age of medical practitioners and medical graduates leads to the conclusion that the Polish health care system should not suffer a decrease in the overall number of medical practitioners in the coming years.

[13]OECD, Health at a Glance 2019

Figure 29. The number of medical graduates and the number of medical practitioners nearing retirement age



Source: MZ study based on data from CRL, NFZ and Regulation of the Minister of Health on the limitation of admissions to faculties of medicine and faculties of medicine and dentistry

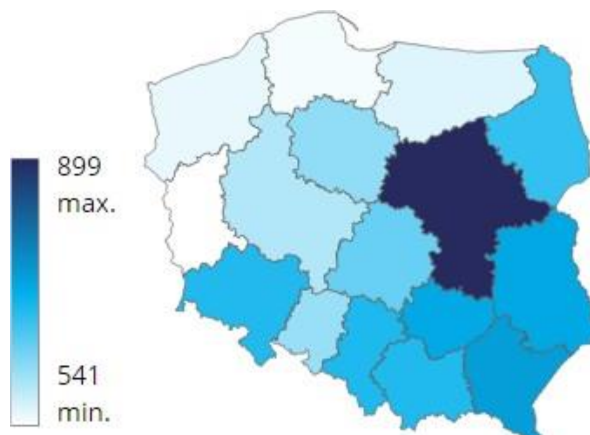
An analysis of the generational interchangeability of specialist medical practitioners shows that the field of internal medicine, where the number of doctors reaching retirement age almost was nearly double the number of doctors in specialised training, may face the most significant issues. However, based on the recommendations of national consultants, other fields of medicine, particularly family medicine and psychiatry, also deserve attention.

An ageing population means an increasing demand for nursing care, among other issues, and the situation of nursing in the Polish health care system is peculiar — mainly due to the issue of generational replacement among the nursing staff. This also applies to midwives. However, it should be noted that, in light of the declining births per woman rate, such a big number of midwives as today may not be necessary then.

As of 2019, the number of nurses and midwives in Poland was 238,000 and 31,000, respectively, i.e. 620 and 82 per 100,000 population. In 2017, Poland's number of nurses per capita was 30% lower than the OECD36 average[14], indicating that the country is in a significantly worse situation in this regard compared to others. The average number of nurses and midwives per 1 resident varied between regions. The voivodeship with the highest ratio of nurses/midwives per 100,000 population, both with respect to nurses and midviwes, was the Mazowieckie Voivodeship (899 and 158, respectively), whereas that with the lowest ratio was the Lubuskie Voivodeship (541 and 68, respectively). The data shows inequalities between provinces in terms of access to nursing and midwifery care.

