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IS THERE A CONFLICT OF SOCIAL INTERESTS AND ECONOMICS IN THE MANAGEMENT OF POLISH MATERNITY WARDS?

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Purpose: The proposed study raises the problem of closing some maternity wards being closed in Poland, refers to the economic reasons for such actions, but also touches on the related social opposition.
Design/methodology/approach: It analyses maternity wards in the administrative voivodeship division of the country using basic statistics, but also the DEA method that enables allowing for the assessment of their technical efficiency, and also takes into account demographic changes and, therefore, social needs in the field of maternity services.
Findings: Unprofitable wards are maintained in Poland today under the guise of universal access to health services, with no regard for the real needs of society, and no adjustments are made to the range of publicly funded health services in order to match the age structure of the population or address the demand for specific services.
Originality/value: The ob-gyn wards in Poland analysed in this study are struggling not only with internal problems, which include, among others, shortages of qualified medical staff or inefficient use of existing infrastructure. The regions characterised by the lowest numbers of medical staff and the smallest number of beds in obstetrics and gynaecology wards had the highest number of births and their technical efficiency stood at 100%.
Keywords: technical efficiency; infrastructure of health care providers; demand for maternity services, profitability of maternity wards.
Category of the paper: Research paper.

1. Introduction

Many years ago, in the 1970s, the knowledge became widespread in Poland and elsewhere that the health sector could and should be subject to economic assessment (Suchecka, 1998). Moreover, a separate discipline, called medical economics, emerged in the common understanding. It deals with "the study of economic phenomena and regularities occurring in health care and determines the most effective economic instruments that shape the exchange between the quantitative and qualitative sides of the demand for medical services and supplies."

(Suchecka, 1998). Research that takes such specificities into account becomes particularly important when it comes to assessment of health care providers that are financed from public funds and generate enormous costs in their operation (Nieszporska, 2006). In the Polish health care system, hospitals are the most agents not only due to the costs of their operation, but also the importance of their services (Holly, Suchecka, 2009). The types of entities prevailing in Poland are public hospitals, with varying degrees of reference, with their founding body being a local government authority or one of the existing ministries (Wiśniewski, 2023).

In February 2024, the Polish industry journals (Lurka, 2024 e) widely circulated the news about the closure of an obstetrics and gynaecology ward in one of the poviat-level hospitals in order to save the hospital and get rid of the unprofitable ward. The ward did not deliver enough births and the operating costs and staff-related costs were too high.

Despite it being an economically sound and widely-used solution, (Mills et al., 2023), this news seems to come as a big surprise in the Polish reality, both from the perspective of health care managers and the inhabitants of the region served by the said facility. Indeed, hospital managers usually reorganise and restructure hospitals by, for instance, merging a number of entities and, as a result, the previously independent parts of the newly created hospital structure become responsible for specific specialisations while some wards are liquidated1. Researchers exploring the nature of such transformations point to the associated increase in service quality (Maraini et al., 2022), improvement of the hospitals' financial performance (Cirulli et al., 2022), or the broadening of healthcare provision (van der Schors et al., 2023).

In the public understanding of a closure of an obstetrics and gynaecology ward, the most common allegations may be related to reduced access to medical services, a lack of care for medical staff or a lack of understanding of the needs of the local community (Avdic et al., 2024).

An economic perspective on the confusion surrounding the closure of a ward seems to focus primarily on the profitability of the ward concerned. However, this may be accompanied by aspects such as the efficiency of the ward, the extent to which its resources are used, the costs associated with staff remuneration, the efficiency of their work, or the possibilities associated with the use and operation of medical apparatus and equipment.

However, the closure of hospital departments, or more precisely the consolidation of existing ones, can also have negative economic consequences. As Godwin, Levinson, and Hulver demonstrate, it can contribute to an increase in the price of services while not increasing their quality (Godwin et al., 2023). Moreover, it may cause higher death rates (Propper et al., 2004).

[1] One example of such a move was reported, for example, in the city of Częstochowa, where some wards were transferred from one of two previously independently operating hospitals to another – *Nie likwidacja, a przenosiny. Z powodu braku kadr szpital połączy oddziały,* 2022.

The closure of hospital wards also touches on the moral and social aspects of their operation. Among other things, this causes not only problems with access to services, but also job losses, and reduced economic prosperity in society (Holmes et al., 2019). Moreover, as research shows, in assessing the legitimacy of hospital closures, to the local community the following are also important: the symbolic and emotional significance of hospitals, the safety of the patients and a sense of belonging, and the preservation and identity of the local community (Kvåle et al., 2021).

The study presented here is an attempt to answer the question posed in the title with a special focus placed on the reasons for such specific way of hospital management, whose aim is to close certain departments. Thus, in the submitted study, attention is paid to examining the efficiency of the use of existing hospital resources, specifically gynecological and obstetric departments, but the work also focuses on describing the possible social consequences of the decision to close existing departments. Moreover, the following question arises: how can the health needs of citizens be met at a time of change in Poland's demographic structure? And can the existing infrastructure and medical resources of the public health service really keep up with the actual health needs of the country's population? It seems that this question can be answered by referring to the relevant statistical analyses supported by measures and indicators that are collected by each institution, but perhaps not fully utilised by managers in the management of heath care providers.

2. Demographic trends in Poland

Globally speaking, the population of the Earth is ageing. The number of elderly people is constantly increasing[2] alongside the increase in health literacy (Nutbeam, 2000), dynamic progress in medical technologies, improved living conditions and widely understood quality of life (especially in highly developed countries), activation of senior citizens as well as the increase in life expectancy and the actual duration of life. The ageing of societies is recognised as a common fact by the World Health Organisation, which estimates that by 2050 as much as 20% of the Earth's population will be aged over 60[3].

In Europe, population ageing does not only result from the aforementioned factors, but is linked to low fertility rates, which do not guarantee the replacement of generations. The average fertility rate in the European Union in 2021 was 1.53, with Poland being placed in the fourth lowest position in Europe at that time[4].

