How does the Statistics Poland compute the satellite health account?

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Contents

Preface

Monitoring and assessing the functioning of the healthcare system requires the development of additional analytical tools that enable a systematic description of financial flows related to healthcare. For several years the team from the Centre for Health and Health Care Statistics at the Statistical Office in Kraków has been dealing with the issue of estimating the economic dimension of the functioning of this sector in the national economy. Poland is one of the few countries that, in parallel with the development of the national health account, elaborated the methodology for a satellite health account and made related calculations.

In this publication, we present in a synthetic form the issue of the satellite health account. Our goal is to explain step by step how we conduct the calculations, and thus how we determine the actual role of the health care sector in the national economy, with particular emphasis on the share in the GDP creation.

We hope that this form of release will be an introduction to the subject of health accounts and an interesting form of presenting the financial aspects of the health care system. We will be grateful for any comments and suggestions, so even more valuable publications will be prepared in the future.

Director
of the Statistical Office in Kraków

Agnieszka Szlubowska

Kraków, October 2024

Satellite health account

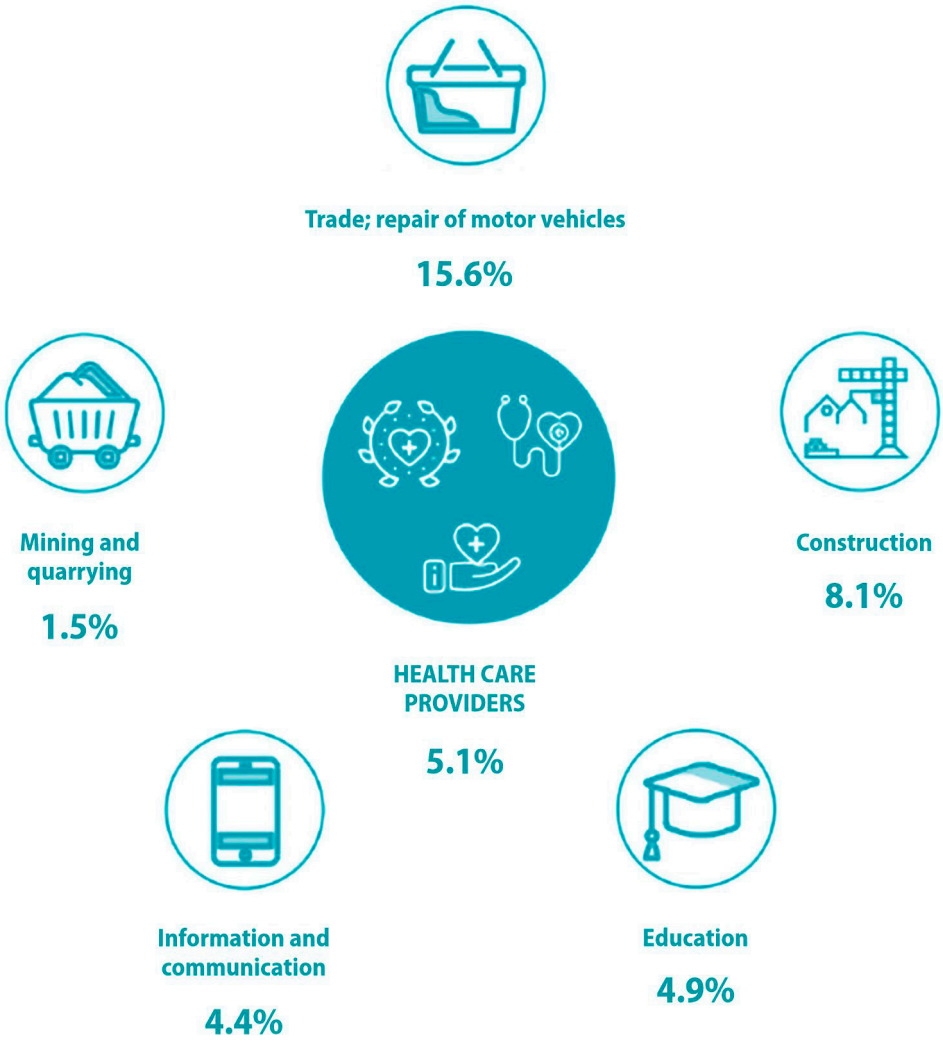
"My good and noble health, Thou matter's more than wealth. None known'th thy worth until Thou fad'st, and we fall ill" wrote Jan Kochanowski in his poem "On Health". The message flowing from these words, which were written in the 16th century, is still relevant. Health is one of the most desirable personal goods. In the common understanding, it provides a sense of happiness and the ability to fulfil dreams and life plans. This is also emphasized by the World Health Organization (WHO), which, defining health as "a state of complete physical, mental and social well-being […]", indicating it is essential for the normal functioning of a person in a society. Poor health of an individual or population becomes the cause of poverty and economic problems, in reverse the recovery is associated with an improvement in the economic situation. For this reason, the health care system is expected to provide equal access to health services, as well as a high standard of care and treatment.

