

Implementation of the Value-Based Healthcare (VBHC) Concept with a Focus on Outcome Measurement

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Abstract: *Value-based healthcare* (VBHC) is a service improvement approach developed at Harvard Business School (HBS) that explores the best practices for reorganizing and coordinating healthcare that aim to achieve the outcomes that are important to patients. An implementation of value-added services for patients diagnosed with *age-related macular degeneration* (AMD) and macular edema using value-based healthcare (VBHC) was introduced in a Bulgarian ophthalmic clinic. Human resources were freed using time-driven activity-based costing (TDABC) methodology and were then reinvested in patient-related outcome measurement activity. A change in the way health-related outcomes are administrated was necessary to make an appropriate outcome analysis and to reduce additional administrative burden to medical staff. Processes should be included as a part of the routine clinical practice, which will also ensure their execution. It is important to build a clearly defined strategy for structuring the process. Objectives and steps should be outlined clearly, starting with a specific indication and gradually expanding the scope. The choice of standard sets and periodisation for data collection is important. There is a need for constant communication between team members, who will be responsible for the measuring, collecting, analyzing, and processing data, regular meetings of all members, and ongoing training.

Keywords: Time-Driven Activity-Based Costing, Outcome Measurement, Value-Based Healthcare, Business Model, Ophthalmology

1. Introduction

External evaluation, resource analysis for outcome measurement (health-related outcomes, HROs and patient-related outcomes, PROs), cost analysis of processes, management team structure, and technical solutions were performed in an ophthalmology clinic as a concept in the treatment of patients with age-related macular degeneration (AMD) and macular edema by intravitreal administration of VEGF-inhibitors. Value-added services for patients diagnosed with AMD and macular edema were implemented by using *value-based healthcare* (VBHC) methodology - measuring HROs and PROs and

implementing *time-driven activity-based costing* (TDABC).

VBHC is a methodology developed at Harvard Business School (HBS) that explores the best practices for reorganizing and coordinating healthcare, improving process efficiency, and applying innovative payment schemes for the entire health and care cycle including prevention and diagnosis. The overall aims of VBHC are to achieve better outcomes that are relevant for patients as well as the integration into practice at the system level. It aims at improving patient outcomes while optimizing the use of hospitals' resources among medical personnel, administrations, and support services through an evidence-based, collaborative approach [1, 2].

The importance of VBHC is widely accepted but implementing the methodology among healthcare providers presents a challenge. The most important step in VBHC implementation is to determine, measure, and compare the outcomes for the respective medical condition, which should be rewarded in the direction of outcomes improvement, and the improvement of process efficiency. That is why a key element of the strategy for value-based healthcare delivery is the *collection of outcome data*, as well as *subsequent analysis and reporting*. Outcomes, the numerator of the value equation, are inherently condition-specific and multidimensional [3]. *Outcome measurement requires a dedicated team and significant additional workload, which is often challenging to integrate into the busy work schedule of healthcare facilities, the insufficiently flexible information technology infrastructures, and the lack of motivation of the staff involved* [4].

This case study describes the implementation of VBHC in a Bulgarian ophthalmology clinic: from the initial vision through the iterative process of developing a strategy for implementation and outcome measurement to demonstrating the results obtained for 12 months.

2. Challenges of the VBHC Implementation in an Ophthalmology Clinic

During observations and interviews in the ophthalmology clinic, the following challenges were identified:

2.1. Health-Related Outcomes (HROs)

Key indicators in monitoring the condition of patients with AMD and macular edema and the outcomes of treatment are *visual acuity* and the results from the diagnostic *optical coherent tomography* (OCT) - *central retinal thickness*. After field observations, it was established that these health indicators are entered in the patient's medical history as free text. This data format is not suitable for analysis and leads to significant difficulties in tracking. An attempt for collecting retrospective data has been made, but due to the need to process and clear a large number of cases its validation presented an administrative burden. Due to the reasons listed above, keeping statistics and regular analyzes is missing as an established and integrated regular process in the clinic.

2.2. Quality of Life of Patients

The importance of measuring the quality of life of patients with AMD and macular edema was recognized by the hospital's management team, but at the time of analysis such measurement has not been introduced in the clinic yet. Measuring patient-related data of patients diagnosed with AMD and macular edema requires selection of appropriate staff, motivation of the staff to perform additional activities by understanding the importance and benefits of such activity, choosing appropriate standardized questionnaires,

determination of appropriate measurement periods, validation, analysis, and data reporting.

