Research Article

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Experience of Implementation of an Organizational and Methodological Approach to the Description and Standardization of Treatment and Diagnostic Processes in N.V. Sklifosovsky Research Institute for Emergency Medicine

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ABSTRACT Currently, the issues of improving the quality of medical care and the effectiveness of management are in the focus of attention of heads of medical organizations. Obviously, for the successful management of any complex object, it is necessary to understand the principles of its operation and have a formalized description (model).

This article presents the experience of systemic implementation of the organizational and methodological approach developed by the authors to the description and standardization of the treatment and diagnostic processes of a multidisciplinary hospital.

When writing the work, the methods of system analysis and synthesis were used. Analyzed and systematized the successful experience of the N.V. Sklifosovsky Research Institute for Emergency Medicine on the introduction of the developed organizational and methodological approach into the current activities of a medical institution, as well as the results of its approbation in more than 270 complex medical and diagnostic processes, surgical interventions, active methods of treatment, instrumental and laboratory diagnostics.

The article defines the most important principles for the formation of small groups, the basic values underlying their work, the main motivational factors for the participation of doctors, as well as critical factors for the success of the implementation of the organizational and methodological approach. The experience of its phased implementation is considered: from the processes of the admission department to the processes of medical and intensive care departments; as well as implementation features in the description of diagnostic profile processes.

Based on the results of the implementation of the organizational and methodological approach at the N.V. Sklifosovsky Research Institute for Emergency Medicine, a conclusion was made about its universality and applicability for any medical institution.

In the conclusion of the article, recommendations are formulated for the systemic organization of implementation in a medical institution of the organizational and methodological approach developed by the authors to the description and standardization of treatment and diagnostic processes.

Keywords: description of processes, standardization of processes, treatment and diagnostic process, modified operogram, small group, staff involvement, implementation of changes, values of small groups, implementation success factors

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UMIAS - Unified Medical Information Analysis System
DTP – diagnostic and treatment process
OMA - organizational and methodological approach
CHI - compulsory health insurance
ACVA - acute cerebrovascular accident
DUS - Diagnostic ultrasound
USE - ultrasound examination

RELEVANCE

Currently, there are healthcare trends towards increased requirements to medical service quality, as well as the effectiveness of the management system of a medical institution [1, 2].

One of the basic principles of the "lean manufacturing" concept states that the right process provides the right result [3]. And the key to the successful solution of the above tasks lies in the shift in emphasis from the management of structural units to the management of diagnostic and treatment processes (DTP) without losing control over the activities of the structural units.

It is a well known fact that for the successful management of any complex object, it is necessary to understand the principles of its operation and have its formalized description (model).

The authors proposed an organizational and methodological approach (OMA) to the description and standardization of the DTP of a multidisciplinary hospital [4] taking into account specific features of the activity of the medical institution and special requirements for the organization of work on the description of the processes.

As the authors' experience shows, to ensure the effective use of this approach in an institution, it is vital to systematically organize the process of its implementation.

The article is devoted to the experience of organizing the implementation process of the proposed OMA to the description and standardization of the DTP at the N.V. Sklifosovsky Research Institute for Emergency Medicine.

The aim of the study was the development and approbation of the OMA to the description and standardization of the DTP, taking into account the specific features of a multidisciplinary hospital activity.

The main objectives of the study were:

- analysis of the organizational and economic characteristics of the DTP in a multidisciplinary hospital;
- development of methodological principles for the description and regulation of the DTP;
- development of an organizational approach to the description and standardization of the DTP;
- approbation of the OMA in relation to the therapeutic and surgical disciplines.

The developed OMA to the description and standardization of the DTP has been presented in detail in our publication on this topic [4]. The present article is a continuation of our previous work and is devoted to the experience of implementing this approach at the N.V. Sklifosovsky Research Institute for Emergency Medicine.

MATERIALS AND METHODS

The authors use system analysis and synthesis the methods.

