

## TRENDS IN THE DEVELOPMENT OF MEDICAL EDUCATION THROUGH THE INTRODUCTION OF DIGITAL ONLINE CONSULTATIONS

Abdullayeva Saboxon,

Nomozova Gulnoza

Uzbek State University of Physical Culture and Sports, Uzbekistan

**Annotation.** Universities have traditionally aimed to instill in their students the ability to interpret information as well as the joy of learning. However, today's universities are challenged with the need to also incorporate technological advances without forsaking the solid principles at their foundation. Furthermore, modern society's demand for a university-educated workforce is increasing, while the demand for unskilled jobs is decreasing. Universities now face the challenge of training many students with vast differences in background, previous knowledge, and study motivation. Supporting student learning with digital resources A huge amount of digital resources is now available for administrative as well as pedagogical support and enhancement in higher education.

**Keywords:** telemedicine, information technology

Digitalization is being widely implemented in all areas of healthcare, and telemedicine was its first variety. Despite the widespread opinion that telemedicine is a young direction and still little used in practice, it began its history long before the appearance of a computer - in the days of telegraphs. Telephone consultations can also be conditionally attributed to this area. At the same time, the first videoconferencing session as a tool for telemedicine was held in 1965. It was a broadcast of an aortic valve replacement operation with an artificial heart, assisted by the eminent cardiac surgeon Michael DeBakey.

Since the 1960s, there has been a significant increase in the use of video conferencing among medical personnel, including surgeons [3]. In recent years, the cost of equipment for this has become cheaper, and high technical skills are not required to use the system. In 2004, the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) presented their definitions of telemedicine [4]. A video conference is defined as a real-time interactive program in which one group of participants is in one or more locations and another group of participants is in another location.

Videoconferencing allows interaction, including audio and/or video, and possibly other means, between at least two professionals [4]. A similar definition is used in the Telemedicine Journal and e-Health [3]. The U.S. Department of Health and Human Services defines telehealth as "the use of electronic information and telecommunication technologies to support and promote remote clinical care, patient education and professional medical education, public health, and healthcare management."

The Healthcare Research and Quality Agency classifies telemedicine into 3 distinct categories:

1. telemedicine in real time between the patient and the medical worker;
2. store and forward telemedicine services such as the exchange of medical images or data between service providers;
3. home telehealth monitoring, which includes the use of telehealth to remotely monitor patients and their health, also known as remote patient monitoring; [7].

The greatest concern in the current pandemic is the sheer workload, psychological stress, emergencies and worse, the transmission of the virus among healthcare workers. As of May 8, 2020, 90,000 healthcare workers have been infected with severe COVID-19 and many countries have reported a large number of deaths of healthcare workers

One potentially useful tool to mitigate the aforementioned health system risks is the digitalization of medicine. It is known that many surgical pathologies have negative results due to delayed treatment, which leads to worse outcomes and increased patient mortality [8, 9].

Education and training is an important aspect of the practice of an academic surgeon. Training of residents is hampered by reduced operating hours, patients in clinics, and individual training for surgeons. Virtual learning environments via videoconferencing are being successfully used for training trainees and students, as well as for telerehabilitation.

It is believed that distance learning is as effective as traditional instructor-led methods [11]. This teaching method provides theoretical knowledge, but does not allow residents and medical students to acquire technical and surgical skills. Virtual patient cases have been studied as an option to replace some of the patient meetings and have shown modest improvement in knowledge and appear to be useful in preparing or reinforcing face-to-face patient meetings.

A unified communication and information service for emergency medical care has been created in the Republic, which consists of several levels and structural components. The priority direction of the healthcare system reform remains the transformation of primary health care to the population, the development of an emergency medical care system, as well as ensuring the availability of highly qualified specialized medical care to the population.

This service aims to provide the population with qualified, specialized, high-tech emergency, first aid and urgent care, to organize an emergency medical care system that meets international standards, and to establish close cooperation with foreign specialized institutions. It is here that the introduction of digitalization for the availability of medical services and education is relevant.

Air ambulance is one of the structures of the emergency service, in particular surgery, when specialists need help in collegial problem solving in severe and controversial clinical cases. Of course, this emergency service is relevant in all branches of modern healthcare, but when it comes to the economic efficiency of this service, it is necessary to modernize it by introducing digitalization into the air ambulance service.

