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The Maturity Level of Quality Management and Medical Service Improvement by Wielkopolska District Hospitals

Keywords: the maturity of quality management; health service improvement; hospital development

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Abstract

Theoretical background: Quality management and medical service improvement in district hospitals enables to achieve a number of internal and external benefits. It is a long-term process of conscious transformation of the existing state into a desired and accepted one by the concerned stakeholders. The diagnosis of the medical service organizations' performance is an important aspect in the context of building a hospital of the future which is focused on quality, development and improvement.
Purpose of the article: The article reveals the positions of hospital managers (directors) on the current level of the quality management maturity service improvement of the medical facilities they manage.
Research methods: A diagnostic survey was conducted using a paper questionnaire. The form was handed in person and filled in the presence of the author. This provided an inducement for analysis and conclusions. The study was performed in 2022.
Main findings: The level of implementation of the quality management system (QMS) principles in the surveyed hospital organizations, despite the variability, uncertainty, complexity and ambiguity of the environment, was evaluated at 3.39. This means that the practice of the QMS is widely established, but not in most areas. Therefore, the scope of the principles cannot be considered as complete. The result is different for the assessed maturity of quality excellence in the selected accreditation standards. The surveyed

district hospitals evaluated their maturity level at 3.69. Thus, the respondents considered that the maturity level to be close to 70%. They identify the practice as typical (only some exceptions are deviations from it). The surveyed hospitals also have evidence of continuous improvement after at least one year. Another important aspect concerned maturity research in relation to innovation. The surveyed entities determined this parameter at the level of 3.50, which corresponds to approximately 66%. The highest level of maturity achieved the hospitals in the operational skills in conditions of disruption. They assessed the adaptation abilities and taken actions towards sustainable development at the level of 3.82 (72%). These results prove that the district hospitals in the Wielkopolska voivodeship take steps toward excellence, but their level of excellence in 2022 is not full (as it does not apply to 100% of occurrences, and the practice is also not implemented in entire hospitals, without exceptions).

Introduction

What if hospitals were personified and had human features? The use of this stylistic technique would allow, in accordance with philosophical considerations, to formulate the following thought: the perfection of hospitals is the readiness to do what is best and to move towards achieving this goal. We would say that the perfection of hospitals could be identified with their perfectionism or with the knowledge of their imperfections. We would recognize that, paradoxically, weaknesses can provoke a hospital to develop and make it ready to change. Most probably, the fact that a medical facility is on the path of change may be a testimony to its perfectionistic motivations. The utilitarian goals of hospitals are health and protection of human life, and these goals are, at the same time, cardinal values for the majority of Poles (Czapiński & Panek, 2015). Therefore, should the improvement of operations in hospitals only take place through the individual effort of medical institutions? There is a lot of talk about the idea of sustainable development of health systems. The new approach manifests itself in a change of the center of gravity, which is clearly a greater focus on patients and their needs in terms of the quality of life and the access to services. The activities require giving more importance to holistic planning of various areas at the organizational, financial, socio-cultural, IT, developmental, innovative or knowledge levels. The process should involve representatives of external stakeholders (patients, their families, payers, owners, founding bodies, suppliers, institutional recipients, strategic partners) and internal stakeholders (medical, support and administrative staff). It is in the society's interest to go for excellence to ensure a common and equal access to healthcare. Such activity seems to be better than dealing with the consequences of inaction.

Polish hospitals have experienced a deep transformation process in recent years, resulting with the adaptation of the form of their activities to the new socio-economic conditions. Work on improving of medical services became a part of the permanent duties of management. In the context of these trends, the area of quality management issues becomes very important. The aim of the article is to diagnose the functioning of organisations that provide medical services in relation to quality improvement activities. This knowledge is an important aspect in terms of building

a hospital of the future focused on quality, development and improvement. Today, the fate of district hospitals evokes great feelings. The entire healthcare system is sometimes considered as dysfunctional. The result of such condition is noticed, but are its sources well interpreted? This is very important because, as Aristotle said, "true knowledge is the knowledge of the causes". Quality, service availability, evaluation of services, personnel shortages, introduction of categories and motivation to improve quality, have chance to tip the scale. You may wonder whether the increasing hospitals' debts is connected with the people managing and supervising the facilities (including their incompetence, lack of professionalism, proper care)? Perhaps the problems are caused by an external factor, which is understood as a complex system of many trends (including demographic, political and legal, economic and operating mechanisms of financing hospitals)?

