Commentary

How digital transformation can help achieve value-based healthcare: Balkans as a case in point

Rodney Alexander Rosalia, PhD a,b,* , Khaled Wahba, PhD b,d, Neda Milevska-Kostova, PhD c,**

a Zan Mitrev Clinic, Skopje, The Republic of North Macedonia
b Maastricht School of Management, Maastricht, the Netherlands
c International Alliance of Patients Organisations, London, United Kingdom
d School of Business & Economics, Algoma University, Brampton, Ontario, Canada

ARTICLE INFO

Article History:
Received 11 December 2020
Revised 20 March 2021
Accepted 23 March 2021
Available online 14 April 2021

Digital transformation (DT) is revolutionising healthcare. Propelled by the ‘new normal’ associated with the COVID-19 pandemic, we have witnessed a surge in technology innovation to assure continuity in care delivery.

In general terms, DT refers to the disruptive improvement process that introduces changes in information management, computing, communication, and connectivity technologies that impact organisational operations, structure, and business strategy.

However, managing clinical data flows and using advanced technologies are just part of it. A common misconception about DT is that the disruption is merely technological; instead, DT is a wider philosophical framework of business transformation propelled by digital innovation to increase stakeholder satisfaction. Its aim goes beyond digitalising the organisational environment - rather DT entails improving clinical governance by leveraging the vast amount of data, supporting clinical decision-making, and ensuring resource utilisation towards operational excellence.

In healthcare, operational excellence is correlated with the quality of care provided. DT may boost quality-of-care and increase patient satisfaction by enhancing clinical data communication and patient engagement.

Yet, in many countries, it is hard to move beyond concept and shift away from the perception that digital transformation of health is only a technology-driven process where “people merely have to adapt to a new normal” [1].

The Western Balkans are no exception. While the network infrastructure and digital connectivity are still lagging behind the wider EU environment, some Balkan countries, over the past several years, have made initial strides towards digitally transforming healthcare, including state-of-the-art health information systems and open-source telemedicine platforms [2]. However, the stagnating healthcare systems’ groundwork impedes a more significant innovation in care delivery; service provision is vertical and siloed, resulting in excessive duplicated costs for low-quality disintegrated care. Input-based fee-for-service models dominate, enabling healthcare providers to declare most costs without reciprocity on quality-of-care performance. Consequently, the higher healthcare expenditures do not yield matching trends in better health outcomes jeopardising Sustainable Development Goals achievement [3]. The overall value proposition is biased towards caregivers instead of the patients; patient feedback, perception, satisfaction, and quality-of-life metrics are rarely accounted for in the policymaking despite patients’ increasing expectations for inclusion and meaningful participation in the decision-making processes and initiatives that impact their health.

In short, value-based healthcare (VBHC) – defined as health outcomes achieved that matter to patients relative to the cost of realising those outcomes [4] – is mostly absent in the Balkans.

VBHC, a concept coined by Michael Porter [4], entails transforming health care systems with the primary goal to maximise value to patients [4]. Determining “value” may require a system-level model and framework to understand better the distributed components that are interrelated by complex processes within a healthcare system [5].

The European Commission proposed a comprehensive meaning of “value” that expands beyond the univariable interpretation based solely on monetary value in the context of cost-effectiveness. The modified value definition encompasses four components [6]:

1. Allocative "value": Equitable distribution of resources across all patient groups.
2. Technical “value”: Achievement of best possible outcomes with available resources.
3. Personal "value": Appropriate care to achieve patients’ personal goals.
4. Societal "value": Contribution of Healthcare to social participation and connectedness.

In the proposed VBHC value ratio, the numerator (health outcomes) specifies condition-specific results most relevant to the
patients, for example, improvement in functional independence and quality of life. The denominator (costs) designates to cumulative spending across the complete care delivery value chain.

DT may facilitate the transition towards VBHC, but it requires, among other, a top-down cultural and behavioural change in clinical governance, management, and policymaking. Regional providers, payers, and suppliers must acknowledge the current health system’s pitfalls and embrace DT to disrupt and shift the value-proposition favouring patients.

