



## Review

# Change Management in Medical Institutions: Implementation View

Said Said Elshama <sup>a,b,\*</sup> 

<sup>a</sup> Department of Forensic Medicine and Clinical Toxicology, College of Medicine, Suez Canal University, Ismailia City, Egypt

<sup>b</sup> College of Medicine, Taif University, Taif, Saudi Arabia

### ARTICLE INFO

#### Article history:

Received 01 March 2021

Received in revised form

09 March 2021

Accepted 16 March 2021

#### Keywords:

Change

Management

Implementation

Medical institutions

### ABSTRACT

Change is a learning process modeling the attitudes and values of the involved staff to adapt and show the change in daily work life. Leading the change in medical schools or in the health care system is considered one of the assignments of successful leadership that can achieve an effective organizational change under complex conditions. This review aims to show an implementation view about how to manage the change in medical institutions and how to overcome obstacles, and how to face the challenges. The resistance to change represents a major obstacle to the change process in any medical school or health care system. Thus, it should address this resistance by creating a suitable climate for carrying out the change based on a flexible strategy that may be translated into practical steps during the implementation. Moreover, the change should be institutionalized wherein new behaviors are persisting and generalizing in the medical school or the health care system as a result of the change application. In addition, the successful management of change in any medical school or system requires a well-functioning and efficient management system for achieving the intended results. Therefore, many benefits may be gained as a result of the success of a change process in any organization wherein it improves the effectiveness and efficiency of organizational and staff performance besides creating an opportunity for getting the best practices.

© 2021 The Authors. Published by Iberoamerican Journal of Medicine. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

HOW TO CITE THIS ARTICLE: Elshama SS. Change Management in Medical Institutions: Implementation View. Iberoam J Med. 2021;3(2):161-168. doi: 10.5281/zenodo.4610269.

## 1. INTRODUCTION

Any innovation in medical education or change in the applied traditional learning methods in medical schools usually faces resistance from the involved staff members whatever because of the old tough beliefs or to get used to the old and the familiar rejecting all that is new just

because it is new only. This is also frequent in the health care system when the administration is forced to make a change in the health care system in order to improve the health service provided to beneficiaries by enhancing the positives and getting rid of negatives [1].

Leading the change in medical schools or in the health care system is considered one of the assignments of the leader

\* Corresponding author.

E-mail address: [saidelshama@yahoo.com](mailto:saidelshama@yahoo.com)

ISSN: 2695-5075 / © 2021 The Authors. Published by Iberoamerican Journal of Medicine. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

<http://doi.org/10.5281/zenodo.4610269>

wherein facing the challenges and achieving the desired results is the job of the leader. The successful leadership means the ability to lead the change effectively under complex conditions because there is a major difference between the routine conditions or problems and complex. Thus, the routine problem may be solved using the present knowledge and practices through a specific process implementation by a group or individually while a complex problem or condition needs situation analysis and immediate solution that is unknown. Therefore, distinguishing between routine and complex conditions helps the people to adopt new approaches to overcome the obstacles along the way which leads to the change [2].

The leader and the involved stakeholders should recognize some key change beliefs that motivate and support the change efforts to achieve successful sustainable organizational change. Firstly, it should there is an urgent necessity need for the change because of the discrepancy between the current state of medical school or health care system and what it should be. Secondly, the desired specific change designed to address the discrepancy should be appropriate for this medical school or health care system. Thirdly, the efficacy of the successful change implementation in medical school or health care system. Fourthly, the principal support of the formal leaders wherein they should be committed to the success of this change. Finally, the change should be beneficial for all inside and outside the organization [3].

In this context, it should mention that the leading change in medical school should be consistent with the priorities and values of this medical school without any disturbance in the organizational activities during the implementation. The stakeholders' commitment is also an important issue for supporting the change because they are the chief resource for the change implementation. Noteworthy, the failure in the achievement of the change may lead to negative consequences such as the lack of commitment, demoralization, and shifts in the attention of involved people besides complacency about the current situation leading to the lack of sustained effort for the achievement in the work [4].

