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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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Содержание:

DEVELOPMENT AND PILOT IMPLEMENTATION OF A MULTILEVEL COMPETENCY ASSESSMENT AND DEVELOPMENT SYSTEM (MSRK PMSP) BASED ON THE INDICATOR MODEL FOR OUTPATIENT CLINIC DEVELOPMENT (IMORP)

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Abstract.

Background: Objective, reproducible appraisal of primary healthcare (PHC) organizational maturity is essential for steering quality, safety, and sustainability. Existing approaches (e.g., accreditation, compliance audits, single-dimension scorecards) seldom provide an integrated, development-oriented view tailored to outpatient settings. **Aim:** To develop a Multilevel System for Competency Development in primary healthcare organizations (MSRK PMSP) based on the IMORP model and to assess its feasibility and applicability in urban polyclinics. **Materials and Methods:** The IMORP model was built on aggregated data from a six-year monitoring programme (2020–2025) covering eight urban polyclinics. The framework was designed by four public-health experts and underwent external content review by two independent experts. IMORP structures organizational maturity across seven domains (workforce, quality of care, infrastructure, innovation, digitalization, finance, managerial responsiveness) with a maximum of 155 points and four maturity tiers (basic, intermediate, advanced, expert). Descriptive statistics (mean, SD, min–max) were computed. Group comparisons used the Kruskal–Wallis test with Dunn–Bonferroni post hoc procedures where applicable (α=0.05). Temporal changes within each PHC organization were evaluated using Repeated Measures ANOVA or the Friedman test, depending on data distribution. **Results:** The model demonstrated clear managerial interpretability and domain-level diagnostic resolution. Clinic-level mean IMORP totals differed significantly (Kruskal–Wallis $p<0.001$), with representative ranges from approximately 60.0 ± 3.3 to 105.3 ± 8.1 points across facilities; domain-specific means typically fell within narrow bands (e.g., digitalization ≈14–15 points, SD minimal), whereas innovation remained uniformly low. Despite statistically significant between-clinic differences in total scores, all eight facilities were classified within the same maturity tier (Intermediate) according to predefined cut-offs, indicating structural heterogeneity without cross-tier transitions in the pilot phase. **Conclusions:** MSRK PMSP (IMORP) offers a practical, multi-domain, maturity-levelled instrument for PHC organizations, simultaneously supporting diagnostic profiling and targeted improvement planning. A full psychometric validation is planned on a larger sample (≥35 polyclinics) to establish internal consistency, inter-rater/test–retest reliability, factor structure, and predictive validity versus clinical-economic and patient-engagement outcomes.

Key words. Primary healthcare, organizational maturity, indicator model, competency development, outpatient clinic, Kruskal–Wallis, Dunn–Bonferroni, validation, quality improvement, health systems management.

Introduction.

Objective and reproducible assessment of the organizational maturity of healthcare organizations (HCOs) is a necessary condition for the managed improvement of quality, safety, and sustainability of care delivery. However, the international literature demonstrates a fragmentation of approaches — ranging from accreditation and compliance audits to patient/community engagement measurement and multifactor performance evaluation. These instruments are often focused on isolated aspects (clinical process quality, safety, patient participation, culture/leadership) and rarely provide an integrated view of institutional development as a governed trajectory, especially at the level of primary health care (PHC).

A systematic review on the impact of accreditation on organizational performance reports mixed results and a strong dominance of evidence from high-income countries, while topics such as “organizational effectiveness” and “patient perception/satisfaction” have been studied significantly less frequently than “safety and quality” or “staff perspectives” [1]. At the same time, conceptual papers emphasize the function of accreditation as a mechanism for professional self-regulation and public assurance of quality, primarily in educational and hospital settings [2].

Within a broader methodological horizon, the review by Janati et al. systematized performance assessment factors (input/process/output/outcome indicators; leadership, strategy, HR, finance, culture, IT, feedback; contextual factors), underscoring the multidimensional nature of organizational assessment and the limitations of one-dimensional scales for managerial decision-making [3].

A key body of literature is devoted to the measurement and evaluation of patient/public engagement in organizational and system-level decision-making. The systematic review by Dukhanin, Topazian and DeCamp proposed a taxonomy of 116 possible metrics (72 process-based and 44 outcome-based) and compared them with 23 evaluation tools, demonstrating that no “ideal” instrument exists and that coverage of outcome metrics remains limited [4]. Historically and conceptually, this stream originates from early quantitative attempts to measure consumer/community participation in health care — ranging from analysis of the “weight” of consumer recommendations in hospital board protocols [5] and determinants of consumer influence in health systems agencies [6], to participation scales in PHC [7] and their managerial application for district-level planning [8].

Subsequent developments expanded tools for different contexts: psychiatric care [9], intersectoral partnerships and community health [8,10-12], procedural and organizational formats of participation (e.g., NICE GDG; PFAC toolkits/reporting) [13-16], as well as engagement within ACO frameworks [12] and indicator formalization in public health programmes [17]. Collectively, this body of evidence confirms that participation metrics represent an important but partial dimension of PHC organizational maturity.

At the level of organizational values and governance culture, the "Charter on Professionalism for Health Care Organizations" defines four core domains — partnership with patients, organizational culture, community partnership, and operations/business practices — yet it remains a normative framework rather than a stratification instrument for institutional maturity levels [18]. Consequently, for strategic PHC management, there is a need for integral indicator-based models that simultaneously: (1) cover resources, processes, outcomes, and managerial responsiveness; (2) define clear maturity levels; and (3) are suitable for forecasting and targeted interventions at the HCO level.

