Sigalet, E. L., Grant, D., Kissoon, N., & al., E. (2020). Simulation and Active Learning Decreases Training Time of an Emergency Triage Assessment and Treatment Course in Pilot Study in Malawi: Implications for Increasing Efficiency and Workforce Capacity in Low-Resource Settings. *Pediatr Emerg Care*. .
<https://doi.org/10.1097/PEC.0000000000001996>

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Pediatric Emergency Care

Simulation and Active Learning Decreases Training time of an Emergency Triage Assessment and Treatment Course in Pilot Study in Malawi; Implications for Increasing Efficiency and Workforce Capacity in Low Resource Settings

--Manuscript Draft--

Manuscript Number:	PCARE-D-19-00450R1
Full Title:	Simulation and Active Learning Decreases Training time of an Emergency Triage Assessment and Treatment Course in Pilot Study in Malawi; Implications for Increasing Efficiency and Workforce Capacity in Low Resource Settings
Article Type:	Original Research Article
Keywords:	Pediatric Emergency, Health Education; Simulation, Emergency Medical Services, Pediatrics, Low Resource Country
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Abstract:	<p>Objectives: The aim of the Emergency Triage Assessment and Treatment (ETAT) plus Trauma course is to improve the quality of care provided to infants and children under 5-years old. The curriculum was revised and shortened from 5 to 2.5 days by enhancing simulation and active learning opportunities. The goal of this study was to examine the feasibility and value of the new short form ETAT course by assessing post course knowledge and satisfaction.</p> <p>Methods We delivered the short form Emergency Triage Assessment and Treatment course to a group of interdisciplinary health workers in Malawi. Pre and post course knowledge were assessed using a standardized 20 questions short answer test used previously in the 5-day courses. A 13-statement survey with 2 open-ended questions was used to examine participant satisfaction.</p> <p>Results Participants' post-course knowledge improved significantly ($p < 0.001$) after the</p>

	<p>shorter ETAT course. Participants reported high levels of satisfaction with the short form ETAT.</p> <p>Conclusions</p> <p>Simulation and other active learning strategies reduced training time by 50% in the short form ETAT course. Participants with and without previous ETAT training improved their knowledge after participating in the short form ETAT course. Reduced training time is beneficial in settings already burdened by scarce human resources and may facilitate better access to in-service training, and build capacity while conserving resources in low resource settings.</p>
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Simulation and Active Learning Decreases Training time of an Emergency Triage Assessment
and Treatment Course in Pilot Study in Malawi: Implications for Increasing Efficiency and
Workforce Capacity in Low Resource Settings

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Research Conducted in Malawi in 2017.

Source of Funding and Conflict of Interest

Drs. Sigalet and Dubrowski had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

This study was underpinned and supported in part, by a memorandum of understanding from World Federation of Pediatric Intensive and Critical Care Society (WFPICCS), the Malawi Ministry of Health, and the International Pediatric Simulation Society (IPSS). This content is solely the responsibility of the authors and does not necessarily represent the views of the various Societies and Ministry of Health.

Dr. Dubrowski received grant support from the Cross-Campus Initiatives, Vice-Provost Memorial University Fund. The 4 days of course revision with local leaders in Blantyre in April 2017 was supported by a grant from USAID through the Organised Network of Everyone's Health. The 2 day train the trainer and 2.5-day Emergency Triage Assessment and Treatment course plus trauma held in October 2017 received funding from USAID through the Organised Network of Everyone's Health.

There were no sources of funding to declare for remaining authors. There were no conflicts of interest to declare for any author. For information regarding this article, E-mail: elaine.sigalet2@ucalgary.ca

Objectives:

The aim of the Emergency Triage Assessment and Treatment (ETAT) plus Trauma course is to improve the quality of care provided to infants and children under 5-years old. The curriculum was revised and shortened from 5 to 2.5 days by enhancing simulation and active learning opportunities. The goal of this study was to examine the feasibility and value of the new short form ETAT course by assessing post course knowledge and satisfaction.

