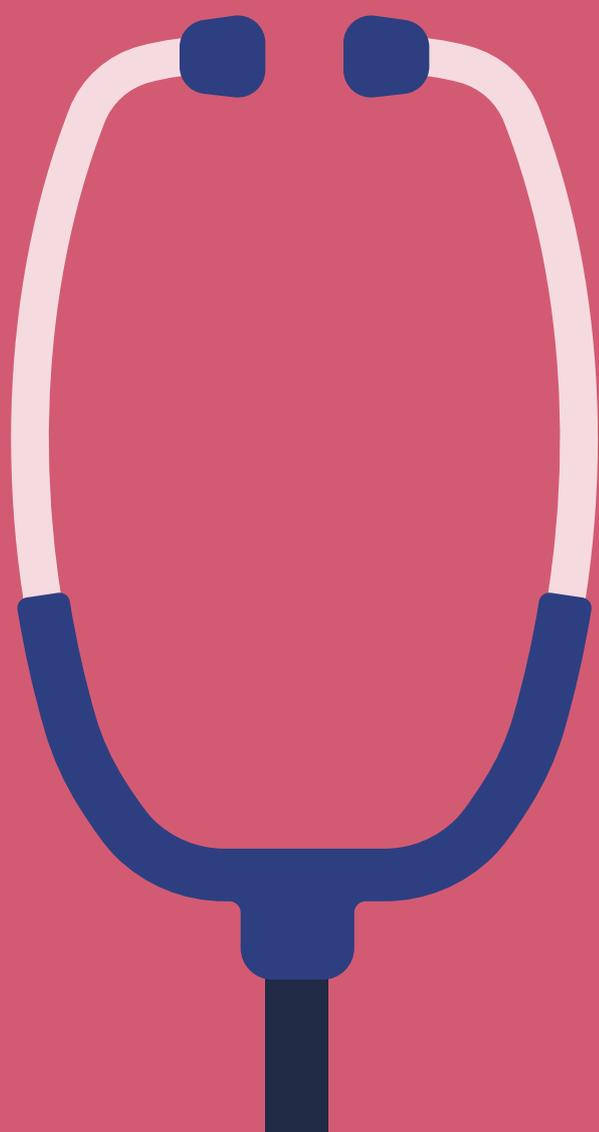


STRENGTHENING HOSPITALS FOR A POST-COVID-19 FUTURE IN POLAND



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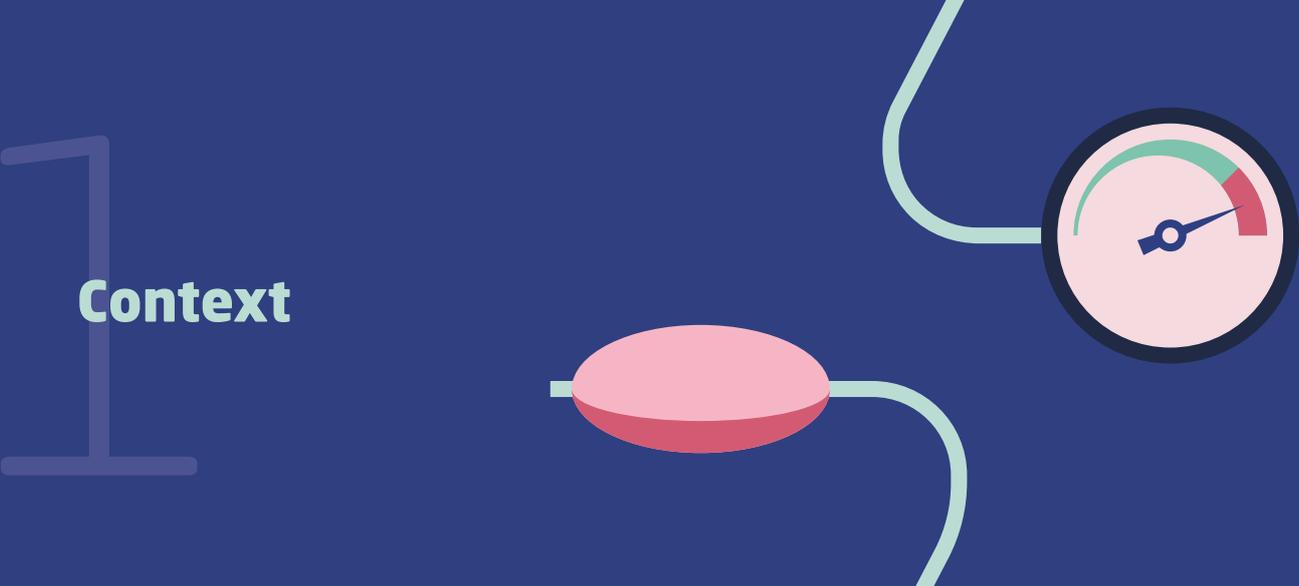
This paper was prepared under the general direction of Tania Dmytraczenko, Practice Manager, and Marcus Bernhard Heinz, Resident Representative. The extended team was led by Anna Koziel and Mukesh Chawla, and included Katarzyna Dubas-Jakóbczyk, Richard Siegrist, Alejandro Gonzalez Aquines, Barbara Skwarczyńska and Mohammed Edreess Sahak. Filip Kochan supported external communications. Piotr Ruczyński helped with the production and logistics.

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ABBREVIATIONS

BMJ	British Medical Journal
CEE	Central and Eastern Europe
CEEC	Central and Eastern European Countries
CMS	Centers for Medicare and Medicaid Services
DRG	The diagnosis-related groups
EU	European Union
EBM	Evidence based medicine
GDP	Gross Development Product
HCAHPS	Hospital Consumer Assessment of Healthcare Providers and Systems
ICD	International Classification of Diseases
ICU	Intensive Care Unit
IT	Information Technology
LTR	Likelihood to recommend
MD	Medical doctor
MOH	Ministry of Health
NFZ	National Health Fund (Polish: Narodowy Fundusz Zdrowia)
NIK	Supreme Audit Office (Polish: Najwyższa Izba Kontroli)
OCR	Optical character recognition
OECD	Organization for Economic Co-operation and Development
PHC	Primary health care
PSI	Patients Safety Indicators
SOC	Specialist outpatient care
COPD	Chronic obstructive pulmonary disease
SPZOZ	Independent public health facility (Polish: Samodzielny Publiczny Zakład Opieki Zdrowotnej)
WHO	World Health Organization

Context



The outbreak of the coronavirus disease (COVID-19) pandemic has delivered an enormous shock to the global economy, exacting a large human toll, shutting down major economic sectors, and deeply upending labor markets. The virus has already infected over 150 million people worldwide, killing over 3 million, and has disrupted millions of lives and livelihoods in the deepest global recession in eight decades. As a result, per capita incomes in most countries shrank in 2020, tipping many millions back into poverty. In the Europe and Central Asia region alone, the World Bank estimates that an additional 2.2 million people may have slipped into poverty in the emerging and developing countries of the region, a figure that could be as high as 6 million if the US\$3.20 a day poverty line is used.¹

The health care sector is usually one of the more resilient sectors in most recessions, and spending levels typically stay steady or fall only slightly because people have less money to spend on health care. Amid the global financial crisis in 2009, health care spending rose 2.8 percent in US dollar terms in sharp contrast to the 1.8 percent decline in real gross domestic product (GDP). But the recession induced by the COVID-19 pandemic seems to be different. In the United States, for instance, health care spending declined for the first time in years, falling about 2 percent year-on-year in December 2020.² Globally, health care spending is estimated to have fallen by 1.1 percent in US dollar terms during 2020 because of the unprecedented COVID-19 pandemic.³

At first glance, this is counterintuitive, especially as this economic downturn has been caused by the COVID-19 pandemic, a health emergency. But closer examination shows that while COVID-19 is overstressing the health system by filling up hospitals with infected patients, it is also resulting in closing of outpatient facilities and doctors' offices and causing people to defer or skip care either because they have lesser money during the pandemic or because of fear of becoming infected. There is not enough information to determine whether the delayed or forgone utilization was necessary nor is it clear whether outcomes are suffering. Early data from the United States point to a decline in cancer screenings and visits to manage chronic care, but more data and analyses are needed before meaningful conclusions can be drawn. The situation is similar in Poland.

1. World Bank. 2020. *COVID-19 and Human Capital: Europe and Central Asia Economic Update (Fall)*. Washington, DC: World Bank. doi:10.1596/978-1-4648-1643-7.

2. Peterson-KFF Health System Tracker. Accessed January 21, 2020, <https://www.kff.org/coronavirus-covid-19/perspective/covid-19-is-causing-health-spending-to-go-down/#:~:text=percent2B percent20Year percent2Dto percent2Ddate percent20spending,about percent200.5 percent25 percent20from percent20last percent20year>.

3. The Economic Intelligence Unit. 2020. *COVID-19: The Impact on Healthcare Expenditure*.

Another way in which the COVID-19 pandemic is affecting the health care sector is through the impact it is having on the revenues and future expenses of health systems as well as on the overall national economy. In Poland, where the economic downturn due to the pandemic has so far been one of the smallest in Europe, the GDP is estimated to have declined by 2.7 percent in 2020, private consumption by 3.1 percent, and total investment by 8.4 percent.⁴ As part of the first stimulus package, estimated at PLN 116 billion (5.2 percent of GDP), the government provided additional funds for hospital equipment and supplies and gave wage subsidies for employees of affected businesses and self-employed persons, among others, to cover social insurance contributions. Growth in the third quarter of 2020 turned out marginally higher than expected as manufacturing activity picked up, but the respite was interrupted by the second wave of COVID-19 in November–December 2020, forcing the government to adopt a new stimulus package estimated at 1.5 percent of GDP. The large fiscal stimulus and the decline in economic activity caused the fiscal deficit to widen to 8.5 percent of GDP in 2020, which is expected to improve in 2021 but remain in deficit at 4.8 percent of GDP.

The current upward trajectory of the pandemic notwithstanding, the successful development of several effective vaccine candidates and the single-minded focus on deployment of the vaccine portends cautious hope that the COVID-19 pandemic may soon be over. Growth is thus projected to recover in 2021, though even the most optimistic assessments would agree that the pace of recovery is highly uncertain and is dependent on the availability and distribution of a vaccine and management of the inevitable mutations of the virus. The World Bank (2021) estimates that the Polish economy will recover over the course of 2021 and projects growth at 3.3 percent for the year as a whole – increasing to 4.2 percent in 2022⁵ – and averaging about 3.25 percent for a few years after that.⁶

The next couple of years, therefore, present a mix of challenges and opportunities. On the one hand, health utilization rates are expected to rise significantly as the pandemic wanes and incomes rise. On the other hand, health sector revenues are also expected to rise, making it possible for the system to generate more absolute resources without any tinkering at the margins. Most importantly, however, the possibilities opened up by the ongoing pandemic of redefining norms, limits, and expectations provide an almost new platform for the government to significantly reshape the health care sector and build back better, stronger, and faster – not only to prepare it for future major disease outbreaks but also to better produce and deliver health care services for its population beleaguered for a protracted time by the 1-in-a-100-year pandemic.

Of the many potential health sector reform areas that broadly aim at improving efficiency, effectiveness, and quality of care, reform of Poland's hospital sector requires the most urgent attention.⁷ The rest of this note is organized as follows. Section 2 defines the development objective and outlines the approach of this study. Key hospital sector challenges are discussed in Section 3. Recent hospital reforms are presented in Section 4. Sections 5 and 6 contain the Action Roadmaps for hospital-level and systemic challenges, respectively. Section 7 reflects on the larger systemic reforms in the health sector. Section 8 concludes.

