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OPINION ARTICLE

Information and knowledge management: strategic resources for primary care

Gestión de la información y el conocimiento: recursos estratégicos para el primer nivel de atención

Jonatham Veliz-González [1*], https://orcid.org/0009-0001-8155-6945

[1] Teaching Polyclinic "Adrián Sansaricq." Artemisa, Cuba.

***Corresponding author:** velizjonatham@gmail.com

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ABSTRACT

Information and knowledge are fundamental resources for social progress, as they act as key tools in decision-making, conflict resolution, and the effective execution of tasks within organizations. Their proper management is necessary to achieve high levels of performance, productivity, competitiveness, innovation, and organizational positioning. In healthcare facilities, the management of both processes is closely linked to advancements in the quality of care and efficiency in service delivery. This paper aims to assess the incorporation of information and knowledge management processes as essential components for the performance of institutions at the primary care level. Leveraging human resources, along with the availability of appropriate technological tools and platforms, meets the demands necessary for management and allows for the identification of essential innovations to facilitate management work in the current context of the healthcare system. These practices, closely linked to organizational learning, enable evolution based on expertise, collective reflection, and adaptation. It is imminent to

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move toward a management policy oriented toward innovation, progressive digitalization, and the optimization of training processes, all in line with institutional objectives and in tune with the demands of the sector, allowing decision-making to be based on reliable, current, and relevant information, capable of responding to the real challenges of the healthcare environment.

Keywords: Information Management; Knowledge Management; Organizational Processes; Health Institutions; Primary Health Care

RESUMEN

La información y el conocimiento son recursos fundamentales para el progreso social, ya que actúan como herramientas clave en la toma de decisiones, la solución de conflictos y la ejecución eficaz de las labores dentro de las organizaciones. Su adecuada gestión resulta necesaria para alcanzar elevados niveles de desempeño, productividad, competitividad, innovación y posicionamiento organizacional. En los establecimientos de salud, la gestión de ambos procesos está estrechamente vinculada con el avance en la calidad de la atención y la eficiencia en la prestación de los servicios. El presente trabajo persigue el objetivo de valorar la incorporación de los procesos de gestión de la información y el conocimiento como componentes esenciales para el desempeño de las instituciones en el primer nivel de atención. El aprovechamiento de los recursos humanos junto con la disponibilidad de herramientas y plataformas tecnológicas adecuadas, cubren las demandas necesarias para la gestión, además de permitir identificar las innovaciones indispensables para facilitar la labor directiva en el contexto actual del sistema de salud. Estas prácticas, estrechamente vinculadas al aprendizaje organizacional, permiten que se evolucione a partir de la experticia, la reflexión colectiva y la adaptación. Resulta inminente avanzar hacia una política de gestión orientada a la innovación, la digitalización progresiva y la optimización de los procesos de capacitación, todo ello en concordancia con los objetivos institucionales y en sintonía con las exigencias del sector, permitiendo que la toma de decisiones se sustente en información confiable, actual y pertinente, capaz de responder a los desafíos reales del entorno sanitario.

Palabras clave: Gestión de Información; Gestión del Conocimiento; Procesos Organizacionales; Instituciones de Salud; Atención Primaria de Salud

Information and knowledge are fundamental resources for social progress, as they serve as key tools for decision-making, conflict resolution, and the effective execution of tasks within organizations.

Information must be managed efficiently, although its administration represents a challenge both in terms of organization and in generating opportunities to improve the effectiveness of any entity.[1] Proper information management (IM) helps minimize risks, as having the necessary and high-quality data is essential for institutional survival. Therefore, organizations are compelled to allocate their economic, physical, human, and material resources to properly handle information, both internally and for their users.[2]

Regarding knowledge management (KM), it focuses on leveraging the organization's intellectual capital, adding value to existing knowledge, and promoting the creation of new insights.[2,3] In addition, it protects proprietary knowledge, encourages its exchange, and fosters collaboration among experts and communities.[3] In this sense, knowledge itself is not managed directly; rather, the necessary conditions are created for it to be shared by those who possess it.

From the above, it follows that proper information and knowledge management (IKM) is essential to achieving high levels of performance, productivity, competitiveness, innovation, and organizational positioning.[4]

In the field of health, the application of IKM processes allows professionals to obtain agile and accurate responses related to the decisions they must make in their daily practice. This is mainly based on the knowledge of those involved and their ability to quickly adapt to change. It is an intentional practice that involves identifying the knowledge needs of a specific group and subsequently generating and disseminating relevant information that contributes to improving public health programs and achieving institutional goals.[3,5]

For these reasons, the present study aims to assess the incorporation of IKM processes as essential components for the performance of institutions at the primary level of care.

In healthcare facilities, the management of both processes is closely linked to advances in the quality of care and the efficiency of service delivery.[6] The appropriate use of information promotes improvements in teaching, research, innovation, and medical care—impacts that are positively reflected in patients' quality of life.[3]

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The Community Polyclinic has as its fundamental mission to ensure medical care that encompasses prevention through rehabilitation, through coordinated promotion and assistance actions. Its work extends to active case finding, epidemiological control, environmental protection, and educational guidance for both professionals and the community.