Therefore, there are some key factors that should be considered in mind when we lead the change because they are responsible for the success of the effort for the organizational change. Firstly, it should be determining a clear frame of the challenge (change) with the creation of a shared vision among the formed core team besides engaging the others in the planning and implementation. Secondly, the responsible team should make the change according to the organizational culture and system with a

focus on short-term achievements and the results along with overcoming the arising obstacles by collaborative work and continuous diligent efforts [5]. Therefore, this review will present an implementation view about change management in medical institutions and how to overcome obstacles, and how to face the challenges.

---

## **2. HOW TO ADDRESS THE RESISTANCE AGAINST THE CHANGE IN MEDICAL INSTITUTIONS?**

The process of change comprises specific steps such as diagnosis, creating readiness, change adoption, and institutionalization. The change is considered a learning process that models the attitudes and values of the involved staff to adapt and show the change in daily work life maintaining job satisfaction and organizational commitment. The response to changing conditions requires examination of the attitude and behavior of the staff members in the target medical school or health care system [6].

In this context, it should clarify that resistance represents a major obstacle to the change process in any medical school or health care system. Thus, the resistance to the change should be addressed to create a suitable climate that encourages all the involved staff to carry out the change. Therefore, it should identify the resisting staff in the medical school to understand the reasons for their resistance. After that, it should know and understand the reasons for resistance to polarize of the resisters via involving them in the deliberations of the change process [7].

In addition, the benefit of the desired change and the extent of its reflection on learning process improvement should be clear to align and mobilize all staff and other stakeholders with the change efforts. A sound foundation for work with all the involved staff should be created based on fairness and equity to inspire them to work toward the shared vision to attain a positive reflection on their performance and the change process as a whole [8].

In a related context, Landaeta and his colleagues [9] conducted a study on healthcare providers at Sentara Leigh Hospital, Virginia to survey the resistance sources to a change initiative in healthcare using a phenomenology approach. The researchers observed a lot of the sources of resistance during the formulation stage such as the inability of participants to have a clear vision for the future, refusal to accept unexpected or undesired information, tendency to maintain on the present thought although the situation has changed, communication barriers, implicit assumptions,

organizational silence, costs of change, and past failure. The researchers identified also other sources of resistance to change during the implementation stage such as the relation gap between change values and organizational values, departmental politics, incommensurable beliefs, leadership inaction, lack of necessary capabilities, and deep-rooted values.

Kellogg and his colleagues [10] carried out another study to address the resistance to the change in the health care system, especially in a surgical residency via conducting an ethnographic study of work hours reform. The results of this study revealed that practical solutions alone may not be enough for achieving the change in the surgical residency. This study showed also some challenges to the change such as traditional surgical culture besides the important role of the social and political issues in promoting the success of the change.

### **3. HOW TO APPLY THE CHANGE STRATEGY IN THE MEDICAL INSTITUTIONS?**

Initially, it would like to mention that assessments should be done at different stages of strategy application of the change to get feedback regarding the degree of support for this change among the change recipients in the organization. This assessment may be done using different methodologies such as observation, interviews, or organizational surveys. The planner of the change program should take into consideration the social differences and individual personality differences among the change recipients during the application of the change strategy wherein acceptance to the change may be uneven because of these differences. Thus, these differences should be incorporated in the applied strategy [11].

However, there are many steps that should apply during the implementation of the change strategy to achieve a successful change in medical schools or in the health care systems. At the first, we should identify the reason for a change in medical school or in the health care system via referring to the pros and cons of the change, and the negative impact that may result if we are not adopting this change. Secondly, it should face the long-held beliefs and wrong ideas of the staff members that represent a challenge itself and indestructible myths. Thirdly, providing resources and rewards is an essential component for the success of the change process that is considered a creation of the desired new practice or behavior that requires reinforcing via resources and rewards. Fourthly, the vision of the change should be clarified to the staff members via

using different ways to understand everyone that the change is inevitable [12].

Fifthly, it should also change or improve the habitual ways of communication with the involved staff members wherein we should listen more than speaking to overcome or decrease the expected resistance at least. Sixthly, the demonstration of positive effects of a proposed change via a practical method is the best procedure for exposing the resisters to the others. This practical method may be a visit to other medical schools that applies the change to show the positive results of this change [13]. Seventhly, it should not worry about some of the involved staff members who may be have a slow response to the change because they will adopt the new way with the time when the change becomes a real practice and official manner. In last not least, any change may take some time, but we can know that we walk on the right way and expect the extent of the success that may be achieved via providing freedom for the involved staff to innovate through acknowledgment and accountable climate under the umbrella of inspiring and motivation relationship connecting the staff with the leader. This is besides the promotion of continuous learning and searching out of the best practices along with support from community and target stakeholders [14].