The health sector is extremely complex, encompassing both public and private financing sources and various forms of health care. The Satellite Health Account is a tool that enables in-depth analysis of the functioning of the health sector, facilitating understanding of how health resources are allocated, which is fundamental to managing and reforming health care systems.

Growing public expenditure on healthcare increases interest in creating tools that enable measuring its economic effects and conducting effective healthcare policy. Economic entities in the health care sector influence the creation of new economic values. They create new jobs, contribute to the growth of state budget revenues, and stimulate other sectors of the economy, such as construction, trade, and education. A synthetic measure of their activity is the share of the health care sector in the national economy. The satellite health account is based on international standards developed by the OECD, WHO and Eurostat. The use of a consistent methodology, developed on the System of Health Accounts (SHA) standard, allows international data comparisons, important for monitoring international trends in health care expenditure as well as comparing or monitoring the efficiency of health care systems.

The Satellite Health Account provides detailed information on resource management in the area of health. It is a comprehensive summary of financial flows related to health care. Its main objective is to measure the economic importance of the health care sector at the national level using the following macroeconomic categories: gross output, intermediate consumption, gross value added, compensation of employees, final consumption, exports and imports.

Contribution of the health care providers (HP) to the national economy by selected sections of the Polish Classification of Activities (PKD) in 2020



What kind of statistical data on health is collected?

Public statistics provide a wide range of information on health used to monitor the health status of the population, the effectiveness of the health care system and the allocation of resources. The statistical observation covers economic entities providing health care services. These are facilities with different organizational forms and operating at different levels of care, regardless of the form of financing and the organizational dependence of the service provider. Included are: outpatient departments, health centres, professional practices, hospitals, psychiatric facilities, long-term care facilities (hospices and palliative wards, as well as health resort facilities, inpatient rehabilitation facilities), emergency medical services and first aid facilities, pharmacies, blood donation and blood centres, and occupational health service providers. Statistical data on healthcare related economic entities cover a wide range of issues, including medical personnel, number of patients and the healthcare services provided to them, as well as selected elements of equipment and its usage.

Statistical studies cover also the economic dimension of the health care system functioning. The National Health Account provides data on current public and private expenditure on healthcare by healthcare providers, functions, financing systems and their revenues. Their aim is to describe financial flows related to the consumption of healthcare goods and services from the expenditure perspective. It is complemented by the satellite health account that provides comprehensive information on the financial aspect of the healthcare sector at the national economy level.

What are satellite accounts?

Determining the economic effects of the health care sector on the basis of national accounts is not a simple task. This is primarily due to the complexity of the sector, which includes various entities conducting business activities, the common feature of which is offering goods and services that meet broadly understood health-related needs. Examples include medical device stores, social welfare facilities or insurance companies. These entities are scattered among various sections and divisions of the Polish Classification of Activities (PKD) used in national accounts. As a result, in the standard system of national accounts the healthcare sector is not fully defined and separated. With this in mind, supplementary accounts were developed to replenish the basic system of national accounts, which we call satellite accounts.

The satellite account is an analytical tool used to estimate the impact of a given sector on the national economy. It is an extension or modification of the standard national accounts, so that a comprehensive analysis is possible, taking into account economic entities that represent different sections or divisions of the Polish Classification of Activities (PKD), but provide goods and services closely related to the analysed industry. The satellite account methodology account for various solutions, depending on analytical needs, such as: extending the scope of presented data, changing the layout of tables, using concepts, definitions or classifications characteristic for a given industry. As a result, the satellite account satisfies the need for detailed data and comparisons between economic sectors or countries.

