INNOVATIVE TRAINING METHODS IN THE SIMULATION CENTER

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The global problem of COVID - 19 infection caused by the SARS - CoV - 19 coronavirus [1], which has spread throughout the world, has become pandemic. On January 30, 2020, WHO declared the spread of COVID - 19 an international emergency [2]. To date, more than 188 countries are involved in the pandemic, more than 1 million people have died and over 32.8 million cases have been registered [3], data for September 2020. According to the latest WHO data, more than 48.1 million cases of coronavirus have been recorded worldwide. The pandemic has claimed the lives of over 1.23 million people. The number of COVID-19 infections and deaths is growing every day.

The pandemic has not spared Kazakhstan either. The relevance of the problem of the spread of COVID-19 in Kazakhstan is evidenced by the persistence of an emergency and quarantine in many regions and cities of our country. The threat of the spread of COVID-19 in the modern world is an urgent problem today.

In the Simulation Center of KazNMU named after Asfendiyarov, a set of measures has been developed for the individual protection of a student from coronavirus infection. Students are taught personal hygiene measures, social distancing, which is one of the ways to contain infection.

Filmed videos with the participation of the students themselves, on the handling of hands before and after contact with an infected patient. The skills of teaching in the differential diagnosis of clinical situations with small-focal myocardial infarction developed against the background of coronavirus infection have been developed and introduced into practice. Instrumental examination methods, such as R-graphy and CT of the lung, demonstrating massive damage to the lung tissue up to 55-60% of the total lung volume, as well as clinical simulation indicators, worked out on the robot - the Apollo manikin, objectified the patient's condition. Revealed the effectiveness of the consistent action of students in providing assistance to the patient. In the video, material has been worked out on the clinic, the diagnosis of COVID infection and the indications for transferring a serious patient to mechanical ventilation. Traditional volumetric-cyclical ventilation was carried out with the HAMILTON MEDICA apparatus. Ventilation modes have been developed for severe pulmonary pathology that developed against the background of COVID infection. The mechanical ventilation mode was selected individually on a breathing apparatus, under the control of acid base balance and blood gases. Transfer of a patient to mechanical ventilation, with a hyperoxic breathing mixture $FiO2 = 1.0$ against the background of persistent hypoxemia, hemodynamic and $SpO2$ readings were considered to reduce the oxygen concentration in the inhaled mixture. The actions of the trainee when selecting the ventilation mode and the oxygen concentration in the inhaled mixture were discussed individually, in each case. Changing the scenario complicated the severity of the patient's condition on the robot - the Apollo mannequin. Clinical and laboratory data varied depending on the goal, complicating the severity of the patient's condition on a robot - a dummy.

At the Simulation Center on phantoms, robots - dummies, students continue to practice the skills of mastering the clinic, treating and preventing COVID infection.

References

1. World Health Organization. March 22, 2020.
2. World Health Organization. July 15, 2020
3. COVID - 19 Dashboard by the Center for Systems Science and Engineering / CSSE / at Johns Hopkins University / JHU /. January 29, 2020.