4. World Bank. 2021. *Europe and Central Asia Economic Update, Spring 2021: Data, Digitalization, and Governance*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/35273>.

5. World Bank 2021.

6. IMF (International Monetary Fund). 2020. *Article IV Mission Concluding Statement*, November 20, 2020. <https://www.imf.org/en/News/Articles/2020/11/20/mcs112020-poland-staff-concluding-statement-of-the-2020-article-iv-mission>.

7. Butler, Stuart. 2021. "After COVID-19: Thinking Differently about Running the Health Care System." *JAMA* 323 (24): 2450–2451. doi:10.1001/jama.2020.8484; Fuchs, Victor. 2020. "Health Care Policy after the COVID-19 Pandemic." *JAMA*. 324 (3): 233–234. doi:10.1001/jama.2020.10777.



Objective and Approach

The objective of this analysis is to identify pragmatic steps to improve hospital performance in Poland and propose actionable short- and medium-term roadmaps for reforming hospitals post COVID-19.

The World Bank health team has a long history of engagement in the health sector in Poland and has built on various pieces of analysis to meet the objectives of this study. In addition to studying the hospital sector and the reform experience to date, the study team has held focused discussions with senior executives at Polish hospitals and other key stakeholders within the Polish health care system. Drawing upon expertise in hospital evaluation and management, health economics, and health services research, the study team identifies and assesses the critical challenges facing Polish hospitals in the areas of efficiency and effectiveness and proposes recommendations that key stakeholders can launch in the short or medium term to begin to address those challenges. While the COVID-19 pandemic has had an enormous impact on the Polish hospital system over the last 14 months, this analysis focuses on the anticipated post-pandemic environment for hospitals.



Systemic Issues in the Hospital Sector in Poland

Hospitals constitute the cornerstone of health care provision in Poland.⁸ Although for many years now the global trend has been to shift toward providing ambulatory care, promoting community care, and implementing diverse inpatient care cost-containment procedures, the position of hospitals in Poland continues to be strong.⁹ In 2019, there were over 250,000 hospital beds spread across 1,086 hospitals in Poland, averaging about 6.7 beds per 1,000 people. As in most countries, the basic function of all hospitals in Poland is to provide medical services, and many carry out various other activities (for example, teaching and research) and constitute important social and economic stakeholders in their local environments.

Oversized infrastructure

As in many other Central and Eastern European (CEE) countries, the hospital sector in Poland is characterized by oversized infrastructure, publicly owned hospitals, and public financing. In 2019, beds in public hospitals constituted 88 percent of the total number of hospital beds in Poland. Public hospitals are owned by three levels of local governments, ministries, and medical universities and are spread across counties (or powiats), districts (or voivods), and regions (or marshal) levels. The roughly 12 million hospitalizations in 2019 were almost equally divided across hospitals in powiats (24.5 percent of all hospitalizations), voivods (24.2 percent), marshal (25 percent), and university hospitals (20.6 percent). The remaining few hospitalizations took place outside the hospital network.

Reducing the number of curative care beds and implementing cost-containment measures for hospitals have been common trends of European health systems in the past three decades.¹⁰ The CEE countries inherited large hospital sectors from the Soviet period, and in many countries the organizational structure of hospitals had not been systematically redesigned to ensure synergies with external incentives. As a result, most countries have focused on reducing the number of hospital beds, but in some countries, such as Poland, Bulgaria, and Romania, the bed-population ratio actually increased largely because the fragmented governance structure in these countries has not encouraged initiatives to reduce the number of beds.¹¹

8. Dubas-Jakóbczyk, Katarzyna, and Anna Kozieł. 2020. "Towards Financial Sustainability of the Hospital Sector in Poland – A Post Hoc Evaluation of Policy Approaches" *Sustainability* 12(12) : 4801. <https://doi.org/10.3390/su12124801>.

9. Schwierz, C. 2016. "Cost-Containment Policies in Hospital Expenditure in the European Union." European Economy Discussion Paper 037, European Commission, Brussels, Belgium.

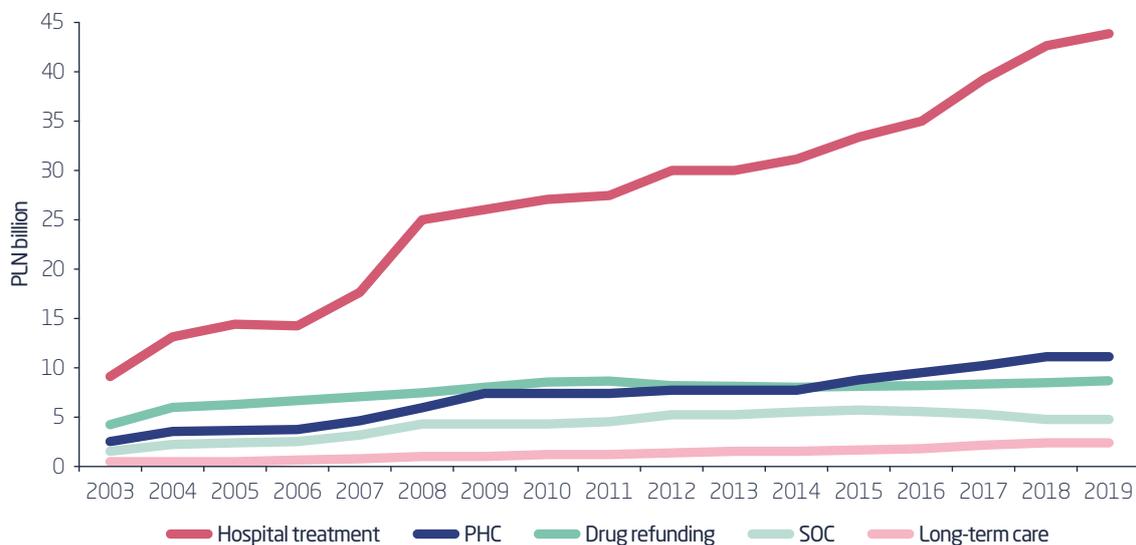
10. Dubas-Jakóbczyk, K., et al. 2020. "Hospital Reforms in 11 Central and Eastern European Countries between 2008 and 2019: A Comparative Analysis." *Health Policy* 124 (4): 368–379.

11. Kurpas, Donata. 2020. "Challenges in Implementing Integrated Care in Central and Eastern Europe – Experience of Poland." *International Journal of Integrated Care* 20 (2): 7.

Overreliance on inpatient care

There are huge imbalances in the provision of services in the health care system in Poland. The provision of outpatient and long-term care is insufficient, and coordination between inpatient and outpatient care is weak. Only 9 percent of doctors are general practitioners and around 80 percent are specialists; in comparison, the European Union (EU) average of general practitioners is 21 percent of all doctors.¹² Poor quality and insufficient use of primary care results in hospitalization rates for chronic conditions that are among the highest in Europe. Provision of care relies too much on patient care, and the shift to more community-based care has not yet occurred.¹³

FIGURE 1 NFZ expenditures, by types of services, 2003–2019 (PLN, billions)



Source: World Bank calculations (outpatient care provided within the hospital network is extracted from hospital spending).

Note: NFZ = National Health Fund (*Narodowy Fundusz Zdrowia*); PHC = Primary Health Care; SOC = Specialist Outpatient Care.

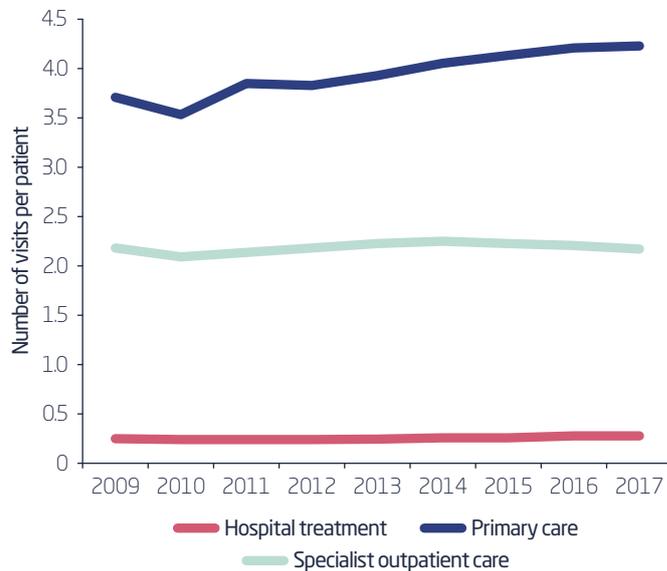
Another area of inefficiency is the underuse of day surgery for procedures such as cataract removal, inguinal hernia, and tonsillectomy, which have remained unchanged since 2000 and remain at levels that are far below the EU averages (except for cataract removal).¹⁴ Some progress has been made in recent years, but further efforts are needed to step up, for example, from 40 percent cataract surgeries in 2018 in Poland to the level of 91 percent in France. Further, hospitalization rates are high for chronic conditions (for example, asthma and chronic obstructive pulmonary [COPD] disease), and avoidable hospitalization is one of the highest in the EU. The overall hospitalization rate rose from 0.26 hospitalizations per insured person in 2009 to 0.29 in 2017 (Figure 2). Unsurprisingly, therefore, expenditures for hospital services, which rose from PLN 9 billion in 2009 to PLN 55 billion in 2020, increased significantly more than expenditures on primary care or for insurance reimbursement for drugs (Figure 1).

12. OECD. 2020. *Health at a Glance: Europe 2020*. https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe-2020_82129230-en.

13. Kurpas 2020.

14. Kurpas 2020.

FIGURE 2 Patient visits in primary care, specialist care, and hospitals, 2009-2017



Source: World Bank calculations, based on NFZ data.

Overall, the health system in Poland is heavily hospital centered. In 2020, NFZ spent more than PLN 55 million on hospitals (approximately 54 percent of its total budget). Since the launch of NFZ in 2004, the growth of spending on hospitals has been higher than the total budget growth (adjusted for inflation, NFZ's total budget increased by 130 percent between 2004 and 2020, while the share of spending on hospitals increased by 191 percent in the same period. Although public spending on hospital care increased almost three-fold between 2004 and 2020,¹⁵ there was no similar increase in the sector productivity, with hospital discharges increasing marginally from 133 per 1,000 people in 2004 to 173 in 2018 (OECD 2021).¹⁶ Among 31 Organisation for Economic Co-operation and Development (OECD) countries for which data are available,

the share of hospitals in total current health expenditures ranged from 28.3 percent in Germany to 53.2 percent in Turkey and was above 35.0 percent in 21 countries.¹⁷ According to the American Hospital Association, inpatient revenues in us hospitals accounted for approximately half of hospital revenues in 2017 (us\$498 billion inpatient versus us\$472 billion outpatient).¹⁸

Shortage of doctors and nurses

According to OECD data (Health at a Glance: Europe 2020), of all the EU countries, Poland has among the lowest number of doctors and nurses per 1,000 population (Figure 3).