2.3. Workload and Lack of Staff Motivation

At the time of analysis, the staff of the ophthalmology clinic is overloaded, without the availability of free resources and, accordingly, without motivation to perform additional activities. In this regard, questions arise from the management team regarding the integration of additional activities such as outcome measurement. How much extra work is needed to integrate this activity? Would it be realistic to add additional work for the staff? Or would this require additional resources? Would it require additional financial resources - and if so, what would be the opportunities for financing? How to further incentivize the staff? How will staff be coordinated in a way that they could reconcile their routine clinical responsibilities with the new ones?

3. Strategy for VBHC Implementation with a Focus on Outcome Measurement

Possible solutions to the challenges and application of a model for seamless data collection in the ophthalmology clinic were identified, with improvements in the routine health outcomes collection and analysis and the introduction of patient-related outcome measurement of patients with AMD and macular edema. The steps of the VBHC implementation strategy with a focus on outcome measurement are presented below.

3.1. TDABC

The TDABC methodology is implemented by using initiation questionnaires, interviews, and on-site observations with time measurement for each step to outline all steps of the intravitreal VEGF-inhibitor procedure for patients with AMD and macular edema and their duration - from the moment the patient enters the ophthalmology clinic to the moment of discharge and follow-up schedule. The mapping of processes using TDABC makes it possible to visualize all the steps of the intravitreal application procedure and their duration, as well as to perform optimizations, if applicable, by:

- a) removing steps,
- b) adding steps,
- c) changing the sequence of steps,
- d) optimizing the time needed,
- e) changing the location of steps,
- f) changing the person responsible for specific steps and activities.

As a result of the TDABC implementation, the following results are expected:

- 1) *Time optimization* for performing the intravitreal application of VEGF-inhibitor by saving minutes for performing the procedure by the participating staff and

reduced patient stay.

- 2) *Capacity optimization* - gives the possibility to perform *additional activities or increase the capacity* to perform the same activity. This in turn will generate additional revenue. The released capacity will create an opportunity for *reallocation and reinvestment of resources* in activities of increased value, such as measuring patient-related outcomes.

Time and capacity optimization allow for emphasizing *the engagement and development of medical specialists*.

- 1) *Increasing the patients' flow* by improving medical care with main focus on outcomes.
- 2) *Better organization of the overall work process*, predictability, and planning of processes.

TDABC and process mapping allow for a selection of the most appropriate time to perform outcome measurement. Moreover, where TDABC is being applied, it is helping providers find numerous ways to substantially reduce costs without negatively affecting outcomes (and sometimes even improving them) [5].

3.2. Communication with the Management Team During the Whole Project

The next step is to hold an initiating meeting that includes a presentation on the idea and importance of implementing the value-based healthcare concept in clinical practice that:

- 1) presents the results from implementing TDABC and the possibilities for optimization to free up staff capacity in order to free time to measure patient-related outcomes. This way, outcome measurement *will not present an additional administrative burden* for the staff involved.
- 2) communicate the importance of the leader who wants to implement outcome measurement in the daily clinical practice, the way to select and engage appropriate staff, as well as how to motivate and incentivize the selected staff to perform additional activities.

Follow-up discussions and consultations are also held regarding the desired steps to be taken toward the transition to VBHC. These meetings must include the clinic's top management team.

3.3. Selection of Standardized Questionnaires for Measuring PROs of Patients with AMD and Macular Edema in the Ophthalmology Clinic

The third step is the selection of appropriate standardised questionnaires to measure PROs of patients with AMD and macular edema. PROs provide patients' perspectives on their well-being, functioning, symptoms, and experiences with treatment [6]. The use of PROs has become increasingly prevalent in clinical research, reflecting the growing recognition that patient quality of life is an important outcome [6, 7]. The requirements of the questionnaires, if any, are to be *standardized*, easy to complete, understandable for patients, short duration of completion, and the clinic's access to implement the questionnaires in practice.

The best option is to use two questionnaires - one to

measure the quality of life of the general population, and one to be specific to the patients' diagnosis. In this case, the standardized specific questionnaire for measuring quality of life of AMD patients should reflect how visual impairment affect patients' quality of life.

To initiate patient-related outcome measurement of patients with AMD and macular edema, the questionnaires are filled out on paper due to impaired vision and lack of appropriate technological solutions in the ophthalmology clinic. As a next step, a digital completion of the questionnaires by using a appropriate tool is planned.

