

## Continuing education: experience in the SUS network in the central region of São Paulo

## Educação continuada: experiência na rede SUS da região central de São Paulo

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**ABSTRACT | INTRODUCTION:** The effective implementation of comprehensive care to the population of health services makes it necessary to think about the qualification of professionals and work processes through dialogical activities based on the exchange of knowledge and practices in an engaged way and the recognition of the singularities experienced in the daily life of the patient. thus enabling the acquisition of new skills, processes that challenge the consolidation of SUS. **OBJECTIVE:** Describing the training process developed through Continuing Education in urgent and emergency care in the qualification of medical professionals and nurses in the Regional Health Coordination Center of the Municipality of São Paulo. **METHODOLOGY:** Descriptive study of the type experience report based on the conduct of health training conducted through continuing education based on active learning methodologies. **RESULTS:** Based on the situational diagnosis, the need to carry out activities aimed at meeting situations more focused on urgency and clinical emergencies was identified. Thus, training was proposed for doctors and nurses in these services, according to topics discussed with the team and coordination of the units. **CONCLUSION:** The formulation and use of management and evaluation mechanisms based on strategic planning and analysis of monitoring and performance indicators, led to the creation of training based on active learning methodologies with specific themes aimed at these groups of professionals.

**KEYWORDS:** Simulation training. Health education. Public health. Active learning.

**RESUMO | INTRODUÇÃO:** A efetiva implantação do cuidado integral à população dos serviços de saúde faz-se necessário pensar na qualificação dos profissionais e processos de trabalho por meio de atividades dialógicas com base na troca de conhecimentos e práticas de forma engajada e no reconhecimento das singularidades vividas no cotidiano do serviço, possibilitando, assim, aquisição de novas habilidades, processos que desafiam a consolidação do SUS. **OBJETIVO:** Descrever o processo de formação desenvolvido por meio da Educação Continuada em atendimentos de urgências e emergências, na qualificação dos profissionais médicos e enfermeiros na Coordenadoria Regional de Saúde Centro do Município de São Paulo. **METODOLOGIA:** Estudo descritivo do tipo relato de experiência a partir das condutas de capacitações em saúde conduzidas através da educação continuada baseadas em metodologias ativas de aprendizagem. **RESULTADOS:** A partir do diagnóstico situacional foi identificado a necessidade de realizar atividades voltadas ao atendimento de situações mais focadas em urgência e emergências clínicas. Dessa forma, foram propostos treinamentos para os médicos e enfermeiros destes serviços conforme temáticas discutidas com a equipe e coordenação das unidades. **CONCLUSÃO:** A formulação e utilização dos mecanismos de gestão e avaliação baseados no planejamento estratégico e análise de indicadores de monitoramento e desempenho, propiciaram a criação de treinamentos baseados em metodologias ativas de aprendizagem com temáticas específicas direcionadas a estes grupos de profissionais.

**PALAVRAS-CHAVE:** Treinamento por simulação. Educação em saúde. Saúde pública. Aprendizagem ativa.

## Introduction

The challenges faced when seeking to effectively implement integrated care requires analyzing healthcare professional training and work processes through dialogical activities. Exchanging knowledge and sharing practices promotes the active participation of these healthcare professionals and the practical applicability of the subjects covered in training courses. For this purpose, the participants must identify, in the teaching-learning strategy, specificities experienced in their daily routine and the adverse situations that challenge them to acquire new skills. Besides, in the work process of healthcare teams, professionals must be aware of their personal, professional, and social commitment to their context and seek to improve their training; as such, their lifelong learning is a process and a tool whereby they complement their overall training<sup>1</sup>. Thus, continuing education is a powerful strategy because such an approach goes beyond professional training, that is, continuing education is inserted in the real-world context of healthcare<sup>2</sup>.

In this context, the theoretical-methodological model of constructivism considerably enhances professional training through problem-based learning strategies. The current trend in health curricula and continuing education departments is to use hybrid models, that is, several complementary strategies aimed at meeting andragogy goals, in other words, to foster learning by helping participants understand why they should learn a specific subject<sup>3</sup>. Currently, among the various trends that are increasingly applied, Team-Based Learning (TBL), which is defined as a learning strategy based on active learning methods, stands out as a key tool for teamwork processes<sup>4</sup>.

In TBL, the instructor previously selects preparatory materials that will be the session topic and assigns them to the groups. After their briefing on the significance of the topic of discussion, the participants take two short multiple-choice tests, first individually and then collectively. These tests are known as individual and team readiness assurance tests,

respectively<sup>4</sup>. The answers are tallied individually and collectively. This stage aims to assess whether the material was analyzed and whether the students were able to reach a consensus, based on their reading of preparatory and other complementary materials, on their prior knowledge, or other learning approaches.