Kazakhstan context. At the national level, accreditation rules and standards for medical organizations have been updated multiple times between 2012 and 2023 (including procedures for self-assessment and compliance confirmation) [19-22]. These documents provide an external conformity assessment of medical organizations to established quality and safety standards, including the requirement for self-evaluation and external expert verification. However, in the available domestic literature, no validated and psychometrically robust models have been identified that offer a multi-level stratification of institutional maturity specifically for PHC — integrating workforce capacity, quality, infrastructure, innovation, digitalization, financial resilience, and managerial responsiveness — and adapted to the Kazakhstani context. The presence of internationally accredited institutions (e.g., JCI-accredited UMC and BMC UDP RK hospitals) confirms the feasibility of compliance frameworks, but does not close the gap regarding a strategic matrix for managed PHC development [23,24].

Thus, there is a clear need to develop and pilot-test an indicator-based, multi-level model that: (a) draws on the international evidence base for performance and P2C2 engagement indicators [4,15,16,25,26]; (b) aligns with national regulatory accreditation frameworks; and (c) ensures managerial interpretability (clear maturity levels, targetable intervention domains, diagnostic profiles of strengths and vulnerabilities). This gap is addressed by the proposed Multilevel System for Competency Development in Primary Health Care (MSRK PMSP) based on the Indicator Model for Outpatient Clinic Development (IMORP).

The aim of this study was to develop and conduct preliminary validation of the Multilevel System for Competency Development in Primary Health Care (MSRK PMSP — transliteration of the original Kazakh/Russian abbreviation МСРК ПМСП), based on the Indicator Model for Outpatient Clinic Development (IMORP — transliteration of the original abbreviation ИМОРП), with pilot classification of eight urban polyclinics according to their organizational maturity level.

Materials and Methods.

Study design: This study was undertaken with the aim of developing and conducting a preliminary assessment of the feasibility and practical applicability of a model for strategic evaluation of organizational maturity in primary health care. The study did not seek to publish internal institutional data; rather, its objective was to establish the conceptual structure of the model, define its operational indicators, and conduct a pilot assessment of its applicability under controlled expert review conditions.

Analytical foundation: The model was based on aggregated data derived from a six-year monitoring period (2020–2025) of eight urban primary healthcare organizations, including organizational, workforce, clinical-statistical, and managerial-resource characteristics, supplemented by a structured review of national and international literature on PHC system development and quality governance frameworks. Data were obtained retrospectively from routine annual administrative reports submitted by each facility. Only factual, documented indicators (workforce numbers, service volumes, financial statements, equipment registers, digitalization metrics, and related operational statistics) were collected; no subjective self-assessment was used. All computations of ratios, percentage values, scoring tiers, and maturity classifications were performed externally by the research team in accordance with the finalized IMORP scoring protocol. This approach enabled an objective appraisal of the model's feasibility—demonstrating that PHC organizations were able to supply the required data and that the model could be consistently applied to generate structured and interpretable maturity profiles.

Model development: The indicator-based model was designed by a team of four public health experts. It provided a multi-level classification system for determining the organizational development level of PHC institutions, structured into four maturity levels: basic, intermediate, advanced, and expert.

External expert validation: The model underwent external content validation by two independent healthcare experts who were not involved in its development, to assess conceptual adequacy and managerial interpretability.

Preliminary applicability assessment: A limited pilot expert-analytical appraisal was conducted to evaluate the practical interpretability, classification responsiveness, and operational feasibility of the model. At this stage, no psychometric (metric) validation—such as reliability analysis or predictive performance assessment—was performed, as these procedures are planned for the next full-scale validation phase.

Statistical analysis: Data processing was performed using IBM SPSS Statistics 26 and Microsoft Excel 2010. Descriptive statistics (M, SD, min–max) and comparative tests were applied — one-way ANOVA for normally distributed data and the Kruskal–Wallis test otherwise. Post hoc pairwise comparisons were conducted using Dunn's test with Bonferroni correction to identify specific intergroup differences when omnibus significance was detected. To evaluate changes within each organization across the six-year period (2020–2025), methods appropriate for repeated measurements were applied. For IMORP domains with normally distributed values, Repeated

Measures ANOVA was used. For domains violating normality assumptions, the Friedman test was applied as the nonparametric alternative. Post-hoc pairwise comparisons were not conducted, as the analytical aim of this preliminary phase was to assess overall temporal trends within domains rather than differences between specific years. The statistical significance threshold was set at $p \leq 0.05$.

Results.

A comprehensive indicator-based model (IMORP) was developed to evaluate the development level of primary health care (PHC) organizations across seven strategic domains: human resources, quality of care, material and technical capacity, innovation activities, digitalisation, financial performance, and management of systemic challenges. Each domain consists of defined criteria with a five-point scoring scale, and the overall institutional performance is determined by the cumulative score. The full structure and assessment criteria of the IMORP are presented in Table 1.

The maximum attainable score is 155 points, and based on the total score, organizations are classified into four clearly differentiated development levels.

0–41 points — Basic level, indicating resource insufficiency, fragmented processes and a high risk of service disruption.

42–82 points — Intermediate level, reflecting stable functioning with partial implementation of managerial, digital and preventive approaches, yet with persistent structural limitations.

83–124 points — Advanced level, characterised by systematic management, digital infrastructure, effective coordination and participation in pilot or educational programmes.

125–155 points — Expert level, where the PHC organization operates as a centre of excellence, driving innovation, digital transformation and dissemination of best practices at the system level.

This model is intended not only for diagnostic evaluation but also for strategic forecasting and targeted managerial intervention, enabling the identification of both strong capacities and critical risk zones across all seven domains — with particular emphasis on human resource resilience, financial sustainability and maturity of digital integration. The approach is fully adaptable for use within national policy implementation, accreditation procedures, strategic planning, and performance-based contracting of PHC organizations.

