Guidelines for Implementing Value-Based Health Care in Slovenia

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Guidelines for Implementing
Value-Based Health Care in Slovenia

VBHC Expert Group
Slovenia, October 2022

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The health care system in Slovenia needs change. The patient must be put at the centre of the system. All other stakeholders – doctors, nurses, nurse assistants, physiotherapists, laboratory staff, pharmacists, the Ministry of Health, HIIS, NIPH, and JAZMP, but also the Minister of Health, the Prime Minister and the President – should gather around the patient and work for the patient's good.

Our health system needs an overhaul. In undertaking reform, we should adhere to the principle of the Hippocratic Oath, 'First do no harm'. Maintaining the current situation is harmful for patients.

The newly established Patient Organisations Association of Slovenia believes that we can be better together. VBHC, value measurement as perceived by the patient, is a concept proven at the international level. As shown by the authors of these Guidelines, the concept should be implemented in Slovenia on a step-by-step and prudent basis. We will certainly support these efforts.

Measuring value through the patient's perception is an internationally proven concept

Štefanija Lukič Zlobec
President of the Federation of Patient Organisations of Slovenia

The quality of health care can be evaluated at several levels. For organisers of health care in a country, proper organisation is important, allowing effective and high-quality work of employees, especially at times when health care professionals are increasingly valuable. The same applies to material resources. For medical doctors, quality stems from results of clinical trials. We often measure quality at either level by means of process quality indicators that are often set on the basis of agreement rather than science, and therefore the link between process and outcome indicators is uncertain. The question remains what the outcomes of our work mean for the persons for whom our work is intended. Patients are not interested in the process nor in the scientific merits of our work: they are interested in how to improve or maintain their health and quality of life.

Measuring health outcomes leads to a higher quality of patients' lives

With increasing patient empowerment and health literacy, patient involvement in the treatment process has grown into a new challenge and at the same time an added value. A new challenge for health care systems and doctors as the cornerstones of medical services is how to reasonably combine cost effectiveness and science-based quality of care with the outcomes that patients expect in accordance with their values.

Value-based health care presents a health care delivery model where providers, including hospitals and doctors, are paid on the basis of patient outcomes. In the context of value-based agreements, providers are rewarded for helping patients improve their health, decrease the effects and incidence of chronic diseases, and lead healthier lives in an evidence-based way.

Seemingly, the implementation of value-based health care is complicating the role of physicians, but what is in fact at stake is bringing health care assessment closer to their core mission. Throughout the history of the profession, the primary interest of a doctor is to satisfy the patient, with their service, in a way that is recognised and valued by the patient. It is the doctor's responsibility to ensure, with their knowledge, that the patient recognises and values the services that truly and based on evidence benefit their health, while it is the duty of the health care system and society to ensure, through good organisation, that the services are financially sustainable and that both the patient and the doctor are interested in professionally sustainable service.

Prof. Bojana Beović, MD, PhD
President of the Medical Chamber of Slovenia

Slovenia is still facing many challenges in monitoring results and implementing value-based health care, necessitating an explicitly defined national strategic approach. Numerous examples of good practice in Slovenia show that pursuing higher systemic goals is possible.

The Health Insurance Institute of Slovenia (HIIS) closely follows development trends of health care systems and is fully aware of the paramount importance of fast and continuous introduction of novelties – especially those that bring higher value for patients/insured persons, and are medically recognised and cost-effective. The HIIS therefore supports and participates in efforts to accelerate progress and prepare the ground in this field, which is something that this document inevitably brings.

The HIIS attaches particular importance to value stemming from the most favourable care outcomes and results for patients/insured persons and – what is essential – improvements in their quality of life. In parallel, we monitor this objective in financial terms, making sure that the selected treatment method is also cost-effective in the long term, because we must strive for the best performance of earmarked public spending.

Aware of the opportunities, the HIIS strategic development programme for the medium term until 2025 has set ambitious goals in the development of new payment models and quality assurance of health services.

In order to maximise value for patients/insured persons, it is essential to measure care outcomes and effects by means of models and/or payment methods for health services. For these development steps, it is crucial to have relevant information and data on the one hand, and partners and work colleagues willing to explore new developments, overcome resistance to change, seek maximum efficiency and comparable own performance, search for new solutions, cooperate constructively, and focus, in a joint, co-responsible effort, on the benefit of patients/insured persons – because the health system is intended for them.

This document follows the aforementioned key goals and strategic vision of the HIIS, by exploring new solutions and possible methods of cooperation, with a common goal – to maximise, through systemic capacities and possibilities available, the best interest for individuals going through a health ordeal.

Assist. Prof. Tatjana Mlakar, PhD
Director General of the HIIS

Pass the ball to Luka!

The most brilliant and most important basketball game in the tournament is going on right now. We are transfixed, breathlessly watching the grand event. Our team is struggling. The referee announced the last quarter ages ago. Our team is 18 points behind. The bench is getting shorter for the coach. All the players are exhausted now. The game seems to be long lost at this point, and the players are inclined to just accept their fate. With the game drawing to an end, the coach shoulders the biggest possible responsibility. He decides in a split second, without overthinking. He delegates responsibility to the best player, who will know what do to with the ball and how to engage the other players. All he needs is some trust, encouragement and a bit of inspiration.

At first sight, health has nothing to do with the above. But life, too, is a game with many challenges. Health-related challenges seem to be the fiercest, especially when health is lost. When this happens, time flies on its own, normally at too fast a pace, and the referees interrupt the game too often, interfering with the course of life. It takes hope to take this new step, and no strength is greater than having confidence in your team. Patients and health care professionals make a team. We wish to have a 'Luka Dončić' in our team, because he is the best, because he is here to play the game, because someone believes in him and his ability to connect his teammates and find the best way through the opponents' defence.

Through a well-thought-out approach, VBHC brings more health for all

Well, at least in basketball, we know who deserves the ball. Even more, based on basketball action statistics and evaluation of the competitors, it is possible to plan the game strategy. Value-based health care follows a similar design. The value of care is determined by measuring outcomes, especially those reported by patients. We assume that on the basis of such data, we can make more efficient and informed decisions on appropriate methods of care, which will, against the background of constrained resources, bring as much health for everyone as possible.

The authors of the contributions in these Guidelines are certainly exploring an important topic, highlighting it from different angles. Of course, not all solutions for daily practice are provided at this point. The game is still being played under the old rules. However, we have gained a good insight into how the rules of the game could change – this can be the basis for an open and in-depth debate.

The concept of value-based health care is an extraordinary opportunity for health care systems to also make better use of the capacities offered by pharmacists with a master's degree. The concept promotes better inclusion of pharmacists in health working groups, i.e. teams that will provide holistic, seamless and patient-centred health care. In particular, pharmacists can contribute greatly to the implementation of this new concept in the health care system in Slovenia.

Prof. Mitja Kos, mag. farm., PhD
Head of the Department of Social Pharmacy,
University of Ljubljana, Faculty of Pharmacy

In its essence, the principle of VBHC is quite simple: the patient should receive the best possible service per unit price. We can express this as a question: Is the health care service worth the price? If we tackle this challenge in parts, we will inevitably move away from value: decreasing the price of health services leads to pushing the costs on to other health care providers, lowering the quality of health services, or both. However, focusing on quality alone leads to poor price management and, consequently, poor access to health services. The measure of value is the patient, not the health care programme, doctor or other health care professional, nor performance of hospitals or insurance companies. For the patient, value is much more complex than mere recovery or survival: among others, it consists of recovery time, quality of life, dependence on assistance and care, pain, sense of suffering, dependence on the assistance of another person, etc.

Higher-value health care is not necessarily more expensive. Many novelties became cheaper with their widespread use, streamlining and improved processes, as demonstrated by a wealth of examples. The answer to the question as to what constitutes the basis of competitiveness is therefore quite straightforward: as with any competition, outcomes are essential here, too.

Outcome-based competition can help the profession progress in the international context

In contemporary health care, identification of health care outcomes is of key importance, and in VBHC we focus on the patient in the entire course of care at the level of medical condition. Competition at the level of outcomes must be encouraged and freed from unnecessary restrictions. In this way, we could achieve good prospects that errors in medical treatment, over- and under-diagnosis, and health care in general will be put in order in the spirit of improving competition among providers. We have repeatedly observed that the mere enforcement of recommendations/guidelines, external regulation and supervision are not enough for true improvements.

Last but not least, let me mention the key condition for implementing value-based health care: the VBHC concept cannot become a reality without proper legislation, which must create the necessary conditions for outcome-based competition.

Due to the rigid wage policy and the tendency to use a whole array of standards and norms in the current system, 'better' organisations cannot attract 'better' workers. Health care institutions that perform better in the same regime are not incentivised; on the contrary, the institutions that operate with a loss are ultimately compensated by their founders. In the current system of payment for providers, competitiveness is not possible, and, consequently, the same holds true for VBHC.

Assist. Prof. Aleš Rozman, MD, PhD
Director of the University Clinic Golnik

Integrated care represents a concept of organised patient care that has been proven to be the right approach to health care. It can respond to health challenges brought about by the modern age. This type of care, which – among others – requires customised goal setting and specific quality assessment, must be implemented consistently in practice. But the latter often sees just the opposite. This important concept deserves its place in the education process of all health care professionals. It must be included in the teaching system at all levels of education, if it is to become reality.

Prof. Igor Švab, MD, PhD, Dean,
University of Ljubljana, Faculty of Medicine, Department of Family Medicine

Health care and the economy are closely connected, although this may not appear so at first sight. With respect to the concept of value-based health care, I would like to stress the fact that this important concept was coined by an economist. A renowned academic and professor at Harvard University, Michael Porter, together with his associate, Prof. Elisabeth Olmsted Teisberg, presented the idea of value creation for patient centricity and complete patient focus for the first time in 2006. Their thinking was a paradigm shift that is now, after so many years, a truly recognised framework of modern thought and business practices in health care, recently implemented by a growing number of countries and systems. It puts decision-makers, policy-makers, doctors, patients and their families against a difficult dilemma. When does treatment still bring value?

What does it in fact mean for researches in economic sciences? Value-based health care falls into the context of longevity society and sustainable development goals. These are the fields where researchers from the School of Economics and Business of the University of Ljubljana are on a par with the best in the world, exploring ways to contribute to our society. It is a reflection of the research excellence and knowledge complexity we are developing and at the same time a mirror of the openness of other professions. The latter recognise the relevance of integrating knowledge in different, vertical multidisciplinary teams, where, together with professionals in medicine, nursing care, pharmacy, biotechnology, management and organisation, health economics and other sciences, each profession may contribute their specific expertise and thinking for the benefit of the patient and for the common good. Team dynamics of complementary professions can yield the best outcomes. The best outcomes for the patient in terms of all processes involved in improving their health care – medical, operational, and technical and support processes.

VBHC promotes new multidisciplinary teams, helping create a higher value

As Vice-Dean for Research and Doctoral Studies at the School of Economics and Business of the University of Ljubljana, which with triple accreditations ranks among the elite 1% of business schools worldwide, I welcome that these Guidelines for Implementing Value-Based Health Care in Slovenia were created in such a multidisciplinary spirit. The Guidelines are certainly the right step towards a systematic and most effective implementation of this paradigm in Slovenia, for the benefit of all stakeholders in the country's health care system.

Prof. Miha Škerlavaj, PhD, Vice-Dean for Research and Doctoral Studies,
School of Economics and Business of the University of Ljubljana

In health care, the patient is synonymous with value and quality. Both concepts are intertwined with other factors that (in)directly affect the patient's health, recovery, survival, rehabilitation and return to home and/or work environment. We have defined the health environment or the health market as a competition between stakeholders, where the results gained are of key importance for the competitive advantage. It is worth adopting a different view, namely that a competitive environment exists at the level of health results for a specific patient.

High-quality, safe and value-based health care offers possibilities for further analyses and benchmarking between patients/hospitals, and enables making the right health decisions for specific patients. The latter offers the possibility of better, high-quality and efficient care, which, as a consequence, enables control over (in)direct costs of treatment and also allows for savings. In accordance with the health outcomes achieved, health service providers will cooperate in the exchange of good practices, patient-integrated care, and an overview of health outcomes for the patient. Health care providers will have a tool for making clinical decisions based on treatment results. Subsequently, collecting data on health outcomes will offer an improved value of care, where benchmarking outcome data (between teams, hospitals; exchange of good practice, etc.) is of key importance at all levels of health service.

Monitoring of the above-mentioned indicators is an indispensable instrument for health service payers, because work will be paid on the basis of health care results according to patients' needs. Last but not least, it is worth mentioning the development of good practices that will be visible, in a transparent manner, to all providers, contributing to safer care of higher quality and to optimisation of treatment.

It is essential to put in place an appropriate system that will offer real-time monitoring of costs per patient and allow for the exchange of data between individual providers and flexibility. The key values of this concept are the involvement of both health care providers and teams as well as patients, and monitoring and review of care results. The concept offers not only work optimisation, but also acceptance of responsibility for outcomes and associated costs.

Immensely important for the patient, health outcomes must include both short- and long-term aspects of a patient's health status. They must involve all health services and health care providers affecting outcomes. The measurements performed should enable comparisons of outcomes between patients (from initial to end state) and taking account of case-mix variables. The latter means that the cost price of a health care service should be defined, that (in)direct costs, labour costs and costs of tests should be measured at patient level, etc.

Moreover, we need a leap in thinking, because results of analyses are the prerequisite for comparing results and taking measures for their improvement.

Assoc. Prof. Andrej Starc, PhD, Dean,
University of Ljubljana, Faculty of Health Sciences, Department of Public Health

Executive Summary

According to a stakeholder survey, value-based health care (VBHC) is a rapidly expanding global concept that Slovenia will be unable to avoid in the future. After examining the advantages and disadvantages of VBHC, it is clear that we neither want to nor should avoid the concept in Slovenia. VBHC assumes measuring health outcomes for patients with a specific group of diagnoses at specific time points, e.g. before and after a procedure or, for patients with chronic diseases, at reasonably longer intervals. Based on such measurements, variations in patients' health are monitored and a health care value for each patient is determined. Outcome measurement is therefore the primary starting point for analyses and benchmarking as well as for further decisions about care. Through making decisions based on quality data provided by the patient, VBHC can improve the efficiency and quality of care, and consequently lead to savings. In Slovenia, stakeholders see the biggest advantages of the VBHC concept in putting the patient at the centre of care, but also in the new outcome-based payment system for providers, cooperation and exchange of good practices between providers, integrated care, and transparency of health outcomes for the patient.

To boost VBHC implementation, change is needed in several areas. Stakeholders see the main limitations in the insufficient resources of the providers, especially in terms of analysing big data, which is the basis for making decisions relying on health outcomes. This limitation may be particularly true with small providers who do not have their own analysts but also do not want to depend on a national centre that will, once established, collect and analyse data. For Slovenia, the right solution is definitely in external providers of analytics. According to the stakeholders, another limitation – largely expected – is the information system. Establishing an appropriate information system that is compatible with the existing system is certainly a challenge, both in terms of time as well as financing. According to the calculations set out in this document, it accounts for nearly two-thirds of the total costs of VBHC implementation in the first five years. Further challenges identified by stakeholders and addressed in individual chapters of these Guidelines include the adequacy, usability and availability of measurement instruments (in general and rendered in the Slovenian language), the fear of yet additional work load for health care professionals due to the use of additional instruments, and the concern about the non-responsiveness of the patients in the process. The fact is that VBHC implementation in Slovenia must be accompanied by further changes, such as changes towards outcome-based payments to providers, cooperation and exchange of good practice between providers, and support of the health policy to providing integrated care.

Requiring close collaboration of all participants, VBHC should first be introduced in one specialty, followed by other specialties on a step-by-step basis

The Guidelines for Implementing VBHC in Slovenia ('the Guidelines') offer several very concrete measures for specific areas, drawn up by the Expert Group following the Implementation Matrix as prepared by EIT Health. The Guidelines offer a plan for Slovenia in all essential points.

We begin by setting the criteria for selecting medical conditions for VBHC implementation. Not all conditions are fit for measurement, hence outcome measurements will not lead to improvements. VBHC is therefore to be adopted only for conditions where: (a) the patient group is sufficiently homogeneous; (b) the patient volume is large enough; (c) outcome measurements can be used for analysis, comparison and change of processes; (d) instruments for outcome measurements already exist and are preferably at least partially translated and validated in the Slovenian language; (e) care outcomes can be measured relatively quickly, e.g. at least within a year, and (f) the degree of innovation in diagnostics and therapeutic procedures is relatively low,

and consequently clinical pathways are not constantly changing. Further, the Expert Group identified medical conditions that meet these criteria and where it would be reasonable to start with VBHC implementation, namely: high blood pressure, atrial fibrillation, heart failure and coronary disease in cardiology, and lower back, hip and knee pain in orthopaedics.

