

Re-Centering Precision Medicine on the Person: The Potential Role of Values- Based Practice

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Ground-breaking advances in genetics, biology, pharmacology, medicine and computer science have made it possible to decipher an individual's biological makeup and recommend prevention strategies and treatments tailored to their specific biological and clinical characteristics [1]. This approach has given rise to the notion of precision medicine. According to the US Food and Drug administration "Precision medicine, sometimes known as "personalized medicine", is an innovative approach to tailoring disease prevention and treatment that takes into account differences in people's genes, environments, and lifestyles. The goal of precision medicine is to target the right treatments

to the right patients at the right time [1]. It embodies a paradigm shift from classifying individuals into diagnostic categories to approaching each person as unique with tailored healthcare needs [2].

In practice, the implementation of precision medicine is founded on the use of large volumes of data, both individual and population-level, as well as recent technological advancements [3]. It is grounded in cutting-edge methods like genomics, transcriptomics, epigenomics, proteomics, metabolomics, pharmacogenomics, sensor-based continuous assessments of digital- and biological markers, and big data analytics. These approaches increasingly enable the phenotyping of individuals at genomic, biological and partially behavioral levels, albeit not at the psychological and social ones, which are levels at which human will and autonomy are primarily instantiated [4].

Individual's beliefs, attitudes and preferences towards healthcare remain commonly unconsidered in the decision-making process in precision medicine [1]. Indeed, in the routine practice of oncology, for instance, precision medicine facilitates the decision between targeted therapies and specific immunotherapies based on the genomic characteristics of the tumor and is particularly successful in chronic myeloid leukemia, lung and breast cancer [3]. Interestingly, the new biomarker-based conceptualization of Alzheimer's disease, which increasingly affects people worldwide [5,6], together with the emergence of less invasive blood

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Received: 30 Aug 2025; Accepted: 03 Sep 2025

Key words: *Values; precision medicine; values-based practice; decision-making*

biomarkers of the disease [7], the accumulating evidence for modifiable dementia risk factor [8] and the recently approved first disease-modifying drugs [9] form a new terrain for precision medicine prevention strategies and therapeutic interventions. Nonetheless, the current precision medicine approaches seem to remain exclusively focused on multi-omics data even in fields like mental and neurocognitive disorders, the successful care of which necessitates the comprehensive understanding of the patients and their care partners and presupposes shared decision-making [10]. Nowadays, people are empowered by the proliferation of social media and digital technologies including wearable devices and increasingly participate in managing their own health [11]. Despite this, the preferences, values and needs of each individual are often neglected, or overlooked. As a result, the holistic view on the person can be lost [12]. The way precision medicine is implemented may give rise to a modern version of medical paternalism, which is based on cutting-edge bioanalytics and computer technology, since mainly biological data guide or even define medical decisions, while values, feelings and preferences of healthcare service end-users, i.e. people seeking medical advice and care partners, are frequently overlooked. As a result, their right to participate in shared decision-making may be subsequently undermined [12,13].

This reductionist and materialistic stance [4] may stem from the tools that are available and can be employed by precision medicine in a given context. In other words, precision medicine practice elaborates on the tools that are at its disposal (e.g. -omics techniques), determining the possibility of concrete actions [3]. Thus, tools capturing the psychological, social, spiritual and cultural dimensions of decision-making in healthcare may facilitate the bridging of high-tech solutions and modern data integration methods with the relational and empathic aspect of personalized healthcare delivery.

Values-based practice (VBP) is a toolkit for working with the values of people involved in health-related decision-making and for reaching decisions that are informed by the complexities, conflicts and tensions caused by the values crucially involved in the process of decision-making [14]. It may prove a helpful instrument in shedding light on psychological and social factors shaping decisions related to health issues, ranging from prevention to care and post diagnostic care, and in meticulously incorporating such factors, currently largely neglected, in precision medicine decision-making.

