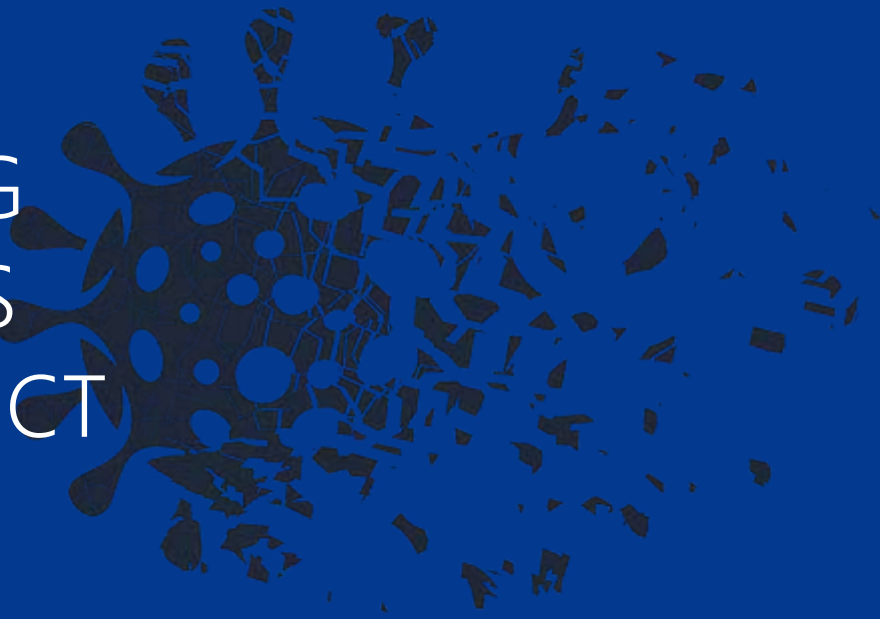

台灣急診醫學會
2020 第十四屆第一次會員大會暨學術研討會
Annual Conference of Taiwan Society of Emergency Medicine
智慧防疫 決戰急診
Fight Smart ! Combating Pandemics in the Frontline ED
8/31-9/1 台大醫院國際會議中心

JUST-IN-TIME TRAINING IN THE COVID-19 CRISIS AND THE TEAMS PROJECT



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CRIMEDIM - Research Center in Emergency and Disaster Medicine

COVID-19 Pandemic

The **COVID-19 pandemic** is currently threatening numerous health systems around the world, requiring an **extraordinary international response** to contain and control the virus.

Education and Training

This response includes **effective education and training of healthcare workers** to attain several operational level **public health skills.**

These skills are **beyond the experience** and knowledge base **of most practitioners**, not familiar with public health emergencies arising from infectious disease outbreaks.

COVID-19 in Italy

Italy has been **one of the most affected** countries.

Many health workers were **working outside of their field of expertise.**

The **risk of secondary infections** is still extremely high.

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Just-in-Time Training

Implementation of **just-in-time training** interventions was of paramount importance **to equip healthcare workers with basic competencies.**

A **well-established concept** among disaster and humanitarian responders

Intended to **rapidly address 'disaster specific information, tasks, skills and knowledge'** just before the deployment to a disaster-stricken area

Novara University Hospital

Second largest, third level referral hospita
of the **Piedmont Region**

Activation of **the hospital contingency pla**
for massive influx of patients

ED and ICU expanded their **surge capacity**

More than **200 COVID-19 beds**

More than **300 healthcare workers** were
asked to change roles

COVID-19 Just-in-Time Training

Provide the **entire hospital staff** with a common background, competencies and proper attitude to:

1. Proficiently and **safely work** inside the NH
2. Understand the **working principles and the SOPs** in place at the NH
3. Accurately apply and safely remove the **PPE**
4. Understand basic principles of **disaster medicine** applied to the COVID-19 pandemic