According to the most recent World Health Organization (WHO) statistics, Poland had a lower number of physicians at 2.4 per 1,000 people (2017) than the European Union (3.7) and its bordering countries of Germany (4.2), the Czech Republic (4.1), and the Slovak Republic (3.4) physicians per 1,000 people. However, Poland was more in line with the United States at 2.6 and the United Kingdom at 2.8 physicians per 1,000 people.¹⁹

15. OECD (2021), Health Expenditure and Financing. Available from: <https://stats.oecd.org/>. Accessed 16 June 2021.

16. OECD (2021), Hospital discharge rates (indicator). doi: 10.1787/5880c955-en (Accessed on 16 June 2021)

17. OECD Statistics 2020

18. Advisory Board. 2019. "The Outpatient Shift Continues. Outpatient Revenue Now 95 Percent of Inpatient Revenue, New Report Reveals." <https://www.advisory.com/en/daily-briefing/2019/01/08/hospital-revenue>.

19. <https://data.worldbank.org/indicator/SH.MED.PHYS.ZS>.

FIGURE 3 Practising doctors and nurses per 1,000 population, 2018 (or latest year)

Source: OECD 2020.

Lack of well-functioning reimbursement incentives

The diagnosis-related group (DRG) system was implemented more than a decade ago in 2008, but because it has not been comprehensively updated since then, it does not promote effective treatment models for today. The disconnect is made even larger, with tariff valuations lagging behind the actual costs increases.

The DRG system does not account for hospitals' reference levels (highly specialized university clinics receive the same reimbursement per DRG as local, general hospitals) nor does it allow for adequate reimbursement for comprehensive care for patients with multimorbidity, in that it is financially more beneficial for a hospital to discharge the patient and repeat the admission, than to provide all services under a single admission. Similarly, the DRG system does not promote provision of procedures in outpatient or day patient settings. Additional challenges with the use of the DRGs in Poland include (a) limited application of the hospital accounting data and proper auditing of clinical records, (b) lack of DRGs sub-category divisions according to patients' medical conditions, and (c) general International Classification of Diseases (ICD) reporting with loopholes.

DRGs' upcoding remains a valid problem (additional procedures might be applied and/or patient stay might be extended for reasons other than medical). In Poland, diverse information technology (IT) companies offer special software enabling optimization of revenues through upcoding.²⁰ Finally, the payment system does not include elements promoting quality of care. Hospitals can get additional points (budget increase) in the NFZ contract for valid accreditation certificate, yet there is no actual system for measuring, monitoring, and reporting quality of care metrics.

20. NIK (Najwyższa Izba Kontroli). 2015. *Działalność szpitali samorządowych przekształconych w spółki kapitałowe, Kwiecień 2015*.

Fragmentation of care across primary, outpatient, and inpatient settings

Fragmentation of care across the primary, outpatient, and inpatient sectors is an important problem contributing to health system inefficiency and ineffectiveness in Poland. The three sectors operate as separate silos, with little sharing of information, minimal coordination of care, and consequent wasting of resources.

The high level of inpatient admissions for ambulatory sensitive conditions such as diabetes, congestive heart failure, and asthma is a clear indicator of this lack of coordination. Poland reports above the EU average for the rate of avoidable hospital admissions for chronic conditions (asthma, COPD, congestive heart failure, and diabetes).²¹ Poland ranks highest in congestive heart failure hospital admissions in adults, with 511 admissions per 100,000 population, almost twice the EU average of 276. Similar figures for hospital admissions for diabetes are 210 per 100,000 in Poland, compared to the EU average of 131. And for asthma and COPD, Poland reports 236 hospital admissions per 100,000, against the EU average of 209.²²

Although electronic health records have been implemented in hospitals, they typically take the form of scanned paper charts, documents, and graphical files. There are no adequate IT tools (for example, comprehensive optical character recognition [OCR] systems) that would allow for converting these files into more operational data. Consequently, there is no exchange of the patient records between different levels of care or even between different providers at the same level (for example, two hospitals). The courier of any information (test results and so on) is the patient, which hinders care coordination attempts. For example, although in oncological care the position of ‘cancer care coordinator’ was implemented in 2015, the actual ‘coordination’ is often limited to the services provided by the hospital where the coordinator is employed. The exchange of information with other providers is limited, leading to ineffective duplication of services and higher burden for patients and their families.²³

Hospital indebtedness

Indebtedness is a recurring and endemic problem in public hospitals in Poland, so much so that it is not straightforward anymore to list it as a problem by itself or as a result of structural inefficiencies – or some combination of both.²⁴ In 2020, the overall debt (total liabilities) of public hospitals (SPZOZ, in Polish for Independent/Autonomous Public Health Care Unit) was PLN 15.7 billion (0.7 percent of GDP), of which PLN 1.7 billion (11 percent) was arrears (overdue liabilities) (Figure 4). Between 2010 and 2020, the value of hospitals’ overall debt increased in real terms (2010 prices) by almost 27 percent, while the value of arrears decreased by 35 percent (Figure 5).²⁵ Hospitals owned by local government units represent the largest share of debt and arrears (72 and 62 percent, respectively, in 2018). The next highest debt was carried by

21. OECD 2020.

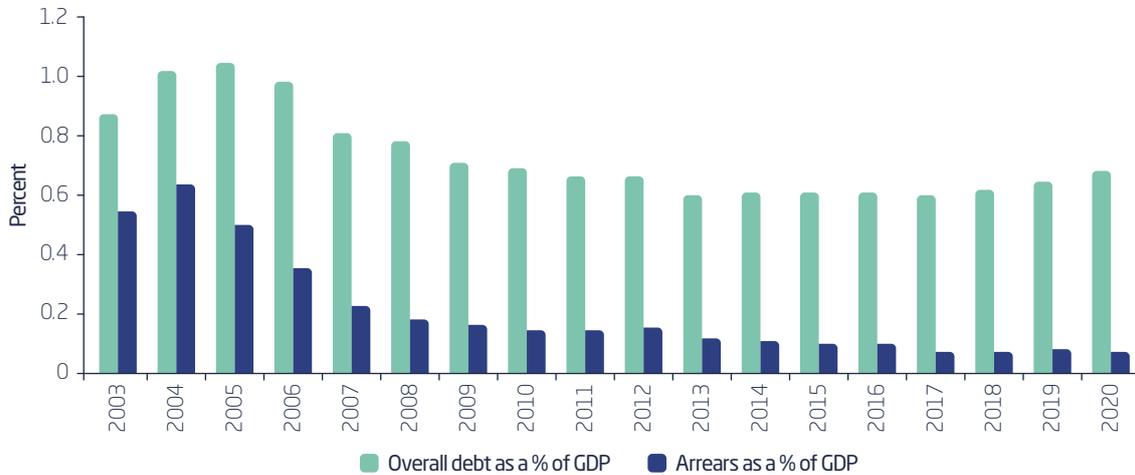
22. OECD Health Statistics, 2020. <https://www.oecd-ilibrary.org/sites/58a359ac-en/index.html?itemId=/content/component/58a359ac-en>.

23. Dela, R., et al. 2020. “Cancer Care Coordinators in Poland: Activities and Role in the System: A Cross-Sectional Study.” *European Journal of Public Health* 30 (5).

24. OECD/European Observatory on Health Systems and Policies. Poland: Country Health Profile 2019, State of Health in the EU. (accessed May 1, 2020). http://www.euro.who.int/__data/assets/pdf_file/0007/419470/Country-Health-Profile-2019-Poland.pdf?ua=1.

25. Having short- or long-term liabilities is not an issue per se, but the problem arises when new liabilities are incurred to settle overdue ones and the debt is rolled over into the future. Data on 52 hospitals owned by local governments show that in 2016, 13 percent of the overall debts was devoted to settling previously generated liabilities.

FIGURE 4 Hospital debts as percentage of GDP, 2003–2020

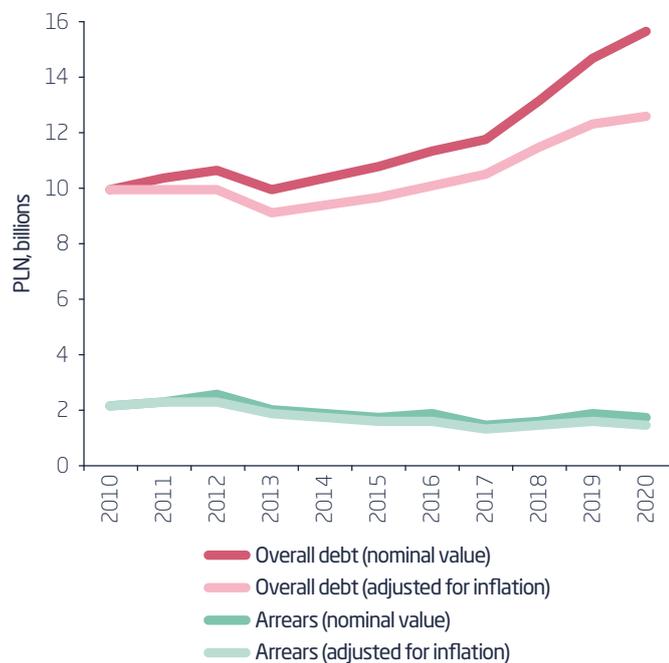


Source: World Bank analyses, based on Ministry of Health (MOH) data 2021.

university hospitals which, although representing only 14 percent of public hospitals beds, accumulated 22 percent of overall debts and 32 percent of arrears in 2018. The analysis of financial performance indicators according to ownership groups indicated that in 2018, the biggest share of units with arrears was in a group of providers owned by medical universities and powiats (52.5 percent and 48.5 percent, respectively). Also, in case of these two owners, most units generated loss. In general, powiat and university hospitals were in the most disadvantageous financial situation in 2018 (measured by three performance indicators: gross profit margin, debt ratio, and share of arrears in total liabilities).²⁶

The growing debt of public hospitals in Poland has been a source of concern for more than two decades now. Numerous previous analyses have indicated that

FIGURE 5 Overall debt and arrears between 2010 and 2020 (PLN, millions)



Source: World Bank analyses, based on MOH data 2021.

26. Dubas-Jakóbczyk, K., et al. 2020. "Financial Performance of Public Hospitals: A Cross Sectional Study among Polish Providers." *International Journal of Environmental Research and Public Health* 17 (7): 2188.

there is no single leading cause of the debt problem. Instead there is a mix of both macro- and micro-level factors that contribute to undermining the public hospitals' financial standing. At the system level, these include weak stewardship, a historically oversized infrastructure, central regulations on medical workers salaries and high competition in employing physicians, fragmentation of the hospitals' ownership structure, underfunding and/or lack of health needs analysis and matching funding, and inadequate financial mechanisms. At the level of specific hospitals, additional micro-level features might be leading factors, including poor management, weak ownership control, and the general state of the hospital infrastructure. The importance of the individual micro-level factors is highlighted by a huge diversity in the hospitals' financial standings and a situation in which entities with high debt levels coexist with profitable and liquid ones.

In the last two decades, the government has made several direct attempts to deal with the debt problem of hospitals. It provided different requirements and solutions for indebted hospitals, including bailout programs together with restructuration (2005–2011) or corporatization with debt-relief plans (2011–2013). Implemented in 2017, the hospital network reform, although not directly targeted at the debt problem, included elements aimed at improving the relationship between the payer and hospital care providers while ensuring continuity and stability of financing for the latter. A total of 594, mostly public, hospitals were included in the network and divided into seven reference levels: three basic and four specialties. The reform introduced significant changes in the payment mechanism. At the system level, the reform provided a sort of stewardship mechanism, and the included hospitals were guaranteed access to public financing for four years on the principles of a global budget for the complex care provided within the defined period.