However, there are different strategies that may be used to apply the change in medical schools and health care system wherein the selection of the used strategy should depend on some important factors such as accessibility, resources, cultural considerations, health and safety to recognize when, where, and how to use these strategies [15]. The used strategy should depend on the type and complexity of the task wherein the directive strategy is applied when the leader wants to impose the change using his authority without the collaboration of the others while the expert strategy means using the experience during the implementation to solve any problem that may result from the change. On another hand, there is a negotiating strategy that needs a skillful leader who has the ability to negotiate to add timely adjustments and concessions prompting the change while the educative strategy is used to change the values and beliefs of people. Finally, the participative strategy may be used as a change strategy when we need the full involvement of all the target population who will be affected by the anticipated change. From the above-mentioned presentation, the success of change depends on the success in choosing the suitable implemented strategy to achieve this change [16].

From another view, Wyszewianski and Green [17] suggested a new perspective about the application of strategies for changing clinicians' practice patterns in the

Michigan Consortium for family practice research wherein they presented a new theoretical framework for selecting effective change strategies that depend on a right selection of an appropriate strategy for a particular situation. This study divided clinicians into four categories based on their responses to new knowledge about the effectiveness of clinical strategies. The practice change strategies were also divided into knowledge-oriented and behavior-oriented methods. After that, this study selected specific combinations of these strategies that are likely to be compatible efficiently for each of the four categories of clinicians. However, they reported that this framework requires more practical testing before its using encouraging others to participate in testing and refining this framework.

---

#### **4. HOW TO INSTITUTIONALIZE THE CHANGE IN THE MEDICAL INSTITUTIONS?**

Initially, the institutionalization of the change means that new behaviors will be persisting and generalizing in the medical school or health care system as a result of the change application. Therefore, the change can be institutionalized via commitment that may be promoted by giving the teamwork a chance to choose freely to support the change and express openly about their support and commitment to the change based on understanding the reasons that stand behind their acts. It should spread the change inside the medical school or health care system based on explanation and motivation for all teamwork to accommodate it and then they will be cooperative and increase their commitment to the new way of working. In addition, it is known that socialization drives the behavior wherein acceptance and then transmission of information that is related to beliefs, norms, and values may lead to acceptance of the changed behavior [18].

In the same context, reward allocation is considered one of the core elements of institutionalization of the change in any medical school or health care system. Reward allocation can create pleasure for teamwork when they perform their assignments well reinforcing and promoting the quality of performance towards the change. Noteworthy, it should balance between internal reward and external reward. Internal reward (improved job satisfaction) is a sense of achievement and contribution while extrinsic reward means money and benefits. Thus, it should balance between the financial benefit of the organization and the financial benefit of the teamwork to keep on the institutionalization of change. In last, not least, it should not institutionalize the current level of performance, but it should keep on continuous

improvement of the performance via continuous monitoring of the behavior of teamwork wherein it should attempt to find new things to drive higher performance and prevent the sag of productivity again [19].

The teamwork should learn to know what to do and how, and the results of their actions. And then, they begin to perform certain tasks regularly based on the implemented changes. Teamwork should also link between the results and behaviors subconsciously to reach normative consensus. In addition, they should agree and accept that their way is the right for doing the things at all-time wherein the obvious performing behaviors lead to the required results denoting that change becomes institutionalized. Thus, the indicators of institutionalization can be measured via the level of knowledge, performance, normative consensus, and value consensus [20].

A study was conducted to show the institutionalization of the change in medical education. This study investigated a transformation model of the clinical center to an academic institution as a practical example of medical educational change that achieved short and long-term successful change management using directive change strategy. The results of the study showed that this strategy facilitated a fast change implementation without chaos in the process of change that could not have achieved if another strategy was utilized in this transformation. This study indicated also that communicating short and long-term wins to different stakeholders was one of the major factors that contribute to the success of the medical educational change [21].