3.4. Selection of Staff with Freed Capacity

Based on optimisations obtained through TDABC and the decision of the management team, the next step is to select the appropriate staff to engage in outcome measurement. The selected staff should perform the following activities:

- a) Assist patients to complete the questionnaires, as they have a visual impairment and do not have the opportunity to complete the questionnaires on their own. The most suitable staff for this purpose are the nurses.
- b) Collection of data and sending questionnaires for validation and analysis within a certain period. The most suitable staff for this activity are the employees engaged in administrative activities.
- c) Internal reporting of the data obtained from the analysis in the ophthalmology clinic, and subsequent reporting to other stakeholders in accordance with the aims of the ophthalmology clinic. The management team should be involved in this activity.
- d) Conducting scientific activity and preparing publications – could be done by staff engaged only in scientific activity and statistics or this activity could be performed by an external consultant. In the current case, the external team that performs the analysis of the ophthalmology clinic and the subsequent implementation of outcome measurement is responsible after preliminary communication of the goals with the ophthalmology clinic's management team.

3.5. Training of Staff and Analysis of Data Related to the Quality of Life of Patients with AMD and Macular Edema

The next step is training of the selected staff to work with the selected standardized questionnaires, to communicate with patients, and to select appropriate periodization for measurement.

Data validation, subsequent analysis, and scientific activity are performed by external team within a certain period in accordance with the number of completed questionnaires.

3.6. Change in the Way of Entering Health Outcomes

To enable report preparation on a patient level, on a specific eye indicator, the strategy includes performing the following changes:

- 1) measurement of visual acuity by number of letters

should be entered only in numerical values in the patient's file, and not recorded as free text in the patient's medical history,

- 2) entering OCT test results, expressed as central retinal thickness, should be entered only in numerical values and not recorded as free text in the patient's medical history.

This change provides an opportunity for detailed reports and analysis on a patient level, reflecting the changes in the two health indicators.

4. Presentation of Results

The results from the value-based healthcare concept implementation with a focus on measuring outcomes in a challenging environment are presented below:

4.1. Health-Related Outcomes

As a result of an observation of the medical software used by the ophthalmology clinic, health indicators monitored when applying intravitreal injections for the treatment of AMD as well as possible input fields in the software with potential for optimization have been identified - in the specific case, this concerns the way of entering the health indicators in the medical software. After the implementation of the strategy described above for changing the way of entering health indicators through fine-tuning of the medical software, the clinic has the opportunity to generate patient-level reports on pre-defined and important health indicators.

The table below presents the clinical-related outcome measurement (CROM) before the team's assessment and process improvement after integration of the recommended changes in the daily practice.

Table 1. Changes in the way of entering CROs in the ophthalmology clinic.

	Before	After	Process improvements
Clinical-related outcomes (CROs)	The CROs of each patient are entered into a text box in the medical software and the patient's medical record.	Change in the way CROs are entered - only in numerical values, and not as free text in the text box.	Opportunity for structured reports in a fast and automated way that allows easy tracking and analysis based on real individual patient data - at a patient level, periodically, by administered medication, etc.

Collection, validation, analysis, and monitoring of CROs are key to VBHC's philosophy, as these activities provide an opportunity to seek possible improvements in the healthcare delivery and serve as a basis for preparing scientific publications and communicating the outcomes at scientific forums, with referring physicians and other centers, preparation of benchmark analyzes of the value provided by clinics from other regions and countries.

As further steps, it is possible to develop a strategy for the selection of indicators and appropriate periodization, as well as performing, validating, and preparing subsequent analyzes of the data collected. Data visualization and analysis could be performed using appropriately selected digital business tools.

4.2. Measurement of QoL Data of Patients with AMD and Macular Edema

As a result of successful implementation of the VBHC, part of the clinic's medical staff with freed capacity was selected to measure PROs of patients with AMD and macular edema and was successfully trained.

Two questionnaires for QoL measurement of patients with AMD and macular edema were selected - EQ-5D (EuroQol five-dimensional) and IVI (Impact of Vision Impairment) [8] and successfully implemented into daily practice.

EQ-5D is:

- a) A generic questionnaire that is not specific and could be used to assess the health-related QoL, both of the general population and of patients diagnosed with various diseases;
- b) Includes 5 main domains: mobility, self-care, daily activities, pain/discomfort, and anxiety/depression;
- c) For each domain there are 5 possible answers (no problems =1, slight problems =2; moderate problems =

3; severe problems = 4; extreme problems = 5) [9] and the patient chooses 1 of them;

- d) The questionnaire also contains a visual analog scale (VAS) - the patient indicates the part (numerical value) of the scale that most accurately reflects his/her current health status (for the specific current state).

