

Realistic simulation of an incident with multiple victims: support from the SUS National Force to organize the scenario*Simulación realista de un incidente con múltiples víctimas: apoyo de la Fuerza Nacional del SUS para organizar el escenario**Simulação realística em incidente com múltiplas vítimas: apoio da Força Nacional do SUS para organização do cenário***July Grassiely de Oliveira Branco¹**

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Abstract

This study aims to describe the experience of the National Force of the Unified Health System (FN-SUS) in supporting states to organize realistic simulation (SR) in different scenarios involving multiple victims, within the scope of the Training "Preparation of Response an Incident with Multiple Victims". This is a critical-reflective study of the experience report type referring to the period from October 2021 to September 2022, involving an average of 150 professionals represented by FN-SUS technicians, State Health Secretariats, members of the Emergency Care Network and other agencies working in the response to incidents with multiple victims. The results converged into three thematic categories: contextualization of training, approximation with the state and planning and construction of the scenario. One of the greatest legacies of the construction of this training with SR consists of the perception that while this methodology promotes a space for interaction between the different agents resp. ondedores, also launches the main challenges encountered in the structure of the local network, thus bringing together different professionals in search of the best strategies in light of the sovereign objective of saving the greatest number of lives.

Descriptors: Simulation Training; Incidents with Mass Injuries; Emergency Medical Services; Professional Training; Emergency Response Capacity.

Resumén

Este estudio tiene como objetivo describir la experiencia de la Fuerza Nacional del Sistema Único de Salud (FN-SUS) en el apoyo a los estados para organizar la simulación realista (SR) en diferentes escenarios que implican múltiples víctimas, en el ámbito de la Formación "Preparación de Respuesta a un Incidente con Múltiples Víctimas". Se trata de un estudio crítico-reflexivo del tipo relato de experiencia referente al período de octubre de 2021 a septiembre de 2022, involucrando un promedio de 150 profesionales representados por técnicos de la FN-SUS, Secretarías Estaduales de Salud, integrantes de las Red y otros organismos que trabajan en la respuesta a hechos con víctimas múltiples. Los resultados convergieron en tres categorías temáticas: contextualización de la formación, aproximación con el estado y planificación y construcción del escenario. Uno de los mayores legados de la construcción de esta formación con la RS consiste en la percepción de que si bien esta metodología promueve un espacio de interacción entre los diferentes agentes resp. ondedores, también lanza los principales desafíos encontrados en la estructura de la red local, reuniendo así a diferentes profesionales en busca de las mejores estrategias ante el objetivo soberano de salvar el mayor número de vidas.

Descriptoros: Formación en Simulación; Incidentes con Lesiones Masivas; Servicios Médicos de Emergencia; Capacitación Profesional; Capacidad de Respuesta a Emergencias.

Resumo

O presente estudo visa descrever a experiência da Força Nacional do Sistema Único de Saúde (FN-SUS) no apoio aos estados para a organização da simulação realística (SR) em diferentes cenários envolvendo múltiplas vítimas, no âmbito da Capacitação "Preparo da Resposta a Incidente com Múltiplas Víctimas". Trata-se de um estudo crítico-reflexivo do tipo relato de experiência referente ao período de outubro de 2021 a setembro de 2022, envolvendo em média 150 profissionais representados por técnicos da FN-SUS, Secretarias Estaduais de Saúde, integrantes da Rede de Atenção às Urgências e demais agências atuantes na resposta em incidentes com múltiplas vítimas. Os resultados confluíram em três categorias temáticas: contextualização da capacitação, aproximação com o estado e planejamento e construção do cenário. Um dos maiores legados da construção dessa capacitação com SR consiste na percepção de que ao passo que essa metodologia promove um espaço de interação entre os diferentes agentes respondedores, também lança em cena os principais desafios encontrados na estrutura da rede local, agregando assim, diferentes profissionais na busca das melhores estratégias à luz do objetivo soberano de salvar o maior número de vidas.

Descritores: Treinamento por Simulação; Incidentes com Feridos em Massa; Serviços Médicos de Emergência; Capacitação Profissional; Capacidade de Resposta ante Emergências.