The present study analyzes and systematizes the successful experience of the N.V. Sklifosovsky Research Institute for Emergency Medicine on the introduction into the current activities of a medical institution of the developed OMA to the description and standardization of the DTP, as well as the results of its approbation on more than 270 complex DTPs, surgical interventions, active treatment methods, instrumental and laboratory diagnostics.

RESEARCH RESULTS

The developed OMA to the description and standardization of the multidisciplinary hospital DTP, including its methodological basis in the form of a modified flowchart, a scheme for organizing the small groups' work and multilevel examination of the developed DTP models, as well as the directions of their application for solving various organizational and economic problems, have been presented in detail earlier [4].

An important component of the successful implementation of such a project is the effective introduction of the OMA into the daily activities of a multidisciplinary hospital.

A number of works by foreign and domestic researchers are devoted to the implementation of organizational changes, many of which are focused on the behavioral aspect of the employee perception of organizational changes [5–7]. The behavioral theory states that change management is most effective through the study and transformation of beliefs/behavior of the employees [5].

For example, sociologists Cynthia Scott and Dennis Jaffe believe that at the initial stage of introducing organizational innovations, it is enough to attract at least 5% of the employees as supporters in order to initiate the process of change. More often than not, those employees are “innovators” or “early adopters” by nature. And when more than 20% of the organization's employees are involved, the process of change can be considered as already irreversible and there can be no return to the previous state of the organization [8].

The introduction of the OMA to the description and standardization of the DTP at the N.V. Sklifosovsky Research Institute for Emergency Medicine took place in two stages:

Stage 1. Implementation of the approach to the description of hospital admission procedure (the admission department).

Stage 2. Replication of the approach for the patient treatment process in the medical, intensive care and diagnostic departments.

It should be mentioned that at each stage, there were specific features of the implementation of the approach and the involvement of the employees in this process.

The first stage of the implementation was actually a pilot project within the framework of which the OMA was tested and adjusted, and key change leaders were identified and involved, who became the disseminators of the basic ideas of the approach at the next stages.

It is important to note that the description of the hospital admission procedure was launched as one of the stages within the framework of a comprehensive reengineering of the admission department activity and at the first stage it allowed for a “soft” introduction of changes.

It is known that the work of the admission department of a hospital has an organizational specificity which consists in the fact that, as a rule, the doctors on duty in the admission department are at the same time full-time employees of the corresponding medical departments. In fact, these employees are the “trusted representatives” of their specialized departments and organize the process of receiving and diagnosing the patient condition, making a preliminary diagnosis and a decision on the need for hospitalization to the appropriate specialized department of the hospital.

The most proactive doctors on duty of the main disciplines (neurosurgery, vascular surgery, abdominal surgery, thoracic surgery, neurology, gynecology, traumatology, etc) took part in the work on describing the processes in the admission department.

A series of staged meetings was held at which we discussed: the purpose and objectives of this work, the main methodological aspects of describing the DTP, the advantages of modified flowcharts, the planned scheme of organizing work on the project, etc.

Due to the fact that the work was innovative for the Institute, the doctors asked many questions related to whether or not there is a real need to implement this task, as well as the feasibility of solving it by medical personnel. A number of motivational issues required additional individual discussion. As a result, those employees who were interested in the specifics of the work and the proposed approach made a decision to participate in the project and became change leaders.

It is necessary to mention the most important personality traits associated with majority of doctors working at emergency hospitals, such as humanism, healthy conservatism, self-confidence, decisiveness, efficiency in performing tasks, etc. All these qualities must certainly be taken into account while selecting motivational factors.

Our experience shows that the main motivational factors for doctors-leaders to make a positive decision to participate in an innovation project can be presented as follows:

— All doctors-leaders have a desire to change the world, their institution and department for the better. "I care".

— Only doctors working inside the DTP can describe it fully and accurately, taking into account all the features, thereby forming the correct internal standard of work and a detailed justification as to what resources are needed to ensure the high quality of the DTP. "If you want a thing well done, do it yourself."

— All leaders of change have additional opportunities for professional self-realization and career growth, including the opportunity to get into the talent pool of the Institute. "I am ready to take responsibility."

