

EDUCATIONAL SUPPORT FOR THE INSERTION OF ELMO 1.0 IN THE EMERGENCY CARE UNITS (EDU) IN FORTALEZA, CEARÁ

SUPORTE EDUCACIONAL PARA INSERÇÃO DO ELMO 1.0 NAS UNIDADES DE PRONTO
ATENDIMENTO-UPA EM FORTALEZA, CEARÁ

APOYO EDUCATIVO PARA LA INSERCIÓN DE ELMO 1.0 EN LAS UNIDADES DE ATENCIÓN DE
EMERGENCIA - UPA EN FORTALEZA, CEARÁ

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ABSTRACT

To report the experience of the ESP/CE Skills Training and Simulation team in educational support as a strategy for implementing the Elmo 1.0 system in the Emergency Care Units (EDUs) in Fortaleza, Ceará. The method is a report of experience lived in the UPA's of Fortaleza, from the period May to June 2021. The lived experience arose from the epidemiological need of the increase of Covid-19 cases in the state of Ceará - specifically in the metropolitan region of Fortaleza- where there was a large significant change in the profile of care in the UPA. Final It is important to highlight in our experience with the intervention of educational support that this support should be permanent and planned according to educational needs, also ensuring updating for the execution of the handling of any proposal. **Descriptors:** *Simulation Training; Health Education; Noninvasive Ventilation.*

RESUMO

Relatar a experiência vivenciada pela equipe de Treinamento de Habilidades e Simulação da ESP/CE no suporte educacional como estratégia de implantação do sistema Elmo 1.0 nas Unidades de Pronto Atendimento-UPA em Fortaleza, Ceará. O método é um relato de experiência vivenciado nas UPAs de Fortaleza, no período de maio a junho de 2021. A experiência vivenciada surgiu da necessidade epidemiológica do aumento dos casos de Covid-19 no estado do Ceará - especificamente na Região Metropolitana de Fortaleza - onde houve uma grande mudança significativa no perfil de atendimento nas UPAs. É importante destacar, em nossa experiência com a intervenção do suporte educacional, que o presente apoio deve ser de forma permanente e planejada, conforme necessidades educacionais, garantindo inclusive atualização para execução do manuseio de qualquer que seja a proposta. **Descritores:** *Treinamento por simulação; Educação em Saúde; Ventilação Não Invasiva.*

RESUMEN

Relatar la experiencia vivida por el equipo de Tratamiento de Habilidades y Simulación de la ESP/CE en el soporte educativo como estrategia de implantación del sitio Elmo 1.0 en las Unidades de Pronto Atención-UPA en Fortaleza, Ceará. El método es un relato de experiencia vivida en las UPA's de Fortaleza, del período de mayo a junio de 2021. La experiencia vivida surgió a partir de la necesidad epidemiológica del aumento de los casos de Covid-19 en el estado de Ceará -concretamente en la región metropolitana de Fortaleza- donde se produjo un gran cambio significativo en el perfil de atención en la UPA. Es importante destacar en nuestra experiencia con la intervención de apoyo educativo es que este apoyo debe ser permanente y planificado de acuerdo a las necesidades educativas, incluyendo la garantía de actualización para la aplicación del manejo de cualquiera que sea la propuesta. **Descritores:** *Entrenamiento Simulado; Educación en Salud; Ventilación No Invasiva.*

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INTRODUCTION

At the end of December 2019, in the province of Wuhan, China, health authorities identified a set of cases of pneumonia of unknown etiology, with rapid worsening and highly transmissible.

The causative agent has been identified as a new type of coronavirus, named SARS-CoV-25. In January 2020, the World Health Organization (WHO) declared the outbreak of the new coronavirus, constituting a Public Health Emergency of International Importance (ESPII) – the highest level of alert provided for in the International Health Regulations. In March 2020, a pandemic was characterized¹.