VBHC implementation largely depends on human resources. Representatives of patients, doctors and nurses should be involved in change planning. Gradually, other stakeholders should join, including physiotherapists, laboratory technicians, purchasing departments, etc. We have developed a team proposal at the national level (consisting of physicians, nurses, a clinical pharmacist, IT experts, and an analyst) and for each major health care provider rolling-out VBHC. Human resources and improvement of their competencies are at the heart of introducing new concepts and at the same time represent one of the highest investment items.

To measure outcomes, appropriate indicators are needed. To measure outcomes for selected patient groups, the Expert Group proposes to use internationally defined outcomes and instruments designated for their collection. ICHOM seems to be a suitable source for the selection of outcomes and instruments for their measurement. Preparing measurement instruments requires their translation and validation in the Slovenian language, which, in turn, requires monetary and HR support as well as sufficient time. The goal of collecting outcome data is to improve the value of care for the patient, which can only be achieved by benchmarking outcome data between teams and providers, exchanging best practices and improving care processes. This, in turn, requires data transparency and strengthened cooperation between providers – both at the same level as well as across levels. In Slovenia, patient-level cost tracking should be developed and supported with IT, through time-driven activity-based costing. Against this background, it is essential to increase the types of costs monitored on an ongoing basis at the patient level, paying particular attention to the allocation of labour costs that represent the largest share of total costs.

Instruments for outcome measurement can only be introduced with the necessary IT support, which, in addition to clinical indicators and PROMs, should also support the collection of administrative data and defined case-mix variables and facilitate connection with cost data. In line with the ambition of establishing value-based health care in Slovenia, a national information system for the collection, review and analysis of PROMs and CROMs should be put in place. It would be reasonable to set up the system within the existing infrastructure on the eHealth platform, by integrating it in a modular way into existing IT solutions at all levels of health care activity, avoiding the need for multiple developments within existing IT solutions.

The total investment in VBHC in the field of endoprosthetics in degenerative knee and hip disease in the first five years of regular operation, together with the phase-in period, is estimated at EUR 2.02 million, of which the initial investment in IT support for the entire implementation period represents around one-fifth or EUR 419,500. Due to the design of the integrated information system, the volume of investment in the entire VBHC system is significantly higher and is presented in chapter 7.4.

Putting in place health outcome measurement in the long term would represent an important tool for the payer in contracting with providers and incentivising their work on the basis of health outcomes. The selective approach to contracting services based on health outcomes would, as a consequence, facilitate the creation and roll-out of a network of providers and activities. VBHC links payments to providers with the quality of care, and rewards providers for efficiency and effectiveness: health care outcomes

must be measured to be able to focus on patient needs. Indicators with good values should be encouraged by not punishing indicators with bad values, providing ongoing analysis and feedback for providers, and setting transitional periods for improvements.

VBHC creates new types of external links and relationships between payers and health care providers (bundled payments), between suppliers and buyers (value-based procurement), between providers themselves (benchmarking and cooperation in the introduction of good practices), and between patients and providers (larger involvement in health care and cooperation in expressing preferences by patients). A comprehensive overhaul of the public procurement system in health care should implement the criterion of quality of the object/service based on health outcomes (with a clearly defined share of outcome-based assessment criteria). Public contracts in Slovenia should contain value-based provisions using outcome measurements, which must also be financially evaluated. Urgently needed are appropriately designed structures that will also involve patients in the preparation and design of innovative pricing schemes, helping create public contracts for health services whose outcomes will be based on health value for patients.

The Guidelines also bring a case of implementing VBHC in orthopaedics as a possible first suitable area of implementation.

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1 Introduction

Value-Based Health Care (VBHC) is a form of care delivery where health outcomes that matter to patients are maximised relative to health care costs. Based on outcome measurements and benchmarking between patients, health care teams, providers or countries, we can find examples of good practice and translate them to other locations, increasing the quality and safety of care in terms of optimisation of health care delivery for each patient.

The authors of this publication joined forces in September 2021 upon the initiative and under the umbrella of HealthDay.si to explore possibilities for implementing value-based health care in Slovenia. We firmly believe that the VBHC concept serves the patient by placing them in the very centre of care and by making all other goals and aspirations of stakeholders in the health care system subordinate to health care optimisation. Limitations of this approach are also addressed. We believe, however, that the limitations can be resolved through the development and adaptation of IT support, additional training, and through financial and non-financial motivation of employees, as well as through the biggest challenge – changing the mindset.

VBHC requires data-based actions while at the same time correctly addressing transparency on the one hand and data security on the other. The main purpose of VBHC is to increase the general value, and thus the quality and safety of health care as well as health outcomes. VBHC encourages all providers to share data in a safe environment, rewarding high performers, while at the same time not sanctioning underperformers but rather encouraging them to improve. Yet as good as information support and as high as financial rewards may be, they cannot replace the confidence of all stakeholders involved that the data and properly prepared analyses will be used solely and only for the purpose of improving patient care.

It is essential to gradually build trust between teams from different backgrounds; the main purpose of data collection is to improve each and every medical team

We stress in several parts of these Guidelines that the VBHC concept is not suited to all areas nor to the entire system; its implementation must be gradual and should take place only in areas where it can make a positive contribution. In selected areas, it comprises the entire process of health care and long-term care. The criteria to select areas and/or conditions are, based on foreign experience, clear. Our proposal for implementing the VBHC concept follows the experience and practice in other countries while at the same time giving due consideration to the specificities of the Slovenian health care system, its circumstances and culture as well as behaviour and customs. Quite often, the implementation of the VBHC concept in other countries was either not successful or did not yield good results – we can learn the most important lessons from them. Similarly, in Slovenia, we strive for a gradual, but decisive implementation, learning through errors that are part of any improvement process.

Finally, it should be noted that the VBHC concept is not an all-powerful concept resolving all health care problems – while it can contribute to more efficient care, higher quality and, inevitably, lower costs, it cannot solve problems such as the growing demand due to the ageing population and technological advances in health care. The VBHC concept also requires a certain level of clinical and financial culture of Slovenian stakeholders in the health care system, who must ensure appropriate ethics in its implementation. Similarly as any other concept that is manipulated and pursued through unethical conduct, the VBHC concept can show its disadvantages and lead to cost reduction to the detriment of quality. In Slovenia, where solidarity and universality are the basic values of the health care system, the primary focus of the concept refers to health outcomes along with correctly and meaningfully measured costs of the necessary medical treatment, and not vice versa.

Putting patients at the centre of the health care system

2
Before VBHC implementation in Slovenia

Valentina Prevolnik Rupel, Petra Došenović Bonča, Dorjan Marušič

After 1980, health systems of developed countries aimed to secure sustainability of the welfare state and meet the need for budgetary stability and strict control of spending. With their rigid, consistent and diligent regulatory compliance, traditional public administrations were unable to meet the expectations of efficient and effective operation. Health care systems, too, were subject to much criticism due to their inefficiency and lack of cost-effectiveness. The growing demands to increase productivity, effectiveness, quality and responsibility for the diligent management of public, collectively raised resources have led health systems to adopt more flexible and creative public management. This may be among the reasons why states have withdrawn from the direct management of health care institutions, while retaining the role of coordinating and guiding health care systems (Oxfam, 2016).

At the beginning of the 1990s, health reforms focused on improving the management and efficiency of health care providers (Jönsson, 1996; Dunning, 1996). Some countries sought to improve access – i.e. reducing long waiting lists, increasing patient choice and upgrading infrastructure, and tried to introduce market mechanisms, such as selective contracting, outsourcing, and changing payment methods. All this contributed to an increase in overall health spending. Countries that had relied more on regulation sought to open their systems to competition. System inputs and outcomes had to be constantly measured and evaluated in terms of effectiveness, efficiency, quality and safety, adjusting the structure and processes in view of the outcomes (OECD, 1990). The transition from health inputs to outcomes represents a transition towards monitoring health outcomes as the basis of monitoring the efficacy and effectiveness of the health system. The search for and putting in place a relation between efficiency and productivity as well as between quality and safety represented a significant part of the reform processes in the health systems of developed countries. The increased role of the population and putting patients at the centre of the health system gave rise to the need for performance indicators, which include the subjective assessment of the quality of life of an individual (Marušič, 2016).

Payment models that disregard health outcomes are not sustainable

2.1. Challenges of implementing VBHC in Slovenia

With the legislation adopted in 1992, certain state tasks in Slovenia were transferred to the public payer, providers, patients' interest groups and policy-makers; a partnership-based system of making agreements was promoted, with the state having the role of coordinating various interests and setting common tasks. In its analysis, the World Health Organization pointed at the absence of multi-year planning and the excessive role of the state in health care planning, weaknesses connected with the purchasing role of the Health Insurance Institute of Slovenia (HIIS), lack of transparency for providers, and insufficient inclusion of patients' representatives, all of which has led to focusing on financing only instead of ensuring quality through the promotion of quality indicators, clinical pathways and clinical guidelines (Ministry of Health of the RS, 2015).

The long-standing and persistent prioritisation of inputs and delays in replacing public administration with new public management either suppressed or prevented focusing on health processes and outcomes, the autonomy of providers and a patient-centred health system, while health outcomes are practically not monitored. All efforts of upgrading the financing system in this millennium have mainly focussed on processes (clinical pathways and guidelines), appropriate financing (new payment models at the primary level, diagnosis-related groups) and inappropriate management of the accessibility to the healthcare system, causing an increase in waiting t imes beyond acceptable limits (Prevolnik Rupel, Marušič and Kuhar, 2022). Most payment models have never been evaluated and, notably, are not regularly updated in a way reflecting either the current practices in patient care in Slovenia or major developments in care through time. Today, payment models are thus based on unrealistically defined capitation adjustments for risk factors such as age at the primary level, points assigned at specialist outpatient levels, DRG weights in acute care, days of nursing care provided in social protection institutes, and hospital days of non-acute care. Above all, payments made to providers based on payment models are still founded on services/programmes delivered, without considering health outcomes of the work performed.

2.2. Survey on knowledge of the VBHC model

81% of all respondents think that the VBHC concept brings numerous benefits to the health system

As part of preparing the framework of the Guidelines for Implementing VBHC in Slovenia, which attach special importance to the monitoring of health outcomes, members of the Expert Group created an online survey. Its purpose was to find out how well the VBHC model is known among the various stakeholders and what attitude they have towards VBHC. In particular, we were interested in the advantages and disadvantages of the VBHC concept as perceived by the stakeholders and what they saw as the most important limitations to overcome in implementing VBHC.

The survey questions were prepared by two members of the Expert Group (Došenović Bonča and Prevolnik Rupel), while all the other members of the Expert Group and the Monitoring Group (observers) received those questions for comments and corrections. The survey was drawn up online via HealthDay.si and published on the 1ka portal. HealthDay.si sent the survey link to all stakeholders identified by the Expert Group as the key stakeholders. Further sharing of the survey was not restricted. The following entities were identified as the key stakeholders: the Ministry of Health of the Republic of Slovenia, the Health Insurance Institute of Slovenia, the Medical Chamber of Slovenia, the Health Council, the Agency of the Republic of Slovenia for Medicinal Products and Medical Devices, the Association of Health Institutions of Slovenia, health care providers, representatives of insured persons in the boards of health care providers, representatives of patient associations, private health insurers, pharmaceutical companies, suppliers of medical devices, professional health associations, and educational and research organisations. Open between February and April 2022, the survey was completed by 206 respondents. The number of valid and complete responses was 110, and 65% of the respondents were women.

Of the 206 respondents, 14% believe that they know the VBHC concept very well, while almost half (47%) of the respondents have not yet heard of the VBHC concept. Some 81% (167) of all respondents are of the opinion that the VBHC concept brings numerous benefits to the health system, while the rest believe that compared to the current system, the benefits are not material. The highest number of respondents believe the biggest advantage lies in the fact that the new approach is patient-centred (145 respondents), and many respondents also see advantages

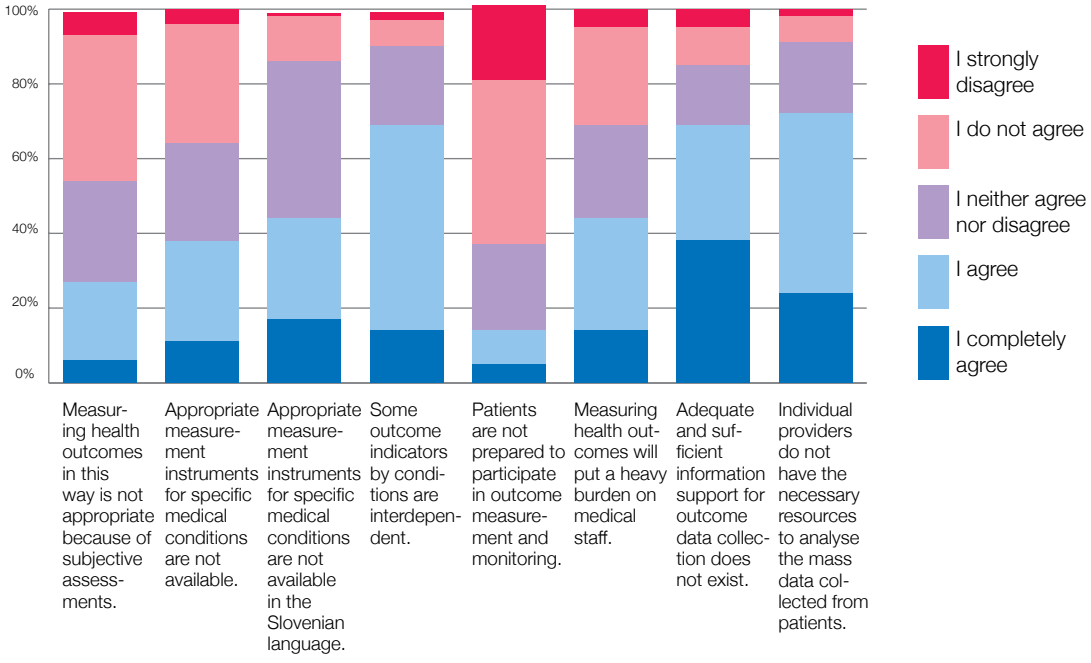
in the new outcome-based provider payment models (71%), the cooperation and exchange of good practices between providers (68%), integrated care (65%) and the transparency of health outcomes for the patient (63%).

As many as 72% of the respondents believe that the VBHC concept in Slovenia is inevitable. Moreover, as many as 82% of the respondents believe this concept to be extremely welcome in Slovenia as it provides better care to patients. 54% of the respondents agree that the VBHC concept leads to savings in health care, while only a small proportion of the respondents believe that VBHC is not suitable for Slovenia. 7% believe the concept is not suitable because it introduces competition among providers and increases their interdependence, while 16% claim it is not suitable because of the current lack of capacities. 10% of the respondents replied that VBHC is a buzzword that will soon fade.

VBHC assumes measuring health outcomes for patients with a specific group of diagnoses (both objectively and subjectively perceived) at specific time points, e.g. before and after a procedure or at reasonable longer intervals for patients with chronic diseases. Based on such measurements, variations in patients' health are monitored and health care value for each patient is determined. Outcome measurement is therefore the primary starting point for analyses and benchmarking as well as for further decisions on care.

