

Indicators of Quality of Primary Care Used in Health Systems Performance Assessment

Valeriya Nikolova

Assistant Professor at the Department of Health Economics and Management, Medical University “Prof. D-r Paraskev Stoyanov”- Varna, Bulgaria
Email: Valeriya.V.Nikolova@gmail.com

Abstract - Health System Performance Assessment (HSPA) is an instrument many countries use to assess the degree of accomplishment of their health goals. Quality of care is one of the most widely used components in the conceptual frameworks for HSPA. It is composed of six core dimensions - effectiveness, safety, patient-centredness, access, appropriateness, and continuity of care – many of which include primary care quality indicators.

Index Terms-- Quality of health care, primary health care, HSPA, quality indicators.s for identifying appropriate keywords.

I. INTRODUCTION

Health System Performance Assessment (HSPA) is an instrument through which countries assess and evaluate the degree of accomplishment of their health goals. HSPA is used for benchmarking among health systems as it helps countries to determine areas for progress in their health systems and those that need improvement (1). HSPA gives clarity about the essence of health systems, their organization, and their goals (2). The modern health care systems face various challenges leading to problems with their funding and organization (3,5). HSPA helps countries to overcome difficulties in health system performance and to accomplish their health goals.

A report by Murray and Frank from 2000 catalyzed the application of HSPA by various countries and organizations (6). In the last 20 years, different countries have presented their conceptual HSPA frameworks (7,8,17–26,9,27,10–16). The EU (28,29), OECD (30–33), the Commonwealth Fund (1,36), and the WHO (37,38) have presented reports including indicators and recommendations for better health systems performance.

HSPA conceptual frameworks comprise different areas in which health systems are evaluated depending on the

needs of the countries. Quality of care is the HSPA component used in all of the studied frameworks except of the framework of Turkey (17), which makes it a core component of HSPA (30,39). Some authors such as Arah et al., go even further stating that HSPA is in fact an assessment of the quality of care (40). Measuring of the quality of care is an important process that identifies medical services or activities with poor quality and thus reduces and prevents the emergence of inappropriate providers in the health system (41).

The Institute of Medicine (IOM) defines quality of care as "the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (39). According to the IOM, the quality of care is measured through six dimensions – safety, effectiveness, patient-centeredness, timeliness, efficiency, equity, which individually and together can lead to better performance of the health systems.

The definition of IOM is the most frequently used in the HSPA conceptual frameworks (1,8–10,12,13,24). Quality of care used in HSPA is measured through six core dimensions - effectiveness, safety, patient-centredness, access, appropriateness, and continuity of care. The indicators in these dimensions reflect the health care processes and outcomes. Primary care quality indicators are present in almost all of its dimensions - a sign of its leading role for the better performance of the health systems. Primary care is the first (entry) point of patients' contact to the health system (43,44) and plays a key role in achieving health system goals (45). The Expert Panel on Effective Ways of Investing in Health (EXPH) claims that well organized primary care helps for the better health system performance (46).

This study aims to research and systematize the most frequently used indicators for measuring the quality of

primary care used in the HSPA conceptual frameworks of various countries and organizations.

II. MATERIAL AND METHODS

The HSPA conceptual frameworks of 15 countries and their evolution through the years have been studied. These include 23 documents from 15 countries: Belgium (6,7,18,20), The Netherlands (21), Croatia (44), Malta (23), New Zealand (24), Hungary (45), The United Kingdom (25), Portugal (26), Turkey (8), Australia (9–11), Canada (12–14,46), Estonia (15), Armenia (16), Latvia (17), and The Commonwealth Fund USA (1,33) and eight reports by OECD (29–32), WHO (34,35), EU (27,28). Two reports of the Agency for Healthcare Research and Quality (USA) have also been studied (47,48). The total number of quality indicators is 905, out of which 304 different by meaning, which means that most of the frameworks use one and the same indicators. The most frequently used primary care quality indicators were systematized in adjoining dimensions.

III. RESULTS

Quality of primary care indicators are found in five of the six HSPA quality dimension: effectiveness, patient-centredness, access, appropriateness, and continuity of care (Table 1). Most primary care quality indicators fall into dimensions of effectiveness, patient-centredness, and continuity of care. No primary care quality indicators were found in the "safety" dimension.

The most of the indicators refer to ambulatory care sensitive conditions' outcomes, interpersonal aspects of health care, access-to-primary care issues, primary and hospital care coordination, and medical standards compliance monitoring.