IVI (Impact of Vision Impairment) is a questionnaire:

- 1) Applied based on the standard recommendations of ICHOM (International Consortium for Health Outcomes Measurement) for assessing the health-related quality of life of patients with visual impairment.
- 2) Contains 32 questions used to determine the level of limiting the daily activities of patients as a result of visual impairment.
- 3) The questions are separated in five domains: mobility; household and personal care; social and user interactions/relationships; free time and professional life and emotional reaction to vision loss;
- 4) The questions have the following possible answers: "not at all" (0), "rarely" (1), "little" (2), "significant" (3), "many" (4), and "all the time" (5), and for some elements, the answer could be "impossible for me due to impaired vision" (5) or "I do not do it for other reasons" (8) [10].

To ensure the anonymity of patients, a special system for filling the questionnaires was developed, generating a corresponding 9-character code for each patient.

- 5) Code generation:

- a) The first 6 digits of the patient's identification number;
- b) The first letter of the patient's name and surname;
- c) M/F letter, denoting the gender.

As a result of the implementation of patient-related

outcome measurement (PROM) in the eye clinic, 65 patient have filled in the questionnaires but due to missing data, 60 patients were included in the analysis. As the number of patients in different age groups is small, the most reliable conclusions could be made for the age group ≥ 75 years and for the general group of patients.

The collected questionnaires were processed and analyzed. The results show that health-related QoL deteriorates with age, as measured by the EQ-5D-5L/VAS and IVI

questionnaires. The IVI score value is increasing with age while the EQ-5D score and VAS values are decreasing (Table 2). There is an exception to this trend in the age group 45-54 years, but since only 1 patient is included in this group, this value cannot be considered as statistically significant. The mean EQ-5D score for the entire patient group was 0.862, the mean VAS score was 0.862, and the mean IVI score was 2.4.

Table 2. Patients with AMD and macular edema – QoL data results for the overall patient group and divided in groups by age (EQ-5D index, VAS, and IVI score).

total	n=60	EQ-5D index value 0,862	VAS score 0,62	IVI score 2,4
18-24 y	1	1,000	0,90	0,60
25-34 y	3	0,977	0,78	2,11
35-44 y	2	0,991	0,75	2,72
45-54 y	1	1,000	0,85	0,27
55-64 y	4	0,941	0,61	1,89
65-74 y	27	0,904	0,65	2,34
≥ 75 y	22	0,755	0,52	2,76

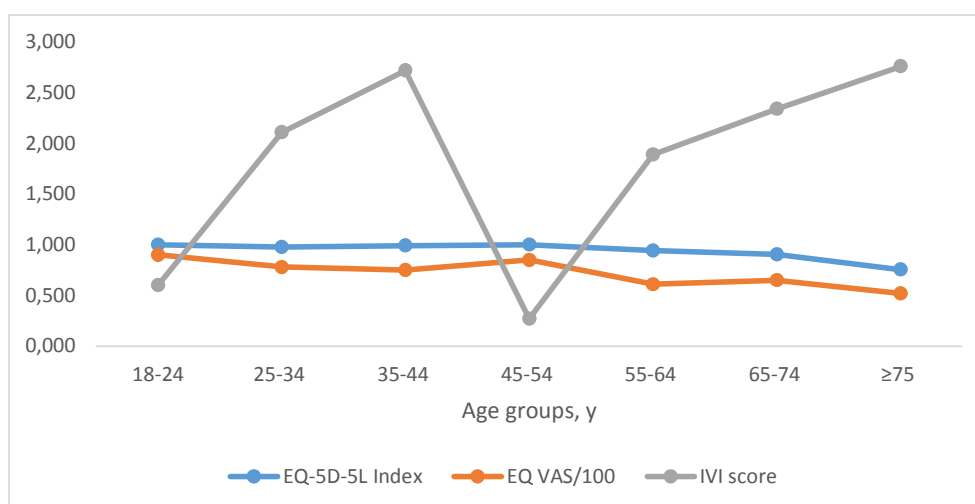


Figure 1. EQ-5D index, VAS, and IVI score results for patients with AMD and macular edema divided in age groups.