Figure 1: What respondents think about health outcome measurements for patients with a specific group of diagnoses in order to deliver value for patients

Source: own calculations, 2022



According to Figure 1, less than 30% of the respondents agree that subjective measurement of health outcomes, i.e. reporting health outcomes by patients, is not appropriate. More respondents, i.e. almost 40%, see measurement limitations in the absence of suitable measurement instruments, and even more respondents agree that these instruments are not available in the Slovenian language. 44% of the respondents believe that measuring health outcomes will put a heavy burden on health care professionals. 70% of the respondents agree that instruments are interdependent (e.g. intensified care

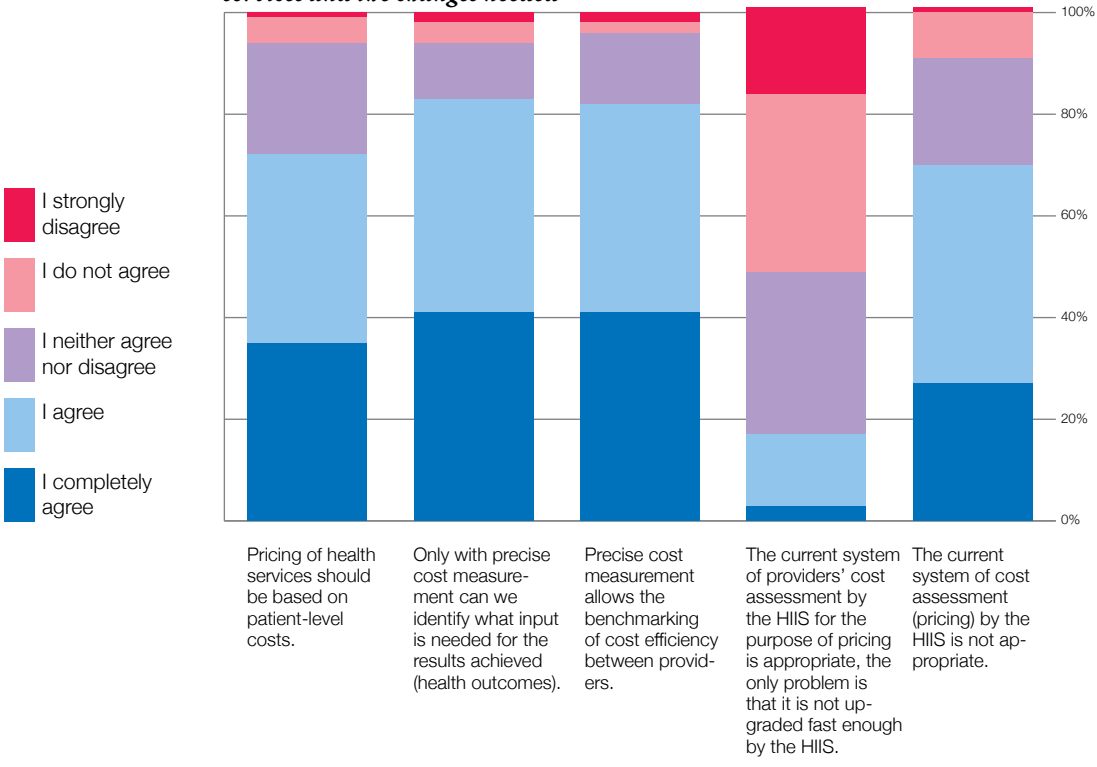
may lead to faster remission, but may also potentiate adverse effects), which facilitates the development and implementation of new solutions in care methods aimed at reducing such conflicting effects. Similarly, around 70% of the respondents agree that providers have adequate and sufficient information support for the collection of data on health outcomes, but providers do not have the necessary resources to analyse the data collected from patients. The majority of the respondents (70%) understand that in the VBHC concept, health outcomes are measured with a combination of general clinical indicators, disease-specific clinical indicators, process indicators, satisfaction indicators (PREMs), indicators of outcomes that matter to patients (PROMs), and indicators of sustainability of health. Among all the indicators, outcomes that matter to patients seem to be the most important and would be used by 45% of the respondents, while disease-specific clinical indicators seem to be the least important (e.g. blood cholesterol).

It is not only value measurement that is at stake, the new concept requires a coordinated approach of all stakeholders

In addition to outcome measurement, the VBHC concept focuses on health care cost measurement. As shown in Figure 2, more than 70% of the respondents agree that the current system of assessing providers' costs by the HIIS for the purpose of pricing is inappropriate. 18% of the respondents agree that the system is appropriate, but see a problem in its slow upgrading by the HIIS. More than 70% of the respondents believe that care pricing should be based on patient-level costs – only precise measurements allow for the benchmarking of costs and effects and thus benchmarking of providers.

Figure 2: What respondents think about the current pricing system of health services and the changes needed

Source: own calculations, 2022

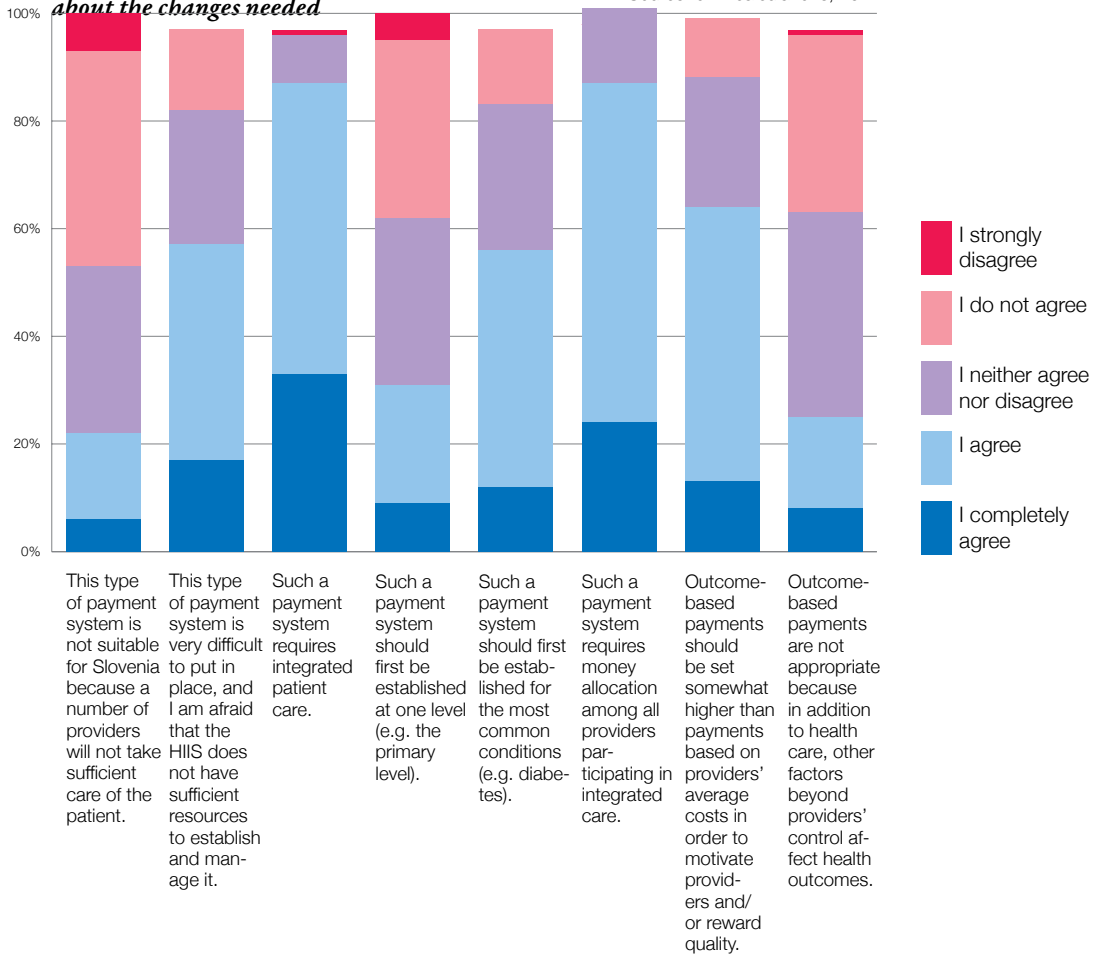


VBHC brings payments for health care based on outcomes for specific health conditions, e.g. cataract surgery, treatment of arterial hypertension, diabetes, etc. As shown in Figure 3, almost a quarter of the respondents (22%) believe such payment

method is not appropriate and are worried that providers would not take sufficient care of the patient and/or that the patients' health is also affected by other factors beyond the control of providers. Slightly more than half of the respondents believe that such a payment system is very difficult to put in place and should first be implemented for the most common conditions (e.g. diabetes). Accordingly, most respondents agree that outcome-based payments should start for specific conditions and not at levels (e.g. primary level, secondary level, specialties). The objective namely is to ensure integrated care, which is the prerequisite for implementing VBHC and, accordingly, outcome-based payments (87% of the respondents). 64% of the respondents believe that outcome-based payments should be set somewhat higher than the planned average costs of providers in order to motivate them to change over to the new system. Integrated care is a precondition for introducing payments based on achieving patient value. Outcome-based payments cannot be launched at a single level only, but should think about the patient, their disease and treatment. It is therefore reasonable to start setting indicators for the most common diseases.

Figure 3: What respondents think about the current payment system for health services and/or the method of funds allocation among providers and about the changes needed

Source: own calculations, 2022

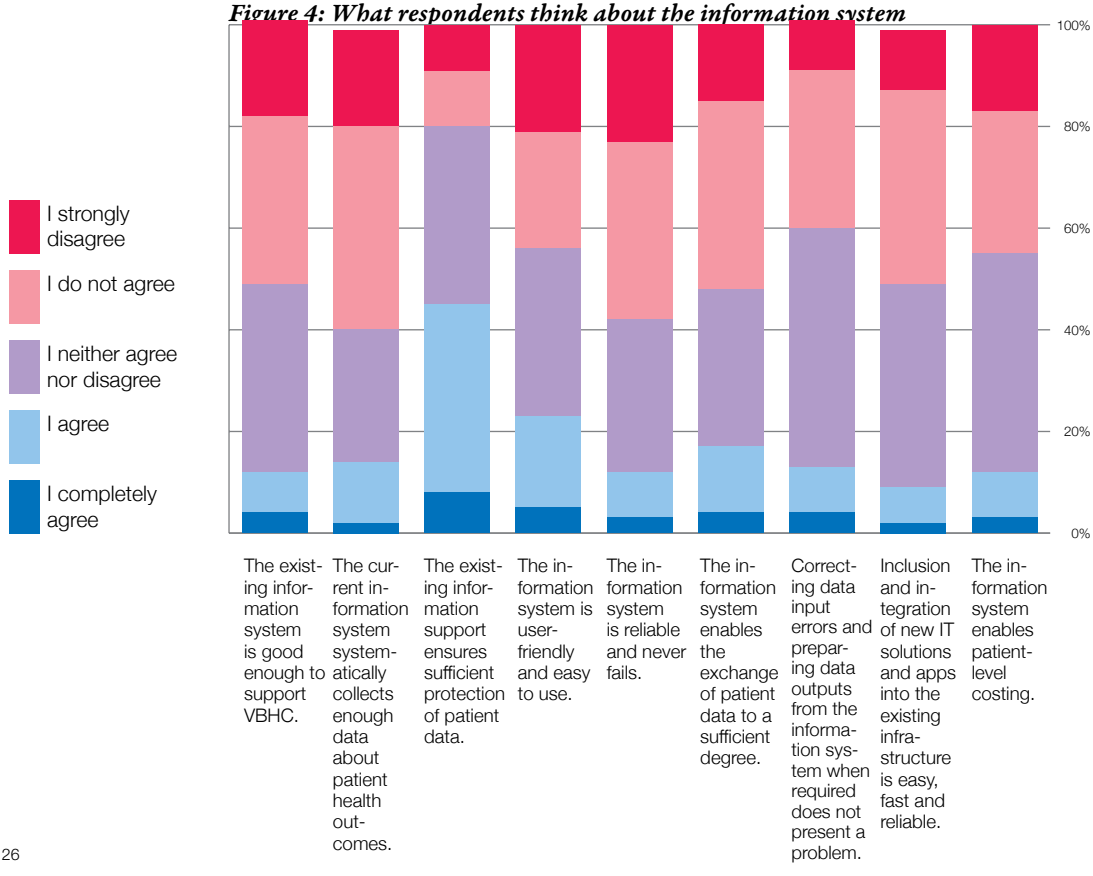


The VBHC system requires the collection of a large amount of information about

each individual patient because information about their health status is collected at a number of time points and through various questionnaires, and this information is also linked to the basic demographic, social and clinical data from administrative databases and the patient's medical documentation. Slovenia's e-Health project has built the basic backbone, already holding certain information about patients. In the survey, we were interested in finding out what the respondents thought about the adequacy of the existing information structure and what steps are necessary.

According to the results shown in Figure 4, respondents think poorly of the existing information system (IS). 12% believe that the current IS can support the implementation of VBHC and the same percentage believe that the IS is reliable. The respondents' opinion about the simplicity and user-friendliness of the system is slightly better, with nearly half (45%) believing that the IS provides sufficient protection and security of patient data. The replies show that although the respondents' opinion about the existing basic information backbone is not entirely negative, the current IS does not support the implementation of the VBHC. The IS should therefore be upgraded to support the VBHC implementation. The system should accommodate cost monitoring per patient, underpinning the exchange of patient information between providers. It should also be more flexible in terms of allowing the correction of input errors as well as integration and inclusion of new IT solutions into the existing structure. Additional modules should be established, allowing the monitoring of health outcomes per individual patient. Given that the proportion of those who find the system reliable and simple to use is rather low, the IS should definitely be made more reliable and user-friendly.

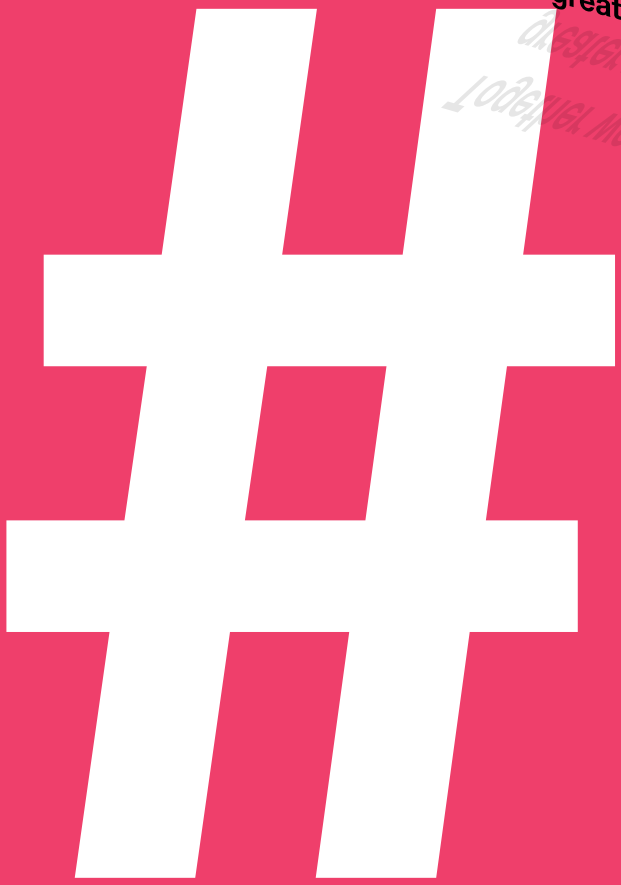
Figure 4: What respondents think about the information system



2.3. Preparing for VBHC implementation in Slovenia

According to the opinion of the large majority of stakeholders, the VBHC concept is something Slovenia cannot avoid. The concept is welcome as it brings solutions to problems faced by the health system and makes it possible to achieve higher efficiency and effectiveness of health care, and thus improve the quality of health care with limited health resources. In addition to changing the mindset, the new concept also requires preparations in many areas identified by the stakeholders in the current system as limitations or potential barriers to implementing VBHC, including:

1. Provision of appropriate measurement instruments in the Slovenian language for health outcome monitoring in selected health programmes;
2. Ensuring appropriate expert analysis of the collected outcome data, underlying further comparisons between patients, teams, providers, regions, etc.;
3. Upgrading the information system to accommodate the inclusion of new modules, cost-per-patient monitoring, exchange of patient data between providers, greater flexibility in ensuring that input errors can be corrected, and greater simplicity and reliability;
4. Changes to the system of outcome-based financing of health care providers;
5. Introducing outcome measurements for the most common conditions rather than at various levels of the health care system; and
6. Ensuring greater and transparent cooperation and connections between providers, facilitating integrated supply as a prerequisite for VBHC implementation.



Together we create greater value for all

3
Choosing health care programmes for VBHC implementation

Dorjan Marušič, Valentina Prevolnik Rupel

The implementation of VBHC in Slovenia should be addressed at the systemic level, mainly because hospitals and health care centres are largely held by the same owners (central government, the municipalities). It is therefore reasonable to undertake a shift in organisation and measurement at the national level, with greater impact. This does not mean that VBHC is suitable for all patients and all health conditions. Capitalising on the wealth of experience from around the world, we can learn and try to set criteria for selecting health programmes on the one hand and connect them to the needs of patients in Slovenia on the other.

3.1. International practice calls for step-by-step implementation

Many cases from abroad (Klop and Rute, 2021) show that measurement and control of patient outcomes are demanding and very complex to implement. When implementing measurement and control of health status and costs, a number of issues may arise, leading to lengthy preparations, a decline in the motivation of employees and external stakeholders, and poor results. The case of Punt voor Parkinson, which is part of the University Medical Centre Groningen, shows that preparations for implementing VBHC must begin in a systematic and coordinated manner. Setting up the entire team and launching the project before defining indicators leads to lengthy scientific discussions and time delays, which has a demotivating effect on the team. Selecting an area where international indicators are well established is therefore of key importance. Yet we see in other cases that measurements based on international indicators could not be translated into practice well – there are many obstacles, from poor analysis that does not help doctors find the cause of inefficiencies, to the fact that health care outcomes are visible only in the long term, i.e. in years. On the one hand, waiting for the necessary outcomes is tiring for patients, who after such a long time are no longer willing to provide information, and on the other hand outcome monitoring is more difficult, thus preventing improvements in the process. In the case of Volante, a partnership involving four organisations (Dimence Group, Lentis, GGzE and GGZ Noord-Holland Noord), the interconnectedness of outcomes and the possibility of their connection with the process in a variable time frame turned out to be devastating for the implementation of VBHC. In many cases, integration of care between departments and therefore changing the entire organisation (Porter and Olmsted Teisberg, 2006) proved to be rather unrealistic – in many organisations that planned changes so thoroughly, the idea turned out to be next to impossible. Nevertheless, instead of integration, a higher level of coordination and cooperation among departments, including by preparing inter-departmental patient clinical pathways, proved to be positive. The findings that VBHC cannot be implemented

without information support, motivation for improvements (by decision-makers) and implementation of transparency of outcomes (including at the internal level only), were also completely expected. An important lesson points to the urgency of connection between delivery and payment: unless providers are rewarded and encouraged for benchmarking care outcomes, they must, of course, act by the rules set by the payer, and cannot perform their work with a view to creating value. For the payer, it is therefore extremely important where and in what manner payment by patient value can best be introduced in their payment mechanisms.

