

SUSTAINABLE DEVELOPMENT OF POLISH HEALTHCARE DETERMINED BY THE COVID-19 PANDEMIC

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Purpose: The acceleration of the digitization of the healthcare sector, forced by the pandemic, and the extensive use of e-services prevented is collapsed. But it was also created a space for innovative medical and medical-related solutions, development of staff competences, greater focus on the patient and his environment. The aim of the article is to determine the state and directions of sustainable development of Polish health care in connection with the COVID-19 pandemic.

Design/methodology/approach: According to the World Commission on Environment and Development, sustainable development makes it possible to meet the needs of the present generation without compromising the ability of future generations to meet their needs. The 2030 Agenda aims to “ensure healthy lives and promote prosperity for all people of all ages”. The coronavirus pandemic has challenged global healthcare systems to cope with an unprecedented crisis while pursuing sustainable development as defined above.

Findings: The pandemic has led healthcare leaders to act with agility, build resilience and adopt smarter ways of working to help future-proof care. It has also pushed them to rethink how care is delivered.

Originality/value: An identification the main directions of sustainable development of Polish healthcare in connection with the COVID-19 pandemic.

Keywords: sustainable development, healthcare, pandemic.

Category of the paper: Conceptual paper.

1. Introduction

Nowadays, among all the resources, no longer financial capital nor technology, but people are becoming more and more important resources. We are meeting at a time of immense challenges to sustainable development. Global health threats, more frequent and intense natural disasters, spiraling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades.

To promote physical and mental health and well-being, and to extend life expectancy for all, we must achieve universal health coverage and access to quality healthcare. No one must be left behind. United Nations commit to accelerating the progress made to date in reducing newborn, child and maternal mortality by ending all such preventable deaths before 2030. They are committed to ensuring universal access to sexual and reproductive healthcare services, including for family planning, information and education. They will equally accelerate the pace of progress made in fighting COVID-19, malaria, HIV/AIDS, tuberculosis, hepatitis, Ebola and other communicable diseases, epidemics and pandemics, including by addressing growing antimicrobial resistance and the problem of unattended diseases affecting developing countries. They are committed to the prevention and treatment of non-communicable diseases, including behavioral, developmental and neurological disorders, which constitute a major challenge for sustainable development (United Nation, 2016).

Healthcare units, like most organizations, function in a very unstable environment – especially in pandemic time, and are formed by the determination of factors which refer to both distal and near surroundings (mostly because of underfunding, staff shortage, operating a social mission resulting from the nature of these units, etc.). Aspects like patient orientation and demands, high standards of medical services performed and the escalation of the performance of these organizations within the budget add to a growth of the conditions for medical units. (Krawczyk-Sołtys, 2018b).

According to Polish health policy the main objective of healthcare units is to ensure patients effective healthcare by providing medical services, considering patients' values and expectations.

The aim of the article is to determine the state and directions of sustainable development of Polish healthcare in connection with the COVID-19 pandemic.

2. Sustainable development of healthcare according the United Nations 2030 Agenda

Sustainable development as a concept should be perceived in a very broad context, including many spheres of human activity (economy, social issues, environment). Currently, sustainable development, as one of the main subjects of economic and ecological research, is undertaken mainly by ecological economics, energy analysis, environmental economics, and other related disciplines. Due to its extensive nature, there are numerous definitions of the term 'sustainable development'.

The first definition of sustainable development was formulated by the United Nations in 1987 (United Nations, 1987) - Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts within it:

- the concept of 'needs', in particular, the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future need.

Sustainable development has been one of the main goals of EU policy for many years. Sustainable development means that the needs of the present generation should be met without compromising the ability of future generations to meet their own needs. It is an overarching objective of the European Union set out in the Treaty, governing all the Union's policies and activities. It is about safeguarding the earth's capacity to support life in all its diversity and is based on the principles of democracy, gender equality, solidarity, the rule of law and respect for fundamental rights, including freedom and equal opportunities for all. It aims at the continuous improvement of the quality of life and well-being on Earth for present and future generations. To that end it promotes a dynamic economy with full employment and a high level of education, health protection, social and territorial cohesion and environmental protection in a peaceful and secure world, respecting cultural diversity (Council of the European Union, 2006).