Methods

We delivered the short form Emergency Triage Assessment and Treatment course to a group of interdisciplinary health workers in Malawi. Pre and post course knowledge were assessed using a standardized 20 questions short answer test used previously in the 5-day courses. A 13-statement survey with 2 open-ended questions was used to examine participant satisfaction.

Results

Participants' post-course knowledge improved significantly ($p<0.001$) after the shorter ETAT course. Participants reported high levels of satisfaction with the short form ETAT.

Conclusions

Simulation and other active learning strategies reduced training time by 50% in the short form ETAT course. Participants with and without previous ETAT training improved their knowledge after participating in the short form ETAT course. Reduced training time is beneficial in settings already burdened by scarce human resources and may facilitate better access to in-service training, and build capacity while conserving resources in low resource settings.

Key Words

Health Education, Simulation, Pediatric Critical Care, Emergency Medical Services, ETAT, Pediatrics

Introduction

The Emergency Triage Assessment and Treatment (ETAT) plus trauma course is aimed at improving the quality of care for children with life threatening illnesses through quick identification (triage), and stabilization prior to ongoing definitive care. (1). In resource constrained countries ETAT has been one strategy that has contributed to a decline in mortality in children under five (U5) years of age (2-4). In 2006, mortality after ETAT training in a district hospital in Malawi decreased by 10% (4). Mortality gains after ETAT training were reported in the same hospital in 2011 (2) as well as in Guatemala (3). Despite these gains in one hospital, the child mortality rate in Malawi remains high at 63 deaths per 1000 live births, much higher than the reported 42.5 per 1000 live births in some other developing countries (5-7). High mortality rates are a result of a complex interplay of social, economic and clinical factors (5-7) including limited budgets, workforce shortages, and inconsistent and variable dissemination of in-service training programs (8).

Malawi is especially affected by staff shortages. There is a 45% vacancy rate in frontline health workers in the public healthcare system (7). Upwards of 50% of absenteeism in healthcare facilities in Malawi is directly attributable to healthcare providers attending off-site training courses and meetings (9). ETAT may have contributed to this high training burden because the original course duration of 3.5 days (1) was increased to 5 days to include trauma modules and admission care to meet local population needs (2, 3, 10). A lengthier course can be prohibitive in many rural centers where a single health professional is the sole provider for paediatric and adult care in the region and even a strain on larger districts and central hospitals with borderline staffing to meet population needs. Thus, there was a need to examine innovative approaches to modify ETAT training that is more accommodating to local staffing realities, places less demand on healthcare personnel and increases workforce capacity.

Simulation based learning, (SBL) the intentional use of experience with feedback may be a useful tool which can contribute to achieving the goals above (11). Simulation based learning creates opportunities for individuals and teams to engage in deliberate practice in a realistic context, reflect on actions, and experiment with learning to hone competence, with no risk to real patients (12). Evidence

from the developed world shows that simulation-based learning improves patient outcomes (13-15). In a recent systematic review of simulation, limited evidence from the developing world suggests improved patient outcomes, but mostly reported an increase in knowledge, skills, and learner satisfaction (13). Regardless of location, healthcare workers prefer repetitive SBL to improve knowledge, skills, and teamwork rather than passive instructions or lectures (13). Indeed, a study in Tanzania reported a decrease in neonatal mortality after repetitive short weekly SBL sessions with neonatal staff (16).

Cognizant of the benefits of ETAT training and use of simulation and other active learning strategies, in 2013, the World Federation of Pediatric Intensive and Critical Care Society (WFPICCS), the International Pediatric Simulation Society (IPSS) and the Malawi Ministry of Health entered into a memorandum of understanding to review and improve ETAT training in Malawi. International and local experts performed a needs assessment to judge the feasibility of the role of simulation and other active learning strategies in ETAT. Findings from the 2013 and 2014 needs assessment reinforced the current challenges espoused in literature such as varied and limited dissemination of ETAT due to lack of national standards for in-service training, budget constraints and workforce shortages. Learning was impeded by heavy use of didactic teaching with less than optimal use of simulation and active learning, and failure of formal training programs to link feedback and improved performance. Follow-up refresher programs for participants, facilitators or faculty were lacking. These findings reinforced the need to improve the delivery of ETAT courses, and to develop the Train the Trainer (TTT) ETAT course. The specifics of this revised TTT-ETAT curriculum which adhered to the breadth of knowledge and skills of the 5-day course were recently published (17). The first version of the short form ETAT course was piloted with 27 frontline health workers at the Mzuzu Central Hospital (Malawi) in November 2016. Lessons learned from that experience prompted further revisions by an interdisciplinary group of local healthcare leaders in Blantyre (Malawi) in April 2017. Senior authors provided coaching throughout the revision process. The short form course was taught by local facilitators who attended the TTT ETAT course. Senior authors (ES & IW) were on site to coach. The aim of this study was to assess the feasibility and efficacy of the new short course.