However, these reforms have had limited success. Addressing the debt problem would likely require a comprehensive package of multi-level measures, including stewardship, management, modern technologies, data, clarification of ownership and contingent liability issues, and so on. None of the measures to contain debts has succeeded in developing effective solutions for this chronic ailment of the health system in Poland.



4 Recent Reforms in the Hospital Sector

In 2017, Poland carried out large-scale hospital reforms, but there have been no tangible results so far. The objectives of the 2017 hospital network reform were “(1) to improve the organization of services delivered by hospitals, (2) to improve access to hospital care; (3) to optimize the number of specialist wards; (4) to improve coordination of in- and out-patient care; (5) to facilitate hospital management.”²⁷ Indirect, general assumptions behind the reform were related to improving the relationship between the payer and hospital care providers while ensuring continuity and stability of financing for providers, which was important from the point of view of securing access to health services. The reform introduced a system of basic hospital service provision in which hospitals are divided into seven groups/levels (three basic and four specialists) depending on the scope of services provided. The hospitals included in the network received a guarantee of access to public financing for four years. The network inclusion criteria were based not on an actual health needs analysis but on certain elements of the existing infrastructure, specifically providing a predefined scope of services (wards and ambulatory clinics), having a contract with the public payer for at least two years, and providing emergency care services. A total of 594 hospitals were included in the network, the vast majority of which were public. The included hospitals accounted for around 70 percent of all hospital beds and 90 percent of NFZ funding.²⁸

Before implementation of the hospital network reform in 2017, NFZ bought hospital services through an annual contracting procedure, which took the form of competitive tenders. The value of the contract with the public payer was the main determinant of hospitals’ revenues. Providing services above the contracted value (justified as delivered under ‘sudden circumstances’) and claiming additional funds (also through court lawsuits) was a common practice. Depending on financial ability, the payer usually, at least partially, covered these claims. Nevertheless, numerous public hospitals faced the problem of a difficult financial situation with a significant value of overdue liabilities.

The regulations introduced a significant change in the payment mechanism (although the basic unit of calculation remained DRGs). In general, hospitals included in the network moved from per case financing to global budgets, which is calculated per hospital and covers all types of care (inpatient as well as ambulatory specialty visits, rehabilitation, and services provided during the night and over holidays) (Table 1). Yet, as the network covers only predefined specialties, only chosen wards and outpatient services in some hospitals might be included in the network, while the remaining ones might be contracted on different terms outside the network. In addition, some services (mainly predefined highly specialist

27. Dubas-Jakóbczyk, K., et al. 2019. “The 2017 Reform of the Hospital Sector in Poland – The Challenge of Consistent Design.” *Health Policy* 123 (6): 538–543. <https://doi.org/10.1016/j.healthpol.2019.03.013>.

28. Sowada et al. Poland: Health system review. *Health Systems in Transition*, 2019; 21(1): 1–235.

and diagnostic procedures) could be covered by the network but financed outside the global budget, on a fee-for-service basis. Fragmented data show a huge variance in the share of the global budget value in total hospital revenues, which in 2018 ranged from 29 to 99 percent, depending on the hospital.²⁹ The budget calculation formula also introduced financial incentives to shift patients to less-expensive outpatient care as well as to undergo an accreditation process, because a hospital could receive a higher global budget value for reporting higher number of outpatient services (Table 1).

TABLE 1 Hospital payment mechanism introduced by the 2017 network reform

Scope of Services	Included in the Network	Not included in the Network	
Payment time frame	4-year financing guarantee	Annual contract	
Method	Global budget calculated based on the number of services delivered in the previous reporting period	Services financed separately—a list of 24 specialized services (fee-for-service)	Contracting procedure which takes the form of competitive tenders (fee-for-service)
Management flexibility	Flexible management of the services structure	On agreement with the payer, hospital can shift the contracted budget between different types of services (up to 15-20%)	
Incentives for service structure changes	1% increase of the budget value for reporting at least 10% increase in outpatient services; 1% budget value decrease for reporting 5% fall in outpatient services	No direct, positive incentives to shift to outpatient or provide one-day hospitalizations	
Incentives for quality assurance	Possibility of 1-2% increase of the budget value, depending on the number of points acquired in the accreditation process	Provider offer assessed on quality, complexity, availability, continuity, and price	

Source: Dubas-Jakóbczyk et al. 2019.

The global budget value is calculated based on the number and value of services reported in the previous period. Yet, the mathematical formula for its calculation includes negative financial incentives for exceeding its granted value: the higher the overspending, the lower the increase of the future budget value. In general, from the payer perspective, one of the indirect objectives of the reform was elimination of the problem of services provided by hospitals above the contracted limit. The reforms have not yet been comprehensively evaluated. However, fragmented data (from the pre-COVID-19 period) show that hospitals balanced services to limit the provision of uncompensated care, though the shift toward outpatient care was minimal (for example, among 29 hospitals controlled in 2018, only 7 used the global budget increase from higher number of outpatient services). Also, hospitals have not conducted organizational changes aimed, among others, to adjust the existing structures to more effective service provision, which resulted in low bed occupancy ratios (below 60 percent in majority of controlled wards).³⁰ Finally, the reform has not improved the hospitals' financial standing. Although the value of hospital revenues increased in the years following reform implementation, the cost increase at the same time was more significant, which resulted in financial losses.

29. NIK. 2019. *Funkcjonowanie system podstawowego szpitalnego zabezpieczenia świadczeń zdrowotnych*. Warszawa. <https://www.nik.gov.pl/aktualnosci/siec-nie-wyciagnela-szpitali-z-dlugow.html>.

30. NIK. 2019. *Funkcjonowanie system podstawowego szpitalnego zabezpieczenia świadczeń zdrowotnych*. Warszawa. <https://www.nik.gov.pl/aktualnosci/siec-nie-wyciagnela-szpitali-z-dlugow.html>.

One of the major controversies concerning the reform's design and implementation is the lack of any quality of care, health outcomes, and/or efficiency measures in the network inclusion criteria. There is no formal regulation of quality assurance and/or monitoring in hospital care. Over the last two decades, the MOH has made several attempts to implement some quality assurance system, but progress has been limited. Reviews of other developed countries' experiences with pay-for-performance (P4P) systems in hospital care show that quality metrics from all three main categories of the Donabedian quality framework are used in such systems: structure (for example, staffing ratios); process (for example, following recommended clinical pathways); and outcome (for example, mortality, adverse events, and patient experience).³¹ Quality of care metrics are often disease specific and are based on evidenced based medicine (EBM)/clinical pathways guidelines, which makes it necessary to support the development of such clinical pathways/guidelines to allow for better care standardization and quality monitoring.

31. Mathes, T., D. Pieper, J. Morche, S. Polus, T. Jaschinski, and M. Eikermann M. 2019. "Pay for Performance for Hospitals." *Cochrane Database of Systematic Reviews* 2019, Issue 7: CD011156. doi: 10.1002/14651858.CD011156.pub2; Milstein, R., and J. Schreyoegg. 2016. "Pay for Performance in the Inpatient Sector: A Review of 34 P4P Programs in 14 OECD Countries." *Health Policy* 120: 1125–1140. <https://doi.org/10.1016/j.healthpol.2016.08.009>.



Action Roadmap I: Pilot Projects to Address Hospital-Level Challenges

COVID-19 has stretched the health care system and disrupted routine health services in Poland. The impacts are wide ranging. The COVID-19 restrictions have had a significant impact on oncological treatment in Poland, and in 2020, the number of preliminary cancer diagnoses decreased by 31 percent compared to 2019, while the number of extended diagnostic procedures decreased by 25 percent and the number of oncological consultations decreased by 19 percent.³² In south-west Poland, hospital admissions for dermatology care significantly reduced during the pandemic, especially for female patients.³³ Based on Eurostat information for November 2020, however, Poland reported a 97 percent increase in excess mortality, the highest among all the EU countries.³⁴ A study on the impact of COVID-19 on the performance of primary health care service providers in the context of a capitation payment scheme found considerable profitability due to costs savings and reduction of services provided to patients. The study found that utilization of primary care health service and related expenditure fell after the COVID-19 pandemic outbreak, resulting in huge improvements in the financial results of primary health care facilities. At the same time, however, the quality of performance measured with access quantities decreased.³⁵ In a time where access to information online has never been more important, a study focusing on the quality of infectious disease hospital websites in Poland during the COVID-19 pandemic found that the websites of many infectious disease hospitals were rarely updated.³⁶

The large number of COVID-19 patients needing intensive critical care is placing a huge strain on hospitals, which have to find beds for the unprecedented number of COVID-19 patients while at the same time ensuring that people who have medical emergencies can still get help. Some hospitals are responding by substantially increasing the threshold for admitting patients to make more beds available for COVID-19 patients, while others are simply closing some services.³⁷ The net result is that only the sickest are being admitted and any surgery that could reasonably wait is canceled.

32. Maluchnik, Michał, Krzysztof Podwójcic, and Barbara Więckowska. 2021. "Decreasing Access to Cancer Diagnosis and Treatment during the COVID-19 Pandemic in Poland." *Acta Oncologica* 60 (1): 28–31. doi:10.1080/0284186X.2020.1837392.

33. Białynicki-Birula, R., I. Siemasz, A. Otlewska, L. Matusiak, and J. C. Szepietowski. 2020. "Influence of COVID-19 Pandemic on Hospitalizations at the Tertiary Dermatology Department in South–West Poland." *Dermatologic Therapy* 33: e13738. <https://doi.org/10.1111/dth.13738>.

34. Grabowski, Jakub, Natalia Witkowska, and Leszek Bidzan. 2021. "Letter to the Editor: Excess All-Cause Mortality during Second Wave of COVID-19 – the Polish Perspective." *Euro Surveill* 26 (7): pii=2100117. <https://doi.org/10.2807/1560-7917.ES.2021.26.7.2100117>.

35. Korneta, P., M. Kludacz-Alessandri, and R. Walczak. 2021. "The Impact of COVID-19 on the Performance of Primary Health Care Service Providers in a Capitation Payment System: A Case Study from Poland." *International Journal of Environmental Research and Public Health* 18 (4): 1407. <https://doi.org/10.3390/ijerph18041407>.

36. Król, K., and D. Zdonek. 2021. "The Quality of Infectious Disease Hospital Websites in Poland in Light of the COVID-19 Pandemic." *International Journal of Environmental Research and Public Health* 18 (2): 642. <https://doi.org/10.3390/ijerph18020642>.

37. De Filippis, G., L. Cavazzana, A. Gimigliano, M. Piacenza, and S. Vimercati. 2020. "COVID-19 Pandemic: A Frontline Hospital Reorganization to Cope with Therapeutic and Diagnostic Emergency." *Pharmacological Research*.

The COVID-19 outbreak provides an opportunity for optimizing hospital care in Poland, which already has more hospitals per 1 million inhabitants than the OECD average. Hospital treatment processes are far from optimal, at times even without implementation of triage in emergency departments or the use of data related to actions conducted at the hospital level to optimize processes of management of resources, including personnel. Evidence from other EU countries shows the general trend of hospitals developing new roles and organizational structures and redefining their relationships with other types of care providers.³⁸ The latter may involve shifting non-complex care to ambulatory settings, limiting the number of hospitalizations needed by strengthening disease management and prevention programs, and improving timely discharge to post-hospital care.³⁹ By freeing capacity and resources, hospitals can focus on providing more complex care when needed and improving efficiency and quality standards at the same time. The use of modern technologies and digital solutions provides innovative solutions for health care management.

