

challenging. The absence of significant changes in dental students following training warrants further research and, possibly, adjustments to the training program.

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FROM CHAOS TO COORDINATION: SIMULATION MODELING OF MULTITASKING IN THE EMERGENCY DEPARTMENT

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Abstract. The operation of an emergency department under high workload conditions requires effective coordination of clinical, organizational, and communication processes. The aim of this study was to evaluate the potential of the “Chaos Hospital Management” multi-task simulation for developing leadership, communication, teamwork, situational awareness, decision-making, and resource management. Fifty-five healthcare professionals, divided into five interdisciplinary teams, participated in the study. Following debriefing and training, the overall rate of meeting the criteria increased from 58% to 90–92%.

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

Relevance

A high workload in the emergency department is accompanied by the simultaneous unfolding of clinical, organizational, and communication processes that require coordinated teamwork, rapid decision-making, and the rational use of resources. Traditional simulation formats are primarily focused on individual clinical scenarios and do not always reflect the complexity of a real-world multitasking environment. Multithreaded simulation allows for the simultaneous modeling of multiple evolving situations, resource shortages, and emotionally charged interactions with patients’ relatives, bringing training closer to the conditions of real clinical practice. Therefore, evaluating this format is of practical interest for improving the readiness of interdisciplinary teams to work under conditions of high workload and uncertainty

Objective

To evaluate the effectiveness of the “Chaos Hospital Management” multithreaded simulation training in developing leadership, communication, teamwork, situational awareness, decision-making, and resource management among healthcare professionals in the context of simultaneously unfolding clinical and organizational crisis situations.

Materials and Methods

A prospective quasi-experimental educational study was conducted at a simulation center. Fifty-five healthcare professionals participated in the 5-day training: 22 neurologists, 16 anesthesiologists and intensivists, 9 nurses, 5 pediatricians, 2 cardiologists, and 1 neurology resident. Participants were divided into five interdisciplinary teams

of 5–6 people each. All teams worked simultaneously in a single simulation space modeled after an emergency department. Each team carried out a separate scenario: “Dispatcher Chaos,” “LEGO Hospital Leadership,” “Resource-limited Pediatric Emergency,” “Stroke under Chaos,” and “Termin Challenge.” The five clinical and organizational scenarios unfolded in parallel, creating a high information and cognitive load.

In some scenarios, standardized parents and relatives of patients exhibited emotionally charged and moderately confrontational behavior, which allowed for the assessment of professional communication while simultaneously performing clinical and organizational tasks.

In the first stage, the scenarios were performed without prior training, followed by a structured debriefing that analyzed leadership, communication, role distribution, situational awareness, decision-making, and resource management. Participants were then introduced to the principles of Crew Resource Management (CRM), Crisis Resource Management, and TeamSTEPPS, after which they repeated the scenarios.

Each team’s performance was independently evaluated in real time by two experts; there were 10 experts in total. One evaluated team interaction and non-technical skills, while the other assessed clinical decision-making and technical skills. The evaluation was conducted using structured checklists; the results are presented as the percentage of criteria met.

Results

In the initial run of the scenarios, the overall compliance rate with the checklist criteria was 58%. The most frequently identified issues were the absence of a clear leader, role ambiguity, incomplete information sharing, disruptions in the sequence of issuing and confirming orders, insufficient situational awareness, and ineffective resource allocation.

After a structured debriefing, training, and a repeat run of the scenarios, the overall compliance rate increased to 90–92%.

The most significant improvement was observed in leadership — from 50% to 92% (+42 percentage points), communication — from 53% to 91% (+38 percentage points), role allocation — from 53% to 91% (+38 percentage points), and resource management — from 53% to 91% (+38 percentage points). The teamwork score increased from 58% to 94% (+36 percentage points), situational awareness from 55% to 90% (+35 percentage points), and decision-making from 62% to 92% (+30 percentage points).

Discussion

A key feature of the program was the simultaneous simulation of five different processes within a single emergency room setting. Rather than moving sequentially through individual stations, participants were simultaneously confronted with multiple unfolding events, a high information load, and the need to allocate limited resources efficiently. This format made it possible to assess not only intra-team interaction but also the ability of healthcare workers to remain effective in a multitasking environment: to convey critical information in a timely manner, delegate respon-

sibilities, set priorities, make decisions, and maintain situational awareness.