The satellite health account enables the measurement of the share of healthcare providers in the creation of gross domestic product and the analysis of the flows of healthcare goods and services in the sphere of production and their final use. The scope of the healthcare sector and its entities (i.e. classified as healthcare providers) are defined by international classifications of the health account system.

How is satellite health account elaborated?

Step 1 – Defining the health care boundaries

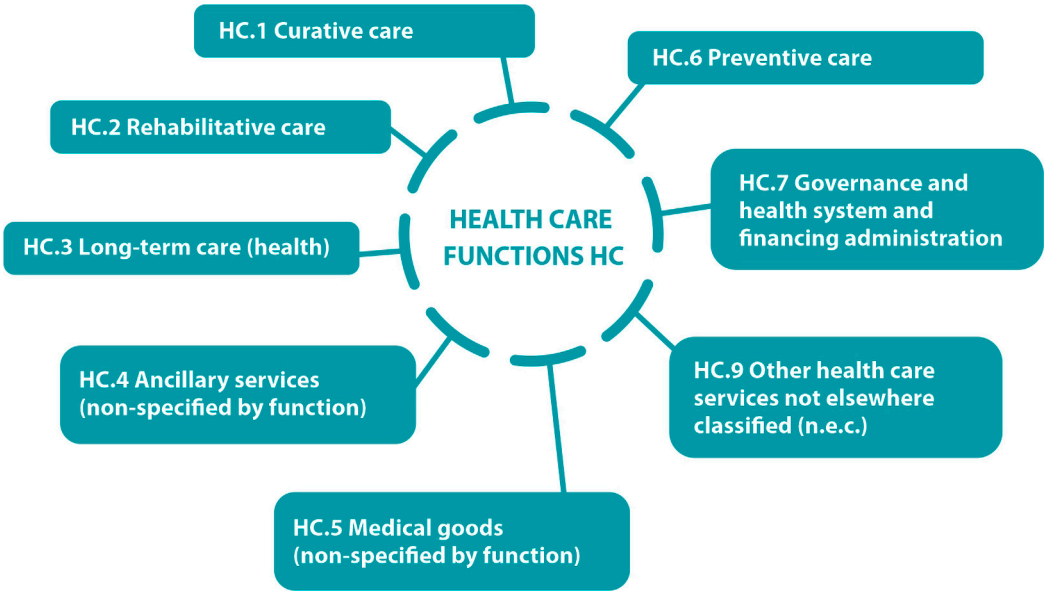
Health care means all activities with the primary purpose of improving, maintaining and preventing the deterioration of the health status of persons and mitigating the consequences of ill-health through the application of qualified health knowledge[1].

The health accounts system focuses on the primary functions performed by the health care system. Health care consists of the following groups of activities:

- health promotion and prevention;
- diagnosis, treatment, cure and rehabilitation of illness;
- caring for persons affected by chronic illness; persons with health-related impairment and disability;
- palliative care;
- providing community health programmes;
- governance and administration of the health system.

In the health accounts system, they are grouped within the functional classification of health care into HC categories, which are groups of health care goods or services purchased to meet specific health needs of both individuals and population groups.

[1] According to the Commission Regulation (EU) 2021/1901 of 29 October 2021 implementing Regulation (EC) No 1338/2008 of the European Parliament and of the Council as regards statistics on health care expenditure and financing.