[2] For a broader discussion of the reasons and consequences of the ageing of the Polish population, see: Nieszporska, 2021.
[3] *World Population Ageing 2017*, p. 7.
[4] https://forsal.pl/gospodarka/demografia/artykuly/8680536,europejska-mapa-dzietnosci-polska-z-czwartym-najgorszym-wynikiem.html

Data from Poland's Central Statistical Office leave little hope that the demographic crisis may have bypassed Poland. The total number of births in Poland shows an average annual downward trend (by approx. 1%[5]). For example, in 2000, this figure was around 380,500 for the whole country, while in 2022 it stood at 306,200[6]. At the same time, since 2000, the number of people aged 65+ in Poland, which then stood at almost 5 million, has increased to just over 7 million, with an annual growth rate of slightly over 2% between 2000 and 2022.

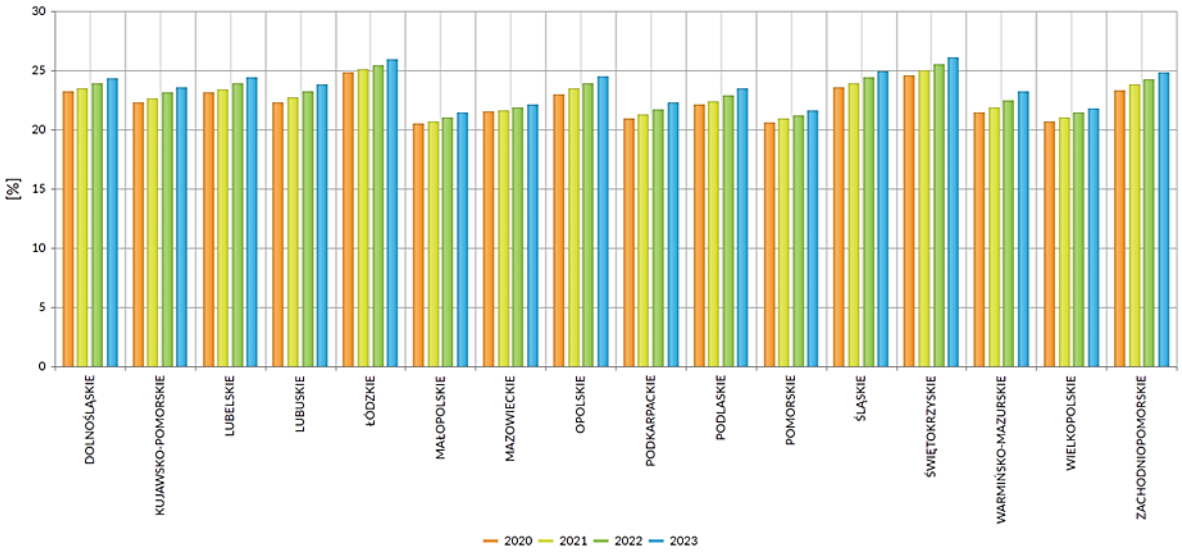

Figure 1. Percentage of population in the post-working age in the total number of inhabitants of Polish voivodeships in 2020-2023.

Source: https://bdl.stat.gov.pl/bdl/dane/podgrup/wykres, 5.07.2024.

If we look at the administrative breakdown by voivodeships in Poland, an upward trend in the number of senior citizens is also a fact (Figure 1). In each of the regions, the number of such people has been increasing in recent years, with the highest percentage of elderly citizens in the total population recorded in the Świętokrzyskie and Łódzkie voivodeships in 2023 (26.1% and 25.9% respectively). At that time, "the youngest" voivodeships in the country were Małopolskie (21.4%), Pomorskie (21.6%) and Wielkopolskie (21.8%). These voivodeships were also characterised by the highest rate of live births per 1000 inhabitants and, together with Mazowieckie, reached a level of approximately 8 in 2023. The voivodeships with the lowest rate of live births at that time were: Świętokrzyskie (6.17%), Warmińsko-mazurskie (6.23%) as well as Śląskie and Zachodniopomorskie (each 6.38%).

In consequence, the disproportion in the trend of the number of births and the number of elderly people leads to a negative population change not only for Poland as a whole, but also for each of the country's voivodeships (Figure 2).

[5] Author's own calculations based on Central Statistical Office data.
[6] https://stat.gov.pl/obszary-tematyczne/ludnosc/ludnosc/struktura-ludnosci,16,1.html

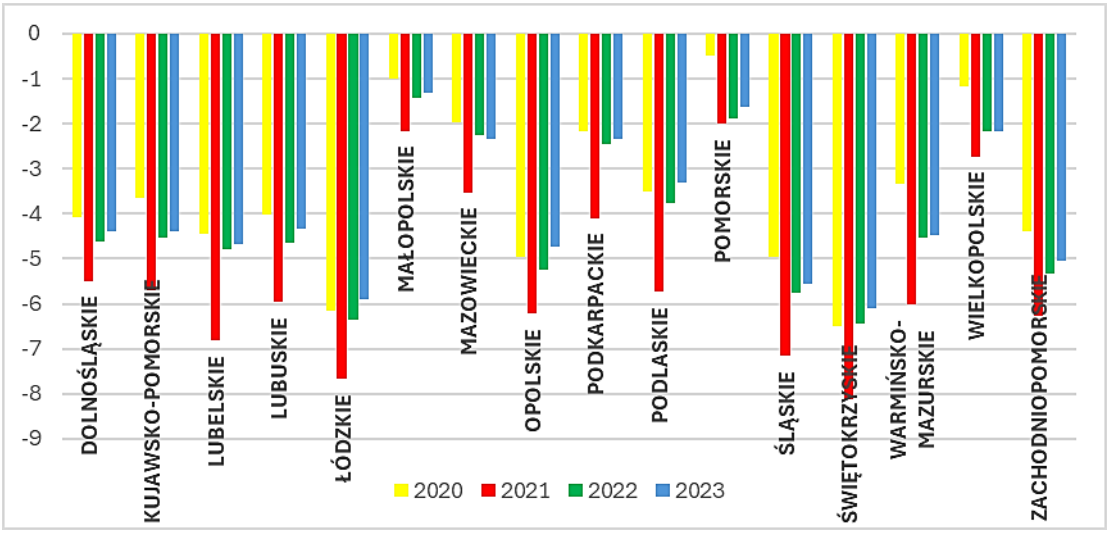

Figure 2. Population growth in Polish voivodeships in 2020-2023.