— Financial incentives for the project team members. An important manifestation of the value of the project and its results for the management is their willingness to provide financial incentives to its participants.

Once the doctors-leaders made their mind to participate in the project, each was asked to form their own team (a small group) of 4–5 doctors of corresponding disciplines and to lead their work.

Basic requirements for the formation of the small groups are presented in Table 1.

Table 1

Basic requirements for forming small groups

Item#	Basic requirement for forming a small group	Explanation
1	The doctor's understanding of the features of the DTP "from the inside"	It is important that a doctor participating in the group understands the described DTP, the features of diagnosis and treatment.
2	Interest in improving the DTP	The interest can be driven by a desire to improve working conditions and patient satisfaction, as well as the efficiency and effectiveness of the treatment process.
3	Absence of direct supervisors in a small group	The requirement is due to the need to organize a creative space for developing the model, which is possible only if the participants are peers. It is important to avoid pressure from the authority of the immediate leader in the small group. The final results of the group's work are presented to the head for approval.
4	Teamwork skills	Each small group leader should be able to select participants based on their expertise and constructive attitude, taking into account the types of team roles, such as idea generator, coordinator, motivator, implementer, analyst, etc. [9]. Also, an important factor in the effective work of the group is the presence of mutual understanding and comfort of communication.

Note: DTP —diagnostic and treatment process

In addition, a moderator was included in the work of each group, who was a carrier of methodological competencies, whose tasks included organizing communications, keeping minutes, monitoring the progress of activities, training group members in OMA methods, etc.

The basic values of small group work on implementing the OMA to the description and standardization of the processes are presented in Table 2.

Table 2

Basic values of small group work

Item #	Value	Value content
1	The value of the "doctor's art"	It is undeniable that the "doctor's art" plays a decisive role in ensuring the quality of medical care and the success of treatment, but still there is a set of routine actions of DTP participants that can be formalized and standardized.
2	The value of a doctor's expert opinion	Each doctor has his own approach to treating a patient. In small group work, each expert doctor needs to be heard. The author's notation for describing the processes [4] makes it possible to take into account various strategies and methods of diagnosing and treating patients within the same model (with a certain use incidence).
3	The value of constructive criticism	During the discussion of models, objections and criticism are accepted, but it is necessary to present one's line of argument and formulate one's own proposals.
4	The value of a doctor's time	The time of a competent doctor is extremely expensive, and therefore face-to-face meetings of small groups with discussion of intermediate work results are held no more than once a week with a schedule not exceeding one hour. The rest of the work the group members carry out offline at a convenient time.
5	The value of methodological support	At the first stage of the OMA introduction, it was necessary to form an understanding that DTP models are not difficult to develop and every doctor is able to do this. In this regard, the main task of the moderators is to provide active methodological support, promptly answer all arising questions. To do this, each small group create their own chat in a messenger, and also use Google documents with the ability to co-edit and comment on working versions of the models.

Notes: DTP —diagnostic and treatment process; OMA — organizational and methodological approach

An important factor that made it possible to reduce the rejection of the innovations was the participation of small group members in mapping the course of the DTP in the admission department. As part of the mapping, patients were monitored from the moment they entered the lobby of the admission department until the decision was made whether they had to be hospitalized and transferred to a specialized department or discharged; the actions carried out with the patient, the time of performing these actions and all the difficulties that arise were recorded.

For mapping in the admission department, patients admitted to different specialized departments and with various diagnoses were selected. In total, 52 maps with 25 nosologies were completed; more than 30 doctors and nurses took part in the mapping.

It is important to note that at the beginning of the mapping process, almost every doctor was sure that they understood the work of the admission department from start to finish, could describe it with "closed eyes" and there was no particular need for mapping. However, after observing several patients, such confidence disappeared, since the “bottlenecks” of the processes, typical difficulties in the implementation of certain, even the most simple at first glance, actions were identified. These facts came to many doctors as a certain surprise, allowed them to realize that the process of hospital admission is not so obvious and debugged, and that difficulties exist not so much in the work of specific participants of the process, but in their interaction with each other.