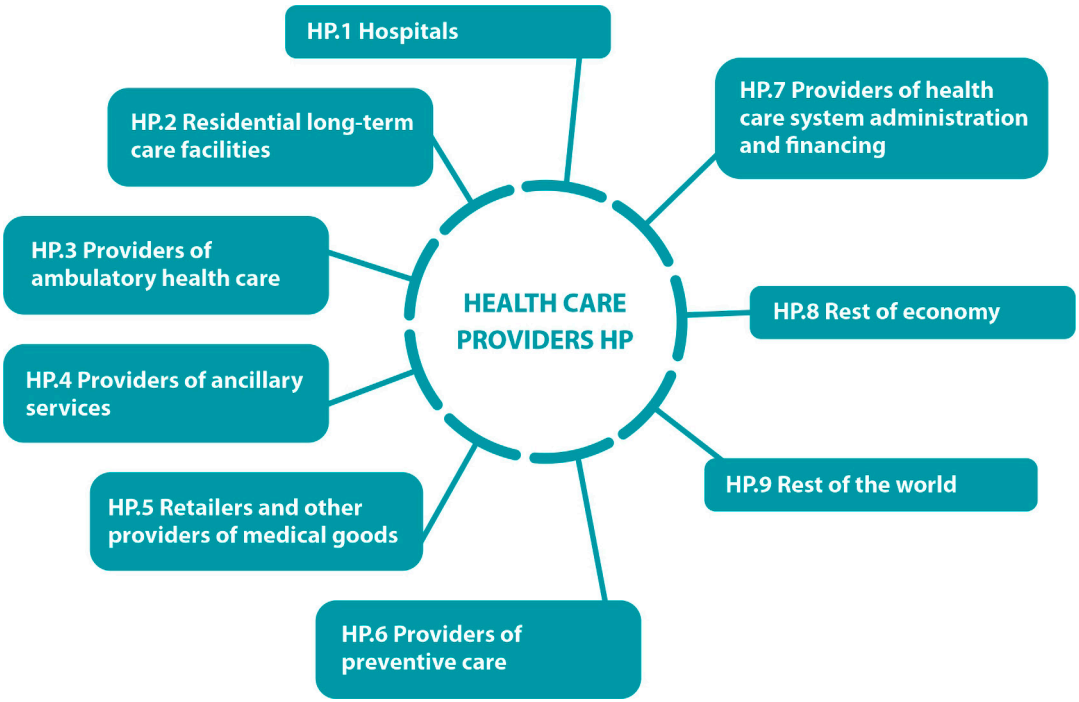
Step 2 – Identifying health care providers

Health care providers means the organisations and actors that deliver health care goods and services as their primary activity, as well as those for which health care provision is only one among a number of activities.

In the health account system, health care providers are divided into:

- primary providers (HP.1-HP.6), those whose principal activity is to deliver health care goods and services as defined in the core functional classification,
- secondary providers (HP.7-HP.8), those that deliver health care services in addition to their principal activities, which might be related to health,
- non-resident units providing health care goods and services as well as those involved in health-related activities, directed for final use to country residents (HP.9).

Typical primary providers are hospitals, offices of physicians, outpatient departments, health centres, chronic medical care homes, nursing homes, units of emergency ambulance services, laboratories, pharmacies and so on. Examples of secondary providers include: units that play an important role in the governance and management of health care systems by carrying out a type of collective service related to the provision and financing of health care (activities of the Ministry of Health, the National Health Fund), households as providers of home health care to family members as well as all other organisations that deliver health care goods and services as a secondary activity (for example social care facilities).



Step 3 – Relationship between the classification of health care providers and national accounts classifications

Comparing the classification of health care providers used in the health accounts system with the Polish Classification of Activities used in national accounts, it can be seen that most providers are classified under division 86 "Human health activities" from section Q "Human health and social work activities" according to the PKD 2007 nomenclature. In the case of the satellite health account, the health care sector, in addition to division 86, also includes the activities of:

- scientific institutes in the field of medical sciences (class 72.19 "Other research and experimental development on natural sciences and engineering");
- long-term care facilities (division 87 "Residential care activities");
- retailers and other suppliers of medical goods, e.g. pharmacies, medical stores (classes 47.73 "Dispensing chemist in specialised stores" and 47.74 "Retail sale of medical and orthopaedic goods in specialised stores" of the G section "Wholesale and retail trade; repair of motor vehicles including motorcycles");
- entities coordinating the administration and financing of health care, e.g. the National Health Fund, the Ministry of Health, local government (group 84.1 "Public administration and the economic and social policy of the community" and group 84.3 "Compulsory social security activities" from section O "Public administration and defence; compulsory social security");
- economic entities for which health care is a secondary activity (classified in other sections or divisions of the PKD);
- households related to the provision of health care services to the sick or disabled in the household, which are not included in the national accounts.

It should be noted that some identified relationships are not fully comparable; health care activities are included together with other types of activities. For example, this is the case of division 87 "Residential care activities", which also includes entities with primary activities in the social sphere as well as public administration activities, which also include other social services. In such a situation, it is necessary to estimate and calculate a healthcare-related part of the activities. For this purpose, appropriate methods of statistical data estimation are used.

Step 4 – Calculation of the results

This step also answers the question:

Why is the satellite health account created?

The mail goal is to provide comprehensive information on the economic dimension of the health care sector at the level of the national economy. By using the classification of the health accounts system, it is possible to determine the actual role of the health care sector and the share of health care providers in creating the GDP, and thus estimate its economic importance.

