



## Strategy of overcoming in the attention to patients with Diabetes Mellitus type II

Estrategia de superación en la atención a pacientes con Diabetes Mellitus tipo II

Gilda Acela Martí-Martínez<sup>1</sup>✉, Roberto Hidalgo-Mederos<sup>2</sup>, Yerina Figueredo-Mesa<sup>3</sup>, Norberto Valcárcel-Izquierdo<sup>4</sup>, Raidel Martínez-Pérez<sup>5</sup>

<sup>1</sup>University of Medical Sciences of Havana. Dr. Joaquín Albarrán Clinical Surgical Hospital. Havana, Cuba.

<sup>2</sup>University of Medical Sciences of Havana. Julio Trigo Faculty of Medical Sciences. Havana, Cuba.

<sup>3</sup>University of Medical Sciences of Havana. Victoria de Girón Institute of Medical and Preclinical Sciences. Havana, Cuba.

<sup>4</sup>University of Medical Sciences of Havana. Faculty of Medical Sciences Girón. Havana, Cuba.

<sup>5</sup>University of Medical Sciences of Matanzas. Matanzas, Cuba.

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### ABSTRACT

**Introduction:** in the knowledge society it is essential to keep in mind that it is growing rapidly, which contributes to the need to learn how to manage it; it is necessary to update health professionals under this precept, and turn them into a human resource with high knowledge.

**Objective:** to design a professional improvement strategy for the improvement of performance, aimed at primary health care physicians in the care of patients with type II diabetes mellitus.

**Methods:** a mixed, longitudinal, descriptive study was carried out. The population and sample consisted of 58 family physicians. Theoretical and empirical methods and the Delphi statistical method were used.

**Results:** the implementation phase of the Professional Improvement Strategy for the improvement of performance, merges at the methodological level with the task related to the assessment of performance results, which show its feasibility.

**Discussion:** the modeling of the Professional Improvement Strategy made it possible to identify relationships: correspondence between improvement actions and improvement needs, hierarchy revealed between the identification of improvement needs.

**Conclusions:** the design of the professional improvement strategy allows determining the essential relationships that enrich the Medical Education Sciences from the postgraduate level; it proposes short, medium and long term actions that allow the development of knowledge, skills and attitudes with the purpose of solving the problem of professional practice with efficiency and efficacy.

**Keywords:** Strategies; Professional Training; Medical Sciences.

## RESUMEN

**Introducción:** en la sociedad del conocimiento es imprescindible tener presente que ésta crece de forma acelerada, lo que contribuye a la necesidad de aprender a gestionarlo; resulta necesario actualizar bajo este precepto a los profesionales de la salud, y convertirlos en un recurso humano con altos conocimientos.

**Objetivo:** diseñar una estrategia de superación profesional para el mejoramiento del desempeño, dirigida a médicos del nivel primario de salud en la atención a pacientes con Diabetes Mellitus tipo II.

**Métodos:** se realizó un estudio mixto, longitudinal, descriptivo. La población y muestra está constituida por 58 médicos de familia, se emplearon métodos del nivel teóricos, empíricos y el método estadístico Delphi.

**Resultados:** la fase de implementación de la Estrategia de Superación Profesional para el mejoramiento del desempeño, se funde en el plano metodológico con la tarea relacionada a la valoración de los resultados en el desempeño, que evidencian su viabilidad.

**Discusión:** la modelación de la Estrategia de Superación Profesional, posibilitó la identificación de relaciones: de correspondencia entre las acciones de superación con las necesidades del mejoramiento, jerarquización revelada entre la identificación de las necesidades de superación y causal entre las acciones de superación profesional y la atención al paciente con Diabetes Mellitus tipo II.

**Conclusiones:** el diseño de la estrategia de superación profesional permite determinar las relaciones esenciales que enriquecen las Ciencias de la Educación Médica desde el posgrado; propone acciones a corto, mediano y largo plazo que permiten el desarrollo de conocimientos, habilidades y actitudes con el propósito de resolver el problema de la práctica profesional con eficiencia y eficacia.

