

Procedure to manage the suitability of workers in public health entities

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Abstract

The principle of proven suitability contributes, together with management by competencies, to achieving effectiveness in Human Capital Management. In public health entities, it is essential to correctly develop competency-based management to enhance the quality of services. However, studies conducted by the Ministry of Public Health show dissatisfaction of the population with medical care received, demonstrated by the increase in complaints and claims in recent years, especially directed at hospital services. In this study we propose a procedure to manage suitability in public health entities. It is in line with Cuban legislation and contributes to improving the systems of internal control of organizations. The application was developed in a hospital, and allowed the elaboration of proficiency and suitability profiles, evaluation of these profiles and calculation and analysis of indicators for the key processes of human capital.

Keywords: demonstrated suitability, labor competencies

1. Introduction

Cuba is not alien to the world economic reality; affected by the economic, political and financial blockade imposed by the United States it is more difficult to proceed to achieve satisfactory results. According to the guidelines 43 of the VI Congress of the Communist Party of Cuba, it achieves a progressive reduction of the levels of support by the State. To achieve these results, guideline 15 refers to the essential thing that is to elevate the responsibility and the faculty of companies to strengthen their Internal Control System.

In 2011, the General Comptroller of the Republic of Cuba enforces Resolution No. 60 on internal control a standard that serves as a guide for the Cuban business system and the implementation of internal control. The aforementioned resolution proposes five components that make up the Internal Control System and that are consistent with the most generalized criteria: Control, risk management and prevention environment, control activities, supervision and monitoring, and information and communication.

The Control Environment is the basis for the operation of internal control (COSO, 1992; Resolution No.297, 2003; Nieves Julbe, 2010). It sustains the functioning of this and sets the goals towards where the organization should go. According to Resolution No. 60, the Control Environment component has five standards: planning annual, monthly and individual work plans, integrity and ethical values, demonstrated suitability, organizational structure and assignment of authority and responsibility, and management policies and practices in the management Human Resources.

The Demonstrated Suitability (DS) is a fundamental element to guarantee the effectiveness in the Internal Control System of an organization. This facilitates the fulfillment of the functions and responsibilities assigned to each worker. The general elements to be taken into account about DS are expressed in the Labor Code (Asamblea Nacional del Poder Popular, 2014) and state the fulfillment of features and vital characteristics that are included in the Labor Competencies (LC) of a worker. The Labor Competencies constitute a set of elements that the worker must have, and are based on the principle of demonstrated suitability. Both aspects must be managed jointly to achieve the efficient and effective management of human capital, they are a complement to the results that can be reached especially in the key processes of the Integrated Human Capital Management System (Selection and Integration (SI), Performance Evaluation (PE), Training and Development (TD) and Moral and Material Stimulation (MME))

In the current approaches analyzed only Cuesta Santos (2000); Sánchez Rodríguez (2007); Nieves Julbe (2010); The Office of the Comptroller General of the Republic of Cuba (2011) and García Fenton (2011) treat the terms by linking them with the four key processes of Human Capital Management (HCM) and internal control. Of this group of authors the one of greater specialization to the subject is García Fenton (2011). It proposes a procedure for Human Capital Management based on demonstrated suitability and is aimed at public health entities. However, it does not do so from the perspective of internal control and does not use techniques for the analysis of demonstrated suitability.

On the other hand, Guideline 143 of the VI Congress of the Communist Party of Cuba states that the quality of the health services provided must be enhanced. However, at present, medical care services, according to studies issued by the Ministry of Public Health (MINSAP), have experienced difficulties, evidenced by the increase in complaints and claims from the population throughout the country to the provincial health directorates. Medical care affects 19.4% of all complaints and claims, which demonstrates the deficiencies of Human Capital Management in public health entities. Of the public health organizations, the hospital entities have been those that collect the most percent of these complaints and claims.