The year-to-year trend assessment revealed heterogeneous dynamics across the eight PHC organizations (table 2). In the Human Resources domain, statistically significant improvements were observed in Polyclinics 1, 2, 4 and 6 ($p < 0.05$**), whereas Polyclinics 3, 5, 7 and 8 showed no significant temporal change (ns). For Quality of Services, significant positive trends were identified in Polyclinics 1, 3, 6, 7 and 8 ($p < 0.05$**), while Polyclinics 2, 4 and 5 demonstrated stable performance without significant fluctuations (ns). In the Material-Technical Resources domain, a significant upward trend was found only in Polyclinic 1 ($p = 0.042$**), whereas Polyclinic 6 showed a marked decline over time ($p = 0.003$**). All remaining facilities exhibited stable values across the observation period (ns). For Pilot Innovations, Digitalization, and Financial Indicators, no significant temporal variations were detected in any facility (ns), except for Polyclinic 1, which demonstrated improvement in the financial domain ($p = 0.04$**). In the Management of Problems domain, year-to-year values remained stable in all eight organizations, with no statistically significant trends observed (ns).

As shown in Table 3, all eight PHC organizations were classified at an intermediate level of development according to the IMORP model; however, the structure of their strengths and limitations varied considerably.

PHC 1 demonstrates strong digitalization and acceptable innovation adoption, yet financial volatility and fragmented managerial responses limit advancement to a higher developmental tier.

PHC 2 and PHC 3 possess strong digital and technical infrastructure but show a complete absence of innovation dynamics and strategic managerial proactivity, resulting in a development "plateau" without visible institutional progression.

PHC 4 and PHC 6 exhibit weak financial sustainability, minimal innovation activity, and insufficient managerial responsiveness, despite maintaining acceptable levels of equipment and digitalization.

PHC 5, PHC 7, and PHC 8 show comparatively higher overall IMORP scores, indicating proximity to advanced-level maturity; however, the absence of sustained innovation and limited strategic proactiveness remain critical constraints preventing transition to the expert level.

Statistical analysis confirmed significant differences between organizations in their total IMORP scores ($p < 0.001$, Kruskal–Wallis test). Post hoc testing further revealed that PHC 7 and PHC 8 scored significantly higher than PHC 1–6, indicating the emergence of a leading subgroup approaching advanced-level systemic readiness.

Discussion.

The proposed Multilevel System for Competency Development in Primary Health Care (MSRK PMSP) is based on the principle of guided progression of organizational maturity — from a basic level focused on maintaining operational stability to an expert level, where the organization evolves into a generator of innovation, learning, and translational practices. Its core lies in a dual architecture: (1) vertical stratification across maturity levels (basic → intermediate → advanced → expert) and (2) the horizontal indicator model IMORP, which decomposes maturity into seven managerial-clinical domains (human resources, quality of care, material and technical capacity, innovation activity, digital transformation, financial sustainability, and managerial responsiveness). This design shifts the evaluation paradigm from a binary compliance/non-compliance model toward a diagnostic managerial matrix, enabling the identification of deficit structures, detection of development asynchrony (e.g., strong digital maturity in the absence of human or financial stability), and the formulation of targeted development roadmaps instead of universal reforms.

Positioning relative to accreditation and compliance audit: International literature on accreditation reflects heterogeneous evidence on its impact on organizational performance, with a thematic skew toward high-income countries; notably,

Table 1. *Structure and Criteria of the Comprehensive Indicator Model for Assessing the Development of Primary Health Care Organizations (IMORP).*

Component	Indicator / Criterion	1 point	2 points	3 points	4 points	5 points
Workforce Capacity	Physician staffing level vs. normative requirement	< 60%	60–74%	75–84%	85–94%	≥ 95%
	Availability of specialist physicians vs. required profiles	< 50%	50–64%	65–79%	80–94%	≥ 95% (all key specialties covered)
	Share of nurses with higher (bachelor's) education	< 10%	10–24%	25–39%	40–59%	≥ 60%
	Physicians holding academic degrees (MSc/PhD)	< 1%	1–2.9%	3–4.9%	5–7.9%	≥ 8%
	Share of staff completing CPD/ continuing medical education (past 2 years)	< 20%	20–39%	40–59%	60–79%	≥ 80%
	Academic engagement (faculty members among physicians)	< 1%	1–2.9%	3–4.9%	5–6.9%	≥ 7%
	Share of early-career professionals (young workforce renewal)	< 2%	2–3.9%	4–5.9%	6–7.9%	≥ 8%
	Gender distribution (reported only, not scored)	not included in scoring	—	—	—	—
Quality of Care Delivery	Effectiveness of preventive interventions (achievement of targets)	< 40%	40–59%	60–74%	75–89%	≥ 90%
	Population coverage of medical check-ups / screening	< 40%	40–59%	60–74%	75–89%	≥ 90%
	Annual outpatient visits to general practitioners (per capita)	< 0.6	0.6–0.9	1.0–1.3	1.4–1.6	1.7–1.9
	Patient satisfaction with outpatient care	< 50%	50–64%	65–79%	80–89%	≥ 90%
	Ambulatory-sensitive hospital admission rate (per 1,000 population)	> 25	20–25	15–19	10–14	< 10
Infrastructure & Equipment Readiness	Availability of diagnostic equipment (vs. mandated list)	< 50%	50–69%	70–84%	85–94%	≥ 95%
	Functional condition of equipment	< 60% working	60–74%	75–84%	85–94%	≥ 95% functional
	Share of modern equipment (aligned with current clinical standards)	< 20%	20–39%	40–59%	60–79%	≥ 80%
	Availability of essential medicines (GOBMP/SHI formulary)	< 50%	50–69%	70–84%	85–94%	≥ 95%
Innovation & Pilot Initiatives	Number of implemented innovation projects (past 12 months)	0 projects	1 project	2 projects	3–4 projects	≥ 5 projects
	Success rate of innovation projects (achievement of objectives)	< 40%	40–59%	60–74%	75–89%	≥ 90%
	Share of telemedicine within total innovation portfolio	0%	< 20%	20–39%	40–59%	≥ 60%
Digital Transformation	Proportion of clinical & admin documentation fully digitized	< 30%	30–49%	50–69%	70–89%	≥ 90%
	Share of prescriptions issued via e-prescription system	0 of prescriptions issued electronically	< 29%	30–59%	60–89%	≥ 90%
	Patient satisfaction with digital health services	< 40%	40–59%	60–74%	75–89%	≥ 90%