Optimizing hospital care in Poland would involve a host of structural and policy reforms, including, among others, adjusting infrastructure and equipment to match new challenges, developing adaptive approaches to scale up intensive care unit (ICU) capacity in existing hospitals at short notice to meet increased inflows during pandemics such as COVID-19, strengthening financial management and fiscal discipline, and incentivizing management and staff to maintain high levels of efficiency and quality of care. Some hospitals would likely require restructuring and changing the service mix in favor of outpatient care, rehabilitation, and long-term care instead of the traditional hospital care. Other hospital entities would be better served by merging to achieve greater economies of scale. Attaining such gains, however, would require substantial initial capital and human resource investment.

The Action Roadmap distinguishes between micro- and macro-level challenges facing Polish hospitals, with the understanding that micro-level challenges involve initiatives that individual hospitals can undertake in a shorter time frame while macro-level challenges will require more comprehensive solutions that will likely take more time to gain approval and to implement than the micro challenges. It would be useful to consider several pilot projects to better understand the nuances of these micro-level challenges and organically develop solutions that could be scaled up to enhance effectiveness and efficiency of all hospitals in Poland in the short run. Pilot approaches have been advocated for many years now as a means to test innovative solutions and reduce the risks associated with implementing complex health system reforms.⁴⁰ Pilot projects are conducted on a smaller scale and are thus easier to manage, evaluate, and adjust. Pilots can anticipate how the project might scale and perform under a variety of real-world circumstances to be generalizable.⁴¹

38. Schwierz, C. 2016. "Cost-Containment Policies in Hospital Expenditure in the European Union." European Economy Discussion Paper 037, European Commission. doi:10.2765/253237; Nolte, E., and P. Groenewegen. 2021. "How Can We Transfer Service and Policy Innovations between Health Systems?" Policy Brief 40, the European Observatory on Health Systems and Policies.

39. Nolte and Groenewegen 2021.

40. Bennett, S., and M. Paterson. 2003. *Piloting Health System Reforms: A Review of Experience*. Technical Report No. 019. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc; De Winter, M. 2020. "Reshaping Health Care Governance Using Pilot Projects as Public Policy Implementation Instruments. The Case of Integrated Care Pilot Projects for Chronic Patients in Belgium." *International Review of Public Policy* 2 (3): 317–341.

41. Hussey, P., R. Bankowitz, M. Dinneen, D. Kelleher, K. Matsuoka, J. McCannon, W. Shrank, and R. Saunders. 2013. "From Pilots to Practice: Speeding the Movement of Successful Pilots to Effective Practice." Discussion Paper, Institute of Medicine, Washington, DC. <http://nam.edu/wp-content/uploads/2015/06/pilotstopractice>.

The most prevalent micro issues facing Polish hospitals regarding efficiency and effectiveness include:

- Insufficient internal cost accounting and budgeting information to understand and manage profitability at the clinical ward or service line level;
- Lack of regular information on patient experience to identify ongoing issues and prioritize actions to improve that patient experience;
- Poor communication with and engagement of the patient’s family during the care process;
- Infrequent surveying of clinical and nonclinical staff regarding satisfaction and engagement to identify better ways to attract, motivate, and retain qualified personnel;
- Insufficient clinical quality of care information to effectively identify quality issues and provide insights and incentives to enhance the quality of care; and
- Lack of sufficient managerial training for hospital middle and senior leaders in the areas of differential cost analysis, management control structure and process, strategic management, and intrapreneurship.

Most of the identified micro-challenges refer to different aspects of the quality of care (patients and family experiences, staff involvement, and monitoring quality of care process and outcomes). Improving the quality of care has been one of the most important health policy objectives for many years now and is thus often incorporated into hospital care reforms as well.⁴² Measuring, monitoring, and reporting quality of care data constitute a core element of diverse performance assessment and benchmarking projects. Quality indicators are currently used in both P4P programs and public reporting systems and aim at providing incentives to improve the quality of hospital care, such as financial rewards or penalties in case of P4P and reputational damage incentives and selection pathways (both patients and insurers/payers use comparative information to change from poor to good performers) as well as change pathways (providers themselves focus on improving their benchmarking position) in case of public reporting. The scope of reported indicators varies across initiatives, from those providing basic information on availability of structures (for example, beds per specialty and available staffed beds) to those providing more detailed information on processes of care (for example, lengths of stay by specialty and trends in hospital activity) and outcomes. Outcome indicators are usually risk adjusted using patients’ age, gender, and comorbidities, for which data are available in hospital databases (for example, mortality, readmissions, and hospital-associated infection). Patient experience and/or satisfaction is usually measured by systematic surveys and might cover several areas, for example, satisfaction/experience with care provided by the treating physician, communication with nurses, cleanliness of wards, and so on. Some systems might also provide a composite score (star rating) on general assessments.⁴³

The following sections elaborate on the nature and scope of pilot projects recommended to address the micro-level challenges facing Polish hospitals.

42. Busse, R., D. Panteli, and W. Quentin. 2019. “An Introduction to Healthcare Quality: Defining and Explaining its Role in Health Systems.” In *Improving Healthcare Quality in Europe* edited by R. Busse, N. Klazinga D, Panteli, and W. Quentin. The European Observatory on Health Systems and Policies and OECD. (pp. 3–13) <https://apps.who.int/iris/bitstream/handle/10665/327356/9789289051750-eng.pdf>.

43. Milstein and Schreyoegg 2019; Cacace, M., M. Geraedts, and E. Berger. 2019. “Public Reporting as a Quality Strategy.” In *Improving Healthcare Quality in Europe* edited by R. Busse, N. Klazinga, D. Panteli, and W. Quentin. The European Observatory on Health Systems and Policies and OECD. (pp. 331–353)

Pilot Project 1: Strengthen IT Systems and Enable Use of Cost Accounting to Measure Costs of Care and Manage Expenses

The ability to accurately measure costs of care and use these data to manage expenses is a vital factor for financial survival of a hospital. Standards have been laid down for cost accounting in hospitals in Poland, but these are not widely used. For instance, the Regulation of the Minister of Health and Welfare on specific rules for cost accounting in public health care institutions (Journal of Laws 1998, No. 164, item 1194) was in force in Poland from January 1, 1999, to June 30, 2011, but was repealed because it was not being widely applied. In 2015, the Agency for Health Technology Assessment and Tariff System (*Agencja Oceny Technologii Medycznych i Taryfikacji*, AOTMiT) developed proposals for recommendations on cost accounting standards and collect and publish information on rules of determining service tariffs. Standard cost accounting was specified in the form of the Regulation of the Minister of Health of July 8, 2015, which entered into force on January 1, 2020 (Journal of Laws 2015, item 1126).⁴⁴ The regulation determines the rules of organization, identification, grouping, recording, and settlement of costs of health care services and the method of their calculation.⁴⁵ But this regulation is also more of a recommendation rather than an obligation, and hospitals with inadequate IT systems can prolong implementation of the new standards.

The complexity of processes and the multiplicity of resources within health services make their calculation a difficult task. Settlement of health services requires the collection of numerous necessary cost and statistic data, and many Polish hospitals do not have sufficient internal cost accounting and budgeting information to record and track costs and manage profitability at the clinical ward or service line level. While hospitals develop budgets and collect actual information on expenses and revenues, this information is typically not structured in ways that help internal decision-making or effective management control over costs.⁴⁶ There is general reluctance among hospital managers to view a public hospital in economic terms, because it provides humanitarian services. Further, hospital managers have little incentive to invest in cost accounting, because information on costs from hospitals is not substantively used to price the provision of health services by the payer.⁴⁷ This is ironic, both because cost is the carrier of information about resources used and because the hospital sector is an endemic source of indebtedness of the health system in Poland.

Specifically, the following essential financial management functions are not adequately developed in Polish hospitals:

- Ability to look at profitability by ward or service line, focusing on the direct contribution margin (that is, contribution to indirect costs measured as net revenue less direct costs)
- Separation of variable and fixed direct costs at the ward (for example, orthopedics and obstetrics wards); service line (for example, internal medicine and orthopedics service lines); and ancillary department level (for example, laboratory, radiology, pharmacy, and operating room)

44. <https://www.aotm.gov.pl/taryfikacja/standard-rachunku-kosztow/>.

45. Also see Piersiala, Luiza. 2017. *Cost Accounting for Management of Health Services in a Hospital*. doi:<http://dx.doi.org/10.18778/0208-6018.329.14>.

46. Siegrist, R. "Cost Accounting and Management Control Structure Process" in Sanfilippo, J., E. Bieber, D. Javitch, and R. Siegrist. *MBA for Healthcare*. Oxford University Press, December 2015. (pp:1–19)

47. Kludacz, M. 2014. *Zasady i etapy rachunku kosztów działań w angielskich szpitalach na potrzeby wyceny świadczeń zdrowotnych*, "Zeszyty Teoretyczne Rachunkowości." 76 (132): 39–60

- Identification of variable and fixed costs at the individual patient level which can then be summarized by a wide variety of characteristics (for example, DRG, service line, attending physician, age range, geography, and contract)
- Actionable monthly variance analysis that distinguishes between variances resulting from volume, efficiency, and price and goes beyond simply a budget versus actual comparison
- Transfer pricing for services provided by one area of the hospital to another
- Ability to use differential analysis as opposed to full cost analysis in looking at alternative management decisions (for example, expand/contract, add/drop, make/buy, and capital budgeting)
- Accountability for budget variances and direct contribution margin targets.

Addressing all these cost accounting and management information shortcomings is beyond the scope and capability of what most hospitals can accomplish in the short term. It is therefore recommended that a pilot project be carried out in selected Polish hospitals, which will help adjust the existing IT system to enable the recording, collection, and analysis of cost data. It would also help implement the standardized cost accounting template that will allow those pilot hospitals to take the critical first steps toward addressing the information limitations at a summary level. Exhibits A and B provide examples of the summary and contribution margin by service line for a hypothetical Polish public hospital with PLN 100 million in revenues and expenses, which would be available by implementing such a cost accounting template.

Pilot Project 2: Collecting Regular Information on Patient Experience to Identify Ongoing Issues and Prioritize Actions

Patient experience encompasses the range of interactions that patients have with the health care system, including from doctors, nurses, and staff in hospitals, physician practices, and other health care facilities. It includes “several aspects of health care delivery that patients value highly when they seek and receive care, such as getting timely appointments, easy access to information, and good communication with health care providers.”⁴⁸ Improving patient experience has an inherent value for patients and families and is therefore an important outcome in its own right. But good patient experience is also associated with important clinical processes and outcomes and is correlated with key financial indicators, making it good for business and for patients.⁴⁹

In the United States, in more than a decade that the Centers for Medicare and Medicaid Services (CMS) has been publicly reporting patient experience information, the national average hospital score has consistently improved by 16 percent, from 63 in 2007 upon introduction of public reporting to 73 in 2018 (see Exhibit C for percentage of patients giving the hospital a score of 9 or 10 on a scale of 0 to 10). As shown in Exhibit D, UMass Memorial, a 1,000-bed hospital system, has consistently improved its scores on likelihood to recommend from 70.6 in 2016 to 74.4 in 2020 with a concerted focus on patient experience. Research also indicates that patient experience correlates well with the quality of care delivered across multiple

48. *What Is Patient Experience?* Content last reviewed January 2021. Agency for Healthcare Research and Quality, Rockville, MD. <https://www.ahrq.gov/cahps/about-cahps/patient-experience/index.html>.