Material and Methods

This study was reviewed by the National Health Science Research Committee in Malawi and was exempted. Course participants were clinical officers, medical assistants and nurses. Clinical officers are non-physician clinicians who train for 3 years at a health science college and then complete a 1-year internship at a local hospital (18). Medical assistants get a certificate in clinical medicine after 2 years in training, but do not have an internship (18). Together with nurses these cadres of healthcare workers provide the backbone of health services in Malawi due to the critical shortage of medical doctors (18). Details distinguishing the new short form ETAT course from the 5-day ETAT course are found in Figure 1. Session activities are identified as teacher or learner centered based on observations from the needs assessment and current short form course. Learner centered modalities are highlighted in bold with red script used to depict active learning. The trauma module was integrated in all relevant modules. Module format was adapted to include 3 opportunities for scenario management. The same scenario was used throughout the module. The first opportunity for scenario management was used to identify learner needs. This allowed facilitators to focus on learner gaps in knowledge and skill in presentation of module content. We added an active learning strategy called “Think, Pair Share”. “Think” begins with individuals being asked to think about a concept. The strategy then requires each learner to discuss their thinking with a partner (Pair) and report their conclusions back to the group (Share) (19). Skill teaching emphasized peer to peer feedback (20). Each module culminated with two more opportunities to manage the scenario. The intention was to provide an opportunity for learners to integrate new knowledge and skills, participate in a feedback session, and integrate feedback in another opportunity to manage the scenario. We converted case management scenarios into scenario cards ($n=12$) and used them as cognitive aids for the learners and the facilitators (Figure 2 & 3). All course content was presented over the first two days. On the third day we included 4 hours of case scenario practice with teams rotating through four 45-minute stations. Facilitators had 5 minutes to set up equipment, 5-10 minute for team management, 10-20 minutes for feedback and 10 minutes for the team to manage the scenario again to

experience the value of feedback. Equipment and material used was unchanged from the 5-day course as it reflected the reality of practice contexts. No changes were made to the facilitator participant ratio.

The research question we asked is can simulation and active learning when used by trained local facilitators decrease training time without compromising learning? We performed pre and post knowledge tests on all participants in the short form ETAT course. Participants also completed a 13-item satisfaction survey with two open ended questions.

SPSS Version 25 was used to analyze data (21). We used a single group, paired t-test (2-tailed, significance set at $p<0.05$; scores out of 100%) to address the pre-and post-test differences in knowledge for participants as a group and then for participants who had and did not have previous ETAT training. We performed Spearman's Rank Order Correlation (r_s) to look for positive relationships between demographics and pre-test scores in the short form ETAT course. We analysed satisfaction survey results by calculating the average score for each item, rounding off to the nearest 0.5, and this was used as a criterion. Next, we used the criterion in a series of 1-sample t-tests (2-tailed, $p<0.05$). To protect the analysis against a type I error due to multiple t-test we used a Bonferroni correction. Themes were identified from the open-ended questions. Significance level was set to $p=0.05$ for all tests.