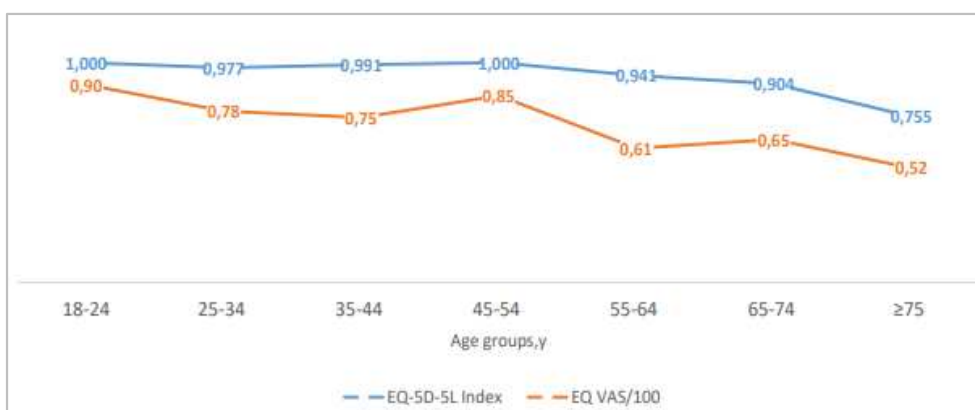


Figure 2. EQ-5D index and VAS results for patients with AMD and macular edema divided in age groups.

A comparison of the EQ-5D data results obtained from the population norms trial in Bulgaria (i.e. for a representative sample of the general population) could be made. Patients with impaired vision have a reduced health-related QoL compared to the general population, which reflects the severity of the disease (Figure 3).

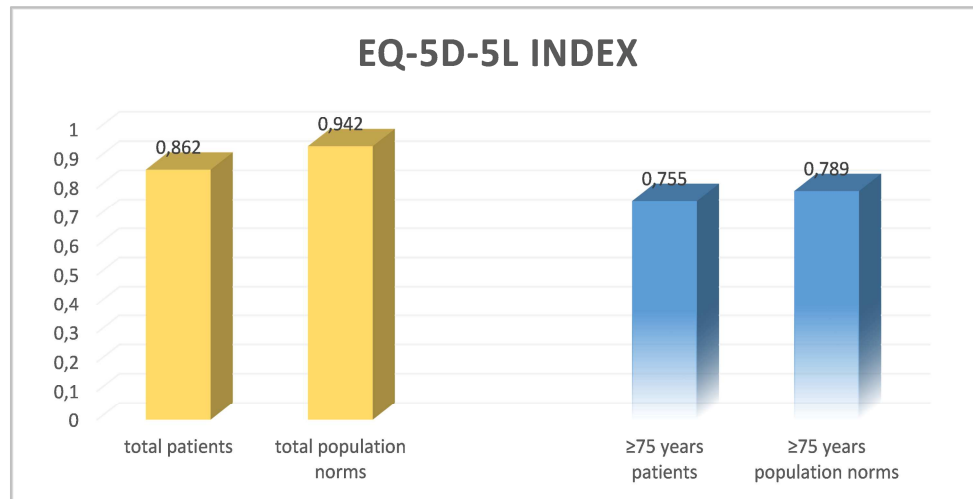


Figure 3. EQ-5D results: comparison between patients with AMD and macular edema and the general population (total and in the age group over 75 years).

When analyzing the data for the three indicators by gender, the results show that the disease has a more negative impact on the health related QoL in women (Figure 4). The EQ-5D

score and EQ-VAS/100 values in women are lower than in men (0.838 vs 0.879 and 0.60 vs 0.66, respectively, in both indicators), and the IVI score increases (2.43 vs 2.24).

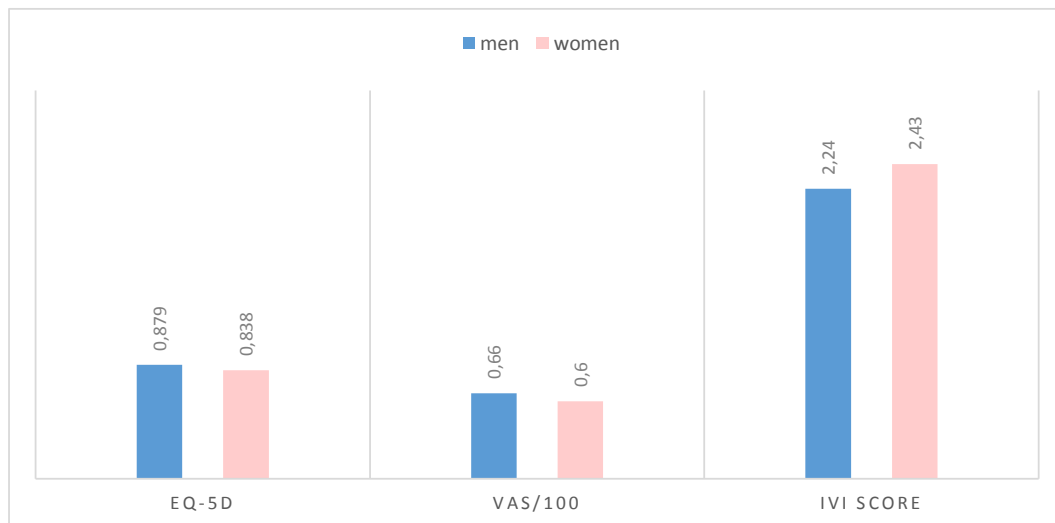


Figure 4. EQ-5D index, VAS score, and IVI gender score for patients with AMD and macular edema divided by gender.