In Agenda for Sustainable Development United Nations set up seventeen significant goals (United Nation, 2016):

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable and modern energy for all.
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
10. Reduce inequality within and among countries.
11. Make cities and human settlements inclusive, safe, resilient and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impacts.

14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

Moving on with the considerations on the implementation of Sustainable Development Goal 3 (Good health and well-being) (United Nations, 2021) UN pointed such targets:

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births.
- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
- By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and wellbeing.
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.
- By 2020, halve the number of global deaths and injuries from road traffic accidents.
- By 2030, ensure universal access to sexual and reproductive healthcare services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs.
- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.
- By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
- Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate.
- Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related

Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.

- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing states.
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

The COVID-19 pandemic has revealed and exacerbated existing inequalities. The latest findings of the 2021 Sustainable Development Report revealed that the COVID-19 pandemic is an obstacle to sustainable development worldwide. Suppressing the pandemic through non-pharmaceutical interventions and global access to vaccines must remain the top priority of any government. As long as the pandemic was raging, there could be no sustainable development or economic recovery (Żbikowska-Rydz, 2022).

Many health indicators were heading in the right direction before the COVID-19 threat emerged. Maternal and infant health had improved, immunization coverage had increased, and infectious diseases had declined, though not fast enough to meet the 2030 targets. The pandemic halted or reversed health progress and poses a serious threat beyond the disease itself. About 90% of countries still report one or more disruptions to basic health services, and available data from several countries show that the pandemic has shortened life expectancy. No wonder the virus disproportionately affects disadvantaged groups (World Health Organization, 2021a). The pandemic has underlined the importance of universal health insurance and multi-sectoral coordination for health preparedness. In addition, to design effective pandemic policy interventions, governments are tasked with improving and strengthening the collection of basic demographic and epidemiological data. COVID-19 has impacted health outcomes and mortality worldwide, and has led to shorter life expectancies, even in many developed countries (World Health Organization, 2021b). Europe and North America recorded the largest loss, close to 1.7 million, followed by Latin America and the Caribbean, with around 1.2 million, and Central and South Asia with just under half a million (Sachs et al., 2019). COVID-19 can have long-term health effects, including disability due to scarring of the lungs and damage to the heart, as well as mental health problems that can affect people for long periods. The indiscriminate use of antibiotics during the pandemic could further increase antimicrobial resistance. While it is too early for existing data to reflect this impact, the COVID-19 pandemic threatens to reverse years of progress towards better health worldwide, no matter the place on the map or the state of development (Żbikowska-Rydz, 2022).

The COVID-19 pandemic is an obstacle to sustainable development in Europe and around the world. It is obvious that the pandemic was more than a health crisis. It is a crisis - socio-economic, humanitarian, security and human rights. It has affected us as individuals,

families, communities, and societies. It has had an impact on every generation, including those not yet born. The crisis has highlighted fragilities within and among nations, as well as in systems for a coordinated global response to shared threats.

The UN's response to COVID-19 and its impact consists of three main components:

1. A largescale, coordinated and comprehensive response to health, supervised by the World Health Organization (WHO) and its Strategic Preparedness and Response Plan to mobilize all sectors and communities to respond to all threats, control and suppress virus transmission, reduce mortality by providing care to those affected, and develop safe and effective vaccines and drugs that can be delivered on a large scale and available as needed. Part of that response is a new global collaboration – the Access to COVID-19 Tools (ACT) Accelerator – which aims to accelerate the development, production, and fair access to COVID-19 testing, therapies, and vaccines (World Health Organization, 2021c).
2. Extensive action to protect lives and livelihoods by addressing the destructive short-term aspects of the socio-economic, humanitarian, and human rights crisis, focusing on those most affected. The main target is to save lives, maintaining access to critical services, corporate solvency, supply chains, strong institutions, public service delivery, and human rights in the foreground. This is achieved through immediate humanitarian aid to the most affected population in the most vulnerable 63 countries with life-saving aid under the Global Humanitarian Response Plan (GHRP), as well as support for over 120 countries for an immediate socio-economic response guided by the framework of the UN development system (United Nations Office for the Coordination of Humanitarian Affairs, 2021).
3. A transformation process that leads to a better post-COVID-19 future by addressing fundamental weaknesses and identifying opportunities for a transformation towards fairer, equal and resilient societies and economies. Overcoming this crisis should be seen as an opportunity to mitigate the climate crisis, inequalities, exclusion, gaps in social protection systems, and many other injustices that have been revealed and aggravated (United Nations, 2020).