The conducted research does not provide answers to all raised questions. However, it seems that it will throw light on the aspect of management, the level of hospitals' maturity and the pro-quality measures.

Literature review

The literature review shows that there have been numerous studies on quality management, as well as on the systemic approach to quality management and its improvement. There is also an increasing number of researchers who have placed the maturity of quality management systems at the centre of their interests. The group of undisputed authorities on quality and improvement issues includes: Deming, Juran, Crosby, Oakland, Ishikawa, Taguchi, Feigenbaum. Among Polish researchers, such names as: Kolman, Kindlarski, Oyrzanowski, Wasilewski, Skrzypek, Borys, Hamrol, Cholewicka-Goździk, Lisiecka, Łuczak, Wolniak, Tkaczyk, Wawak, Zymonik, Bugdol, and Borkowski, should not be missed. The analysis of the literature of pro-quality aspects in the context of healthcare also allows to conclude that many authors take the effort to face this subject. The increased attention to the problem of excellence in hospitals may be related to the implementation of ISO 9001 quality management standards or to join to accreditation (in Poland, carried out by the CMJ Quality Monitoring Center). The quality problems in health services were also highlighted thanks to the popularization of the EFQM Excellence model, as well as the Polish Quality Award (PNJ).

The tool enabling the review of the literature on the subject is the PubMed / MEDLINE database. It contains over 34 million references. For example, a search for the phrase "quality improvement + hospital + management" with the simultaneous selection of the abstract option allowed us to generate 29,948 results. In the database, the first studies devoted to this subject, appeared in 1971. The following years were associated with an increase in publications, while 2010 was so critical that the number of articles exceeded 1,000 studies. The peak moment was in 2020,

when the number was 3,150 publications. The database review, taking into account previous phrases and additional inclusion of the word "Poland", brought this number to 171. Including the phrases "ISO EFQM hospital accreditation" made it possible to find 8 results. In another database, called "ELSEVIER", after entering the phrase "quality improvement + hospital + management", resulted in 5,249 findings, while after entering the phrase "ISO EFQM hospital accreditation" showed 1,456 results. Literature query could also be carried out in databases such as: Web of Science, Scopus, EconLit, ABI/INFORM and Business Source Premier.

Initially, there was information in scientific studies emphasizing the importance of quality improvement. The authors pointed to the importance of high-quality factors (attributes) while providing services by doctors (Cleland, 1995; Carey & Lloyd, 1995). However, it quickly turned out that a planned system of reliably performed activities is needed, in which employees could carry out the assigned tasks in accordance with the standards. This approach was named as "quality assurance", in short QA (Marciniak, 1999, p. 78; Lenartowicz, 1998, pp. 15, 35–39; Niżankowski, 2000, p. 417; Batalden & Davidoff, 2007, pp. 2–3). The World Health Organization also pointed out the promotion of such activities. In the study: "Health Goals in the Health for All Program. Health Policy in Europe", the member countries were asked to take into account the need to create structures and develop processes of continuous improvement of health quality. It recommended systematic monitoring of: health achievements, quality of life, patient satisfaction, availability and effectiveness of funding. Nearly in parallel, a complementary Risk Management concept appeared, which, according to Dobska and Dobski, was to protect the interests of the hospital and not, as in the case of QA, to protect patients (Dobska & Dobski, 2016, p. 83). The next stage of evolution in searching for excellence in healthcare was quality management (including, in many cases, the implementation of ISO 9000 series standard. Research devoted to this issue can be found in the works (Bryce & Carson, 2004, p. 26; Klazinga, 2000). The result of the search for the highest level of commitment to quality issues resulted in the implementation of the TQM philosophy, or total quality management.