Results

The cadre of health providers in the short form ETAT ($n=18$) included clinical officers ($n=6$), nurses ($n=8$), a physician ($n=1$), and medical assistants ($n=3$). Eight participants had attended previous ETAT training between 2009 and 2013. Years of experience in an under 5 (U5) setting varied from 1 to 7 years for all participants. The knowledge test post-test scores improved significantly for all participants in the course [$t(17) = 10.71, p<0.001$]. Pre and post-test scores, and the mean score (M) was higher for participants with previous ETAT training (Table 1). There was a positive correlation between previous ETAT training and pretest score [$r_s = 0.57, p<0.05$]. There was no significant correlation between years of experience in a U5 setting and pretest scores. Participants were very satisfied with the course (Table 2). The mean rating was 4.78 (SD 0.45) on a five-point Likert scale. As illustrated in Table 2, after applying

the Bonferroni correction, two questions were scored significantly lower than 5. These were Q6 and Q9. Question 6 was “I liked how each session ended with the same or similar scenario to give us a chance to use the information and skills and Question 9 was “The large group sessions were more effective than the small group sessions. Themes from the open-ended questions identified satisfaction with the use of simulation, the increased number of scenarios to practice, but still would like to have had more course time.

Discussion

To our knowledge this is the first pilot study to shorten ETAT training time and still demonstrate significant gains in course knowledge. This was done by increasing the effective use of simulation and other active learning strategies. Most LMICs, including Malawi, have challenging economic constraints (8), and a reduction in training time could significantly reduce the costs of education and in-service trainings. A short-form ETAT course is 2 days shorter than a 5-day ETAT course. With 24 participants and 4 facilitators per course, there would be 56 days of per diem saved per course with the shorter version. We see this as an important return on investment that could improve access to this training. There would be a further benefit of reducing the time staff are away from their duties. The present course helped to upskill the local faculty (who did all of the teaching) with a better understanding of teaching theory and the use of simulation. This is line with the Malawi government commitment to improve in-service and continuing professional development of healthcare workers (11, 12). The short ETAT course is amenable to distributive and in situ learning for rural healthcare workers. Furthermore, it is aligned with the WHO global strategy on human resources that identifies the need to adopt a paradigm shift in how we plan and educate the workforce (22). More research is needed to look at the optimum methods for knowledge and skill retention, using components of this curriculum.

In this study, we improved the volume of simulation in the course and how facilitators used simulation to reduce training time. Simulation is learner-centered which means the learner must participate in the learning process (11). The attraction of SBL even in austere environments relies on its effectiveness

by using low fidelity technology such as simple dolls, role play, and only equipment as simulation aids that are available in LMIC's (23). In these teaching sessions there were many times when an empty box was used as a saturation monitor, and this improvisation did not detract from learning. Although we did not test the value of low fidelity simulation, the results of our pilot suggest that it was effective, which lends support to a study in which there was no difference in participant learning when low or high-fidelity simulation was used (24). High fidelity simulation is costly and unnecessary because learning happens through experience and feedback and is independent of the type of the manikin (11, 12, 24).

In this pilot, we showed that SBL was helpful to various cadres of frontline healthcare workers with differing years of experience in a U5 setting. We used SBL to assess learners' gaps in knowledge and ability by starting each module with a scenario. This approach utilized time efficiently as facilitators could focus module content on learner gaps. To help learners integrate learning we increased the number of times for learners to practice scenario management. Learner teams were given two opportunities to manage the final module scenario. In a systematic review of simulation-based training and resuscitation, studies have shown that learning was optimized when feedback was integrated and learners were given an opportunity to apply learning immediately (25). We integrated Think Pair Share at various points in the course to ensure all learners were engaged in the learning process (18). In this strategy pairs of learners solve problems together which makes it less stressful for the individual learner. This may be particularly helpful if a course is being run in a second language for some participants (18). The concept of effective feedback was a priority in the TTT. In the short ETAT course, facilitators were coached by on-site instructors, to ensure that feedback came from the learners first before the facilitators provided any guidance or comments. Learners who identify their own performance gaps are more likely to close them with a change in practice (12, 19).

Using the scenario cards as cognitive aids was novel and proved very helpful in reducing the number of learner questions. The reverse side of the card (facilitator facing) provides a checklist of expected management, clinical prompts and a guide for feedback. We found it reduced the facilitator's

need to memorize a lot of information. Cognitive aids have shown their value in resuscitation literature; they improve performance of individuals and teams (26, 27).