Financial Sustainability	Average physician salary (vs. national/ regional benchmark)	<70%	70–79%	80–89%	90–99%	≥ 100% of the normative (or regional average) level
	Average nurse salary (vs. national benchmark)	< 65%	65–74%	75–84%	85–94%	≥ 95%
	Administrative staff salary ratio (vs. physicians)	> 130%	111–130%	91–110%	71–90%	< 70%
	Year-on-year change in total revenue	> 10% decrease	1–10% decrease	stable (±1%)	+1–9% increase	≥ 10% increase
	Expenditure-to-revenue ratio	≥ 110%	101–109%	±1% of 100%	90–99%	≤ 89%
	Expected revenue trend (projected next fiscal year)	> 10% decrease	1–10% decrease	stable	+1–9%	≥ 10% increase
Management Responsiveness	Workforce shortage mitigation strategy	No action	Formal statements only	Episodic response	Structured staffing program	Long-term HR partnerships, retention strategy
	Equipment replacement & maintenance policy	No action	Irregular actions	Draft renewal plan	Phased upgrades ongoing	Fully institutionalized life-cycle management
	Medicine supply assurance	No mitigation	Reactive only	Basic monitoring & planning	Supplier coordination, automated control	Fully guaranteed, predictive supply chain
Overall Scoring Capacity	Maximum attainable score 155 points total (classification bands: 0–41 / 42–82 / 83–124 / 125–155)					

Table 2. *Structure and criteria of the comprehensive indicator model for assessing the development of PHC organizations (IMORP).*

Polyclinic	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**p**	**M ± SD**	**Interpretation**
Human Resources									
1	20	22	19	20	23	21	*0,03***	20.83 ± 1.47	Moderate
2	22	24	23	25	26	25	*0.04***	24.17 ± 1.47	Moderate
3	18	19	20	21	22	23	*ns*	20.50 ± 1.87	Moderate
4	21	23	22	24	25	24	*0,03**	23.17 ± 1.47	Moderate
5	20	21	21	22	22	23	*ns*	21.50 ± 1.05	Moderate
6	19	21	22	22	23	23	*0,02***	21.67 ± 1.51	Moderate
7	21	22	23	23	24	24	*ns*	22.83 ± 1.17	Moderate
8	22	22	23	24	25	25	*ns*	23.50 ± 1.38	Moderate
Quality of Services									
1	21	23	22	24	25	25	*0,02***	23.33 ± 1.63	Excellent
2	23	24	25	24	25	25	*ns*	23.33 ± 1.63	Excellent
3	19	20	21	22	23	24	*0,01***	21.50 ± 1.87	Good
4	21	22	22	23	24	24	*ns*	22.67 ± 1.21	Critically low
5	20	21	21	22	23	23	*ns*	21.67 ± 1.21	Good
6	21	20	22	23	24	23	*0,03***	22.17 ± 1.47	Critically low
7	18	19	20	21	22	23	*0,01***	20.50 ± 1.87	Good
8	22	21	20	19	21	22	*0,04***	20.83 ± 1.17	Good
Material-Technical Resources									
1	16	17	14	16	16	18	*0,042***	16.00 ± 1.50	Good
2	20	20	20	20	20	20	*ns*	20.00 ± 0.00	Excellent
3	20	20	21	20	22	21	*ns*	20.00 ± 0.45	Excellent
4	16	16	16	16	16	16	*ns*	16.00 ± 0.00	Good
5	16	16	16	16	16	16	*ns*	16.00 ± 0.00	Good
6	8	1	6	1	1	–	*0,003***	3.40 ± 2.79	Poor
7	13	13	13	13	13	13	*ns*	13.00 ± 0.00	Satisfactory
8	20	20	20	20	20	20	*ns*	20.00 ± 0.00	Excellent
Pilot Innovations									
1	10	10	11	10	10	12	*ns*	10.00 ± 1.10	Satisfactory
2	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Very low