The participation of simulated parents and relatives added an emotional burden, requiring the team to simultaneously maintain professional communication, manage complex interactions, and stay focused on the patient's condition and the team's objectives.

Observation by two independent experts allowed for real-time evaluation of all five teams' performance. A structured debriefing focused on analyzing specific actions and identified shortcomings, while repeating the scenarios aimed to assess changes following the training.

Conclusions

The "Chaos Hospital Management" multi-threaded simulation training — which recreated the simultaneous unfolding of five crisis situations within the shared space of the emergency department and included emotionally complex interactions with patients' relatives — demonstrated high educational effectiveness. After the training, the overall rate of compliance with checklist criteria increased from 58% to 90–92%.

The most pronounced positive trends were observed in leadership, communication, role allocation, teamwork, situational awareness, decision-making, and resource management. The results confirm the promise of multi-threaded simulation as an innovative format for training interdisciplinary medical teams to work under conditions of high workload, uncertainty, and simultaneously unfolding crisis events.

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DEVELOPING A TRAINING PATHWAY FOR ALGOLOGISTS IN THE RUSSIAN FEDERATION

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Abstract. This paper identifies conceptual approaches to developing a professional training system in the specialty of "algology" — a branch of medicine focused on the treatment of chronic pain syndrome as a socially significant pathology. Based on an analysis of existing international educational models (North American and European), priority areas for training specialists in this field are identified. A systematic list of the basic theoretical knowledge and clinical skills required of an algologist is presented, with an emphasis on the interdisciplinary nature of these competencies. In light of the existing organizational and methodological challenges in training algology specialists in the Russian Federation, strategies for overcoming these challenges are proposed.

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

Relevance

Chronic pain (CP) is recognized as a distinct pathological condition in ICD-11 (section MG30). It is not a symptom but an independent disease with its own epidemiology.

Chronic pain (of any location) affects 20–30% of the adult population; high-intensity and disabling chronic pain affects 8–12%; back pain affects 9.4%; and neuropathic chronic pain affects 7–10%. In Europe, the economic burden of chronic pain is estimated at 3–5% of GDP; in the United States, annual economic losses amount to \$560–635 billion. The main costs stem from medications, hospitalizations, surgeries (often unnecessary and ineffective), temporary disability benefits, and disability payments. This creates a significant social problem. Algology is a branch of medicine dedicated to the treatment of chronic pain, at the intersection of many specialties: neurology, neurosurgery, anesthesiology, psychiatry, traumatology and orthopedics, and physical and rehabilitative medicine. For a long time, the treatment of chronic pain was considered a supplement to a primary specialty. Many physicians treating chronic pain who lack specialized training in this field often focus on manipulative techniques rather than on a holistic assessment of chronic pain issues (social, psychological, physical, etc.) and the application of other treatment methods (pharmacotherapy, psychotherapy, therapeutic exercise, physical therapy, etc.). In the Russian Federation, algology is not recognized as a separate specialty, although there is high demand for this branch of medicine.

Objective

To identify the main contemporary technologies, trends, and approaches to teaching algology in Russia.

Materials and Methods

Algology is a recognized specialty in many countries. Training should include not only interventional methods but also pharmacology, psychology, rehabilitation, and communication skills.

Today, there are several training pathways for algology worldwide:

1. North American (ACGME Pain Medicine Fellowship). A 12-month fellowship following residency. The key document is the IASP Core Curriculum for Pain Medicine, which, according to , identifies the following sections: fundamental science of pain, study of the clinical presentation of pain syndromes, treatment methods (pharmacological, interventional, physical therapy, etc.), and organization of care.
2. European (EFIC Diploma in Pain Medicine). Training is based on work in multidisciplinary centers, where the pain specialist learns to collaborate with physical therapists, psychotherapists, nurses, etc.

Results

After analyzing the scientific literature, a pain specialist must master the following areas:

1. Diagnostic. Be able to recognize neuropathic, nociceptive, and psychogenic chronic pain. Be proficient in provocation tests for each condition (tension symptoms, Tinel's sign, Hanslen's test, Patrick's test, etc.). Mastery of screening scales (DN4, PainDETECT, Central Sensitization Inventory, HADS) is mandatory. Identification of red, yellow, black, and blue pain flags. Ability to interpret data from imaging studies: MRI, CT, ultrasound, EMG, etc. Differential diagnosis of pain syndromes: back pain (facet syndrome, radicular pain,