49. *Why Improve Patient Experience?* Content last reviewed February 2020. Agency for Healthcare Research and Quality, Rockville, MD. <https://www.ahrq.gov/cahps/quality-improvement/improvement-guide/2-why-improve/index.html>.

settings and areas.⁵⁰ Recently, many US hospitals have incorporated hospital performance on patient experience into the bonus compensation for their leadership teams. It has also been an important factor in the ongoing evaluation of practicing physicians.⁵¹

Despite accreditation requirements, few Polish hospitals are collecting patient experience information regularly to improve patient experience. When this data collection does occur, the hospitals do not share this information externally and rarely take actions based on the findings. As demonstrated in the United States, public patient experience reporting can have a positive impact on hospital effectiveness.⁵² Based on the US experience, it is recommended that a pilot project be implemented to collect and share patient experience in a select number of Polish hospitals. Some components of such an initiative would include:

- Randomly surveying discharged hospital inpatients monthly;
- Conducting the survey through text messaging to maximize the response rate (over a 50 percent response rate likely);
- Limiting the survey to several questions, including one that encourages the patient to offer a comment on the care received (see Exhibit E for sample questions);
- Making the survey results accessible only to the participating hospital for the first six months of collection;
- Providing the public with the summary results for surveys collected quarterly, starting after the first six months;
- After the first year, introducing positive financial and other incentives for hospitals that improve their patient experience scores;
- Incorporating benchmarks from US hospitals for comparative purposes; and
- Introducing processes to identify common themes and detect positive or negative sentiments expressed in the patient comments.⁵³

Pilot Project 3: Strengthening Communication and Engagement with Patients' Families during the Care Process

Effective family communication can be an essential part of a hospital's strategy to both offer better patient experience and build patient loyalty. Family members often experience uncertainty and anxiety when their loved ones are in the hospital for care. Simple communication of their loved one's status during the care process can contribute substantially to lessening that uncertainty and anxiety.⁵⁴

50. Doyle, C., L. Lennox, and D. Bell. 2013. "A Systematic Review of Evidence on the Links between Patient Experience and Clinical Safety and Effectiveness." *BMJ Open* 3 (1): e001570. <https://bmjopen.bmj.com/content/3/1/e001570>.

51. HCAHPS: *Patients' Perspectives of Care Survey*. Centers for Medicare and Medicaid Services. Content last reviewed February 2020. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS> (accessed May 2021).

52. Anhang Price, R., M. N. Elliott, A. M. Zaslavsky, R. D. Hays, W. G. Lehrman, L. Rybowski, Edgman-Levitan, S., and P. D. Cleary. 2014. "Examining the Role of Patient Experience Surveys in Measuring Health Care Quality." *Medical Care Research and Review* 71 (5): 522–554.

53. Siegrist, R. 2013. "Patient Satisfaction: History, Myths, and Misperceptions." *Virtual Mentor, American Medical Association Journal of Ethics* 15 (11): 982–987. <https://journalofethics.ama-assn.org/article/patient-satisfaction-history-myths-and-misperceptions/2013-11>.

54. Siegrist, R. 2013. *Family Communication – The Next Frontier for Improving Patient Satisfaction?* Association for Patient Experience, September 29, 2013. <https://www.patient-experience.org/Resources/Newsletter/Newsletters/Articles/2013/Family-Communication-The-Next-Frontier-for-Improving-Patient-Satisfaction>.

Traditionally, doctors, nurses, and other staff have provided family communication in person or by phone but on an irregular and inconsistent basis. The pandemic has exacerbated the difficulty of family communication. The communication of routine status information to multiple family members also diverts the time of doctors, nurses, and staff from other activities.

Text messaging may be a valuable way to communicate with family members regarding the routine status of their loved ones.⁵⁵ Such text messaging would allow more time for doctors and nurses to share the more serious clinical information with those family members in person or by phone. Because most family members can receive text messages, Polish hospitals could introduce an organized system of text messaging to those designated family members with the express permission of the patients. This enhanced engagement of the family members could also hasten the recovery of patients and encourage the family to be more involved in the post-discharge recovery process, reducing the length of stay and hospital readmissions.⁵⁶

It is recommended that a pilot project on improving family communication be implemented in select hospitals to complement efforts on improving the patient experience. Some components of such an initiative would include:

- Introducing text messaging for family members who have loved ones undergoing surgery, are spending time in routine wards, or having babies;
- Making patients aware of the availability of the text messaging service as part of the pre-registration or registration process and ask them for family member mobile numbers for that communication;
- Developing standardized text messages for specific clinical areas to both streamline the process of sending the messages and ensuring consistent messaging, engaging the nurses in that message determination process;
- Conducting a short text-based survey of family members upon the discharge of the patient (see Exhibit F for suggested questions); and
- Sharing the specific survey responses with the nurses who have sent the messages to the family members to increase their engagement in the messaging process.

Pilot Project 4: Improve Staff Engagement to Identify Better Ways to Attract, Motivate, and Retain Qualified Personnel

Clinical and nonclinical staff engagement is critical for hospital efficiency and effectiveness, and strong employee engagement and good patient experience go hand in hand.⁵⁷

Several of the hospital executives in Poland conduct employee engagement surveys every several years. However, these surveys are typically not linked to patient experience and do not appear to be an important

55. Weiner, J. 2021. *COVID-19 and the Rise of Texting in Healthcare*. Medical Economics. (accessed May 2021). <https://www.medicaleconomics.com/view/covid-19-and-the-rise-of-texting-in-healthcare>.

56. Intermountain Medical Center. 2018. "Engaging Family in Care of Hospitalized Loved Ones Enhances Healing, Reduces Readmission Rates." *ScienceDaily*, February 12, 2018. Retrieved May 24, 2021, from www.sciencedaily.com/releases/2018/02/180212100615.htm.

57. See, for example, Buhlmann, N., and T. Lee. 2019. "When Patient Experience and Employee Engagement Both Improve, Hospitals' Ratings and Profits Climb." *Harvard Business Review*, May 8, 2019.

ongoing initiative to improve performance. It is recommended that a pilot project be implemented for employee engagement in a select number of Polish hospitals. Some components of such an initiative would include:

- Conducting baseline survey of all employees, including doctors, nurses, and other clinical and nonclinical staff;
- Conducting the survey through text messaging to maximize the response rate while ensuring respondent confidentiality;
- Limiting the survey to several questions, including one that encourages the employee to offer a comment on their experience at the hospital (see Exhibit G for sample questions);
- Making the survey results accessible only to the participating hospital, protecting the identity of the respondents;
- Incorporating benchmarks from us hospitals for comparative purposes; and
- Employing sentiment analysis to identify common themes and measure the strength of the sentiment expressed in the employee comments.

Pilot Project 5: Use Clinical Quality of Care Information to Enhance Quality of Care

Polish hospitals are not consistently collecting and reporting on standardized quality metrics, either internally or externally. While there are some exceptions, most hospitals talk about the importance of quality measurement but have not taken the necessary steps to make that a reality in practice.

Effective measurement of quality of care in a hospital setting has three main components:

- Routine collection of meaningful quality of care metrics
- Regular reporting of those quality metrics, both internally and externally
- Accountability for improving performance on those quality metrics.

In the current Polish health care environment dominated by inpatient care, an urgent focus on inpatient quality of care metrics is urgently needed. Considering the information available in Polish hospital electronic health records, the most promising quality of care metrics are:

- In-hospital inpatient mortality (expressed as an observed to expected ratio);
- 30-day hospital readmission rate; and
- Length of stay (expressed as an observed to expected ratio).

As an example, Exhibit H shows the multiyear performance on these measures for UMass Memorial. Polish hospitals can currently measure and report on these quality metrics. There are likely opportunities for Polish hospitals to reduce the average length of stay. While the Polish hospital average of 7.1 days in 2018 is lower than the EU average of 7.5 days, it is higher than the 4.7 day average length of stay in the United States.⁵⁸ In the future, Polish hospitals should also report on a measure of patient complications such as

58. OECD Health Statistics 2020; Eurostat Database.
<https://www.oecd-ilibrary.org/sites/c762d8be-en/index.html?itemId=/content/component/c762d8be-en>.

the CMS patient safety and adverse events composite (CMS PSI 90), currently widely used in US hospitals.⁵⁹ It captures indicators such as pressure ulcers, in-hospital falls, and various preoperative and postoperative complications. The coding practices in Polish hospitals will likely need to be improved to make this composite measure meaningful for internal and external comparisons. Other useful quality measures for future consideration would include 30-day mortality rates and percentage of avoidable hospital admissions/ambulatory care sensitive admissions.

It is recommended that a pilot project for measuring and sharing the three suggested quality measures be implemented in a select number of Polish hospitals. Some components of such an initiative would include:

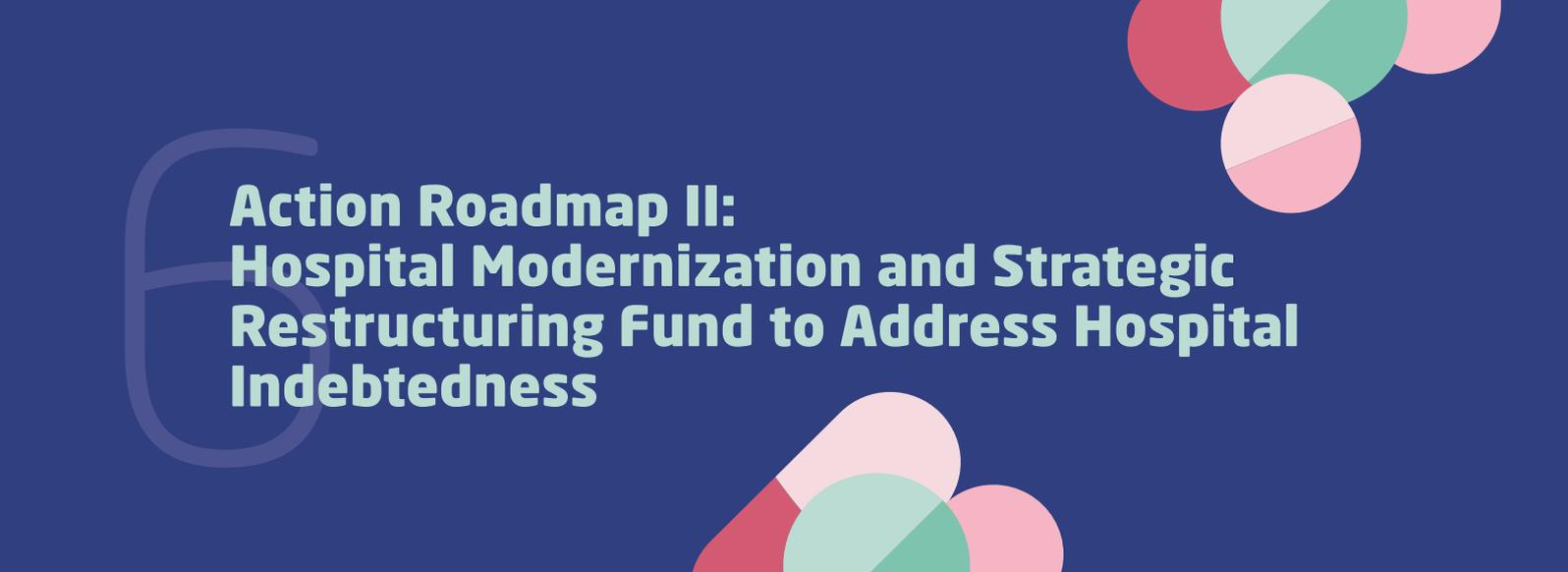
- Making the quality metrics results accessible only to the participating hospital for the first six months of collection;
- Providing the public with the quality metrics quarterly, starting after the initial six months;
- After the first year, introducing positive financial and other incentives for hospitals that improve their performance on the quality metrics; and
- Incorporating benchmarks from US hospitals for determination of observed to expected ratios.