Introduction

Multiple Casualty Incidents (MIV) are sudden situations where there is a disproportion between the need and the available resources, that is, the number of victims exceeds the capacity of the emergency services for the usual response¹. In Brazil, the Ministry of Health (MS) defines IMV as sudden events in which the number of victims involved is equal to or greater than five². In general, IMV is understood to be events in which the “[...] local health system is overloaded, with a number of victims that greatly exceed local resources and capacities in a short period of time”³.

At a global level, IMV have grown exponentially in recent decades, requiring agencies involved in the response to be prepared and capable of managing and deploying the response in a timely manner^{3,4}.

In real situations, the analysis of the response used in IMV reveals weaknesses in the communication process, integration of responding agents and scene management. In this scenario, the integration between the agencies is fundamental for the effectiveness of the response⁵⁻⁷.

Health professionals, as agents directly involved in the response, need to be properly integrated, prepared, qualified and trained to respond effectively and efficiently to IMV situations. Thus, based on the premises that govern Ordinance No. 198/2004 that instituted the National Policy of Permanent Education in Health, promoting in its articles the formation and development of workers of the Unified Health System (SUS) in the daily work of critically and reflectively, training strategies emerge with simulated exercises, aiming to exercise skills, abilities and attitudes. In another context, as described in the literature, the use of SR has demonstrated effectiveness in the learning process⁸⁻¹⁰.

Permanent Health Education advocates the use of active methodologies, including Realistic Simulation (RS), as a practice that involves not only technical skills, but also skills and attitudes such as crisis management, effective communication, integration, leadership, teamwork, clinical reasoning in critical situations and in a controlled environment¹¹.

Evidences indicate that the use of SR in IMV constitutes a facilitating strategy for the skills, attitudes and abilities of the agents involved in the response to the IMV to be worked on, resulting in better levels of individual and team professional performance, which directly contributes to the management of future situations that require a quick response from a multidisciplinary and interdisciplinary team^{8,12,13}.

With a view to improving and strengthening IMV rapid response teams, this study aims to describe the experience of the National Force of the Unified Health System (FN-SUS) in supporting states to organize RS in different scenarios involving multiple victims, within the scope of the Training “Preparing the Response to an Incident with Multiple Victims”.

Methodology

A critical-reflective study of the experience report type. Studies that address experience reports aim to contribute to praxis by exposing cases and/or situations of

relevance in order to encourage discussions and reflections on a given subject, through systematic observations of reality¹⁴.

The experience discussed took place between October 2021 and September 2022, in Espírito Santo, Manaus, Paraná, Acre and Sergipe, involving an average of 150 professionals represented by FN-SUS technicians, State Health Departments, members of the Emergency Care Network (RAU), Military Fire Brigade, State Civil Defense and members of other agencies acting in the IMV response.

In order to support the states in the organization of the SR in IMV, within the scope of Training for Response Preparation in Incidents with Multiple Victims, the management team of the National Force of the SUS promoted five meetings with state representatives via video conference via the online communication platform. -line lasting approximately one hour.

The construction of the SR, despite being coordinated by members of the RAU, involves the contributions of the different actors involved in the planning for carrying out the practice based on technical documents, literature on health care in urgency and emergency and basic and advanced support protocols for life.

The results were presented descriptively, merging into three thematic categories: contextualization of training, approximation with the state and planning and construction of the scenario. The analysis was based on the current literature.

This type of study does not require an opinion from the research ethics committee for its performance. However, the ethical principles contained in Resolution n.º 466/12 of the National Health Council were respected for its construction¹⁵.

Experience Report

Contextualization of training

The training “Preparing the Response to an Incident with Multiple Victims” offered by the Ministry of Health, through the FN-SUS, a component of the Department of Hospital, Home and Emergency Care (DAHU) of the Specialized Health Care Secretariat (SAES), is carried out for three days including theoretical approaches regarding the organization and management of the integrated response, presentation of the competencies of the responding agencies involved, simulated table and scene exercises (worked through fictitious scenarios based on accidents with the highest local incidence), planning and response integrated into IMV scenarios.

Approach to the state

The contact is initiated after a request sent by the federated entity to the FN-SUS to carry out the training “Preparing the Response to an Incident with Multiple Victims” in the state, consequently, the construction of the scenario for RS.