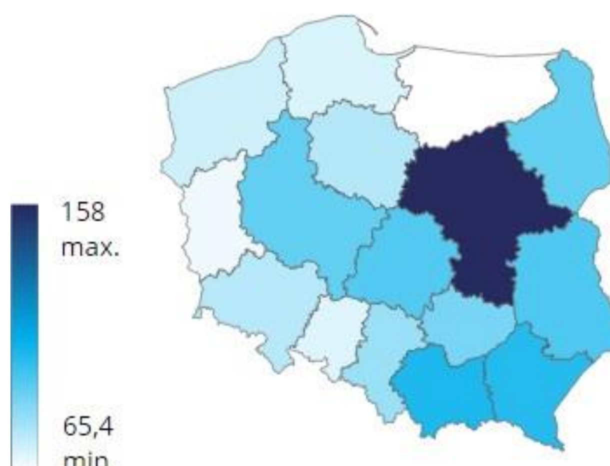
[14] OECD, *Health at a Glance 2019*

Figure 30. The number of nurses per 100,000 population by province



Source: MZ study based on data from CWPM, NFZ, GUS

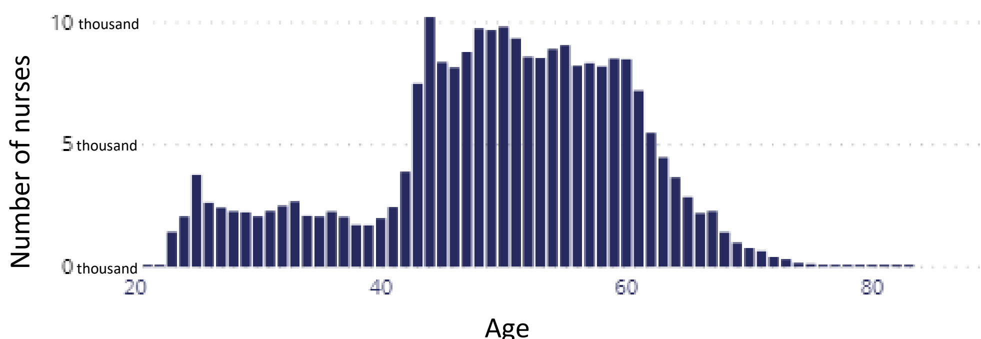
Figure 31. The number of midwives per 100,000 population by province



Source: MZ study based on data from CWPM, NFZ, GUS

One of the main problems facing the nursing workforce in Poland is the rising average age. The average age of professionally active nurses in Poland was 49.5. The low increase in the number of young nurses and a relatively high number of those above 43 years of age may indicate that there is a risk of a decline in the number of nurses. The analysis shows that if the labour market entry process for young nurses does not improve, then by 2029, the labour market may have 33% fewer nurses in the 25-29 age group.

Figure 32. Age distribution of nurses in Poland



Source: MZ study based on data from CWPM, NFZ

The situation of the medical staff is difficult. The biggest challenges include the risk of a decline in the number of specialist medical practitioners and medical practitioners in speciality training and the number of nurses, as well as the uneven regional distribution of medical staff, among other things.

Key health needs and challenges of health system organisation

1. Pursuing a proactive and strong policy in order to increase the number of working nurses and midwives. Specifically, increasing the number of nursing students and taking measures to reintroduce to the profession those people who stopped practising it before retirement.
2. Increasing the use of accredited speciality vacancies for medical practitioners, particularly in selected medical fields.

Actions taken at supraregional level

Action 2.11.1.

Implementation of the goals and actions set out in the document titled "Long-term State Policy for Nursing and Midwifery in Poland," including such things as the promotion of the nursing and midwifery professions and the transfer of certain powers from medical practitioners to nurses and midwives, e.g. the power to grant a short-term medical leave.

Expected results of the action: Ensuring the high quality, safety and accessibility of nursing care for patients and the public, including by increasing the interest of graduates of high schools in choosing such fields of study as nursing and midwifery; increasing the number of nurses and midwives in the health care system (nursing and midwifery graduates, as well as nurses and midwives returning to the profession after a career break).

Entities responsible for implementing the action: MZ and the entities listed in the document titled "Long-term State Policy for Nursing and Midwifery in Poland".

Planned period during which the action will be implemented: 2021-2031.

Estimated cost of the action: According to the document "Long-term State Policy for Nursing and Midwifery in Poland".

Action implementation indicators:

1. The number of universities teaching nursing and midwifery.
2. The number of nursing and midwifery students and graduates and the number of nurses and midwives employed in the health care system.
3. The ratio of nurses and midwives per 1,000 population.

Action 2.11.2.

Implementing measures to increase the use of speciality vacancies throughout the country, particularly in the shortage areas that are in the greatest demand by the health care system. Creating the functionality of the central Education Monitoring System.

Expected results of the action: Ensuring an adequate number of specialist medical practitioners, especially in fields suffering from shortages.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: Costs of building and implementing the Learning Monitoring System – estimated on an ongoing basis.

