

Low-Cost Simulation Experience During COVID-19 Pandemic

Ohud Alotaibi*

Department Simulation and Skills,
King Abdullah bin Abdulaziz University
Hospital, Riyadh, Saudi Arabia

Abstract

This article was written to show the experience of using low-cost material in simulation training. A low-cost simulation was done to create a training material for the clear plastic drape which was utilized for intubation and the face shield for the PPE. This was done to support the training for non-critical care physicians to fulfil the needs during COVID-19 pandemic. The low-cost material was successful achieved the training objectives.

Keywords: Simulation; Low cost; Training

Received with Revision July 17, 2021, **Accepted:** August 02, 2021, **Published:** August 09, 2021

Abbreviation

COVID-19: Coronavirus disease 2019; LCS: Low-Cost Simulation; PPE: Personal protective equipment

Introduction

In medical simulation, some modern technical equipment is costly and not affordable for all simulation centres especially with supply constrains during coronavirus disease (COVID-19) [1]. To overcome this challenge, the term low-cost simulation (LCS) has gained some popularity. LCS aims toward creating an affordable environment to mimic real-life situations [2]. Establishing LCS into a work-place context improves psychological fidelity that allows trainees to have better confidence and perceive realistic scenarios [3]. LCS can be achieved by producing a recorded educational training material for participants from non-critical care areas to safely deal suspected COVID-19 cases. One of the aerosol-generating procedure is intubation of suspected COVID-19 cases; hence, generating LCS educational material for intubation of suspected cases with the appropriate personal protection equipment (PPE) are needed to enhance the skills of health care providers. During COVID-19 pandemic, an intubation box was recently used [4] to reduce exposure to aerosol and droplets from facial and body contamination during laryngoscopy and intubation.

To apply the concept of LCS, we describe the following proposed educational training experience. A clear plastic drape is utilized for intubation which could mimic the use of the intubation box by adding a clear plastic drape to the personal protective equipment (PPE). A clear plastic drape for intubation was created by using the plastic bag of the yellow gowns, transparent tape, and scissor. The final result served the purpose of simulating the same function of

the intubation box by cutting the plastic bag vertically and glued it with the adhesive tape to become one big piece (**Figure 1**).

The face shield is an item for PPE intent to protect the healthcare provider's face from hazards such as flying objects and fluids. The simplest **face shields** consist of transparent mask that covers the face connected to a strap or headband to hold them on the head [5]. This can be simply created by a simple face shield using transparent file, rubber band, paper punch and scissor. The final result was considerable to protect the face from aerosol droplets (**Figure 2**).



Figure 1 Clear Plastic Drape for Intubation.



Figure 2 Face shields for PPE.

Conclusion

The LSC of clear plastic drape and face shield is an alternative for training staff on COVID-19 case management especially in the face of the diminishing supply of real PPE. This is recommended to be supported by well-designed simulation scenarios to facilitate the continuing professional development.

References

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Declaration

Ethics approval and consent to participate

It is an experience article no study was made.

Consent for publication

It is an experience article no study was made.

Availability of data and materials

Always.

Competing interest

No interest.

Funding

No funding.

Authors' contribution

Both Authors participate equally.

Acknowledgments

To the Simulation and Skills Development Centre. In Princess Nourah bint Abdulrahman University.

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