Subsequently, based on the results and on the hypotheses considered correct by the instructor, the topics and responses are discussed in a stage known as Appeals Process, always focusing on the issues that students deem significant, considering their professional training<sup>5-7</sup>. At this stage, participants can defend divergences from the answers considered correct. Lastly, the instructor presents a real-world situation within the same topic of discussion where participants must provide the rationale for their diagnostic hypotheses, using clinical reasoning, as well as clinical management applicable to clinical and complementary research and the appropriate therapeutic plan<sup>5</sup>.

Another commonly used active learning method is a medical simulation. Medical simulation can be defined as an educational strategy that replicates real-world experiences through clinical settings that foster a safe, inclusive and interactive environment in which several tools can be used, from dolls for training technical skills to actors playing patients for procedural and behavioral training, in addition to high-fidelity patient simulators, which allow various manipulations with immediate responses to interventions and can associate all levels of performance expected from healthcare professionals<sup>6</sup>.

In teaching and training clinical emergency care, in general, the relationship between practical learning and adequate care is impaired by the emergency itself and consequently by patient safety. For this reason, continuing education activities based on medical simulation methods make it possible to train physicians and nurses according to the main international guidelines in emergencies, ensuring a safe environment and the motivating possibility of repeating activities and therefore retaining knowledge<sup>7,8</sup>.

Several studies highlight the psychological factors of medical simulation regarding stress, emphasizing the various possibilities of its use for knowledge retention. Medical simulation has proved to be an effective teaching tool for professional training in the context of clinical emergencies, with promising results on patient safety<sup>9</sup>. Accordingly, using medical simulation in continuing education is important for learning cognitive processes, adapting specific clinical cases to the medical specialty under training, developing teamwork and other behavioral skills and simulating exposure to rare situations requiring immediate intervention<sup>8</sup>.

Based on the National Policy of Continuing Education in Health (*Política Nacional de Educação Permanente em Saúde* – PNEPS), a pillar of which is the regionalization of the Unified Health System (*Sistema Único de Saúde* – SUS), implementing different educational strategies fosters improvements in healthcare actions, which should be designed to meet territorial needs<sup>2</sup>.

## Objective

To describe the continuing education-based training process developed in emergency departments for medical and nursing training at the Regional Healthcare Coordinating Center of the Municipality of São Paulo (*Coordenadoria Regional de Saúde Centro do Município de São Paulo*).

## Method

This is an experience report of a descriptive study with a qualitative approach. The teaching-learning activities were conducted in a “simulated hospital” environment at the Medical School of the City University of São Paulo (*Universidade Cidade de São Paulo* – UNICID) from 2018 to 2019.

Active learning methods were used based on medical simulation and on team-based learning, involving physicians and nurses from the services that compose the Emergency Care Network of the Central Region of the Municipality of São Paulo (*Rede de Urgência e Emergência da Região Central do Município de São Paulo*).

This region has several specificities and social inequalities and includes major commercial and financial centers; as a result, approximately 3,000,000 people/day circulate in this territory. More than 431 thousand people live in this area, accounting for 3.8% of the total population of the Municipality<sup>10,11</sup>. This region is the main hub of psychoactive drug users in the municipality, with more than half of its homeless people<sup>3</sup>. Planning healthcare actions and organizing equipment in this territory are both constant challenges. The units of the Healthcare Network responsible for treating emergency patients are four Outpatient Medical Centers and an Emergency Room<sup>10,11</sup>.

The activities were based on three thematic axes: a) Healthcare: integrated care designed to meet individual and public health needs; b) Health management: resource and healthcare management; and c) Health education: the data were analyzed using the participant observation method, which is a social research technique in which the observer shares, as much as possible, the activities, circumstances, interests and affections of a group of people<sup>12</sup>.

## Results and discussion

To survey data related to the continuing education needs of the emergency teams, meetings were held at healthcare units of the Central Region of São Paulo (*Região Central de São Paulo*). In each unit, the local manager held meetings with the teams to map the self-reported needs for training and epidemiological

background on the most prevalent diseases and conditions. After these meetings, some debates were held with all local managers of the Central Region of São Paulo and with an active learning instructor for sharing experiences and peer evaluation. The result from these meetings was the collective development of the Annual Continuing Education Plan (*Plano Anual de Educação Permanente - PLAMEP*), from the healthcare worker perspective. As stated above, these meetings included an instructed from the continuing education team and had the following methodologic theoretical axes: The National Program for Access and Quality Improvement in Primary Care (*Programa Nacional de Melhora do Acesso e Qualidade na Atenção Básica - PMAQ-AB-MS*), the healthcare guidelines of the corresponding Medical Boards and the guidelines specific to the municipality of São Paulo.

The first training phase was completed in 2018 and included the participation of 20 physicians from different medical specialties related to emergency care. Cardiovascular, pediatric and obstetric care, as well as polytrauma patients, was prioritized, using high-fidelity patient simulators with audio visual resources, mannequins and surgical skills laboratory for hands-on procedures. The topics and methods used are described, in detail, in chart 1.