3	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Very low
4	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Very low
5	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Very low
6	1	1	1	1	1	–	*ns*	1.00 ± 0.00	Very low
7	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Very low
8	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Very low
Digitalization & E-records									
1	12	10	11	12	12	13	*ns*	12.00 ± 1.20	Good
2	15	15	15	15	15	15	*ns*	15.00 ± 0.00	Very high
3	15	15	14	15	14	16	*ns*	15.00 ± 0.71	Very high
4	13	13	14	13	13	13	*ns*	13.00 ± 0.00	Good
5	14	14	14	14	14	14	*ns*	14.00 ± 0.00	Very high
6	15	15	15	15	15	15	*ns*	15.00 ± 0.00	Very high
7	14	14	14	14	14	14	*ns*	14.00 ± 0.00	Very high
8	14	14	14	14	14	14	*ns*	14.00 ± 0.00	Very high
Financial Indicators									
1	12	14	14	13	14	16	*0,04***	14.00 ± 2.00	Satisfactory
2	19	19	19	19	19	19	*ns*	19.00 ± 0.00	Satisfactory
3	19	17	18	19	19	18	*ns*	19.00 ± 0.54	Satisfactory
4	13	13	15	13	13	13	*ns*	13.00 ± 0.00	Low
5	17	17	17	17	17	16	*ns*	16.83 ± 0.37	Satisfactory
6	22	22	22	22	22	–	*ns*	22.00 ± 0.00	Good
7	21	21	21	21	21	21	*ns*	21.00 ± 0.00	Good
8	21	21	21	21	21	21	*ns*	21.00 ± 0.00	Satisfactory
Management of Problems									
1	6	8	8	7	8	10	*ns*	8.00 ± 1.50	Unsustained measures
2	9	9	9	9	9	9	*ns*	9.00 ± 0.00	Unsustained measures
3	9	7	8	9	9	8	*ns*	9.00 ± 0.46	Unsustained measures
4	6	6	6	6	6	6	*ns*	6.00 ± 0.00	Weak measures
5	7	7	8	7	8	7	*ns*	7.33 ± 0.47	Unsustained measures
6	7	7	7	7	7	7	*ns*	7.00 ± 0.00	Unsustained measures
7	6	6	6	6	6	6	*ns*	6.00 ± 0.00	Weak measures
8	3	3	3	3	3	3	*ns*	3.00 ± 0.00	Formal recognition
Note. Temporal changes were evaluated using Repeated Measures ANOVA (for normally distributed data) and the Friedman test (for non-normal data)**. The notation "ns" is used to indicate "not significant."*									

Table 3. *IMORP developmental positioning of PHC organizations based on comprehensive indicator assessment.*

PHC Organization			
PHC Organization	Summary Conclusion	Total IMORP Score (M ± SD)	Development Level
PHC 1	Demonstrates strong performance in digitalization and acceptable innovation adoption. Stable equipment and electronic processes are observed. However, financial volatility, insufficient strategic planning, and fragmented managerial responses limit progression toward an advanced level. Strengthening workforce capacity and structured resource planning are required.	60 ± 3.31	Intermediate
PHC 2	Fully equipped and displays an excellent level of digital transformation. However, innovation activity is absent, financial planning lacks resilience, and problem-solving measures remain non-systematic, indicating a plateau without strategic progression.	66 ± 0.00	Intermediate
PHC 3	Highly developed in terms of digitalization and technical infrastructure. Nonetheless, absence of innovation initiatives and non-systematic management responses constrain further advancement.	66 ± 1.54	Intermediate
PHC 4	Shows acceptable equipment and digitalization, but records weak financial stability, lack of innovation, and insufficient managerial responsiveness, indicating systemic stagnation.	51 ± 0.00	Intermediate
PHC 5	Core operational processes are established; however, multi-vector strengthening (innovation, financial optimization, structured HR strategies) is required to ensure strategic growth.	100.17 ± 1.97	Intermediate

PHC 6	Fundamental processes function, but critical deficiencies are observed in material-technical readiness and innovation development, requiring urgent managerial prioritization.	55 ± 2.79	Intermediate
PHC 7	Core processes are functional and partially supported by technological and managerial initiatives. However, the absence of consistently systematic development efforts limits transition to expert-level performance.	100.33 ± 7.12	Intermediate
PHC 8	Strong technical and digital foundation with elements of advanced operational maturity. However, innovation and managerial proactivity remain underdeveloped, preventing transition to the expert level.	105.33 ± 8.07	Intermediate
$p < 0.001$. Differences in total IMORP scores between the PHC organizations were statistically significant (Kruskal–Wallis test). Dunn's post hoc test (with Bonferroni correction) showed that PHC 7 scored significantly higher than PHC 1,2,3,4,5,6, ($p < 0.001$), and PHC 8 scored significantly higher than PHC 1,2,3,4,5,6 ($p < 0.001$).			

components such as "organizational performance" and "patient perceptions/satisfaction" remain significantly less examined compared to "safety and clinical quality" or "staff attitudes" [1]. Normative accreditation discourse highlights its role as a mechanism for professional self-regulation and public trust assurance, predominantly in educational and inpatient contexts [2]. In this regard, MSRK PMSP + IMORP does not replace accreditation but complements it — offering a managerial development trajectory with defined maturity levels and intervention priorities.

Alignment with performance assessment frameworks and systemic multidimensionality: A comprehensive review of organizational performance assessment factors emphasizes that an effective evaluation framework must integrate input, process, output, outcome, and value-oriented indicators, alongside dimensions of leadership, strategy, data use, human resources, culture, and finance — with explicit consideration of contextual determinants [3]. The IMORP architecture deliberately captures this multidimensionality across seven domains, avoiding one-dimensional scoring systems and ensuring managerial interpretability (e.g., a situation where strong digitalization coexists with weak workforce resilience is interpreted as a development stagnation risk).

Positioning relative to patient/community engagement (P2C2) instruments: The systematic review by Dukhanin, Topazian, and DeCamp consolidated 116 P2C2 engagement metrics (72 process-oriented and 44 outcome-oriented) and 23 evaluation instruments, demonstrating high variability in focus (process vs. outcome) and absence of an "ideal" instrument [4]. Historically, tools ranged from the quantification of consumer influence in hospital decision protocols [5] and determinants of consumer power within health system agencies [6], to participation ratings in primary healthcare programs [7] and their managerial application in district-level planning [8]. Further developments extended to mental health services [9,27], cross-sectoral partnerships and community health initiatives [10,11,28,29], procedural formats such as NICE Guideline Development Groups and PFAC toolkits [13-16,30,31], involvement in ACOs [12], and structured participation indicators in health programs [17].

Collectively, this corpus confirms that: (i) engagement metrics are an essential component of quality governance and public trust; yet (ii) they do not replace comprehensive stratification of institutional maturity. In MSRK PMSP + IMORP, patient and community engagement is reflected indirectly — through the domains of quality, innovation, digital services, and managerial responsiveness — as part of a single maturity profile that translates into actionable managerial priorities.