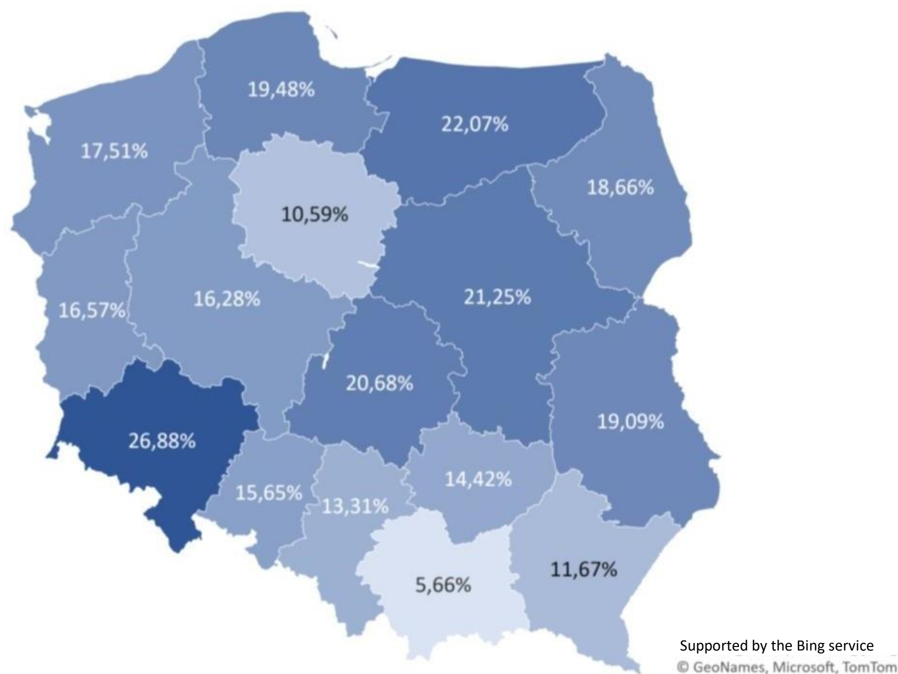
Action implementation indicator: Provision of central enrollment for specialisation in the Education Monitoring System.

2.12. Emergency Medical Services

Diagnosis resulting from the map of health needs

Analyses of travel times to reach patients showed discrepancies depending on the location of the incident. In cities with over 10,000 population, ambulances, in most cases, arrive at the patient's location within the statutory time frame. The problem arises for incidents outside cities with more than 10,000 population — in some provinces, the statutory travel time was exceeded in nearly 20% of all calls.

Figure 33. The share of calls with a travel time of more than 20 min in areas outside cities with more than 10,000 population according to data for the period from 1 April to 31 December 2019



Source: MZ study based on data from Command Support System for PRM

Key health needs and challenges of health system organisation

1. Striving to improve travel times, especially outside cities with over 10,000 population in Europe.

Actions taken at supraregional level

Action 2.12.1.

1. Amending the Act on EMS by adjusting the number and type of emergency medical teams to the actual needs and capabilities of the health care system in terms of providing medical staff, especially medical practitioner staff.
2. Adopting the act on the paramedic profession and the professional self-government of paramedics, along with provisions on continuing education and improving the qualifications of this group.

Expected results of the action:

1. Reducing the shortage of medical staff in the Emergency Medical Services.

2. Reducing EMS travel times to accident scenes.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2023.

Estimated cost of the action: PLN 185.0 million (one hundred and eighty-five million zlotys).

Action implementation indicators:

1. Having a single model for Out-of-Hospital Emergency Care.
2. Reducing the average EMS arrival time.
3. Amending the Act on EMS and its implementing acts.
4. Entry into force of the act on the paramedic profession and the professional self-government of paramedics.

2.13. Other

Health needs and challenges of health system organisation that are not the outcome of the MHN analytical process

The activities identified as "other" are a crucial element that complements those listed in the above areas. They were recommended as a response to the dynamically changing situation both at home and abroad (mainly due to the COVID-19 pandemic, i.e. medical emergencies, as well as ongoing technological advances).

It must be stressed that deepening the process of digitisation in the health sector will enable Poland to improve medical service accessibility, in particular, to provide continuous care for the elderly and people with disabilities, as well as to prepare the system for possible future unpredictable epidemiological outbreaks. Moreover, measures have been identified to reduce the human factor in such processes as registration and diagnosis (use of algorithms for initial diagnosis), thereby maximising the time spent on treatment and resulting in improved patient outcomes.

In addition, the following activities emphasize the development of national programmes in clinical research, the biomedical sector and epidemiological research and other areas. They aim to introduce solutions that will increase Poland's capacity to conduct relevant research from the point of view of society as a whole, increase independence in making key decisions, and improve knowledge of the country's situation.

Actions taken at supraregional level

Action 2.13.1.