Training Module 1: Develop a Leadership and Management Education Program for Middle and Senior Hospital Executives

A customized leadership and management education program for middle-level and senior-level Polish hospital executives would facilitate the planning and implementation of the initiatives recommended above. The program would focus on case-based education in relevant aspects of leadership and management in a public hospital setting. Appropriate topics would include leadership and strategy, cost accounting and management control, innovation and intrapreneurship, and quality and patient experience.

It would be useful to concurrently offer a series of such programs, each of which would be jointly developed and offered by a Polish and a foreign management school or university school of public health (for example, Jagiellonian University in Krakow and the Harvard T.H. Chan School of Public Health in Boston). It would likely be most cost-effective if such programs are a hybrid online and in-person format to facilitate discussion and information sharing among hospital executives and faculty.

59. CMS PSI 90 composite. <https://innovation.cms.gov/files/fact-sheet/bpciadvanced-fs-psi90.pdf>.



Action Roadmap II: Hospital Modernization and Strategic Restructuring Fund to Address Hospital Indebtedness

The growing debt of public hospitals, which increased by 27 percent in real terms from 2010 to 2020, has been a source of concern for more than two decades now. As discussed in previous sections, a mix of macro- and micro-level factors contribute to undermine the financial standing of public hospitals in Poland. There are no obvious and widely accepted solutions to these challenges. The Polish government has introduced several initiatives to address the hospital debt problem but has had limited success.⁶⁰ Closing hospitals is almost a political impossibility. Centralizing decision-making regarding bed capacity and services to better match supply and demand for services and encourage the conversion of inpatient capacity to outpatient capacity is almost a nonstarter, given the fragmented ownership of hospitals. Consolidating multiple hospital entities is an option that holds some promise, but it will require a huge amount of coordination and willingness at multiple levels of ownership and interests.⁶¹ Likewise, shifting care from inpatient to outpatient settings in Poland has not been easy, with all players – including hospital management, hospital physicians, and patients – opposing it for various incentive-related reasons.

Recognizing the complex and multi-faceted nature of potential solutions to the debt problem, it is proposed that a Hospital Modernization and Strategic Restructuring Fund be established to infuse new capital and incentives to modernize the hospital system; raise fiscal discipline; enhance patient experience; and promote a vibrant, self-sufficient, and patient-centered hospital system.

The Hospital Modernization and Strategic Restructuring Fund

The Hospital Modernization and Strategic Restructuring Fund (henceforth, simply the Fund) could be established based along the lines of a dedicated sovereign wealth fund, that is, a special-purpose investment fund owned by the government. Sovereign wealth funds are widely recognized as well-established institutional investors and important participants in the international monetary and financial system.⁶² Globally, a little over half of all sovereign wealth funds hold investments in the infrastructure asset class and of these, more than a third hold investments in social infrastructure, such as hospitals and schools.

60. Dubas-Jakóbczyk and Kozieł 2020.

61. One success story of consolidation comes from the experience of UMass Memorial Health, a 1,000-bed nonprofit and safety net health care system in the state of Massachusetts in the United States. When the system was formed in 1998, there were seven hospitals in the City of Worcester, serving a population of 170,000 for the city and 750,000 for the county. Twenty-three years later, only three of the nine hospitals remain as inpatient facilities. The other locations were consolidated into an existing hospital, became outpatient centers, or were closed. This consolidation was facilitated by the gradual shift of inpatient services to outpatient settings and involved many, sometimes contentious, conversations with the communities and local governments affected.

62. Examples of large sovereign wealth funds include the Public Investment Corporation in South Africa, Investment Authority in Kuwait, Samruk-Kazyna in Kazakhstan, and Khazanah in Malaysia.

Sovereign wealth funds are generally established in one of the following three forms: (a) separate legal entities under law with legal identities and full capacity to act; (b) state-owned corporations also with distinct legal persona; or (c) a pool of assets owned by the state, without a separate legal identity. The Fund could adopt a legal framework and institutional and governance arrangements that would allow it to operate as an expert investor, establish relationships with other state bodies, define clear roles and responsibilities, and ensure that its transactions are consistent with the broader legal framework governing the government's budgetary processes. The main objective of the Fund would be to provide broad assistance to hospitals in their efforts to improve financial position, management capacity, widely understood modernization of infrastructure, and optionally restructuring in terms of changing the legal form.

Besides having the mandate and legal authority to raise capital, the proposed Fund would employ hospital management experts capable of solving difficult managerial and strategic problems and navigating a complex and changing policy environment. The Fund would use a private equity investment model. Private equity is the procurement of medium- to long-term committed share capital that is directly invested in the growth and development of investee companies in exchange for a stake in the investee company, which is typically large enough for the investor company to influence management decisions in the investee company. Because the private equity is vested in the investee company, returns to the investor are dependent upon the growth and profitability of the investee company. Private equity investors typically divest their shares in the investee company once a set of strategic objectives and return targets have been met. This model promotes true partnership between the investor and investee companies, both of which gain when certain performance standards are met. This combination of capital and professional experience sets the private equity model apart from other forms of finance.

The proposed Fund would work as follows:

- The Fund would be set up as a legal public entity with a core start-up capital to fully finance five years of operations, including core expertise in strategy and operations, hospital management, corporate financing, strategic operations, and law. The governing body would include representatives from the government, NFZ, banking industry, leading management experts, representatives from all types of hospital owners (university, voivod, and powiat), representatives from the medical and health community, and representatives of consumer groups. The Fund would be professionally managed.
- The Fund would establish a significant line of credit from commercial banks, duly backed by government guarantees.
- In the first year of operation, the Fund would work with at least 10 hospitals with large debts and develop modernization and rehabilitation plans for each of the hospitals. The Fund will enter into investment agreements with these hospitals with the aim of strengthening their fiscal health and addressing the root causes of annual debts.
- In return for providing substantial funding to the hospital, the Fund will be recompensed as follows:
 - It will obtain a controlling or sizeable minority equity interest in the hospital receiving funds, sufficient to effectively provide it with managerial control of the hospital. The Fund will use that control to direct the hospital's growth along a path that maximizes financial returns and provides high-quality medical services to the hospital patients.

- The Fund will receive a periodic management fee from the hospital receiving the financing (set at, for example, an annual management fee equal to 2 percent of the total financing provided).
- The Fund will additionally charge the hospital a running fee equivalent to the interest on capital from the commercial bank. This will be ensured in an agreement cosigned by the Fund, the hospital entity, NFZ, and the commercial bank that extends the credit.
- When the hospital entity reaches fiscal stability, the Fund will relinquish its equity interest in the hospital and withdraw from its management.
- The Fund will repeat this cycle until all hospitals are out of chronic indebtedness.

Such an arrangement will potentially offer several advantages to ailing hospitals. First, it will allow hospitals access to liquidity and opportunities to rightsize and modernize. Second, it will help hospitals professionalize their management and introduce the latest digital and strategy tools to run the hospital in a service-oriented but fiscally responsible way. Third, it will help hospitals experiment with new and unorthodox growth and development strategies.



Long-Term Health System Reforms

Optimizing hospital care would also require significant national-level (macro), regional-level (mezzo), and hospital-level (micro) efforts focusing not only on inpatient care but also on the broader health system context. These include reforms in health financing, new health services purchasing model, strengthening of primary health care, development of new reporting systems supporting quality assurance, and further development of the e-health system.

In addition to changes in legislation, measures such as training, lean management process implementation, introduction of new reporting systems increasing transparency, and actual information on quality indicators and hospital performance would need to be considered in the systemwide reform. System-level solutions could also consider new purchasing framework encouraging longer-term relationships and integrated decision-making between providers and the NFZ. As more stringent planning mechanisms are introduced, purchasing practices would need to be adapted to ensure consistency with service reorganization. In addition to the broad agreement that improving hospitals would require complex and sustained interventions, strong political commitment to reforming the system would be needed, supported by transparent and evidence-based system governance and strengthened capacity of the key health stakeholders.

Investments in developing and producing hospital indicator dashboards are still needed. Health maps prepared by the MOH do not serve as a planning tool (on hospital, regional, or national level). A minimum level of data reporting is mandated for all facilities across Poland, and while most hospital owners receive the data, few analyze it systematically and use it for decision-making. Voivodships together with local NFZ branches would be in a good position to insist on higher standards of data collection and benchmark facilities among themselves but most lack tools, time, and capacity. From a business perspective, it would make sense for founders and hospitals to individually or even jointly invest in developing and producing hospital indicators dashboards to monitor the costs, quality, efficiency, and impact of delivered services. The systematic documentation and publication of comparative performance data might further generate leverage to impose politically difficult changes.

Another step would be decreasing governance-related waste that pertains to resources that do not directly contribute to patient care but are significant in terms of effectiveness of spending and organization as well as safety of processes. Examples include the unneeded administrative procedures and paperwork, contradictory requirements, and frequent (even several times per month) change of national regulations.

Support actions mitigating operational/process waste that occurs when care could be provided using fewer resources within the system while maintaining the health benefits. Examples include situations where pharmaceuticals or medical services are discarded unused or where lower prices could be obtained for specific goods or services. One of the tools suggested would be joint procurement of good and drugs for hospitals.⁶³ Another example of paying more when less could be paid is visits to hospital emergency department. Patients under regular care in primary or outpatient specialist settings often seek emergency care. Preventive measures and strengthening primary health care could contribute to reducing use of emergency care and enhance efficiency gains.⁶⁴

63. Espín, J., J. Rovira, A. Calleja, N. Azzopardi-Muscat, E. Richardson, W. Palm, and D. Panteli. 2016. "How Can Voluntary Cross-Border Collaboration in Public Procurement Improve Access to Health Technologies in Europe?" Policy Brief 21, European Observatory on Health Systems and Policy.

64. van den Berg, M. J., T. van Loenen, and G. P. Westert. 2016. "Accessible and Continuous Primary Care May Help Reduce Rates of Emergency Department Use. An International Survey in 34 Countries." *Family Practice* 33 (1): 42–50; O'Malley, A. S. 2013. "After-Hours Access to Primary Care Practices Linked with Lower Emergency Department Use and Less Unmet Medical Need." *Health Affairs (Project Hope)* 32 (1): 175–183. <https://doi.org/10.1377/hlthaff.2012.0494>.



8 Summary and Conclusion

This paper identifies and assesses the critical challenges facing Polish hospitals in the areas of efficiency and effectiveness. It then proposes recommendations that key stakeholders can launch in the short or medium term to begin to address those challenges. Putting these recommendations into a practical implementation context post-COVID-19 is the underlying motivation of the paper.

The most promising short-term opportunities to improve hospital efficiency and effectiveness on Poland lie in addressing the micro-level challenges of the lack of sufficient information and transparency regarding cost accounting, patient experience, family communication, staff engagement, and clinical quality of care. A select group of Polish hospitals could engage in near-term pilot projects in each of these areas to develop best practices and provide the foundation for expansion. Poland has undertaken health care pilots that have shown promise in primary health care, oncology, and coordinated care for cardiovascular disease.⁶⁵

As described previously in more depth, the following five pilot interventions are proposed:

- Implement a standardized hospital cost accounting system.
- Launch a short text message-based patient experience survey.
- Introduce patient status updates for family members through text messaging.
- Conduct a text message-based engagement survey of doctors, nurses, and other staff.
- Measure and report on three key quality metrics (mortality, length of stay, and readmissions).