Through diagnosis, it can be corroborated how in the country's hospitals there are also deficiencies in compliance with the standards such as: the suitability committee for each area is not created; difficulties in training plans; the requirements set out in the work code and its regulations are not met, especially those related to the selection, evaluation and stimulation of personnel and not all proficiency profiles are defined, especially those of the sector's own personnel. These elements show the problem of the study and generate the needs to manage the suitability for public health entities. The objective of the research is the proposal of a procedure to manage the suitability of workers in public health organizations.

2. Procedure to manage the suitability of workers in public health entities

The objective of the procedure is to evaluate the ID according to the suitability profile (García Fentón, 2011), whose realization starts with the elaboration of the competence profiles of the workers, where the proposal of Sánchez Rodríguez (2007) is taken as reference. Once the suitability of each worker is evaluated, this result is linked to the key processes of the HCM in order to increase the suitability index of the workers, both individually and collectively. The procedure has four stages and eleven steps as shown in figure 2.1

Stage one (Initial preparation) aims to create the necessary conditions to execute the remaining stages and contribute to the logical development of all steps and tasks and their results are expected. Part of making the working groups: planning the development of the procedure in the entity under study and carrying out a diagnostic characterization of it. The working group will be the expert committee itself and should be given a preparation that allows it to define the competences and at the same time evaluate them. The elements of characterization can be the general characteristics of the organization such as branch membership, mission, vision and characteristics of human capital in addition to the analysis of the strategy of the organization, characterize the culture of managers and skills and the analysis of audit results.

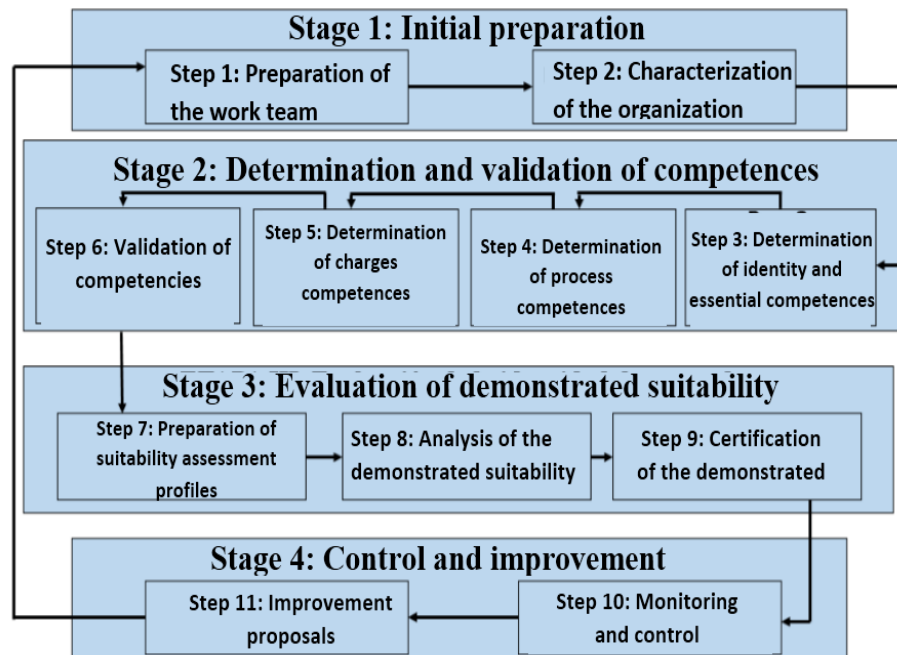


Figure 2.1 Procedure to manage the suitability of workers in public health entities

In stage two (Determination and validation of labor competencies) the main objective is to define the LCs for each family of charge and that they are validated by the experts' criteria so that they can be used in the evaluation of the ID of the worker. The proposal made by Sánchez Rodríguez (2007) with adaptation to some elements is used in the procedure.

Be part of defining the competences of identity, the essential ones, those of processes and finally those of the positions. The latter are grouped into education, training, skills, attitudes and personal qualities and experiences at work. Once the profile of each position is drawn up, the committee responsible for evaluating the position validates it.

