



Validation of new ETS material

Patient bank for Bomb blast victims

Tested by ICRC Jordan

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Emergo Train System® (ETS)

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1 Introduction

Emergo Train System® (ETS) was developed in the mid-1980s to be a simulation tool for training in disaster medicine. In 2005 new material, version 2, was introduced which had a stronger emphasis to evaluation. Performance indicators were introduced in the ETS material as well as a standardised three day long Senior Instructor course. Since then, ETS has evolved from an academic/educational tool for simulation exercises to become a complete training concept with an association of ETS Educator faculties who run Senior Instructor courses around the world. This network of ETS Educator faculties and Senior Instructors is also important for the development of ETS.

In recent years there has been an ongoing development of the ETS. For example, in-hospital patients (patients already in hospital when the exercise starts) who are possible to evaluate during a surge capacity exercise in hospital. New victim banks with injuries that did not exist before in the ETS but have been requested from instructors have been developed, for example patients with burn injuries and patients with war-injuries. There have also been developed ETS figurant cards to be used for exercises using figurants acting as victims and a set for training decontamination at hospital.

In 2018 a new version 4 of ETS was released (Hornwall, Berggren, Kristedal, Pettersson, & Prytz, 2018). In version 4, all victim- and patient banks have undergone a complete medical review and update. The training material has a new design and the training sets are available in different sizes. ETS developments are made in collaboration with Universities and subject matter experts from different specialities around the world. All new ETS material is tested and validated before being distributed to instructors for use in exercises. This link to research and subject matter experts along with the organisation of Educator faculties and Senior Instructors is essential to maintain the high quality of the ETS, but also to provide high quality simulation training around the world.

Emergo Train System® is owned by Region Östergötland, Sweden, administered by KMC - Centre for Teaching & Research in Disaster Medicine and Traumatology, and developed in collaboration with Linköping University, Sweden.

Emergo Train System is a platform for exercises to test and train personnel involved in crisis response and disaster management. The patient outcome performance measure allows for structured and detailed evaluations of crisis response on multiple levels in a response system.

The purpose of validating new material for Emergo Train System® (ETS) is to make sure that it fits with current ETS material, that the new material is understandable, medically correct, and that it contributes to the learning situation an ETS exercise provides.

Prior to the testing step where the material is evaluated in an exercise, the material has been through several steps and iterations. These are: development of a primary draft version, primary validation by the ETS medical advisor, consensus validation by a group of experts (from the field of the new material), and finally the last step – using the material in an exercise.

2 Background

This report presents the outcome from the evaluation of the bomb blast victim bank (patients # 701 – 750). The patient bank includes 50 bomb blast victims with different wounds. Ten of the patients are children.

ICRC Amman Jordan Delegation were responsible for the exercise where the bomb blast victim bank was tested. The exercise location was Al Mafraq Governorate in Jordan. An ETS senior instructor from ICRS was responsible for running the exercise.

Testing of the new material during exercise is carried out through five phases:

1. Information about Emergo Train System (ETS) (appendix A)
2. Walkthrough of ETS (how an ETS exercise is conducted and what is expected from participants)
3. Carrying out the exercise
4. Discussion of patient outcome
5. Evaluation of the exercise and the new material (using the evaluation questionnaires, appendix B). In addition the participants sign an informed consent form, appendix C.

3 Procedure for evaluation

Participants are informed about the purpose of the evaluation of the patient bank. The next step is that they sign an informed consent form. After that, they answer the questionnaire.

Fifty-five participants answered the questionnaire. They were doctors, registered nurses (RN), and paramedics. Participants had an experience of between 3 and 19 years in respective profession. None of the participants had used ETS prior the exercise.

4 Results

For all questions were the participants were asked to rate a dimension 1="Not at all" and 7="Absolutely". The outcome of 13 rating questions are seen in table 1.

Table 1. Presentation of questions response means (standard deviation).

Question	Mean (SD)
Is the information on patients and management cards understandable?	6,36 (0,64)
Is the information on the patients and management cards medically correct?	6,27 (0,75)
Is the information on patients and management cards well adapted for use in the exercises?	6,64 (0,48)
Is the information on patients and management cards sufficient to act upon?	6,55 (0,50)
Is the ETS concept "patient outcome" understandable in this material (that is, how a patient's state relates to his/her patient outcome)?	6,55 (0,50)
Is "patient outcome" relevant for these patients from a medical perspective?	6,64 (0,48)
Does management of patients give a realistic outcome?	6,64 (0,64)
Does use of this ETS material contribute to improved possibilities for training?	6,73 (0,45)
Does use of this ETS material contribute to improved understanding for this type of care?	6,82 (0,39)
Do you think that the knowledge and skills that you have developed during the exercise are applicable in real-world situations?	7,00 (0)
Did you feel immersed in the exercise?	7,00 (0)
Did the exercise make you more confident in dealing with a real-world situation?	6,91 (0,29)
Was the material useable for you as a participant?	7,00 (0)

On the open question 90% of the participants felt immersed into the ETS session, and the remaining 10% requested that the ETS materials be converted in the Arabic language.

5 Conclusion

As the participants rated all questions quite high with standard deviations were small, meaning that the distribution of the ratings to be quite homogenous for each question. Information on the patients and management cards was deemed adequate. The performance measure patient outcome was regarded understandable and useful. Management of the patients was considered realistic. ETS material contribute to both training and understanding of management of bomb/blast victims. The participants thought that their knowledge and skills developed during the exercise are applicable in real-world situations and also made them more confident in dealing with a real-world situation.

The new bomb/blast victim bank has been tested in an exercise and was received with a high level of acceptance.

6 References

Hornwall, J., Berggren, P., Kristedal, E., Pettersson, J., & Prytz, E. G. (2018). *Manual version 4 Emergo Train System*. Region Östergötland.