IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 19, Issue 10 Ser.4 (October. 2020), PP 19-22
www.iosrjournals.org

Simulation training in ICU

Evangelia Michail Michailidou
Intensive Medicine Department, Hippokration General Hospital, Greece / Senior Student in the Department of Business Administration, University of Macedonia, Greece / Masters Degrees, International Medicine-Health Crisis Management, Greece/ Member of Health Response team to Crisis Situations of G.H.T.Hippokration

Konstantina Salpiggidou
Nurse T.E / MSc Clinical Pediatric Nursing and Research / Certified adult educator of G.H.T.Hippokration / Responsible Trainee for pediatric nursing - Deputy coordinator of emergency and intensive nursing specialty of G.H.T.Hippokration

Antigoni Hampla
Internist, ICU Resident Hippokration General Hospital, Greece
**Corresponding author: Evangelia Michailidou, Consultant Anesthesiologist-Intensivist, General Hospital Hippokratio of Thessaloniki, Konstantinoupoleos 46, Thessaloniki, Greece | +306934417763 |*

Date of Submission: 26-09-2020 Date of Acceptance: 09-10-2020

Abstract
Intensive Care Medicine (ICU) may be a complex, costly, mistake inclined, restorative claim to fame and remains the central point of major advancement endeavors in healthcare conveyance. Different modeling and simulation strategies offer one of a kind openings to superior get it the intelligent between clinical physiology and care health. The novel bits of knowledge picked up from the frameworks viewpoint can at that point be utilized to create and test unused treatment methodologies and make ICU more productive and compelling. Be that as it may, modeling and simulation applications in ICU stay underutilized. There are major computer-based learning methods that connected to critical care medicine. Usually there are three examples of different simulation techniques, including :

a. pathophysiological model of acute lung injury
b. process modeling of critical care delivery
c. a model for the study of interaction between pathophysiology and health care delivery.

Customarily, reenactment simulation has happened in particular centers, which offer an assortment of courses pointed at health care experts. These courses are ordinarily costly and ordinarily don't give group simulation: specialists and general all personnel of ICU tend to be prepared independently and professionals frequently conclusion up the simulation with unknown persons. Which lowers the importance of the team. After all, we do not work the same with everyone. It would be important to do simulation exercises with the members we work with every day so that the working group as a whole can be strengthened. Long time now, reenactment simulation has been brought into the working environment.

In 2005, Weinstock et al portrayed how they took simulation training into different parts of their clinic employing a portable cart. Since at that point, this sort of simulation, known differently as 'point-of-care', 'in-situ', or 'mobile' simulation, has picked up force.

I. The Benefits

In-situ simulation happens within the typical working environment, utilizing ordinary working environment gear. Healthcare experts act on their typical parts, in 'intact teams', amid ordinary working hours. These components are thought to upgrade authenticity and legitimacy, progress working connections, and diminish the uneasiness that a few professionals relate to conventional simulation simulation. In expansion, scenarios can be custom-made to reflect nearby case-mix and basic episodes, and site-specific framework mistakes may be identified.

II. Group Training

One of the focal points of in-situ simulation is that it can include intaglio, multi-professional groups. Group simulation courses are developing in healthcare, particularly tending to 'non-technical skills' or 'human factors'. Criticism from in-situ simulation program uncovers that this procedure is prevalent; members appreciate training with staff from other disciplines. Simulation may be a well-recognised and progressively commonplace instructive instrument for healthcare experts.

Progresses in innovation have driven to wide differences of simulation strategies, using hardware, extending from low-fidelity models for aptitudes hone to the high-fidelity manikins utilized in training centres for scenario-based learning. Within the most recent CICM learner study, simulation training was appraised within the beat three educating strategies, and the endless majority of learners were sharp for the College to form courses to address specialized and non-technical aptitudes.

Traditionally, simulation preparing has happened in particular centers, which offer an assortment of courses pointed at health care experts. These courses are ordinarily costly, include taking think about take off and ordinarily don't give group preparing: specialists and medical caretakers tend to be prepared independently and professionals frequently conclusion up preparing with strangers.

Recent years, simulation preparing has been brought into the work environment. In 2005, Weinstock et al depicted how they took reenactment preparing into different parts of their healing center employing a versatile cart. Since at that point, this sort of preparing, known differently as 'point-of-care', 'in-situ', or 'mobile' reenactment, has picked up the energy. The true is that few simulation programs have been set up in ICU in all over the world.