In VBP, the term 'values' is defined in a wide manner. It includes interests, pleasures, likes, preferences, duties, moral obligations, desires, wants, goals, needs, aversions, and attractions, as well as other kinds of selective orientations which shape the way a person approaches their medical condition, healthcare and its treatment or disease prevention issues. Values reflect what matters or what is important to people. The application of VBP to different fields of healthcare (e.g., occupational therapy, orthopedics, primary care, psychiatry, psychology, community mental health practice, child psychiatry, radiotherapy) in which increasingly cutting-edge techniques facilitating precision medicine approaches are implemented, or to areas of medicine which may benefit from such applications in the near future, has been proposed, and training materials for healthcare professionals have been developed [14–17]. These materials concisely teach clinicians how they can pragmatically identify and bring into light the values of all stakeholders involved in each decision-making context. After short training courses, the acquired knowledge and skills equip clinicians to deal with psychological and social aspects of the decision-making process in a way that is transparent and willing to openly discuss conflicts and disagreements. Indeed, VBP is open and inclusive regarding value diversity, so as to create the necessary safe space for those directly concerned in each decision to be reflective and express their values, motives, needs, wishes etc. VBP, as a decision-making toolkit in healthcare, paves the way to open and constructive interactions and shared decision-making. Founded on the legacy of the Popperian open society, the philosophy of values and the anthropological conception of language, VBP scrutinizes values in play in each context of health-related decision-making and treats values as democracy deals with ideas, ideologies, and human voices [14,18,19]. Hence, the VBP decision-making toolkit is neither limited to ethical codes, nor does it give priority to one value over others. All values concerned in a decision-making process may influence the process, provided they are compatible with the locally established, relevant legal, regulatory, and bioethical frameworks of values. These frameworks are treated as values of a higher order (meta-values) compared to those involved in the process of the decision-making process in question.

VBP operates in a way that has analogies with the way precision medicine works. VBP's "first call" for in-

Table 1. Common threads of precision medicine and values-based practice.

	Precision Medicine	Values-based Practice
Individual characteristics	Biological makeup of healthcare service user	Values of healthcare service user
Characteristics of a given context	Available prevention and/or care strategies	Available prevention and/or care strategies and values of stakeholders involved in the decision-making
Relevant population-based evidence	Multi-omics data	Evidence of values derived from philosophy of psychiatry, social sciences, patient narratives
Decision-making	Data driven decision-making	Emphasis on good process and inclusivity of stakeholders' values in decision-making
Dynamic character of decisions	Tailoring prevention and/or care strategies to the needs of each service user at each particular context and according to available evidence	Balancing different values sometimes one way, sometimes another, based on the particular context at the time of each decision

formation is the perspective and the values of the healthcare service user or patient group concerned in a given decision [20], in line with the importance of unveiling the biological makeup of each person for implementing precision medicine. Decision-making in VBP is facilitated by the resources of philosophical value theory and other areas of the philosophy of psychiatry, such as phenomenology, in addition to empirical social science methods, patient narratives and other sources of 'evidence of values' [15], as precision medicine in its current form benefits from multi-omics data. As precision medicine aims for unbiased, data-driven decisions, the emphasis of VBP is on good process, rather than pre-determined 'correct' outcomes [15]. In VBP, values become subject to a process of natural selection, as the weaker, i.e., the less relevant for health promotion and/or combating disease, give priority to the mutually accepted as more crucial ones, under the specific circumstances of each case. In addition, precision medicine pragmatically considers all available prevention and/or care means, while VBP takes into account the values of all stakeholders implicated in a given decision-making and strives to complement evidence-based practice, since medical evidence largely shapes the context of the decision-making and all decisions are based on both values and facts [16,21]. Last but not least, the best matching of individual characteristics with available prevention and/or care strategies in precision medicine is dynamic and changes as the person ages, their clinical condition evolves, and scientific knowledge

accumulates. Interestingly, the aim of VBP is accepting and navigating dissensus [20], i.e., balancing different values sometimes one way, sometimes another, based on the particular context at the time of each decision. The aspects of VBP decision-making that concord with precision medicine implementation are succinctly presented in Table 1.

To conclude, we hereby demonstrate that VBP is not only compatible with precision medicine, but when used in combination with precision medicine can enable better health outcomes. It can enrich precision medicine with a decision-making toolkit that facilitates the navigation of value diversity and conflicts in healthcare issues, reflecting the psychological and social aspects of the lives of end-users of healthcare services. In such a way the person's values, preferences, needs and attitudes, alongside their biological characteristics, become central to the decision-making process in precision medicine, as they crucially influence the personalized design, implementation and outcome of a given treatment or prevention strategy.