Knowledge of quality improvement in healthcare has evolved. It is worth to mention the proposal of chronology considering three stages of pro-quality activities in the healthcare sector. The first step (the so-called Quality 1.0) was to define the quality level (through inspections, controls, standard development, certification). At the second stage (the so-called Quality 2.0), the activities were extended to the improvement of the process and system. The focus was on measuring performance and achieving reliability, and there was a strong accent on the role of patients and suppliers. The next stage, Quality 3.0, should be interpreted as co-production (co-creation) of health. It was agreed that it was important to consider how to improve the value of the "input" (Lachman et al., 2021). There is a growing voice for those who recognize that the Fourth Industrial Revolution (leading to widespread digitization) forces quality management to adapt. Based on these opinions, emerges Quality

4.0, becoming the next stage in the development of activities to improve quality. It develops on a solid, traditional foundation of quality, and its main change drivers are mainly technologies. Jacobs strongly emphasizes that Quality 4.0 requires transformation in the quality culture, leadership and implemented processes (Jacobs, 2017). According to the researchers, specialists in Quality 4.0 must have such skills as: creative thinking, leadership, communication and teamwork. In addition, they should have knowledge of new technologies, cyber-physical systems and use Big Data in decision-making processes. Moreover, they should motivate the team, be open to changes, deal with conflicts, control emotions, create value for clients and stakeholders (Santos et al., 2021, p. 18). It is worth paying attention to the fact that Quality 4.0, understood as combining new technologies with traditional quality methods, in order to optimize efficiency, operational and innovative excellence, corresponds in its assumptions with the idea of Smart Hospital.

The contemporary view to quality management leads us to adopt another perspective, at the fifth level, and recognize it as Quality 5.0. The announcement of these changes can be seen in the observation of van Kemenade and Hardjono (2019), who notice the need to move quality management towards epistemic flow, defined by Markauskaite and Goodyear (2016) as "the ability to understand, switch and combine different types of knowledge and different ways of learning about the world". Quality 5.0 will be understood as means of making better decisions and applying new working procedures in order to achieve sustainable activities, and, thus, foster the development of a sustainable society (Deleryd & Fundin, 2015). The contemporary paradigm corresponds to the research project of the Swedish Academy of Quality Management SQMA and the Swedish Quality Institute SIQ. As part of the project called "Quality 2030", researchers and experts assumed that quality is moving in the direction of (Fundin et al., 2020):

– applying a systems perspective,

– stability in changes (developing the organisation's ability to deal with new external forces while maintaining stability and coping with internal processes),

– models of intelligent self-realisation (drawing from models, learning to co-design and testing contextual combinations of self-organisation with traditional leadership),

– integration with sustainability (care for the relationship between quality and sustainability, the accent should be on economic, ecological and social dimensions),

– the establishment of a higher purpose (co-creating a sustainable future) to act as a driver for improvement and performance in the organisation.

Furthermore, this research project identified values that should be fostered as they lead to a stable transformation of quality management in a rapidly changing environment.

Quality 5.0 corresponds to a new trend called "sustainable development in healthcare", which highlights the need to include the goals of mentioned sustainable development in changes to be made in healthcare systems (Kruk et al., 2018). Values such