Inadequate training of teachers and facilitators has been highlighted as a challenge in Malawi (7) and other LMICs (24, 28-30). It is important for resource-constrained countries to see the return on investment for including training programs that embrace the principles of experiential learning. Our results suggest a return by reducing training time by 50%.

The inclusion of a teamwork activity to introduce each day in the short form ETAT was novel and set the expectation of teamwork throughout all activities. The concepts of a clear leader, role clarity and clear communication to optimize effective, efficient and timely management were reinforced throughout all scenario feedback sessions. This concept is often overlooked when limited resources prioritize individual knowledge and skill for learning outcomes (31, 32).

Participants were very satisfied with the ETAT course, however not all learners liked starting and finishing with a scenario (Question 6). This was a new approach and unfamiliarity with this approach may have underpinned the varied responses. Question 9 was deliberately designed as a reverse scoring question to ensure responses were not automated. Overall the findings suggest that the learners enjoyed small group learning. Lastly 11 participants indicated a need for “more course time.” Literature suggests that this is commonly reported and may be financially motivated because learners per diems for attending courses often exceed salary (33), however we believe the theme should be examined more closely in future research to understand learner need in local contexts.

Limitations to this study include the small cohort, unequal representation of cadres of healthcare workers in the course, the unknown demographics of participants from 2008 and 2013 and the inability to retest participants to assess retention of knowledge. We acknowledge that our results only show improved knowledge and not performance and it would be useful to develop performance measures, such as those used in Helping Babies Breathe (34) to improve the rigor of findings. Additionally, the short ETAT course should be tested with a much larger cohort and the outcome compared to participants with similar demographics to those in the original 5 day course to really understand its efficacy. We

acknowledge the need for further research replicating our findings in other contexts to provide an element of generalizability.

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Figure Legend

Figure 1. A Comparison of 5 and 2.5-day ETAT course components. *Course Modules were reduced from 10 to 9 in new short form course. We increased the volume of active learning by assessing learning with a scenario at the beginning of a module and guiding knowledge review and all drills to learner gaps. Although simulation was used in the 5-day course we introduced learner centered feedback to optimize learning. All active learning integrated in the module framework is identified by red script.*

Figure 2. Mega Scenario Card Front. *We transformed case scenarios and mega scenarios into learning cards to guide both the learners and the teacher. The front side of the card is read by the teacher and the learners and is used to create the management context.*

Figure 3. Mega Scenario Card Back: *The back of the card details expected management and clinical prompts to help the teacher keep the learner(s) focused on the learning objectives. There is an additional section to help the teacher use a learner centered approach to feedback.*

5-day ETAT + Trauma Course	2.5-day ETAT + Trauma Course
<ul style="list-style-type: none"> Facilitators trained with apprenticeship/supervisory model Pre-test Modules (n=10): Triage, Airway, Breathing, Circulation, Coma, Convulsions, Diarrhea, Trauma, Case Scenarios, Implementing ETAT Module Framework <ul style="list-style-type: none"> Knowledge Review: <i>Didactic</i>: (Teacher Centered) Check Yourself Questions: <i>Interactive</i>: (Teacher Centered) Drills: <i>Interactive</i>: (Teacher Centered) Expert <i>Demonstration</i>: (Teacher Centered) Skills: <i>Simulation and Role play</i>: (Learner Centered) Case Scenarios: <i>Simulation</i>: (One opportunity to manage scenario: Teacher Centered) Feedback: <i>Didactic</i>: (Teacher Centered- teacher tells participant what they did wrong) Mega Scenarios: <i>Simulation- one opportunity to manage scenario- Feedback Didactic</i>: (Teacher Centered) Post-test 	<ul style="list-style-type: none"> Facilitators trained in Train the Trainer Course focused on Act Pre-test Modules (n=9): Triage, Airway, Breathing, Circulation, Coma, Convulsions, Diarrhea, Case Scenarios, Implementing ETAT Module Framework <ul style="list-style-type: none"> Scenario: <i>Simulation and Role play</i> to assess learner needs: (<i>Learner centered</i>) Knowledge Review focusing on learner gaps: <i>Interactive</i>: (<i>Learner Centered</i>) Check Yourself Questions: <i>Active Learning: Think Pair and Share</i>: (<i>Learner Centered</i>) Expert Demonstration: (Teacher Centered) Skills: <i>Simulation and Role Play</i>: (<i>Learner Centered</i>) <ul style="list-style-type: none"> Skill practice: <i>Peer to Peer</i>: (<i>Learner Centered</i>) Practice till competent: (<i>Learner Centered</i>) Feedback: <i>Interactive</i>: (Learner Centered- Teacher asks learner what went well and what they would like to change) Case Scenarios: <i>Simulation and Interactive Feedback</i>: (<i>Learner Centered-two opportunities to manage scenario so learners could apply learning</i>) <ul style="list-style-type: none"> Feedback: <i>Interactive</i> Mega Scenarios: <i>Simulation: Feedback Interactive</i>: (<i>Learner Centered-two opportunities to manage scenario so learners could apply learning</i>) Post-test