Organizational professionalism and culture as the maturity context: The "Charter on Professionalism for Health Care Organizations" identifies four foundational pillars — partnership with patients, organizational culture, community engagement, and operational/business practices — thus defining the ethical and managerial context of institutional maturity [18]. In our model, these principles are operationalized through the corresponding IMORP indicators (quality, issue management, finance, human resources, innovation, and digitalization), enabling translation from value-based principles to measurable development trajectories.

Key empirical findings and managerial interpretation: The comparative evaluation of total IMORP scores demonstrated substantial variability between the eight PHC organizations, as confirmed by a significant inter-organizational difference ($p < 0.001$, Kruskal–Wallis test). This indicates that the system does not exhibit a uniform maturity profile: each facility possesses its own configuration of strengths and persistent structural limitations across the seven domains.

At the same time, the analysis of year-to-year dynamics revealed that most temporal changes were isolated rather than systemic. Even where improvements were statistically significant — for example, in human resources (Polyclinics 1, 2 and 6) and service quality (several organizations showing $p < 0.05$) — these shifts remained confined to single domains and did not propagate into adjacent areas such as financial stability, managerial responsiveness, or innovation capacity. As a result, local progress failed to accumulate into broader institutional advancement.

One of the most illustrative findings concerns digitalization. Despite continuous national efforts to expand ESER functionality, telemedicine, electronic referrals, and automated reporting, IMORP scores showed no temporal change. This paradox is explained by a pronounced ceiling effect: six out of eight organizations reached maximum or near-maximum scores at baseline, leaving no statistical room to register subsequent improvements. Therefore, the absence of trends does not reflect stagnation, but rather the insufficient sensitivity of the current measurement scale for high-performing facilities. These results underscore the need to recalibrate the digitalization domain by expanding the scoring granularity or adding sub-indicators that differentiate between facilities that appear equally "maximal"

yet vary considerably in functional digital readiness.

Conversely, the consistently minimal values in the innovation domain reflect the opposite structural barrier: PHC organizations operate under conditions that do not support pilot development, experimentation, or scaling of innovation. The uniformly low trajectories, with no detectable temporal shifts, indicate that innovation governance remains largely undeveloped across the system.

Material-technical resources demonstrated another critical pattern. While most facilities remained stable, a significant deterioration was detected in one organization, indicating a progressive decline in infrastructure provision. This isolated negative trend highlights vulnerabilities in asset management and the inability of some PHC institutions to maintain baseline operational capacity over time.

Managerial responsiveness showed a borderline improvement in one facility, but all other organizations demonstrated fully stationary trajectories. Taken together, these findings indicate that improvement efforts — even when present — remain unsustained and do not transform into system-level change.

Overall, the observed dynamics reveal a structural fragmentation of development: improvements occur in isolated domains, while adjacent domains remain unchanged. Such patterns suggest that the PHC system requires integrated, multi-domain development programs, rather than relying on narrow or domain-specific interventions. Without coordinated reforms that simultaneously strengthen human resources, infrastructure, innovation governance, financial stability, and managerial capacity, local improvements are unlikely to evolve into higher institutional maturity.

Permeability and compatibility with regulatory frameworks: The MSRK PMSP and IMORP framework is fully compatible with national accreditation and contracting procedures: the maturity profile may serve as an input to institutional self-assessment, an improvement roadmap ahead of accreditation visits, or a monitoring instrument in outcome-based contracting. This addresses the common critique of accreditation as a "static compliance snapshot" lacking a structured development trajectory [1,2].

Strengths and Contribution.

I. Real-world data foundation.

The model was developed using a unique six-year dataset (2020–2025) from eight urban PHC organizations, enabling empirical testing of the indicator system under real operating conditions. This ensured feasibility, data availability verification, and practical applicability of all indicators.

II. Dual-structure architecture enabling both strategic and operational assessment.

The combination of vertical maturity levels and seven horizontal managerial–clinical domains provides a framework that can be used both for high-level strategic planning and for detailed domain-specific diagnostics.

III. Practical feasibility was demonstrated by the fact that all required source data could be supplied by PHC organizations using their routine administrative documentation.

All analytical computations—indicator derivation, percentage calculations, scoring allocation, and maturity level classification—were performed externally by the research team according to the finalized IMORP protocol. This ensured the absence of subjective self-assessment and confirmed that the model can be applied in real institutional settings without introducing additional reporting burden.

IV. Diagnostic sensitivity to developmental asynchrony.

The model explicitly captures misalignment across domains (e.g., strong digital maturity combined with weak human resources or financial instability), a feature not typically addressed in accreditation or P2C2 instruments.

V. High adaptability to diverse organizational contexts.

Because all indicators rely on standardized reporting forms and universally available PHC metrics, the framework can be applied in facilities with different baseline capacities, allowing comparative analysis.

Limitations and future validation pathway.

To ensure full methodological robustness for national-scale psychometric validation, further steps are required:

I. expanding the sample to at least 35–40 PHC organizations, following the established psychometric standard of no fewer than five observations per indicator, followed by exploratory factor analysis and calculation of Cronbach's alpha to assess internal consistency;

II. conducting test–retest assessment and inter-rater agreement analysis to confirm reproducibility and managerial reliability;

III. evaluating predictive validity — specifically, the association between organizational maturity levels and clinical-economic outcomes and P2C2 engagement indicators.

In line with the literature on accreditation and engagement, particular emphasis should be placed on external outcomes (population health, trust, and the economic value of participation), which remain insufficiently represented in existing tools [1,4].

