

# Evaluation of an Emergency Triage Assessment and Treatment (ETAT+) training in Madagascar – preliminary findings

Galatsch M.<sup>1</sup>, Noa R C.<sup>2</sup>, Lang H-J.<sup>1</sup>, Weigel R.<sup>1</sup>, Köcher-Andrianarimanana D.<sup>2</sup>

1. Friede Springer Endowed Professorship of Global Child Health, School of human medicine, Faculty of Health, Witten/Herdecke University, Witten, Germany  
2. Faculté de Médecine, Université de Mahajanga, Mahajanga, Madagascar

## Introduction

Under-five mortality has dropped by almost 60% in the last three decades due to improvements of the health situation worldwide. Globally, the under-five mortality rate per 1000 live births dropped from 93 (1990) to 38 (2019)<sup>1</sup>. The Sustainable Development Goals' (SDG) target is to achieve 25 deaths per 1000 live births (Goal 3; Target 3.2) by 2030. Madagascar, one of the world's poorest countries, still needs major efforts to achieve this goal, despite an improvement in the under-five mortality rate from 157 (1990) to 57 (2019)<sup>1</sup>.

One component for reducing mortality is essential emergency and critical care (EECC) in health care facilities<sup>3</sup>. In addition, it has been shown that implementing efficient patient circuits and training of health workers can have a major impact on paediatric hospital mortality<sup>5,6</sup>. Therefore, the World Health Organisation (WHO) produced guidelines and training materials for Emergency Triage Assessment and Treatment (ETAT+)<sup>4</sup> for children managed at district hospital level. However, in the last years, few ETAT trainings took place in Madagascar. To re-establish ETAT principles, a multi-disciplinary team from University Hospital Mahajanga (Chu PZaGa), WHO, Management Sciences for Health (msh) and the Witten/Herdecke University conducted a pilot ETAT+ course in December 2019 at Chu PZaGa. Health professionals from health facilities in different regions of Madagascar attended the course. This study determines, through a written evaluation conducted at the end of the training, whether the ETAT+ training content met Madagascar's clinical needs and whether the participants have achieved their learning objectives.

## Method

This cross-sectional study uses a paper-based questionnaire with 41 items (37 closed items and four free text options) in the French language. The Data were collected at the end of the five-day ETAT+ training from 12 attending Malagasy health professionals (paediatricians, physicians, nurses and Midwives). The questionnaire includes eight categories related to learning: preparation, engagement, critical thinking, collaborative working, overall experience, training delivery, training content and future role as a trainer. The data were descriptively analysed with SPSS Statistics 26. The study was approved by the ethics commission of the Witten/Herdecke University.

## Results

Overall, the participants gave very positive feedback. They found the training's content highly relevant to Madagascar's clinical work and felt motivated and challenged. Tables 1 and 2 present the results of the closed questions. The feedback to the reading materials was very positive related to content, scope, and structure (nine positive answers). However, five respondents were concerned about the timeliness of the reading materials' receipt and wanted more time to prepare.

Nevertheless, half of the participants (six) felt fully prepared for the training. Ten participants reported asking questions during the training. Only slightly more than half (seven) said they discussed their training performance during the training. In terms of content, the training partly presented the participants with new challenges, which they mastered. They stated that they gained new ideas or understanding (12) for their work and new situations (10).

Course evaluation: categorised questions and participants' responses II

Category	Question	Yes	No	Missing
reading materials	Did you read the training materials provided before the training started?	5	7	0
training content	Are there any topics missing in the training?	0	12	0
	Are there topics in the training that you consider unnecessary and could be omitted?	0	12	0
	At the end of the training, did you feel well prepared enough for the Examination?	9	3	0

Table 2: categorised items of the questionnaire.

Besides, all (12) participants indicated that a refresher course would positively affect their clinical skills. Implementing ETAT in facilities seems to be a challenge for some participants. Only five could imagine immediate implementation. According to the participants, the training had only relevant content (100%), and no topics were missing from the training (100%). Diagram 1 shows the topics participants felt were most relevant to their practice. The "ABCDE approach" was described as most relevant (n=11), followed by "Management of shock and resuscitation (n=5), triage and "Management of intra-osseous access (both n=4). The delivery of the training was also rated positively. All participants (12) rated the course content as up-to-date and relevant to their work. Similar positive ratings (12) received the clarity of the learning objectives, the illustration of the course content and the appreciation of one's learning success. However, the participants rated the training pace (four), the amount of reading material (three) and the training week negatively.

## Discussion/Conclusion

Overall, the participants gave very positive feedback. They found the In summary, the pilot project to re-establish ETAT in Madagascar can be considered a success. The ETAT training, adapted to Malagasy conditions and implemented by a multi-professional team, meets the participants' needs and the clinical challenges they are facing. Participants feel motivated and challenged and have a vision for improvement in their clinical practice. Comparable results can be found in evaluations of ETAT training in other African countries<sup>6,7</sup>. However, the results also show that some adjustments are still necessary before implementing ETAT in Madagascar. For example, better and earlier access to ETAT documents in preparation for training must be ensured. It is also necessary to see if the pace and content can be adapted to the training time. The role of the participants in the hospitals must also be strengthened to support implementation. These processes need to be continuously reviewed for their validity to improve the quality of care. Further research is required to find a sustainable solution for the specific settings in Madagascar.