---

#### **5. HOW TO IMPLEMENT THE CHANGE IN THE MEDICAL INSTITUTIONS?**

Initially, two important factors should be considered during the implementation of any organizational change. The first factor is the identification of the change recipients' characters in this organization because it may show how individuals react to the organizational change wherein identification of the individual characters can help for the understanding of the change motivation during the implementation. The second factor is ethics wherein the organizational change should be planned, implemented, and evaluated ethically. The design of the change program should not include unethical practices besides the implementation should maintain organizational practices that satisfy a standard of ethics [22].

To implement the change in the medical school or in the health care system, it should face this challenge through translating the change strategy into practical steps leading to the achievement of this change in an efficient and fast

manner. Initially, the leader of the change process should form teamwork from different persons (key players) who should have different jobs in this organization related to the target change to give position power for this team to progress. The expertise should be represented in this teamwork under the umbrella of the leader who should drive the change process with credibility to empower the team to make the right decision. Secondly, meeting and open discussion should be held between the leader of the change process and his teamwork to discuss and identify the current situation using all available data about medical school or health care system to discover the reality that is motivating the change [23].

A powerful and applicable shared vision should be created depending on how the teamwork can make the change in the daily work in medical school or in the health care system for improving the quality of the performance to get the best results. This vision should be discussed in this mentioned meeting wherein it should be realistic based on real facts, clear, imaginable, desirable, feasible, focused, flexible and communicable to become effective and a guide for decision making giving the chance for individual initiative and alternative responses according to the condition. Worthwhile, it should communicate the vision to all the staff members for ensuring the involvement of every person in the medical school. The discussion through a regular monthly meeting is the best method for this. Thus, an implementation plan can be created to achieve the vision after discussion of all staff opinions. After that, the role of every person in this plan may be determined after studying all suggestions received from the teamwork [24]. Thirdly, developing the collaborative work to be able to face and overcome the expected obstacles via changing the routine administrative system in medical school because it can undermine the vision along with identification of the obstacles and its root to determine its solutions. In addition, it should also encourage teamwork for risk-taking, adopting non-traditional ideas and activities to overcome these expected obstacles such as shortage of staff, lack of staff training, shortage of facilities, wrong culture and beliefs, and bad management system. It should mention here that keeping obstacles in place without finding solutions based on their roots may lead to demoralization and an inability of the teamwork to sustain energy to continue and progress [25].

Fourthly, preparation of a suitable climate that fosters the change by addressing and controlling the emerging different responses of the staff members during the implementation of the change process. Therefore, those who resist the change, it should discuss their opinions and

objections by open-minded and give them the chance for their feeling expression keeping on empathy and understanding as an approach to deal with their resistance without the struggle that may lead to adoption the defence as an approach, and this is unwanted [26].

On another hand, it should explain to those who deny the new change giving more information about the importance of change and its reflection on improving the medical school performance and its positive impact on the educational process. No doubt, this information will transform the denial of some staff members to positive and cooperative act. Regarding those who adopt exploration as one of the other responses, it should attempt to encourage them to discover the new situation based on making the opportunities and resources to support this discovering [27].

Fifthly, it should divide the target from the change into short term targets in a plan because the positive results and short term wins motivate the teamwork to keep on their engagement and sustain the efforts for achievement more wins. Noteworthy, periodical and regular achievement reflect the real visible performance improvement in medical school or in the health care system giving more motivation for continuity in the application of the change process. Sixthly, it should maintain the attention of teamwork and their efforts to keep continuous motivation for more improvement in quality and quantity. New challenges should be framed via renewing and adding more targets or by changing the position of some staff inside the medical institution changing their responsibilities. In addition, the continuity of change should be maintained via reinforcing new values such as rewards and promotion besides changing the culture of staff to reflect on their behavior and attitude, and then on the extent of success in the change achievement [28].

In a related context, it should mention the results of a study conducted to assess professionals' change responses about the implementation of change in health care in Sweden. This study investigated health care professionals' responses to organizational and workplace changes using an inductive approach wherein it conducted thirty interviews with health care professionals in the Swedish health care system using a semi-structured interview guide. The results of this study reported that change responses are ranging from a strong acceptance of the change to strong resistance to change showing seven forms of change responses. Most of the change responses were indifferent or passive resistant to changes. However, involvement in changes with support appeared when the health care professionals initiated the changes themselves and when these changes

caused a positive impact on the work, and when changes were proved as well-founded. This study concluded also that identification of change responses is useful for change management and for more successful implementation of this change [29].