What can we learn from the satellite health account?

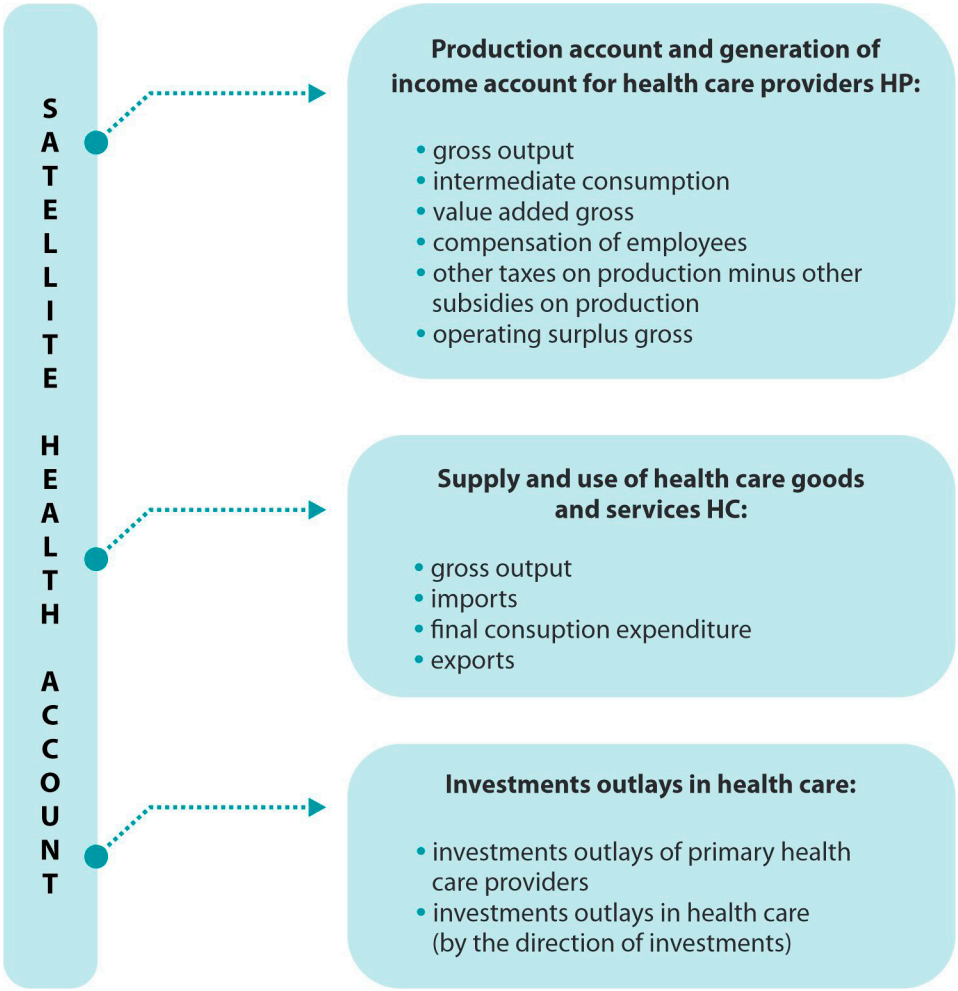
Satellite Health Account consist of a core set of economic transactions related to the production activities of health care providers, the supply and use of health care-specific goods and services, and supplementary data on investments outlays in health care.

In the production account, calculations are made for health care providers to identify value of the goods and services they produce (so-called gross output) and value of the materials and services used in the process of creating these products and services (so-called intermediate consumption). Then, the gross value added generated by them is calculated by subtracting intermediate consumption from gross output, and after including the balance of taxes and subsidies on products, we obtain the gross domestic product in the national economy generated by the health care sector.

Afterwards, the generation of income account is computed to illustrate the process of generating income directly related to production process. On the resource side in this account is the balancing item of the production account, i.e. gross value added. On the uses side, the compensation of employment, other taxes on production less other subsidies on production are recorded. The balancing item of the account is gross operating surplus (gross mixed income in the household sector).

The calculations of the production account and the generation of income account are carried out separately for the individual institutional sectors in which health care providers are identified: non-financial corporation, general government, households, non-profit institutions. After adding the data for the sectors, we obtain the results of the accounts for all health care providers.