Source: Author's own calculation based on the Central Statistical Office data.

The lowest values of the natural population change in 2023 were recorded in the aforementioned voivodeships[7]: Świętokrzyskie (-6.09) and Łódzkie (-5.9), whereas the highest values, albeit still negative, were recorded in Małopolskie (-1.3) and Pomorskie (-1.62).

3. Infrastructure of obstetrics and gynaecology wards and the degree of its utilisation

In Poland, the public sector still represents the major part of the market of health services provided to citizens. The major players are hospitals, which provide highly specialized inpatient services, thus generating the highest costs for the public payers.

In 2022, Poland had 896 hospitals with 462 obstetrics and gynecology (ob-gyn) wards and a total of 14,420 beds there. Compared to all hospital beds available to patients in that year (164,155 beds), those in ob-gyn wards accounted for just under 9%.

In 2001–2022, the number of beds in ob-gyn wards in almost all voivodeships showed a slight declining trend. The largest annual decrease over this period was recorded in the Lubuskie, Warmińsko-mazurskie and Wielkopolskie voivodeships, amounting to just over 2%. In terms of the number of ob-gyn beds, Małopolskie was the most stable voivodeship[8].

In 2022, the highest number of beds per 10,000 inhabitants in the analysed wards was found in Podlaskie, Wielkopolskie, Lubelskie and Łódzkie voivodeships, and the lowest figures were recorded in Pomorskie, Dolnośląskie and Małopolskie voivodeships (Figure 3).

[7] Values in brackets are given per 1,000 inhabitants.
[8] Author's own calculations based on Central Statistical Office data.

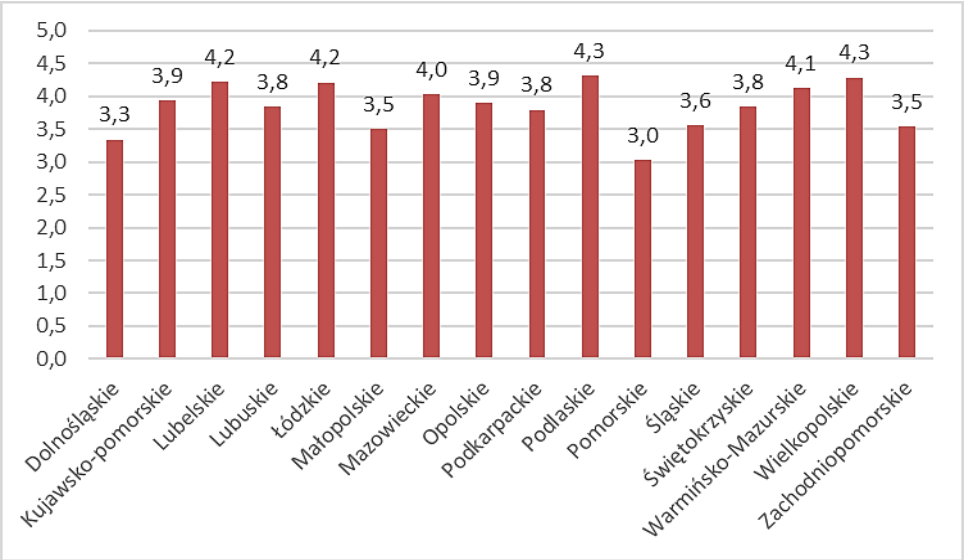

Figure 3. Number of beds in obstetrics and gynecology wards in Poland in 2022 (per 10,000 inhabitants).

Source: Author's own analysis based on Central Statistical Office data.

The activity of health care providers is inextricably linked to the medical staff they employ. In 2021, the number of obstetrics and gynecology specialists working in Poland was 3710, with 3914 a year later[9].

In the European context, the number of obstetrics and gynecology specialists per 100,000 inhabitants was 17.61 in Poland in 2021, compared with 26.07 in Germany, for example (Figure 4).

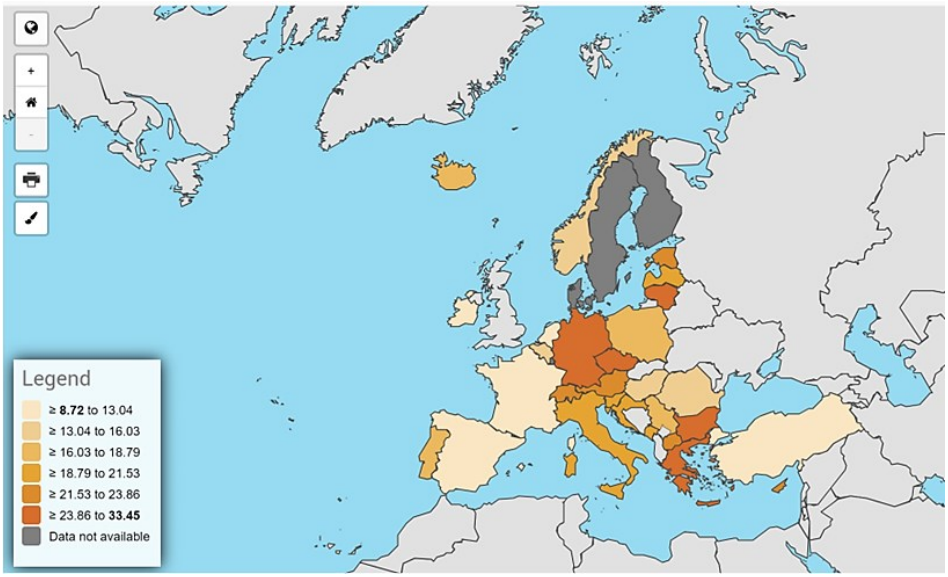

Figure 4. Number of physicians specialising in obstetrics and gynaecology in Europe in 2021 (per 100,000 inhabitants).