In general, participation in the mapping had a positive impact on many small group members and allowed them to see that step-by-step description of typical processes is necessary to improve admission process efficiency.

In total, at the first stage of introducing the OMA to the description and standardization of the DTP into the admission department, 6 small groups were formed according to their members’ specialties: "neurology", "neurosurgery", "vascular surgery", "trauma", "abdominal and thoracic surgery", "gynecology".

25 most common in the Institute’s admission department nosologies were selected for the description.

One of the valuable effects of the introduced approach was the opportunity for the doctors to discuss the variety of approaches to the DTP performance and exchange experience in the process of examining the flowcharts, which is not always possible on a regular basis in daily work activities, even between doctors of the same department.

Particular attention should be paid to new opportunities for improving the DTP and options for their implementation arising in the process of discussion with allied professionals (diagnosticians consulting the departments). To this end, representatives of related departments participating in the described process were invited to the meeting of the corresponding small group. This has often allowed the doctors to take a fresh look at the organization of the DTP.

For example, the process of admitting and examining a patient with suspected acute cerebrovascular accident (ACVA) was considered, which procedure is clearly regulated by Order of the Ministry of Health of the Russian Federation of November 15, 2012 No. 928n (hereinafter - Order No. 928n) [10]. This order regulates not only the mandatory actions, but also the maximum duration of the process. In particular, the time from the moment of admission of a patient with ACVA signs to the department until the neurologist on duty receives the results of certain blood tests must not exceed 40 minutes. While for the entire examination of the patient in the admission department (until the moment when the strategies of the patient’s treatment and hospitalization to the specialized department are determined) it is allotted no more than 60 minutes.

This time limit was taken into account by a small group when developing the process’ flowchart. In particular, the doctors of the small group indicated the desired time to complete the required blood test - no more than 20 minutes. In addition, during the discussion between neurologists, it was revealed that in the actual process, problems periodically arise with the timely provision of this test’s results.

A detailed discussion of the identified problem at an expanded meeting of the small group with the participation of representatives of the admission department and the clinical diagnostic laboratory made it possible to determine the cause of the indicated problem. Despite the fact that the sampling of biomaterial is carried out immediately upon the patient’s admission for computed tomography, the laboratory is located on another floor of the building and taking into account the additional time for transportation of the biomaterial, as well as the regulated technical characteristics of the analyzer, the doctor's requirement to obtain the conclusion 20 minutes after sampling of the biomaterial under these conditions is technically unfeasible.

During the discussion, the following solutions were proposed:

— the nurse of the treatment room must take blood from the patient to complete the approved list of routine examination, make notes in the appropriate columns of the checklist; then immediately transfer test tubes with biomaterial and directions marked "ACVA *cito*!" to the treatment room of the admission department;

— the heads of the admission department and the clinical diagnostic laboratory should arrange for the provision of the admission department with a separate express analyzer in order to reduce the time for the delivery of blood samples and waiting for the availability of the analyzer.

Despite the seeming simplicity and obviousness of these solutions, in order to identify the presence of organizational problems in the DTP, it was necessary to create a model that clearly reflected its imperfection. Moreover, it was on the basis of the discussion of specific steps and parameters of the model that a constructive dialogue arose between the related departments, which representatives wanted to hear and understand each other, and ultimately resolve the conflict of interest.

Similar ideas and solutions when discussed with related divisions arose during the description of the DTP in every small group.

Thus, for example, in the small group of abdominal and thoracic surgery, while describing the process of admitting and examining the patient with suspected chest trauma, surgeons made a demand to accelerate the process of ultrasound examination (USE) and obtaining conclusions in the admission department.

During discussion with diagnostic ultrasound (DUS) specialists, it turned out that with the intensive patient flow in the admission department, the DUS doctor performs examinations on a mobile ultrasound machine for several patients in a row in various examination rooms, and then draws up conclusions. In connection with such an organization of work, the doctor has to additionally record the main parameters and results on paper during the examination, so as not to forget them until the conclusion is drawn up. All this increases the duration of examination and the preparation of conclusions in the admission department in comparison to the office work conditions.

