

# ТЕЛЕМЕДИЧНА ПЕДАГОГІКА

*Dies diem docet!*

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## Utilization of telemedicine for teaching in nursing

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### РЕЗЮМЕ, ABSTRACT

The article discusses the modernization of teaching with the utilization of information communication technology. The main idea is to use effectively various forms of performance information for educational purposes. Telemedicine is currently represented by utilization of medical information exchanged between two places by means of electronic communication for health education of patients and as well as for care providers who try to improve patient care. Utilization of telemedicine in nursing is an effective way to modernize the teaching of students in non medical curricula and attractive way to brighten routines. The paper presents the partial results of KEGA project that will help to make teaching more effective in non medical curricula (Ukr.z.telemed.med.telemat.-2011.-Vol.9,№2.-P.191-194).

**Keywords:** Telemedicine, modernization of teaching, nursing, information technology

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**ВИКОРИСТАННЯ ТЕЛЕМЕДИЦИНИ ДЛЯ ВИКЛАДАННЯ СЕСТРИНСЬКОЇ СПРАВИ**  
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У статті розглядаються можливості удосконалення викладання сестринської справи з використанням інформаційно-комунікаційних технологій. Основна ідея полягає у використанні можливостей телемедицини в освітніх цілях. Використання телемедицини є ефективним способом модернізації підготовки студентів за програмами нелікарських спеціальностей та підвищення ефективності навчального процесу. Стаття ґрунтується на проміжних результатах реалізації проекту KEGA, метою якого є розробка нових освітніх технологій (Укр.ж.телемед.мед.телемат.-2011.-Т.9,№2.-С.191-194).

**Ключові слова:** телемедицина, модернізація навчання, сестринська справа, інформаційні технології

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**ИСПОЛЬЗОВАНИЕ ТЕЛЕМЕДИЦИНЫ ДЛЯ ПРЕПОДАВАНИЯ СЕСТРИНСКОЙ ДЕЛА**  
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В статье рассматриваются возможности усовершенствования преподавания сестринского дела с использованием информационно-коммуникационных технологий. Основная идея заключается в использовании возможностей телемедицины в образовательных целях. Использование телемедицины является эффективным способом модернизации подготовки студентов по программам неврачебных специальностей и повышения эффективности учебного процесса. Статья основывается на промежуточных результатах реализации проекта KEGA, целью которого является разработка новых образовательных технологий (Укр.ж.телемед.мед.телемат.-2011.-Т.9,№2.-С.191-194).

**Ключевые слова:** телемедицина, модернизация обучения, работа медсестер, информационные технологии

Telemedicine is the utilization of medical information exchanged between two places by means of electronic communication and it also contributes to the expansion of medical

knowledge. It covers many areas of computer-assisted "distance" medicine. It is a part of technology telepresence, which creates the illusion that the user is fully immersed in

another environment, either real or synthetic. The educational dimension of telemedicine is particularly important. Attachments to videoconference system enable interactive teaching of students as well. According to the WHO definition of telemedicine is the summary designation for medical activities, services and systems operated remotely via ICT to promote global health, prevention and health care as well as education, health management and health management research.

According to another definition (including WHO) telemedicine is providing information, where the distance, traffic and sanitation is a critical factor in using ICT for the exchange of valid information for continuing education of healthcare providers. An interactive telemedicine as the effective way of exchanging information between two places using the electronic communication as an important contribution to modern education of students in nursing. Telepresence technology between teachers and students can help create the idea that the student is located directly in the operating room and allows it to obtain direct knowledge of the real environment using.

Results of understanding the world's top experts are focused on necessary changes to innovative medical systems and services. These are supported by the top international professional organizations, which together with national academic and research institutions form a "think-tank" accelerating increase in the routine application of information and ICT services in systems of health care for citizens. E-health includes designation of telemedicine - distance health monitoring and the circumstances in which the individual is, the provision of distance diagnosis and nursing services, etc. An acronym - e-health also called development of policies, programmes, methods and projects including their results through the application of ICT to a high professional level in a wide range of everyday healthcare, medical and social activities. The aim is to increase the availability, reliability, quality and safety services provided to sick and healthy citizens with quality organizational arrangements in place and time of need, while also reflects the possibility of reducing the cost ratio whenever possible and necessary. E-health is a new way, which is evolving rapidly and is currently not sufficiently developed in

the literature. Informatization of health issues is given special attention throughout the whole EU. In 2004 the European Commission adopted an action plan - "e-health - making healthcare better for European citizens: An action plan for a European e-health." Action Plan e-health pointed out, as using of ICT to improve the quality of health care across Europe. In the Action Plan the European Commission (EC) has outlined a roadmap for the introduction of new technologies, services and systems to create a European health space. The EC identifies practical steps to implementation of e-health applications and also sets a target of the EU Member States develop national and regional e-health strategy. The Slovak Republic as an EU Member State, in 2004 subscribed to the European agenda of e-health, which is aimed at applying information and communication technologies in executive health and is involved in the process of computerization and informatization of health. The main goal is effectively use various forms of performance information for educational purposes.