Source: https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_physcat__custom_12124573/default/map?lang=en, 11.07.2024.

[9] Central Statistical Office data.

In the breakdown by voivodeship, the highest indicator of the number of ob-gyn specialists was found in Zachodniopomorskie, Warmińsko-mazurskie and Kujawsko-pomorskie while the lowest figures were recorded for Wielkopolskie, Dolnośląskie and Pomorskie (Figure 5).

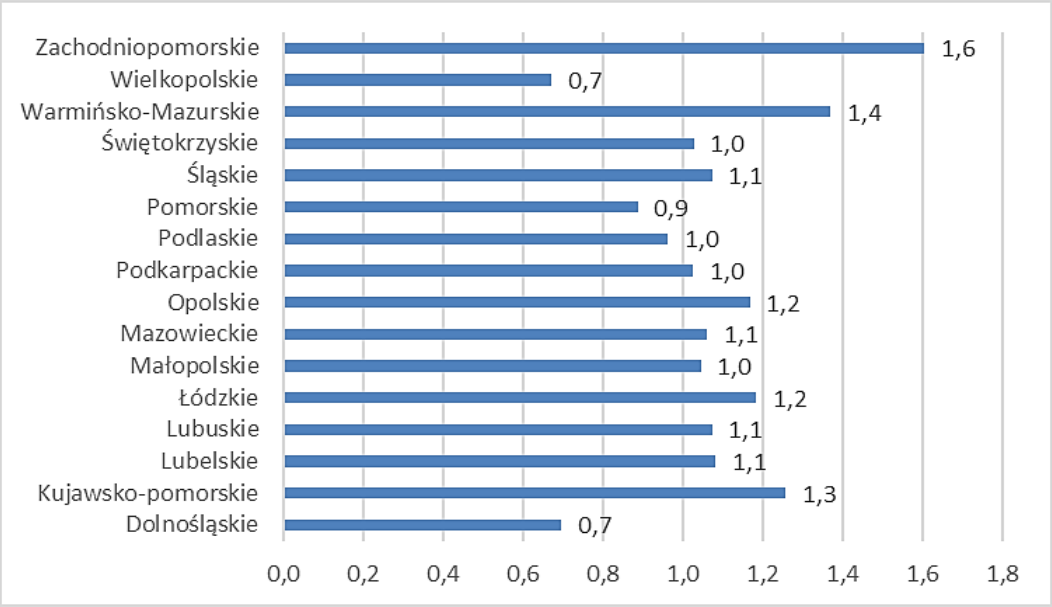

Figure 5. Number of physicians specialising in obstetrics and gynaecology working in Poland's voivodeships in 2022 (per 10,000 inhabitants).

Source: Author's own analysis based on: *Biuletyn statystyczny ministra zdrowia 2023*, Tables 1.1 and 2.3.4.

Midwives are among the extremely important medical staff in obstetrics and gynaecology wards. The lowest number of midwives was employed in 2022 in the Pomorskie, Dolnośląskie and Lubuskie Voivodeships, and the highest number was recorded in Lubelskie and Podkarpackie (Figure 6).