The analysis shows that the percentage of patients reporting problems in all EQ-5D domains is significantly higher than the population norms, which again demonstrates the burden of the disease and how impaired vision negatively affects patients' QoL (Table 3 and Figure 5).

Table 3. Percentage of patients with AMD and macular edema reporting problems from the EQ-5D domains.

EQ-5D-5L dimensions	level	Total n=60
Mobility	no problems	29 (48,33%)
	slight problems	11 (18,33%)
	moderate problems	12 (20,00%)
	severe problems	8 (13,34%)
	unable to	0 (0,00%)
Self-care	no problems	40 (66,67%)
	slight problems	8 (13,33%)
	moderate problems	9 (15,00%)
	severe problems	3 (5,00%)
	unable to	0 (0,00%)
Usual activities	no problems	25 (41,67%)
	slight problems	14 (23,33%)

EQ-5D-5L dimensions	level	Total
		n=60
Pain/discomfort	moderate problems	13 (21,67%)
	severe problems	8 (13,33%)
	unable to	0 (0,00%)
	no	27 (45,00%)
	slight	15 (25,00%)
Anxiety/depression	moderate	13 (21,67%)
	severe	5 (8,33%)
	extreme	0 (0,00%)
	no	23 (38,33%)
	slight	19 (31,67%)
	moderate	9 (15,00%)
	severe	9 (15,00%)
	extreme	0 (0,00%)

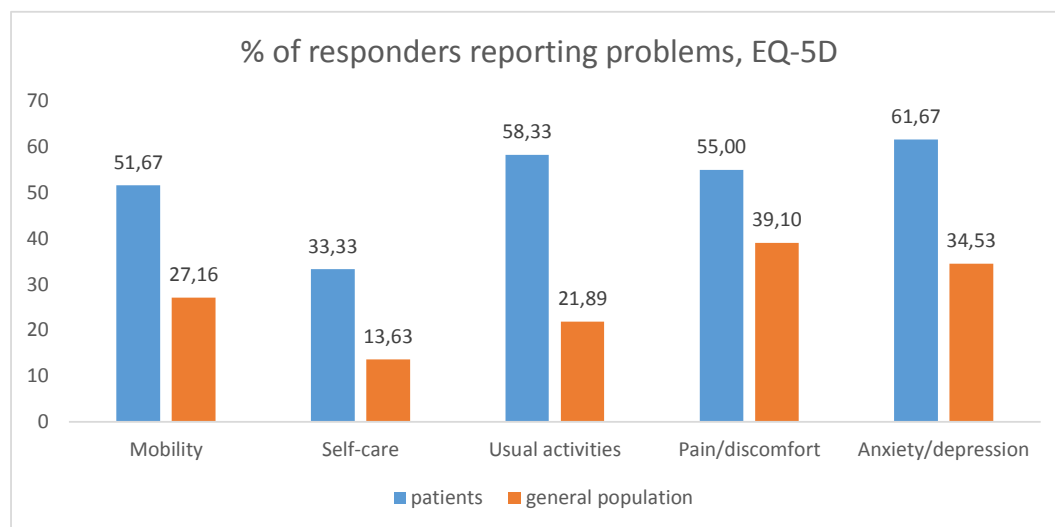


Figure 5. Percentage of responders reporting problems from EQ-5D domains - comparison of patients with AMD and macular edema and general population data (population norms).

Figure 5 shows that the largest percentage of patients report problems with anxiety/depression domain, daily activities, and pain/discomfort. The percentage of patients who report mobility problems as a result of impaired vision is also high. This correlates with the mean domain values of the

IVI score - the data from the IVI questionnaire shows that impaired vision has the greatest impact on patient mobility (Figure 6). IVI scores in the individual patients range from 0.27 to 5.00.