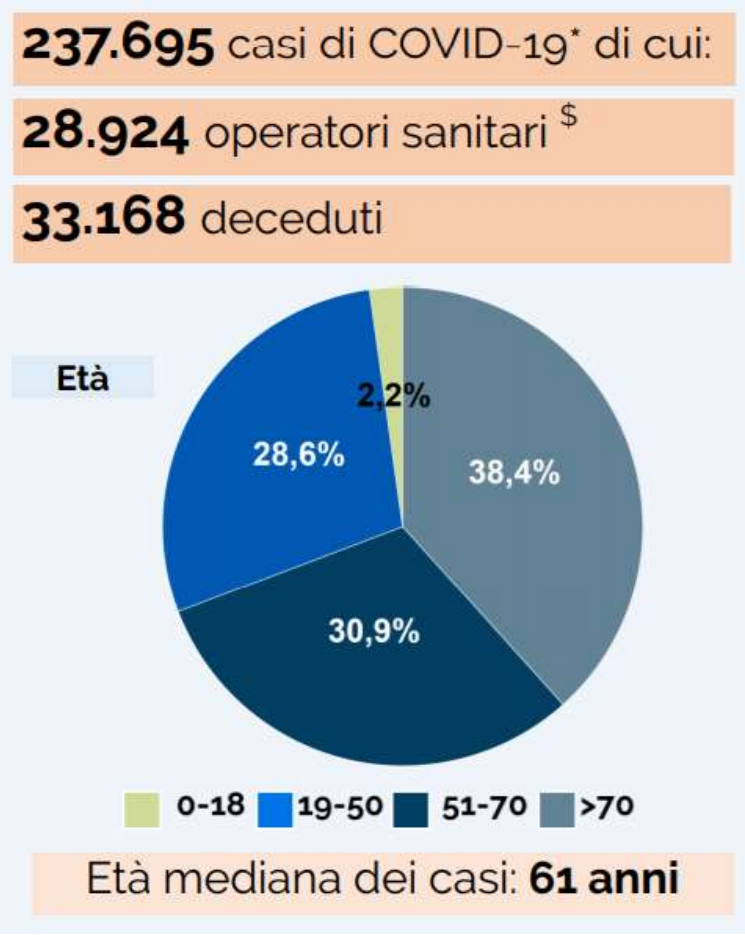
Curriculum Framework

Module	Learning Objectives	Teaching Methodology and Time
COVID-19 Policy, procedures and protocols in place at MCUH	- To describe the transmission and the signs and symptoms of COVID-19. - To understand the epidemiology and case definitions of COVID-19. - To list ways of protecting themselves, colleagues, patients and family from COVID-19. - To identify the main actors for COVID-19 coordination mechanisms in Italy and in Piedmont. - To know safety and security protocols in place at MCUH. - To know about policy and procedures in place at MCUH. - To follow all disinfection, waste management and cleaning protocols within the MCUH.	Classroom lecture 90 minutes
Introduction to PPE Donning full PPE Doffing full PPE	- To know the separate parts of the suit. - To understand the need to wear PPE. - To know how to dress (donning) PPE. - To demonstrate the correct steps in donning the PPE. - To know how to doff PPE. - To demonstrate the correct steps in doffing the PPE. - To understand the decontamination process.	Practical session 60 minutes
Disaster medicine and public health emergencies principles	- To understand the concepts of hospital surge capacity in terms of staff, stuff and structure, and the importance of scarce resource allocation. - To recognize the value of triage and the difficulties in dealing with ethical challenges related to the distribution of limited medical resources.	Discussion-based exercise 30 minutes

Lessons Learned

On June 15th, 2020, after 4 months since the beginning of the outbreak in Italy, more than **28,000 Italian healthcare workers contracted COVID-19 and 168 have died.**

These numbers reinforce once again **how important was the implementation of the training** to address competencies that we knew were **beyond the experience of most of our colleagues.**



Lessons Learned

DISASTER MEDICINE TRAINING

1. Our idea to address **disaster medicine** concepts was crucial.

2. **First experience** in responding to a large-scale public health emergency or a disaster for the majority of healthcare workers

3. Most of healthcare workers **never studied disaster medicine** or global health in medical or nursing schools.

4. The current pandemic should stimulate to consider introducing disaster medicine in the **medical and nursing school programs**.

Virtual Reality

COVID-19 Community Center layout a Virtual Reality just-in-time training

UNIVERSITÀ DEL PIEMONTE ORIENTALE
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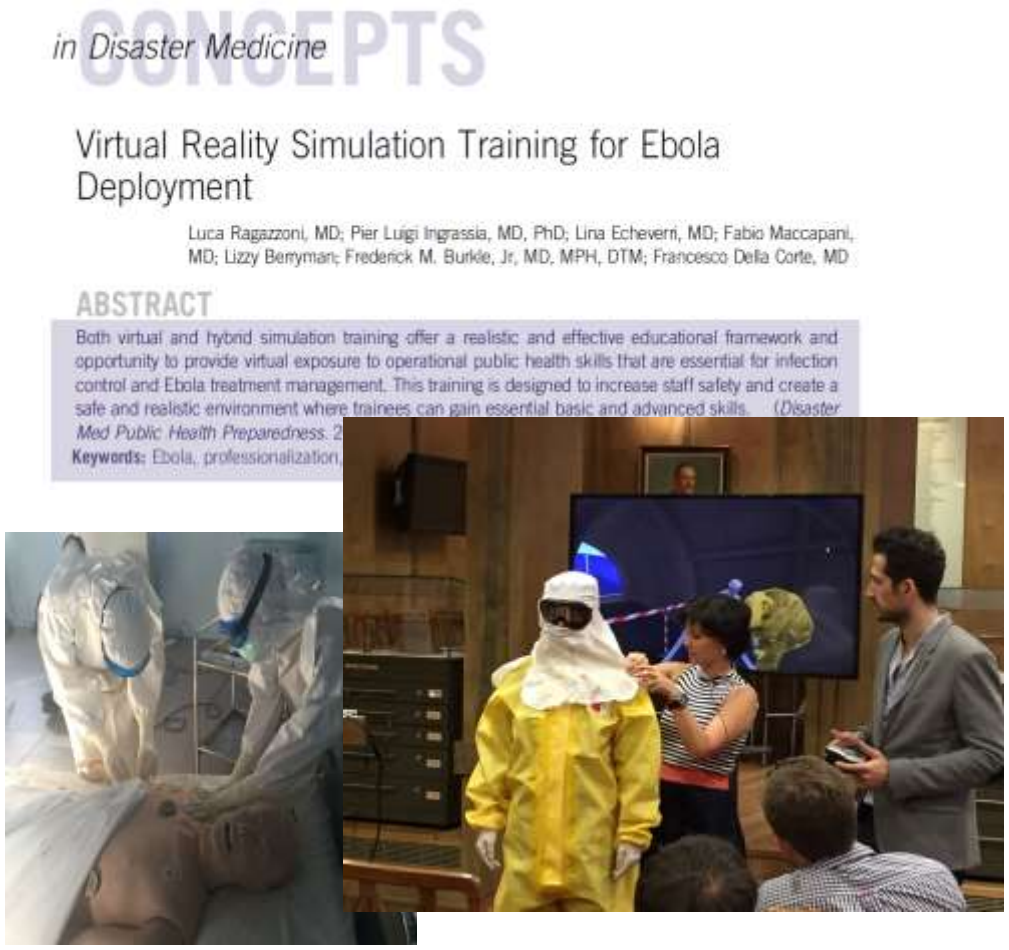
Ebola Outbreak