These functions—which involve teaching, health surveillance, and intersectoral and community collaboration—are integrated across all departments, particularly within the statistics department. This department is responsible for collecting, analyzing, and systematizing data produced by the various areas of the polyclinic, enabling not only the diagnosis of the population's health status but also the evaluation of intervention impacts, optimization of planning, and concentration of resources on the most pressing priorities.

In this context, GIK processes are essential, as they facilitate the efficient use of data and promote the integration of generated knowledge, resulting in tangible improvements in the community's health profile.

In this regard, Cuban health policies recognize the importance of establishing an enabling environment for the development of GIK, as well as the incorporation of methods and tools that facilitate the effective management of these resources for the advancement of science.[3,7]

Following the spectrum of added value, GI processes in Primary Health Care (PHC) are not limited to data collection; rather, they involve cognitive actions such as organization, analysis, interpretation, and evaluation—stages that transform data into useful and actionable knowledge.

The distribution of information occurs bidirectionally among the internal departments of the polyclinic, to be presented to management and subsequently to the higher levels of the health system. This process requires punctuality and accuracy but may face challenges due to delays in delivery from healthcare services, limited technological coverage, and the absence of intranet or internet access in some centers.[7]

However, it is worth noting that, although the goal is not to establish a dependency between the technological component and information management (IM), their interconnection serves as a factor that enhances organizational efficiency. Finally, the use of information materializes in resource planning, service evaluation, and the development of intervention strategies.

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Knowledge, in turn, circulates in parallel and manifests both explicitly in the normative documents of the National Health System and tacitly through the daily practices of the staff, who, through experience and judgment, interpret data and transform them into useful inputs. Knowledge creation occurs continuously, and although most knowledge remains implicit in practice and rarely formalized, it is precisely these routines and informal exchange mechanisms that ensure it flows with meaning and purpose.

According to the author, challenges such as staff instability, the loss of professionals with skills and expertise, the lack of repositories to document this knowledge, and limited systematization constitute factors that may hinder its retention and preservation processes.

These practices, closely linked to organizational learning, enable the polyclinic to evolve through expertise, collective reflection, and adaptation. However, as noted by some Cuban studies on knowledge management in health care [8,9], strengthening these processes requires institutional commitment, continuous training, and an organizational culture that values knowledge as a strategic resource.

Furthermore, the effective use of human resources, along with the availability of appropriate tools and technological platforms, meets the necessary demands for knowledge and information management (KIM) and makes it possible to identify the innovations needed to facilitate managerial work in the current context. [7]

Thus, workers must not only be familiar with the vision, mission, policies, and content but also integrate them coherently into their daily actions. Although there are currently few structured programs aimed at their professional development, there is a collective awareness of the importance of progressing toward systematic training, with initiatives emerging for self-directed learning and the sharing of useful experiences.

Work is articulated dynamically between individual and collaborative dimensions. The promotion of learning extends beyond technical or procedural processes to encompass human, emotional, and ethical growth, resulting in environments that foster well-being and motivation.

A scientific and academic management approach is essential to strengthen the image of health institutions through rigor in their operations, the training of human resources, the proper use of Information and Communication

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Technologies (ICT), and collaboration with other institutions. [5,10] In this regard, Salas and Ponjuán [11] place particular emphasis on knowledge auditing, with the purpose of revealing the characteristics of organizational knowledge—how it is created, where it resides, who possesses it, and how it is transferred—thereby identifying the strengths and weaknesses present within institutions.

Audits ensure the detection of inconsistencies, duplications, and gaps in information. Likewise, they allow for the mapping of critical processes, the identification of underutilized knowledge sources, the redefinition of roles based on actual capabilities, and the proposal of Information and Knowledge Management (IM and KM) models adapted to the institution's mission and aligned with its characteristics and objectives.

In addition, it allows for the establishment of informational quality indicators, the guidance of strategic decisions with greater precision, and the promotion of continuous improvement of processes at all levels.

Based on the analysis of the literature and previous reflections, the author proposes that, in primary care institutions, the following actions can be implemented to optimize Information and Knowledge Management (IKM) processes:

- Manage users' information needs and assess their level of satisfaction.
- Analyze information to add value and facilitate problem-solving.
- Examine strategic, political, social, economic, technological, and cultural factors that influence decision-making.
- Develop strategies to improve technological resources.
- Design strategic intelligence and technological surveillance systems through interinstitutional collaboration.
- Plan information flows to strengthen communication and support organizational processes.
- Propose systems and infrastructures that facilitate knowledge and document management.
- Manage the complete staffing and human resources required.
- Foster skills in organizational policies, information resource management, role definition, information life cycle, environmental interaction, and the use of appropriate technologies for professional development.
- Improve leadership techniques and conflict resolution capabilities.
- Promote an information culture within the organization.
- Train staff in advanced ICT skills for data processing.