Of course, similar controversial situations arose in the work of the admission department's doctors on a daily basis and did not find an answer due to the lack of time and the urge for effective communication.

Discussion of problematic issues of interaction at a small group meeting with proper moderation can significantly reduce the severity of conflicts and help realize the presence of organizational difficulties in the work of each specialist.

Thus, the implemented OMA allowed doctors, in the course of considering specific models of processes with a detailed description of steps and key parameters, to transfer conflict situations into the channel of constructive discussion and search for solutions.

The most important motivating factor for the small groups' work was, of course, the interest and support of the management of the Institute, including attendance of the small groups' meetings by representatives of the management and participation in their work, mentioning the results of the small groups' work at morning conferences and other meetings, covering the activities of the small groups in the media (several videos about the small groups' work were posted on the official pages of the Institute in social networks). All these steps strengthened the group members' confidence that their work is necessary and important for the Institute.

Based on the results of the 1st stage of the OMA implementation in the admission department, the vital factors of success were formulated, as presented in the Figure.

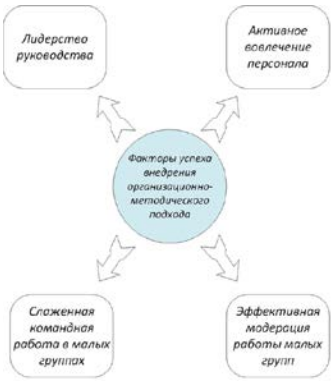

Fig. Critical Success Factors for Implementing the Organizational and Methodological Approach in the Admissions Department
Top to bottom and left to right:

1. Leadership of the management (including reducing the barriers between the head of the Institute and the doctors).

2. Active involvement of the staff (the work of small groups is open to everyone, everybody can come and express their opinion).

3. Well-coordinated team work (everyone is equal, every issue is discussed, constructive suggestions are welcome).

4. Effective moderation of the small groups' work (freeing the doctors from routine tasks, gently directing the work of the group in the required direction, resolving conflicts).

As a result of the work on the description of the DTP in the admission department, which lasted about 6 months, 25 models were developed at the first stage of the OMA implementation. These models became the basis for determining the requirements for a computerized decision support system for doctors' decision-making based on checklists, as well as for calculating the standard cost of patient admission and diagnosis in the admission department.

The work involved 25 doctors, most of whom became the leaders of change to further replicate the approach. Many members of the small groups were included in the talent pool of the Institute, and 3 leaders of the small groups were appointed heads of various structural divisions.

Of course, there were also some participants in the group who behaved rather passively or did not support teamwork; in these cases, the group leaders resolved issues independently and without conflict replaced such members with more active and ready to work staff.

In general, the management of the Institute recognized the successful completion of the first stage of the implementation and the effectiveness of the OMA to the description and standardization of the processes, and decided to organize similar work in medical and intensive care units.

Thus, the second stage of the implementation of the OMA to the description and standardization of the DTP was its replication in the medical and intensive care departments of the Institute.

Diagnostic and treatment processes in the specialized departments are longer and more complex in comparison with those of the admission department, which is reflected in the complexity of the models, as well as labour-consuming nature of their development. In this regard, at the second stage it was necessary to increase both the number of small groups and the number of their members.

For example, a small group of abdominal and thoracic surgery selected 22 DTPs which arouse the greatest interest for describing and standardizing. Moreover, the size of the flowcharts could reach 250 actions and 55 participants. For comparison, in the admissions department, the models did not exceed 20 participants and 60 actions. In this regard, the size of the small group was expanded to 10 members. Later, this small group was reorganized into 2 separate groups: for abdominal surgery and for thoracic surgery.

Also, in the course of work, new small groups were created for such disciplines as cardiac surgery, toxicology, kidney and pancreas transplantation, liver transplantation, combustiology, treatment of acute endotoxemia, etc.

It is worth mentioning that during new group formation, one of the main motivating factors is the successful work of the existing small groups, which confirms the possibility and feasibility of such approach. Thus, the most important motivating factor is the presence of a "story of success".