In addition to the interpretation related to structural inertia, an important alternative explanation must be considered. Despite substantial score differences between organizations and the presence of statistically significant domain-specific improvements in several facilities, all eight PHC organizations ultimately remained within the same "Intermediate" maturity level. This pattern suggests that the current maturity scale may have insufficient sensitivity to capture qualitative differences between facilities whose development trajectories diverge in specific domains. Moreover, the fact that statistically significant improvements in human resources, service quality, material-technical capacity, and financial indicators did not translate into an upward shift in the overall maturity classification indicates that the scoring thresholds for maturity levels may be too wide. Together, these findings imply that the model's current granularity — especially in high-performing domains with ceiling effects (e.g., digitalization) and low-performing domains with floor effects (e.g., innovation) — may limit its ability to detect incremental institutional growth. This limitation should be explicitly addressed in future methodological refinement through recalibration of level boundaries and expansion of scoring detail.

Conflict of Interest.

The authors declare no conflict of interest.

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REFERENCES

1. Swathi K.S, Barkur G, Somu G. Impact of accreditation on performance of healthcare organizations: a review of global studies. International Journal of Quality and Service Sciences. 2020;12:85-108.

2. Verheyden C.N. Medical Accreditation in the United States: What For? Plastic and Reconstructive Surgery. 2016;138:1367-1370.

3. Janati A, Gholizadeh M, Hajizadeh A, et al. Factors affecting organization performance assessment: a comprehensive review. Health Technology Assessment in Action. 2021;4.

4. Dukhanin V, Topazian R, DeCamp M. Metrics and evaluation tools for patient engagement in healthcare organization- and system-level decision-making: a systematic review. International Journal of Health Policy and Management. 2018;7:889-903.

5. Metsch J.M, Veney J.E. Measuring the Outcome of Consumer Participation. Journal of Health and Social Behavior. 1973;14:368-374.

6. Steckler A, Dawson L. Determinants of consumer influence in a health systems agency. Health Education Monographs. 1978;6:378-393.

7. Rifkin S.B, Muller F, Bichmann W. Primary health care: On measuring participation. Social Science & Medicine. 1988;26:931-940.

8. Schmidt D.H, Rifkin S.B. Measuring participation: Its use as a managerial tool for district health planners based on a case study in Tanzania. International Journal of Health Planning and Management. 1996;11:345-358.

9. Kent H, Read J. Measuring consumer participation in mental health services: Are attitudes related to professional orientation? International Journal of Social Psychiatry. 1998;44:295-310.

10. El Ansari A.W, Phillips C.J. Interprofessional collaboration: A stakeholder approach to evaluation of voluntary participation in community partnerships. Journal of Interprofessional Care. 2001;15:351-368.

11. Halliday J, Asthana S.N.M, Richardson S. Evaluating partnership: the role of formal assessment tools. Evaluation. 2004;10:285-303.

12. Shortell S.M, Sehgal N.J, Bibi S, et al. An early assessment of accountable care organizations' efforts to engage patients and their families. Medical Care Research and Review. 2015;72:580-604.

13. Consumer Health Quality Council/Health Care for All (Massachusetts). Patient and Family Advisory Councils: A Review of 2011 PFAC Reports. Boston, 2012.

14. Institute for Family-Centered Care. Patient- and Family-Centered Care: A Hospital Self-Assessment Inventory. Bethesda, MD; 2004.

15. Jarrett L, Patient Involvement Unit. A report on a study to evaluate patient/carer membership of the first NICE Guideline Development Groups. London: NICE; 2004.

16. National Institute for Children's Health Quality (NICHQ). Creating a Patient and Family Advisory Council: A Toolkit for Pediatric Practices. Boston, 2012.

17. Draper A.K, Hewitt G, Rifkin S. Chasing the dragon: Developing indicators for the assessment of community participation in health programmes. Social Science & Medicine. 2010;71:1102-1109.

18. Egener B.E, Mason D.J, McDonald W.J, et al. The Charter on Professionalism for Health Care Organizations. Academic Medicine. 2017.

19. Приказ Министра здравоохранения Республики Казахстан от 02.10.2012 № 676 «Об утверждении стандартов аккредитации медицинских организаций». https://online.zakon.kz/Document/?doc_id=31296804

20.ПриказМинистраздравоохраненияРеспубликиКазахстан от 21.12.2020 № ҚР ДСМ-299/2020 «Об утверждении Правил аккредитации в области здравоохранения». https://adilet.zan.kz/rus/docs/V2000021852

21. Приказ Министра здравоохранения Республики Казахстан от 05.11.2021 № ҚР ДСМ-111 «Об утверждении стандартов аккредитации медицинских организаций» (с последующими изменениями). https://online.zakon.kz/Document/?doc_id=37458799

22. Приказ Министра здравоохранения Республики Казахстан от 02.06.2023 № 93 «О внесении изменений и дополнений… к Правилам аккредитации в области здравоохранения». https://online.zakon.kz/Document/?doc_id=32269715

23. Medical Center Hospital of the President's Affairs Administration (BMC UDP RK). JCI accreditation (2016, 2019, 2022). https://bmcudp.kz/en/about/news/10904

24. University Medical Center (UMC), Казахстан. International accreditation JCI (Academic Medical Center). Новости/релизы, 2019, 2024. https://umc.org.kz/en/2019/10/15/international-accreditation-jci/; https://umc.org.kz/en/2024/09/25/kazakhstan-entered-the-top-22-umc-received-international-accreditation-as-an-academic-medical-center/

25. Abelson J, PPEET Research–Practice Collaborative. The Public and Patient Engagement Evaluation Tool (PPEET), v1.0 (Participant & Organization). McMaster University, 2015.

