

upon already automated basic skills, ensuring that graduates possess not merely knowledge of the algorithm, but the operational readiness to act in any real-world emergency scenario.

Conclusions

Thus, simulation-based training is not merely a supplementary tool but a fundamental component of effective training for first-year students in the “First Aid” course, which lays the foundation for the future specialist’s professional reliability while simultaneously developing their motor skills, psychological resilience, and the ability to think clinically under conditions of uncertainty.

Manuscript received on September 7, 2026

COMPUTER SCIENCE KNOWLEDGE FOR FUTURE PHYSICIANS: A PROFESSIONAL RESOURCE

Demeneva A. E., Kabirova Yu. A.

Perm State Medical University named after Academician E. A. Wagner, Perm, Russian Federation

alinademeneva@yandex.ru

DOI: 10.46594/2687-0037_2026_3_2267

Abstract. The digitization of healthcare and the implementation of electronic health records require medical school graduates to possess well-developed digital competencies. Based on an analysis of domestic and international experience in teaching medical informatics, regulatory documents, and current research, this paper justifies the need for continuous, multi-stage training in informatics throughout a physician’s entire educational journey — from pre-university preparation to postgraduate education.

Scientific specialty: 3.2.3. Public Health and Health Care Organization, Sociology and History of Medicine.

Relevance

Modern healthcare is inconceivable without information technology. Electronic health records, clinical decision support systems, big data analysis, and artificial intelligence algorithms have become everyday tools of medical practice. In Russia, the Unified State Information System for Healthcare (EGISZ) is being actively developed, and services for digital doctor’s appointments, remote monitoring, and electronic document management are being implemented.

However, the level of digital training among healthcare professionals is not keeping pace with the rate of technological change. Medical informatics courses at Russian universities are often limited to 38–108 academic hours, taught in the first years of study when students have not yet mastered clinical disciplines, and focus on office software suites rather than professionally relevant technologies.

At PGMU, the medical informatics course is limited to 108 instructional hours for second-year students. Students majoring in “Medical and Preventive Care” take the course over two semesters (one each in their first and second years) and receive more instructional hours. The curriculum consists solely of basic training: office software, creating games using a game engine, and basic programming.

Thus, the gap between the growing demands of digital medicine and the actual level of IT competencies among graduates makes improving the IT training of future doctors one of the most pressing issues in medical education.

Objective

To justify the role and importance of computer science knowledge in the professional training of future physicians and to identify areas for its application in medical practice.

Materials and Methods

Comparative analysis.

Results

A review of the literature identified six universal digital competencies required of physicians in any specialty:

Revamping the “Medical Informatics” curriculum at Russian universities to support young doctors in performing their work comfortably.

Retraining of practicing physicians — learning new skills.

Information management and personal data security — understanding legal data protection procedures and cybersecurity protocols.

Use of digital systems and clinical safety — working with electronic health records, electronic prescription of medications, and understanding the likelihood of system errors.

Digital communication — telemedicine consultations, transmission of patient data, and understanding the limitations of telemedicine.

Medical knowledge management — assessing the quality of information sources, the basics of analyzing and interpreting scientific data, and the principles of evidence-based medicine.

Rapid adaptation to digital innovations — proactively mastering new technologies as they are integrated into clinical practice.

Reducing wait times at clinics — speedy appointments, no need for follow-up visits to receive medical test results.

Conclusions

Improved quality of medical care, the introduction of the IT physician profession, and a reduction in the number of visits and waiting times for appointments.

Manuscript received on September 7, 2026

SIMULATION TRAINING FOR FIRST AID DURING COMBAT OPERATIONS IN EXTREMELY LOW TEMPERATURES: DEVELOPMENT AND TESTING OF A COURSE

Zavirsky A. V., Moksheninov R. A., Lishchinsky A. V., Mostovaya V. V., Novikov Yu. G., Panin A. M.

S. M. Kirov Military Medical Academy, St. Petersburg, Russian Federation

ryo_tagava@mail.ru

DOI: 10.46594/2687-0037_2026_3_2268

Abstract. A six-day course titled “Tactical Medicine — Special Course: Providing First Aid in Arctic Conditions” has been developed and tested. The program includes theoretical training, practical sessions at an outdoor winter training site, and a final six-hour team-based scen-