To call a specialist to a remote institution, the participation of many specialists is necessary, in particular, a consultant, a dispatcher, a driver, and, accordingly, their financial incentives. Of course, if it is necessary and possible to carry out various types of surgical interventions on the ground, the departure of specialists is mandatory.

But, today the question is raised about the availability of specialists of all levels in the field in the early stages of the disease, and digitalization plays the main role here. There are situations when doctors need help, because severe and complex cases occur everywhere. At the same time, transporting a patient to a capital clinic or a specialized medical center is impossible or impractical. The only way out is an urgent video call session, which will help you get the necessary advice as quickly as possible, avoiding the loss of precious time. Digitization in this direction allows students to visually see clinical situations and conduct a joint analysis of complex cases, when they can actually monitor the progress of the patient's treatment online. Moreover, unlike watching videos, students can ask questions and get detailed explanations, and analyze complex situational moments.

In addition, it allows you to display all patient data, from clinical laboratory tests to complex instrumental studies, which ensures data transmission at any distance, long-term preservation and the absence of paper workload, which is used everywhere today.

Thus, the relevance of the emergency medical service and its structural unit - air ambulance is beyond doubt, however, it is necessary to widely introduce digitalization in the form of a preliminary online consultation, where all patient data and the treatment performed will be displayed.

This requires the improvement of the digital base and the involvement of specialist engineers who will create a program for this service. A feature of this digitalization is urgency, an unlimited number of consultants, with a consultation, accessibility and high economic efficiency.

#### **Литература.**

1. Bashshur, R.L., Sanders, J.H., and Shannon, G.W. (eds.) Telemedicine: Theory and Practice. Springfield: Charles C. Thomas, Publisher, Ltd., 1997. DeBakey M. Telemedicine has now come of age // Telemedicine Journal.-1995.-Vol.1,N1.
2. <https://link.springer.com/article/10.1007/s00268-009-0036-0#ref-CR2>

3. Jarvis-Selinger S, Chan E, Payne R, Plohman K, Но К (2008) Клиническое телемедицина по дисциплинам: извлеченные уроки. Телемед J E Здоровье 14:720–725
4. S.A.G.E.S Общество американских желудочно-кишечных и эндоскопических хирургов (январь 2009 г.) Руководство по хирургической практике телемедицины; практические/клинические рекомендации. <http://www.sages.org/publication/id/21>
5. Программы телемедицины по управлению ресурсами и услугами здравоохранения. 2015. [2017-01-03] <https://www.hrsa.gov/ruralhealth/telehealth/webcite>
6. Агентство медицинских исследований и качественных медицинских информационных технологий. 2017. [2017-01-07]. <https://healthit.ahrq.gov/key-topics/telehealth>;
7. Обзор больницы Вайдьи А. Беккера. 90000 медицинских работников во всем мире заразились коронавирусом. 8 мая 2020 г. Доступно по адресу: <https://www.beckershospitalreview.com/workforce/90-000-healthcare-workers-infected-with-coronavirus-worldwide.html> [по состоянию на 23 июля 2020 г.]
8. Shin DW, Cho J, Kim SY, Guallar E, Hwang SS, Cho B, Oh JH, Jung KW, Seo HG, Park JH. Энн Сург Онкол. 2013 Aug; 20 (8): 2468-76
9. COVIDSurg Collaborative. Elective surgery cancellations due to the COVID-19 pandemic: global predictive modelling to inform surgical recovery plans. Br J Surg. 2020 Oct;107(11):1440-1449. doi: 10.1002/bjs.11746. Epub 2020 Jun 13. PMID: 32395848; PMCID: PMC7272903.
10. Видеоконференцсвязь для дистанционного обучения ортопедии. Баруффальди Ф, Джангиакомо Л, Палтриньери А, Тони А J Telemed Telecare. 2003; 9 (4): 241-2.
11. Влияние электронного обучения на медицинское образование. Руис Дж. Г., Минцер М. Дж., Лейпциг, PM Acad Med. 2006 Mar; 81 (3): 207-12.
12. Оценка виртуальных случаев пациентов для обучения диагностическим и управленческим навыкам в области внутренней медицины: исследование смешанных методов. Джейми С., Ван Дж.Й., Ричардсон Л. BMC Res Notes. 5 июня 2018 г.; 11 (1): 357.
13. <https://mineconomy.uz/ru/info/1631>