Along with that if we look at the health systems we can see that it's being confronted with rapidly increasing demand generated by the COVID-19 outbreak and more recently, the influx of refugees from war-torn Ukraine especially in Poland. A well-organized and prepared health system has the capacity to maintain equitable access to essential service delivery throughout an emergency, limiting direct mortality and avoiding increased indirect mortality (Krawczyk-Sołtys, Płatkowska-Prokopczyk, 2022).

3. Sustainable development of healthcare in Poland during COVID-19 pandemic

Life expectancy at birth in Poland increased by more than four years between 2000 and 2014 to reach 78 years, and fluctuated around this level until 2019, when the gap between life expectancy in Poland and the EU average was about three years. The gap was largely caused by greater exposure to modifiable risk factors among men, such as smoking and alcohol consumption. In 2020, the very high level of excess deaths – many due to COVID-19 – caused life expectancy at birth to decrease temporarily by 1.4 years compared to 2019, which was among the largest reductions recorded within the EU. As a result, the gap in life expectancy between Poland and the EU widened to four years (OECD, European Observatory on Health Systems and Policies, 2021).

In Poland, as in many other countries, the actual number of deaths from COVID-19 is likely to be higher than the number of reported deaths because of limited testing and issues related to the attribution of causes of death. The number of COVID-19 deaths also does not include possible increase in deaths from other causes that may arise during or after the pandemic, such as reduced access to health services for non-COVID-19 patients and fewer people seeking treatment because of fear of catching the virus (indirect deaths). The indicator of excess mortality (defined as the number of deaths from all causes over what would have been expected based on the experience baseline from previous years) can provide a broader measure of the direct and indirect deaths due to COVID-19 that is less affected by issues related to testing and causes of death registration.

Polish health system is based on social health insurance (SHI). The Ministry of Health plays a central role in health sector governance, although it shares this responsibility with three levels of territorial government: municipalities oversee primary care; counties are responsible for (often) smaller county hospitals; and voivodeships (regions) are responsible for generally larger regional hospitals. The Ministry of Health supervises the highly specialised tertiary care providers. The Ministry also played a major role in coordinating the country's response to the COVID-19 pandemic. Private facilities provide mainly outpatient care, while most inpatient care is provided in hospitals, which are public. This high level of fragmentation of health system governance presents considerable challenges for achieving effective coordination of activities across the health system, although recently efforts have been made to improve the situation. The National Health Fund (NHF) is the sole purchaser in the SHI system. It operates through its 16 voivodeship branches, which manage the purchasing of healthcare services in their regions.

Poland's COVID-19 response was led by the central government, with the involvement of relevant ministries, including the Ministry of Health. The Minister of Health led the health system response, supported by a dedicated Crisis Management Team within the Ministry.

This body consists mainly of representatives from various state authorities rather than independent public health specialists or scientists. Unlike its neighbors, Poland did not declare a state of emergency, which would have provided the government with a choice of ready-made restrictive measures and other special powers to address the pandemic under the Constitution. Instead, in March 2020 the government declared a lower “state of epidemiological emergency” and then a “state of epidemic”, which meant that all extraordinary measures had to be introduced via special provisions and resolutions enacted through parliament (Sowada et al., 2022).

Poland’s healthcare system is affected by large imbalances in the provision of services, with infrastructure concentrated in the hospital sector; insufficient provision of outpatient care, diagnostics and long-term care; and weak coordination between inpatient and other care. The number of hospital beds is high, at 6.2 beds per 1000 population in 2019 compared to an EU average of 5.3, but these are unevenly distributed across the country. Current reform plans anticipate transformation of acute hospital beds into other types of beds, such as long-term care beds, rather than reducing their number (OECD, European Observatory on Health Systems and Policies, 2021).