**Palabras clave:** Estrategia; Capacitación Profesional; Ciencias Médicas.

## INTRODUCTION

In the knowledge society, it is essential to bear in mind that it is growing rapidly and is also aging rapidly, which contributes to the need to learn how to manage it. It is therefore necessary to update health professionals and turn them into a highly knowledgeable human talent resource, highly appreciated in all countries, especially in the Third World, as it would respond to the most pressing health needs.<sup>(1)</sup>

Higher education in the 21st century, when taking on the challenge of the vertiginous development of sciences and technologies, must emphasize solid professional training as a consequence of prioritizing learning processes with an eminently productive character. Consequently, postgraduate education must be based on a graduate who is endowed with the intellectual and human resources that guarantee education throughout his/her professional life.<sup>(2)</sup>

Through Agreement No. 8625 on July 11, 2019 adopted by the Council of Ministers, it is established that Higher Education details the components that make up the model of continuing education, in its article three which states that: "Postgraduate Education, enables the specialization, reorientation and permanent updating of university graduates, in addition to the enrichment of the cultural heritage, for a better performance according to the present and future needs of the economic, social and cultural development of the country".<sup>(3)</sup>

Postgraduate Education is one of the main directions of work that meets the demands for the improvement of professionals in Higher Education in Cuba. Medical Education makes possible the permanent and continuous preparation of professionals in the sector, whose preparation is aimed at solving the health problems of society, since it constitutes the set of teaching-learning processes with the purpose of achieving a higher level of professional practice of graduates in correspondence with scientific-technical advances as a social responsibility of the university.<sup>(4)</sup>

The Cuban National Health System (SNS) is structured on the basis of the Family Doctor and Nurse Program (PMEF); it has the need, as well as the political will and legal instruments, to increase the demand in the levels of training and improvement of human resources. Accordingly, it should be aimed at raising the quality of services, based on the fact that health is a right of the people and a duty of the State.<sup>(5)</sup>

The performance of the Primary Health Care (PHC) physician is conscious and organized, an expression of permanent and continuous training that reveals the modes of action necessary to meet the demands of the service he/she provides and of the functions of the position qualifier, establishing the cognitive, procedural and attitudinal elements necessary as a professional of the medical sciences to offer solutions to the problems that arise in the radius of action, in correspondence with team work, decision making and the use of the scientific method (clinical, epidemiological and social) in the integration of the assistance, surgical, clinical, pharmacological, therapeutic and education at work, for the quality of life of the population that attends these services.<sup>(6)</sup>

One of the priorities of PHC is to improve the quality of life of the population, it is the ideal scenario to carry out fundamental activities aimed at health promotion and prevention, since it is where healthy lifestyles are oriented, which are linked to healthy eating and the practice of systematic physical activities and the elimination of unhealthy habits, alcoholism, smoking and drug addiction, preventing non-communicable diseases, including Diabetes Mellitus; from the individual, the family and society. In the dimension of the problem, the need to improve this situation is recognized, through permanent and continuous training in any of the modalities and organizational forms of education to achieve the improvement of the performance of physicians in the first level of care for patients with Diabetes Mellitus type two (DM II).<sup>(7,8,9)</sup>

Diabetes Mellitus type two is a health problem in the Cuban population; therefore, it is necessary to update the programs related to this disease and to adequately prepare physicians at the primary health care level in order to improve their professional performance in the care of these patients. Hence the need to design a Professional Improvement Strategy to improve the performance of PHC physicians in the care of patients with DM II.

## METHODS

A qualitative-quantitative (mixed), observational, descriptive and longitudinal study was carried out. An improvement strategy was elaborated for a population and sample of 58 physicians, representing 100 % who work in the family medical offices belonging to the Jorge Ruiz Ramírez and Docente polyclinics of the Playa municipality, in the period from January 2020 to December 2021. The variable: professional performance of primary health care physicians in the care of patients with DM II was identified and parameterized.