in Disaster Medicine

CONCEPTS

Virtual Reality Simulation Training for Ebola Deployment

Luca Ragazzoni, MD; Pier Luigi Ingrassia, MD, PhD; Lina Echeverri, MD; Fabio Maccapani, MD; Lizzy Berryman; Frederick M. Burkle, Jr, MD, MPH, DTM; Francesco Della Corte, MD

ABSTRACT

Both virtual and hybrid simulation training offer a realistic and effective educational framework and opportunity to provide virtual exposure to operational public health skills that are essential for infection control and Ebola treatment management. This training is designed to increase staff safety and create a safe and realistic environment where trainees can gain essential basic and advanced skills. (*Disaster Med Public Health Preparedness*. 2

Keywords: Ebola, professionalization

Virtual Reality Simulation Training for Ebola Deployment

The Ebola outbreak in West Africa was one of the worst natural disaster of the last decades.

CRIMEDIM and Save the Children International (SCI) collaborated to develop and implement a specific training using virtual reality (VR) and hybrid simulation to improve the safety of humanitarian workers against the possible infection with Ebola virus, and an evaluation tool to assess the improvement of humanitarian workers' technical and non-technical skills.

Save the Children

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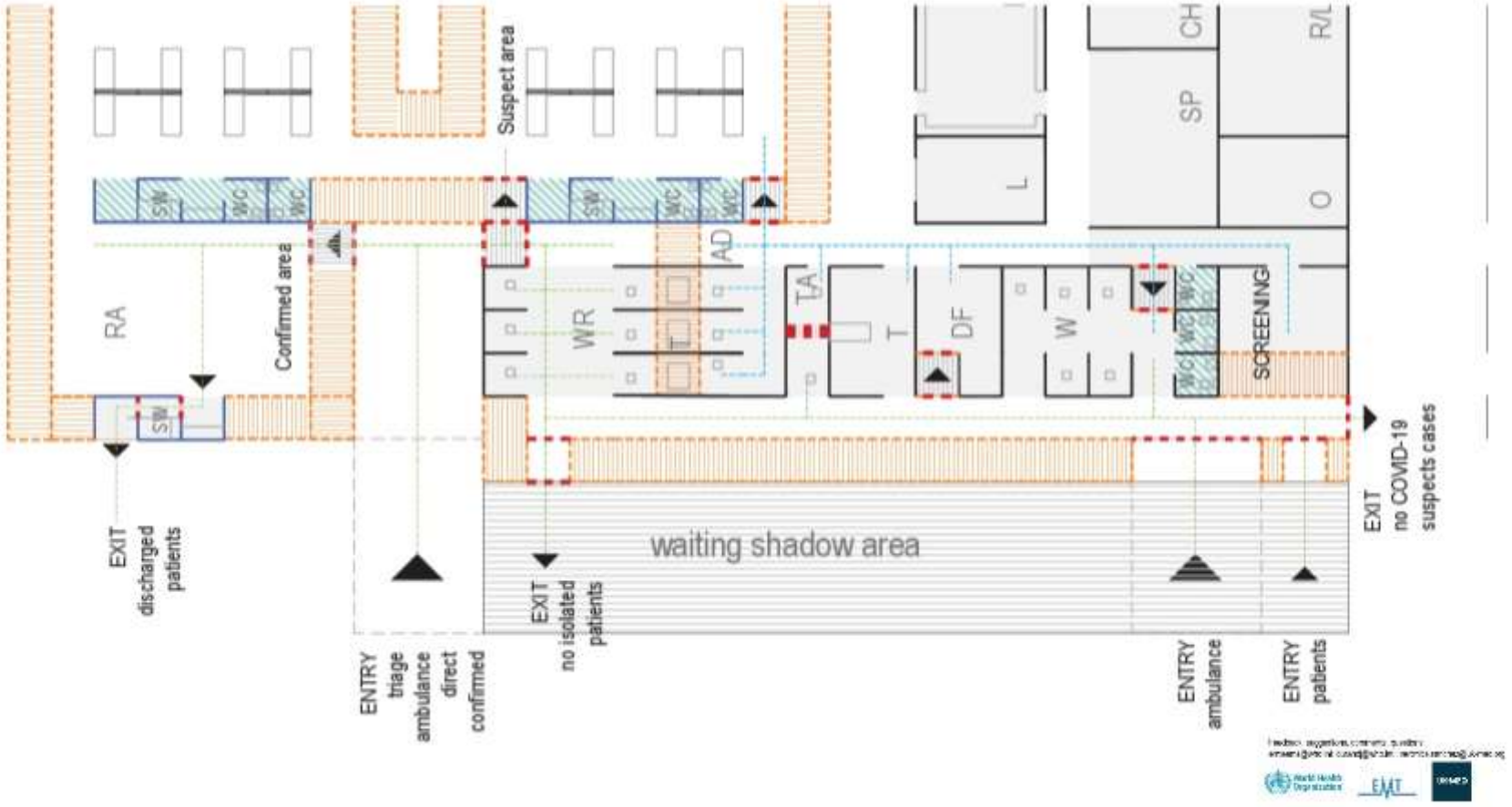
Why Virtual Reality?