Based on the above findings, we can set criteria to select medical conditions (Klop and Rute, 2021). We should select medical conditions where:

1. the patient group is sufficiently homogenous;
2. the patient volume is large enough;
3. outcome measurements can be used for analysis, comparison and change of processes;
4. instruments for outcome measurement already exist and are preferably at least partially translated and validated in the Slovenian language;
5. care outcomes can be measured relatively quickly, e.g. at least within a year;
6. the degree of innovation in diagnostics and therapeutic procedures is relatively low, and consequently clinical pathways are not changing constantly.

In view of the relevant criteria, VBHC should first be implemented in cardiology or orthopaedics

3.2. Stability of the Slovenian health care system jeopardised

Reviewing the situation in Slovenia and patient needs, we have focused on diseases with the highest morbidity and mortality rates and on people's needs for accessibility.

Despite a significant decline recorded in recent decades, cardiovascular diseases remain the leading cause of mortality and morbidity in Slovenia, as in most countries across the globe. In Slovenia, almost half (49%) of women's deaths and one third (34%) of men's deaths are attributable to cardiovascular diseases. Although mortality rates from cardiovascular diseases have fallen since 2000, contributing to better life expectancy, they remain above the EU average. Looking at more specific causes of death, stroke and cardiovascular diseases remain the main cause of death in 2014 (OECD, 2017).

Back pain, depression and dementia are the leading contributors to poor health. Musculoskeletal problems (including lower back and neck pain) and mental health problems contribute to years of life lost due to disease, disability or premature mortality (disability-adjusted life-years, DALY) in Slovenia (IHME, 2016). Based on the self-reported data from the European Health Interview Survey (EHIS), nearly one quarter of people in Slovenia suffer from high blood pressure, one in 11 people suffer from depression, one in 20 from asthma, and one in 14 from diabetes.

Determining the scope of the health benefit basket accessible to the entire population through public coverage represents the biggest challenge of all health systems. To ensure financial sustainability, most countries use supplementary insurance schemes and health technology assessment, an increasingly recognised professional tool for positioning a new method or even revising the benefit basket. Access of the population to health services is limited regardless of the universality of rights. The process of purchasing and paying for services plays a key role in ensuring accessibility and promoting efficiency in the health care system. Slovenia has not made progress in this area; instead, the existing health programmes are preserved and any changes

are only made within the scope of any surplus of revenues in the following year, the surplus being mostly allocated without any in-depth analysis of the outcomes of existing programmes. There have been hardly any attempts at putting in place an effective and strategic approach to purchasing and paying for health services, and certainly none based on outcomes.

With the constant and linear aspirations for financial sustainability of the health system, the latter has been increasingly moving away from upgrading and defining realistically achievable health benefits. Scientific achievements and people's desires have exceeded the limits of the real health system. The end point where all resources would be allocated to the health system is an illusion. It is therefore essential to incorporate tools for monitoring and measuring health outcomes, not just inputs. This will allow a more detailed insight into the efficiency, effectiveness, quality, safety, and ultimately necessity of the health service delivered.

In the case of specialist outpatient care – the link between the primary level and hospital care – almost half of the patients in 2020 were waiting for dermatology, orthopaedics and cardiology examinations, with a total of two-thirds waiting longer than the admissible waiting period.

3.3. Criteria for selecting initial specialties for VBHC implementation

1. To promote strategic purchasing through promotion of quality and safety, we should focus on health outcomes.
2. The selection of services should be based on criteria arising from foreign good practices and from patients' needs in Slovenia. Services should be picked gradually, without involving too many areas at a time.
3. Cardiology and orthopaedics seem to fulfil most of the conditions, with less than four diagnoses accounting for more than half of all care. These conditions include high blood pressure, atrial fibrillation, heart failure and coronary disease in cardiology, and lower back pain, hip pain and knee pain in orthopaedics.
4. Translated and validated international indicators should be used, along with appropriate IT support. Adequate resources for outcome collection, control and analysis should be ensured.
5. Using all these criteria will help ensure smoother breakthrough into the health system based on the needs of the people as active participants in health care processes within an effective and efficient health system.

VBHC is a team effort

4
The VBHC team

Janez Bernik

As with any change, VBHC can expect resistance on the part of those involved, too. Critics and sceptics tend to raise questions, such as: On top of our regular work, how can we also deal with patient-reported outcome measures (PROMs)? Is it the role of clinicians to capture data like bureaucrats? What lessons can we draw given that the data will inevitably be incomplete? Is VBHC just another fad from America? Some of these and similar questions are, of course, valid and reasonable, as are the concerns they raise. Yet we must distinguish between real challenges that must be overcome and excuses to maintain the status quo (Porter and Teisberg, 2006).

When implementing VBHC, it is important that health care providers rely on core values brought by this concept, such as: patient involvement, team empowerment and accountability, end-result transparency and commitment to continuous improvement. These cultural shifts are of key importance for medical teams to find the necessary motivation for their fundamental mission, that is to deliver outcomes that matter to patients. Many cases demonstrate that vision alone is not sufficient to trigger implementation. Mobilising internal forces is essential to overcoming resistance to change (Pottharst, 2018).

In terms of organisation, VBHC implementation requires good collaboration between medical professionals and other professional and administrative staff, combining medical, organisational economic, legal and other skills, and jointly accepting the risks inherent to change.

For Slovenia, we recommend step-by-step implementation, based on one or two indications at most, within a chosen specialty, but not at the same time with all providers because the project needs sufficient information and analytical support as well as a uniform approach linking the entire profession.

Successful implementation would require collaboration at both national and local levels. At the national level, leaders of the VBHC Implementation Group should be connected with the managerial and medical leadership teams of all providers involved – i.e. public sector providers, private providers with concession and private providers.

At the local level, collaboration of teams within hospitals, but also in specialised outpatient clinics and health care centres is relevant.

The leadership of each provider must build bridges and ensure proper communication across functions. The leadership must also appoint a cross-functional VBHC team to bring change from the operating room to the boardroom (Pottharst, 2018).

It is the responsibility of directors to provide heads of VBHC teams with sufficient human resources and equipment underpinning VBHC implementation. It would be reasonable to transfer financial resources for medical treatment of specific conditions from the existing diagnosis-related groups. Incentives would be introduced for higher quality, i.e. better outcomes of care, to be agreed between heads of hospitals and payers.

It is recommended that a VBHC multidisciplinary team has, in addition to the operational lead, a so-called internal sponsor (e.g. the General Manager) and a medical lead (e.g. head of a specialty). Members of the VBHC team should be properly trained about VBHC topics, to be able to help all the clinical leaders with the implementation

of each pre-defined patient pathway. Staffing these VBHC teams is essential in order to successfully implement changes. The team size and organisation may be very flexible and can vary according to the size of the organisation The multi-disciplinarity of the teams is key, because understanding different views of operation of an organisation is essential for establishing good relations with the medical and other staff, but also to enhance the cultural change within a hospital. We should also be aware that some views and relations may be deeply rooted in the way we work. Inclusion of multidisciplinary professional profiles and fresh inputs may be an added value in the reorganisation necessary for VBHC implementation (Cossio-Gilc, 2021).

One of the key elements of VBHC suggested by Porter and Teisberg (2006) includes the reorganisation of hospitals and the way that doctors and other health professionals work. According to them, the first principle of defining the structure and processes of any organisation or enterprise is to always follow patient needs. The vast majority of health institutions are currently organised around more or less connected medical specialties. Porter and Teisberg (2006) suggest that providers should organise themselves around patients' medical conditions. They term this structure of hospital organisation 'integrated practice units'. In addition to improving efficiency, this way of working is expected to increase direct competition between providers, which may, however, not be the most suitable option for European health systems. The key benefit of VBHC in Slovenia will be its influence on the advancement of the profession and providers across the country, while at the same time making competitiveness visible internationally – Slovenia will become more attractive in terms of exporting health services and knowledge.

Introduction in one specialty, but at all providers concurrently, and benchmarking between medical teams represents the core of progress

The key issue of organisation based on integrated practice units is described in literature dealing with the management of complex processes. High process standardisation is described as suitable for production processes characterised by high volumes and low variety. In health care, this way of working could, for example, be applied in laboratory services and hip or knee surgeries. However, organisation on the basis of integrated practice units is not suitable when patient needs are unique and/or difficult to predict, such as in the case of highly specialised care and patients with multiple conditions. Additional complexity arises from the introduction of personalised care principles. In these cases, the care processes need to be flexible enough to be adjusted to each patient's needs (Slack, 2013; Krohwinkel, 2021).

Full implementation of integrated practice units in hospitals can thus become very expensive and time-consuming as it requires extensive organisational and cultural changes. It is therefore not always suitable. The European University Hospital Alliance (EUHA) suggests that where appropriate, hospitals should start transforming towards continued assistance by clinical condition, in particular in the form of mutual visits and collaboration of all staff with participation in care. The EUHA sees real possibilities for the implementation of integrated care in defining and optimisation of clinical pathways for each condition according to defined logical models (e.g. by using SNOMED, ICD-10, ICD-11, LOINC or DRG codes or other grouping parameters) (Cossio-Gilc, 2021).

4.1. Partial implementation attempts

In Slovenia, attempts to trace values and costs of patient care have been introduced on an ad hoc and project basis. A systematic approach to the care of patients with a certain condition by fully applying the VBHC principle does not exist; projects usually stop at measuring patient value, without being upgraded with comparison of costs and/or actions that would lead to the identification of non-optimal elements

in the process and suggested changes. As the approach is not all-encompassing but distinctively partial, it does not lead to organisational changes or the appointment of a responsible person/multidisciplinary VBHC team that would embark on a different approach to patient care, properly and in all areas.

4.2. Successful teams abroad

Santeon, a Dutch network of seven leading hospitals, began implementing VBHC in early 2016 for breast cancer. Implementation of VBHC principles proceeded in three stages.

In phase one, they appointed a multidisciplinary VBHC team, consisting of a core team of three expert members: a medical lead (surgeon), a programme manager, and a data analyst. The broader team included representatives of all other health care professionals along the breast cancer patient's journey (nurses, nurse practitioners, oncologists, pathologists, plastic surgeons, pharmacists, radiologists, radiotherapists). Two patient representatives were also actively involved in the team. In the initial phase, a scorecard of 20 key indicators was selected, monitoring care outcomes, costs and, to a lesser degree, processes. For health outcome measurements, Santeon used the defined and standardised ICHOM indicator sets. Patients and the needs that matter most to them played a central role in defining all the indicators.

The second phase involved organisation and analysis of collecting data related to the selected indicators, identifying areas for improvement and implementing changes addressing the problems identified. A safe learning environment is critical at this stage, therefore data sharing in the second phase was restricted only to the VBHC team of one hospital. A safe working environment in which all involved are working towards improvements based on data collected, without fear of punishment or feelings of guilt, is the basic precondition for an effective and fast implementation of changes (The Boston Consulting Group, 2018).

Following the completion of three six-month cycles, the findings and results were openly shared with other hospitals in phase three. This aimed at encouraging other hospitals to introduce the same key indicators and thus ensure more effective data collection based on a larger sample, allowing for direct benchmarking between hospitals. As the logical next step, the Santeon group began discussions with health insurers to move towards value-based funding.

A powerful example of mobilising internal forces to launch a VBHC initiative comes from Vall d'Hebron University Hospital in Barcelona. The CEO appointed a multidisciplinary VBHC team, consisting of medical professionals (doctors, nurses, pharmacists, nurse assistants) as well as other professionals and administrative staff (administrators, economists, lawyers). Initially, they organised a series of process mapping workshops with caregivers. The management team invited doctors, nurses and nurse-assistants to these workshops, to assess the value of each action across the cycle of care for the patient. As a result, caregivers discovered that 55% of their actions had low value to patients. Visualising and quantifying existing organisational inefficiencies in a safe and trusted environment is the starting point to empower and encourage health care teams to change care delivery from the bottom up. Another Vall d'Hebron exercise consisted of switching positions among doctors, nurses and nurse-assistants during a full workday to better understand their actions and record weaknesses in the work processes. This exercise revealed, for example, that in some cases, nurses walked nearly 10 km per day through hospital corridors, due to sub-optimal organisation of the work process.

This collective awareness of ineffective internal processes catalysed a desire to implement change. The workshops organised by the multidisciplinary VBHC team enhanced empathy, communication, team spirit and respect between medical team members. Following the workshops, medical teams organised improvement cycles with patient representatives to drive change. According to the VBHC team leader, the capacity to mobilise internal forces is the corner stone of VBHC implementation (EIT Health, 2020).

In implementing the new organisational model based on patient value, medical team workers will have to accept responsibility for health outcomes and financial accountability. Experience shows that once this shift is made, it often leads to a dramatic increase in professional influence over the institution's performance and change agenda, and to a higher degree of autonomy and work satisfaction. Moving the focus of hospital management away from forcing compliance with the clinical budget and towards delivering high-value care to defined patient populations builds medical teams and cooperation, enhances innovativeness and allows clinical experts to contribute in a meaningful way to improving the organisational efficiency of hospitals. No less important in the future will be recruitment and development of medical expertise, and adequate funding (World Economic Forum, 2018).

4.3. Actions for setting up VBHC teams

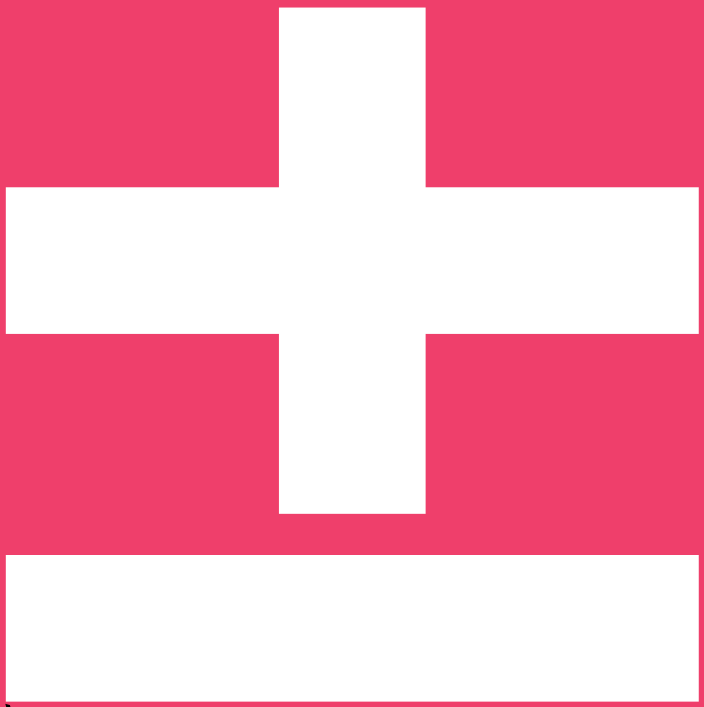
Empathy, communication, team spirit, respect

Key recommendations for implementing the VBHC concept are:

1. Broader understanding of the importance of value-based health care should be developed. Training on VBHC should be introduced – first for the core groups (selected heads of departments, directors, future leaders of VBHC teams), and then gradually for broader groups (internally at care providers).
2. Long-term commitment to implementing changes should be secured. It is essential that the Ministry of Health, the National Institute of Public Health (NIPH), the Health Insurance Institute of Slovenia (HIIS) and the new VBHC Implementation Group adopt joint documents.
3. Representatives of patients, doctors and nurses should be involved in change planning. Gradually, other stakeholders should join, including physiotherapists, laboratory technicians, purchasing departments, the Agency of the Republic of Slovenia for Medicinal Products and Medical Devices (JAZMP), professional associations and, ultimately, the public.
4. We should start on a project basis with one or two diagnoses, but with all providers at the same time. The lessons learned and knowledge gained through mistakes in implementation should then be shared. Mistakes will occur, but responding to mistakes will generate practical knowledge that cannot be drawn from theory alone. We should be pragmatic, fast and responsive, but also persistent because VBHC implementation resembles long-distance running.
5. We need to establish a safe learning environment based on transparency and encouraging the implementation of change. Errors are part of the process leading to more knowledge. They are not to punish, except if intentional, and their goal is to improve health care,

reduce the burden on the health system, and achieve progress for all.

6. Change implementation within an organisation should be led by the most capable staff, regardless of their function or profession. Other participants, including the management, should provide the necessary support and assistance in resolving problems occurring in change implementation, e.g. the necessary information support, data analysis, etc. The VBHC Implementation Group at the national level will be of great help to the local teams.
7. Changes should be implemented and health care should be optimised in the local environments, building on tested good practices from elsewhere.