Developing and implementing new regulations in the area of clinical trials of medicinal products for human use.

Expected results of the action: Increased attractiveness of conducting clinical trials in Poland.

Entity responsible for implementing the action: ABM.

Planned period during which the action will be implemented: Q4 2022.

Estimated cost of the action: at no cost.

Action implementation indicator:

1. The Act on Clinical Trials of Medicinal Products for Human Use.

Action 2.13.2.

Creating innovative medical technological and legal solutions of systemic importance for improving the health of patients and increasing the efficiency of the Polish health care system

Expected results of the action:

1. Creating innovations in medicine and technology in the biotechnology, pharmaceutical and medical sectors.
2. Implementation of programmes and projects announced by WHIH partners, created in cooperation with public institutions.

Entity responsible for implementing the action: ABM.

Planned period during which the action will be implemented: from 2022.

Estimated cost of the action: budget in planning.

Action implementation indicator:

1. The establishment of WHIH.
2. The establishment of a working group on communications, which will be tasked with continuing the WHIH information and communication policy.

Action 2.13.3.

Developing innovative drug technologies. Developing an RNA-based vaccine or an innovative drug against RNA viruses and proceeding with it to at least Phase I clinical trials, or achieving RNA-based vaccine manufacturing capability.

Expected results of the action:

1. Developing innovative medicinal products in the RNA therapy area.
2. Increasing the competencies of R&D personnel in technology development work concerning RNA-based drugs.
3. Increasing the number of Polish solutions protected under e.g. patent applications for the use of nucleic acids in innovative drug therapies.
4. Improving access to R&D and manufacturing infrastructure for RNA-based medical products.
5. Improving patient access to innovative diagnostic and therapeutic solutions, e.g. as part of early-phase clinical trials.
6. Increasing the number of research teams conducting R&D in nucleic acid-based drug technologies in Polish research units and innovative pharmaceutical companies.
7. Increasing the number of projects, publications and patents/patent applications in the field of nucleic acid-based drug technologies.
8. Increasing the scale of implementation work and clinical trials concerning RNA-based drug technologies.

Entity responsible for implementing the action: ABM.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: PLN 350 million (three hundred and fifty million zlotys).

Action implementation indicator: The establishment of a public interest working group to review and monitor projects submitted by WHIH Partners for their compliance with public institutions' security objectives and priorities.

Action 2.13.4.

Establishing an Epidemiological Research Development Programme.

Expected results of the action: Implementation of the Epidemiological Research Development Programme by the end of 2026.

Entities responsible for implementing the action: ABM, NIO-PIB, IK, NIZP PZH-PIB.

Planned period during which the action will be implemented: 2021-2026.

Estimated cost of the action: PLN 80,000 (eighty thousand zlotys).

Action implementation indicator:

1. Epidemiological Research Development Strategy Report

Action 2.13.5.

Analysing the needs of the biomedical sector, identifying the key directions of development of the sector in Poland, increasing the funding allocated for the development of the R&D sector in the areas of medicinal product, medical device and e-health service development, and developing a new, effective innovation management model.

Expected results of the action:

1) creating the Biotechnology Sector Development Programme;
2) having Poland's first ever innovative drug created by 2030;
3) strengthening the sector in the area of the development and implementation of innovative products and services.

Entity responsible for implementing the action: ABM.

Planned period during which the action will be implemented: by 2030.

Estimated cost of the action: approximately PLN 1.0 billion (one billion zlotys).

Action implementation indicator:

1. Number of funded projects - 80.
2. Number of Clinical Research Support Centres established - 40.
3. Number of evaluation reports - 10.

Action 2.13.6.

Implementing Electronic Death Report (e-KZ) and Electronic Birth Report (e-KU).

Expected results of the action: Optimising the area related to the issuance of birth and death reports.

Entities responsible for implementing the action: CeZ in cooperation with e.g. KPRM, MSWiA, GUS, GIS, NIZP PZH-PIB.

Planned period during which the action will be implemented: 2022.

Estimated cost of the action: PLN 6.1 million (six million one hundred thousand zlotys).

Action implementation indicators:

1. Digitisation of the process related to the issuance of death and birth reports.
2. Reduced number of procedures.
3. Increased time to settle the case.