1. Simulate highly specialized real-world environment
2. Training can be done remotely ensuring access to a higher number of staff
3. Safe training for high-risk scenarios
4. Increase knowledge retention
5. Reduce cost and travel, a key today with current travel restrictions
6. Virtual and hybrid training provide a realistic virtual exposure, essential to learn IPC measures
7. Adaptable to context needs

COVID-19 Community Center layout



COVID-19 Community Center layout

TEAMS

hcri
Humanitarian and Conflict Response Institute

UPO
UNIVERSITÀ DEL PIEMONTE ORIENTALE
CRIMEDIM
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KAROLINSKA INSTITUTET ANNO 1810
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ISTANBUL MEDENIYET UNIVERSITY

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With the financial support of the European Union Humanitarian Aid and Civil Protection

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TEAMS

TRAINING FOR EMERGENCY MEDICAL TEAMS AND EUROPEAN MEDICAL CORPS

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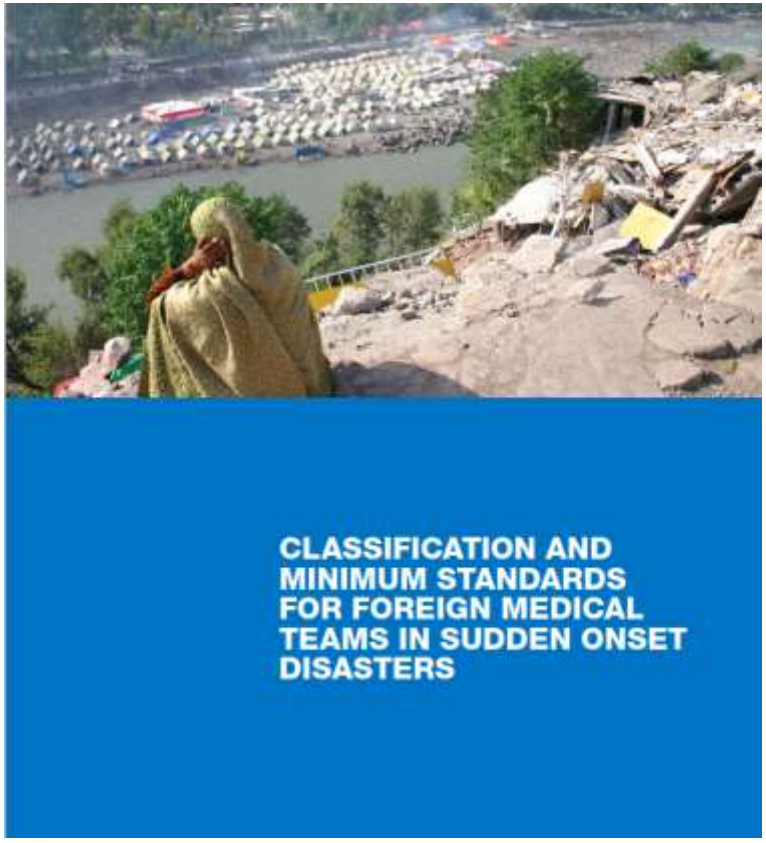
Project Coordinator
CRIMEDIM - Research Center in Emergency and Disaster Medicine