For the N.V. Sklifosovsky Research Institute for Emergency Medicine this was the result of the work of the small group of toxicology. The group was one of the first to begin work on describing the processes of diagnosis and treatment of patients in the acute poisoning department. Applying the introduced OMA, the small group described 4 DTPs for treating patients with mild and moderate/severe poisoning by unspecified drugs and biological substances (excluding corrosive substances) and treating patients with mild and moderate /severe poisoning by corrosive substances.

Based on the prepared flowcharts, summary tables of resource characteristics were developed and the total standard cost of patient treatment was calculated. These supporting documents were sent to the Moscow City Health Department, and after the appropriate ratification by the Moscow City Compulsory Medical Insurance Fund (MSCMIF), new compulsory medical insurance (CMI) rates for the above services (which exceeded the current single rate by 3-6 times) were approved. Taking into account the average annual patient flow, the annual income of the Institute increased by more than 89 million rubles.

Undoubtedly, such results are a significant motivation for performing similar work in small groups of other disciplines.

Currently, there are 12 small groups working in the specialized departments of the N.V. Sklifosovsky Research Institute for Emergency Medicine. Despite the increased scale and volume, most of the basic principles and values of their work have been preserved. However, new features of the organization of their activities have appeared too.

Face-to-face meetings of the small groups still take place no more than once a week and have an hourly schedule, with the exception of the situations when group members themselves take the initiative to extend the meeting until its logical conclusion.

Because of the increase in the number of the small groups, the work of their members in connection with preparing models has become more independent. This became possible due to the fact that most doctors-leaders of change have mastered the work with modified flowcharts well. In addition, in each group 1-2 members were identified who were good at modeling tools and can provide assistance to other group members if necessary. The functional role of the moderators has been limited to organizing the work of the group, arranging multilevel expert examination, supporting the presentation of the work results and presenting it to the management.

In their work the groups retain the value of "constructive criticism" which consists in the necessity to present one’s line of argument and one’s own proposals. There were situations when, after being absent from several meetings (for example, for a vacation), a returning group member questioned the result achieved during his absence and the correctness of the developed model. In this case, he was asked to formulate proposals and adjustments before the next meeting and introduce them into the model for further discussion with the rest of the group. It should be noted that most often in such situations, after analyzing the model in detail, it turned out that this group member had no significant comments on the model.

After the development of a model for its further examination expanded meetings of the small groups are held with the invitation of other doctors and heads of specialized departments. At the same time, due to the fact that simultaneously with the small groups’ work, work is carried out with the diagnostic services of the Institute in order to describe and standardize various instrumental and laboratory diagnostic methods, the need for the full-time presence of representatives of these departments at those meetings has actually disappeared. They are invited only in cases when it is vital to discuss the "bottlenecks" of the process or peculiarities of a certain diagnostic technique, which happens quite rarely.

In general, thanks to the face-to-face format of the examination, the agreement between the experts is actually achieved in the most objective way. And, as noted earlier, all reasonable approaches and treatment strategies are with some frequency included in the model.

Owing to the active development and implementation of the medical information system "UMIAS" (Unified Medical Information Analysis System) in the activities of the Institute's departments, the small groups have received another opportunity to check the adequacy of expert assessments - comparing these models with the actual data. Thus, at the second stage of the OMA implementation, another stage of work of the small groups was added - plan-fact analysis.

Unloading from UMIAS with regard to the indication and performance of instrumental and laboratory examinations, active methods of treatment, consultations of doctors of related departments made it possible to analyze the average frequency and ratio of these indications for the patient model under consideration.

This had a significant impact on the OMA implementation, as it allowed the group members and medical experts to see the discrepancies between their idea of the "perfect" treatment process and the actual process. Often, the identification of such discrepancies caused surprise and heated discussions, but in the end helped analyze their causes and make an informed decision in each specific case. Thanks to this, the degree of trust in the developed models has significantly increased both among the group members themselves and the entire medical community of the Institute.