One of the critical prerequisites is for governments to install policies that incentivise stakeholders who commit to transparent reporting of clinical outcome and patient-reported outcome measures following the General Data Protection Regulation framework, and industry data communication standards, such as Health Level-7 or Fast Healthcare Interoperability Resources. In doing so, healthcare organisations would be able to assure safe bidirectional communication between different system segments, a holistic approach to patient care and better utilisation of resources for genuinely integrated patient-centred healthcare.

Tremendous resources will be needed to get the current health sector out of its ‘comfort’ zone; DT may resolve many of its current limitations by disrupting the healthcare governance to respond to the outdated healthcare systems in the Balkans.

The current pandemic has provided compelling evidence on the necessity of DT in healthcare as a means to introduce VBHC.

In the effort to pave the way to VBHC in the region effectively, DT can offer ample opportunities to increase process efficiency and establish sustainable, high-quality patient-centric care [7], which is widely accessible [5].

By maximising leadership and clinical governance, one can assure relatively fast results. Healthcare organisations are likely to experience steady growth of return on investments as patients are drawn by evidence-based, universal, validated quality-of-care.

In addition, through DT, governments will be empowered for better resource utilisation and thus deliver on their commitments to provide high-quality, high-value patient-centric universal health coverage.

The benefits of that are multiple. If it is to be judged by similar experiences, this will entail rewarding the local providers who deliver the VBHC on predefined global quality metrics.

Universal health coverage by 2030 is an ambitious goal, and success requires a collective approach to overcome technical, political and cultural challenges towards health equality.

The Balkan countries should embrace DT as a stepping stone towards VBHC leveraging real-time data on clinical status; a robust interoperability infrastructure across multiple healthcare organisations is key. Data-driven patient segmentation represents a powerful tool to guide decision-making during the healthcare journey in terms of medical services and therapies offered to patients and, importantly, on what terms [8,9]. Personalised care based on patient profiles and multidisciplinary data analytics, should accelerate the establishment of VBHC in the Balkans.

While DT must not be seen as a panacea for all vulnerabilities of the region’s healthcare systems, it should be regarded as the foundation of a future modernised healthcare systems [10] and a pivotal initial step to facilitate the transition VBHC.

Embracing digital health innovation to map patient-reported outcomes will lead to operational excellence in healthcare – it will also establish a transparent ecosystem where all patients are adequately informed throughout their care pathway to achieve better health outcomes.

**Author Contributions**

R.R. conceptualised the presented idea. R.R and N.M developed the theory and wrote the manuscript with support from K.W. All authors discussed the findings and contributed to the final manuscript.

**Declaration of Interests**

Dr Whaba has nothing to disclose. Dr Milevska-Kostova has nothing to disclose. Dr Rosalia reports non-financial support from Zan Mitrev Clinic, outside the submitted work

**References**

[1] Kickbusch I. Will tech save healthcare? In: AboutDigitalHealth, editor. www.aboutDigitalHealth.com; 2021.
[2] Stone CS. Benchmarking telemedicine: improving health security in the Balkans. IOS Press; 2017.
[3] WHO. Health for all database. WHO; 2020.
[4] Michael E., Porter T.H.L. The strategy that will fix health care. 2013.
[5] Zeigler B., Traoré M., Zacharewicz G., Duboz R. Value-based learning healthcare systems: integrative modeling and simulation (healthcare technologies); 2018.
[6] Health ECD-Gf, Safety F. Defining Value in ‘value-based healthcare’: opinion by the expert panel on effective ways of investing in health (EXPH): publications office of the European Union; 2019.
[7] Kraus S, Schiavone F, Pluzhnikova A, Invernizzi AC. Digital transformation in healthcare: analyzing the current state-of-research. J Bus Res 2021:123:557–67.
[8] Kamal-Bahl S, Towse A, Spurgin L, Danzon PM. Specific value assessment considerations. Value in Health 2019;22(6) 524-58.
[9] Talaga J., King D. Evolving toward engagement: the recent history of patient segmentation. 2020. https://www.hfma.org/topics/hfm/2020/january/evolving-toward-engagement-recent-history-of-patient-segmentation.html. Accessed January 5, 2020.
[10] Jonathan Miles S.H.N.C. Improving patient care through digital transformation. 2020.