For the construction of the theoretical framework related to the object and field of action, the following theoretical and empirical methods were used:

**Documentary analysis:** for the systematization and assessment of the theoretical assumptions. The review of official documents, publications and other research contributed to obtain the necessary information.

**Analytical-synthetic:** it was used during the study of the specialized bibliography to determine the epistemological regularities of the object and field of research. Inductive and deductive: it made it possible to go from particular to general knowledge and, from the data obtained, to assess the specific characteristics related to the object of study and to infer generalizations.

**Historical-logical:** it made it possible to know the background of the object of study, the evolution that led the author to determine the characteristics of the process of improvement of primary health care physicians and, specifically, those associated with the care of patients with DM II.

**Systematization:** it contributed to the organization of knowledge, to the development of contents in each chapter and to the search for interrelations that express the dialectic conception of the object of study. It allowed the construction of the variable to be studied, indicators and instruments to be applied in the research.

**Systemic structural functional:** it made it possible to carry out the integral analysis to model the object of study, by determining the existing links in the Professional Improvement Strategy for the improvement of the physician's performance at the primary health care level for the care of patients with DM II.

**Modeling:** it was used in order to reproduce, in a simplified form, the object of study and to represent the design of the professional improvement strategy to improve the performance of primary care physicians.

Surveys addressed to physicians at the primary health care level: it allowed to deepen in aspects related to the background of the improvement process and to obtain information on the difficulties related to performance.

Interviews to managers: it allowed assessing the criteria issued regarding the performance of physicians at the primary health level in the care received by patients with DM II in the two polyclinics where the research was carried out.

Consultation with experts: the Delphi method was used, which facilitated the theoretical assessment of the Professional Improvement Strategy for the improvement of the performance of physicians at the primary health level in the care of patients with DM II.

**Ethical aspects:** informed consent was obtained from the scientific council of the institution and from 100 % of the participants. The principle of confidentiality of the data was complied with, which were used only for research purposes and by the researchers. The information obtained was presented collectively and not individually.

## RESULTS

For the foundation of the professional development strategy, a group of curricular dimensions are established. These dimensions, from the alternatives of Advanced Education (AE), are considered "(...) frames of reference for the foundation of any proposal that goes from the macro level of the curriculum",<sup>(10)</sup> that is, from the PHC of a territory to the micro level: the family doctor's office.

It is considered appropriate to refer that in the fundamentation of the design, the existence of dimensions, understood as "those frames of reference or intervening variables to be considered in the act of planning", is addressed.<sup>(11)</sup> In the modeling process around physicians working at the primary health level in the care of patients with DM II in the municipality of Playa, it is based on the theoretical level.

### Philosophical foundations

From the systematization made to researchers,<sup>(12,13,14)</sup> the authors assume that Dialectical and Historical Materialism are inseparable parts of philosophy, they constitute the basis of the proposed Improvement Strategy and at the same time an instrument of reflection and theoretical-practical apprehension of reality, which allows man to enter through knowledge in all aspects of his work and activity. Among the functions of dialectical materialism is to provide it with a scientific conception, which implies the development of intellectual capacities and skills with a humanistic essence that characterizes health professionals.

The strategy aims to prepare physicians at the primary health level to achieve positive changes in behaviors and attitudes that lead to improved performance in the care of patients with DM II, with updated, holistic and personalized information that originates with the relationship established between improvement and performance, as a process inherent to the improvement of the quality of public health.

The appropriation and development of moral values, which once made conscious, are incorporated into the behavior of these physicians; fundamental elements stand out, Marxist humanism and the unity of theory and practice, resulting in the essential role of work in the development of the personality and the transforming activity of social practice. The philosophical conception of the world is manifested in the performance of these physicians by the critical and transforming activity, which allows the constant reconstruction and continuous improvement of their modes of action and levels of professionalization for the improvement of performance at the primary health level.