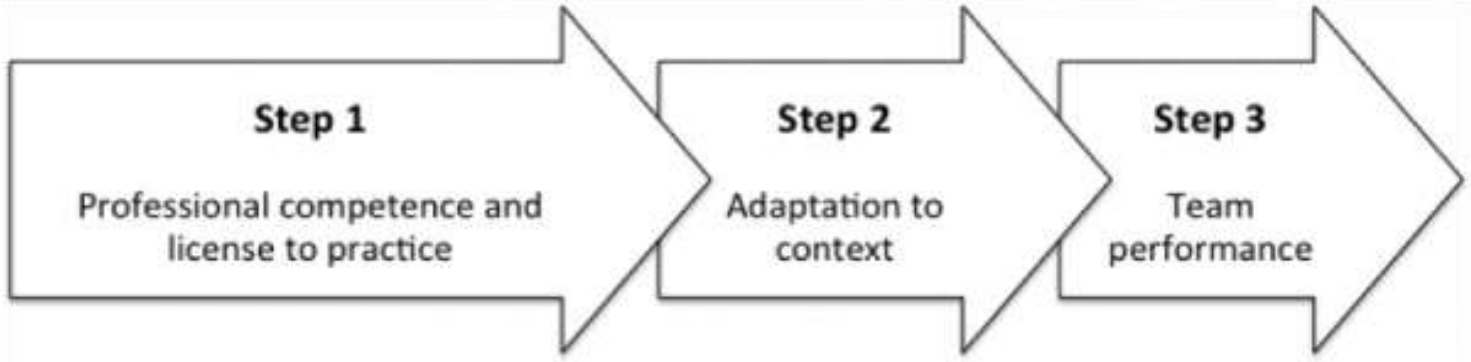


The **'Emergency Medical Teams' (EMTs) initiative** evolved in 2010 under the umbrella of the WHO, the Global Health Cluster and other actors, with the aim to **improve the quality and accountability of international emergency medical teams** responding to disasters.

In 2013, the EMT Working Group published a first edition of the **'Classification and minimum standards for Foreign Medical Teams in sudden onset disasters'**, in which capacities, services and minimum deployment standards for EMTs were defined.

- Public Health Teams
- Emergency Medical Teams
- Mobile Laboratories
- **European Medical Corps**
- Logistical Support Teams
- Medical Evacuation
- Assessment & Coordination experts

EMT COMPETENCY AREAS



Amat Camacho N, Hughes A, Burkle FM, Ingrassia PL, Ragazzoni L, Redmond A, Norton I, von Schreeb J. Education and Training of Emergency Medical Teams: Recommendations for a Global Operational Learning Framework. PLoS Curr. 2016 Oct 21;8.

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THE PROJECT

TEAMS is a project, funded by the European Union Humanitarian Aid and Civil Protection (DG ECHO), aiming to **develop, pilot and assess** a standardized **training package** (set of simulation exercises), **focused on operational team training** (team dynamics) **for EMCs/EMTs**, adaptable to different types of EMCs/EMTs.

Specific aims:

1) To create a **training framework** focused on operational team training for EMTs.
2) To design a cost-effective set of **simulation-based immersive scenarios** for training EMTs.
3) To implement a low-cost **e-learning platform** to facilitate the access of the training package.
4) To pilot the overall training package through **two main training events**.
5) To **assess the effectiveness** of the training
6) To **evaluate the quality** of the training package.