## Literature

- United Nations Inter-agency Group for Child Mortality Estimation (UN IGME). 'Levels & Trends in Child Mortality: Report 2020, Estimates developed by the United Nations Inter-agency Group for Child Mortality Estimation'. United Nations Children's Fund, New York, (2020)
- United Nations. <https://unstats.un.org/wki/DisplaySDGHandbook/Home> accessed 14 January 2021
- Schell, C. O., Gerdin Warnberg, M., Hvarfner, A., Hoog, A., Baker, U., Castegren, M., & Baker, T. (2018). The global need for essential emergency and critical care. *Crit Care*, 22(1), 284.
- World Health Organisation (WHO). Department of Child and Adolescent Health and Development. Emergency triage assessment and treatment (ETAT). Manual for participants (2005). Geneva, Switzerland
- Molyneux E, Ahmad S, Robertson A. (2006) Improved triage and emergency care for children reduces inpatient mortality in a resource-constrained setting. *Bulletin of the World Health Organization*; 84: 314-9.
- Molyneux EM. (2010) Paediatric emergency care in resource-constrained health services is usually neglected: time for change. *Annals of tropical paediatrics*; 30: 165-76.
- Hategeka, C., Mwai, L., & Tuyisenge, L. (2017). Implementing the emergency triage, assessment and treatment plus admission care (etap+) clinical practice guidelines to improve quality of hospital care in rwandan district hospitals: Healthcare workers' perspectives on relevance and challenges. *BMC Health Serv Res*, 17(1)

Course evaluation: categorised questions and participants' responses I

Category	Question	Definitely Agree/ Mostly Agree	Definitely Disagree/ Mostly Disagree	Missing
reading materials	The reading materials are perfectly adapted for preparation to the training	9	3	0
	The amount of reading materials for the training is adequate.	9	3	0
	The reading material was well structured	9	3	0
engagement	I received the reading material in time to prepare myself adequately for the training	5	5	2
	I came to training sessions fully prepared	6	5	1
	I often asked questions during the training	10	2	0
critical thinking	I discussed my training performance and/or feedback with staff or tutors	7	4	1
	I analysed ideas or theories in depth	11	1	0
	I evaluated a point of view, decision or information source	10	2	0
collaborative working	I formed a new idea or understanding from various pieces of information	12	0	0
	I applied knowledge to new situations	10	1	1
	I worked with other participants during tasks or assignments	10	2	0
overall experience	I explained training materials to other participants	10	1	1
	I discussed ideas from my training with others outside of the training (e.g. family, friends, or...)	5	7	0
	This training has challenged me to produce my best work	12	0	0
training delivery	I engaged with my trainers regularly	9	2	1
	I found this training interesting	12	0	0
	I met my learning objectives	12	0	0
	The training content was adequately illustrated (e.g. by examples, visualisations, etc.)	12	0	0
	The training was well structured	10	2	0
	The learning objectives of the training were clearly defined	12	0	0
	Additionally, helpful resources were provided (e.g. articles, videos etc.)	11	1	0
	The trainers were open to criticism	11	1	0
	The content of the training is very relevant to my work	11	1	0
	The training was conducted at an appropriate pace	7	4	1
The amount of material to learn in this training was too extensive	7	3	2	
role as trainer	The content of this training was up-to-date	11	1	0
	I highly value my learning success through this course	11	1	0
	I feel now prepared to train others on in a Triage, Emergency and Treatment training	12	0	0
role as trainer	I feel able to identify challenges in my daily clinical life due to the training	11	1	0
	I would like to have a refresher course after some time so that I can further develop my skills think that it is straight-forward to implement in my institution what was proposed in the training	5	7	0

Table 1: categorised dichotomised items of the questionnaire.

Ten of the participants reported about working together during the training and explained training contents to each other. Outside the training setting, the content was discussed less (five). The general feedback about the training was consistently positive. All participants (12) found the training interesting, felt challenged to perform at their best, and achieved their learning objectives. After the training, all participants (12) felt able to communicate ETAT content at their facilities further and identify challenging situations related to daily hospital routines.

Please let us know which three topics of the training were most relevant to your practice:

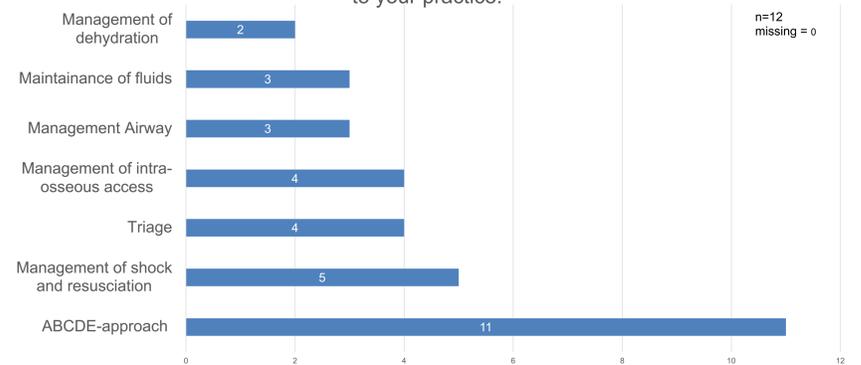


Diagram 1: Free text answer with multiple answer option: most relevant topics to participants practice