One of the preferences of in-situ preparing simulation programs is that it can include intaglio, multi-professional groups.

Group preparing courses are rising in healthcare, particularly tending to 'non-technical skills' or 'human factors'. Input from in-situ simulation preparing programs uncovers that this procedure is well known; members appreciate preparing with staff from other disciplines.

III. The Benefits

In-situ reenactment happens within the typical working environment, utilizing ordinary working environment hardware. Healthcare experts act on their typical parts, in 'intact teams', amid typical working hours. These components are thought to improve authenticity and legitimacy, progress working connections, and diminish the uneasiness that a few specialists relate to conventional reenactment preparing. In expansion, scenarios can be custom fitted to reflect nearby case-mix and basic occurrences, and site-specific framework mistakes may be identified.

- Make up & fake blood

Moulage, persistent notes, charts and examinations, different bits of ward gear and a bit of creative energy are utilized to upgrade authenticity, but the low-fidelity nature of the puppet implies that an exchange is required between the facilitator and the group, much like a mid life back course scenarios. Members are briefed some time recently the situation with the 'ground rules', the signs they may well be anticipated to discover and those they will be told.

- Head & Chest on mannequin

The straightforwardness of the set-up permits for preparing to happen either in arranging sessions or on an ad-hoc premise when there's a calm period on the ICU. The puppet can be set in a purge bed and preparing commenced inside some minutes. Alternatively, on the off chance that there's space, the puppet can be cleared out set up permanently.

https://cdn0.laerdal.com/cdn-4aef45/globalassets/images--blocks/products/training-products/simman

TO ERR IS HUMAN…

Training sessions can cover common clinical scenarios or be focused on to address later basic episodes or issues one of a kind to the healing center. Specialized abilities can be practiced and clinical information changed, but preparing sessions can too underline non-technical aptitudes or 'human factors' such as situational mindfulness, choice making, errand administration, group working, communication abilities and calmness beneath pressure. These abilities are progressively being accentuated in emergency administration and life back preparing, and human variables preparing (to some of the time called 'Crew Asset Management' or CRM preparing) is being included in numerous undergrad and postgraduate education program.

THE COSTS

The simulation programs utilize a comparable setup which can be accomplished in an ICU for negligible fetched. The simulation includes the utilize of a basic revival puppet. These are low-fidelity manikins, with exceptionally few moving parts. They are hence a division of the fetched of a high-fidelity test system, including much decreased adjusting costs. It is way better in the event that the puppet encompasses a practical, head with an inflatable tongue to mimic troublesome intubation, and a neck in which cricothyroidotomy and tracheostomy can be performed).

Patient notes, charts and examinations, different bits of ward hardware and a bit of creative ability are utilized to upgrade authenticity, but the low-fidelity nature of the puppet implies that a exchange is required between the facilitator and the group, much like amid life back course scenarios. Members are briefed some time recently the scenario with the 'ground rules', the signs they may be anticipated to discover and those they will be told.

THE DEBRIEF

Debriefing sessions, which ought to go with all simulation based preparing, are where most of the learning takes to put. Developmental criticism is one of the best two procedures for improving learning (the other one being dynamic participatory). There are numerous diverse strategies and models for questioning, but as a common run the show, in group preparing, input ought to be given in the complete group execution amid a centered, organized session including all members and observers. Input ought to concentrate on execution instead of the characteristics of group individuals, and ought to be given as before long as a conceivable after completion of the situation. Recording of scenarios to help input is common, but by no implies mandatory. Debriefing sessions can contain instructional educating to cover learning focuses, or concentrate on non-technical abilities, or be a combination of both.

THE FINAL SCORE

Increasingly, simulation is being utilized as a shape of appraisal: for case, numerous amateur doctors must pass a simulation-based competency appraisal some time recently been permitted to go on the on-call program. These appraisals may be checklist-based or utilize a worldwide rating scale. A case of a worldwide rating scale utilized to survey non-technical aptitudes are the Anaesthetists' Non-Technical Abilities (ANTS) framework and others for technical skills. This can be approved by anesthetists, breaks the abilities down into basic categories and gives illustrations of 'good' and 'bad' practices. Correspondingly, there are protocols - seminars specialized in technical skills, with which ATLS is most known. The most important would be to create a program and system specialized for intensivists and not to use programs from others areas & specialties. It is imperative, as with all instructive methods(for technical and non skills) to look for input from the members of reenactment preparing. This sort of assessment is basic in arranging that the preparing is pertinent, pitched at the correct level, and proceeds adjust and move forward over time.