## **6. HOW TO OVERCOME SHORTCOMING IN MANAGEMENT SYSTEM DURING THE CHANGE PROCESS?**

Initially, it should also mention that participation in decision-making is considered an aspect of professional and organizational engagement that should be encouraged by leadership in the change process according to the study of Spurgeon and his colleagues [30] that conducted in highly complex organizations such as hospitals wherein participation in decision-making contributed towards health service quality because of the constructive relationship between engagement and the quality outcomes. A relationship between participation in decision-making and performance obstacles was observed while another relationship between organizational change and performance obstacles was also noted through participation in decision-making. However, it was noted that organizational change is also negatively related to job satisfaction and change-oriented leadership is also negatively related to performance obstacles.

To manage the change and achieve the intended results, medical school or health care system should have a well-functioning and efficient management system wherein one of the most obstacles that face the change process is an inability management system to support organizational capacity for resources management. Thus, the management system should be able to provide needed critical information in a timely manner, able to respond quickly to requests, help for discovering the problems and send warning signals on time. It should analyze and assess management capacity by using the management and organizational sustainability tool (MOST) to assess mission, values, strategy, structure, and system [31].

Based on this assessment, it should develop an action plan for improving the management system to increase its efficacy for supporting the change. This action plan should include determination of the number of administrators in medical school or in the health care system and identification of the job description for every person besides the determination of the shortcoming in the management system and the addressing methods of shortcoming. In addition, the action plan should also include developing the mechanism of work and

performance in this organization along with the determination of the role that may be performed by the management system for supporting the change process [32].

Therefore, the first step of the action plan is the determination of measurable objectives, timetable, needed resources and responsible persons for every activity while the second step is the flexibility for assignments distribution between the involved staff to compensate for the shortage. The third step is developing an internal system to provide regular feedback about the quality of the performance during the change process as a type of quality assurance. In addition, information management is considered the fourth step in the action plan for analyzing the data to reach the results that reflect the extent of progress towards achieving the change to inspire the teamwork via this progress. The fifth step should develop a mechanism for monitoring and evaluation based on the official rules for checking the performance to support and sustain the change, and then its improvement. The sixth and last step is sound financial management that is able to serve the change process and its requirements [33].

Last but not least, it should refer to some important points that help the success of the change process. At first, the institutional climate should be supported via sharing experience through information exchange between the teamwork and the involved staff members to encourage the new approach for thinking along with the extraction of lessons learned to support the institutional environment improving the performance. The partners should move behind the traditional roles and restricted areas to take on new responsibilities because partnership working rushes the managers and leaders to strengthen their capabilities for successful achievement [34].

The change should be scaled up inside the different sectors of the organization and may also be outside it at the national level according to a common view. The making of change in any organization leads to many benefits for the organization and the staff members wherein it improves the effectiveness and efficiency of organizational and staff performance besides creating an opportunity for developing the best practices such as leadership and teamwork. The making of change improves also the morale and productivity of teamwork along with increasing cooperation and communication among the teamwork encouraging them to stay loyal to the organization [35].

In a related context, the study of Gershengorn and his colleagues [36] showed that creating a culture that accepts and embraces change can facilitate the change process in the intensive care units besides a selection of the suitable

management technique that can improve communication and coordination between the involved medical teams boosting the quality initiative implementation and maintenance. The change can also lead to creating a better environment in intensive care units wherein medical teams can perform their work well besides the intensive care unit is integrated into the rest of the institution (hospital) providing better care for the critically ill and strengthen the relationships with the clinicians who are outside intensive care unit.

## 7. CONCLUSIONS

Leading change is a process for making significant improvements in medical institutions. Leading change needs creating a suitable climate besides a management system support to overcome challenges and obstacles such as the resistance to the change. Thus, the application of the successful change should depend on a strategy and action plan during its implementation. In addition, the change should be institutionalized in medical institutions leading to a positive impact on the work and more benefits for teamwork and organization.