as dialogue, cooperation, commitment, passion, searching for optimal stable solutions, empathy and trust should become the basis for sustainability in healthcare. Although quality as a category was not unfamiliar to domestic researchers, as demonstrated by, among others, studies by Kiliński (1979), it was not until the 1990s that the quality aspect in healthcare gained particular attention. At the turn of the century, the aspect of quality management and the issue of accreditation attracted interest (Lenartowicz, 1998; Murkowski et al., 1996; Bedlicki et al., 1998, p. 35). After 2000, the time came to introduce knowledge about quality management (i.e. the philosophy of Total Quality Management) in the context of medical services. This task was carried out, for example, by Opolski et al. (2003), Opolski and Waśniewski (2012), or Dobska and Dobski (2016). The following years brought in-depth research studies, showing the possibility of implementing the QFD method in hospitals (Wolniak, 2016), emphasizing the importance of non-compliance costs in hospital management (Kister, 2018), emphasizing the role of improving work processes in hospital organization (Bartnicka, 2020) and showing what the process maturity of hospitals is (Deryna, 2020). Also interesting are studies based on a literature review in which the authors examined the relationship between the quality of care and hospital financial performance (Dubas-Jakóbczyk et al., 2021) or those relating to the lean concept (Bukowska-Piestrzyńska et al., 2021; Bąk, 2021). Although the wealth of literature seems undisputed, there is still lack of studies that would indicate what is the current level of maturity of quality management and medical services improvement. It seems important to present this self-assessment in interaction to turbulent times (resulting in the variability, uncertainty, complexity and ambiguity [VUCA] of the environment). Moreover, the author's ambition was to define the relationship of the hospital's maturity level in the context of innovation. This study will attempt to fill this gap, at least partially, by a synthetic presentation of the results of research carried out among Wielkopolska district hospitals.

Research methods

In summary, the research procedure involved three stages. The first stage related to the preparation for the proper examination (including, a literature query, construction of a preliminary research questionnaire and conducting preliminary research). The next stage involved constructing the questionnaire, conducting a pilot study, constructing the final version of the questionnaire and conducting the survey. The last (third) step was to analyse the results.

The aim of the research was to show the maturity level of quality management and improvement of services provided by district hospitals in the context of a turbulent environment (full of variability, uncertainty, complexity and ambiguity). Moreover, the author's ambition was to define the hospital's maturity level against the background of management, organisational, technological, service and social innovations. In the presented study, the following research hypotheses were formulated:

H1: The maturity level of the quality management system is higher than the maturity level of the manager's adaptive skills and ability to adapt to new VUCA circumstances.

H2: The maturity level of the quality management system is higher than the maturity level associated with openness to new solutions.

H3: The maturity level of the quality management system is higher than the maturity level related to the accreditation guidelines of CMJ Quality Monitoring Center.

H4: The maturity level related to CMJ Quality Monitoring Center accreditation guidelines is higher than the maturity level of the manager's ability and ability to adapt to new VUCA circumstances.

H5: The maturity level related to CMJ Quality Monitoring Center accreditation guidelines is higher than the maturity level related to openness to new solutions.

All district hospitals operating in the Wielkopolskie voivodeship (30 entities) were invited to the study. A total of 18 hospitals replied to the questions (in the form of statements) contained in the paper questionnaire. The survey was a volume study, although qualitative features were examined. The form contained 123 closed questions and one open question. The single-choice questions were based on a five-point Likert scale. The questionnaire also had a metric. The analytical process and statistical work were carried out in MS Excel. The study took six months from mid-March to mid-September 2022. Except of standard results analysis methods, more advanced correlation detection tools were used to find meaningful correlations with significant strength. The weaknesses of the presented research methodology were: high costs of getting to the respondents, long time of survey completion, long questionnaire, the possibility of the "survey effect".

The respondents, using the mentioned five-point Likert scale, determined the level of system maturity. A presentation of the response key is provided in Table 1.

Table 1. Description of the degree of maturity

Maturity level	Statement in accordance with the description of the system maturity level
5	Yes, nearly 100% of incidents. The practice is implemented in the whole hospital, basically with no exceptions. Evidence of continuous improvement after a longer period of time, e.g. 3 years.
4	Mostly true, approximately 75% of the time. Practice is very usual, with some exceptions. Evidence of continuous improvement after an extended period of time, e.g. at least one year.
3	Partially true, approximately 50% of incidents. Practice is widely established, but not in most areas. Occasional evidence of clear improvement not fully.
2	Minimally true, approximately 25% of incidents. Practice is only observable in some areas. Occasional reviews or evaluations resulting in some upgrades and improvements.
1	No, or not true, 0% of occurrences. Practice is not established, not undertaken, not much happens.