Table 1. Indicators for measuring quality of primary care used for HSPA

Dimension	Indicators
Effectiveness	Asthma hospital admissions for adults
	COPD hospital admissions (adults)

	Complication of diabetes hospital admissions in adults
	Influenza vaccination rate (% of persons aged 65 +)
	Rate of children who receive recommended vaccines
Patient-centredness	Doctor providing an easy-to-understand explanation
	Doctor allowing asking questions or raising concerns
	Doctor involving patients in decisions about care and/or treatments
	Doctor spending enough time with patients during the consultation
Access	Financial barriers
	Physical access to primary care
Acceptability	Rate of prescribing antibiotics
	Appropriate follow up of adult diabetic patients (%)
Continuity of care	Coverage of global medical record
	Usual Provider Continuity Index
	GP encounter within 7 days after hospital discharge (% patients 65 +)
	The proportion of adult diabetic (under insulin or receiving only glucose-lowering drugs) with convention, pass/pre-care trajectory, or a care trajectory

Source: (1,6,7,9,10,12,18,20–24,26,29,31,32,49,50)

IV. DISCUSSION

The HSPA primary care quality indicators are found in almost all HSPA quality dimensions. Most of the indicators refer effectiveness, patient-centredness, and continuity of care. Dimension "effectiveness" investigates the degree of achievement of the desired health outcomes (37). As Batalden states "Every system is perfectly designed to get the results it gets" (51). Health outcomes indicate the degree to which health services have improved the patient's condition and health system goals are being achieved (52,53). Blumenthal and colleagues argued that monitoring health outcomes is very important for better health system performance (54). In the studied HSPA conceptual frameworks, the effectiveness dimension consists of indicators that show the degree of achieving the desired outcomes of ambulatory care sensitive conditions (ACSCs). ACSCs are defined as "Conditions for which hospitalizations can be avoided by timely and effective care in ambulatory settings" (42). The primary care quality indicators for measuring effectiveness cover ACSCs outcomes such as vaccine-preventable conditions (influenza, Measles, Hepatitis B, etc.) and complications of chronic conditions like diabetes, asthma, and COPD (Table 1). ACSCs outcomes indicators can be used as key primary care quality indicators because qualitative primary care can prevent complications and reduce hospital admission due to various chronic conditions (18,32,42).

Other dimensions focus on the process of health service provision. According to Mant, monitoring data is a direct measure of quality, because of its sensitivity to the changes in quality (55). He argued that unlike the results, process provides information that is more reliable and easier to interpret.

Patient-centredness is the dimension which examines patient's experience with health care. The exploration of patient-centredness is essential for the better performance of health systems (56,57) and improvement of the quality of health services (58). According to Berwick "Person-centredness is not just one of the dimensions of health care quality, it is the doorway to all qualities." (57). The HSPA patient-centredness indicators investigate clinician-patient relationship. The most frequently used indicators indicate the degree to which patients are involved in decisions about care (Table 1). According to some authors, patients who share a positive experience of care are more committed to their treatment (53) which reduces ACSCs complications (59).

The access dimension explores difficulties that patients encounter in need of health care. The HSPA access indicators are focused on financial and physical barriers that patients face in primary care. Financial barriers are linked to

impossibilities patients have to receive medical care, drugs, follow-up tests or treatment they need due to the cost. Physical barriers indicators examine issues concerning geographical access to primary health services. Access to primary care is critical for timely treatment, prevention of chronic disease progression, and reduction of avoidable hospitalization (59).

Acceptability is defined as "the degree to which provided health care is relevant to the clinical needs, given the current best evidence" (30). This dimension indicates the extent to which clinical guidelines and medical standards are applied by clinicians. The most frequently used acceptability indicators study prescribing antibiotics in primary care and the presence of follow-up for patients with diabetes. The focus on these issues is associated with their widespread negative impact on health (60,61) and the need to reduce it.

Continuity of care is a dimension which shows the degree of coherence between primary and hospital care. Devos et. al., conceptualize continuity of care in four aspects: informational continuity (the availability and use of data from prior events during current patient encounters), relational continuity (an ongoing relationship between patients and one or more providers), management continuity (the coherent delivery of care by different providers across different care settings) and coordination of care (the connection between different health providers over time to achieve a common objective) (18). Continuity of care indicators show the availability of a health information system in the countries and the degree to which primary care physicians can adequately take care of patients with chronic conditions like diabetes. This dimension is the least common among the studied frameworks (7–10,20,21,31,50). This might be because the continuity of care is frequently used as a part of the patient-centredness dimension (30).

There were no primary care quality indicators in the "safety" dimension. Indicators in the safety dimension are focused on the hospital care processes since they are related with adverse events, which are most likely to accrue in hospitals.