Figure 1. A Comparison of the 5-day and 2.5-day ETAT course

Mega Scenario #2

- You are in charge of the care of this child at triage. You may ask for assistance from others in initiating treatment.
- Speak aloud as you assess and manage the patient and please ask for any information the doll can not provide. Please manage the child in real time. Any questions?

A 1 month old baby (4 kg) carried in to the OPD by Mama- not breathing. Mama says baby was hot to touch, irritable and not feeding for past two days.

Figure 2. *Case Management Scenario used to pre-brief learner(s)*

Mega Scenario #2: Septic shock

Facilitator Notes

Scenario should be 5 minutes long, feedback session 5-10 minutes . Then give the team a second opportunity to manage again.

Please read the stem to the learners "You are in charge of the care of this child. You may ask for assistance from others in initiating treatment. Speak aloud as you assess and manage the patient and please ask for any information the doll can not provide. A 1 month old baby (4 kg) carried in to the OPD by Mama- not breathing. Mama says baby was hot to touch, irritable and not feeding for past two days. Please triage and manage this child. "

Expected Action	Facilitator Input (Prompts):Tell them
☐ Ask about trauma ☐ Assess airway and Breathing- asks about color ☐ Triage as Emergency- to treatment room ☐ Calls for help ☐ Work as a team to assess and manage	<ul style="list-style-type: none"> • No trauma • Airway clear but no airflow- no chest movement • Child blue • If they move on to circulation before treating apnea- make child's color more blue
☐ Open airway-insert oral airway ☐ Put in neutral position ☐ Starts BVM 1 breath every 3 second	<ul style="list-style-type: none"> • Airway still clear • No change in airflow • Tell them chest rises and falls with ventilation if technique is good- if not tell them chest not rising- trigger them to check mask seal, bag pressure and rate
☐ Asks nurse to check circulation while you continue BVM ☐ Starts IV and completes blood work- blood glucose- malaria- infection	<ul style="list-style-type: none"> • Hands cold, brachial pulse is fast, cap refill 4 seconds • Blood glucose 2.1 mmol/l
☐ Gives 20ml/kg of NS/RL bolus over 30 minutes (80 mls)	<ul style="list-style-type: none"> • Look to see if calculating drops/min- ask • If right bolus, child starts to fight BVM- improve • Ask about how they will make 10% glucose
☐ Gives 5mls/kg of 10% glucose – 20 mls ☐ Reassess breathing and circulation ☐ Puts baby on mask at 51 minute/11 prongs	<ul style="list-style-type: none"> • If don't give glucose make baby seize • Starts to breathe spontaneously • Color improves- breathing 60 minute

Feedback- Treatment and Teamwork

How did that feel?

What went well?

- Let the team discuss and only add something if they missed something you want to point out

What did not go as well as you would have liked? Why?

- Let the team discuss and add what you saw that you would like to discuss- **Close any performance gap**

Can use Observation, Point of View, Question (OPQ)

- What you saw or heard, what you think about what you saw or heard and ask a question
- After second opportunity to manage scenario ask them to tell you one thing they learned.