The supply and use account for the health care function develops the main components of supply (gross output, imports) and use (final consumption expenditure, exports). Additionally, we calculate data on investment outlays: of the primary health care providers for new fixed assets and improving existing fixed assets, as well as investment outlays in health care by the direction of investments (i.e. for health care).

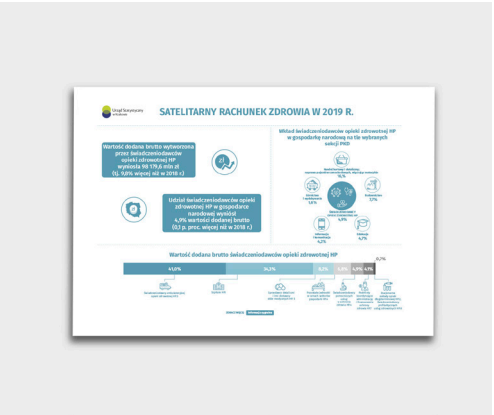


Step 5 – Data publication

Data on the share of the health care sector in the national economy and other transactions calculated as part of the satellite health account are available on the information portal of the Statistics Poland:

in the publication
"Health and health care"

in the infographic
"Satellite health account"



Accounts are compiled each year starting from estimates for 2017. Due to the late availability of data used for calculations (e.g. from the National Health Account), the results of the satellite health account are published with a 4-year delay.

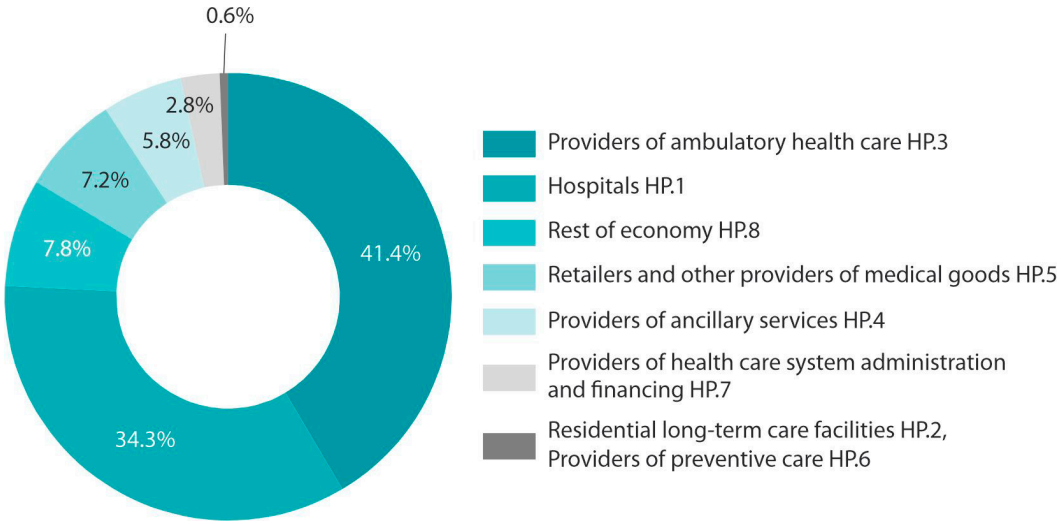
Satellite health account in 2017–2020

The country results of the satellite health account for the years 2017–2020 are summarised below.

Health care providers HP in national economy in Poland, 2017–2020 (in %, current prices)

Transactions	2017	2018	2019	2020
Gross output	3.6	3.6	3.7	3.8
Intermediate consumption	2.7	2.7	2.8	2.7
Value added gross	4.8	4.7	4.8	5.1
Compensation of employees	5.5	5.6	5.8	5.9
Operating surplus gross	4.3	4.1	4.1	4.4