### Sociological Foundations

They are established coherently with the philosophical foundations, which take as a starting point the dialectical relationship of the educational phenomenon in the social projection, intimately linked to the essential aspects of human life (politics, economy, law, environment, social

communication, culture), which reach a higher dimension in Medical Education. In the proposal of the Professional Improvement Strategy, it is conceived that PHC physicians, from the sociological aspect, improve their knowledge, skills, attitudes and values, in correspondence with the social demands of the health system.

Physicians at the primary health care level who participate in the improvement strategy become agents that produce increasingly positive transformations in the object and in the subjects; their actions influence the individual and social order. Emphasis is placed on a professional practice of physicians, according to the demand of health processes in the community, in offering a holistic approach of action by executing effective actions in promotion and prevention, mainly aimed at lifestyle changes and non-drug care, choice in the balance in the health-disease process for the rehabilitation in the health of patients with Diabetes Mellitus type two.

### **Psychological Foundations**

For the conformation of the strategy of improvement, the psychological foundations and the historical-cultural approach are assumed, starting from the interpretation of the Dialectical and Historical Materialism that L.S. Vigotsky,<sup>(14)</sup> in particular the ideas related to learning as an activity of social character and not only a process of individual realization, which is revealed in the proposed strategy, where the learning of primary level physicians is carried out through the improvement with the activity of social character, and in the active role of the subject in learning, when dealing with the solution of social problems with participatory and collaborative sense, especially, the formation and development of an ethical conduct in the professional performance in the medical attention to the health of the individual, family and community.

### **Fundamentals of Primary Health Care**

Physicians working at the primary health care level are responsible for ensuring the health of the individual, the family and the community through promotion, prevention, diagnosis, treatment and rehabilitation, manifested in professional and human behavior, which meet the expectations and needs of physical, psychological and social well-being of the population and meet the quality requirements shown through the relationship established between professionals and patients.<sup>(15)</sup>

The proposed professional improvement strategy considers in its relationship, the achievement of better results in lifestyle changes in patients who have a history of type two Diabetes Mellitus or those who suffer from the disease. The contents that are developed in it, are aimed at the improvement of its four basic functions, besides focusing on care with a holistic approach and incorporating care with non-pharmacological treatments that is an assistance according to the health problems that these patients present in the community, so that the research teaching function that is implicit, makes it possible to appropriate the necessary knowledge and from the research skills and new technologies in the service of health.

### **Fundamentals of Medical Education Sciences**

In this context, research analyzes a problem, whose solution should contribute to the improvement of the performance of physicians at the primary health level; this process is assumed with a conscious, systematic and goal-oriented character, and is characterized by a social projection, a humanistic orientation and a transforming character; that is, it addresses the solution of a problem and is focused on its own transformation. Five epistemological principles of Medical Education Sciences are distinguished, which enrich the epistemological basis of Medical Sciences and Health Sciences; these are: Education at Work; Autonomy; Do No Evil; Professional Ethics and Beneficence, which also include permanent and continuing education, interdisciplinarity and humanism.<sup>(16)</sup>

The proposed Professional Improvement Strategy corresponds to the Cuban educational policy for the training, updating and continuing education of human resources, through different postgraduate programs, which guarantees optimal performance, aimed at solving the population's health problems. The adaptive transformations of the proposed contents are manifested in a contextualized way, taking into account that education at work is the core in the application of the research approach in the teaching-learning process, which requires the planning, organization, direction and control of the professional improvement strategy proposed by the flexibility, dynamism, developmental and harmonious character linked to coordination and feedback relationships of the process and the adaptation to which it aspires.

These fundamentals about the Professional Improvement Strategy for medical care become the basis for its structuring. From the systematization of the works of different authors,<sup>(17,18,19,20,21)</sup> regularities are identified in line with the strategy proposed in this article, as it is conceived as a system in which actions are interrelated and conditioned, in order to move from a real situation to the one to be achieved.

The above definitions allowed the identification of the following regularities regarding Professional Improvement Strategies:

- They are aimed at the individual transformation of human resources.
- They make it possible to update the contents, methods and values of science.
- It is conceived from the development of a system of actions.
- It gathers the theoretical-practical experience of the participants.
- It goes towards the transformation of the modes of action.
- It promotes obtaining results in the short, medium and long term.