The third stage (Evaluation of the demonstrated suitability) has as objective to determine the ID of the worker and to compare them with decision criteria for decision-making based on the preparation of suitability profiles. In the elaboration of these profiles the multi-criteria method Analytical Hierarchic Process (AHP) of Saaty is integrated with the legal framework of the Labor Code and the resolutions linked to it, in order to elaborate a weighted profile that diminishes the uncertainty when analyzing the individual suitability of each worker. When applying the multiple criterion method with the support of specialists in the subject, the model of suitability profile for health personnel was drawn up (see table 1) based on what is proposed in Resolution No. 282 of the MINSAP. Saaty's AHP weighs the elements of the MINSAP resolution. Within these elements are grouped the vital skills that are extracted from the competence profile and are weighted through an expert method. Each competition must be described according to whether its manifestation is considered high, medium or low.

To determine the individual suitability index of each worker, the following equation 1 should be used.

$$\text{EIS} = 0.4057(\sum_{i=1}^n W_i E_i) + 0.5943(\sum_{j=1}^p W_j E_j) \quad (1)$$

Where EIS is the evaluation index of suitability of each worker, i is competence of the first element, j is competence of the second element, n is the total of competencies of the first element, p is the total of competencies of the second element, W_i is the weight of the competition i, W_j is the weight of the competition j, E_i is the evaluation of the competence i, and E_j is the evaluation of the competition j.

Table 2.1: Model suitability profile for the health worker

Elements	Weight	Vital Competences	Weight	Evaluation		
				High	Medium	Low
Principles of medical ethics and values of a social, moral or human nature	0,4057	C ₁	W ₁			
		C ₂	W ₂			
		C _n	W _n			
Update knowledge and skills	0,5943	C ₁	W ₁			
		C ₂	W ₂			
		C _q	W _q			

It must be taken into account that the evaluation of each competition will be 3, 2 and 1 for when its behavior is high, medium and low respectively. The suitability index must be between 1 and 3. It has five evaluation criteria based on the intervals as shown in the following table:

Table 2.2: Individual suitability assessment interval

Intervals	Evaluation
$EIS \leq 1,4$	Very low suitability
$1,4 < EIS \leq 1,8$	Low suitability
$1,8 < EIS \leq 2,2$	Average suitability
$2,2 < EIS \leq 2,6$	Acceptable suitability
$EIS \geq 2,6$	High suitability

For the first case, when very low suitability is reached, the worker loses the suitability and seeks to relocate it in a less complex position. If it is a health sector staff, the possibility should be sought within the sector itself. In case of not being able, the separation of the center and the sector is proposed. If the suitability evaluation is very low, the worker loses the suitability and training needs are urgently considered. In case of not being able, the measures for the first case are applied. For an evaluation of average suitability the worker maintains its suitability but training needs are raised for its better performance. You must have continuity with these workers and control their training.

In the case of acceptable suitability the worker maintains the condition of ideal and if it is high, the possible promotion and/or stimulation of this can be analyzed. Once the suitability index is evaluated, the working mechanism is followed through linking the suitability with the key processes of the HCG as shown in Figure 2.2.

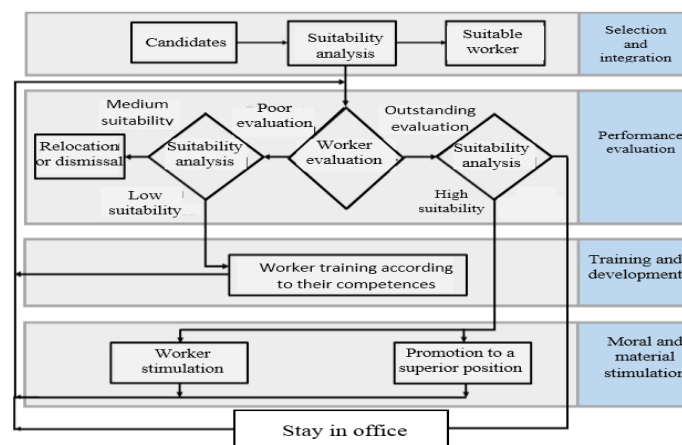


Figure 2.2 Analysis of suitability through the key processes of the HCM

Put into practice the suitability analysis mechanism proceeds to the fourth stage (Control and improvement). The objective is to verify that in the management of the suitability of the workers satisfactory results have been obtained and in case of detecting deviations, it is proposed to make the necessary adjustments to give a continuous improvement approach to the procedure. For this purpose, a series of indicators are proposed that control the degree of suitability that has been achieved in the organization and how much has been improved fundamentally by the contribution of the four key processes of the GCH (table 3). The analysis of the indicators can be carried out both general, as shown in table 3, and individual to go to the particularities of each worker and specify fundamentally regarding the training.