V. CONCLUSION

Primary care quality indicators research the health care processes and outcomes and cover mainly ACSCs. Most of indicators are repeated which indicate the coincidence in primary health care goals to the different countries. The widespread use of primary care quality indicators in HSPA confirms the key role of primary care providers for better health system performance assessment.

ACKNOWLEDGMENT

The author gratefully acknowledge the contributions of her colleagues from the Department of Health Economics and

Management at Medical University- Varna whom she is working with on the HSPA framework for Bulgaria.

REFERENCES

1. Fund TC. First Report and Recommendations of The Commonwealth Fund's International Working Group on Quality Indicators. 2004.
2. Atanasova, E., Koeva, S., Dimova, A., Rohova M. Health System Performance Assessment Frameworks: A Comparative Analysis. Heal Policy Manag [Internet]. 2019;2:236–43. Available from: https://www.researchgate.net/publication/333825772_Ocenka_na_funkcioniraneto_na_zdravnata_sistema_-_sравnitelen_analiz_na_konceptualnite_ramki
3. Committee of the Regions. Effective, accessible and resilient health systems. Saúde Ment. 2014;(December):3–4.
4. Hejduková P, Kureková L. National Health Systems' Performance: Evaluation WHO Indicators. Procedia - Soc Behav Sci [Internet]. 2016;230(May):240–8. Available from: <http://dx.doi.org/10.1016/j.sbspro.2016.09.031>
5. WHO. The world health report 2000 - Health systems: improving performance. 2000.
6. Joan V, Katrien V, Céline C, Julien P, Denise W, Laurence K, et al. Een eerste stap naar het meten van de performantie van het Belgische gezondheidszorgsysteem. Kce. 2010;reports 12.
7. Vrijens F, Renard F, Camberlin C, Desomer A, Dubois C, Jonckheer P, et al. Performance of the Belgian Health System - Report 2015. Heal Serv Res Brussels [Internet]. 2016;84. Available from: www.kce.fgov.be
8. WHO. Turkey Health System Performance Assessment 2011. 2012;(May):37.
9. Australian Institute of Health and Welfare (AIHW). Australia 's health Australian Health Performance Framework. Aust Heal 2018. 2018;(16):2018.
10. NHPC. National Health Performance Framework Report. Fourth Report on Health Sector Performance Indicators - A Report to the Australian Health Ministers'Conference. Heal (San Fr. 2001;(August).
11. Committee NHI and PP. The Australian Health Performance Framework. 2017.
12. Statistics Canada, Canadian Institute for Health Information. Canadian Health Indicators Framework. 2006;
13. CIHI. A Performance Measurement Framework for the Canadian Health System Health System Performance. 2013;42. Available from: https://secure.cihi.ca/free_products/HSP_Framework_Technical_Report_EN.pdf
14. Canadian Institute for Health Information. Health indicators 2013: Definitions, data sources and rationale. 2013;(May):22. Available from: http://www.cihi.ca/CIHI-ext-portal/pdf/internet/IND_DEFIN_2013_EN
15. WHO Regional Office for Europe. Estonia Health System Performance Assessment 2009 snapshot [Internet]. 2010. Available from: http://www.euro.who.int/__data/assets/pdf_file/0015/115260/E93979.pdf?ua=1
16. WHO Regional Office for Europe. Armenia health system performance assessment. 2009.
17. Noto G, Corazza I, Kļaviņa K, Lepiksone J, Nuti S. Health system performance assessment in small countries: The case study of Latvia. Int J Health Plann Manage. 2019;(April):1–15.
18. Devos C, Cordon A, Lefèvre M, Obyn C, Renard F, Bouckaert N, et al. Performance of the Belgian Health System – Report 2019 [Internet]. Health Services Research, Brussels. 2019. 117 p. Available from: www.kce.fgov.be
19. Health Organization Regional Office for Europe W. STRENGTHENING HEALTH SYSTEM PERFORMANCE ASSESSMENT IN HUNGARY ANALYSIS AND RECOMMENDATIONS edited by: szabolcs szigetesi tamás evetovits Péter Gaál Zsófia Pusztai [Internet]. 2014 [cited 2020 Dec 10]. Available from: <http://www.euro.who.int/>
20. Vrijens F, Renard F, Jonckheer P, Van den Heede K, Desomer A, Van de Voorde C, et al. The Belgian Health System Performance Report 2012: Snapshot of results and recommendations to policy makers. Health Policy (New York). 2013;112(1–2):133–40.
21. den Berg MJ, de Boer D, Gijzen R, Heijink R, Limburg LCM, Zwakhals SLN. Dutch health care performance report 2014 [Internet]. RIVM rapport 2015-0050. 2015. 360 p. Available from: <http://www.rivm.nl/dsresource?objectid=rivmp:277134&type=org&disposition=inline%5Cnhttp://www.gezondheidszorgbala ns.nl/English/>
22. WHO Regional Office for Europe. Georgia Health System Performance Assessment. 2009.
23. Grech K, Podesta M, Calleja A, Calleja N. Report on the Performance of the Maltese Health System, 2015. 2015;264.
24. Gauld R, Al-wahaibi S, Chisholm J, Crabbe R, Kwon B, Oh T, et al. Scorecards for health system performance assessment: The New Zealand example. Health Policy (New York) [Internet]. 2011;103(2–3):200–8. Available from:

- <http://dx.doi.org/10.1016/j.healthpol.2011.05.016>
25. Department of Health. The NHS Outcomes Framework 2011 / 12. Framework [Internet]. 2010;56. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213789/dh_123138.pdf
 26. Regional Office for Europe W. Portugal Health System: Performance Assessment. Who. 2010. 19–20 p.
 27. EU. The European Core Health Indicators (ECHI) shortlist of 88 health indicators identified by policy area. 2012;5. Available from: http://ec.europa.eu/health/indicators/docs/echi_shortlist_by_policy_area_en.pdf
 28. Poussette A, Larsman P, Hemlin S, Kauth MR, Sullivan G, Blevins D, et al. Съобщение на комисията относно ефективни, достъпни и устойчиви системи на здравеопазване. Implement Sci [Internet]. 2014;39(1):1–15. Available from: <http://dx.doi.org/10.1016/j.biochi.2015.03.025><http://dx.doi.org/10.1038/nature10402><http://dx.doi.org/10.1038/nature21059><http://journal.stainkudus.ac.id/index.php/equilibrium/article/view/1268/1127><http://dx.doi.org/10.1038/nrmicro2577>
 29. Hurst J, Jee-Hughes M. Performance Measurement and Performance Management in OECD Health Systems. Labour Market and Social Policy Occasional Papers No. 47. 2001. 69 p.
 30. Kelley E, Hurst J. Health care quality indicators project: Conceptual framework paper. Oecd Heal Work Pap. 2006;(23):1–37.
 31. OECD. Health at a Glance: Europe 2018 STATE OF HEALTH IN THE EU CYCLE. 2018 [cited 2020 Apr 8]; Available from: https://doi.org/10.1787/health_glance_eur-2018-en
 32. OECD. Health at a Glance 2017. 2017 [cited 2020 Apr 8]; Available from: http://dx.doi.org/10.1787/health_glance-2017-en
 33. Radley DC, McCarthy D, Lippa J a, Hayes SL, Schoen C. Aiming Higher: Results from a Scorecard on State Health System Performance, 2014. Commonw Fund [Internet]. 2014;(March):60. Available from: <http://www.commonwealthfund.org/Publications/Fund-Reports/2014/Apr/2014-State-Scorecard.aspx?omnicid=20>
 34. WHO. 100 Core Health Indicators. 2015;(1779):1–136. Available from: apps.who.int/iris/bitstream/10665/173589/1/WHO_HIS_HSI_2015.3_eng.pdf<http://ci.nii.ac.jp/naid/40020358184/>
 35. World Health Organization. 2018 Global Reference List of 100 Core Health Indicators (plus health-related SDGs). 2018;164. Available from: <https://apps.who.int/iris/bitstream/handle/10665/259951/WHO-HIS-IER-GPM-2018.1-eng.pdf?sequence=1>
 36. Canadian Institute for Health Information. The CIHI Data Quality Framework [Internet]. Canadian Institute for Health Information. 2009. 128 p. Available from: http://www.cihi.ca/CIHI-ext-portal/pdf/internet/DATA_QUALITY_FRAMEWORK_2009_EN
 37. Arah OA, Westert GP, Hurst J, Klazinga NS. A conceptual framework for the OECD Health Care Quality Indicators Project. Int J Qual Heal Care. 2006;18(SUPPL. 1):5–13.
 38. Friedman MA. Issues in measuring and improving Health Care quality. Health Care Financ Rev. 1995;16(4):1–13.
 39. Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Vol. 24, Journal For Healthcare Quality. 2002. 52 p.
 40. Guthrie B, Dreischulte T. Quality in primary care. Vol. 349, BMJ (Clinical research ed.). 2014. g6485 p.
 41. Nejad B, Abrampah NM, Neilson M. Amanda Howe (World Organization of Family Doctors). European Society for Quality and Safety in Family Practice-EQUIP. Andrew Likaka (Ministry of Health; 2018.
 42. Health Organization Regional Office for Europe W. Assessing health services delivery performance with hospitalizations for ambulatory care sensitive conditions Working document [Internet]. 2016 [cited 2020 Apr 8]. Available from: <http://www.euro.who.int/pubrequest>
 43. Commisison E. TOOLS AND METHODOLOGIES FOR ASSESSING THE PERFORMANCE OF PRIMARY CARE Report of the Expert Panel on effective ways of investing in Health (EXPH). 2018.
 44. Mesarić J, Bogdan S, Bosanac V, Božić M, Čvorišćec D, Grdinić B, et al. Performance assessment tool for quality improvement in hospitals (Path): First experiences in Croatia. Lijec Vjesn. 2011;133(7–8):250–5.
 45. Häkkinen U, Iversen T, Peltola M, Seppälä TT, Malmivaara A, Belicza É, et al. Health care performance comparison using a disease-based approach: The EuroHOPE project. Health Policy (New York) [Internet]. 2013;112(1–2):100–9. Available from: <http://dx.doi.org/10.1016/j.healthpol.2013.04.013>
 46. Canada S, Canada S. Health Indicators 2008. (8).
 47. Report D. 2016 National Healthcare Quality and Disparities Report | Agency for Healthcare Research & Quality. Rockville, MD Agency Healthe Res Qual [Internet]. 2017;AHRQ Pub. No. 17-0001. Available from: <https://www.ahrq.gov/research/findings/nhqdr/nhqdr16/index.html>https://www.ahrq.gov/research/findings/nhqdr/nhqdr16/index.html?utm_source=ahrq&utm_medium=en2&utm_term=&utm_content=2&utm_campaign=ahrq_en8_15_2017
 48. AHRQ. AHRQ Quality Indicators TM QUALITY INDICATOR USER GUIDE: PATIENT SAFETY INDICATORS (PSI) COMPOSITE MEASURES [Internet]. 2020 [cited 2020 Dec 10]. Available from: <http://www.qualityindicators.ahrq.gov>
 49. Bennett V, Bleicher K, Cooper-Stanbury M, Dobbie K, Hanson G, Hellyer B, et al. Australia's health 2018 [Internet]. 2018.