VBHC is an opportunity for gradual, yet comprehensive change of the health care system, specialty by specialty

5
Measuring health care value

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Perhaps the most important step in value-based health care is value measurement, i.e. measurement of outcomes and costs. Without precise measurement of outcomes, we can neither assess the health status nor changes or impact on the health of individuals, which we hope will be brought about by improved care. Systematic measurement of outcomes is the basis of any change and any investment, whatever the level of change or the country (World Economic Forum, 2017; Porter and Lee, 2013).

Doctors and other health professionals providing care for specific conditions (e.g. diabetes) track a number of indicators in the current system, too, but they are mostly an expression of the requirements set by either the payer or the regulator. Most of these indicators therefore do not relate to measuring health outcomes but to accessibility monitoring (waiting days according to priority), process monitoring (measurement of quality in terms of adhering to clinical guidelines and pathways), monitoring of procedures and services as the basis for payments by the payer, and monitoring patients' satisfaction with the service provided. Although all these indicators are important and serve a specific purpose, they measure the efficiency of a department or a hospital and/or a patient's subjective experience rather than the actual health outcomes achieved by a patient through a particular intervention or by a patient suffering from a specific disease.

Multidisciplinarity of VBHC teams is reflected in cost and outcome measurements. Measurements yield data that can help everyone.

Over the past two decades, an increasing number of institutions have decided to measure health outcomes for patients undergoing treatment. Thus, an increasing number of measurement methodologies and approaches have been developing, e.g. disease registries set up by patient associations or health care professional associations (Larsson, Lawyer, Garrelick, Lindahl and Lundström, 2013). At the same time, methodologies and tools for measuring outcomes have also been developed at the international level, with examples being ICHOM (www.ichom.org) and OECD, the PaRIS project (www.oecd.org/health/paris).

The first step in measuring outcomes is determining the medical conditions for which a measurement system is to be set up. A well-defined medical condition will allow measurements without difficulties, and should therefore include associated diseases and comorbidities, and potential complications, as well as the beginning and end of cycle of care. The outcome measured must matter to the patient, and it must embrace both short-and long-term aspects of a patient's condition and a period long enough to cover the ultimate goal of care. Outcomes must comprise all services (and their providers) with an influence on care outcomes. Comparability of outcomes between patients must be ensured with all measurements, meaning that all instruments applied must also measure the initial status and take account of case-mix variables.

However, assessment of health care value also requires, in addition to tracking the outcomes achieved, the measurement of costs of delivering all activities required of providers for the purpose of delivering comprehensive care. Costing has two key roles (Porter and Lee, 2013; Kaplan et al., 2014). The first role relates to the

economic viability of care delivery and innovation. Implementing a new or improved method of care only makes sense if it brings a higher effect per input unit compared to maintaining the status quo. With increasingly constrained health resources, it is not enough if we only expect improved effects in the form of better health outcomes. If a disproportionate amount of resources is necessary to achieve only a small increase of effects by implementing a decision, it is more reasonable to use resources for other alternatives that can bring better outcomes with the same level of costs. The second role of exact cost tracking is connected to charging payers for the health services performed. The basis for forming both an appropriate market price for a given service as well as the administratively regulated price of a single service or a package of services necessary for the comprehensive care of a patient lies in the correct calculation of cost prices of products or services, which enables profitable or at least balanced operations of a provider.

5.1. Definition of value

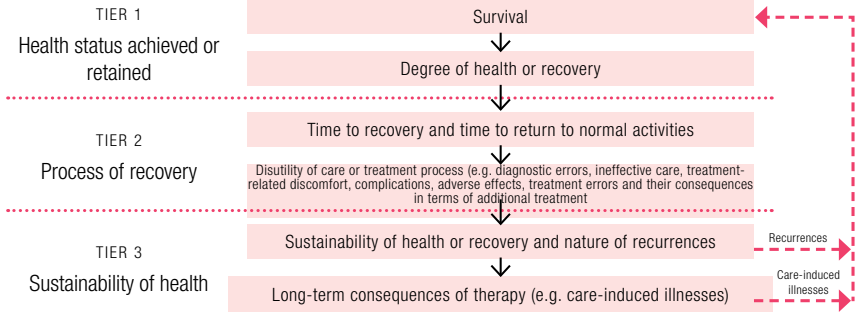
The ultimate goal of health care is to maximise the quality of life

To measure value, it is first necessary to define instruments for health outcome measurement, develop a cost measurement approach, and draw up a plan for outcome and cost analysis allowing the demonstration of health care value. Implementing systemic changes in health care is not possible without making outcomes and performance measures public. All the above components will be outlined and described in the following sections.

5.2. Health outcome measurement instruments

Any condition is complex and cannot be described with a single health outcome only. Only several outcomes together can define the success of care. According to Porter (2010), outcomes fall into three tiers. Tier 1 – the overriding tier – involves survival and the degree of health. If the patient does not survive, it is clearly not meaningful to measure outcomes in tier 2. In areas of treatment with a very high survival rate, e.g. 99%, patients care about more than just survival – they are also concerned about their functional outcomes, potential complications, probability of illness recurrence, etc. Tier 2 is therefore related to the process of care and recovery, i.e. return to normal life. For example, high readmission rates may not be life threatening, but they can cause a patient's discomfort, a higher degree of anxiety, lower functionality at the workplace, and higher costs of care. Tier 3 outcomes relate to the sustainability of health and long-term consequences of therapy.

Figure 5. Hierarchy of outcome measures



Source: Porter M., 2010

With each health status, outcomes must cover all the three tiers because only in this way can they cover the entire patient journey through care as well as outcomes as a consequence of care. It is not easy to define instruments measuring all levels of health and covering all dimensions. Each instrument must demonstrate validity, reliability and responsiveness. Over the past decades, health outcome measurement instruments have been developed for most high burden diseases – rather than their lack, it is their high number that poses a bigger problem. ICHOM's efforts to select a minimum set of common standards therefore represent an optimal beginning. In addition to having good psychometric properties, the instruments included in the minimum set are the basic instruments identified by health system stakeholders as relevant and important. Their implementation in more than 30 countries also brings the possibility of comparing and transferring good practices between teams, organisations or at the national level. The minimum set of health outcome indicators can be extended if required. A concept that is worth following in the initial set-up of instruments and indicators is that of pragmatism – any pre-existing data and registers should be used to the fullest extent possible, and should be adapted and improved over time.

A single instrument may measure several outcomes, and several instruments may measure a single outcome – there is no fixed rule. The instruments selected can be divided according to their sources of data: they can be clinical, e.g. blood pressure; administrative, e.g. age; or they can be instruments filled in by patients, for example when reporting pain, discomfort, social inclusion, ability to work, in short, patient-reported outcome measures (PROMs).

In Slovenia, providers have been using instruments for outcome measurements for many years, mainly in the fields of orthopaedics and oncology. As pioneers of introducing these instruments in Slovenia, we can expect a number of difficulties. Implementing each instrument requires its Slovenian translation and validation, for which both time and money are needed. Implementation can only develop its full value if, at the same time, values of case-mix variables are collected, if adequate information technology support is available, and if there is a person who will properly analyse the data for providers and present them in a comprehensible manner, enabling analysis of health care procedures and their adaptation. Value equation cannot be applied without the triangulation of clinical data, PROMs, case-mix variables and cost data. Collecting data by means of instruments is complex and must be integrated in the care of an individual, and linked to the data already collected for other purposes.

5.3. Cost measurement

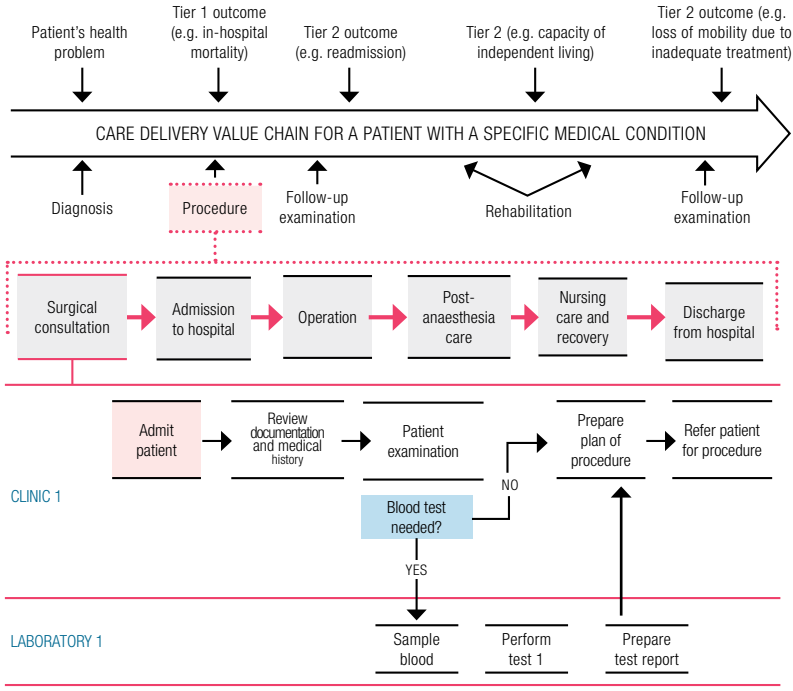
To determine cost prices of health care services or bundles of health care servicese, measuring direct health care costs at patient level is necessary, such as labour costs or the costs of blood and other tests per patient. Moreover, indirect or overhead costs should be properly allocated to care processes, for example heating, administrative services (e.g. purchasing department), etc. Various approaches connected in particular with different methods of indirect cost allocation can be applied to calculate cost price. Costs can be allocated to individual products, services or packages of services in view of the level of direct costs incurred, the number of patients receiving care, the length of stay, the size of rooms, etc. As these approaches were not always the most appropriate, activity-based costing (ABC) was developed, which is a method of assigning costs to products, services or bundles of services on the basis of activities giving rise to such costs (Hočevar, 2007).

In this method of costing, the first step involves process mapping at various levels,

from definition of core processes of care delivery for patients with specific conditions to sub-processes and their detailed process activity maps, as is shown for a simplified case in Figure 1. In this way, the sequence of processes, sub-processes and activities and their duration are clearly shown, and with the use of nodes it is possible to incorporate care variability (Kaplan et al., 2014). In the second step, the mapping of all activities must be supplemented with the calculation of cost per time unit of capacity, i.e. time unit of using both human as well as material resources for such activities. The product of the cost per minute/hour of capacity utilisation and the duration of activities requiring the use of such capacities represents the cost of resources utilised in each phase of patient care (cost-driver rates).

Although this approach is a good tool for cost management through optimisation of core care and support processes, for allocation of limited resources between various activities, for connecting various health services into comprehensive patient care and for pricing such service packages (Kaplan et al., 2014), its use in practice, especially in organisations with complex processes – including most health care organisations – comes with many challenges. However, as Kaplan and Anderson (2004) point out, the biggest difficulties are connected with how to determine the time of utilising various resources to carry out activities. Initially, allocation of time between activities was performed by assuming that employees allocated their entire working time between activities. The traditional ABC methods later developed into an approach where the time of consumption of resources is determined directly for each activity. This approach is called time-driven activity-based costing (TDABC) and is increasingly gaining ground in health organisations (Keel et al., 2017).

Figure 6: Care delivery value chain for a patient with a specific medical condition



The difference between the two approaches is demonstrated using the example shown in Figure 1. Figure 6 displays a simplified and transparent overview of health processes and activities constituting the care of a patient with a specific disease, while these care processes are also connected with numerous support processes, such as material purchasing, reporting to the payer, sterilisation, etc. Both approaches will be illustrated on the basis of an example of support processes in order to show both their characteristics that also apply for using such approaches in health care processes, as well as the method of allocation of direct costs arising from support processes between different health care processes. We assume that laboratory 1 must acquire different reagents and other materials to perform its services, with materials purchased by the central purchasing department for different laboratories. Let us assume that work in the purchasing department is performed by a single person and that the total costs of this department amount to EUR 50,000.00, where this employee performs three activities. Table 1 shows the traditional ABC approach, where the total costs would be divided among activities based on the structure of the time spent by the employee on the three activities. This approach would normally require surveying employees to estimate how much time they spend on each activity, and should be repeated every time new activities emerge. The approach described above is not suitable for organisations with complex processes; it relies on the assumption that material and human resources are fully utilised, and thus ignores any inefficiencies (Kaplan and Anderson, 2004). These differences are removed by the TDABC method presented in Table 2.

Table 1: Traditional ABC method

Purchasing	Allocation of time per activity (%)	Allocation of costs (€)	Quantity (no. of requests, orders, deliveries)	Unit cost (€)
Collect laboratory requests	60	30,000	2,500	12
Perform orders	25	12,500	1,000	12.5
Deliver material to laboratories	15	7,500	2,000	3.75
Total	100	50,000		

The TDABC method accounts for the difference between the total capacity of resources and their real capacity, which for human resources also assumes holidays, breaks, training time, etc. In our example, we assume that 82% of the total available working time is available for performing activities; that time is assigned between activities by duration and extent of each activity. The time used can be estimated by managers, but it can also be estimated through interviews with employees or by observation. The above example clearly shows that adding new activities in principle does not require recalculation of costs for existing activities. They must only be recalculated if there is a change in the efficiency of performing an existing activity, for instance its faster performance due to new information technology solutions. Another key advantage is in the identification of the extent of unused capacity and associated costs, which allows the management to, over time and based on comparisons between

different units, analyse their justification and seek for opportunities for improvement (Kaplan and Anderson, 2004).

Table 2: TDABC approach

Purchasing	Duration of activity (in hours)	Quantity	Total time used (in hours)	Assigned costs (€)	Unit cost (€)
Collect laboratory requests	5	2,500	12,500	25,000	10
Perform orders	4	1,000	4,000	8,000	8
Deliver material to laboratories	2	2,000	4,000	8,000	4
Total time spent and total costs of using resources			20,500	41,000	
Total available time and total costs			25,000	50,000	
Unused capacity and related costs			4,500	9,000	

VBHC can help improve the position of individual providers in international terms, without hurting other providers

Based on the results shown in Table 2, we can assign the costs of purchasing processes to the core processes from Figure 6. If laboratory 1 sent 250 requests to the purchasing department, and if 100 orders and 50 supplies were made from the central warehouse, a total of EUR 3,500 of indirect costs was incurred. Total costs of patient care are obtained by identifying, in addition to indirect costs, also the direct costs of care for each phase of the care value chain. For each activity in the care process (e.g. admit a patient, examine a patient or perform a test), it is necessary to define the duration and the total available amount of human and material capacity necessary for its performance, as well as the total costs of such capacity. This allows the calculation of the per hour or per minute cost of using human and material resources, such as various types of equipment and premises, which, together with the duration of activities, determines the cost at the level of each activity. If we add to these direct costs the costs of the materials used, which are tracked at patient level (e.g. a prescribed medicines or an implanted medical device), we get a complete picture of all the costs incurred at activity level, which can be combined into costs at process level and ultimately at the level of the whole care chain of a patient with a specific disease.

With challenges related to financial sustainability of health care and the growing role of assessing the value of health care, examination of the above-described cost monitoring is strengthening; systematic reviews of the literature (e.g. Keel et al., 2017; Etges et al., 2020) confirm that the TDABC methodology in health care could achieve better cost accuracy, facilitate resource allocation, increase efficiency, and enable health care professionals and managers of health organisation to increase the value of health care in a transparent manner.

5.4. Data sharing and benchmarking – trust-building mechanisms

When setting up the VBHC system and defining health outcomes and measurement instruments, it is important to understand why and for what purpose data is collected. One of the most important decisions to be taken is the one regarding the publication of results (at appropriate level of aggregation).

Sharing results of analyses is a prerequisite for outcome benchmarking and, consequently, for taking measures for outcome improvement. Transition to a higher level of trust requires a major shift in the mindset, perhaps even more so in Slovenia where the media environment largely tends to label any diversion from what is expected as scandalous.

Trust can primarily be achieved through appropriate data disclosure, which must be consistent across all providers because it is the basis for comparisons. Transparency must be ensured at the common agreed level (appropriate aggregation, protection of personal data, protection of integrity). The goal of publication is to transfer best practices and methods and hence to learn from high performers. The profession can also learn from underperformers, who, through proper disclosure of data and the assistance of external shareholders, can detect unintentional mistakes or suboptimal practices. With this, the entire profession makes progress, resources are used more effectively, while the surplus of resources can be channelled towards improvements – ultimately, everyone is better off, that is both the patients and the health system.

In any case, benchmarks of aggregated outcomes without blaming is a prerequisite, where all participants are benchmarked on the basis of the same instruments, taking account of all case-mix variables. Only in this way can we ensure statistically comparable results and prevent adverse selection. All this enables positive incentives while limiting negative action to the minimum, in order to prevent any intentional misuse.