System of actions oriented to the acquisition and continuous updating of knowledge, skills and moral values.

Therefore, it was determined that the mission of the Improvement Strategy is: to raise the quality of services from the updating, consolidation of content and training of specific skills for the care of patients with Diabetes Mellitus type two, through the fulfillment of the functions, in family medical offices, with the necessary quality for early detection and diagnosis.

The components and relationships of the Improvement Strategy are structured according to the vision: the improvement of the professional performance of PHC physicians and the general objective: to organize the improvement process for the improvement of the professional performance of PHC physicians in the care of patients with type 2 diabetes mellitus. With these ideas, the theoretical model of the system recognized as Professional Improvement Strategy for the improvement of performance is built, in a process of arrangement of the components. The solidity and stability are made explicit and concretize the capacity of response to the results of the diagnosis, which the strategy possesses, in the components and in the theoretical supports that support the transit through three essential phases: scientific-methodological, procedural and contextual.

### **Stages of the Professional Improvement Strategy**

**Stage 1.** Diagnosis of the performance of primary health care physicians.

Objective: to assess the updated comprehensive diagnosis of the knowledge, attitudes, values and professional skills that physicians possess in the care of patients with type 2 diabetes mellitus.

Among the actions, the following are identified:

1. Design of the diagnostic instruments, based on the parameterization process and the sources of information to be used.
2. Development of the diagnosis, through the application of the instruments to the selected sample.
3. Identification of potentialities and weaknesses based on the quantitative processing of the information obtained and the qualitative assessment through methodological triangulation.

**Stage 2.** Planning of the Professional Improvement Strategy for primary health care physicians. Objective: to design professional development actions for physicians working at the primary health care level to care for patients with type 2 diabetes mellitus.

Among the actions, the following are identified:

1. Proposal of suggestions for actions, system of contents, forms of organization, control, evaluation and redesign of the actions of each stage.
2. Assessing the topics to be taught in each course.

**Stage 3.** Execution of the Professional Improvement Strategy for primary health care physicians. Objective: to carry out the professional development actions designed in the professional development strategy to improve the performance of physicians at the primary health care level in the care of patients with type 2 diabetes mellitus.

Among the actions, the following are identified:

1. Elaboration of agreements for the improvement actions with the beach polyclinics methodologically attended by the "Joaquín Albarrán Domínguez" Clinical and Surgical Teaching Hospital.
2. Approval of the training actions with the municipal health directorates and with the "Victoria de Girón" Faculty.
3. Identification of the teaching scenarios, from education at work, for the implementation of the professional improvement strategy.
4. Placement in the virtual environments of the bibliography of the different contents that were addressed in the improvement actions.

**Stage 4.** Evaluation of the Professional Improvement Strategy of the performance of the primary health care physician.

Objective: to evaluate the improvement in the performance of physicians at the primary health care level in the care of patients with type II diabetes mellitus, based on their participation in the improvement actions of the strategy.

Among the actions, the following are identified:

1. Elaboration, implementation and discussion of the results in the follow-up of the strategy of improvement.
2. Evaluation of the quality of the improvement process from the satisfaction tests.
3. Evaluation of the impact of the change on the improvement of the physicians' performance.

## DISCUSSION

After organizing the forms of implementation and evaluation of the professional improvement strategy from the foundations identified in the Medical Education Sciences, and from the relationships established between the components, the authors consider within the theoretical contribution to these sciences an improvement strategy that updates and develops knowledge and skills, with a holistic approach in the preparation of physicians at the primary health level for the care of patients with DM II.



The follow-up and monitoring of the development of the Professional Improvement Strategy allows the feedback of the system of actions according to defined variables, dimensions and indicators, which allows taking measures to improve the proposal. The lectures are based on updated topics concerning Diabetes Mellitus type two and changes in lifestyle, environmental, diet and holistic and personalized care to each patient depending on the system of standards for implementation.