Infection with the SARS-CoV-2 virus causes COVID-19, whose clinical spectrum ranges from asymptomatic patients to flu-like conditions, with symptoms such as fever, fatigue, dry cough and dyspnea. Although most patients have a favorable evolution, approximately 15-20% of infected people develop severe forms of the disease, including Acute Respiratory Distress Syndrome (ARDS), requiring oxygen therapy².

The world was faced with different challenges: vaccine development in record time, questionable drug regimens, frequent use of mechanical respirators and interfaces for ventilatory therapies. Since the beginning of this scenario, hypoxemic respiratory failure has been the most frequent life-threatening complication of COVID-19.

The ideal initial respiratory support to treat these patients is still controversial and different approaches have been implemented with variable success rates. In the context of ventilatory therapies and oxygen therapy, the state of Ceará leveraged with pioneering spirit and technological innovation^{1,3}.

Through a public-private partnership, under the coordination of the School of Public Health of Ceará Paulo Marcelo Martins Rodrigues, involving research funding agencies, universities and industry sectors in the state of Ceará, a multidisciplinary task force was created for the creation and development of a innovative non-invasive assisted breathing technology. A ventilatory interface called Helmet Elmo 1.0, inspired by HELMET@, an Italian interface.

This device is a hospital medical article, adapted in a record time of three months to our real pandemic situation. It was fully driven by the need for pandemic emergency care, including aerosolization in the management of patients with hypoxemic respiratory failure^{2,3}.

Given the challenging circumstances for the implementation of the new device, the educational axis

showed a strong and effective strategy for implementing any hospital medical article in health services with so many uncertainties. Based on this premise, the Elmo 1.0 interface is based on Permanent Education to promote the insertion of the equipment into the Unified Health System-SUS network in the state of Ceará and some health services in the Brazilian territory^{1,4}.

With the Permanent Education in Health (EPS), the conception of work in the SUS, added to daily learning and committed to the collective, it was possible to create a space for high-level professional qualification to train health professionals on the front line. For the Permanent Education in Health - EPS, inserted in Ceará, Northeast, Brazil, as an ethical-political-pedagogical proposal, it was undoubtedly a challenge.

From this perspective, the different methodologies applied to qualify professionals establish formative stages and teaching and learning environments for clinical and community work. This approach rescues the methodology of clinical simulation and training to develop skills and competencies that add value in consolidating the health professional's learning. Based on andragogy (from the Greek: andros = adult and gogos = to educate), the science that studies how adults learn, according to the educator Kapp | (1833), highlights situations that consolidate the andragogical construction, strengthening security to approach the new^{7,8,9}.

In this panorama, Realistic Simulation, as a teaching and training methodology for health professionals, appears as an important factor to reduce errors and improve performance in the practical assimilation of the proposed contents.

The simulated situations require from the participant a clinical reasoning aimed at an immediate solution, however, allowing for the possibility of error, promoting discussion and teaching intervention, in order to correct and score improvements^{8,9}.

At the time of the Pandemic, the Public Health School of Ceará (ESP/CE), a reference in performance and teaching, through the implementation of active methodologies, provided training for the handling of the Elmo device for physicians, physiotherapists and nurses in the Emergency Units Service (UPAS) in Fortaleza. Therefore, the described experience aims to report the experience of the ESP/CE Training team in handling the Elmo 1.0 helmet, through Realistic Simulation as a tool in the educational process for health professionals in the COVID-19 Pandemic.

The management of physiotherapy at the UPAs in Fortaleza was the support for associating the

qualification of front-line professionals with indication and operationalization of the device in urgent and emergency units, with monitoring of the educational curve of skills training since the simulations..

METHODS

This is an experience report lived in the UPAs of Fortaleza under the administration of the Hospital Management Health Institute (ISGH), from May to June 2021.

RESULTS

The experience arose from the epidemiological need for the increase in Covid-19 cases in the state of Ceará - specifically in the Metropolitan Region of Fortaleza -, with a great demand for positive cases of infection, significantly changing the profile of care in the Emergency Care Units - UPAs of this territory.

Patients who were now stabilized and regulated by the State's Central of Beds, for transfer to reference hospitals, were transferred to continued care due to the lack of hospital beds at the time of the pandemic.