5.5. Experience in VBHC measurement in other countries

Hospitals in the Santeon group noticed variations in outcomes of breast cancer operations between hospitals. They measured health outcomes with 19 instruments. To find the reason for this variance, cross-hospital meetings of multi-disciplinary teams were held. Their goal was to find out whether the variation was due to differences in data collection, patient mix or treatment choice. Clinicians examined in detail the steps of the entire procedure. Though the percentage of repeat operations due to complication was low at all Santeon hospitals (less than 4%), there was a 400% variation between the highest and lowest scoring hospitals. The multidisciplinary teams examined in detail the procedure at each clinician level. They found that the clinician with the lowest complication rate used more highly augmented wound flushing. They shared the good practice with other surgeons. In just 18 months, after other surgeons adopted this methodology, reoperations due to complications fell by 27% across Santeon hospitals, and by 2.6 times at the St. Antonius hospital, which scored worst prior to the variation (EIT Health, 2020).

Benchmarking health outcomes is not important only for medical personnel and improved clinical practice, but to a large degree for patients, too. Patients gain an insight into the performance of various procedures and treatments per se, in terms of what is important for them, including rehabilitation time, pain, functionality after procedure, and severity of symptoms. In addition to the average performance of procedures from all aspects, not only clinical – these are often very high compared to other aspects – patients also gain an insight into comparisons between providers.

If outcome measurement instruments are defined correctly, patients will find it much easier to decide on a provider for their treatments (National quality report for the year of diagnosis 2012 from the National Prostate Cancer Register (NPCR) Sweden).

Good outcomes and the efforts of dedicated health professionals show that the Slovenian system is not completely rejecting changes towards value measurement. The fact is, however, that advantages of value-based health care only become visible when data about the outcomes are transparent and enable comparisons of programmes and hence their improvements.

5.5.1. Measuring costs is a challenge in practice

Cost analysis is also performed for individual health technologies, which is important in public procurement, but only rarely are costs measured across the entire care cycle for a specific health status (EIT Health, 2020).

Although TDABC is an appropriate approach for a more in-depth and detailed identification of costs, there is no broadly accepted methodology for measuring and benchmarking costs in Europe. To address this difficulty, NHS Wales launched the "Finance Academy", a programme partnering clinicians and hospital finance leaders in developing practical methodologies.

Hospitals also develop analytic tools. One of them is the Cruces University Hospital based in Bilbao, Spain, whose analytic tool measures costs over the primary to the secondary care cycle. For a given care pathway, a theoretical cost is calculated according to the patient's entire process map, before being compared to the empirical cost. In 2019, Cruces compared three different care protocols for implanting a neurostimulator to treat patients affected by Parkinson's disease. With equivalent outcomes, cost analysis revealed one of the three tested protocols had a cost of 53% lower than the most expensive one (EIT Health, 2020).

5.5.2. International benchmarks

In Europe, a number of initiatives to benchmark patient health outcomes between providers exist. Formed in 2017, the EUHA (The European University Hospital Alliance) brings together university hospitals and strives to establish a shared data platform to facilitate outcome benchmarks for patient groups and exchange of good clinical practice (https://www.euhalliance.eu/). The Nordic Interoperability Project (https://nordicinteroperability.com/) pursues a similar goal, connecting Scandinavian countries. Many examples also exist at national levels. The VBHC Consortium (https://www.consortium-vbhc.org/en/home/), a non-profit organisation in France, facilitates the adoption of health outcome instruments among patients, coordinates data collection on a shared IT platform and works in collaboration with the payer to design new payment models to incentivise outcome measurement and transparency.

5.6. Practice to date in Slovenia

Outcome measurement through various instruments, both generic and disease-specific, is quite widespread in Slovenia; it is carried out in the framework of research projects, at the level of individual hospitals, organisations or interested employees, for a certain period, but without connection to the payment system and without the possibility of cross-sectional or chronological comparisons.

In Slovenia, there is only one example of good practice of health outcome measurement connected with the system of payments. The objectives of the national tender for hip, hernia, varicose vein and carpal tunnel surgeries were to improve patient access to health services and increase the efficiency and quality of the service delivery by introducing competition between providers, namely through price management while ensuring and measuring the quality of health services. An indirect goal of the national tender was to encourage money following the patient. Providers with a larger agreed volume of their regular health care programme and longer waiting lists could calculate the price offered by taking into account the economy of scale, achieve an increase of the annual programme, and, through programme concentration, also greater specialisation of the providers. In this way, the national tender was supposed to constitute an additional tool to streamline the public health care network, increase access to health care services, define the cost price, and measure the outcomes of care.

In the national tender, the generic EQ-5D instrument for measuring health-related quality of life was used for the first time (Prevolnik Rupel and Ogorevc, 2014). Other quality indicators were also introduced, but were regrettably not analysed. The outcomes of the EQ-5D analyses represented a very good concept for national implementation, but due to a lack of systematic collection, loose data control and a high rate of non-reporting, they could not grant a sufficiently deep insight to provide recommendations on how to reorganise the health care network or limit the range of services by each provider.

Unfortunately, the Health Insurance Institute of Slovenia (HIIS), after two years of pressure from public providers, abandoned the government's plan. Today, the HIIS does not track care outcomes and quality in the allocation of funding.

Due to the project-based approach, Slovenia has to date not been using performance criteria and systematic analyses leading towards the improvement of health care.

The aforedescribed cost measurement for the requirements of VBHC presents a challenge for all countries. Experience gained with the upgrading of the calculation models in Slovenia shows that tracking patient-level costs with a specific medical condition should be given special attention and appropriate support in order to overcome barriers for its implementation. Important lessons can be drawn from the national cost analysis for the period 2017–2019, which aimed to calculate appropriate weights adjusted to Slovenia for diagnosis-related groups (DRG). These were, following the Australian example, introduced as early as 2004. The analysis covered 67% of all DRG cases in 2016, and eight hospitals participated in the collection of data on consumption and related costs. A combined patient-based costs allocation was used. Some costs are already tracked by health care providers at patient level (e.g. costs of implantable materials or laboratory tests), but most costs are not. This means they must be allocated on the basis of the agreed work standards or selected keys. In the first national cost analysis, as much as 45% of the costs were allocated at patient level on the basis of the length of stay. New Slovenian DRG weights resulting from this analysis were never used in practice, as there were significant differences between the old and the new weights, which would, of course, trigger considerable redistribution of revenues between hospitals. This experience clearly shows the need to improve cost monitoring at patient level and ensure that any existing inefficiencies are not embedded in the accounting model.

5.7. Steps to implement health care value measurement in Slovenia

1. To measure health outcomes for selected patient groups, internationally agreed minimum outcome sets and instruments for their collection should be applied in Slovenia. A suitable source for the selection of outcomes and measurement instruments seems to be ICHOM.
2. Preparing measurement instruments requires their translation and validation in the Slovenian language, which, in turn, requires monetary and HR support as well as sufficient time.
3. Instruments for outcome measurement can only be introduced with the necessary IT support, which, in addition to clinical indicators and PROMs, should also support the collection of administrative data and defined case-mix variables and facilitate connection with cost data.
4. The goal of collecting outcome data is to improve the value of care for the patient, which can only be achieved by benchmarking outcome data between teams and providers, exchanging best practices and improving care processes.
5. Introducing health outcome and cost measurement, which is a precondition for implementing value-based health care, also requires changes in the payment systems of providers. The aim is to increase value, which should be achieved without reducing resources but by increasing their productivity.
6. In Slovenia, cost tracking at patient level through time-driven activity-based costing should be developed and supported with IT. Against this background, it is essential to increase the volume and types of costs monitored on an ongoing basis, paying particular attention to the allocation of labour costs that represent the largest share of total costs.

Slovenia has good conditions
for VBHC implementation

6
Data platform

Anže Droljc

Today, IT systems in health care are still separated at several levels: depending on the department, location, type of service, but also type of data, such as X-ray images. IT systems often complicate rather than support integrated, multidisciplinary care. But IT should be viewed as a tool: the automation of disorderly processes only creates more problems.

To make informed decisions, medical teams must examine countless paper records and use several IT solutions to gain a comprehensive overview of the patient's condition. This means that they spend a lot of their valuable time looking for information, while risking, at the same time, not taking the most optimal care decisions due to incomplete information. Health care in itself is becoming increasingly complex: people live longer, resulting in an increase in the number of patients suffering from one or multiple chronic diseases.

To combat the changing health environment, a growing number of new IT solutions and applications are entering the fast-growing health care market. These solutions address the needs of patients and health care professionals, helping them move towards more integrated and preventative models of care. These applications generate more data — not only in traditional health care settings, but increasingly in social, environmental, personal and internet settings.

Such volume of available patient information can be exploited to the fullest by IT systems, helping health care providers and caregivers at local, regional and national levels. In what way? By cooperating seamlessly, allowing for measurements, analyses and new approaches to cost recovery, and combining well-structured care systems.

6.1. Situation in the world

The key drivers of change and transformation in health care are not to be sought in new applications, but the data within those applications. So the key drivers are the data that must be retained throughout the patient's life and must be available during care to all relevant providers at all levels. To achieve this, a digital health platform is needed as the digital basis. Such platform enables a data-driven rather than an application-driven approach. It accelerates transformation in integrated care systems and fully supports ambitions and new digital value-based health care (VBHC) services. By creating value, health care brings the following important benefits:

- Anyone involved in patient care has all important information about the patient at hand at any time.
- Teams are formed in such a way that they focus on the patient's needs in all phases of care delivery – diagnostics, treatment, monitoring or management of continuous care.
- The next steps in the care process are agreed by all key experts/ stakeholders.
- The relevant medical team is able to respond immediately to any deterioration in the patient's condition at home, and provide timely

advice to prevent unnecessary admissions and complications.
- Patients are fully empowered to take action to manage their conditions and obtain all the information they need — when they need it.
- Different services/stakeholders inside and outside health care, for example social services, can be seamlessly involved in managing the patient's general well-being.
- The patient's health experience improves along with the quality of their lives and health outcomes.

A single Digital Health Platform (DHP) enables effective cooperation and coordination in integrated practice units, while facilitating the acquisition, comparison and reporting of outcomes and cost data. Below is a list of the main benefits brought by such platform with respect to digitalisation scenarios of VBHC:

1. Direct care – collection of PROMs remotely (outside hospital) or in a clinic (hospital) just before admitting a patient, for the purpose of care and use during care cycles and/or through consultation and joint decision-making.
2. Entire care cycle – possibility of "routine" remote collection of PROMs and other relevant data (outside the hospital) or in a clinic (hospital) at (pre-)determined time points in the clinical pathway and care cycle. For example: at referral or diagnosis, before care episodes, such as clinic visits, after procedure/surgery and according to a predetermined schedule before or after any of the aforementioned care phases.
3. Planning and evaluation of public health – possibility of researching and monitoring/tracking the impact of disease, well-being and health outcome trends at population level, allowing better steering towards preventative as well as high-value and low-cost interventions, such as lifestyle changes and evaluation of disease impact on the entire system.
4. Improved health care services – ability to automatically retrieve, triangulate and analyse PROM data for different conditions, patient groups, disease subtypes or clinical pathways in nearly real-time. This enables linking responses with other data sets and tracking over time. Such analysis helps assess the impact of improved services on patients' quality of life and health outcomes, decrease unjustified changes and reallocate resources.

Greater integration of all stakeholders in the health system, including the patient, will be essential in VBHC implementation, as will be social protection aspects

6.2. Preparedness of IT in Slovenia for VBHC

Compared to other EU countries, Slovenia has good conditions for implementing VBHC because the country is manageable both in terms of the population and the health system. In addition, Slovenia's health care providers have IT support of sufficient quality and the country has a good national infrastructure, allowing for an easy integration of additional IT solutions that will be crucial in VBHC implementation.

Another major advantage is that Slovenia practices the system of unique identification of its population and that the national infrastructure in place uses uniform standards (openEHR, HL7, Dicom/RIS-PACS). All this facilitates the development of a patient's lifelong electronic health record, which can have all data

stored in a structured format, in a manner where data are not dependent on each application, allowing practitioners to autonomously and rapidly develop and publish guidelines that can be easily and quickly integrated into existing local and national IT infrastructures.

Greater integration of all stakeholders in the health system, including the patient, will be essential in the implementation of VBHC, as will be social protection aspects. In order to maximise the effect of value-based health care, it is crucial that patient data are simply and securely available to all stakeholders, to the extent fit for purpose.

With the national digital health platform, Slovenia is prepared to deploy new digital solutions relatively quickly. In this setting, it is crucial that this digitalisation concept also be brought to the level of health service providers and other key stakeholders, including the patient. In this way, a fully integrated national ecosystem of IT solutions will be created, upgrading the patient's single digital record.

6.3. Digitalisation of VBHC implementation in Slovenia

In line with the ambition of establishing value-based health care in Slovenia, a national information system for the collection, review and analysis of PROMs (patient-reported outcome measures) and CROMs (clinician-reported outcome measures) should be put in place. It would be reasonable to set up the system within the existing infrastructure on the eHealth platform, by integrating it in a modular way into existing IT solutions at all levels of health care activity, avoiding the need for multiple developments within existing IT solutions.

The key concepts and functionalities of such a system are set out in the previous chapters. To make it more concrete and fit for implementation, the following should be determined:

1. Establishment of a national database of the above-mentioned criteria within eHealth and the relevant local IT systems.
2. Defining key performance indicators and quality indicators, and developing a definition of areas and control platforms underpinning real-time monitoring of VBHC implementation with initial diagnoses, enabling proactive adjustments.
3. Preparation of a concrete description of the project, professional guidelines and specification of an IT solution, eligible for the absorption of funds under the Recovery and Resilience Plan (RRP).
4. Development of applications for specific specialties, aimed at monitoring indicators, and their inclusion into existing hospital information systems on a modular basis, following the example of COVID applications.
5. When developing applications, top priority should be afforded to improved user experience, with the aim of reducing the time needed for data input, allowing simple and transparent reporting, and enabling analytics.

Investing in VBHC means investing in raising the competitiveness of Slovenian health care on an international scale

7
Estimation of the investment in VBHC implementation

Janko Burgar, Anže Droljc

7.1. Key categories of VBHC implementation and management

Table 1 contains key categories requiring financing at VBHC implementation. Each category is explained, and investment and management costs are estimated.

Table 1: Estimated costs of implementing and operating VBHC in Slovenia, by key categories

Category	Estimated initial investment	Estimated regular annual operation
Multidisciplinary team (in charge of preparing and implementing VBHC, consisting of: data analyst, programme manager – medical lead, representative of the HIIS, representative of nurses)	€90,000/year Additional time, tasks of the existing team addressed through increased volume of work. New employments are mostly on a replacement and temporary basis, serving to perform otherwise regular operational tasks of team members. • Core multidisciplinary team: 4 people (20% of their regular time) + patient representative. • Broader multidisciplinary team (5%) × representatives of all health institutes with a complementary programme (11 public + 4 concession-based*). *The current situation of providers in the area of endoprosthetics in degenerative knee and hip diseases.	€150,000/year Additional time, tasks of the existing team addressed through increased volume of work. New employments are mostly on a replacement and temporary basis, serving to perform otherwise regular operational tasks of team members. • Core multidisciplinary team: 4 people (20% of their regular time) + patient representative. • Alternative employment: 2 persons.

Operational implementation team	€0/year Already included in the broader multidisciplinary team.	€75,000/year Represents: 10% of the time of two representatives of each organisation implementing VBHC: doctor + person cooperating with patients.
Training (training courses, business travel, counselling) for staff and stakeholders (patients)	€50,000	€15,000/year
Preparation of a communication strategy (internal and external), promotional events and promotional materials	€15,000	€3,000/year (part of regular communication)
Integrated information system (data capture), including data collection and presentation devices (operational IT equipment)	Information system: €350,000 Operational IT equipment: Central PC: €2,000 Tablets: €500/device (€7,500)	Information system – maintenance €50,000/year Operational IT equipment – maintenance: €2,000/year
Outsourced contractors (data management and analysis, participation in international projects)	€20,000	€2,000/year
TOTAL	€534,500	€297,000/year (€1,485,000/5 years)

Implementing VBHC is a process of change management, on a step by step, specialty by specialty basis, with the target of covering more than half of all care by 2030

The proposal is made for a pilot programme and one indication/classification in the area of endoprosthetics in degenerative knee and hip disease. The initial investment relates to the period of design and deployment up to the full implementation and acceptance by all stakeholders, lasting one year from the full operation of an integrated information system.

Any change, including the implementation of VBHC, is backed by properly trained, motivated and empowered people. The costs of training, reassignment and new employment will represent most of the investments in VBHC implementation and operation. In addition to the core team in charge of VBHC implementation, providers will play an important part – experts defining the indicators and preparing guidelines to use them on the one hand, a structure that will operationally implement VBHC, and those who are the most important source of information, namely patients. Costs of the multidisciplinary team are assessed as costs of the core team because new employments are not foreseen. New colleagues in the operational VBHC implementation and operation are deemed to be new employments. It is particularly important to engage, as early as the system development phase, operational teams of individual departments in all public health institutes (and concessionaires) that will

be part of the operational implementation. Without motivated providers, VBHC implementation does not have the necessary prospects. In addition to non-financial motivation, i.e. training on the role of VBHC and positive changes for the patient, financial motivation is also important. Financial incentives are foreseen as payments for the increased workload, already included in team activity in the preparation and implementation phases.