Table 2.3: Indicators for the control of suitability through the key processes of the HCM

Process	Indicator	Criterion
DS	$GSI = \frac{\sum_{i=1}^n EIS}{n} (2)$ <p>Where GSI is the General suitability index and n is the number of workers that the study is made.</p>	$\geq 2,4$ Good $\geq 1,8$ y $\leq 2,4$ Regular $\leq 1,8$ Bad
SI	$SQI = \frac{\sum_{i=1}^n EIS}{3 \times n} * (3)$ <p>Where SQI is the selection quality index in a period, EIS is the suitability index of a selected candidate, and n is the number of workers selected in a period.</p>	$\geq 0,85$ Good $\geq 0,60$ y $\leq 0,85$ Regular $\leq 0,60$ Bad
TD	$ICT = GSI_2 - GSI_1 * (4)$ <p>Where ICT is the index of training in one period, GSI1 is the general index of suitability at the beginning of the period and GSI2 is the general index of suitability at the end of the period</p>	Greater than 0 is good
MME	$SI = \frac{WHS}{SW} (5)$ <p>Where SI is stimulation index, WHS is the number of workers who have obtained a high index of suitability in the period and SW is the number of workers stimulated in the period</p>	There must be a tendency to one
PE	$QPE = \frac{WHS}{WAP} (6)$ <p>Where QPE is the quality of the performance evaluation, WHS is the total of workers with high or acceptable suitability indices and WAP is the total of workers with adequate performance.</p>	There must be a tendency to one

After the analysis of these indicators, measures are projected linked to the increase of the suitability of the workers and to the best development of the key processes of the HCM. For the proposed measures, it is recommended to use an action plan in which actions are included, responsible for executing and controlling, start and control dates and resources, if necessary.

Once this stage is concluded, the cycle of the procedure closes, but due to its character of continuous improvement it can return to the initial stages. Any changes in regulations, technologies, structures, among others, should be made in the profiles of both suitability and competence.

To verify if the suitability of the workers has been improved, a non-parametric test will be used, the Wilcoxon signed-rank test, this is to compare the average range of two related samples and determine if there are differences between them. It is used as an alternative to the Student t test when the normality of these samples cannot be assumed. It is a nonparametric test of comparison of two related samples and therefore does not need a specific distribution. It is used to compare two related measurements and determine if the difference between them is due to chance or not (in the latter case, the difference is statistically significant, which is achieved when the p-value is greater than 5%).

3. Application of the procedure to the nursing staff of a health entity

The validation of the procedure was carried out through the practical application in a hospital. The analysis was developed in the Emergency Service process and specifically to the nursing positions. The main results obtained from each of the stages of the procedure once applied are described below.

In the first stage began with the creation of working groups, which are composed by expert committees. It was found that the entity has four committees of experts: one for health technologists, one for nursing staff, one for medical personnel and the last for personnel that is not specific to the sector. The committees are well defined according to the regulations of the Labor Code and each one is composed of five members. The group was prepared to be more involved with the subject and instructed in the techniques that were to be applied.

The diagnostic characterization of the Hospital was carried out as the second stage of the first stage. An analysis of the mission, vision, shared values was carried out and the work force was characterized by sex ages and occupational category.

On the analysis of the strategy of the organization, it was concluded that it presents a given average development because the strategic objectives of the organization are not of the knowledge of all the personnel, the strategies are not systematically updated and the policies for the organization are not well declared. Internal Control System and the Integrated Human Capital Management System. The culture of the managers and their competencies qualified both as means, because teamwork is not efficiently deployed, they do not possess the necessary skills to manage the human capital under their charge and not all the cadres and leaders have passed administration courses.