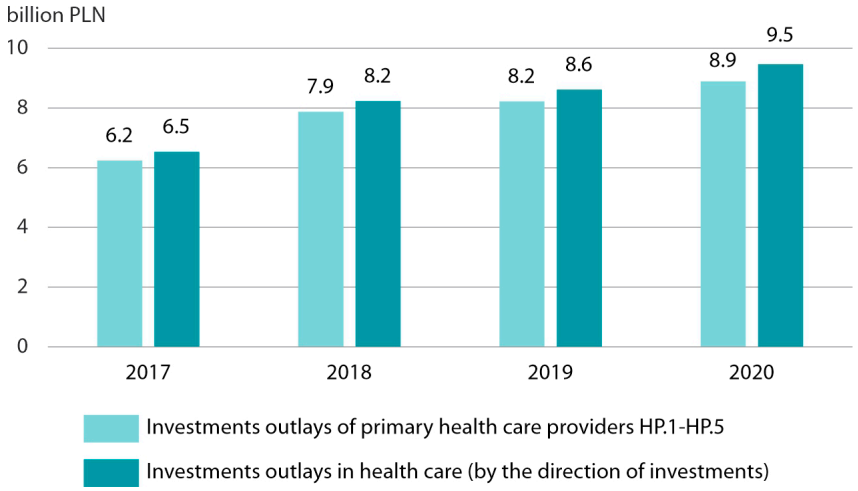
Gross value added by health care providers HP in Poland, 2020 (in %, current prices)



Supply and use of health care goods and services HC in Poland, 2017–2020 (in million PLN, current prices)

Transactions	2017	2018	2019	2020
Gross output	159 874.7	169 755.3	185 874.7	190 995.7
of which gross output by health care providers	141 394.7	150 595.7	165 652.2	171 620.9
Imports	715.4	836.1	902.0	889.6
Final consumption expenditure	130 535.8	134 244.4	147 838.5	153 487.7
by households	39 253.3	37 304.5	40 707.4	40 494.7
by non-profit institutions serving households	1 437.6	1 560.3	1 642.4	2 222.6
by general government	89 844.9	95 379.6	105 488.7	110 770.3
Exports	575.4	724.2	876.8	928.1

Investments outlays in health care in Poland, 2017–2020 (in billion PLN, current prices)



Methodological annex

Definitions of health care providers[2]

Hospitals HP.1 – the licensed establishments that are primarily engaged in providing medical, diagnostic and treatment services that include physician, nursing and other health services to inpatients and the specialised accommodation services required by inpatients and which may also provide day care, outpatient and home health care services.

Residential long-term care facilities HP.2 – establishments that are primarily engaged in providing residential long-term care that combines nursing, supervisory or other types of care as required by the residents, where a significant part of the production process and the care provided is a mix of health and social services with the health services being largely at the level of nursing care in combination with personal care services.

Providers of ambulatory health care HP.3 – establishments that are primarily engaged in providing health care services directly to outpatients who do not require inpatient services, including both offices of general medical practitioners and medical specialists and establishments specialising in the treatment of day-cases and in the delivery of home care services.

Providers of ancillary services HP.4 – establishments that provide specific ancillary type of services directly to outpatients under the supervision of health professionals and not covered within the episode of treatment by hospitals, nursing care facilities, ambulatory care providers or other providers.

Retailers and other providers of medical goods HP.5 – establishments whose primary activity is the retail sale of medical goods to the general public for individual or household consumption or utilisation, including fitting and repair done in combination with sale.

[2] According to Commission Regulation (EU) 2021/1901 of 29 October 2021 implementing Regulation (EC) No 1338/2008 of the European Parliament and of the Council as regards statistics on health care expenditure and financing.

Providers of preventive care HP.6 – organisations that primarily provide collective preventive programmes and campaigns/public health programmes for specific groups of individuals or the population-at-large, such as health promotion and protection agencies or public health institutes as well as specialised establishments providing primary preventive care as their principal activity.

Providers of health care system administration and financing HP.7 – establishments that are primarily engaged in the regulation of the activities of agencies that provide health care and in the overall administration of the health care sector, including the administration of health financing.

Rest of the economy HP.8 – other resident health care providers not elsewhere classified, including households as providers of personal home health services to family members, in cases where they correspond to social transfer payments granted for this purpose as well as all other industries that offer health care as a secondary activity.

Rest of the world HP.9 – all non-resident units providing health care goods and services as well as those involved in health-related activities.

Correspondence between the categories of the health care providers classification HP and the types of activities by the Polish Classification of Activities PKD 2007

HP	Health care providers	Code PKD 2007	Description PKD 2007
HP.1	Hospitals	86.10	Hospital activities
		72.19 (institutes with hospitals)	Other research and experimental development on natural sciences and engineering
HP.2	Residential long-term care facilities	87.10	Residential nursing care activities
		87.20	Residential care activities for mental retardation, mental health and substance abuse
		87.30	Residential care activities for the elderly and disabled

Correspondence between the categories of the health care providers classification HP and the types of activities by the Polish Classification of Activities PKD 2007 (cont.)