Conflict of interest disclosure: None to declare

Declaration of funding sources: None to declare

Author Contributions: Conceptualization and writing – original draft: Panagiotis Alexopoulos; Writing – review & editing: Alison J. Canty, Jayashree Dasgupta, Joyla A. Furlano, Aline Nogueira Haas

REFERENCES

1. Evans W, Meslin EM, Kai J, Ahlqvist V, Andersson C, Appelbaum PS, et al. Precision medicine—are we there yet? A narrative review of precision medicine's applicability in primary care. *J Pers Med.* 2024;14(4):418.
2. Nilsson S, Hansson H, Moons P, Fors A, Strömberg A, Jaarsma T, et al. Is this the road to health?—the person in precision health. *Eur J Cardiovasc Nurs.* 2025;00(0):1–8.
3. Delpierre C, Lefèvre T, Aujoulat I, Cantarero-Arévalo L, Pardo-Crespo MR, Kelly-Irving M, et al. Precision and personalized medicine: what their current definition says and silences about the model of health they promote. Implication for the development of personalized health. *Front Sociol.* 2023;8:1112159.
4. Hayward E. Swimming upstream: practising whole-person medicine in a reductionist medical culture. *Br J Gen Pract.* 2019;69(682):242.
5. Nichols E, Steinmetz JD, Vollset SE, Abate KH, Abbasi N, Abd-Allah F, et al. Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019. *Lancet Public Health.* 2022;7(2):e105–25.
6. Alexopoulos P, Kurz A. The new conceptualization of Alzheimer's disease under the microscope of influential definitions of disease. *Psychopathology.* 2015;48(6):359–67.
7. Grande G, Valletta M, Rizzuto D, Vetrano DL, Marengoni A, Calderón-Larrañaga A, et al. Blood-based biomarkers of Alzheimer's disease and incident dementia in the community. *Nat Med.* 2025;31(8):2027–35.
8. Livingston G, Huntley J, Liu KY, Sommerlad A, Costafreda SG, Mukadam N, et al. Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. *Lancet.* 2024;404(10419):572–628.
9. Belder CRS, Schott JM, Fox NC. Preparing for disease-modifying therapies in Alzheimer's disease. *Lancet Neurol.* 2023;22(9):782–3.
10. Chmielowska M, Zisman-Ilani Y, Saunders R, Bird V, Borkoles E, Craig P, et al. Trends, challenges, and priorities for shared decision making in mental health: the first umbrella review. *Int J Soc Psychiatry.* 2023;69(4):823–40.
11. Beckmann JS, Lew D. Reconciling evidence-based medicine and precision medicine in the era of big data: challenges and opportunities. *Genome Med.* 2016;8:134.
12. Erdmann A, Rehmann-Sutter C, Bozzaro C, Biller-Andorno N, Buyx A, Burgio G, et al. Patients' and professionals' views related to ethical issues in precision medicine: a mixed research synthesis. *BMC Med Ethics.* 2021;22(1):116.
13. Montori VM, Ruissen MM, Hargraves IG, Boehmer KR, Guyatt GH, Shippee ND, et al. Shared decision-making as a method of care. *BMJ Evid Based Med.* 2022;28(4):213–7.
14. Handa A, Fulford KWM. Values-based practice: a theory-practice dynamic for navigating values and difference in health care. *R Inst Philos Suppl.* 2023;94:219–44.
15. Fulford KWM. The value of evidence and evidence of values: bringing together values-based and evidence-based practice in policy and service development in mental health. *J Eval Clin Pract.* 2011;17(5):976–87.
16. Fulford KWM. Values-based practice and patient engagement. In: Barkham M, Hardy GE, Mellor-Clark J, editors. *The Wiley handbook of healthcare treatment engagement.* Chichester: Wiley-Blackwell; 2020. p. 58–74.
17. Fulford KWM. Values-based practice: a new partner to evidence-based practice and a first for psychiatry? *Mens Sana Monogr.* 2008;6(1):10–21.
18. Royer C. Valuing diversity without illusions: the anti-utopian agonism of Karl Popper's *The open society and its enemies.* *Eur Leg.* 2023;28(5):463–81.
19. Hirschkop K. High anxiety, becalmed language: ordinary language philosophy (Wittgenstein, J. L. Austin). In: *Linguistic turns, 1890–1950.* Oxford: Oxford University Press; 2019. p. 247–70.
20. Alexopoulos P, Leroi I, Kinchin I, Ballard C, Kurz A, Aarsland D, et al. Relevance and premises of values-based practice for decision making in brain health. *Brain Sci.* 2024;14(7):718.
21. Fulford KWM. The realpolitik of values-based practice: an introduction to Part VI, reflections. In: Stoyanov D, Hwang S, Fulford KWM, editors. *International perspectives in values-based mental health practice: case studies and commentaries.* Cham: Springer; 2020. p. 367–77.

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