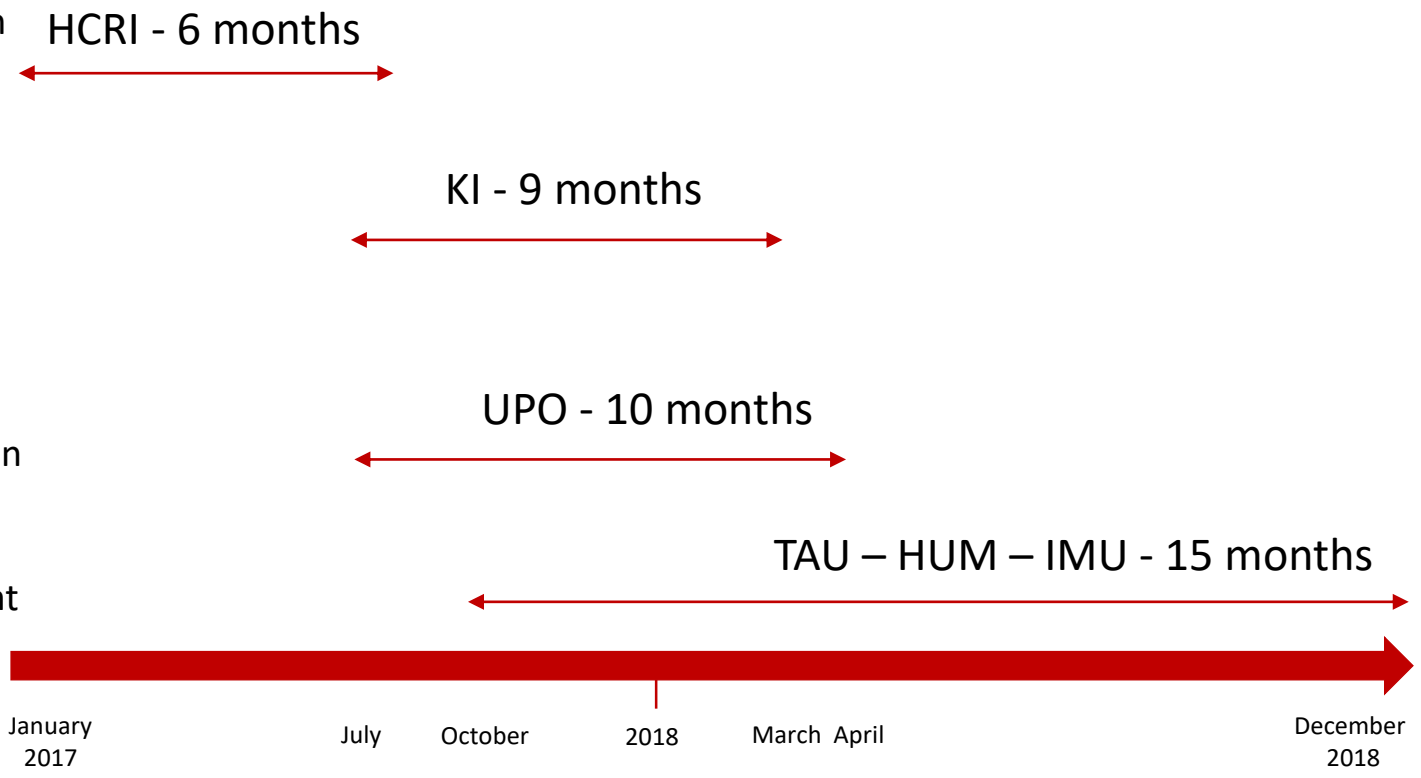
METHODOLOGY AND TIMELINE

Task B. Analysis of situation and definition of training framework

Task C. Development of training materials and evaluation tools

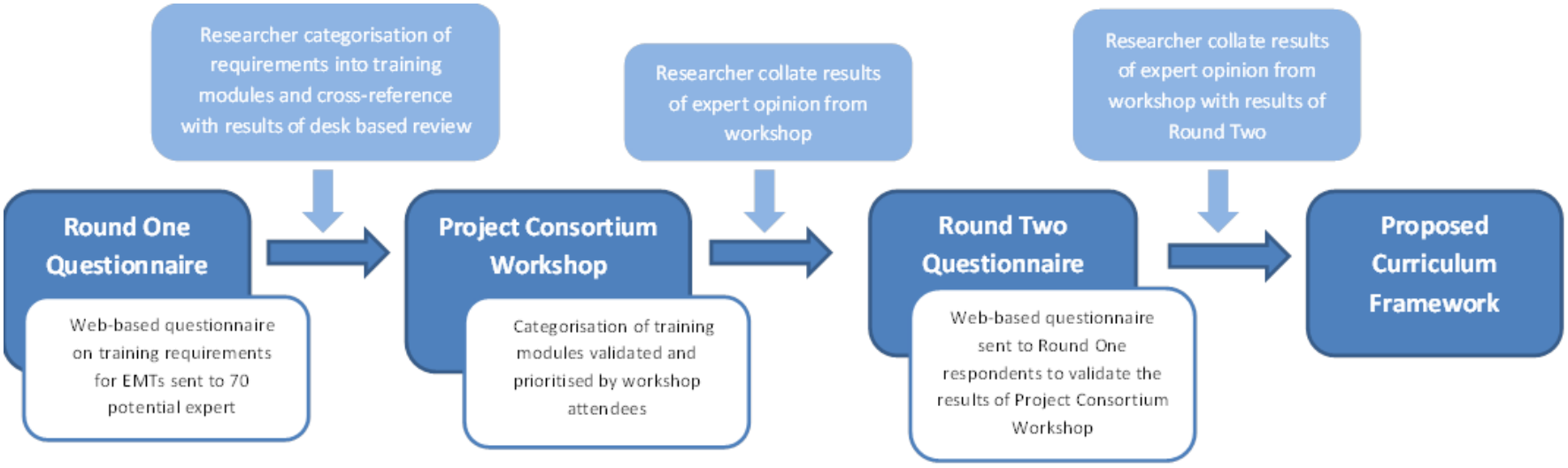
Task D. Development of training tools and simulation scenarios

Task E. Pilot and assessment



DELPHI STUDY

- Assessment of the current **EMT training needs**.
- Analysis of current and **existing training models** and educational initiatives for EMT base on operational team training and assessment of the gaps.
- Definition of the training areas and **development of the training framework**.