The first meeting with the state, represented by the coordination of the Emergency Care Network (RAU), aims to approach and pass on guidelines regarding the organization necessary for training. At this meeting, the objectives and



structure of the training, target audience and respective attributions of all involved are presented.

As for the state hosting the event, it is the responsibility of organizing and setting up the SR to be held on the last day of the training, when all participants will put into practice what was administered in the first two days.

To organize the scenario, the state can use the FN-SUS booklet, which has guidelines to guide the main actions for setting up the scenario. This booklet reinforces the importance of involving all responding agencies, according to the local reality, as well as addresses the type of incident to be chosen for training, the necessary resources, the area to be chosen for carrying out the activity, the location of areas of action on the scene, the number of people who will be involved in the whole activity. In order to promote a better understanding of the development of training, the states are offered the opportunity to send two professionals from the local health network to participate in an edition of the event that precedes the one to be held in their state. In this way, these two network professionals (generally members of the Mobile Emergency Service - SAMU 192) will be able to experience the training previously, and, thus, have a better understanding of the structure for the execution of the course and construction of the realistic scenario.

Scenario planning and construction

Based on the actions that are carried out during the approximation with the state, the FN-SUS management team conducts orientation and alignment meetings, usually in the last month before the event, with representatives of the RAU designated by the State Department of Health who will host the event.

During these meetings, the definition of the scenario for the SR takes place and discussions about the items necessary for setting up the scene, such as: identification of areas (Command Post, hot area, warm area, cold area, helibase, parking), identification of heads/coordinators (heads of canvas, coordinator of the Area of Concentration of Victims - LCA, transport coordinator, head of section, liaison and information officer, head of planning and head of operations), as well as, the resources for triage of victims and treatment area according to the START Protocol (Simple Triage and Rapid Treatment).

Additionally, meetings are held before and during the event, for final adjustments, scene briefing and organization for entry of vehicles and teams from responding agencies that work in situations with multiple victims. In the simulation carried out in Aracaju/SE, for example, representatives of the State Civil Defense, Military Fire Brigade, Military Police, Civil Police represented by the Scientific Police, SAMU 192, Federal Highway Police, Traffic Bodies, Tactical Group Air, among others.

On the last day that precedes the scene simulation, the FN-SUS team remains available to accompany the setting up of the scenario together with professionals from the local network to support the necessary demands that may arise at the time of setting up, in addition to verifying that the number of volunteers selected to act as victims in the scene is adequate for the size of the scenario set up. Generally, the

volunteers who act as victims are students of health courses and are part of urgent and emergency academic leagues.

On the day of the RS, the FN-SUS provides technicians to support the didactic make-up (moulage) and preparation of the victims that make up the scenario, providing guidance regarding identification, positioning on the scene, classification according to the START method, diagnosis, vital signs and characterization of the simulated injuries.

During the simulation, the instructors invited by the FN-SUS for the training also participate in the evaluation of the exercise, in order to provide feedback on the agencies' performance in the integrated response, highlighting the main strengths and weaknesses identified. For this evaluation of performance in the scene, an instrument (checklist) created by the FN-SUS management team is used, which lists as evaluation points the practice of professionals in triage of victims and the Incident Command System (ICS) for the organization of the integrated response in IMV.

Discussion

The IMV is an event of great impact in the context of Urgencies and Emergencies (EU). It can originate from natural causes, such as floods, cyclones, and earthquakes, or it can be man-made, such as traffic accidents, physical violence, industrial accidents, and war-related situations^{16,17}.

The IMV has a direct impact on health services by increasing the resources usually used, often exceeding the local response capacity. This is due to the sudden increase in the demand for response resources, overloading the local emergency service and the installed hospital capacity due to the large number of victims who need immediate treatment or specialized care^{1,2,18,19}.

In the Brazilian context, the fire at the Kiss nightclub in Santa Maria in 2014 is an example of IMV, whose main problems faced in responding to this emergency, according to a study⁶, were: the control of the scene, the communication and integration of the different responding agents in the place. This denotes the need for training based on SR in order to work on the rapid and integrated action of all agents responding to the incident.

