Mobile Simulation Training for Rural Health Providers

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| Introduction

In family practice, medical teams often encounter life-risk patients. Those situations require a high level of theoretical knowledge supported with practical expertise. The number of vitally endangered patients in primary healthcare is too low for medical teams to acquire sufficient experience with them. Therefore it is very important to continually educate medical teams so they can achieve a high degree of theoretical and practical knowledge, enabling them to become more confident in their own abilities and to reduce stress levels, while at the same time reducing the number of medical mistakes.

Simulation is an excellent way for healthcare workers to train their skills in a safe environment. To address this problem, we have developed a mobile simulation unit (SIM mobile), which enables all medical teams in primary healthcare access to modern simulation equipment.

| SIM mobile

SIM mobile is a mobile education and simulation experience unit that provides prehospital and hospital professionals with state-of-the-art, hands-on training using high fidelity human patient simulators and can be brought to healthcare professionals in rural and frontier communities, thus reducing the need for providers to travel for training.

This type of education brings a number of benefits, such as:

- providing effective training related to key community health needs, such as heart attack, stroke and maternal and paediatric emergencies;
- reducing the time that staff are away from the bedside by cutting travel time, which in turn reduces training costs.

| Methods

The present study was carried out from June 2018 to August 2018, and the time period devoted to each location was one day. SIM mobile was used to conduct simulations on 20 different locations in Slovenia (community health centres, prehospital units), all of which were at least 50 km from CHC Ljubljana, and for a total of 20 days and was available to all of the participants for 12-15 hours per day. The participants were family medicine doctors, nurses and EMT workers.

At the end of the training, the participants filled in a questionnaire about their previous experiences with use of simulations in healthcare, as well as their need for this kind of education and its availability. Most of the questions involved closed type answers, there were also several open questions. At the beginning and end of the training, the intake and outtake theoretical knowledge of each individual was measured.

| Results

- simulation: management of a vitally endangered patient suffering anaphylaxis;
- for participants, physical environment of SIM mobile was very comfortable and appropriate for learning and training;
- participants agreed that SIM mobile is an effective learning tool to prepare themselves for working with real patients and also an excellent programme to refresh their knowledge;
- pre- and post-evaluation testing of knowledge indicated a 60 % increase in the level of the participants' knowledge after the simulation;
- the latent safety risks identified were: problems with equipment, high stress levels of some participants, uncoordinated teams, failure of the doctor to lead the process of supplying the vitally threatened patient, excessively long response time, and an inadequate resuscitation algorithm.

| Discussion

The study demonstrated that the use of SIM mobile can be practical and efficient for maintaining the availability of appropriate medical team education.

SIM mobile was tested in different weather conditions from 10°C to over 30°C. In all conditions, the participants evaluated it as a very comfortable environment. Several participants stated that they occasionally have simulation equipment available for training, but it is not used due to its poor state and there is a lack of resources to buy new equipment. The main advantage of SIM mobile is that it can make simulation equipment available to a broad spectrum of medical teams in primary healthcare and is not limited by geographical location.

There are several factors that contribute to medical teams not attending this kind of education, typically associated with work stress, i.e., long working hours, tired employees and limited free time. If this kind of education would be available to medical teams at their doorstep, they are more likely to attend, as no additional travel time is required. The SIM mobile programme also reduces the costs associated with simulations. Building and maintaining large simulation centres is expensive and is only rational for large CHCs or hospitals; simulation centres are certainly not cost efficient for smaller hospitals or rural locations.

| Conclusion

The use of the SIM mobile programme to provide simulation-based education in primary healthcare has proven to be successful, as confirmed by our participants. SIM mobile can make simulations available to a wider group of medical teams.

| References

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