Team/Collaborative working - Negotiation skills - Leadership - Communication - Planning - Team dynamics - Human factors - Sharing Resources - Identifying personnel - Flexibility and adjustability - Critical incident management - Conflict resolution -	**Austere Environments** - Situational awareness and site assessment - Clinical standards in low resource settings - Adaptation of skills (using novel equipment and learning about novel medical conditions) - Understanding international disasters - Self-sufficiency - Mass events unexpected threats **Operational Environment - Cultural Awareness** - Personnel behaviour (adjust to local culture. - Cultural competency and sensitivity. - Community infrastructure - Language and beliefs - Cultural sensitivity - Working with translators - Management of the dead - Understanding the local context - Knowing the deployment area, target population, needs of the population - Language Barrier - Community infrastructure	**Media management** - Media perspective - Media liaison - Engaging with the media – personal behaviour **Field Equipment Logistics** - Understanding power - Fuel and communications - Sat phone - Radio and satellite comms - EMT flow and onsite management - Specific EMT security - Local supply - Customs - Specific equipment use and management - Personal kit self sufficiency - Vehicle management and resource limitations - Management of the dead - Cold Chain - Waste management
Collaborative working (outside the team) - Coordination with other teams, OSOCC (internal command and control, reporting and sharing information) - Working with national healthcare staff - Coordination with host country - International coordination - Collaboration with national MoH - Coordination through EMTCC - Coordination with LEMA	**Safety, Security, and Risk** - Hijacking and hostage taking - Situational risk analysis - Evacuation preparedness - Team safety procedures - Personal safety - Working in hostile environments - Safety and security protocols - Mass events unexpected threats - Planning - Critical incident management - Conflict resolution - Hygiene & Sanitation **Psychological Health (team and individual)** - Psychological first aid - Building and maintaining resilience - Practical strategies for managing critical incidents - Injury or death of a team member - Personal behaviour (adapt to team)	**Essential Healthcare** - Tropical and infectious diseases - Triage - Mass casualty management - Maintaining day-to-day healthcare - Major common health conditions - Trauma, blood transfusion and obstetrics **Data Collection and Reporting** - Data collection templates (Minimum Data Set/unique common patient record) - Confidentiality and consent - Data information gathering and analysis

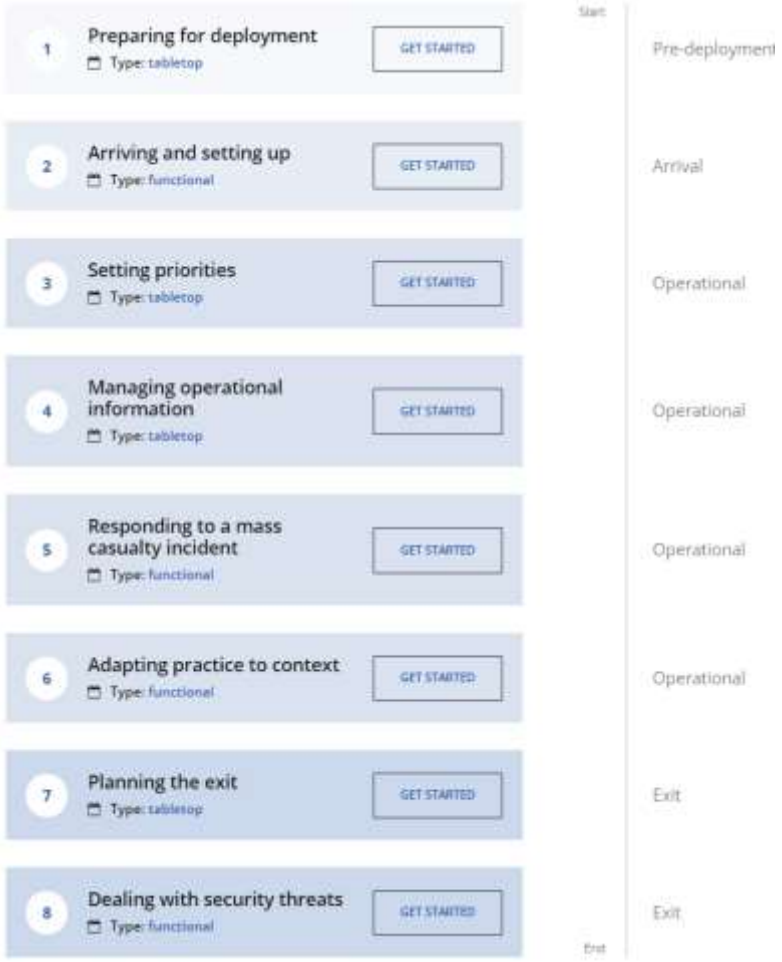
OPERATIONALIZATION OF THE TRAINING FRAMEWORK

- Set of **8 team dynamics exercises**, based on the curriculum framework developed through a the Delphi study.

- Characteristics:
  - Special focus on **health-related exercises**
  - **Scenario based**
  - No need for external trainers: this is an **EMT self- delivered training package**.
  - Build upon **EMT minimum standards**
  - Based on the **own EMT procedures and equipment**
  - The learning objectives should not focus on the technical aspects (i.e triage) but on the **team's performance** in terms of team dynamics.