An additional task of the small group when describing a complex DTP is the description and standardization of various types of surgical interventions. While forming a summary table of resource characteristics, surgical nurses are involved in the work as additional experts in terms of developing standards for the use of materials, tools, etc. In addition, the participation of anesthesiologists is mandatory for the correct description and standardization of various anesthetic procedures.

The small groups also compare the number and ratio of performed surgical procedures with the actual data from the UMIAS. Along with the described positive changes, during the transition to the second stage of the implementation of the OMA to the description and standardization of the processes, some difficulties arose due to significantly increased volume of work, which analysis made it possible to formulate additional principles for organizing the small groups' work:

— When developing a large number of models by one small group, it is extremely important to maintain team work, to monitor the even distribution of tasks among the participants. The concentration of a significant part of work on one group member leads to his burnout, loss of motivation and, eventually, refusal to participate in the group.

— The group must necessarily include practicing doctors in charge of wards with patients in a department, working in UMIAS, forming indications for performing diagnostic examinations in the system. Otherwise, fundamental deviations of the developed model from the real process of patient treatment may occur.

The features of the implementation of the OMA to the description and standardization of the DTP in the intensive care units shall be pointed out separately.

The N.V. Sklifosovsky Research Institute for Emergency Medicine has a unique resuscitation base including 14 resuscitation departments.

A feature of the organization of work in the intensive care units is that all doctors work according to a duty schedule, and therefore it is almost impossible to organize face-to-face meetings of small groups and bring together 4 doctors of the department. Thus, the scheme of organization of work in the intensive care units was revised and an emphasis was placed on the correspondence form of model examinations.

Moreover, the specificity of the DTP in the intensive care unit is such that, in principle, according to the set of actions and the volume of resources spent on the process, the days the patient spends in the ICU bed differ. One can select the 1st, 2nd and subsequent days. Thus, in fact, in each intensive care unit, it was necessary to develop 2 models.

In this respect, the personal characteristics of resuscitators associated with the specifics of their professional activities, such as high responsibility, high degree of decisiveness, efficiency of actions should be mentioned separately.

All this made it possible to quite effectively organize the process of developing DTP models in cooperation with the appointed responsible resuscitators, and then arrange a multilevel examination of the models in the distance mode in accordance with the implemented OMA without reducing the quality of the result.

Currently, departments of general resuscitation, emergency resuscitation, toxicological resuscitation, cardiological resuscitation, neurosurgical resuscitation, resuscitation for patients with stroke, resuscitation for patients with *COVID-19* are actively involved in the process of DTP describing.

In general, there are 18 small groups working in the specialized departments and intensive care units. During the whole period of the OMA implementation, they have carried out the description and standardization of 57 complex DTPs.

On their basis, checklists are being developed for the implementation of the decision support system for doctors in the departments, as well as calculations of the total standard cost of patient treatment are carried out.

In addition, as noted above, along with the description and standardization of the complex DTP, medical and intensive care departments are working together with diagnostic services to describe and standardize the performed instrumental and laboratory tests. This work is of particular importance, since diagnostic and laboratory examination takes up an essential part of the complex process of treating a patient, and has a significant impact on the cost price.

Due to the fact that the work of the employees of these departments is also organized according to the duty pattern, the description and regulation of the processes in this case are carried out similar to the intensive care units. The appointed diagnostician develops a flowchart and a technological map, and then their correspondence examination is performed.

At present, 14 diagnostic departments are involved in the description work, more than 119 laboratory and instrumental diagnostic processes have been standardized.

DISCUSSION

The developed by the authors OMA to the description and standardization of the DTP of a multidisciplinary hospital [4] has been used at the N.V. Sklifosovsky Research Institute for Emergency Medicine for more than 3 years.

During this time, 57 complex DTPs, 99 surgical techniques, 119 instrumental and laboratory diagnostic processes, 4 active methods of treatment have been described and standardized.

At the moment, 18 small groups, more than 160 people are involved in the work on the description and regulation of the processes, which represents 19% of the doctors and researchers of the Institute.