According to Eurostat data, Poland has the lowest number of practicing doctors per 1000 population (2.4) in the EU, and the number of nurses (5.1 per 1000 population) is also among the lowest. While the official national estimates appear to be higher – ranging from 3.4 to 4.4 doctors per 1 000 inhabitants (Kowalska-Bobko et al., 2021) – shortages of health workers have been reported in several regions, leading to difficulties in accessing health services. Shortages are particularly severe in small counties around large cities and in rural areas.

Polish hospitalization rates for conditions that could have been effectively managed in outpatient settings are among the highest in the EU (OECD Health Statistics, 2021). These high rates point to deficiencies in the provision of primary and outpatient specialist care. Since 2018, a new organizational model has strengthened the role of primary health care in management of the 11 most prevalent chronic conditions – including chronic heart failure and diabetes – and is expected to contribute to reducing avoidable hospitalization rates.

As in many other countries in Europe, all non-emergency hospital procedures were cancelled in the early months of the COVID-19 crisis. Primary care clinics continued to operate, providing remote services (usually by telephone), with special guidelines developed for providing teleconsultations during the pandemic. Specialist outpatient consultations were more difficult to conduct remotely, as these rely more on conducting a physical examination and/or diagnostic tests (the availability of which was also limited). Nevertheless, survey data show that 62% of the population used telehealth services in the first year of the pandemic, which was considerably higher than the EU average of 39% (Eurofound, 2021). This was enabled by pre-existing tools and platforms, such as the Patient’s Internet Account, and was further supported by countrywide implementation of e-health solutions and through various information technology initiatives implemented during the pandemic. Elective care was severely

constrained throughout the pandemic due to postponement of treatments and re-profiling of hospitals as COVID-19 hospitals.

Poland was very quick to react with protective measures once the first cases of COVID-19 were detected within its borders. Steps such as closures of schools, bans on mass gatherings and export bans for certain medicines were taken even before the state of epidemiological emergency was declared on 14 March 2020. The government introduced infection prevention measures, including closures of non-essential businesses, a ban on non-essential movement for the population and the closure of national borders.

For many years seen as a source of inefficiency, the relatively high number of hospital beds became an asset during the pandemic when infection rates soared. In 2019, Poland had 10.1 intensive care unit beds per 100 000 people, which was more than in many countries in the EU. Bed capacity for treating COVID-19 patients was initially secured by suspending all elective care and reserving beds for treating COVID-19 cases. A total of 22 hospitals – at least one in each voivodeship – were transformed into COVID-19 hospitals, designated for the sole use of COVID-19 patients. This secured a total of 10 000 beds. However, these decisions were sometimes controversial, as many of the reserved facilities remained severely underutilized before autumn 2020, and the number of COVID-19 beds was progressively reduced. The situation changed from October 2020, with both bed and respirator capacities coming under strain, despite the number of COVID-19 beds increasing to 45 000. Other measures to increase bed capacity included repurposing of existing facilities – for example, adapting hospital wards to treat COVID-19 cases and separating them from other wards with physical barriers to keep patients apart, and building field hospitals. Over the course of the pandemic, this hospital-centered model of COVID-19 response was replaced with one centered on primary health care: most patients with no or mild symptoms were looked after by primary care doctors rather than at infectious diseases hospitals, and most diagnostic tests were ordered at the primary health care level (Ministry of Health, 2020).

With the introduction of vaccinations, most of the temporary field hospitals that had been built were turned into vaccination sites. Vaccines were also administered in hospitals, clinics and other health facilities, with over 6 100 vaccination points nationwide.

Great effort has been made in recent years to implement an electronic health data platform and related e-health tools. From 2019, medical records have to be kept electronically by health care institutions and doctors. From January 2020, with a few exceptions, only e-prescriptions have been allowed. Implementation of e-referrals started in January 2021 in facilities that have the necessary information technology capacity, and from July 2021 all health care providers are expected to exchange medical health records electronically. The pandemic response has shown that successful implementation of these tools is closely connected to the level of digital skills of both health care providers and service users. Poland's efforts in the area of digital health will be supported through the European Health Data Space initiative, which aims to promote better exchange and access to different types of health data, including electronic health records,

genomics data and data from patient registries, and to support health care delivery, health research and policy making (European Commission, 2021).