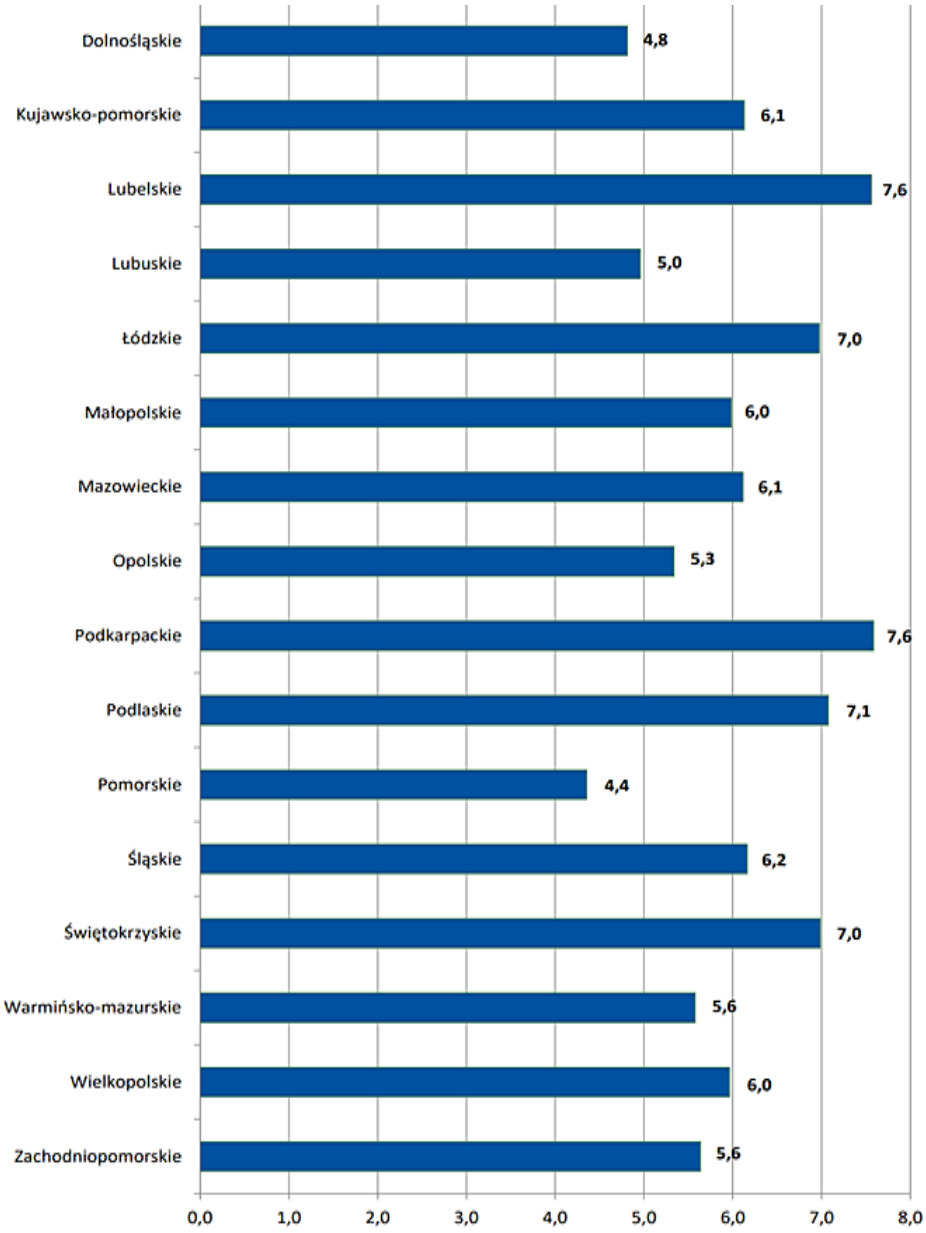

Figure 6. Number of midwives working in Poland's voivodeships in 2022 (per 10,000 inhabitants).
Source: Biuletyn sta*tystyczny ministra zdrowia 2023*, Figure 62.

Paradoxically, in the regions of Poland with the highest birth rates, i.e. Pomorskie, Małopolskie and Wielkopolskie, the rate of professionally active gynecologists and obstetricians as well as midwives is relatively lowest or among the lowest ones in the country.

The provision of health care services is inextricably linked to the results it generates. In the case of obstetrics and gynecology wards, the number of births attended seems to be the most important indicator of this kind. As reported by the Polish Ministry of Health (Biuletyn statystyczny ministra zdrowia 2023), the number of births occurring in Poland has been regularly decreasing: from 365,476 in 2019 to 297,993 in 2022. The downward trend in the number of births attended is found not only in the country as a whole, but also to each individual voivodeship.

In 2022, Pomorskie and Wielkopolskie voivodeships had the highest number of attended births, while the lowest number of births were recorded in Opolskie, Śląskie and Warmińsko-mazurskie (Table 1).

Table 1.
Number of births attended in Poland in 2022 (per hospital)

Voivodeship	Number of births
Dolnośląskie	269
Kujawsko-pomorskie	368
Lubelskie	304
Lubuskie	296
Łódzkie	295
Małopolskie	440
Mazowieckie	438
Opolskie	**214**
Podkarpackie	409
Podlaskie	263
Pomorskie	**497**
Śląskie	**225**
Świętokrzyskie	324
Warmińsko-mazurskie	**229**
Wielkopolskie	**491**
Zachodniopomorskie	262

Source: Author's own analysis based on Central Statistical Office data.

It is interesting to note that the voivodeships with the lowest level of resources in 2022, measured by medical staff employed and the number of beds, seem to work most efficiently since they attend to the highest number of births. These are the Wielkopolskie and Pomorskie voivodeships.

4. Technical efficiency of obstetrics and gynecology wards

When analyzing the performance of hospital wards, it is worth considering their efficiency and utilization of the resources that remain at their disposal. Therefore, it will be helpful to determine the technical efficiency of these wards, considered most commonly when the production process (in this case: the provision of services) is organized in such a way as to minimize the inputs required to generate certain outputs.

Therefore, the analysis focuses on the measurement of the technical efficiency of hospital ob-gyn wards located in each of Poland's sixteen voivodeships. Thus, the voivodeships with their total number of ob-gyn wards have been adopted as the unit of analysis, i.e. the decision-making unit (DMU).

Data Envelopment Analysis (DEA)10 using Frontier Analyst® was used to measure technical efficiency.

Given that the analysis is undertaken to find an answer to the question of whether the wards' resources have been used properly and effectively to achieve the desired results, the following inputs were taken into consideration:

- the number of beds in ob-gyn wards,
- the number of doctors working in these wards,
- the number of midwives working there.

The outputs include:

- the number of people treated per year in the ob-gyn wards,
- the number of births attended to, and
- live births recorded in the analyzed wards.

The primary objective of the study was to find those provinces that were technically efficient in the operation of obstetrics and gynecology wards, thus becoming a model for other regions.

The study involved a model with variable economies of scale and an input-oriented model. Thus, when determining technical efficiency, a situation was considered where, as the production volume increased (i.e. the higher number of persons treated, the number of occurring births and live births), their costs decreased. The analysis presented here also assumes that the ob-gyn wards in each voivodeship strive to minimize the costs of operation.

The DEA method allows us only to find the relative efficiencies of the analysed facilities, with the efficiency level taking values between 0% and 100%. The highest value means that the DMU concerned is efficient. When the value is less than 100%, the DMU is said to be inefficient, while the difference between 100% and the determined value indicates the degree of waste, i.e. inefficient use of resources.

The efficiency values for the Polish voivodeships for 2022 analyzed in the context of the operation of obstetrics and gynaecology wards are presented in Table 2.

Table 2.
Technical efficiency

Voivodeship	Efficiency
Dolnośląskie	100.00
Kujawsko-pomorskie	74.79
Lubelskie	77.97
Lubuskie	100.00
Łódzkie	89.70
Małopolskie	100.00
Mazowieckie	100.00
Opolskie	100.00
Podkarpackie	90.94
Podlaskie	100.00

[10] More information on the DEA method can be found, for example, in: Charnes; Cooper et al., 2000.

Cont. table 2.

Pomorskie	**100.00**
Śląskie	**88.78**
Świętokrzyskie	**97.22**
Warmińsko-mazurskie	**92.96**
Wielkopolskie	**100.00**
Zachodniopomorskie	**96.80**

Source: Author's own calculations.

The lowest relative efficiency in the utilization of resources in the provision of services at ob-gyn wards in 2022 was found for the Kujawsko-pomorskie and Lubelskie voivodeships, and the degree of underutilization of the analysed resources reached almost 15% and 12% respectively. The voivodeships with the highest technical efficiency at the analysed wards were: Dolnośląskie, Lubuskie, Małopolskie, Mazowieckie, Opolskie, Podlaskie, Pomorskie and Wielkopolskie.

5. The funding of obstetrics and gynecology services

According to long-term observations and statistical data, Poland is one of the worst-performing countries in Europe in terms of total health care expenditure (Figure 7). In 2022, these expenditures accounted for 6.4% of Poland's GDP, which amounted to USD 2,972.96 per capita, compared, for example, to USD 8,010.94 in Germany.