From the analysis of the audit results it was detected that as elements that affect the management of human capital and especially the suitability are: deficiencies in the procedures that must be carried out by the entry commission for the recruitment, selection and approval of the personnel and lack of some procedural manuals in fundamental processes of human capital. In addition, the general characteristics of the organization were reviewed, such as the mission, vision and characteristics of the human capital that facilitated the development of the following stages.

In the second stage the competencies were developed from the most general of the organization to the positions. Identity competencies were defined through the Delphi method, which are the ones that all personnel must share and then the essential competencies that are taxed in compliance with the strategic objectives, as shown in table 3.1.

Table 3.1: Hospital identity and essential competencies

Identity competences	Essential competences
Professionalism in the services provided	Constant update of knowledge and skills
Orientation to continuous development and technological innovation	Courtesy and good treatment
Ability to meet interested parties	Guidance on quality management
Social commitment and humanism	Orientation to Internal Control
	Focus on the client
	Reaction capacity

After defining the general competencies of the organization, the competencies of the processes were defined. First, the processes of the organization were analyzed through the process map and it was decided to carry out the study in the Emergency Service process, as this is a key process and that welcomes a large part of the health sector's personnel. In this sense, the groups of experts listed all the functions of each process and then, based on these, defined the competences. Table 5 shows the competencies of the Emergency Service process.

Table 3.2: Competencies of the Emergency Service process

Process	Process competences
Emergency Service process	Reaction capacity
	Friendliness and good treatment
	Professionalism in the service
	Optimism
	Problem solving
	Teamwork

Once the competences of the processes were defined, the competences of the positions were defined. The charges related to the processes were grouped so that a total of 14 charges were defined for the Emergency Service process and five positions of nurses.

In applying the Delphi for the positions, the competences were identified and grouped for each of these in education, training, skills and personal qualities and work experience. After these were defined, they were validated through the meeting and assessment of all the expert committees. The competences manual of the positions was prepared, in which, in addition to the competences, the general data were included such as name of the position, occupational category, salary scale, risks, responsibilities and functions.

These competences were grouped into the two elements weighted by Saaty's AHP (principles of medical ethics and social, moral or human values and updating of knowledge and skills) and within each of these elements a vote weighted by the experts to determine how much weight each of these competencies had within the suitability elements. In conjunction with the expert committees, for each of these competency units, the possible behaviors for when the qualification is high, medium or low were defined and finally the suitability profiles of the positions were drawn up. Table 3.3 shows the profile for the evaluation of the suitability of the senior nursing position of the Emergency Service process.

With the suitability profiles already developed, the evaluation of them was put into practice to determine all suitability indices of the personnel belonging to the Emergency Service process. It was applied to all charges for being the first time this mechanism is implemented. In later moments, the suitability analysis is performed according to the mechanism proposed in figure 2.2.

Table 3.3: Suitability profile for the senior nursing position

Elements	Weight	Vital Competences	Weight	Evaluation		
				High	Medium	Low
Principles of medical ethics and values of a social, moral or human nature	0.41	Professional attitude	0,32			
		Verbal communication to the doctor and patients	0,19			
		Assistance and punctuality to work	0,18			
		Values	0,31			
Update knowledge and skills	0.59	Basic knowledge of nursing	0,27			
		Knowledge to make a preliminary diagnosis	0,11			
		Knowledge about current medications and their availability	0,20			
		Employment of work tools	0,23			
		Completion of tasks	0,13			
		Innovation	0,06			

To facilitate the development in the evaluation of suitability in the same design, a Microsoft Excel spreadsheet programmed is proposed. This determines the suitability index, just by marking with an X the evaluation of each

competition, and graphs the behavior of the same emphasizing those that qualify low to take them into account for training.

After implementing this stage of the procedure, it proceeded to the control and improvement stage. Within the control, the indicators proposed in the design were taken into account. From the index of general suitability index, the result for all nursing positions in the process was 2.45, which can be said to be good. On the other hand, when analyzing the specific charges, it could be seen that in the position of senior nurse, the IIG was only 1.94, receiving this a regular evaluation (figure 3.1 a).