Based on the developed standards, active work is underway to develop and implement a decision support system for doctors using checklists automated in UMIAS. Moreover, the developed models and standards are the basis for the system for analyzing the economic efficiency of the departments' work used at the Institute.

The authors consider the developed approach to be universal and applicable in any medical institution.

Based on the analysis of the experience of the N.V. Sklifosovsky Research Institute for Emergency Medicine, for the systemic organization of the implementation of the developed OMA into the activities of a medical institution, the following recommendations can be formulated [4]:

— Enlist the leadership and support of the management. Work on the standardization and regulation of the DTP can be carried out in the organization only if it is needed and supported by its head. It is important that the head sees the value of the initiative and competence of the employees and supports the implementation of the OMA in the activities of their organization.

— It is advisable to start the OMA implementation in the framework of a small pilot project, and during this process a core of change leaders will be formed and after its completion the institution will receive a measurable result that instills confidence in the feasibility and effectiveness of the approach.

— Select specific motivational factors for the participation of doctors in small groups at the start of the approach implementation (unless the institution gain experience and their own “story of success”), taking into account their personal traits.

— Form small groups of competent medical practitioners in relevant disciplines, without the participation of department heads in model development sessions. The management should only review and approve the finalized results of the group's work.

— Create a separate structural unit at the institution (the core of methodological competencies), which tasks will include support for the work of the small groups, training in the OMA use, moderation of group meetings and methodological support of their work.

— Formulate and maintain the values of the small groups, such as respect for the time and expert opinion of the doctor, respect for the "art of the doctor", constructive criticism, etc.

— Pay special attention to maintaining motivation when the institution moves from the pilot project to organizing continuous improvement of the DTP. It is important that group members see the result of their work, which carries value not only for them personally, but also for the institution as a whole. If necessary, timely adjust the expectations of group members, reasonably change priorities in work and its results.

— Create a transparent talent pool management system which will help consolidate the OMA ideas at the level of structural divisions.

— Form a transparent material motivation system for the members of the small groups, taking into account the complexity of the performed work.

The follow up with these recommendations will increase the efficiency and effectiveness of the implementation of the developed approach, ensure an increase in staff involvement in ongoing improvement processes, strengthen employees' faith in the importance of their opinions and, as a result, increase the loyalty to the institution.

CONCLUSION

1. The authors have developed an organizational and methodological approach to the description and standardization of diagnostic and treatment processes in a multidisciplinary hospital, including a new format for describing diagnostic and treatment processes - a modified flowchart adapted to the specific activities of a medical institution, a scheme for organizing the activities of small groups on describing and normalizing the processes, as well as a multilevel expert examination of the prepared models. This approach was tested on the diagnostic and treatment processes of the therapeutic and surgical disciplines of the N.V. Sklifosovsky Research Institute for Emergency Medicine.

2. The present article analyzes, summarizes and systematizes the experience of the N.V. Sklifosovsky Research Institute for Emergency Medicine on the implementation of this organizational and methodological approach, and formulates vital factors of success for its implementation, basic principles of formation of small groups and the values and motivational factors of their work, reflects the features of the introduction of the organizational and methodological approach into the specialized treatment, intensive care and diagnostic departments. The article provides practical examples illustrating the features of the implementation of the approach in the small groups of various disciplines, which made it possible to formulate additional requirements for the organization of work during the implementation.

3. The results obtained over the last 3 years at the N.V. Sklifosovsky Research Institute for Emergency (including the presence of 18 actively working small groups, 279 described processes, 160 employees involved in the description of the processes) indicate the effective implementation of the organizational and methodological approach to the description and standardization of diagnostic and treatment processes and the successful transition of this work from a project-type task to the ongoing efforts aimed at improving the processes of a medical institution.

4. Based on the analysis of the experience of implementing the organizational and methodological approach at the N.V. Sklifosovsky Research Institute for Emergency Medicine, we made a conclusion about the universality of the developed approach and its applicability in any medical institution, and formulated recommendations for the systematic organization of the process of introducing the organizational and methodological approach into medical institutions in order to increase the efficiency and effectiveness of its application.

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