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This monograph is dedicated to the main conceptual approaches to the assessment of individual health, including not only the physical, mental, and social components specified by the World Health Organization but also intellectual, spiritual, biological, and other components. It postulates that systemic medical and systemic biological research are crucial for the success of efforts in health strengthening, early personalized diagnostics, and correction of deviations. It is shown that aligning key health status indicators will ensure its effective monitoring and assessment of risk factor dynamics. It is emphasized that defining ways to synthesize classical conceptions of individual health with concepts of evolutionary medicine and the tools for depicting individual health problems is possible only through the use of information technologies. Special attention is given to the implementation of the MyHeal platform for individual health monitoring created in Ukraine, based on the "4P Medicine" ideology.

The monograph recommended for use by specialists and higher education seekers in various specialties of knowledge domains 22 "Healthcare" and 09 "Biology", as well as a broad audience interested in issues of individual and population health.

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PREFACE

The definition provided by the World Health Organization (WHO) that health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" has been subjected to criticism both from philosophers since its first appearance in 1948 and specialists in informatics. Despite its obvious conceptual and practical limitations, this definition initiated a productive discussion about the nature of health, dominated by two main approaches: descriptive or naturalistic (health is operationally defined in terms of normal functioning, fully understood in the language of biological sciences) and normative (insisting that health cannot be understood until it is acknowledged that health is a human good). Many criticisms are associated with the lack of quantitative characteristics of health (health metrics). Finally, the issue arises from the absence in the presented definition of health components such as biological, intellectual, spiritual, and others.

Today, more than ever, there are broad debates about person-centered care and related ideas of shared decision-making, value-based practices, expansion of patients' rights and capabilities, patient experience (patient participation)¹. Such issues are important components of any serious discussion about the future of medical services and health care practices and pathology correction. It should be emphasized that personalized (person-centered) care (PCC) represents a fundamentally new movement that goes beyond the reductionist, mechanistic concepts of physical and psychological health that previously dominated. Personalized medicine has proposed a new model of modern clinical practice with the potential for reviving the classical concept of care as caring for the "whole person". The ideas of "person-orientation" have recently been widely used in numerous and influential policy documents², including the long-term plan of the National Health Services^{3,4}. This model is now a key component of various debates

¹De Miranda, L, Loughlin, M. Philosophical health: Unveiling the patient's personal philosophy with a person-centred method of dialogue. *Journal of Evaluation in Clinical Practice*. 2023; 29: 1161–1170.

²Person-centred care made simple: What everyone should know about person-centred care. London: Health Foundation; 2016. 46 p. ISBN 978-1-906461-56-0.

³Person-Centred Care: Implications for Training in Psychiatry. College Report CR215. London: The Royal College of Psychiatrists; 2018. 50 p.

⁴The NHS long term plan. National Health Service; 2019. URL: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-termplan-version-1.2.pdf>.

about the future of health care, service provision, and the philosophy of preventive medicine. However, there is still a gap between discourse and practice, as despite numerous discussions and comments about the principles of PCC, a direct method of systematic and systemic dialogue has not yet been implemented to assess the patient's personal philosophy. Without such a method, person-orientation lacks a proper understanding of patients' value indicators in the context of the peculiarities of their lives and the assessments they provide to specific forms of activity, relationships, processes, and opportunities.

One of the most well-known methods of incorporating "patient values and preferences" in making clinical decisions and evidence-based practice is the widely used and influential GRADE approach — a grading system for assessment, development, and expertise in recommendations. GRADE is also a method for assessing the reliability of evidence and enhancing recommendations in health care⁵. It provides a structured and transparent assessment of the importance of outcomes of alternative management strategies, recognition of patient and societal values and preferences, and complex criteria for lowering and raising the reliability of data. This has important implications for generalizing factual data for systematic reviews, for assessing health care technologies, and clinical practice guidelines, and for other decision-makers^{6,7}. However, the guiding principles included in this approach are somewhat vague, especially in the area of threshold values; they rely on information about the "typical" patient and accordingly favor certain diagnostic states typical of situations. Therefore, they are unlikely to consider and provide recommendations about the life of each specific person in the context of determining the best course of action in any situation. Indeed, this constitutes the concern of PCC advocates.

Another form of reductionism has produced influential biostatistical theories of health that effectively consider the body as a biomechanism, and health as the functioning of this mechanism within normal parameters. However, unfortunately, in several cases, this returns us to the often-cited reduction of the definition of health as the absence of disease or dysfunction.

⁵Mercuri, M, Gafni, A. Defining the meaning, role, and measurement of "values and preferences" in the development of practice guidelines: the case of GRADE. *Eur J Pers Cent Health*. 2020; 8 (1): 45–57.

⁶Loughlin, M, Buetow, S, Cournoyea, M. et al. Interactions between persons-knowledge, decision-making and the coproduction of practice. *J Eval Clin Pract*. 2019; 25 (6): 911–920.

⁷Schünemann, HJ, Best, D, Vist, G, Oxman, AD. Letters, numbers, symbols, and words: How best to communicate grades of evidence and recommendations? *Canadian Medical Association Journal*. 2003; 169 (7): 677–680.

The main merit of the WHO's definition of human health should be recognized as the substantiation of a systems approach to individual health, defining its connections with population health. The systems approach to human health involves understanding its outcomes as complex interactions between internal natural and social systems. Systems thinking is a holistic approach to understanding the dynamic interaction between complex biological, economic, ecological, and social systems and for assessing the potential consequences of interventions.

Increasingly, attention is being paid to issues that require new integrated approaches to health care. One of them is related to the analysis of problems arising from the interaction of spheres of people, animals, and ecosystems that form one environment — the "One Health" approach. Initiatives aimed at addressing such pressing issues usually consist of complex structures and extremely complex dynamics of quantitative assessment of risks to the environment and human health. The development of this direction has led to the development of the theory of Planetary Health. It provides an opportunity for better understanding and representation of the ways of mutual influence of humans on natural systems that negatively reflect on human health. The theory provides an opportunity to apply new ways of creating an evidence base that characterizes complex global environmental changes and links with human health; and also, to conduct transdisciplinary system studies involving end users; and in this way, jointly create solutions for transformative changes⁸.

The systems approach to planetary health requires a scientific analysis of system complexity and the recognition of the role people play in forming and co-creating knowledge about the socio-ecological system. Systematic methods for integrating and analyzing data across various disciplines are increasingly recognized as fostering interdisciplinary collaboration necessary for improving our understanding of planetary health. Defining practical opportunities for preventing and mitigating human-induced environmental impacts on health requires a systemic understanding of interconnections and feedback loops for strategic identification of priority factors.

Studying planetary health at a given spatial scale (urban, sub-national, national, and regional) requires an understanding of how human-induced stressors, either singly or in combination, lead to global and local environmental changes and how these changes affect human health.

⁸Pongsiri, MJ, Gatzweiler, FW, Bassi, AM. et al. The need for a systems approach to planetary health. *The Lancet*. 2017: 257–259.

It is understood that the relationship between human-induced environmental changes and human health may be non-linear (and likely is), influenced by complex feedback processes in social, economic, and ecological aspects. These complex, dynamic interactions, including the interplay between global and local environmental changes, genetic changes in the human organism, can lead to the immediate or delayed emergence of positive or adverse health outcomes⁸.

Therefore, the understanding of human health has undergone a complex path and requires certain generalizations to create a new Universum of concepts and knowledge, substantiating the theory of providing individual health and disease prevention, which will become a cornerstone platform for the society of the future.