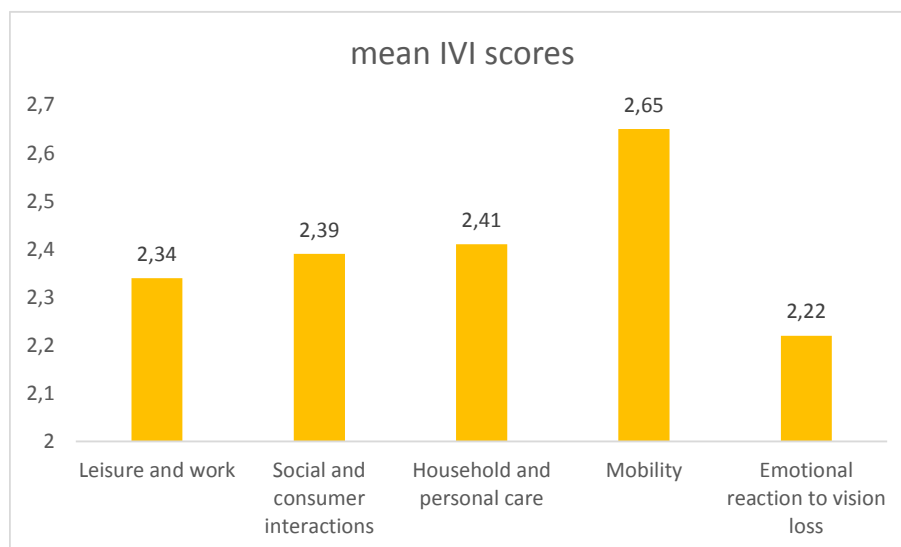


Figure 6. Mean values of IVI questionnaire scores for the individual domains.

As a future step to complement the analysis and improve the statistical reliability of the results, it is recommended questionnaires to be completed by as many patients as possible, and they should be encouraged not to miss questions or data fields (inability to use the results for patients with a missing ID number or unmarked gender; missing answers to some questions requires the removal of this data from the analysis and compromises the quality of the results).

The analysis could be even more comprehensive by monitoring the condition of each patient over time. For this purpose, it is recommended questionnaires to be filled in by the patients on a base line, i.e. *at diagnosis* and *before starting treatment*, and then after a certain period of treatment (eg. 6 months, 1 year, etc.), in order to be able to follow up effect of the therapy.

Moreover, the clinic could expand the range of patient-related data measured by implementing data collection in other ophthalmic diagnoses.

Regular trainings on the selection of PROM methods are organized that aim to assist the strategy development for the selection of standardized questionnaires and appropriate periodization, as well as to validate and subsequently analyze the data collected.

As a result of the successfully established PROM process for patients with AMD and macular edema in the ophthalmology clinic, the reporting of outcomes is performed in the following sequence:

- 1) internal reporting within the department,
- 2) reporting between departments,
- 3) external reporting to key stakeholders in accordance with the aims of the healthcare provider.

This sequence allows for transparency, exchange of experience, negotiations and agreements with key stakeholders, training, and innovation.

The successful PROM implementation allows the ophthalmology clinic to:

- (a) Improve its activity through regular PRO data processing and analysis for patients with AMD and macular edema,
- (b) Monitor the effect of VEGF-inhibitor therapy on the QoL of patients with AMD and macular edema,
- (c) Optimize medical care focusing on the outcomes,
- (d) Emphasize on the commitment and development of the medical specialists in the clinic.

5. The Way Forward

One of the most important steps in the introduction of VBHC is the definition, measurement, and comparison of outcomes for the respective medical condition. Outcomes must be rewarded in the direction of their improvement, and afterwards - in the direction of improving the process efficiency.

Outcomes (CROs and PROs) are specific for the particular medical condition and are multidimensional. For each

medical condition, no single health outcome reflects the outcomes achieved by providing the full cycle of care. Outcomes are measured with standardized sets of questionnaires for the specific medical condition, in a certain period and at patient level. This should not exclude outcome measurement at population level. Improving one outcome could be beneficial to others. The timely treatment of many diseases, for example, could improve recovery. However, the measurement could identify where the *outcomes need to be compromised* - for example, more complex and severe treatment could be required to achieve better recovery, or a higher risk of complications could be accepted.

Healthcare delivery in Bulgaria includes many organizational units, ranging from hospitals to medical practices and units providing single services, but none of them fully comprise the limits within which values for patients are created. When there is an option for bundle payment for the entire treatment cycle, *if outcomes and processes are measured for the entire treatment cycle*, then investors will focus on building integrated practice units and providing integrated services that meet the patients' needs within the specific medical condition.

The introduction of outcome measurement as a routine process in healthcare practice in Bulgarian clinics is a key step towards improving the model of healthcare delivery. After the successful pilot project in the ophthalmology clinic, steps towards the implementation of the process in other Bulgarian clinics are determined. Initiatives have already been launched to collect CROs and PROs of patients in several pilot centers in the country in the field of ophthalmology, oncology, cardiology, and orthopedics.