HP	Health care providers	Code PKD 2007	Description PKD 2007
HP.3	Providers of ambulatory health care	72.19 (institutes without hospitals)	Other research and experimental development on natural sciences and engineering
		86.21	General medical practice activities
		86.22	Specialist medical practice activities
		86.23	Dental practice activities
		86.90.A	Physiotherapeutical activities
		86.90.C	Nurses and midwives activities
		86.90.D	Paramedical activities
		part 86.90.E (hygienists and dental assistants, orthoptists, hygiene instructors, dieticians, health promotion specialists)	Other human health activities not elsewhere classified
		88.10	Social work activities without accommodation for the elderly and disabled
HP.4	Providers of ancillary services	86.90.B	Emergency ambulance activities
		part 86.90.E (independent medical laboratories, blood bank activities and other providers without activities included in HP.3)	Other human health activities not elsewhere classified

Correspondence between the categories of the health care providers classification HP and the types of activities by the Polish Classification of Activities PKD 2007 (cont.)

HP	Health care providers	Code PKD 2007	Description PKD 2007
HP.5	Retailers and other providers of medical goods	47.73	Dispensing chemist in specialised stores
		47.74 (sales of hearing aids, sales of medical devices other than optical glasses and hearing aids)	Retail sale of medical and orthopaedic goods in specialised stores
		part 47.78 (sale of optical glasses and corrective lenses)	Other retail sale of new goods in specialised stores
HP.6	Providers of preventive care	section O (implementation of public health programs)	Public administration and defence; compulsory social security
HP.7	Providers of health care system administration and financing	84.12 (managing the implementation of health care and prevention programs)	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security
		84.30 (common health insurance)	Compulsory social security activities
HP.8	Rest of economy	–	
HP.9	Rest of the world	–	

Main macroeconomic categories in national accounts[3]

Gross output – total products (goods and services) produced during the accounting period, equal to the sum of the products of all national institutional sectors or the sum of the products of all activities.

Intermediate consumption includes the value of net materials used (after deducting the value of utility waste), raw materials (including packaging), fuels, energy, technical gases, external services (external processing, transport services, rental of equipment, telecommunications and computing services, commissions paid for services banking), financial intermediation services indirectly measured (FISIM), business travel costs (without diets), other costs (for example: advertising, representation, lease and rental), business tickets costs, lump sum costs for using own vehicles for business purposes, exchange fees and fees for participation in the National Depository of Securities. Intermediate consumption includes goods and services that are transformed or used in the production process.

Gross value added – the balancing value of the production account. It is the difference between output and intermediate consumption.

Compensations of employees – the sum of wages and salaries as well as employers' social contributions. The wages and salaries consist of: wages and salaries in cash, wages and salaries in kind, bonuses and prizes, bonuses (for example for work in harmful conditions, for seniority, for performing special or managerial functions, etc.), payments for overtime work, holiday pay, remuneration paid for the time of downtime, commissions and tips, retirement benefits, jubilee bonuses, severance pay paid on group dismissals, income from undeclared work, since 1999 the value of employers' social contributions and health insurance contributions paid by employees. Employers' social contributions include the actual contributions constituting the value of employers' actual social contributions, increased by contributions to the Employee Benefits Fund and imputed social contributions, which are mainly related to the imputation in national accounts of contributions for uniformed services employees.

[3] *National accounts by institutional sectors and sub-sectors 2019–2022, Statistics Poland, Warsaw* 2024.

Operating surplus – the balancing item of the generation of income account. It is the gross value added generated by domestic market and non-market units decreased by wages and salaries and other taxes on production and increased by the other subsidies to the producers.

Gross domestic product (GDP) – represents the final result of activity of all entities of the national economy. GDP is the sum of gross value added of all national institutional sectors or all sections of the national economy. It is increased by various components, depending on the type of prices at which the gross value added is calculated.

Final consumption expenditure – is the value of products (goods and services) used to meet people needs and includes: private consumption expenditure (i.e. households' final consumption expenditure and final consumption expenditure of non-profit institutions serving households) as well as final consumption expenditure in the general government sector (consist of: individual consumption expenditure, that is the value of goods and services provided free of charge to households, and collective consumption expenditure i.e. consumption of goods and services, which do not have specific individual recipients).

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