## 8. REFERENCES

1. Armenakis AA, Bernerth JB, Pitts JP, Walker HJ. *Organizational Change Recipients' Beliefs Scale: Development of an Assessment Instrument*. *J Appl Behav Sci*. 2007;43(4):481-505. doi: 10.1177/0021886307303654.
2. Bell J, Breslin JM. *Healthcare provider moral distress as a leadership challenge*. *JONAS Healthc Law Ethics Regul*. 2008;10(4):94-7. doi: 10.1097/NHL.0b013e31818ede46.
3. Galer JB, Vriesendorp S, Ellis A. *Leading Change for Better Health. In: Galer JB, Vriesendorp S, Ellis A, editors. Managers Who Lead: A Handbook for Improving Health Services*. Cambridge (Massachusetts): Management Sciences for Health; 2005:149-71.
4. Cole M, Harris SG, Bernerth JB. *Exploring the implications of vision, appropriateness, and execution of organizational change*. *Leadersh Organ Dev J*. 2006;27(5):352-67. doi: 10.1108/01437730610677963.
5. Self DR, Armenakis AA, Schraeder M. *Organizational Change Content, Process, and Context: A Simultaneous Analysis of Employee Reactions*. *J Chang Manag*. 2007;7:211-29. doi: 10.1080/14697010701461129.
6. Christensen CM, Baumann H, Ruggles R, Sadtler TM. *Disruptive innovation for social change*. *Harv Bus Rev*. 2006;84(12):94-101, 163.
7. Bhattacharjee A, Hikmet N. *Physicians' resistance toward healthcare information technology: a theoretical model and empirical test*. *Eur J Inf Syst*. 2007;16(6):725-37. doi: 10.1057/palgrave.ejis.3000717.
8. Elshama SS. *How to Develop Medical Education (Implementation View)*. 1st ed. Scholars' Press Germany; 2016.
9. Landaeta RE, Mun JH, Rabadi G, Levin D. *Identifying sources of resistance to change in healthcare*. *Int J Health Technol Manag*. 2008;9(1):74-96. doi: 10.1504/IJHTM.2008.016849.
10. Kellogg KC, Breen E, Ferzoco SJ, Zimmer MJ, Ashley SW. *Resistance to change in surgical residency: an ethnographic study of work hours reform*. *J Am Coll Surg*. 2006;202(4):630-6. doi: 10.1016/j.jamcollsurg.2005.11.024.
11. Walker HJ, Armenakis AA, Bernerth JB. *Factors influencing organizational change efforts: An integrative investigation of change content, context, process and individual differences*. *J Organ Chang Manag*. 2007;20(6):761-73. doi: 10.1108/09534810710831000.
12. Øygarden O, Mikkelsen A. *Readiness for Change and Good Translations*. *J Organ Chang Manag*. 2020; 20(3):220-46. doi: 10.1080/14697017.2020.1720775.
13. Andersson T. *The medical leadership challenge in healthcare is an identity challenge*. *Leadersh Health Serv (Bradf Engl)*. 2015;28(2):83-99. doi: 10.1108/LHS-04-2014-0032.
14. Holt DT, Armenakis AA, Field HS, Harris SG. *Readiness for Organizational Change: The Systematic Development of a Scale*. *J Appl Behav Sci*. 2007;43(2):232-42. doi: 10.1177/0021886306295295.
15. Shanley C. *Management of change for nurses: lessons from the discipline of organizational studies*. *J Nurs Manag*. 2007;15(5):538-46. doi: 10.1111/j.1365-2834.2007.00722.x.
16. Armenakis AA, Harris SG. *Reflections: our Journey in Organizational Change Research and Practice*. *J Chang Manag*. 2009;9(2):127-42. doi: 10.1080/14697010902879079.
17. Wyszewianski L, Green LA. *Strategies for changing clinicians' practice patterns. A new perspective*. *J Fam Pract*. 2000;49(5):461-4.
18. Martin G, Currie G, Weaver S, Finn R, McDonald R. *Institutional Complexity and Individual Responses: Delineating the Boundaries of Partial Autonomy*. *Organ Stud*. 2017;38(1):103-27. doi: 10.1177/0170840616663241.
19. Gregory BT, Armenakis AA, Moates KN, Albritton MD, Harris SG. *Achieving scientific rigor in organizational diagnosis: An application of the diagnostic funnel*. *Consult Psychol J: Pract Res*. 2007;59(2):79-90. doi: 10.1037/1065-9293.59.2.79.
20. By RT, Diefenbach T, Klärner P. *Getting Organizational Change Right in Public Services: The Case of European Higher Education*. *J Change Manag*. 2008;8(1):21-35. doi: 10.1080/14697010801937457.
21. Al-Kadri HM, Al Alwan IA, Al-Moamary MS, Al Eissa YA, Al Knawy BA. *From Clinical Center to Academic Institution: An Example of How to Bring About Educational Change*. *Health Prof Educ*. 2015;1(1):4-11. doi: 10.1016/j.hpe.2015.11.001.

