

Managing uncertainty in healthcare: can we prepare for tomorrow?

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It is indisputable that we live in uncertain and unsettling times, as evidenced by the results of the World Economic Forum's Global Risk Perception Survey conducted in 2022. Out of nearly 1,000 experts and leaders surveyed, 84% conveyed concern and apprehension. The list of the ten most significant global risks, the risk of infectious disease spread also ranks high, at sixth place.[1]

Risk is frequently described as a situation in which the availability of various options, along with their potential benefits and costs, is known only with an estimated probability [2].

Health is an area of concern for not only global leaders but also for every individual. This is demonstrated by the "Map of Poles' Risks" [3]. According to this study, the top three concerns remain the same regardless of age, gender, and place of residence: the death of a loved one, a lack of funds for treating a severe illness, and a serious illness affecting a close family member. The perceived probability of these distressing events occurring may have significantly increased during the pandemic.

The healthcare system plays a critical role in managing health risks at both the public health level and in mitigating the risk of adverse health-related events for everyone. Healthcare is a high-risk sector, like aviation or nuclear power – errors can affect many people and preventing them requires specialized

safety procedures. In 2019, the Supreme Audit Office of Poland (NIK) reported that one of the significant weaknesses of the healthcare system is the "lack of risk analysis concerning the functioning of healthcare in the perspective of new challenges, including epidemiological and demographic challenges" [4].

Inadequate prediction, monitoring, response, and mitigation of risk in healthcare facilities expose patients to danger, potentially leading to significant social costs. These costs encompass both economic factors (such as compensation payments, costs of re-treatment, etc.) and the incalculable costs of suffering and death. Even in highly developed countries, adverse events may affect one in ten patients in hospital care. Ensuring high-quality healthcare must, therefore, go together with a focus on risk management and patient safety.

Such thinking also guided legislators in drafting the bill on healthcare quality and patient safety [5]. The bill includes regulations concerning the protection of medical personnel in connection with reporting adverse events. This is intended to encourage staff to disclose as many adverse events as possible without fear of sanctions or reprisals, and to promote a culture of safety within patient care. As part of their internal quality management system, healthcare providers will be required to conduct patient opinion and experience surveys based on

validated questionnaires and ensure the publication of their results.

The emergence of risk introduces uncertainty regarding the balance of costs and benefits, which can only be determined with a certain degree of probability. Risk should not preclude the potential benefits; instead, it should prompt us to consider how to improve the balance of losses and gains. The COVID-19 pandemic has clearly highlighted both the risks and opportunities within the healthcare system. It has emphasized the need to refine the organization of medical service delivery procedures and enhance the system's ability to respond to crises.

COVID-19 should not be analyzed as a standalone risk source but in conjunction with megatrends. The pandemic has acted as a catalyst for certain megatrends. The pandemic period has brought about experiences in profiling hospitals and hospital departments, increasing the flexibility of response to situations, which can be considered as a heightened readiness for potential future crises. This has been a period of growth for medicine in general. The pandemic has been a powerful catalyst for digitalization and robotization in medicine. However, systemic solutions are needed, including financing and incubation of emerging medtechs. Many solutions developed in the commercial healthcare sector are later adopted in the public sector.

The pandemic has also caused a significant regression in the prior improvement of prevention indicators, as evidenced by a 40% decrease in mammography and cytology examinations within a single quarter, which will take years to recover. 2022 was worse in this regard compared to 2019, and the habits concerning preventive behavior cannot be quickly rebuilt. Moreover, the fatigue from the long-lasting pandemic carries the risk of reduced adherence to safety norms and increased exposure to infection risks.

An important area where the pandemic-induced crisis reveals significant deficits and challenges is the labor market for medical professions. The medical education system in Poland is highly competitive, yet, in many key specializations there is no so-called generational replacement. The age of

doctors is increasing, and the situation is even worse for nurses. The inflow of medical staff from other countries does not compensate for the shortage of specialists from Poland – although this has started to change significantly due to the war in Ukraine. The shortage of doctors and nurses was starkly highlighted in the situation of increased demand for medical staff during the pandemic.

The important issue is the need for greater complementarity between public and private healthcare, which was also highlighted during the COVID-19 crisis. The main risk shared by both commercial and public sectors is the departure of young doctors and nurses from the country after graduation. Additionally, efforts should be combined when implementing innovative solutions in areas such as telemedicine. This requires both legislative and mental changes. Further antagonisms between these two parts of the healthcare sector pose a separate risk to the effectiveness and efficiency of the system in the future.

It seems that the most significant systemic benefit for healthcare from the pandemic is the dynamic progress in digitalization, remote medicine, and the improvement of the system's decision-making, organizational, and adaptive capacities in rapidly changing conditions. The pandemic has been a time for implementing and modifying crisis management procedures, resulting in an increased ability of the system to maintain operational capacity in severe and prolonged crisis situations. It has taught us to cooperate better, collect and process data, and make decisions more quickly. There is still much work to be done in these areas, including linking the quality of medical services with the quality of information and the security of medical information, which is addressed by the draft law on quality in healthcare and patient safety [5]. On the other hand, there is a concern that recording adverse events that are not medical errors, such as treatment complications, may lead to an increase in patient claims and a shift in focus from patient care to addressing patient rights.

The COVID-19 pandemic has brought numerous difficult experiences to light, highlighting not only the importance of adept forecasting and risk source

identification to prevent crises, but also the need for continuous focus on a clear vision and strategy. Currently, it is challenging to assess the extent to which experiences from the health and social crisis of the COVID-19 pandemic are adequate for future challenges and how well they can prepare us for them. A significant challenge remains the insufficient ability to predict the most dangerous sources of crises, the so-called "black swans" – events of great significance but low probability [6]. Our ability to cope with future crises will depend on the willingness and skill to learn from past experiences, as well as a holistic and systemic understanding of risk sources, both internal – operational, procedural, technical, and others – and external, stemming from the legal environment, technological, social, and epidemic changes, or the labor market. The healthcare sector itself is fraught with contradictions that can lead to lasting conflicts and even crises. While a social

approach to health demands meeting the healthcare needs of individuals, the economic approach imposes the rigor of economic efficiency and effectiveness, and the managerial approach requires optimization of decisions, resources, and risk management [7]. Values do not always align with needs, but times of crisis are always moments for difficult yet necessary choices. We will learn about the validity of these choices in the future.

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