To achieve this goal, it is very important to ensure constant communication between the team members involved in data collection, processing, and analysis. To accomplish this task, it is important to establish a culture of organizing regular meetings between all team members involved at each stage of the process. This way, a culture of sharing and taking shared responsibility is created.

The real-world practice shows that it is good to start with measuring CROs and PROs, at the level of a specific indication, step by step, as the scope and number of indications expands gradually.

As further steps, collection and processing of PRO data digitally is planned by implementing an electronic software system and completing standardized questionnaires on specially designed mobile devices onsite in the clinic with the assistance of the medical staff, thus ensuring the completion of the questionnaire and providing adequate assistance to the patient if any questions arise during completion.

Digitization will facilitate data collection and the staff by reducing the possibility of human error and speed up the time of data processing because data could be automatically generated on a cloud platform and downloaded electronically along with data visualization in tables, figures, and graphs.

6. Key Messages

6.1. *The Application of TDABC Allows for Process Optimization and Frees Capacity*

TDABC and process mapping allows for identification of all steps included in the healthcare delivery process, the staff involved, as well as the time required for execution, thus calculating the workforce available of each staff member and allocating activities/freed capacity from one team member to another. *This free capacity is essential both for the senior management to understand the need for integrating new activities with high added value and for the staff. Thanks to the freed time, activities with added value for patients could be introduced into the routine practice without adding additional administrative burden for the staff.*

6.2. *Data Collection (on CROs and PROs) Should Be Integrated as a Part of the Daily Practice in the Medical Care Delivery [11]*

The integration of data collection related to CROs and PROs must be done in a way that does not add additional administrative burden to medical staff. Processes should be included as a part of the routine clinical practice, which will also ensure their execution. If data collection processes are seen as an additional process of the healthcare delivery, they will always be left in the background on account of the medical staff's clinical responsibilities.

6.3. *Strategy for Data Collection Is Key to Successful Real-World Implementation*

For successful implementation of outcome measurement in the clinical practice, it is extremely important to build a clearly defined strategy for structuring the process. Objectives and steps should be outlined clearly, starting with a specific indication and gradually expanding the scope. The choice of standard sets and periodization is important. There is a need for constant communication between team members, who will be responsible for the measuring, collecting, analyzing, and processing data, regular meetings of all members, and ongoing training.

6.4. *The Desire of Senior Management to Implement New Activities with Added Value for Patients and Staff Motivation Is a Key Factor for Success*

To measure outcomes - both CROs and PROs, it is necessary that the clinic's top management realizes the need to integrate this process into the routine practice. Only then it would be possible to establish a new culture that can be transferred to the clinic's medical staff. Cultural change could only be achieved with the participation of visionary clinical leaders, ready to be pioneers and innovators that could see the benefits of implementing the value-based healthcare concept. The staff's motivation for additional activity would then happen naturally, with an understanding of the importance and significance, as well as the benefits of this new additional activity. This must be accompanied by

freeing-up additional capacity, which allows the acquisition of new responsibilities without additional burden.

6.5. *Reporting of Outcomes Is a Key Success Factor*

Reporting outcomes creates transparency, allows for exchange of experience between the working staff in a particular medical institution (internal reporting), as well as for exchange of experience with other medical institutions (external reporting), and provides an opportunity to conduct benchmark analysis, education, implementing innovations, scientific publications preparation, participation in scientific conferences and forums. Reporting outcomes provides an opportunity for communication with stakeholders and paying institutions, and is a solid basis for negotiations in changing payment schemes for a particular healthcare service.

It should start with internal reporting between clinicians, then extend the reporting scope to external to the clinic clinicians, and expand reporting over time with referring sources, payers, and patients.

The most important driver for improving value in healthcare should be the reporting of standardized outcomes among all stakeholders, which turns outcome measurement into a universal process.

7. Recommendations for Outcome Measurement

1. Creating a safe environment for experimentation through the incentives based on the outcomes achieved, rather than punishment the absence of such outcomes.
2. Regular meetings and continuous communication are the key to transparency, exchange of experience, and introduction of innovations in the healthcare system.
3. Shared responsibility, commitment, and motivation of the team involved are key to the successful implementation of new processes into the routine practice and data collection, analysis, and reporting.
4. The selection of pilot projects should be carefully considered before proceeding to launch. The outcomes must be communicated constantly while expanding the scale gradually.
5. Changes must be made step by step, starting with small changes and constructively moving to larger ones. Drastic changes are not recommended.

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