SIMULATION CENTRE AS A PART OF EDUCATIONAL MEDICAL CLASTER

N.V. Borisova, P.G.Petrova, L.A.Aprosimov

Abstract

The authors reviewed the simulation training on the computer simulators, various training apparatus, mannequins and training models. Teaching in the direction of development of basic surgical skills and high-tech medical care section is studied.

Keywords: simulation training, basic skills, computer skills, simulation center.

Introduction

Personnel policy of the health system during its modernization carried out in the Russian Federation is aimed at the formation, development, and professional development specialists. Crucial role in the formation of a new generation of professionals should play revival of the Russian educational system. In the new socio- economic conditions of real value to health care is a well-educated physician, capable of flexibly changed direction and content of their activities in connection with the needs of the industry. The main strategy of the development of medical education is the need for training and development specialists to meet the needs of the state in specific categories of health workers. In the current situation, taking into account global trends, it is necessary to go towards the creation of simulation centers for training of both students and novice physicians. The realization of this goal requires the following strategic priorities:

• Introduction of competence-based approach in the training of professionals, ensuring the relationship of academic knowledge and practical skills;

• Development of variability educational programs, including the use of new educational technologies and the best international practices;

• Implementation of an effective quality clinical training and retraining of specialists at the experience of leading Russian and foreign institutions;

• Formation of an external independent certification of professional competence, accreditation, graduates and professionals;

• Establishment of a system of continuous professional development based on the principles of open educational space in accordance with the objectives of the innovation of the industry.

Thus, the model is formed by practical training must necessarily be based on training at the clinic. This requires an urgent review of its content and the creation of new principles:

• Organization of training and work practices;

• Practical training in the departments;

• The introduction of elective courses on practical skills.

In the Institute of Medicine of the North-Eastern Federal University named after M.K. Ammosov in order to develop practical skills of students, students of the university curriculum and training paramedics on phantoms in the framework of the development of the university created Simulation center with simulated workplace practitioner. The emphasis is on simulation training on computer simulations of various simulators, mannequins and training models. The courses are taught both in the direction of development of basic surgical skills, as well as in the high-tech medical care. Education primarily aimed at the interns, residents, graduate students, and surgical training of doctors, as well as students for the first time mastering various invasive manipulations. At the center, students learn the skills of general surgical procedures.

Education of students with modern exercise equipment and systems can raise the learning process to a new level. An integral part of the training for surgical departments is to conduct online transactions with the comments and feedback. The development of each manipulation, the skill or dexterity of several stages:

1. Theoretical training for the manipulation, skill or ability.

2. The study of the functionality of the simulator model, the phantom or dummy.

3. Testing of manipulation in the simulator model, the phantom or without plaster casts of the execution time.

4. Testing of manipulation in the simulator model, or a plaster cast of a phantom with the runtime.

5. Evaluation of the implementation of manipulation, skill or ability (as worked out criteria).

The students master the following practical skills:

a) on the 2nd course - caring for critically ill patients, measurement of blood pressure and body temperature, setting enemas, gastric lavage, administration of intradermal, subcutaneous and intramuscular injection, intravenous drip conducting, staging peripheral intravenous catheter, holding techniques of cardio -pulmonary resuscitation etc.;

b) for the 3rd year - conduct primary resuscitation of the complex, the primary surgical treatment of heart and lung auscultation, electrocardiogram, and others;

c) on the 4th year - conduct auscultation of the lungs and heart, the use of a nebulizer, palpation of the breast, bimanual palpation of the uterus, managing uncomplicated births, etc.;

g) for 5-year student - blood type, digital rectal examination, the technique works with a defibrillator, the restoration of the airway by the introduction of air and the use of a laryngeal mask, etc.;

e) on the 6th year - diagnosis and differential diagnosis of diseases of the heart and lungs, carrying ECG interpretation, execution algorithms action when comatose, shocks and pulmonary edema , etc.

A new concept of training can significantly reduce the time specialist training due to fast and productive set of so-called "training hours", and that the most important thing - to make surgery safer for the patient. Today for us is objectively necessary to create training and simulation training centers precisely on stage postgraduate training, re-training, certification and approval for their work with patients. This will be a major step forward in the proper training of quality professionals specialized medical care. However, such teaching and training centers of high medical technologies have become not only centers of learning, but also centers of certification experts. Many medical institutions throughout the country already have the necessary equipment for this purpose and the tools. In this technique of laparoscopic procedures in various medical surgical specialties have many common points. Optimizing the process of learning laparoscopic surgery is one of the important methodological issues at the post-graduate medical education .In medicine, particularly in surgery, during the development of high-tech methods of providing specialized assistance there is an urgent need to change the system of development of practical skills. Education in operating the type of «look, as I do, and remember" is ineffective and counterproductive. It is advisable to create motivation, which encouraged students to develop practical skills in a training center on a "Bring to make it so" as under the supervision of a teacher, and independently as long as necessary for this learning period. In this case, must necessarily be introduced elements of the game and the competition triggered by the state of excitement, which significantly increases the interest and facilitates the development of practical skills while increasing the effectiveness of training.

The actual implementation of the described concept is feasible when the training methodology and the mandatory application of simulation methods development of practical skills. Feature and the undeniable advantage of simulation training is the possibility and necessity of frequent repetition of certain actions, bring them to the automatism of the highest quality with the commission, which is controlled by the teacher as subjectively and objectively with the use of virtual simulation software. It is extremely desirable that the errors committed in the course of cadet training in the classroom, not in the actual practice in the operating room. A new concept of training can significantly reduce the learning curve of practical skills, making the initial period of self-study of a young surgeon more short-term and less painful for both the doctor and for others of his colleagues and, most importantly, for patients.