Source: (Wolniak, 2011, p. 337).

The respondents were part of the group of healthcare entities providing medical services (called hospitals). They have a form of ownership – public hospital. They are located in the Wielkopolskie voivodeship. All respondents (100%) described their type of hospital as a district one. As many as 83.33% of the respondents belong to the group of first degree hospitals, the remaining 16.67% – second degree. The vast majority of them (94.44%) are listed as surgical and multi-specialist hospitals, and the remaining one as non-surgical. Most of the respondents (88.89%), are ISO 9001 certified. Most often, these entities have several buildings located in one area – 77.78%. There are also those that have several buildings located in several areas (16.67%) and only 5.56% of the respondents own one building. The respondents have numerous laboratories, including: radiological laboratories (94.44%), ultrasound (94.44%), computertomography (88.89%), endoscopic diagnostics (88.89%), laboratory diagnostics (77.78%) and microbiological diagnostics (55.56%). In addition, they have operating rooms (94.44%), an archive, drug supply, blood bank, sterilization room, emergency room or SOR unit and other sections.

Results

There are four areas of research. The first one refers to activities taken in the context of disruptions generated by the environment (its variability, uncertainty, complexity, ambiguity) and 15 assigned statements. The second area is related to the level of maturity in the context of innovation (management, organisational, technological, service and social). It contains 17 statements. The third part covers activities within seven zones (in accordance with the ISO 9001 standard), i.e. patient orientation, leadership, people involvement, process approach, continuous improvement, evidence-based decision-making, relationship management, 79 statements in total. The fourth area refers to the accreditation guidelines of the Quality Monitoring Center and contains 12 statements. The respondents replied in total to123 statements. The average responses in the areas and zones together with the sum of standard deviations are presented in Table 2.

Table 2. The results of the maturity level research in district hospitals

Questions	Part I	Part II	Part III							Part IV
			1	2	3	4	5	6	7	
1	3.72	4.22	3.61	3.50	3.67	3.06	3.94	3.67	3.72	3.78
2	3,.50	3.61	3.61	3.28	3.72	3.00	3.28	3.83	3.67	3.89
3	3.94	3.39	3.61	2.72	3.28	3.67	3.44	3.72	3.33	4.22
4	3.39	3.89	3.61	3.39	3.17	2.94	3.28	3.67	3.44	3.56
5	3.83	3.67	3.33	3.78	3.39	3.56	3.33	3.67	3.67	3.83
6	3.61	3.50	3.33	3.83	2.89	3.11	2.89	3.61	3.00	3.78
7	4.00	3.89	3.61	4.11	3.33	3.06	3.22	2.94	3.11	3.33
8	3.83	3.28	3.39	3.50	3.28	3.17		2.94	3.11	3.22
9	4.22	3.50	3.83	3.56	3.33	3.17				3.72

Questions	Part I	Part II	Part III							Part IV
			1	2	3	4	5	6	7	
10	4.06	3.44	4.00	3.28	3.28	3.22				3.44
11	3.83	3.44	3.44	3.56	3.11	3.22				3.39
12	4.17	3.67	3.28	3.28	3.06	3.39				4.06
13	3.61	3.39		3.72	2.78					
14	3.89	2.94		3.50	2.83					
15	3.72	3.06		3.56						
16		3.61		3.39						
17		3.00		3.67						
18				3.67						
Sum	3.82	3.50	3.56	3.52	3.22	3.21	3.34	3.51	3.38	3.69
			3.39							
Av. deviation	0.66	0.81	0.75	0.71	0.70	0.69	0.77	0.76	0.75	0.90
			0.73							

Source: Author's own study.

According to the presented averaged responses of respondents, the surveyed hospitals do not reach the level of maturity of the system close to the grade 5. It means that the group as a unit does not have evidence of continuous improvement practices for a period of at least three years in 100% of cases. The average score for all the statements is 3.6, which can be interpreted as the practice being applied within typical range in 75% of the cases for a period longer than one year. This (according to Table 1) is indicated by responses close to number 4.