In the calculation of the selection quality index, it could be said that its behavior was favorable. In a period of 3 months, of five selected nursing workers, their indices were between high and acceptable and the indicator obtained a value of 0.88 for what they described as good. In the quality of the evaluation of the performance, of the 60 evaluated the performance, 56 obtained evaluations of suitable or superior. On the other hand, of the suitability analysis performed on these workers, only 44 obtained acceptable and high suitability indexes. When calculating the quality index of the EDD a 0.78 was obtained, which is not all good and indicates that good evaluations are being made to workers who do not meet all the requirements of suitability for the position. Among the charges analyzed, those that affected most were those of the senior nurse, who obtained an index of 0.73, and secondly, those of a technical nurse, reaching only 0.86. On the other hand, in the positions of basic nurse, specialist nurse and head of the nursing room, indexes of 1.00 were obtained, which shows full correspondence between the suitability of these workers and their performance (figure 3.2 b).

The stimulation indicators were not calculated because in the studied positions there were no stimulations in the period. The training index can be calculated once a period has elapsed that allows executing a set of training actions for the personnel studied.

In order to contribute to the improvement of the suitability of the workers, all low and medium qualified skills were grouped. They were prioritized according to the weight and frequency of these in the different positions studied and the possible courses to be requested were listed when the plan for overcoming the hospital was made. These courses were included in the action plan with the proposed format in the design of the procedure. The Wilcoxon T test was applied, which resulted in a p-value of 0.457 greater than 5%, minimum value allowed with a confidence level of 95%, which demonstrates the significant increase in the demonstrated suitability of the workers in the hospital entity.

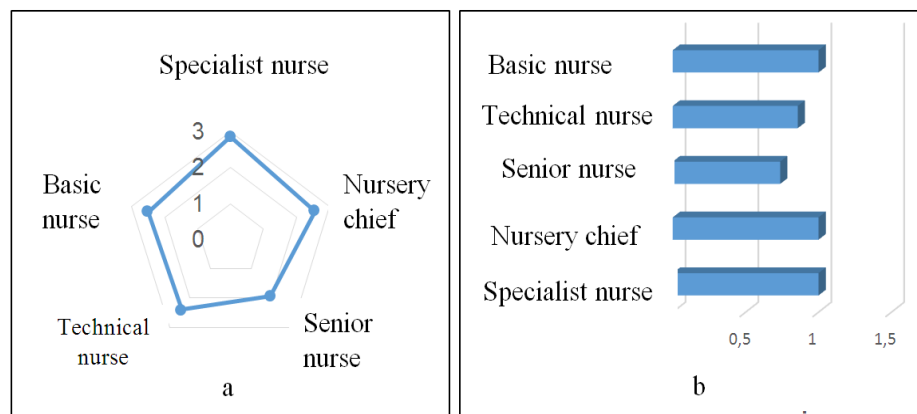


Figure 3.1 Suitability index (a) and quality index of performance evaluation (b)

4. Conclusions

In the literature search of the research the importance of the analysis of the demonstrated suitability of the worker to implement the Control Environment in the organizations was evidenced. Many authors link suitability to the competency-based approach, however, there are theoretical and practical inadequacies as their relationship with internal control and the key processes of the Integrated Human Capital Management System is scarce.

A procedure was designed for the implementation of the standard suitability demonstrated in health entities. The design ranges from the definition of the LCs to the preparation and evaluation of the suitability profiles and

measures indicators that show the behavior of the suitability through the key processes of Human Capital Management.

The partial application of the procedure to the Hospital Emergency Service process allowed to provide the organization with competency and suitability profiles for nurse positions, as well as the suitability assessment method for each of the positions and models of records associated with these.

The suitability of the nursing staff of the Emergency Service process was evaluated. The index of general suitability was affected by actions directed mainly by the positions of superior nurse, where there was no high correspondence between the evaluation of performance and the suitability of the workers. Finally they proposed to the training that will increase the suitability of the workers.

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