Possession of practical skills on models and simulators, mandatory certification practical

skills must be built on the main principles used in the preparation of international practice physician. Here you can take as a basis for an objective structured clinical examination, which is conducted at leading universities in the world. Speaking today about the importance of practical training at the undergraduate level, it is necessary to note the objective needs of the formation of this system on the stages of post-graduate training throughout the professional life. For the implementation of an effective and high-quality training and retraining of medical specialists is necessary to standardize the list of practical skills and specialist skills of different educational levels, to form professional standards that should be targeted indicators of professional competence.

References

1. Koncepcia razvitia sistemy zdravoochranenia v Rossiiskoi Federacii do 2020., itogovyj doklad [The concept of development of the health system in the Russian Federation until 2020., Final report].
2. Ukaz Prezidenta RF “O merah po realizatii gosudarstvennoi politiki v oblasti obrazovania I nauki” ot 7 maja 2012g. №599 [Presidential Decree "On measures for implementation of the state policy in the field of education and science" of 7 May 2012. Number 599].
3. Federalnyi gosudarstvennyi obrazovatelnyi standart po napravleniu podgotovki (specialnosti) 060101 Lechebnoe delo vysschego professionalnogo obrazovania, utverzhdenniy prikazom Ministerstva obrazovania i nauki Rossiiskoy Federacii ot 8 noyabrya 2010g. №1118 [Federal State Educational Standard for training (specialty) 060101 Medicine of higher education approved by the Ministry of Education and Science of the Russian Federation of November 8, 2010. Number 1118].
4. Federalnyi gosudarstvennyi obrazovatelnyi standart po napravleniu podgotovki (specialnosti) 060103 Pediatria vysschego professionalnogo obrazovania, utverzhdennyi prikazom Ministerstva obrazovania i nauki Rossiiskoy Federacii ot 8 noyabrya 2010g. №1122 [Federal State Educational Standard for training (specialty) 060103 Pediatrics higher education, approved by the Ministry of Education and Science of the Russian Federation of November 8, 2010. Number 1122].
5. Federalnyi gosudarstvennyi obrazovatelnyi standart po napravleniu podgotovki (specialnosti) 060201 Stomatologia vysschego professionalnogo obrazovania, utverzhdenniy prikazom Ministerstva obrazovania i nauki Rossiiskoy Federacii ot 14 yanvarya 2011g. №16 [Federal State Educational Standard on direction 060201 "Dentistry" of higher education approved by the Ministry of Education and Science of the Russian Federation dated 14 January 2011. number 16].
6. Postanovlenie Pravitelstva RF ot 31 dekabrya 2010g. № 1220 «O finansovom obespechenii za schet byudzhetnych assignovaniy federalnogo byudzheta sozdania obuchauzhich simulationnych centrov v federalnych gosudarstvennych uchrezhdeniach» [RF Government Decree of December 31, 2010. Number 1220 "On the funding from the federal budget allocations create simulation training centers in the federal government institutions"].
7. Kluev A.K. Struktury razvitia VUZa: nauchno-obrazovatelnye centry // Universitetskoe upravlenie: praktika I analiz [Structure development of the university: research and education centers. University Management: Practice and Analysis], 2009, № 5. pp. 64-70.
8. Mutylina I.N. Informationnye technologii obuchenija v sisteme vysshego obrazovanija // Sovremennye problemy nauki I obrazovanija [Information Technology Learning in Higher Education. Modern problems of science and education], 2008, Issue. 4 (18), pp. 91-92.
9. Navodnov V.G. K voprosu o sozdanii vnutryvuzovskoy sistemy monitoringa kachestva obrazovanija. Sovremennye problemy professionalnogo technicheskogo obrazovanija: materially mezd.nauch.-metod.konf. [Towards the creation intrahigh monitoring systems the quality of education. Modern problems of Professional Technical Education: Materials international konf.], Yoshkar-Ola, 2011, pp. 81-82.
10. Ovchinnikov M.N. Ob ocenivanii deyatelnosti universitetov I pokazatelyach effektinosty

programm razvitiya. Universitetskoe upravlenie: praktika I analiz [On the estimation of the universities and performance indicators of development programs. University Management: Practice and Analysis]. 2012, №1, pp. 25-30.
11. Svistunov A.A. Rol medicinskogo soobchestva v razvitii simulyationnogo obucheniya v Rossii, Medicinskoe obrazovanie I nauka [The role of the medical community in the development of a simulation study in Russia. Medical Education and Research]. 2013, №1(3), pp. 68-71.
12. Teplyakova O.V. Simulyacionnye obrazovatelnye centry kak innovationnaya technologiya medicinskogo obrazovaniya. Medicinskoe obrazovanie, 2012, sb. tezisov III Obscherossiyskoy konferencii s mejdunarodnym uchastyem [Simulation training centers as innovative technology medical education. Medical Education 2012: sb.tezisov III All-Russian conference with international participation]. Moscow: BINOM. Laboratoriya znanij, 2012, pp. 273-275.

The authors

Natalia Borisova - MD, Associate Professor, Deputy Director for Academic Affairs Medical Institute NEFU, Oyunskogo str.,27, 677000, Yakutsk, Russia.
Palmyra Petrova - MD, Professor, Director, Medical Institute NEFU, Oyunskogo str., 27, 677000, Yakutsk, Russia.
Leonid Aprosimov - PhD, Associate Professor, Dean of the Faculty of postgraduate training of doctors Medical Institute NEFU, Oyunskogo str.,27, 677000, Yakutsk, Russia.