**Chart 1.** Medical simulation activity for the Health Education of physicians focused on emergency clinical situations

Topic	Method	Resources
Airway manipulation: Non-invasive airway devices and orotracheal intubation	Task Trainer (specific skills training)	Mannequins and software specifically used for nasal catheter, venturi mask, laryngeal mask and orotracheal intubation.
Intraosseous infusion	Task Trainer (specific skills training)	Surgical skills laboratory with animal part and specific mannequins.
Basic Life Support	Rapid Cycle Deliberate Practice, with immediate feedback.	Identification and initial management of cardiorespiratory arrest and use of automated external defibrillator.
Polytrauma, eclampsia followed by neonatal resuscitation, management of acute myocardial infarction with ST elevation followed by cardiorespiratory arrest and septic shock in children.	Advanced scenarios with standard medical simulation followed by discussion in a debriefing style.	Rooms and simulators specific to each medical specialty with audio visual resources to optimize further discussion.

The clinical simulation strategy can vary with the demand, not only adapting the workplace of these professionals to the clinical cases trained during the training but also ensuring group content standardization<sup>4</sup>. In this context, the activities were divided into task trainers for hands-on rescue procedures using mannequins, rapid-cycle deliberate practices with immediate feedback throughout patient care, and lastly standard medical simulation where the care is not interrupted and will be discussed in a debriefing room using audiovisual resources.

The second phase of training was also completed in 2018, included the participation of 16 nurses, and focused on basic life support for health professionals, which included the identification and management of adult and pediatric cardiac arrest, use of appropriate airway manipulation techniques, and choking maneuvers in adults and children. In this course, advanced patient simulators were also used to simulate scenarios that occur in these healthcare professionals the daily routine.

**Figure 1.** High-fidelity polytrauma patient simulator



Considering that health professionals working in primary care inevitably treat critically ill patients, their ability to identify and manage these situations immediately will determine the patient's prognosis. In 2019, after the positive evaluation of the findings of the first course, and considering the existing demands in the units, a training program for primary care professionals was developed, focusing on the management of clinical emergencies.

The training program was developed in 5 autonomous modules, with the participation of 66 professionals, including nurses and physicians. The objective was to review, standardize and expand the fundamental knowledge of emergencies in primary care, using the most relevant and current guidelines, particularly emphasizing the immediate approaches and management practices used until the patient is transferred considering the dynamic environment in question. Based on the discussion of clinical cases supported by hands-on techniques on static mannequins and patient simulators, the following topics were addressed: Care for polytrauma patients, as shown in Figure 1, update on sepsis in adult and pediatric patients, clinical neurology, respiratory insufficiency, obstetric emergencies and the management of decompensation in diabetes and its fundamental approaches in dehydration.

Team-Based Learning (TBL) sessions were held to complement the modular activities as a strategy to deepen theoretical knowledge. An individual pre-test on fundamental aspects of the theme was applied at the beginning of each module. After completing the theoretical contextualization and practical technique training stages, there was a group discussion on cases focused on the reality of primary care, in which the participants should collectively decide which measures would be used. This activity ended with case and pre-test correction, clarifying the remaining questions.

A limiting factor for the expansion and reproducibility of these training are the physical space and all the materials and resources necessary to conduct a high-fidelity clinical simulation, from robots and mannequins to audiovisual resources. Another great challenge is related to the facilitators or instructors of these methodologies since this activity's success is largely due to a qualified professional. Telesimulation, i.e., a remotely simulated clinical case, has considerably expanded, being a viable alternative for professional training<sup>13,14</sup>.

## Final considerations

Active learning methodologies improve the development of the team and interprofessional work, foster cognitive processes, improve psychomotor skills through a safe participatory environment with repetition, and stimulates the improvement and development of skills when the objectives are well defined and built specifically to the professional reality. Knowledge construction leads to an effective understanding of that reality through direct investigation. The formulation and use of management and evaluation mechanisms based on strategic planning and monitoring and performance indicator analysis enabled the creation of training sessions based on active learning methodologies with specific themes directed to these groups of professionals. It is important to highlight that the workers involved were directly or indirectly engaged during the training and recognized themselves as a team, changing their work processes. On the other hand, organizing a continuing education program requires time, logistics, and the use of different technologies to create a hybrid methodology that considers strategic themes from an institutional point of view and collectively built themes from the perspective of work and space needs. Thus, further studies are necessary to deepen the analysis and evaluation of practical results directly linked to the patient.

## Author contributions

All authors participated in all research stages, writing, revising and approving the final version of the manuscript.

## Conflict of interest

The authors declare that there are no financial, legal or political conflicts involving third parties (government, companies and private foundations, among others) regarding any aspect of this study (including, but not limited to, grants and funding, participation in advisory councils, study design, manuscript preparation and statistical analysis, among others).

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