Figure 3. Case Management Scenario used to guide facilitation

Table 1. Knowledge Test Mean Scores**Scores for Participants with previous ETAT training**

Participant	Profession	Pre-test Score/40	Post-test Score/40
1	Clinical Officer	19	39
2	Clinical Officer	15	33
3	Clinical Officer	31	37
4	Nurse	32	39
5	Nurse	33	40
6	Nurse	29	34
7	Medical Assistant	21	31
8	Medical Assistant	19	39
<i>M (SD)</i>		24.90 (7.10)	36.50 (3.38)

Scores for Participants without Previous ETAT training

9	Clinical Officer	17	36
10	Clinical Officer	14	30
11	Clinical Officer	14	30
12	Nurse	12	30
13	Nurse	11	30
14	Nurse	10	30
15	Nurse	8	30
16	Nurse	15	21
17	Physician	19	34
18	Medical Assistant	12	30
<i>M (SD)</i>		12.63 (2.92)	29.63 (4.07)
Mean (SD) Test Score for all Participants		18.39 (7.88)	32.94 (4.82)

Table 2. Participant Levels of Agreement with Items on Satisfaction Survey

Likert Items (Test Value = 5)	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
1. This was my first ETAT course	-1.458	17	.163	-.11111	-.2719	.0497
2. The course met my expectations	-1.000	17	.331	-.05556	-.1728	.0617
3. I would recommend this course to others	-1.458	17	.163	-.11111	-.2719	.0497
4. The team builder is important because it makes us think about teamwork	-2.219	16	.041	-.23529	-.4601	-.0105
5. I felt comfortable asking questions	-1.844	17	.083	-.16667	-.3574	.0240
6. I liked how we started each session with a scenario to see how much we knew before we went into the information	-2.954	16	.009	-.35294	-.6062	-.0997
7. I like how the trainers demonstrated first, had us talk through the steps, had us practice, gave us feedback and another chance to practice	-2.204	17	.042	-.22222	-.4350	-.0095
8. The small groups sessions were more effective than the large group sessions	-1.458	17	.163	-.11111	-.2719	.0497
9. The large group sessions were more effective than the small group sessions	-3.416	15	.004	-.87500	-1.4210	-.3290
10. I am more confident that I will be able to identify life threatening conditions	-1.461	16	.163	-.35294	-.8652	.1593
11. I am more confident that I will be able to provide timely management to life threatening conditions	-2.204	17	.042	-.22222	-.4350	-.0095
12. I liked the practice scenarios	-1.000	17	.331	-.05556	-.1728	.0617
13. Everyone working in a place where sick children arrive should take this course	-1.458	17	.163	-.11111	-.2719	.0497

Dear Reviewer,

Many thanks for the review and comments. We are so appreciative and really believe our results are important to others so thank you.

To make the statistics easier to understand we did the following:

1. We added a table (Table 1) as suggested to present the mean scores (SD) for participants' with and without previous ETAT training.
1. We simplified the presentation of our statistics as we appreciate that statistics are not the easily interpreted when described in T-test terms. Under the result section, page 8 line 19-24 we removed

“The single group, paired t-test, used to address the pre-and post-test differences across participants in short form course revealed a significant effect [$t(17) = 10.71, p < 0.001$]. The single group paired t - test differences for participants who did and did not attend previous ETAT training revealed a significant effect respectively, [$t(7) = 4.83, p < 0.002$] and [$t(9) = 12.73, p < 0.0005$]. There was a significant positive correlation between previous ETAT training and pretest score [$r_s = 0.57, p < 0.05$].

We replace this section with

“The knowledge test post-test scores improved significantly for all participants in the course [$t(17) = 10.71, p < 0.001$]. Pre and post-test scores, and the mean score (M) was higher for participants with previous ETAT training (Table 1). There was a positive correlation between previous ETAT training and pretest score [$r_s = 0.57, p < 0.05$].

Finally, we relabeled the satisfaction survey to Table 2 to flow with the order of results and discussion.

Please let us know if there is anything else you would like us to address.

Warm Regards,
Elaine Sigalet