Action 2.13.7.

Developing central digital health services responding to the expectations of both medical and patient communities by:

1) Implementing three central digital services (developing a tool supporting the analysis of patient health, artificial intelligence algorithms, and a central repository of medical data);
2) Digitising medical records and developing the medical record exchange service;
3) Strengthening cyber security in health care.

Expected results of the action: improving the resilience of the health care system to future crises by increasing patient participation in the treatment process, expanding public digital services and remote ways of providing medical services.

Entities responsible for implementing the action: MZ, CeZ.

Planned period during which the action will be implemented: 2021-2026.

Estimated cost of the action: PLN 1.95 billion (one billion nine hundred and fifty million zlotys).

Action implementation indicators:

1. Digitisation of medical records on the history of patient's interaction with the health care system
   - 30% by the first quarter of 2026.
2. Digitisation of medical records - 30% by the fourth quarter of 2024.
3. Further digitisation of medical records - 60% by the first quarter of 2026.
4. Central/regional health care providers connected to the central repository of medical data - 30% by the first quarter of 2026.
5. Central regional health care providers equipped with a medical practitioner decision support system based on artificial intelligence algorithms - 30% by the first quarter of 2026.
6. Adult patients covered by the patient health analysis support tool - 70% by the first quarter of 2026.

Action 2.13.8.

Implementing quality-focused actions in the health care system to adapt PHC clinics and hospitals to the needs of people with special needs (mainly people with disabilities and the elderly), based on the Accessibility Standards for PHCs Clinics and Hospitals.

Expected results of the action:

1) Improving the accessibility of 250 PHC clinics and 50 hospitals in architectural, digital, organisational and communication terms;
2) Improving the competencies of employees of PHC clinics and hospitals in communicating with people with special needs - 900 people.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2019-2023.

Estimated cost of the action: PLN 300 million (three hundred million zlotys).

Action implementation indicators:

1. Number of PHC entities that have implemented quality-focused actions as part of the programme -250.
2. Number of entities providing hospital treatment that have implemented quality-focused actions as part of the programme - 50.
3. Number of employees of health care institutions, including the administration of the health care system, covered by the support of the European Social Fund to improve the efficiency of their operation - 900.

Action 2.13.9.

Improving the digital maturity of PHC clinics in terms of their readiness for epidemics, increasing the availability of health services, especially for the elderly and other persons who require support in everyday activities.

Expected results of the action: Improving the digital maturity of PHC clinics in terms of their readiness for epidemic crisis - implementing e-Health solutions for the purchase of ICT infrastructure: hardware, software and integration with P1.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: PLN 300 million (three hundred million zlotys).

Action implementation indicator: To be determined at a later stage after the approval of the implementation of the project as part of REACT-EU.

Action 2.13.10.

Increasing the availability of services in the field of telemedicine, in particular for the elderly and other persons requiring support in everyday activities.

Expected results of the action: Implementing telemedicine solutions in cardiology, geriatrics, psychiatry, obstetrics, diabetology, palliative care, chronic diseases.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: PLN 155 million (one hundred and fifty-five million zlotys).

Action implementation indicators:

1. Number of entities supported as part of telemedicine.
2. Number of implemented telemedicine programmes launched on the DOM platform.

Action 2.13.11.

Developing e-services for patients and improving cyber security in the health sector by:

1) expanding the central e-registration system;
2) developing e-services within IKP (e.g. providing access to profiled information on available prevention programmes);
3) developing m-Health tools;
4) increasing the level of use of artificial intelligence (AI) in the health system;
5) strengthening the capacity of health care providers.

Expected results of the action: Implementing new digital services, disseminating knowledge about cyber security in the health care system.

Entity responsible for implementing the action: MZ.

Planned period during which the action will be implemented: 2021-2027.

Estimated cost of the action: PLN 2.5 billion (two billion five hundred million zlotys).

Action implementation indicator: To be determined at a later stage after the implementation of the project has been approved under the Digital Europe Programme 2021-2027.

Action 2.13.12.