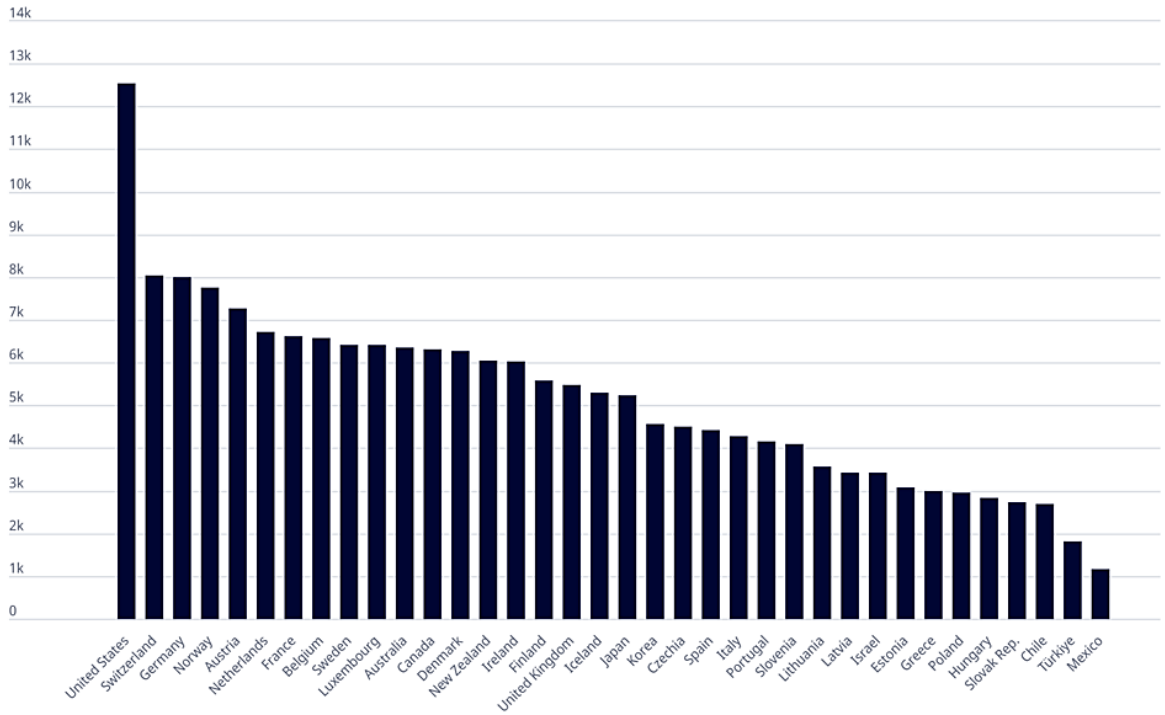

Figure 7. Health spending.

Source: https://www.oecd.org/en/data/indicators/health-spending.html, 08.08.2024.

Public spending on health is even lower, accounting for only 4.7% of GDP for 2022[11]. Health spending, particularly public expenditure, is extremely important for patients in Poland since, according to the Act of 27 August 2004 on health care services financed from public funds[12], any service rendered by a health care provider and contracted with the National Health Fund (NFZ) is free of charge for the patient.

When discussing the operation of maternity wards and their public funding, it must be strongly emphasized that childbirth in a public hospital is fully financed by the National Health Fund in Poland. This applies to all varieties of childbirth: natural birth, caesarean section or the so-called family birth. The latter type is also free of charge, although some public entities charged an additional fee for the participation of a family member in such a birth[13]. Since July 2015, the National Health Fund has paid an additional PLN 400 to hospitals for anaesthesia at childbirth[14], making a total of PLN 2100 per a natural birth (Frączyk, 2024). For the sake of comparison, a natural birth in a private clinic cost PLN 8900 in 2021, with a C-section costing PLN 12,900 while the price for a childbirth with extra options selected by the patient reached even PLN 20,900[15].

In the system of public financing for health care services, the National Health Fund negotiates prices per point[16] and price adjustment coefficients for the service with the health care provider, whereas the Agency for Health Technology Assessment and Tariff System (AOTMiT) assesses the prices for such services[17].

According to the NFZ report18, the highest share in the cost structure of health services in 2022 was held by the costs of hospital treatment at 51.88%, which means that they amounted to PLN 65,726,086.82 thousand. In the breakdown by voivodeship, the costs of health services incurred by the NFZ in 2022 are presented in Table 3.

Table 3.
Costs of health services incurred by the National Health Fund in 2022

Voivodeship	Costs of healthcare services (PLN '000)	Costs of hospital treatment (PLN '000)
Dolnośląskie	6,838,603.66	2,527,455.48
Kujawsko-pomorskie	4,752,602.44	1,795,304.59
Lubelskie	5,135,997.20	1,867,845.93
Lubuskie	2,261,999.26	770,729.22

[11] https://stat.gov.pl/obszary-tematyczne/zdrowie/zdrowie/wydatki-na-ochrone-Zdrowia-w-latach-2021- 2023,27, 4.html.
[12] Polish Journal of Laws. No. 210, item 2135.
[13] *Odpowiedź sekretarza stanu w Ministerstwie Zdrowia - z upoważnienia ministra - na interpelację nr 468 w sprawie pobierania opłat za porody i opiekę okołoporodową w publicznych szpitalach*.
[14] https://www.prawo.pl/zdrowie/od-lipca-nfz-placi-za-porod-ze-znieczuleniem,248495.html
[15] https://cuk.pl/porady/porod-w-prywatnej-klinice.
[16] A point is a unit measure used to determine the value of healthcare services – a billable (reportable) product, defined in the catalogues of services introduced by the Minister of Health in the individual regulations on guaranteed health services – *Wycena świadczeń opieki zdrowotnej finansowanych ze środków publicznych*. 2021, p. 4.
[17] *Wycena świadczeń opieki zdrowotnej finansowanych ze środków publicznych.* 2021, p. 6.
[18] *Roczne sprawozdanie z wykonania planu finansowego narodowego funduszu zdrowia na 2022 rok*, p.42.