One of the most important reasons for the low success rate of VBHC implementation is the poor and/or inappropriate user response, which is also linked to the fact that the personnel involved in VBHC are unsure about how to use the results and how their work contributes to the success of VBHC implementation. In addition to staff training, the costs required to train end users – patients need to be built in. Following foreign examples, training costs can be assessed by defining, in addition to implementation, the time spent at training by participants. Efficiency and acceptance by clinicians can be achieved by integrating VBHC education and training into the credits system of the Medical Chamber of Slovenia.

As part of the project approach, employees and other stakeholders must be informed about the reasons for change and VBHC implementation; for this purpose, an official VBHC implementation and PR strategy should be designed, or a targeted approach to communicating change management and VBHC implementation. Communication is a particularly important element for gaining broader understanding and winning stakeholders in support of the VBHC implementation project. Preparing the strategy requires the time of those involved as well as a certain amount of advice from outsourced contractors. Among others, this category involves promotional events and promotional products.

An integrated information system is indeed an essential element of VBHC, representing interfaces that share stakeholders' data in a simple and safe way to improve health outcomes. Usually, patient data are fragmented and shared between several systems and data warehouses (administrative, process, cost, PROMs, CROMs, etc.). Developing a holistic system is a challenging process, mostly because of the existing systems and their necessary integration, and in terms of deploying an IT system dedicated to VBHC and serving as the future platform for decision-making and advancement of the health system. This category includes the costs of new IT equipment for VBHC. This investment is difficult to estimate – the assessment is based on the assumptions presented in the chapter addressing the necessary IT platform.

Experts working in the public health care system may not be able to perform all activities and master all knowledge about VBHC on their own. The engagement of external experts – VBHC and change management advisers – is therefore just as important an element, with the potential to accelerate and increase the efficiency of VBHC implementation. An expert qualified in change management in organisations can bring an immense added value for putting VBHC into practice, helping achieve successful transition of stakeholders and overcome resistance to change. In particular in this part, it is important to engage good data analytics, because data must be processed in a way to render them comparable to other institutions or even internationally. According to foreign experience, it is often reasonable to outsource this activity to an external, highly specialised provider of data processing and analysis. Setting up the framework of analysis and annual engagement of data analysis and report preparation is estimated as the value of half-engagement of one expert on an annual basis.

7.2. Summary of estimated costs of VBHC implementation and management in Slovenia in the field of endoprosthetics in degenerative knee and hip diseases

Deployment of any novelty requires investments. The cost of VBHC deployment in endoprosthetics for degenerative knee and hip diseases within six years, including the phase-in period (18 months), is estimated at slightly more than EUR 2.02 million. The phase-in period including the development of IT support costs EUR 534,500, and the five-year implementation period amounts to EUR 297,000/year or a total of EUR 1,485,000 in five years.

For VBHC, these costs consist of the initial investment in competences and team activities in the amount of EUR 140,000, which is 26.2% of total costs and thus significantly lower than the anticipated investment in the integrated information system (IIS), which represents 67.3% of the entire investment during the development and implementation period. If the IIS part also includes external support for data preparation and processing, the share of investments in human resources (together with training and communication), which amounts to EUR 155,000 in total (29.0% of the entire investment in the initial period), is EUR 395,000 or 71.0% of the total investments in VBHC in the initial phase. It is very important that the IIS is designed and developed in a way enabling simple adaptation to other VBHC areas, and that the rights to use and upgrade it remain within the public health system.

During the phase of using VBHC, the bulk of funds in the amount of EUR 243,000 (81.2%) is intended for salaries and remuneration of employees within the VBHC system, while only a small share, i.e. EUR 52,000 (17.3%), is intended for IIS maintenance.

7.3. Digitalisation of VBHC at the level of Slovenia and indication groups

As early as the VBHC pilot project, it is recommendable to think about how the acquired experience, knowledge and data contribute to the development of the public health care system. An important element lies in appropriate IT support – including the basic and advanced analytics (from reports and data warehouses to the use of AI, ML, etc.) and its practical application at the national level. Although launched in a single area, the IIS is designed in such a way that certain common functions and IT solutions may be used at the national level when it comes to PROMs capture, so as to reduce and/or prevent double time spent and multiple developments of the same IIS functionalities by each health services provider.

When planning the IIS for the national level and larger groups of indications, comprehensive and long-term thinking is advised and ensuring funding for the following areas:

- Strategic reflection and preparation of the bases for VBHC implementation in the public health care system, carried out by the National Multidisciplinary VBHC Team, will also be critical for the establishment of the national VBHC guidelines, clinical modelling of PROMs and CROMs, and priority setting, offering support to local teams at health services providers. This team is also responsible for the definition, development and publication of key indicators. The national team must include representatives of the health care profession, patients, IT experts, the HIIS, data experts

(reports, analytics, data warehouse, AI, ML, research, etc.) as well as stakeholders from the key state institutions (e.g. National Institute of Public Health, Ministry of Health, Medical Chamber of Slovenia, Nurses and Midwives Association of Slovenia, Slovene Chamber of Pharmacy, etc.).

- The local VBHC implementation team of each provider, who will be responsible for the introduction, support to and local monitoring of the guidelines and results, will not be limited to specific areas only but will capture different types of indications in accordance with the strategy.
- Upgrading the national digital infrastructure in support of the VBHC programme in accordance with the strategy of its implementation into the public health care system.

The cost assessment in section 7.2 can be considered as a (first) part of the national investment and the first (pilot) phase of rolling out a broader national programme. Below is an indicative assessment of the investment required for a period of five years for each of the areas listed above (in case of extension to the national level, the costs of the pilot described in section 7.2 are already included in the assessment below):

Table 2: National VBHC implementation team at the national level*

Role	FTE	Indicative annual cost for FTE	Total annual cost	5-year cost
Doctor	5	€50,000	€250,000	€1,250,000
Nurse	2	€40,000	€80,000	€320,000
Clinical pharmacist	2	€50,000	€100,000	€500,000
Patient representative	2	€40,000	€80,000	€400,000
HIIS	2	€40,000	€80,000	€400,000
Representatives of the state (NIPH, MH, etc.)	2	€40,000	€80,000	€400,000
IT, team of data specialists (analytics, AI, ML, so-called population health, research, etc.)	8	€50,000	€400,000	€2,000,000
Total	23		€1,070,000	€5,270,000

* The actual costs in the first five-year period will be lower because the calculation does not foresee employment dynamics. We propose that the national team be built consistently with the programme expansion at the national level.

Table 3: Internal VBHC team at health care organisations

Role	FTE	Indicative annual cost for FTE	Total annual cost
Doctor	0,5	€50,000	€25,000
Nurse	0,5	€40,000	€20,000
Clinical pharmacist	0,5	€50,000	€25,000
IT and data analyst	0,5	€50,000	€25,000
Total			€95,000.00

Table 4: National IT infrastructure for VBHC

Item	Y1	Y2	Y3	Y4	Y5	Total
Licence	€2,000,000					€2,000,000
Maintenance		€320,000	€320,000	€320,000	€320,000	€1,280,000
2nd level support		€160,000	€160,000	€160,000	€160,000	€640,000
1st level support (24/7)		€300,000	€300,000	€300,000	€300,000	€1,200,000
Integration with existing systems (HIS, KIS, Primar)	€500,000					€500,000
Licence for analytical tool (subscription fee)	€100,000	€100,000	€100,000	€100,000	€100,000	€500,000
Induction, training	€250,000	€250,000				€500,000
Total**	€2,850,000	€1,130,000	€880,000	€880,000	€880,000	€7,120,000

** The estimate does not include work stations (PCs, tablets, smartphones), personal devices and server infrastructure.


Better outcomes create a higher value,
both in health and monetary terms

8
Financial incentives

Dorjan Marušič

The process of purchasing and paying for health services plays a crucial role in securing accessibility, facilitating efficiency and ensuring the performance of the health care system. A comprehensive process of strategic purchasing of health services comprises both basic processes: purchasing services and paying for services. This ensures that both quality and cost efficiency in health care are promoted. Strategic purchasing comprises decision-making about which benefits are to be purchased, how they are to be purchased (the purchasing process) and which payment models are to be used.

8.1. Unchanged health care system in Slovenia as a consequence of unadjusted paying

In Slovenia, there is considerable room for improvement towards an efficient and strategic approach to buying health services, enabling optimum utilisation and spending of available resources. The payment systems in place largely fall in the fee-for-service category, with a limited annual budget and in-built incentives aimed at constant increase of productivity (Prevolnik Rupel, Kuhar and Marušič, 2021). Providers seek to meet their annual financial plan and ensure an adequate inflow of funds, and are hence inclined to performing better-paid services. The latter, however, are not on a par with the priorities of the health care system and possibly not consistent with patients' needs. Selective contracting with providers is an extremely challenging task, while avoidance of selectivity can have negative consequences. To date, only a few attempts at a selective approach have been made in Slovenia, most of which were politicised and quickly abandoned. Using recognised and verified tools for monitoring health outcomes and taking into account all variable parameters could change the long-standing non-selective approach to choosing providers.

In Slovenia, a number of indicators are used to measure errors, adverse events, mortality rates and other potential negative effects of treatment processes, while indicators measuring the effect of treatment on population health are practically not in use. Thus, we do not know which procedures, medicines and other health technologies have a positive impact, a negative impact, or no impact at all on the health status of the population. As health outcomes are not measured, they cannot be compared with medical costs, and consequently the cost-effectiveness of specific technologies cannot be measured (Marušič, 2016).

Since Slovenia's independence, the Health Insurance Institute of Slovenia (HIIS) as the payer of health services in the public network has not developed tools for strategic procurement and payment of services. Throughout this period, very few incentives were extended to providers for improving quality and efficiency, and funds were not always distributed according to priority areas. Through the payment of production factors (labour, materials, services, depreciation), the HIIS indirectly caused the providers' network to remain unchanged. The only variation was in the volume of services of individual providers depending on the availability of additional funds, irrespective of the quality and value of the services for patients (Prevolnik Rupel and Marušič, 2022).

With the negotiation system being outdated and obsolete, every government took the pragmatic approach and every year rejected hundreds of initiatives, thus allowing the system to remain unchanged. The rigidity of the public health network, the insistence on offering all existing services, the launching of new technologies without subjecting them to professional and cost evaluation, and the lack of disinvestment plunged the health care system to one of its lowest points, with half of the population on waiting lists, and the majority of providers recording negative operating results. Then came the pandemic.

8.2. Payments as a leverage for change in other countries

Recognition of the work performed and financial rewards strongly influence human behaviour at both individual and collective levels (Porter and Kaplan, 2016). The combination of these two incentives plays a key role in steering stakeholders towards high-value care. Promotion of outcome-based care comprises a whole range of behaviours: financial incentives must be a part of outcome-based contracts, but also value-based procurement. Moreover, psychological incentives are introduced through transparent benchmarks that impact provider reputation and team recognition. These incentives converge in orienting behaviour towards value enhancement.

Rather than getting lost in the common health budget, savings incurred through better outcomes should become an incentive

Economic incentives are also efficient in driving behavioural change. Value-based payments generally reward providers for superior outcomes and rarely penalise for inferior outcomes. When they comprise the entire reimbursement package or bundled payments, all savings achieved and proven through structural, process or outcome indicators must be left to providers.

Payment systems may focus on a single medical condition or aim to improve patient quality of care across conditions. In a bundle payment system, providers are paid for all services, procedures, tests, drugs and devices used to treat a patient across the entire care cycle, with in-built incentives to maintain or exceed optimal outcomes. The entire team is rewarded (Wohlin, Stalberg, Ström, Rolfson, Willers and Brommelset, 2017).

Package price and any quality rewards must be adjusted according to the patient case complexity and care outcomes achieved. Bundled payment can be divided into package price (expected cost of routine care), warranty payment (expected cost of complications) and performance compensation (bonus/penalty based on health outcomes). Even in these methods of payment, providers may shift to performing less demanding services and healthier patients. To prevent adverse selection, bundled payments are risk-stratified and risk-adjusted according to patient case-mix (Ekman, Lindahl and Nordin, 2016).

8.3. NICE in England

The National Institute for Health and Care Excellence (NICE) in England, which is the global leader in involving various stakeholders in decision-making processes about the public funding of health services, has since 1999 been involving patients and carers as users of health services in its decision-making processes. Every year, NICE performs a survey about their satisfaction with their contribution and manner of involvement in decision-making processes. The purpose of such transparent and all-inclusive approach on the part of NICE is to give people the opportunity to participate in the development of guidelines, quality standards and decision-making on including health technologies in public funding, in order to increase focus and maximise care value for the insureds – patient and carer representatives should present

their views and experience with a disease, and make guidance and decisions more patient-friendly (NICE, 2013).

8.4. Unsuccessful attempts in Slovenia

In 2012, on the proposal of the Ministry of Health, through the General Agreement, a mandatory criterion of the minimum services required per year at hospital level was introduced as a condition to conclude a contract between hospitals and the HIIS. According to the projection made, the mandatory 50 services should have gradually increased over the coming years. Lower-volume services at the national level provided by tertiary institutions counted as an exception.

This action became politicised and played upon after only a year. Of the many tools available for ensuring quality, safety and efficacy, the payer's intentions were serious only with the international hospital accreditation system, and seriousness was proven in the form of financial penalty. In 2013, the General Agreement introduced a new measure, namely that a hospital may lose 0.2% of its annual budget if it does not participate in the accreditation process. This was removed by the government after four years.

8.5. Proposed measures for VBHC implementation in Slovenia

Time needed for VBHC implementation in the first specialty: 14 months after receiving the green light from the MH

Putting in place health outcome measurements in the long run would represent an important tool for the payer when contracting with providers. In this way, the long-existing practice of the HIIS in concluding new contracts with providers could be overcome, namely that of simply transferring the old contract and potentially increasing the scope of services, subject to the availability of additional resources. The selective approach to contracting services based on health outcomes would, as a consequence, facilitate the creation and roll-out of a network of providers and activities.

Proposed steps:

1. Achieving patient value should be a priority objective of the health care system.
2. Value-based health care (VBHC) links payments to providers with the quality of care, and rewards providers for efficiency and effectiveness: health care outcomes must be measured, to be able to focus on patient needs.
3. Large-scale and high-impact care, international indicators and motivated individuals should be selected.
4. On the basis of existing data, a standard of available treatments should gradually be set up, together with a display of deviations, as the basis of sets of services for each patient.
5. Data collection, control and analysis as well as information reporting should be put in place, for the purpose of monitoring and assessment.
6. Timeline:
    a. month 1: creation of the VBHC Implementation Group;
    b. months 2 to 3: training of the core group, together with providers;
    c. month 4: conclusion of a Commitment between the minister of health – GD of the HIIS – GD of NIPH, inclusion of essential stakeholders from associations –

chambers – societies;

d. months 5 to 11: training, ordering and preparation of IT solution, setting up a centre for PROM collection and data analysis;
e. month 12: testing of the solution, verification
f. month 14: start of initial official measurements
g. month 17: launching for two new specialties, additional indications in the first specialty
h. month 20: first incentives for good indicators, bad indicators not penalised, setting transitional periods for improvement, special 5% reward for the entire programme distributed to all providers involved in the exercise according to the overall progress assessment
i. month 24: start of official measurements in new specialties and indications
j. month 25: launching for further three specialties, additional indications in the first three specialties
k. month 32: start of official measurements in further specialties.

By 2030, VBHC can be introduced for more than half of all indications.

The lowest price is not a guarantee of value

9
Value-based procurement

Biserka Simčič

If, on the one hand, VBHC offers the best approach for maintaining and improving health services, value-based procurement (VBP) on the other hand enables the implementation of this approach by considering total care costs and health outcomes, thus contributing to more prudent purchasing decisions.

Value-based procurement is about making purchasing decisions so that the product or service best delivers measurable outcomes, while at the same time the overall cost of care is reduced – instead of solely focusing on buying a certain product or service at the lowest possible price.

VBP requires a multidisciplinary approach and cooperation of a number of stakeholders. It is aligned with the EU Directive that seeks and promotes new methodologies for identifying the best value for money in the most economically advantageous tender.

The biggest flaw for the implementation of VBHC as identified by economist Uwe Reinhardt upon the publication of Porter's book Redefining Health Care (Porter, 2006) is rearrangement of the distribution of economic power and clinical autonomy in our health system (Reinhardt, 2006). VBP in fact creates new types of relationships between payers and health care providers (bundled payments), between suppliers and buyers (value-based procurement), between providers themselves (benchmarking and cooperation in the introduction of good practices), and between patients and providers (larger involvement in treatment and cooperation in expressing preferences by patients). All these new connections transform and rearrange relationships and have an impact on stakeholders who – in the system seeking maximum patient value – start evaluating their activities with that goal in mind, and perhaps set up different behaviours and cooperation.