Faculty of Health Professions, University of Prešov in Prešov, in the educational challenges of the Cultural Grant Agency of Ministry of education and Science applied for obtaining financial support for the project, which would help increase the effectiveness of teaching in non medical curricula with the possibility of the implementation experience of telemedicine applications in medical practice. The project results will enable teachers to manage the learning process better to have more information about the entire educational process and it will help to develop better communication with students. For effective learning it opens the way for the use of new information - communication technologies and database of educational resources [1-3]. Teachers will be able to participate in the creation of their own educational multimedia modules, as well as to create a virtual environment for the provision of administrative teleeducational services. Students will have a better selection of educational products, potentially better opportunity in teaching quality and increase their possibilities of virtual and physical mobility as well. The project focuses on the use of telemedicine for teaching students in non medical curricula. Multimedia teaching project began the first implementation phase, which consisted of a

technical installation, wiring and then placing the two cameras, one fixed and other mobile directly in the operating room in combination with a communication device. This device allows verbal and visual contact between the surgeon and the students who are not directly in the operating room, but also in another room, outside the operational tract. Thus it can avoid the violation of strict hygiene standards in the operating room and allows a larger number of teaching students. Students can watch real course of operations, giving them advanced technology available in the "live" follow the general and specific techniques of the operational team. In the event that it carries out an unplanned, urgent, unique, or specific surgery, it can be documented and

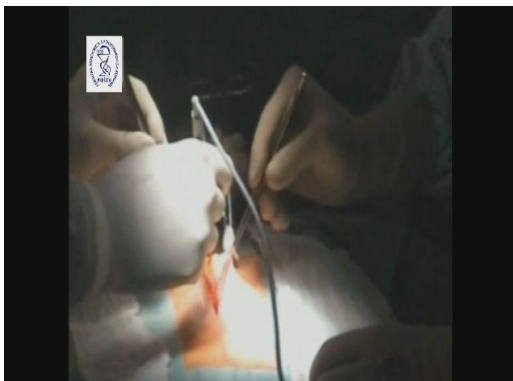
kept on electronic media by a surgeon, who in turn presents it not only students, but also in vocational Bureau if there is extreme urgency. This method reveals the scope for direct viewing of that training the operating room - working environment, training instrumentation and operational field, the location of the surgical and anesthesia team, students can see special instrumentation practice in surgery, urology and traumatology using immediate consultation with a running team. A surgeon has the opportunity to draw attention to specific medical and nursing care after surgery. In pictures 1-7 the initial, financially and technically less demanding equipment, as well as one of the potential uses of telemedicine project in education is illustrated.



Picture 1. Surgeon with mobile camera



Picture 2. Surgical team in action (taking a picture)



Picture 3. Detailed view of the operation field



Picture 4. Detailed view of the operation field



Picture 5. Projection of the images to the lecture room



Picture 6. Surgeon's consultation with the team



Picture 7. Watching a surgery (from the record)

Selected targets of this project:

- implementation of teleeducation for students in non medical curricula;
- exploitation the opportunities of information technology and networks to change the methodology of clinical education;
- online application use - interactive teacher and student collaboration;
- interdisciplinary approach use to teaching with a focus on application to the surgical nursing;
- implementation of videoconference consultation between a teacher and students, but also;
- specialists in other hospitals or abroad, who provided technology use.

Telemedicine - represents some medical activities, services and systems implemented at a distance using information and communication technologies to support global

health, prevention, care, education, medical and health research. Telemedicine teaching makes possible to use the record of significant shift dealing with critical situations, it is a tool to improve access to health and nursing care, reduces costs for its provision. Telemedicine methods represent a vision for the future of health care professionals and this project is an active presentation of possibility which students can use in daily practice, but also after graduation. The current development of information and telecommunication technology will support teleeducational services in the future and they will be important health services in Slovakia. Teleeducation may serve as a platform for exchange of experience among educational institutions to improve the theoretical, practical and methodological side of teleeducational services.

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