These pilots could be undertaken expeditiously and could provide the impetus for broader political change by leveraging the voice and power of the Polish patients, who will benefit from the improved hospital efficiency and effectiveness.

Finally, the opportunity for these recommendations to succeed will be substantially enhanced through better education of middle and senior hospital leaders in differential cost analysis, management control structure and process, strategic management, and intrapreneurship. A case-based program that is jointly designed and conducted by a Polish and foreign school of public health to provide practical education could be launched in the near term.

65. Karasiewicz, M., E. Chawłowska, A. Lipiak, and R. Staszewski. 2020. "A Polish Pilot Programme of Coordinated Care: A Herald of Change or a Missed Opportunity? A Critical Debate." *Frontiers in Public Health* 8: 360. <https://doi.org/10.3389/fpubh.2020.00360>.

To address the chronic hospital debt situation, the paper recommends establishment of a special purpose financing vehicle in the form of a sovereign Hospital Modernization and Strategic Restructuring Fund that targets system-level (macro) challenges. The proposed Fund would help hospitals develop a reforms implementation roadmap; provide strong incentives for fiscal balancing; and employ strategies such as substituting select inpatient interventions with outpatient ambulatory care, rightsizing the mix of hospital services, modernizing hospital management, introducing enabling technology, and developing comprehensive data systems.

The analysis of the key efficiency and effectiveness issues facing Polish hospitals and the proposed solutions may be useful to other CEE countries that share many common characteristics of their health systems as well as the general direction of past reforms.⁶⁶ In the early years of the post-Soviet transformation, the majority of these countries established social insurance systems, undertook provider payment reforms, and decentralized the ownership of hospital facilities to local governments. The reform dynamics and details and the national governments' capacities and determination to implement reforms varied across countries, yet the overall paradigm was similar.⁶⁷ Many of these countries inherited large hospital sectors from the Soviet period, with large number of hospital beds and inpatient admissions relative to countries in Western Europe. The transfer of hospital ownership to local governments was regarded as an instrument to improve responsiveness to the needs of local communities. Yet, in many CEE countries, the organizational structure of hospitals was not adapted to ensure synergies with external incentives, which resulted in fragmented ownership and became an important challenge for subsequent reforms. Given the historical similarities across hospitals in the CEE region, the potential for shared learning may be high.⁶⁸

66. Klich, Jacek. 2015. "Health Care Systems' Evolvement and the Changing Role of the State in Selected CEEC." Institute of Economic Research Working Paper 61. http://www.badania-gospodarcze.pl/images/Working_Papers/2015_No_61.pdf; Romaniuk, P., and A. R. Szromek. 2016. "The Evolution of the Health System Outcomes in Central and Eastern Europe and Their Association with Social, Economic, and Political Factors: An Analysis of 25 Years of Transition." *BMC Health Services Research* 16 (95).

67. Rechel, B., and M. McKee. 2009. "Health Reform in Central and Eastern Europe and the Former Soviet Union." *The Lancet* 374: 1186–1195. doi:10.1016/S0140-6736(09)61334-9.

68. Dubas-Jakobczyk et al. 2020.

Exhibit A

Cost Accounting Template—Summary

Services	Total Cases	Revenue per Case	Total Revenues	Total Cost per Case	Variable Cost per Case	Fixed Cost per Case	Direct Cost per Case	Indirect Cost per Case	Variable Contribution per Case	Direct Contribution per Case	Net Profit per Case	Percent Variable Contribution	Percent Direct Contribution	Percent Net Profit
Internal Medicine	10,000	4,000	40,000,000	3,989	1,701	1,092	2,792	1,197	2,299	1,208	11	57.5%	30.2%	0.3%
General Surgery	4,500	4,500	20,250,000	4,484	1,773	1,365	3,139	1,345	2,727	1,361	16	60.6%	30.3%	0.4%
Orthopedics	1,500	5,000	7,500,000	4,788	1,935	1,417	3,352	1,437	3,065	1,648	212	61.3%	33.0%	4.2%
OB/GYN	2,500	2,500	6,250,000	2,443	1,059	650	1,710	733	1,441	790	57	57.6%	31.6%	2.3%
Other	6,500	4,000	26,000,000	4,099	1,762	1,107	2,869	1,230	2,238	1,131	-99	56.0%	28.3%	-2.5%
Total	25,000	4,000	100,000,000	4,000	1,680	1,120	2,800	1,200	2,320	1,200	0	58.0%	30.0%	0.0%
Revenues	100,000,000													
Variable Costs	41,990,000	42%	60%											
Fixed Costs	28,010,000	28%	40%											
Direct Costs	70,000,000	70%	100%											
Indirect Costs	30,000,000	30%												
Total Costs	100,000,000	100%												
Variable Contribution	58,010,000	58%												
Direct Contribution	30,000,000	30%												
Net Profit	0	0%												

Exhibit B

Cost Accounting Template—Contribution Margin by Service Line

	Overall		Internal Medicine		General Surgery		Orthopedics		OB/GYN		Other	
	Amount	Pct of Rey	Amount	Pct of Rey	Amount	Pct of Rey	Amount	Pct of Rey	Amount	Pct of Rey	Amount	Pct of Rey
Cases/Units	25,000		10,000		4,500		1,500		2,500		6,500	
Revenues	100,000,000	100.0%	40,000,000	100.0%	20,250,000	100.0%	7,500,000	100.0%	6,250,000	100.0%	26,000,000	100.0%
Variable Costs	41,990,000	42.0%	17,005,957	42.5%	7,980,203	39.4%	2,902,884	38.7%	2,648,617	42.4%	11,452,340	44.0%
Variable Contribution	58,010,000	58.0%	22,994,043	57.5%	12,269,797	60.6%	4,597,116	61.3%	3,601,383	57.6%	14,547,660	56.0%
Fixed Direct Costs	28,010,000	28.0%	10,918,439	27.3%	6,144,002	30.3%	2,124,955	28.3%	1,626,003	26.0%	7,196,602	27.7%
Direct Contribution	30,000,000	30.0%	12,075,604	30.2%	6,125,796	30.3%	2,472,162	33.0%	1,975,381	31.6%	7,351,058	28.3%
Indirect Costs	30,000,000	30.0%	11,967,598	29.9%	6,053,230	29.9%	2,154,788	28.7%	1,831,980	29.3%	7,992,404	30.7%
Net Profit	0	0.0%	108,006	0.3%	72,565	0.4%	317,374	4.2%	143,401	2.3%	-641,345	-2.5%

Exhibit C

United States—Patient Experience Survey Results (Hospital Consumer Assessment of Healthcare Providers and Systems, standardized survey)

Fiscal Year	Overall Score 9 or 10	Likelihood to Recommend (LTR)	Response Rate (percent)	Overall Percent Incr. from 2007	LTR Percent Incr. from 2007
2007	63	68	32		
2008	64	68	34	1.6	0.0
2009	66	68	33	4.8	0.0
2010	67	69	33	6.3	1.5
2011	68	70	32	7.9	2.9
2012	70	71	33	11.1	4.4
2013	71	71	33	12.7	4.4
2014	71	71	31	12.7	4.4
2015	72	71	29	14.3	4.4
2016	73	72	28	15.9	5.9
2017	73	72	27	15.9	5.9
2018	73	72	26	15.9	5.9
2019	73	72	26	15.9	5.9
Fiscal year time frame: October to September					

Source: <https://hcahpsonline.org/en/summary-analyses/previous-summary-analyses-documents>, data accessed on April 20, 2021.

Note: Overall score = percentage of surveys giving hospital 9 or 10 on a scale of 0 (worst) to 10 (best)

LTR—percent surveys indicating ‘always’ would recommend the hospital to friends and family.

Exhibit D

UMass Memorial Patient Experience

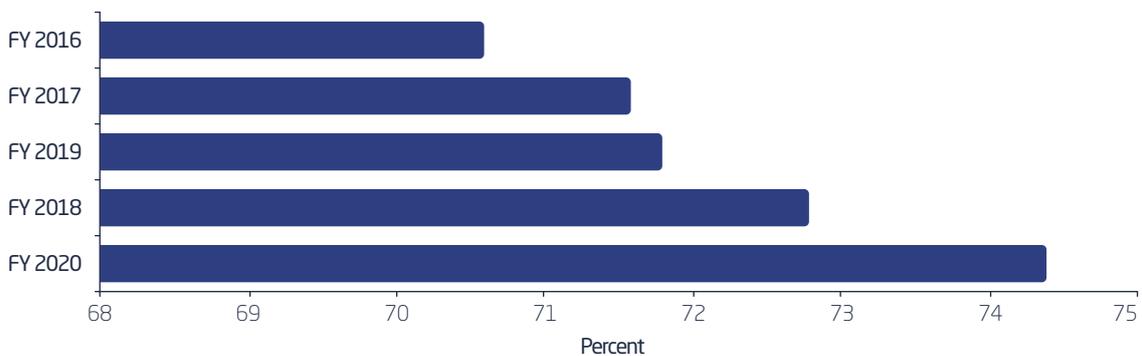


Exhibit E

Suggested Patient Experience Questions

- How would you rate your overall care experience at this hospital on a scale of 1 (very poor) to 5 (very good)?
- How likely would you be to recommend this hospital to family and friends on a scale of 1 (very unlikely) to 5 (very likely)?
- Please comment on your care experience at this hospital.

Exhibit F

Suggested Family Member Experience Questions

- How would you rate the communication with you by this hospital on a scale of 1 (very poor) to 5 (very good)?
- How likely would you be to recommend this hospital to family and friends on a scale of 1 (very unlikely) to 5 (very likely)?
- Please comment on your experience as a family member at this hospital.

Exhibit G

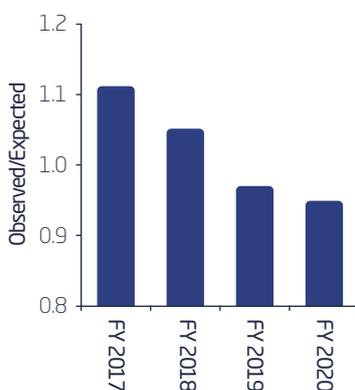
Suggested Staff Engagement Questions

- How would you rate your overall employment experience at this hospital on a scale of 1 (very poor) to 5 (very good)?
- How likely would you be to recommend this hospital as an employer to family and friends on a scale of 1 (very unlikely) to 5 (very likely)?
- Please comment on your experience as an employee at this hospital.

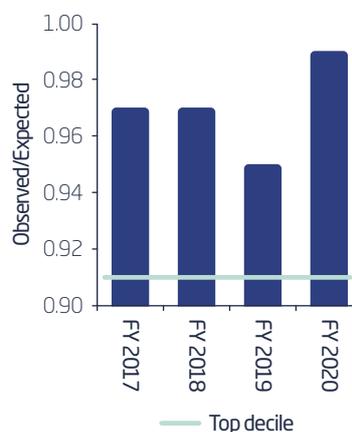
Exhibit H

UMass Memorial Quality Metric Reporting

Inpatient Mortality



Length of Stay OE



30 Day Readmissions