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It is concluded that community-level institutions may face structural and operational challenges that limit the full utilization of Knowledge and Information Management (KIM) tools. Information has been consolidated as a valuable input that supports both population health diagnosis and the processes of planning and decision-making. The weaknesses make evident the urgency of strengthening information systems and promoting cultural and intrastructural changes.

Nevertheless, human capital emerges as the most valuable asset; the experience, commitment, and creativity of work teams can contribute to ensuring that information management, though perfectible, succeeds in responding to institutional and community demands. Collaborative flow, the construction of informal learning practices, and adaptability in the face of material limitations open opportunities to build communities of practice and consolidate a more proactive organizational culture.

The need for a rigorous audit emerges as a requirement to identify gaps, eliminate redundancies, and propose continuous improvement strategies. It is imperative to move toward a management policy oriented toward innovation, progressive digitalization, and the optimization of training processes—all in accordance with institutional objectives and in harmony with the demands of the health sector—allowing decision-making to be based on reliable, current, and relevant information capable of responding to the real challenges of today's healthcare environment.

REFERENCIAS BIBLIOGRÁFICAS

1. Lescay-Arias M, Montoya-Acosta LA, Zelada-Pérez MM, Bell-Fernández NM, Ramírez-Pedroso A. Information management in academic and healthcare processes through the Infomed Santiago cloud. MEDISAN [Internet]. 2022 [cited 2025 Jul 12];26:e4169. Available from: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=118687

2. Fernández-Valdés MM, Ponjuán-Dante G. Conceptual analysis of the main interactions between information management, document management, and knowledge management. ACIMED [Internet]. 2008 [cited 2025 Jul 12];18(1):0–0. Available from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S1024-94352008000700007&lng=es&nrm=iso&tlng=pt

3. Alfonso-Sánchez IR, Ponjuán-Dante G. Design of a knowledge management model for virtual learning environments in health. Rev Cuba Inf Cienc Salud [Internet]. 2016 [cited 2025 Jul 12];27(2). Available from: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=64585

4. Velázquez-Soto OE, Díaz-Arcos L. Tool to assess understanding of Information and Knowledge Management in Infomed. REMS [Internet]. 2023 [cited 2025 Jul 12];37(4). Available from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S0864-21412023000400010&lng=es&nrm=iso&tlng=es

5. Guerra-Bretaña RM, Valencia-Bonilla MB, Roque-González R. Information and knowledge management as essential elements for the quality of health institutions. Rev Cuba Inf Cienc Salud [Internet]. 2023 [cited 2025 Jul 26];34:e2282. Available from: https://acimed.sld.cu/index.php/acimed/article/view/2282

6. Cejas-Martinez MF, Frías E, Liccioni EJ, Quiñónez BM, Romero-Fonseca LE. Knowledge management as a key axis in information management in healthcare organizations. Vive Rev Salud [Internet]. 2022 [cited 2025 Jul 26];5(14):402–18. Available from: http://www.scielo.org.bo/scielo.php?script=sci_abstract&pid=S2664-32432022000200402&lng=es&nrm=iso&tlng=es

7. González-Guitián MV, de Zayas-Pérez MR, López-Porra J. Information audit and knowledge audit: an approach to their visualization as scientific domains. Rev Cuba Inf Cienc Salud [Internet]. 2015 [cited 2025 Jul 26];26(1):48–52. Available from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S2307-21132015000100005&lng=es&nrm=iso&tlng=es

8. Alfonso-Sánchez IRA, Ponjuán-Dante G, Fernández-Valdés MM. Process-oriented knowledge audit and professional development. Case studies: National Medical Library and Special Information Services. Rev Cuba Inf Cienc Salud [Internet]. 2025 [cited 2025 Jul 26];36:e2688. Available from: https://acimed.sld.cu/index.php/acimed/article/view/2688

9. Fernández-Valdés MM, Ponjuán-Dante G, Alfonso-Sánchez IR, Zacca-González G. Knowledge audit in the Teaching and Research Department of the National Center for Information on Medical Sciences of Cuba. Rev Cuba Inf Cienc Salud [Internet]. 2021 [cited 2025 Jul 26];32(1):e1639. Available

from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S2307-21132021000100006&lng=es&nrm=iso&tlng=es

10. Solenzal-Fernández G, Valdés-Martínez Y, Cruz-Márquez D, Pérez-Machín B de la C, Corrales-García AL. Information management for the Postgraduate Department of the Faculty of Medical Sciences Dr. Ernesto Guevara de la Serna. Rev Ciencias Médicas [Internet]. 2024 [cited 2025 Jul 12];28(1). Available from: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S1561-31942024000100020&lng=es&nrm=iso&tlng=es

11. Salas-García G, Ponjuán-Dante G. Process-oriented knowledge audit in a biomedical area. Rev Cuba Inf Cienc Salud [Internet]. 2014 [cited 2025 Jul 12];25(3):303–16. Available from: https://acimed.sld.cu/index.php/acimed/article/view/555

CONFLICT OF INTEREST

The author declare that there is no conflict of interest.

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