1. Improving the accessibility of services (e.g. by developing telemedicine).
2. Stimulating the development of innovative solutions in the field of medical technology
   and ICT solutions supporting the treatment process.
3. Increasing the health safety of patients, supporting medical practitioners in the decision-making process.

Expected results of the action:

1) access to e-registration;
2) launching of an online medical consultation platform;
3) development of services available on telemedicine platform;
4) creation and implementation of algorithms that facilitate decision-making on patient treatment.

Entities responsible for implementing the action: MZ, CeZ.

Planned period during which the action will be implemented: 2021-2023.

Estimated cost of the action: PLN 392 million (three hundred and ninety-two million zlotys).

Action implementation indicators:

1. Number of e-registration services.
2. Number of medical consultations provided per year, patients receiving medical consultations, percentage of medical consultations provided in the form of telemedicine in relation to traditional medical visits.
3. Number of services made available on the telemedicine platform, number of alert results drawing a response from medical staff.
4. Number of algorithms used for the services provided on the telemedicine platform.

Action 2.13.13.

Developing IT tools for adding benefits for citizens who are characterised by low risk of COVID-19 virus transmission using digital certificates issued within the system to exercise the freedom of movement and covering three areas of use (vaccination certificate, negative test result, positive test result).

Expected results of the action:

1) developing a presentation application and a verification application - an overall solution supporting the system of possible incentives and benefits for people of a certain status and the monitoring of access in certain specified social situations as a consequence of external decisions, based on the analysis of expectations of sectors and branches of the economy and the current epidemiological situation.

Entities responsible for implementing the action: MZ, CeZ, Research and Academic Computer Network.

Planned period during which the action will be implemented: 2021-2022.

Estimated cost of the action: PLN 6 million (six million zlotys).

Action implementation indicators:

1. Development of a presentation application.
2. Development of a verification application.
3. Number of downloads.

Action 2.13.14.

Improving the quality of health services, patient service and access to medical data by: Implementing the exchange of electronic medical records and system-wide adverse event reporting, as well as implementing eRegistration and the Online Consultation Platform.

Expected results of the action:

1) Standardising the format of files submitted to the Medical Information System;
2) Establishing an adverse event accounting system;
3) Developing the online consultation platform.

Entities responsible for implementing the action: MZ, CeZ, NFZ. **Planned period during which the action will be implemented:** 2021-2023.

Estimated cost of the action: PLN 15 million (fifteen million zlotys).

Action implementation indicator:

1. Sharing of a file format.
2. Number of medical record formats submitted.
3. Number of functional accounting systems.
4. Number of online consultations provided.
5. Number of employees providing online consultations.

3. Monitoring implementation and updating

Elements such as monitoring, midterm evaluation and final report, which will allow future assessment of the extent to which the objectives, results and indicators envisaged in the NTP have been achieved, are of vital importance from the point of view of the efficiency and streamlining of the actions taken in the health care sector.

The Minister of Health shall annually prepare information on the implementation of the NTP, including data on the implementation indicators achieved in a given year for individual actions coordinated at the supra-regional level. This information shall be published by 30 April in the year following the year to which such information relates.

The interim report shall be prepared by the minister of
health by 30 June in the third calendar year of the implementation of the NTP.

After the five-year period of implementation of the NTP, the minister of health shall prepare a final report on the entire period of implementation of the NTP by 30 June in the year following the year in which the period of implementation of the NTP ended.

The reports in question shall be published each time in the Public Information Bulletin on the relevant website of the office of the minister of health.

Both interim and final reports shall include:

1) description of actions that require coordination at the supra-regional level initiated or completed in a given period;
2) description of how the recommended action directions outlined in the MHN will be implemented;
3) identification of sources and amounts of funding of actions that need to be coordinated at the supra-regional level, completed or initiated in a given period;
4) degree of achievement of indicators for the implementation of individual actions;
5) identification of new priority health needs and challenges for the organisation of health system;
6) conclusions resulting from the implementation of the NTP;
7) proposals for updating actions.

Conclusions drawn from interim reports will be used to update actions in the NTP as a result of achieving the targeted values of indicators before the end of the 5-year period or as a result of identifying new priority health needs and challenges of the organisation of the health care system that require actions coordinated at the supra-regional level and to develop the next map of health needs.