Cont. table 3.

Łódzkie	6,076,750.68	2,328,210.98
Małopolskie	8,219,936.73	3,059,092.10
Mazowieckie	13,467,769.94	5,384,404.51
Opolskie	2,177,866.77	781,275.22
Podkarpackie	4,937,983.35	1,752,966.46
Podlaskie	2,803,868.48	1,078,094.69
Pomorskie	5,550,160.11	2,109,230.03
Śląskie	11,020,736.40	4,122,567.16
Świętokrzyskie	2,878,529.74	1,088,201.51
Warmińsko-mazurskie	3,155,250.80	1,190,844.83
Wielkopolskie	7,989,970.78	2,997,840.12
Zachodniopomorskie	3,801,181.05	1,380,072.75

Source: Author's own analysis based on: Roczne sprawozdanie z wykonania planu finansowego narodowego funduszu zdrowia na 2022 rok.

Unfortunately, the National Health Fund reports do not include an account of costs incurred for obstetrics and gynecology services.

The aforementioned data seem to confirm the widely known fact about the underfunding of the health sector, but also about the underestimated costs of certain procedures, including those in obstetrics. This fact is confirmed by the opinion issued by the Supreme Audit Office (NIK), which stated: *In the period covered by the audit, the system of services valuation (2015-2020) was inefficient despite the (generally) correct implementation of the statutory tasks (Act on benefits) by individual entities, i.e. the Agency for Health Technology Assessment and Tariff System and the National Health Fund*[19].

6. Public expectations

In 2022, Polish hospitals attended to significantly fewer births than in the preceding years. This fact reflects the decreasing number of births, but also suggests that the legitimacy of the current operation of hospital maternity wards should be looked into. The analysis of such dilemmas are all the more justified as healthcare management experts claim that "the break-even limit in the operation of an ob-gyn ward can be reached when 400 births are attended to per year" (Lurka, 2024b), i.e. more than one birth per day on average (!). Based on this principle, it may well be that a large proportion of Polish hospitals should close their maternity wards. This conclusion, obviously subjected to more detailed verification, may result from the fact that if we compare the number of births attended to in each voivodeship to the number of hospitals operating in each voivodeship, we would find that the threshold of 400 births is exceeded in hospitals operating in Małopolskie, Mazowieckie, Podkarpackie, Pomorskie and Wielkopolskie[20]. This indicator was calculated using very general data, without considering the

[19] *Wycena świadczeń opieki zdrowotnej finansowanych ze środków publicznych*, 2021, p. 8.
[20] Author's own calculations based on *Biuletyn statystyczny ministra zdrowia 2023*.

particular conditions of each hospital and based on all the hospitals in each voivodeship being viewed together. However, the conclusions from slightly more detailed analyses would be similar. In fact, the authors of the report published by Menedżer Zdrowia (Lurka, 2024b) indicate that as many as 109 hospitals submitting their reports to the National Health Fund do not meet the economically justified standards.

The break-even point for the profitability of Polish maternity wards is related not only to the low demand for their services, but also to the shortages of medical staff (Lurka, 2024c), and thus the limited scope and quality of services offered by the wards. In cases where sufficient staff is available but the ward remains unprofitable, the potential of qualified staff is clearly wasted.

It is widely known that when patients can choose where they want to give birth and can afford the extra costs involved, they will opt for a facility that, in addition to the delivery room, also has a neonatal unit, a neonatal intensive care unit or at least a pediatrics unit with high-quality medical equipment and specialists who know how to operate it. Therefore, it would appear that hospitals offering a "basic package" of ob-gyn services will disappear from the map of healthcare providers, which in turn will give rise to enormous public concern. In the context of the key principles of the Polish healthcare system, i.e. universality and equal access to medical services for every citizen[21], the closures of maternity wards will limit such access, causing concerns as well as fear among the citizens (Battaglia, 2025).

In this discussion, however, it should be emphasized that even if unprofitable and loss-making wards continue to operate, the quality of services provided there, and thus the safety of patients and their newborns, may raise concerns. As emphasized by Agnieszka Pachciarz, Director of the Wielkopolskie branch of the National Health Fund, "the future lies in profiling and consolidation of competences. Hospitals with high underperformance rates should analyze their medical activity and consider reprofiling and adjusting the number of beds and work profile to the actual needs" (Lurka, 2024c). The aforementioned reprofiling of hospitals means, in many cases, that unprofitable obstetrics and gynaecology wards would be replaced with others, e.g. neurological rehabilitation wards or geriatric wards, both of which are still extremely rare in Poland.

There have also been suggestions in the industry journals that those maternity wards which attend to under 400 births per year should be replaced by district health centres (poviat level), i.e. intermediate providers located between an outpatient clinic and a hospital, providing access to an internist, surgeon and obstetrician-gynecologist to people living in less densely populated areas (Lurka, 2024d).

[21] Article 68 of the Constitution of the Republic of Poland, Text enacted on 2 April 1997 by the National Assembly, Dz.U. – Journal of Laws of 1997 No. 78 item 483.

The idea cited above for changes in the organization of the care in gynecology-obstetrics departments seems particularly relevant in light of the experience on the international health care market. In Sweden, for example, studies have shown that positive effects on infant health reflect a shift of births from smaller to larger wards of higher quality (Avdic et al., 2024).

From a financial perspective, the unprofitability of wards that are affected by declining demand means more than non-performance of services and high costs of premises: it also entails losses related to salaries paid to financially and technically inefficient medical staff. This state of affairs calls for increased vigilance on the part of hospital managers and necessitates bold, economically sound decisions. "Underestimation of the costs of certain medical procedures by the National Health Fund, the insufficient number of doctors, increasing expenses related to medical staff salary increases, costs of purchasing disposable equipment, materials and heating (...) are the biggest problems for hospital managers" (Lurka, 2024d). All these problems go hand in hand with the need for hospital managers to ensure high quality of services, adapt the range of hospital services to the needs of patients (e.g. opening infertility treatment centers, urogynecology outpatient clinics), but also to generate a positive financial result for the facility, which necessitates the constant search for additional sources of funding and support from local government authorities.