In light of this reality, the emergency care units accepted the profile for covid-19 patients with longer lengths of stay, and the implementation of the non-invasive Elmo 1.0 device collaborated, preventing the worsening of acute respiratory failure.

In this report, the subjects participating in the training were health professionals from the multidisciplinary team working on the front line among physicians, physiotherapists, nurses and nursing technicians, from the UPAs in Fortaleza and the Metropolitan Region.

The educational action took place between May and June 2021, with the application of educational support intervention twice a week, with rotation in the Emergency Care Units - UPA of professionals previously trained in the Realistic Simulation and Skills Center, carried out by the School of Health or by a multiplier agent of the service authorized by that institution (ESP/CE).

STEPS IN EDUCATIONAL INTERVENTION:

Alignment with UPAs Local Managers - stage coordinated by the coordination of physiotherapy at the UPAs in Fortaleza, managed by the Institute of Health and Hospital Management (ISGH). The person in charge is a member of the team of instructors in the training of skills for handling the Elmo by the School of Public Health of the State of Ceará.

ESP/CE Educational Support Planning - Mapping of the main educational needs regarding the handling of

Elmo. Objective: address macro educational needs on device management reported by unit.

Table 1

Macro Educational Needs	Classification of Learning Objectives
Patient Monitoring in Elmotherapy.	Recognize the importance of patient monitoring in Elmotherapy.
Adequacy of the hospital routine for Elmotherapy (exams, supply of liquids, food, functionality)	Properly perform hospital routines Recognize the importance of correct and safe execution by the patient's team in Elmotherapy.
Clinical management of the patient in Elmotherapy – protocols.	Recognize the importance of designing and correctly implementing the protocol for managing the Elmo.

Source - researchers' own elaboration

ESP/CE Educational Support Intervention - weekly rotation in each UPA throughout the month. Educationally carried out by Elmo's team of training instructors: two teaching physiotherapists, with experience in educational development and active in the care of patients with Covid-19, welcomed the group in an appropriate place for the educational intervention.

Recovery of Previous Knowledge – initial step: review of the essential elements, assembly and disassembly of the device, based on previous knowledge about the interface.

Identification and analysis of problems associated with the work context (Problematization) - Hears about barriers, difficulties, team routines and attributions of professional categories.

Subsequently, to strengthen the consolidation of the learning curve, the device was applied in two situations: in volunteer participants in pairs or in an application carried out by the instructors in an inpatient with indication of Elmo1.0 selected with examinations and prior evaluation by the unit team.

DISCUSSION

In Brazil, the search for excellence and quality in health services favors a growing investment in the construction of Realistic Simulation Centers in universities and health institutions⁸.

Simulation can be used as a tool in the evaluation of the educational process, enabling the reconstruction of knowledge, contributing to the development of specific and indispensable skills for professional performance⁸.

This initial approach by realistic simulation and skills training was decisive for an important on-site post-

training educational support carried out at ESP/CE in support of meaningful learning, in which the ideas expressed symbolically interact in a substantive and non-arbitrary way with what the apprentice already knows⁷.

In the case of this experience worked on by the group of that institution, it was even more relevant because it is a new equipment and surrounded by many responses that made up a referential construct for its applicability, involving professional assistance responses and results of the evolution or failure of the treatment⁶.

The experience reported reinforces the action of meaningful learning, as the trained professionals had prior knowledge that, during the post-training educational support, they added substantively, emphasizing skills, attitudes and even the competence developed⁷.

FINAL CONSIDERATIONS

After experiencing this experience, it is possible to witness how resolute the teaching and learning process in service is. Continuing educational support is a differential when trying to achieve the insertion of technology and innovation in a health service.

The planning, according to educational needs, guarantees updating for the execution of the proposed equipment handling and training. Thus, Elmo 1.0, as it is a new hospital medical article, the educational team encourages and guides the routines of access to technical and educational content present in the institutional and learning platform for maintenance and updating of content in view of professional qualification.

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