TEAMS TRAINING PACKAGE

- Set of 8 simulation-based exercises specifically designed to improve EMTs' team performance through **scenarios to be encountered on the field**.
- Each exercise is a complete **stand-alone module** consisting of a concept note, learning objectives matrix, debriefing tool and a variety of supplementary documents.
- Designed to **facilitate and guide trainers** on how to effectively organize and deliver the training.
- The 8 exercises can be delivered sequentially to form a **3-day intensive training** simulating a complete humanitarian mission.
- Alternatively, the exercises **can be performed independently** to accommodate each organization's specific training needs, time and resource constraints.




BEREITSCHAFTEN
DEUTSCHES ROTES KREUZ

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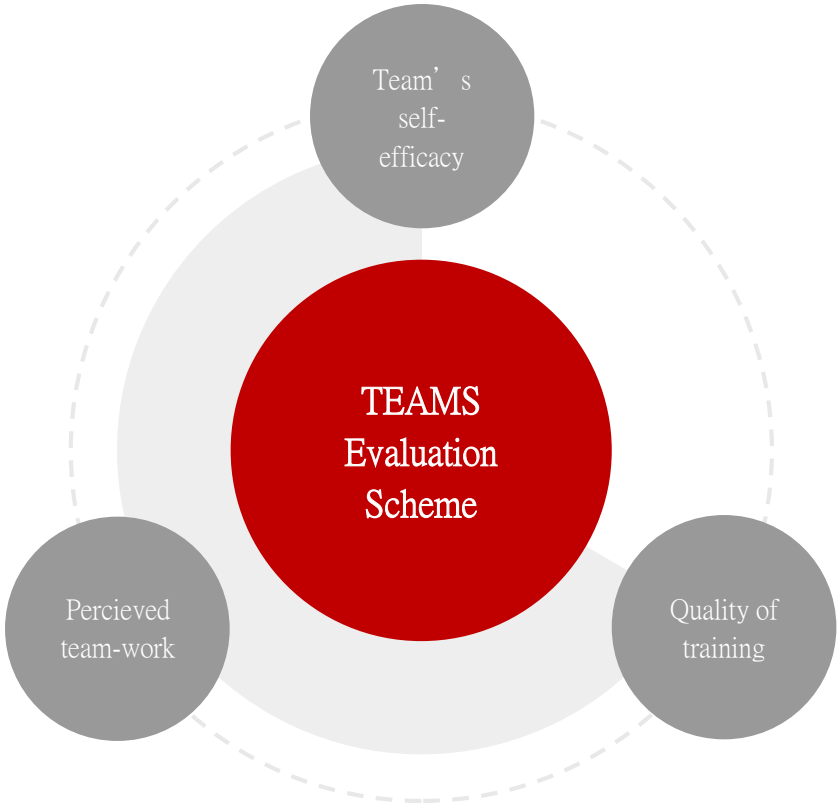
THREE MAIN AREAS OF ASSESSMENT



TEAM'S SELF-EFFICACY

- For overall sample (N=42)
  - BEFORE: 3.912 ±0.655 SD
  - AFTER: 4.580 ±0.369 SD
  - **statistically significant** according to Wilcoxon paired samples test (W=713.00, Z=4.511, p<.001)
  - No differences observed between men and women
  - No differences observed between German and Turkish participants

PERCIEVED TEAM-WORK

- For overall sample (N=45)
  - BEFORE: 3.085 ±0.591 SD
  - AFTER: 3.556 ±0.339 SD
  - **statistically significant** according to Wilcoxon paired samples test (W=890.00, Z=4.209, p<.001)
  - No differences observed between men and women
  - No differences observed between German and Turkish participants
- In addition, item 12 on the questionnaire assess the global rating of the team's non-technical performance on a scale of 1 to 10
  - BEFORE: 7.684 ±1.612 SD
  - AFTER: 8.584 ±0.805 SD
  - W=269.000, Z=2.900, p=.004

QUALITY OF TRAINING

- For overall sample (N=48)
  - **Mean score: 4.443 ±0.671 SD**
  - Turkish participant (4.651±0.263SD) evaluated the training higher than German participants (4.127±0.945SD), according to Mann-Whitney U Test (U=416.50, Z=2.984, p=0.003)
- Trainers: 4.431 ±0.322SD
  Trainees: 4.445 ±0.709SD
- Overall, 74% of trainees and 84% of trainers think that this training was effective and useful to the team

- (the aspect most contributing to the experience was) Becoming aware of my lack in knowledge

(GERMAN TRAINEE)

- It was a very successful training as a whole. I learned how to work as a team. On all steps, the project created a sense of reality.

(TURKISH TRAINEE)

SUSTAINABILITY AND CONTINUATION

The online training package is available **free of charge** to allow continuing access to and the usability of the training materials all over the world.

EMTs around the world now have the option to access, free-of-charge, a **validated training package** to enhance their teamwork capacities for future deployments.

Stakeholders are cordially invited to ask for a personal access token to enter the online platform. Get yours at the following link:

www.teams-project.eu/teams-training-package

Thank you.

TEAMS

www.teams-project.eu

With the financial support of the European Union Humanitarian Aid and Civil Protection

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