- 271–280 p. Available from: www.aihw.gov.au
50. Carinci F, Van Gool K, Mainz J, Veillard J, Pichora EC, Januel JM, et al. Towards actionable international comparisons of health system performance: Expert revision of the OECD framework and quality indicators. *Int J Qual Heal Care*. 2015;27(2):137–46.
 51. IHI. Like Magic? (“Every system is perfectly designed....”) [Internet]. 2015. Available from: <http://www.ihl.org/communities/blogs/origin-of-every-system-is-perfectly-designed-quote>
 52. Donabedian A. The quality of care. How can it be assessed? *JAMA J Am Med Assoc*. 1988 Sep 23;260(12):1743–8.
 53. Morris C, Bailey K. Measuring Health Care Quality: An Overview of Quality Measures. *Heal Syst Improv* [Internet]. 2014;1–16. Available from: <http://familiesusa.org/product/measuring-health-care-quality-overview-quality-measures>
 54. Blumenthal D, Malphrus E, McGinnis JM. THE NATIONAL ACADEMIES PRESS Vital Signs: Core Metrics for Health and Health Care Progress [Internet]. 2015 [cited 2020 Feb 5]. Available from: <http://www.nap.edu/19402>
 55. Mant J. Process versus outcome indicators in the assessment of quality of health care. *Int J Qual Heal Care*. 2001;13(6):475–80.
 56. Olivia Wigzell AR. So what? - Strategies across Europe to assess quality of care. 2016. 160 p.
 57. OECD. People at the centre. Policy Forum - Organisation for Economic Co-operation and Development [Internet]. 2017 [cited 2020 Feb 15]. Available from: <https://www.oecd.org/health/ministerial/policy-forum/speakers.htm>
 58. OECD iLibrary. Caring for quality in health : lessons learnt from 15 reviews of health care quality. :82.
 59. WHO Regional Office for Europe. Assessing health services delivery performance with hospitalizations for ambulatory care sensitive conditions. 2016;
 60. World Health Organization (WHO). Antibiotic resistance [Internet]. Available from: <https://www.who.int/news-room/fact-sheets/detail/antibiotic-resistance>
 61. World Health Organization (WHO). Diabetes [Internet]. Available from: <https://www.who.int/news-room/fact-sheets/detail/diabetes>