However, these issues are often not understood and not appreciated by politicians, who continue to have a strong impact on the operation of healthcare providers, particularly public ones (Rajfur, 2019). They also remain in opposition to the expectations of the regions' inhabitants who use the facilities. The historically well-established belief that a district hospital in Poland must have four core units (internal medicine, surgery, obstetrics and pediatrics) seems to be outdated today, and this problem can be solved by adapting the structure of such hospitals to the actual needs of the residents.

However, the obvious fact remains that in order to talk about the effective and efficient functioning of hospital departments, it is necessary to keep in mind the basic, from the perspective of health, indicators, such as levels of maternal mortality and severe morbidity (Grünebaum et al., 2023), intervention rates (Yu et al., 2020), or pain management (Guiguet-Auclair et al, 2023).

7. Summary

The production capacity of the health care sector ensures that the health needs of the public are addressed, while the consumption of medical services influences the scope and scale of service provision. This well-known fact, which remains compliant with the principles of economics, seems to remain in opposition to social expectations, but also, more often than not, to decisions and actions taken by decision-makers and health care sector managers in Poland.

What remains unchanged, of course, is that the health care sector is a very particular field of human activity. This is due to the fact that although the outcome produced by health care establishments can be considered as their specific output, it cannot be easily expressed in monetary units (Małek, Nieszporska, 2000). Thus, numerical indicators of such services are determined, successfully completed therapeutic treatments are counted, and the health status of the population is measured by analyzing life expectancy or fertility. Classic economic calculations, where both inputs and outputs are expressed in the same (monetary) units, are impossible in this case and therefore, the economic analysis of the health care sector is mainly reduced to cost analysis.

The problem of economic analysis in the health care sector is also related to an issue which is extremely important from an ethical, legal and social perspective, namely the assessment of the doctor-patient relationship (Legchilina, Nieszporska, 2019). Indeed, this relationship determines many factors that characterize the organization, financing and management of healthcare. The important aspect of such relationships lies in the asymmetry of information: patients are often not fully aware of their health needs and do not know what kind of therapies, procedures or treatments they may need. Also, patients often have a limited capacity to assess the quality of the services received, which is why the evaluation of the sector should, crucially, involve the monitoring of the health service quality as well as auditing the operation of medical institutions and organizations.

All health care providers should, to the best of their ability, carry out such analyses. However, many of them, especially the public ones, face problems which the Supreme Audit Office describes as follows: "As the results of the audit showed, most of the health care entities were not prepared for the introduction of the cost accounting standard. Significant differences were found in the way cost accounting was carried out by healthcare providers, and the vast majority of them did not keep full accounts and did not know the costs of the medical procedures they performed. The situation was further aggravated by the fact that providers used IT systems from a variety of developers that were not fully integrated with one another"[22].

Undoubtedly, this state of affairs certainly affects the operation of health care providers and individual hospital wards. The ob-gyn wards in Poland analyzed in this study are also struggling not only with internal problems, which include, among others, shortages of qualified medical staff or inefficient use of existing infrastructure. As indicated by the aforementioned study, the lowest technical efficiency in 2022 was recorded by hospital maternity wards in the Kujawsko-Pomorskie and Lubelskie voivodeships. It seems surprising that the regions characterized by the lowest numbers of medical staff and the smallest number of beds in obstetrics and gynecology wards (Greater Poland and Pomerania) had the highest number of births and their technical efficiency stood at 100%.

[22] *Wycena świadczeń opieki zdrowotnej finansowanych ze środków publicznych*, 2021, p. 12.

Such a result, although taking into account the most common data on the infrastructure of hospitals in individual provinces, without delving into the typically financial aspects of their operation, leads to the conclusion that the highest degree of utilization of hospital ward resources can be achieved not in large centers, but precisely in those where the number of specialists and beds is small. Such a conclusion, however, requires more thorough verification.

When considering how to improve the performance of the health care sector, perhaps the most important step should be to analyze the factors that shape demand. It seems natural to assume that those parts of the country where the largest numbers of babies are born should employ the highest numbers of medical staff. However, in the period under review, i.e. in 2022 in Poland, it was found that the voivodeships with the highest birth rates, i.e. Pomorskie, Wielkopolskie and Małopolskie, had the lowest indicators of professionally active midwives and doctors specializing in obstetrics and gynecology.

The continued negative population growth and dynamic ageing of the population is an important fact that does not seem to be properly addressed by Polish maternity wards and the structure of the health care system in general. The number of births attended to continues to fall, which translates into a significantly declining demand for obstetric services, and this means that delivery wards operate for a very small number of patients from the region. The financial consequence of this fact is the unprofitability of maternity wards. Combined with the undervaluation of many medical procedures and the low levels of financing for the sector in general, this can lead to the economic collapse of many healthcare providers.

Therefore, unprofitable wards are maintained in Poland today under the guise of universal access to health services, with no regard for the real needs of society, and no adjustments are made to the range of publicly funded health services in order to match the age structure of the population or address the demand for specific services. Obstetric wards often operate on the brink of profitability, which translates into poor financial performance for the whole institution. It seems that another underlying reason is the fact that public health care providers are still largely influenced by the broadly understood and centrally managed health policy, and any attempts made by well-informed managers in such facilities are doomed to social criticism and controversy among health care organizers in Poland.

The present study and the findings presented above concerned each voivodeship in Poland taken as a whole in the context of the operation of maternity wards. Such an approach is fraught with certain generalization, but it does provide the basis for a very thorough analysis of each health care provider individually. However, the problem that may occur when such an individual approach is attempted is the unavailability of unit-level data as well as the heterogeneous methods of data collection and processing in the units. Examples of quantitative analysis of the health care sector in Poland and the related opportunities still remain very limited, and the awareness of their existence in the community of health care managers and the resulting conclusions face public criticism. Moreover, in light of the presented problem, the need for regular surveys of public expectations, opinions, or trust in health care in general seems extremely important.

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