26. Consumer Confidence Project Steering Committee. Consumer Confidence Project: Report of Pilot Results. USA. 2015.

27. Grant J. The participation of mental health service users in Ontario, Canada: A Canadian application of the Consumer Participation Questionnaire. International Journal of Social Psychiatry. 2007;53:148-158.
28. Shortell S.M, Zukoski A.P, Alexander J.A, et al. Evaluating partnerships for community health improvement: Tracking the footprints. Journal of Health Politics, Policy and Law. 2002;27:49-91.
29. South J, Fairfax P, Green E. Developing an assessment tool for evaluating community involvement. Health Expectations. 2005;8:64-73.
30. Health and Social Care Regulatory Forum. Framework for Public and Service User Involvement in Health and Social Care Regulation in Ireland. Dublin. 2009.
31. Health Care for All, Massachusetts. A Review of 2013 Massachusetts Patient & Family Advisory Council (PFAC) Reports. Boston. 2014.

მრავალდონიანი კომპეტენციის შეფასებისა და განვითარების სისტემის (MSRK PMSP) შემუშავება და საპილოტე განხორციელება ამბულატორიული კლინიკის განვითარების ინდიკატორის მოდელის (IMORP)საფუძველზე.

ფონს. პირველადი ჯანდაცვის (PHC) ორგანიზაციული სიმწიფის ობიექტური, გამეორებადი შეფასება აუცილებელია მართვის ხარისხის, უსაფრთხოებისა და მდგრადობისთვის. არსებული მიდგომები (მაგალითად, აკრედიტაცია, შესაბამისობის აუდიტი, ერთგანზომილებიანი ქულების ბარათები) იშვიათად უზრუნველყოფს ინტეგრირებულ, განვითარებაზე ორიენტირებულ ხედვას, რომელიც მორგებულია ამბულატორიულ გარემოში.

მიზანი. პირველადი ჯანდაცვის ორგანიზაციებში კომპეტენციის განვითარების მრავალსაფეხურიანი სისტემის (MSRK pmsp) შემუშავება IMORP მოდელის საფუძველზე და მისი მიზანშეწონილობისა და გამოყენების შეფასება ურბანულ პოლიკლინიკებში.

მასალები და მეთოდები. IMORP მოდელი აგებულია ექვსწლიანი მონიტორინგის პროგრამის (2020-2025) აგრეგირებულ მონაცემებზე, რომელიც მოიცავს რვა ურბანულ პოლიკლინიკას. ჩარჩო შეიქმნა ოთხი საზოგადოებრივი ჯანდაცვის ექსპერტის მიერ და გაიარა გარე შინაარსის მიმოხილვა ორი დამოუკიდებელი ექსპერტის მიერ. IMORP სტრუქტურირებს ორგანიზაციულ სიმწიფეს შვიდ სფეროში (სამუშაო ძალა, ზრუნვის ხარისხი, ინფრასტრუქტურა, ინოვაცია, დიგიტალიზაცია, ფინანსები, მენეჯერული რეაგირება) მაქსიმუმ 155 ქულით და ოთხი სიმწიფის დონეზე (ძირითადი, შუალედური, მოწინავე, ექსპერტი). აღწერილობითი სტატისტიკა (საშუალო, SD, min–max) გამოითვალა. ჯგუფური შედარებები იყენებდა კრუსკალ-უოლისის ტესტს Dunn-Bonferroni post hoc პროცედურებთან, სადაც ეს შესაძლებელია (α=0.05). თითოეულ პირველადი ჯანდაცვის ორგანიზაციაში დროებითი ცვლილებები შეფასდა განმეორებითი ზომების ANOVA-ს ან ფრიდმანის ტესტის გამოყენებით, მონაცემთა განაწილების მიხედვით.

შედეგები. მოდელმა აჩვენა მკაფიო მენეჯერული ინტერპრეტაციულობა და დომენის დონეზე დიაგნოსტიკური რეზოლუცია. კლინიკის დონის საშუალო IMORP-ის ჯამური მაჩვენებლები მნიშვნელოვნად განსხვავდებოდა (Kruskal–Wallis $p<0.001$), წარმომადგენლობითი დიაპაზონებით დაახლოებით 60.0 ± 3.3-დან 105.3 ± 8.1 ქულამდე ობიექტებში; დომენის სპეციფიკური საშუალებები, როგორც წესი, ვიწრო ზოლებში (მაგალითად, დიგიტალიზაცია ≈14-15 ქულა, SD მინიმალური), ხოლო ინოვაცია თანაბრად დაბალი დარჩა. მიუხედავად სტატისტიკურად მნიშვნელოვანი განსხვავებისა კლინიკებს შორის საერთო ქულებში, რვავე დაწესებულება კლასიფიცირებული იყო იმავე სიმწიფის დონეზე (შუალედური) წინასწარ განსაზღვრული შემცირების მიხედვით, რაც მიუთითებს სტრუქტურულ ჰეტეროგენობაზე საპილოტე ფაზაში ჯვარედინი გადასვლების გარეშე.

დასკვნები. MSRK PMSP (IMORP) გთავაზობთ პრაქტიკულ, მრავალ დომენურ, სიმწიფის დონეზე დაფუძნებულ ინსტრუმენტს PHC ორგანიზაციებისთვის, ერთდროულად მხარს უჭერს დიაგნოსტიკურ პროფილის შექმნას და მიზნობრივი გაუმჯობესების დაგეგმვას. სრული ფსიქომეტრიული ვალიდაცია დაგეგმილია უფრო დიდ ნიმუშზე (≥35 პოლიკლინიკა), რათა დადგინდეს შიდა თანმიმდევრულობა, ინტერ-რატერი/ტესტ–რეტესტის სანდოობა, ფაქტორის სტრუქტურა და პროგნოზირებადი ვალიდობა კლინიკურ-ეკონომიკური და პაციენტის ჩართულობის შედეგების წინააღმდეგ.

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