Behavioral and environmental risk factors account for nearly half of all deaths in Poland. Although decreasing, smoking rates remain high and alcohol consumption is also higher than the EU average. Obesity is a growing health issue, and policy efforts to tackle it have increased, including the introduction of a “sugar tax” on beverages in 2021. Preventable mortality is far above the EU average, drawing attention not only to the relatively low spending on health promotion and disease prevention but also to the scope for strengthening tobacco and alcohol control measures (Sowada et al., 2022).

Low levels of financing are likely contributors to health workforce shortages, which are more severe than in most EU countries. These shortages contribute to access problems such as long waiting times, particularly in rural areas. In the EU, Poland has among the lowest number of doctors and nurses per capita. Further, many doctors and nurses are approaching retirement age, which exacerbates concerns about future supply. During the pandemic, regulations around the recruitment of international medical staff were relaxed, despite previous strong opposition.

Moving on with the considerations on the implementation of Sustainable Development Goal 3 in Poland (Good health and well-being) targets achievement indicators in 2019-2021 are as follow (Lafortune et al., 2022) and places Poland on 13 position:

- Life expectancy at birth (years) 75.6;
- Gap in life expectancy at birth among regions (years) 2.7;
- Population with good or very good perceived health (% of population aged 16 or over) 64.4;
- Gap in self-reported health, by income (p.p.) 25.3;
- Gap in self-reported unmet need for medical examination and care, by income (p.p.) 1.9;
- New reported cases of tuberculosis (per 100,000 population) 9.6;
- Standardized preventable and treatable mortality (per 100,000 persons aged less than 75) 352.2;
- Suicide rate (per 100,000 population) 12.0;
- Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population) 41;
- Mortality rate, under-5 (per 1,000 live births) 4.4;
- People killed in road accidents (per 100,000 population) 6.6;
- Surviving infants who received 2 WHO-recommended vaccines (%) 80;
- Population engaging in heavy, episodic drinking at least once a week (%) 1.1;
- Smoking prevalence (%) 26;
- People covered by health insurance for a core set of services (%) 94.0;

- Share of total health spending financed by out-of-pocket payments (%) 19.6;
- Subjective Wellbeing (average ladder score, worst 0-10 best) 6.0;
- Individuals that use the internet to make appointments with a practitioner (%) 11.

In recent years, value-based healthcare has become a subject of greater interest in Poland. For example, the Agency for Health Technology Assessment and Tariff System was working on a proposed reimbursement model based on payment for the outcome of treatment covering the entire healthcare continuum (prevention - diagnosis - treatment - rehabilitation). The COVID-19 pandemic has slowed this trend – around a quarter of Polish healthcare leaders indicate that the transition to a value-based healthcare model has become less of a priority for them due to the pandemic. This is a much higher percentage than the average in the 14 countries covered by the study (15%), which may reflect the profound impact of the pandemic on the situation in Poland. However, despite the obstacles caused by the current crisis, about a third of them are currently on a plan to move to value-based healthcare or have plans to do so in the future.

Three-quarters of Polish healthcare leaders, in terms of implementing digital medical technologies, currently invest the most in digital medical records. In addition, compared to the average of the 14 countries covered by the study, this technology is a higher priority for leaders in Poland. The percentage of healthcare entities with IT solutions that enable keeping medical records in electronic form has increased - from 56.6% in 2018 to 68.4% in 2021. These activities contribute to improving the quality of the healthcare system and patient safety, reducing inequalities in access to health care, increasing health awareness and detecting diseases in the early stages of development (Ministry of Economic Development and Technology, 2023). At present, the leaders of Polish health care are focused on creating the foundations of a digital medical record system, but going beyond the requirements caused by the current epidemic situation, they perceive artificial intelligence as one of their future investment priorities, with around a third currently investing in some form of AI, and 61% of them would like their hospital or medical facility to invest most in AI technology in the future.