Focal points of simulation programs

- ✓ Simulation is instructively successful: it makes strides execution of specialized and non-technical abilities
- ✓ It is valuable for practicing a group reaction to low-frequency, high-risk clinical events
- ✓ Staff can act in regular parts, utilizing regular ward hardware; improving authenticity and legitimacy
- ✓ Working in 'intact teams' may make strides interprofessional connections and diminish
- ✓ The uneasiness some of the time related to simulation
- ✓ The staff doesn't need to take off the working environment or take leave
- ✓ Real ward occasions and case-mix can be re-created
- ✓ Local framework blunders have effortlessly identified
- ✓ Insights can be picked up from all inter-professional group individuals amid debrief

IV. Conclusion

Evidence supports a long-term retention of skills learned via simulation training. The importance of simulation to teaching assistantship lesson plans and fellowship programs will enhance and accelerate the theoretical and practical components of professionalism. Apart from the several advantages of the simulation described above, it must be kept in mind that biology is a science of exceptions, and the situation faced in real life can be quite different from that experienced in high-fidelity mannequins. Another drawback of the simulation is the associated cost. There is no evidence that the use of simulators is associated with a better patient outcome for long-term follow-up. In addition, research is needed to define clinical scenarios in which simulation-based teaching is actually needed above didactic methods, which simulator is to be used for each scenario-based or clinical scenario, and finally, which method is to be applied. In particular, the focus on intensive critical care should be on both skill and clinical scenario-based simulation. In ICU, one needs to be skillful enough in both arterial and venous cancellation; at the same time, to know how to manage a given situation involving various team members, such as surgical residents, nurses, and colleagues. The need for the moment is to define simulation standards in all aspects of intensive care.

References

[1]. Evangelia Michailidou. Simulation Programs in Disaster Medicine. Am J Biomed Sci & Res. 2019 - 4(4). AJBSR.MS.ID.000812. DOI: 10.34297/AJBSR.2019.04.000812

[2]. Prat G, Charron C, Repesse X, Coriat P, Bailly P, L'her E, et al. The use of computerized echocardiographic simulation improves the learning curve for transesophageal hemodynamic assessment in critically ill patients. Ann Intensive Care. 2016;6:27. [PMC free article] [PubMed] [Google Scholar]

[3]. Fey, Mary K.; Auerbach, Marc; Szyld, Demian Implementing Faculty Development Programs: Moving From Theory to Practice Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare. 15(1):5-6, February 2020.

[4]. Clau-Terré F, Sharma V, Cholley B, Gonzalez-Alujas T, Galiñanes M, Evangelista A, et al. Can simulation help to answer the demand for echocardiography education? Anesthesiology. 2014;120:32–41. [PubMed] [Google Scholar]

[5]. Liu F, Lin FS, Peng YG, Liu L, Meineri M, Song HB, et al. Evaluation of TEE training for Chinese anesthesiology residents using two various simulation systems. J Anesth Clin Res. 2016;7:611. [Google Scholar]

[6]. Dinh VA, Giri PC, Rathinavel I, Nguyen E, Hecht D, Dorotta I, et al. Impact of a 2-day critical care ultrasound course during fellowship training: A pilot study. Crit Care Res Pract 2015. 2015:675041. [PMC free article] [PubMed] [Google Scholar]

[7]. Selvaraj V, Buhari FS. Ultrasound evaluation of effect of different degree of wrist extension on radial artery dimension at the wrist joint. Annals of Cardiac Anaesthesia. 2016;19:63–7. [PMC free article] [PubMed] [Google Scholar]

[8]. Thosani R, Patel J, Gandhi H, Doshi C, Kothari J. Safe and easy method with little modification in technique is useful for successful internal jugular vein cannulation on the same side even after intra-arterial puncture without using ultrasound guidance in adult cardiac patients. Annals of Cardiac Anaesthesia. 2016;19:277–80. [PMC free article] [PubMed] [Google Scholar]

Evangelia Michail Michailidou, et. al. " Simulation training in ICU." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(10), 2020, pp. 19-22.