It is the responsibility of the local manager to train and carry out permanent education actions with his team. In this sense, the FN-SUS supports the federated entities with the training "Preparing the Response to an Incident with Multiple Victims", integrating different actors beyond the health sector, in line with the constitutional responsibility of the Unified Health System to organize the training of human resources to area of health and promote permanent education in health by adding learning, critical reflection on the work and resoluteness of the clinic and the promotion of collective health^{9,20-22}.

IMV training promotes the improvement of essential elements for a well-coordinated response, with effective communication, incident management system, triage, treatment and transport²³.

Practice scenarios should align with specific community resources. In this context, it is possible to observe that the states, when planning RS scenarios based



on the incidents with the highest incidence in the region, enable professionals to improve skills, abilities and attitudes that will be needed in real emergencies. The effectiveness of the training is associated with its planning according to the epidemiological characteristics of the federative entity^{24,25}.

The use of simulated practices in these situations is considered the gold standard when it comes to training for the improvement and preparation of teams to work in real scenarios. The integration of teams involved in care in multiple victim scenarios is a sore point. In this sense, training emerges as a strategy to enhance the skills, competencies and attitudes of the teams involved²⁶.

When working on the briefing, immediately before the training in the SR, participants are given a moment to review the learning objectives and pass on previous essential information about the simulation scenario (including duration, scenario itself, among others), roles and guidelines, allowing the establishment of a controlled environment that will facilitate the understanding of the activities that will be developed and the achievement of the intended objectives²⁷.

During the preparation of victims, a briefing is held between FN-SUS technicians, SES managers and victims of the simulation; being a common practice in the states, the use of undergraduates from health courses, which encourages the integration between teaching and professionals from the local EU, awakening in students the importance of this theme in their professional training.

According to the National Curriculum Guidelines (DCN) of health courses, such as undergraduate nursing and medicine, students are trained to be generalist professionals. However, the scarce theoretical basis associated with the reduced practice of simulations on IMV, shows that the theme needs to be intensified in the curriculum matrix^{28,29}.

The inclusion of students in the role of victims also contributes to highlighting the importance of teaching IMV, by contextualizing in a practical way, the theories worked on in training (BLS, SAV and other topics related to IMV). In addition, students/victims have the opportunity to understand the importance of developing skills, abilities and attitudes, such as: teamwork and effective communication, which are carried out by professionals who will work in the SR⁸.

Right after the end of the simulation scenario, the debriefing is conducted by a trained instructor and guided by

the evaluation instrument, which allows the agents who acted in the scene to provide feedback on the actions taken. This instructor's main objective is to encourage the participants' critical-reflective thinking so that they can apply what they have learned in real situations²⁷.

One of the greatest legacies of the "Preparing the Response to an Incident with Multiple Victims" training offered by the MH is the perception that while the SR promotes a space for interaction between the different responding agents, it also brings to the fore the main challenges encountered in the local network structure. These challenges unite all professionals involved in the desired response in the search for strategies to achieve the best results with the sovereign objective of saving the greatest number of lives.

Final Considerations

SR used as a tool for permanent health education in the EU has proven to be an effective practice in the teaching-learning process for agents involved in the response to IMV, as in addition to working on the necessary techniques for triage, treatment and transport of victims, it also enables the improvement of skills, abilities and attitudes such as crisis management, communication with other responders, in a controlled environment.

The relevance of the training developed for strengthening, interaction between agencies and alignment of conducts in the face of an IMV is notorious, which currently represents one of the main public health problems. Another important point to be highlighted is the need to involve local managers in the construction of the simulation, so that it is possible to continue training and strengthening human resources in health.

Among the limitations of the study, it should be noted that the training offered is punctual, and therefore, until now, there is no guarantee of the continuity of this action, as well as the number of vacancies offered does not include the totality of state actors involved in the response to IMV. In addition, currently, validated tools are not used to quantitatively measure the real impacts of this training in the territory, which are restricted to the qualitative scope.

Since data about SR in IMV remain incipient in the national territory, new studies are needed in order to provide the analysis of the impacts of training in the integrated response to IMV, given the growing number of this type of incidents in Brazil and in the world.

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