Currently, only 2% of Polish healthcare leaders consider the implementation of sustainable development practices in their hospital or medical facility to be a priority. However, about half of them expect it to be one of their main goals in the future, more important than other needs, such as improving the technological infrastructure (30%) or facilitating the transition to remote or virtual care (27%) (Philips, 2021).

To sum up - health system resilience has been defined as the ability to prepare for, manage (absorb, adapt and transform) and learn from shocks.

4. Conclusions and Further Research

The pandemic has led healthcare leaders to act with agility, build resilience and adopt smarter ways of working to help future-proof care. It has also pushed them to rethink how care is delivered. In many cases, healthcare leaders have continued to use care practices that were adopted more widely during the pandemic, including virtual care. Managerial competencies seem to be crucial for recognizing the needs of the organization itself and its environment, as well as following new challenges and opportunities to deal with them (Krawczyk-Sołtys, 2018a, 2018b, 2019, 2021, 2022; Krawczyk-Sołtys, Płatkowska-Prokopczyk, 2022, 2023).

The Future Health Index 2021 report found that just 4% of healthcare leaders saw implementing sustainability practices as a priority, although many (58%) agreed it would become a priority by 2024. Today, the picture is very different. This year's findings suggest that healthcare leaders have fast-tracked their sustainability plans. Almost one-quarter (24%) are prioritizing sustainability, and the same number plan to do so three years from now. Healthcare leaders in urban facilities are more likely than their peers in rural facilities to prioritize sustainability (26% vs 19%), demonstrating the role of patients and healthcare workers in driving sustainability. In urban areas where there is a wider choice of facilities, healthcare leaders are more likely to feel pressure to meet patient demands for sustainable practices in order to attract and keep patients. Equally, sustainability is increasingly playing a key part in recruiting talent in areas where there is significant competition. However, while leaders in rural facilities are currently behind those in urban facilities in prioritizing sustainability, they are set to surpass them in terms of the issue three years from now (29% vs 25%). There are also differences in attitudes towards sustainability between operational and clinical healthcare leaders. Clinical leaders are less likely to prioritize sustainability than their operational colleagues today and this difference is even greater in the future. However, they can also have an impact on emissions reductions, for example by prescribing medications that are manufactured with a lower carbon footprint or advocating for equipment that has zero landfill at the end of its life. For hospitals and healthcare facilities to achieve their sustainability goals, both clinical and operational leaders must play an equal part in carbon reduction (Philips, 2022).

The early COVID-19 response allowed Poland to contain the first wave of infections effectively. It also offered an opportunity to build contingencies, but the health system quickly came under strain when the infection rate surged during the second wave. Capacity issues affected the large inpatient sector, where shortages of health workers proved to be a major bottleneck to upscaling care, even when infrastructure such as additional intensive care unit beds was mobilized quickly. Over the course of the pandemic, primary health care increasingly became the first line of response to COVID-19. Thanks to the use of telemedicine solutions and supportive platforms and tools, it was largely possible to maintain primary care services during the pandemic. This was more difficult with specialist consultations, which tend to rely on

physical examinations and diagnostic tests. Provision of inpatient care for non-COVID-19 patients suffered the most, as health resources were reallocated to treatment of COVID-19 patients. Poland has bolstered access to the COVID-19 vaccine by assembling a range of vaccination sites to administer the inoculation. In the face of some vaccine hesitancy, it has also provided incentives to encourage the population to get vaccinated (Sowada et al., 2022).

It's supposed to be set out together on the path towards sustainable development, devoting ourselves collectively to the pursuit of global development and of "win-win" cooperation which can bring huge gains to all people.

The pandemic has exacerbated the difficulties faced by healthcare leaders before the crisis. Today, healthcare leaders face a human capital crisis: the 'great resignation' has serious consequences for the industry, leading to the closure of facilities, in some cases. This is an issue that must be addressed in order to fix other challenges. Yet (Breuer et al., 2020; Dahmen et al., 2021; Gibson et al., 2020), this area is not fully developed. Therefore, it seems necessary to conduct empirical and literature research in this area, which will enrich scientific knowledge, rationalize the research methodology, as well as allow to formulate recommendations for practice.

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