A revolutionary leap from payments based on promised outcomes to payments based on actual outcomes

9.1. A leap from paying for promises to paying for measured outcomes

The EU Public Procurement Directive encourages a more holistic approach to product quality and assessment of total life-cycle costs of a product, moving from decisions based purely on price to those based on value (EC, 2014). The Directive has inspired many health care companies to offer and sell technologies leading to better outcomes. In this context, new forms of cooperation and negotiation between suppliers and purchasers are being developed, especially in the early stages, i.e. the process of tender preparation. In most procurement cases, the price remains the basic and sole criterion for the time being, but it is essential to know that the lowest price does not necessarily mean the highest value. On the other hand, a value-based tender is more difficult to prepare. Tenderers must estimate full life-cycle costs of a technology – including the costs of complications – to be able to know the value of their products and define their costs in a comprehensive manner. In doing so, they should mainly rely on clinical studies and information obtained from patients and clinical staff.

Tenderers must understand that in an environment focusing on patient-centred

outcomes, they can remain competitive only if their products lead to high-quality outcomes in relation to total products costs. Of course, the promise of better patient outcomes is one thing, accepting responsibility and providing guarantees for such outcomes is something completely different. In a way, value-based procurement constitutes a revolutionary leap from payment for products on the basis of promised outcomes to payment for products on the basis of actually measured (health) outcomes.

9.2. Public procurement in Slovenia

The Public Procurement Act (2015) transposes the EU directives on public procurement into Slovenian legislation.

As regards award criteria, the Public Procurement Directive (Directive 2014/24/EU) governs public procurement aimed at selecting the 'most economically advantageous tender', which means achieving the 'best price-quality ratio'.

This means that the price or cost aspect is always included in public procurement, but as a rule not only that. The finding whether a tender is the most economically advantageous may be based solely on price or cost efficiency, which is not automatic but assessed in relation to a specific object of public procurement.

These principles are fully enshrined in the Slovenian Public Procurement Act (2015), set out in paragraph 2 of Article 84 as follows:

"(2) The most economically advantageous tender shall be identified on the basis of the price or cost, using a cost-effectiveness approach such as life-cycle costing, as provided for in this Act, and may include the best price-to-quality ratio, which shall be assessed on the basis of criteria relating to qualitative, environmental or social aspects linked to the subject-matter of the public contract in question ..."

With its knowledge, a provider can help the entire medical team perform better

In view of achieving impact, the contracting authority must examine and decide which criteria are the most important for a specific subject-matter of a public contract, so that the contracting authority can realistically select the most advantageous tender. Only the price or only life-cycle costs may be the criterion, but there is no single rule for that and quite often this rule does not apply. Selecting a tender by only taking into account the price can have the opposite effect, reflected in the realisation following the completion of the contract: the lowest price does not always bring the highest value.

Selecting and defining criteria is a demanding task, given that criteria must be objective, i.e. comply with the principles of transparency, non-discrimination and equal treatment of tenderers. Moreover, they must be defined, described and weighted in such a way that the tenderer can recognise what 'better' or 'the best' means for the contracting authority, and can decide whether to submit a tender and/or what the tender must include to be competitive.

The contracting authority must have good knowledge of the subject-matter of the contract, be it products, services or works; accordingly, the contracting authority must specify concrete criteria, based on which the tenders submitted will not only fulfil the contract (i.e. meet the selection criteria) but must also make it possible for the contracting authority to select the most advantageous tender for its needs.

In practice, contracting authorities often resort to an approach where the subject-matter of the contract is described sufficiently (by defining technical specifications), but the only criterion set is the price, although it would be critical to use additional criteria (e.g. quality of the goods/services and/or organisation, qualifications and experience of the staff that will perform the contract, etc.). Price as the only criterion may be suitable only when the subject-matter of the contract is of ready-made nature. In practice, contracting authorities decide for this approach even when it is not

appropriate, because it enables them to conduct relatively fast public procurement processes and be faced with a relatively low risk of appeal.

In Slovenia, the first attempt to pay for services in relation to their quality as measured through outcomes and effectiveness of the health services performed was the one in 2010, in the framework of the national tender for hip, hernia, varicose veins and carpal tunnel release procedures (obligatory reporting on PROMs). In 2020, deliberations about the urgency to pay for services on the basis of the quality of the work performed and health outcomes were revived. Among others, the Act Determining Temporary Measures to Mitigate and Remedy the Consequences of COVID-19 (2020) provides for the implementation of the National Tender (NT) for improving accessibility of health services in 2020 and 2021. In the released NT 2021 and the proposed NT 2022, the selection criteria include indicators that measure health-related quality of life based on the international EQ-5D-5L questionnaire. The indicators are collected during the preoperative (initial) examination and the follow-up examination, and are a condition for the payment of health services.

9.3. Additional payment for better outcomes – foreign examples

In 2016, the Catalan Agency for health Information, Assessment and Quality (AQuAS), a public body of the Catalan Health Ministry, signed the first value-based contract that uses health outcome measurements. The contract was for implantable defibrillators. Following a competitive dialogue, St. Jude Medical (Abbott) and Medtronic applied together and won a EUR 12 million contract over four years. The value-based agreement withholds 3% of the annual contract value until outcome targets, such as patient quality of life and satisfaction, are met. Vendors must realise a threshold of 10% improvement, as reported through PROMs. A monthly report presents outputs and patient outcomes. The call turned out to be practicable and acceptable, clearly showing that it improved patient quality of life. In the following years, AQuAS opened numerous value-based tenders: in 2019, AQuAS launched a call for pacemakers, with 5% of the evaluation criteria focusing on the care continuum and PROMs. AQuAS also opened a tender for aortic stenosis (rather than a given technology (TAVI)), to widen the spectrum of innovations and evaluate outcomes and costs over the full cycle of care (EIT Health, 2020).

In 2016, Amgen launched in Finland the development of a VBHC ecosystem for multiple myeloma in collaboration with haematology units of academic medical centres as well as with other technology partners. The aim was to design innovative pricing schemes, improve real-world data collection and enhance patient support to drive outcomes This ecosystem is built around a value-partnership for Kyprolis, a targeted therapy approved for patients with relapsed and/or refractory multiple myeloma. Amgen commercialises Kyprolis for an average price of EUR 6,500 per month. If Kyprolis does not deliver the expected outcomes when appropriate administration is applied, Amgen refunds the treatment costs. To collect real-world data and support patients in treatment, Amgen partnered with Kaiku Health, a health data science company, and Turku University Hospital. Clinicians selected a well-established PROM instrument (QLQ-C30) in combination with a short version of a validated neuropathy questionnaire. Amgen participated in the IT development costs and supported the implementation, whiles hospitals cover the licence costs, so patients can use the e-PROM solution at no charge. Amgen is scaling this initiative to other clinics and disease areas in Finland.

9.4. Implementing value-based procurement in Slovenia

1. A comprehensive overhaul of the public procurement system in health care should implement the criterion of quality of an object/service based on health outcomes (with a clearly defined share of outcome-based assessment criteria).
2. An awarded contract must contain value-based provisions using outcome measurements, which must also be financially evaluated. For example, payment of a portion of the annual value of services delivered may be retained until the objectives set in terms of outcome measurement are reached (e.g. the patient's health status or a change in the patient's health status).
3. Appropriately designed structures are needed that will also involve patients to prepare and design innovative pricing schemes, helping create public contracts for health services whose outcomes will be based on health value for patients.
4. Preparation of an action plan to implement steps 1 to 3 with clearly defined responsibilities and a timeline.
5. It is critical to train contractors and other stakeholders about the innovative approach to public procurement (training by the Ministry of Public Administration and the Official Gazette of the RS, local and international training, exchange of good practices, etc.).

It is crucial to shift all building blocks of the system while at the same time coordinating many stakeholders

10
VBHC implementation in orthopaedics

Matej Drobnič, Gregor Cuzak

10.1. Orthopaedics as the initial specialty for VBHC implementation

Implementing VBHC in orthopaedics as an example of the first medical specialty in Slovenia is justified for a number of reasons. These include: a relatively low degree of interlinkage with other specialties; similar examples of implementing impact-based payment in other countries (as described in the chapter on foreign examples); the length of waiting lists in orthopaedics (HIIS, 2021) (700 days for knee endoprosthesis, 550 days for hip endoprosthesis) and associated sick leave periods. Sick leave is most often associated with orthopaedic conditions (NIPH, 2021).

VBHC is an opportunity for the advancement of the profession and an increase in the quality of health care. Development of the profession is driven by technological development, which is not sufficient in itself – it is not enough if new solutions emerge only at the level of technology. Along the same lines, it is not enough to add PROM measurements to patient care if the latter remains generally unchanged. VBHC does not merely involve changes in accounting, although accounting may be one of the strongest levers of change.

It is crucial to shift all building blocks of the system and in this way align many stakeholders. In terms of the importance and impact on the success of implementation, the most important stakeholders for the successful launch of the project in orthopaedics include: orthopaedists (heads of departments, but also the most respected leading physicians), hospital directors (and also directors of specialised outpatient clinics and community health centres, if relevant). At the secondary level, the project must also be supported by associations (orthopaedists, the Medical Board), chambers (of doctors, nurses, physiotherapists) and patient associations.

10.2. Foreign models

In international practice, orthopaedics is often one of the first medical specialties where health care professionals, organisations and systems learn to implement VBHC as a new model of care.

The need to measure outcomes in orthopaedics is demonstrated by substantive differences in care outcomes. In Germany, a fivefold difference in the share of reoperations due to complications after knee surgery is reported (Faktencheck Gesundheit, 2019), while Sweden reports about a sixfold difference in the share of reoperations after total hip replacement (Swedish Hip Arthroplasty Register Report, 2012). According to the report about VBHC in Wales, one of the goals of outcome measurements is to decrease unwarranted variation in the quality of care (Laing, 2021).

It should be noted that in Slovenia, too, the HIIS monitors the quality of orthopaedic care in knee and hip endoprosthetics (HIIS, 2021), with significant

variation in quality between providers.

Positive impacts of VBHC implementation are scientifically proven (Bozic, 2019) in terms of better pain relief (measured with the HOOS/KOOS Pain Score), better symptom relief (HOOS/KOOS Symptom Score), higher mental health scores (SF12v2) and higher patient satisfaction (Hip & Knee Satisfaction Scale). La Tour, a Swiss hospital, reports an increase in patient value in total shoulder arthroplasty in almost 80% of all cases (Lädermann et al., 2021). Laing (2021) reports about a Cedar study conducted in Wales, where in a total of 989 knee surgeries with cemented knee prosthesis a gain in Oxford Knee Score of approximately >16 points was shown. GLA:D, a non-profit organisation from Denmark, deserves special attention in view of VBHC and orthopaedics. GLA:D trains and motivates patients with knee and hip osteoarthritis, reducing unnecessary surgery because their state improves thanks to exercise and changes in lifestyle (EIT Health, 2020).

10.3. PROMs in orthopaedics

The first question we need to ask is which area of orthopaedics is most suitable to start with VBHC implementation. In his review paper on PROMs in orthopaedics, Gagnier (2017) provides 25 different areas of orthopaedics and PROMs, relating to specific musculoskeletal regions of the body, diagnoses or procedures.

The Expert Group suggests using diagnosis as the starting point of implementing VBHC in orthopaedics, rather than body regions or specific treatments or procedures. The reason to start with diagnosis is the fact that Slovenia already uses accounting by Diagnosis-Related Groups (DRG). At the same time, VBHC aims to create new value on the basis of innovation in care. If PROMs were based on types of care, room for variation and thus innovation in the resolution of diagnoses would be limited.

We also propose to firstly choose diagnoses associated with the knee or hip – the two body parts connected with the highest number of procedures in Slovenia. Given that several different knee and hip diagnoses exist, we propose that orthopaedic professionals decide autonomously for a single knee and a single hip diagnosis. VBHC implementation would take place simultaneously in all institutions, meaning that selecting widely represented diagnoses would allow many different institutions to participate – the report on the quality of knee endoprosthesis mentioned above, for example, lists 12 Slovenian health care providers.

There are plenty of different indicators to measure care value reported in the literature, including KOOS, IKDC, OKS, WOMAC and others for the knee (Wang et al., 2010; Collins, 2011), while recommended indicators for the hip include HAGOS and iHOT (Impellizzeri et al., 2018). In addition to specific PROMs for orthopaedics and specific diagnoses, generic PROMs, such as EQ-5D (EuroQol) or SF-36 (Rand Corporation), are worth considering prior to PROM selection.

PROM selection should be jointly agreed on by the orthopaedists and the VBHC Implementation Group, as the main objective of the project is not only to introduce PROMs of the highest quality as assessed by the experts, but also to introduce PROMs that are best suited in terms of involvement in the VBHC project, organisation of patient outcome measurements, and data capture, processing and reporting. Due to its universality and simplicity, EQ-5D seems to be suitable for use in a number of different specialties, not only in orthopaedics. As soon as such measure is used, the selection of orthopaedics-specific PROMs may change because the measure no longer requires some general elements.

The final selection of PROMs should be a joint decision of three stakeholder

groups required for VBHC implementation, namely: professionals – orthopaedists; directors of the institutions involved; and the VBHC Implementation Group, with the support of the MH – NIPB – HIIS triangle (the Commitments Document).

10.4. The role of orthopaedists in VBHC implementation

VBHC implementation needs the support of the profession, or else it will be impossible to launch.

Following is an outline of the effect of VBHC implementation on orthopaedists, to gain their support:

- Measuring quality and health outcomes is primarily dedicated to orthopaedists, facilitating their professional development;
- Data sharing will proceed in phases and on an aggregated basis, while individual orthopaedists will not be compared at the national level – neither in professional nor in lay terms;
- Quality will be rewarded both for individual providers as well as collectively;
- Punitive mechanisms will be minimised – there will be none in the first year, and later their only goal will be to prevent intentional abuse;
- Financing better quality stems from the premise that it is better to pay for immediate medical treatment than to choose waiting and sick leave;
- The amount of work will not be reduced, but waiting lists will be shortened;
- VBHC will treat all providers on an equal footing – it will include public, concession-based private, and private providers.

10.5. Other circumstances

VBHC will not be the only change to expect in the health care system. In the same period of expecting VBHC implementation, i.e. by 2030, the following changes with an impact on VBHC will take place:

- An increase in health spending is inevitable and is part of international trends, driven by ageing population, new treatment methods (personalised medicine, precision medicine, genetic therapies), and new technologies;
- Providers should improve their management – in the opposite case, we risk a definitive collapse of the public system, which is not good for sustainability and equality of health care in Slovenia; many reports of the Court of Audit clearly point to this problem;
- The only way to sustain public health is, in addition to improving the quality of care and outcomes, by paying even more attention to prevention, early diagnosis, better palliative care and better integration of health services with social care and long-term care services;
- Digitalisation is quickly permeating all spheres of health care, increasing the volume of data; the key factor is no longer the quantity of data but the skills of data-based management; with generational renewal of physicians, demand for this type of health

care solutions will also increase;
- Unreasonable workload on some profiles in health care should be reduced – burnout is incompatible with the mission to treat; the problem is the poor coordination of many stakeholders, leading to poor organisation;
- The role of patients themselves will be strengthened – they possess more and more data, but they must also accept a greater burden of taking care for their own health and lifestyle because physical activity, balanced nutrition, controlled intake of harmful substances, positive self-image, good employment options and the social network all have a significantly greater impact on health than health care alone;
- Health care is interdependent on education, the economy, the judiciary, housing conditions, the environment, weather and societal climate, and can cooperate well with all these systems; what they all have in common is the effort to create value, and health care progress is one of the pillars of progress in our country and our society in general, and vice versa – progress of our country will have an impact on health care progress.

List of abbreviations

ABC – Activity-based costing
HIS - Hospital information system
CROM – Clinician-reported outcome measures
DALY – Disability-adjusted life years
DHP – Digital health platform
DRG – Diagnosis-Related Groups
EHIS – European Health Interview Survey
EUHA – European University Hospital Alliance
HIIS – Health Insurance Institute of Slovenia
ICHOM – International Consortium for Health Outcomes Measurement
IS – Information system
IT – Information technology
JAZMP – Agency of the Republic of Slovenia for Medicinal Products and Medical Devices
MH – Ministry of Health
NHS – National Health System
NICE – National Institute for Health and Care Excellence
NIPH – National Institute of Public Health
NT – National tender
OECD – Organisation for Economic Co-operation and Development
PREM – Patient-Reported Experience Measure
PROM – Patient-Reported Outcome Measures
RS – Republic of Slovenia
TDABC – Time-driven activity-based costing
VBHC – Value-based health care
VBP – Value-based procurement

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