The highest rated area is part I, relating to the hospital's maturity level in the context of ongoing disruptions: volatility, uncertainty, complexity, and ambiguity. The respondents, as a whole group, considered the level of maturity l on this level at 3.82. On the other hand, they rated the lowest part 3, relating to activities in seven areas of quality management (3.39), with the lowest rated area relating to the principle of the process approach (3.21), followed by the assumptions of people involvement (3.22).

The highest and the lowest assessed answers seem to be interesting. It is worth to mention that the highest rating (precisely 4.22) concerns three statements. In part I, it is related to the description: "The manager actively listens to the interested parties, showing understanding and empathy". In the second part, it concerns the statement: "The manager knows what innovation is for a hospital and what it can achieve thanks to it". The score of 4.22 was also given to the sentence from part IV: "There is a quality team in the hospital". The respondents stated that the manager develops adaptability and quickly adjusts to new circumstances (average 4.17). The respondents confirmed that they identify the needs of organizational changes in the hospital (4.11). They also recognized that the management supports and promotes quality management and activities to improve the quality of care (4.06). The respondents confirmed that it is a typical practice for a manager to communicate with stakeholders to guarantee transparency of their own actions (average 4.06). In addition, respondents agreed that the manager copes with day-to-day responsibilities and with the implementation of major changes (average 4.00).

The lowest scores (below 3.0) are assigned to the following statements (in brackets the average assigned to the statement and the area where it is located):

– developing an effective strategy, policy and business plan to meet suppliers' needs (2.72, part III, leadership),

– people's interest in cooperating with other parties (2.78, part III, people engagement),

– usage of employee satisfaction measures (2.83, part III, people involvement),

– employees' acceptance of being part of hospital and being responsible for solving problems in hospital (2.89, part III, people engagement),

– monitoring of employees' knowledge about methods that support products and processes continuous improvement. (2.89, part III, continuous improvement),

– the manager measures the effectiveness and efficiency of the introduced innovations (2.94, part II),

– usage of process performance measurements (2.94, part III, process approach),

– usage of helpful quality management models and tools in the analyses (2.94, part III, evidence-based decision making),

– avoiding sub-optimisation (putting the benefits before the whole) (2.94, part III, evidence-based decision making).

The presented data analyses allowed to verify the research hypothesis H1. The results clearly indicate its rejection. The maturity level of the quality management system is not higher than the maturity level of the manager's adaptability and his ability to adjust to new VUCA circumstances. The level of maturity of the system is 3.39 and the level of maturity of adaptability is 3.82. The difference between them is 0.43. The surveyed organisations cope better with rough environment than with the actions taken within the seven quality management areas (compliant with ISO 9001). It happens despite the fact that 15 out of 18 respondents (i.e. 83.33%) declared in the questionnaire that they had ISO 9001 certificate and implemented QMS standard.

The results clearly indicate a lack of support for hypothesis two (H2). The maturity level of quality management system was 3.39 and the maturity level associated with openness to new solutions was 3.50. The difference is 0.11. The maturity of QMS does not exceed the maturity resulting from openness to IT solutions.

The research also showed that maturity level of quality management system is not higher than maturity level related to the accreditation guidelines of CMJ Quality Monitoring Center, which was 3.69. The third hypothesis, H3, should also be rejected.

Another H4 hypothesis was also rejected, according to the research results. The level of maturity related to CMJ Quality Monitoring Center accreditation guidelines (mentioned 3.69) is not higher than maturity level of the manager's adaptability and his ability to adjust to new VUCA circumstances (average 3.82).

The H5 hypothesis has been verified positively. The maturity level related to CMJ Quality Monitoring Center accreditation guidelines is higher than maturity level related to openness to new solutions. The first maturity level was 3.69 and the second was 3.50.