22. Bernerth JB, Armenakis AA, Feild HS, Walker J. *Justice, Cynicism, and Commitment: A Study of Important Organizational Change*. *J Appl Behav Sci*. 2007;43(3):303-26. doi: 10.1177/0021886306296602.
23. Bernström VH, Kjekshus LE. *Effect of organisational change type and frequency on long-term sickness absence in hospitals*. *J Nurs Manag*. 2015;23(6):813-22. doi: 10.1111/jonm.12218.
24. Souba WW. *The 3 essential responsibilities: a leadership story*. *Arch Surg*. 2010;145(6):540-3. doi: 10.1001/archsurg.2010.82.
25. Harris SG, Cole MS. *A stages of change perspective on managers' motivation to learn in a leadership development context*. *J Organ Change Manag*. 2007;20:774-93. doi: 10.1108/09534810710831019.
26. Øygarden O, Olsen E, Mikkelsen A. *Changing to improve? Organizational change and change-oriented leadership in hospitals*. *J Health Organ Manag*. 2020;687-706. doi: 10.1108/JHOM-09-2019-0280.
27. Frame J, Watson J, Thomson K. *Deploying a culture change programme management approach in support of information and communication technology developments in Greater Glasgow NHS Board*. *Health Informatics J*. 2008;14(2):125-39. doi: 10.1177/1081180X08089320.
28. Gunderman R, Kanter SL. *Perspective: Educating physicians to lead hospitals*. *Acad Med*. 2009;84(10):1348-51. doi: 10.1097/ACM.0b013e3181b6eb42.
29. Oreg S, Bayazit M, Vakola M, Arcinięga L, Armenakis A, Barkauskiene R, et al. *Dispositional resistance to change: measurement equivalence and the link to personal values across 17 nations*. *J Appl Psychol*. 2008;93(4):935-44. doi: 10.1037/0021-9010.93.4.935.
30. Darzi A. *A time for revolutions--the role of clinicians in health care reform*. *N Engl J Med*. 2009;361(6):e8. doi: 10.1056/NEJMp0905707.
31. Nilsen P, Schildmeijer K, Ericsson C, Seing I, Birken S. *Implementation of change in health care in Sweden: a qualitative study of professionals' change responses*. *Implement Sci*. 2019;14(1):51. doi: 10.1186/s13012-019-0902-6.
32. Spurgeon P, Mazelan PM, Barwell F. *Medical engagement: a crucial underpinning to organizational performance*. *Health Serv Manage Res*. 2011;24(3):114-20. doi: 10.1258/hsmr.2011.011006.
33. Moates KN, Armenakis AA, Gregory BT, Albritton MD, Feild HS. *Achieving content representativeness in organizational diagnosis: Use of action groups for successful organizational change*. *Action Res*. 2005;3(4):399-412. doi: 10.1177/1476750305058489.
34. Armenakis AA, Harris SG, Cole MS, Fillmer JL, Self DR. *A Top Management Team's Reactions to Organizational Transformation: The Diagnostic Benefits of Five Key Change Sentiments*. *J Chang Manag*. 2007;7(3):273-90. doi: 10.1080/14697010701771014.
35. Northouse PG. *Leadership: Theory and Practice*. 7th ed. SAGE Publications; 2015.
36. Gershengorn HB, Kocher R, Factor P. *Management strategies to effect change in intensive care units: lessons from the world of business. Part III. Effectively effecting and sustaining change*. *Ann Am Thorac Soc*. 2014;11(3):454-7. doi: 10.1513/AnnalsATS.201311-393AS.