The activity of education at work, the discussion of health problems, both in teaching-care scenarios, constitutes a form of teaching organization, applicable to the postgraduate; it allows the physician to be trained with a holistic approach to the problem, based on the identification and analysis of the causes for the search of solutions to the problem that arises. At the same time, it offers the possibility of integrating theoretical contents with daily practice.

The scientific debate allows physicians at the primary health care level to demonstrate experiences based on the result of the identification of problems and the development of health actions as a way to apply the content of the improvement in the professional functions they perform, based on the conscious involvement in the search for solutions.

The comprehensive approach by the primary health care physician becomes evident during the discussion, to the extent that he/she is able to use the capacity for analysis and synthesis of the health problems affecting the patient with type two diabetes mellitus and the multifactorial approach established (biopsychosocial and environmental), lifestyle changes in terms of diet, exercise, non-drug treatment, in addition to assessing the elements contributed by the different sectors for the solution of the problem.

In the abstraction process carried out for the modeling of the Professional Improvement Strategy, the following relationships were identified:

1. Relationship of correspondence between the improvement actions with the needs of improving the performance of physicians at the primary health level for the care of patients with Diabetes Mellitus type two, converted into the contents to be linked with the forms of improvement, which were identified from the results of the initial diagnosis.
2. Hierarchical relationship revealed between the identification of the needs for improvement in the care of patients with Diabetes Mellitus type two of the primary care physician and the evaluation of the forms of improvement offered in the Professional Improvement Strategy.
3. Causal relationship between the professional improvement actions and the care of patients with type two diabetes mellitus, the main goal of this research.

These relationships revealed in the Professional Improvement Strategy make possible the solution of the problem between the preparation and performance of physicians at the primary health level, enriches the Sciences of Medical Education, in the area of permanent and continuous training, which offers internal logical coherence to the sciences and consolidation as a principle. The external relationships express the condition of change, which is produced through the mediation of internal relationships that refer to dialectical relationships that underlie within the proposed professional improvement strategy and act as determinants for the achievement of the proposed objective, and are manifested in each of its actions. The most important ones are recognized:

The integration of actions for the achievement of the proposed objectives.  
Contextual dependence of the professional performance improvement process and the teaching-learning process.  
Dependence between the flexible diagnosis and the professional improvement strategy.  
Integration of the dimensions that are established

Coordination of actions in each stage.

The Professional Improvement Strategy for the care of patients with type II diabetes mellitus and the process of abstraction of the elaborated model contribute a group of relationships to the preparation of the physician at the primary health care level, which favor the internal logical coherence of the Medical Education Sciences as a theory under construction. These relationships enrich, in general, the Sciences of Medical Education and, in particular, the permanent and continuous training of the primary level physician who cares for the patient with DM II.

## CONCLUSIONS

The historical-logical study and the systematization carried out allowed the identification of the foundations that support the Professional Improvement Strategy aimed at primary level physicians for the care of patients with Diabetes Mellitus type two and the essential relationships that enrich the Theory of Advanced Education in particular and the Sciences of Medical Education in general from the postgraduate level. The designed strategy proposes short, medium and long term actions that allow the development of knowledge, perceptions, needs, motives, attitudes and behaviors with the purpose of solving the problem of medical professional practice with efficiency and efficacy, through the use of methods and procedures from the achieved objectives. They are visualized in the transformation demonstrated in the performance from taking advantage of the opportunities and evaluating risks that the physicians of the first level of care have for the care of patients with Diabetes Mellitus type two.

### Authors' contribution

**GAMM, RHM:** Participated in the substantial contributions for the conception and design of the work, acquisition, analysis and interpretation of data. Drafted the work and made a substantial revision. Approved the submission of the submitted version.

**YFM, NVI, RMP:** Participated in substantial contributions to the conception and design of the work, acquisition, analysis and interpretation of data. Drafted the work or made a substantial revision. Approved the submission of the submitted version.

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The authors declare that they have no conflicts of interest with respect to this article.

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