Discussion

The results of the preliminary research may be surprising. The implementation of ISO 9001 standards and the certification of Polish healthcare institutions was discussed and written about at around the turn of the century. The interest in these solutions is also confirmed by numerous implementations. It might seem that maturity level of QMS will be at a high level. However, the respondents decided that this level would be 3.39 (according to the arithmetic average calculated for the seven principles). Thus (as shown in Table 1), the system is partially implemented and the practice is widely established, but not in all areas. The respondents also see occasional evidence of clear improvement. It is worth to note that one of the most important principles of "customer focus" received the highest score at the level of 3.56. The remaining average assessments of the implementation of individual principles are presented in radar form (Figure 1).

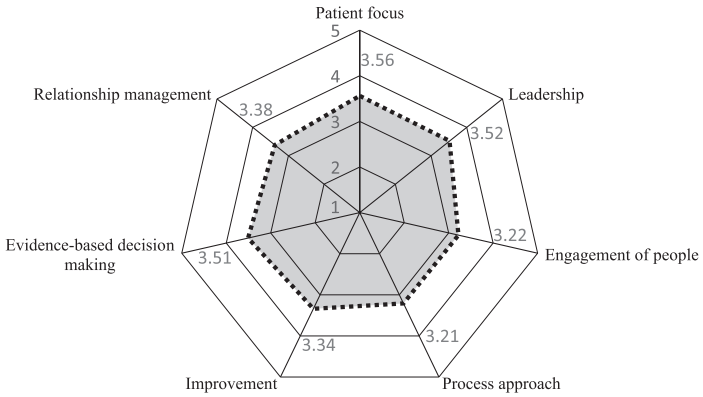

Figure 1. Radar for the implementation of quality management system principles in district hospitals

Source: Author's own study.

The hospitals moving towards the improvement of their processes under quality management system should tend to make the lines connecting the 7 points (principles), located in Figure 1, as large as possible (which means that the assessments should approach the maximum value 5). The presented graphic shows that these ratings are between 3 and 4 in all items. Deryna observes a similar situation, although with higher ratings in QMS areas. In her presented radar of quality management task implementation levels in the hospital, she shows seven principles oscillating around level 4, with the patient orientation being a principle that stands out positively at 4.61. Another highly rated principle is continuous improvement 4.40. She sees deficits in the implementation of such principles as: leadership 4.05, evidence-based decision making 4.08, process approach 4.10 (Deryna, 2020, pp. 245–246). The weaknesses, discovered by the mentioned author, only partially correspond to the research results

presented in Figure 1.[1] In the author's study, the lowest score is assigned in order to: the process approach 3.21, then the involvement of all employees 3.22 and then continuous improvement 3.34 and mutual benefits in relations with interested parties 3.38. The best-rated principles by the respondents are already mentioned: customer (patient) orientation 3.56, leadership 3.52 and evidence-based decision making 3.51.

Paying attention to the principle of "patient orientation" is an expression of a more comprehensive understanding of patients' needs and expectations, as well as their satisfaction. As noted by Rudowska, Polish healthcare, following the example of most of the united European countries, shall strive to increase the value of the relationship between medical service providers and their recipients. The provider should offer a unique and valuable component. This creates patient trust and a feeling of being provided with excellent care. In this way, the above service values become the primary ones (Rudawska, 2007, p. 151, 190). Krot provides evidence of the impact of trust (in competence, kindness and emotional support as well as honesty and integrity of doctors) on satisfaction with medical services (Krot, 2019, p. 272). And although patient orientation received a lot of attention, there are still many entities in need of directions providing possible actions (Bukowska-Piestrzyńska, 2019, p. 8).

The second most highly rated principle by the respondents concerns leadership. The research, conducted in Poland in 2007–2008, clearly shows that managers, managing healthcare facilities, were already active leaders (they learnt new skills and used better cognitive tools to make rational leadership decisions) (Frączkiewicz-Wronki & Austen-Tyndy, 2009, p. 213). The importance of leadership is confirmed by the research from 2020 conducted by Deryna. It shows that the competences of the management have the greatest impact on the quality of services provided by hospitals (Deryna, 2020, p. 242).

According to the author, there are high scores assigned to the improvement guidelines contained in the accreditation standards. This is how the functioning of teams for the quality of education was estimated at the level of 4.22. It was also agreed that the management supports and promotes quality assurance and implements measures to improve the quality of care. This statement was rated as compliant with the facts at the level of 4.06. As indicated by the answers of the respondents, the hospital also develops a program of quality improvement activities (3.78), which is verified at least once a year (3.89). In addition, patient opinions are also measured (3.72). As noted by Dobska and Dobski, the hospital

> by obtaining accreditation, informs about good functioning and meeting the expectations of patients. The benefits of accreditation are not limited only to the patient itself. The desired phenomena resulting from accreditation include, first of all, stimulation of the quality improvement of patient care, increased social trust in the hospital, supporting staff education and qualifications, building a marketing strategy as well as providing funding sources. (2016, pp. 233–234)

[1] The differences may be related to the specificity of the hospitals participating in the study. Deryna invited all Polish hospitals, all levels (including public and private) to explore. She received responses from 122 hospitals, while 18 poviat hospitals from the Wielkopolska voivodeship participated in Chojnacka's survey.

The assessment of the hospitals' maturity level in the context of the effectiveness of actions taken in conditions of variability, uncertainty, complexity, ambiguity, received the highest score (arithmetic mean 3.82). It gives a rise to the following reflections. The hospital managers have been struggling with many problems for years, including: shortages of medical staff, difficulties in accessing patients to treatment, service price, misleading information, insufficient infrastructure, as well as general rising costs. On top of the old difficulties, there are new challenges, such as the increase in the number of people belonging to the group of an ageing population, or the pandemic. Many people (practitioners, experts) wonder how to find themselves in the VUCA world? Hospitals seem to know the answer to this question. Głód (2020), among others, wrote about the management of variables to ensure value growth within healthcare bodies. It can be concluded that previous experiences allowed hospitals to develop adaptive skills. The research shows that in crisis circumstances, managers are able to make decisions, modify them, and develop new rules and protocols. Not only do they develop their flexibility, but they also have a positive impact on the team they work with. Thanks to efficient mutual communication, trust, courage and faithfulness to loyalty to their core values, they take actions to ensure service to all interested parties (system partners, patients, families and communities), moving towards sustainability.

Conclusions

District hospitals perform key function in the healthcare system and they are guarantee of medical service of Polish hospital treatment. Unfortunately, they constantly face a shortage of staff (mainly nurses and doctors) and suffer from insufficient funding and infrastructure. The difficulties caused by increasing running costs will not go unnoticed. Hospitals, despite the existence of obstacles and adversities generated by the environment, implement rules that allow them to improve their management, organisational, technological service and social activities.

According to a conducted survey among Wielkopolska hospitals, managers are able to find potential, proper resources and values to run the hospital. The top management takes immediate actions and is aware of the importance of the implemented solutions for the internal and external stakeholders of the hospital. Leaders also ensure them the transparency of their own actions. In addition, managers create new patterns through innovative strategies and the usage of new technologies.

Quality improvement activities require a transformation in the quality culture, leadership and processes. Both the competences and managers skills and lowly employees are being redefined. Today, hospital managers are able to: motivate the team, be open to changes, deal with conflicts, control emotions, create values for clients and stakeholders. There are pro-quality programs in the surveyed hospitals. They are systematically verified to ensure that they are up to date. The idea of quality management

is evolving as well as quality measures. The improvement in the carried out activities by the hospital is made on the basis of regularly analysed causes of events (such as patients' deaths or extended hospital stays). The surveyed district hospitals do not avoid the possibility of drawing conclusions from the assessments of patients' opinions.

The circumstances within which the study was conducted (i.e. the ongoing pandemic and the Russian-Ukrainian war) may have affected the results obtained from the respondents. Completed studies provoke the formulation of the following observation: "The uncertainty of the environment triggers the need to fully focus on the aspect of flexibility and adaptability, as well as the recognition of timeless values". Taking into account the conditions under which the diagnostic survey was performed, it is worth continuing the study on a wider group of respondents in order to clearly accept or reject this developed thesis.

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