VITAL ANAESTHESIA SIMULATION TRAINING

VAST Course report – Addis Ababa

27th Jan – 1st Feb, 2020

Course Instructor - Adam Mossenson

Executive summary

Situation
The VAST Course was delivered in Addis Ababa in January 2020 in conjunction with a VAST Instructor Course (IC).

Background
Vital Anaesthesia Simulation Training (VAST) was developed to teach and reinforce essential clinical practices and non-technical skills for both anaesthesia providers and perioperative teams. VAST was first piloted in 2018. This set of courses in Ethiopia follows prior delivery of VAST in Ethiopia in 2019 as well as implementation of the VAST Curriculum at Black Lion Hospital. The VAST Instructor Course is a three-day flexible program to build capacity for leading VAST, train new VAST facilitators, and prepare to introduce VAST to a new region. It is individually tailored to the needs of the participant group. Stemming from several months of communication and consideration of how to effectively bring VAST to new sites in East Africa, the VAST leadership team proposed that holding the IC in Ethiopia would be an efficient means of exposing interested participants from Ethiopia, Kenya and Sudan to VAST, with the downstream effect of enabling implementation of VAST in new regions. The courses were financially supported by the Australian and New Zealand College of Anaesthetists (ANZCA), through a Health Equity Projects Fund, and the Canadian Anesthesiologists' Society International Education Foundation (CASIEF).

Assessment
The VAST IC was expansive. Fourteen participants were trained by 11 facilitators. IC participants, or 'trainee-facilitators', were able to apply new skills over a 3-day VAST Course. A palpable sense of mentorship and camaraderie developed amongst the trainee facilitators. The informal sessions, 'Pitfalls of facilitation' and 'Troubleshooting on the fly', generated rich discussions and thoughtful solutions to commonly encountered challenges when running VAST. The IC culminated with implementation planning; proposals were generated to bring VAST to diverse and new regions within Ethiopia and abroad, with dissemination plans for Ethiopia (Black Lion, St Pauls, Hawassa, Jimma, and Baher), Kenya and Sudan. The VAST IC provided an excellent opportunity for developing new trainee-facilitators, enhancing skills of people with prior VAST experience and for immersion of new 'recruits' who plan to implement the program in new regions. The VAST Course trained 13 multi-professional participants who appreciated VAST's simulation training and the applicability of course content.

Recommendations
- Delivery of the VAST IC coupled with a VAST Course should remain as a viable means for orientation of new teams to VAST methodology and development of thoughtful implementation plans for new regions
- VAST Facilitator training should undergo ongoing iterative refinement and development. Facilitator training must be an adaptive and responsive process with integrated mentorship opportunities
- The enthusiasm and momentum generated during implementation planning should be harnessed and translated into tangible outcomes, namely implementation of the course in proposed sites
- The East-African VAST Network should be encouraged to collaborate and support each other in the future dissemination of VAST in the region

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Acknowledgements

We gratefully acknowledge:

- This activity was supported in part by a grant from the ANZCA Research Foundation, Australian and New Zealand College of Anaesthetists (Health Equity Grant) and Canadian Anesthesiologists' Society International Education Foundation (CASIEF)
- The World Federation of Societies of Anaesthesiologists (WFSA) for ongoing its endorsement and support of the program
- The warm welcome of our Ethiopian colleagues
- The enthusiasm and support of our international volunteer network.

Background

Vital Anaesthesia Simulation Training (VAST) was developed to teach and reinforce essential clinical practices and non-technical skills for both anaesthesia providers and perioperative teams. First piloted in Rwanda in January 2018, VAST provides anaesthesia providers, surgical, nursing, and medical colleagues with an immersive simulation environment for managing common clinical cases; there is a focus on safe anaesthesia and resuscitation for obstetrics, paediatrics, trauma, general surgery, and pre- and post-operative care. In addition to role-play in 15 simulated scenarios, there are targeted case- based discussions and skills stations covering non-technical skills, trauma primary survey, difficult airway management, neonatal resuscitation, pain management, and complex decision making. The VAST Instructor Course is a novel offering that focuses on familiarisation of future VAST leads with the contents of VAST, introduces the principles of VAST facilitation and begins the process for implementation planning of VAST in a new region.

In the months preceding these Courses, Dr Mohamed Elaibaid (Al Awasi Training Centre, Sudan) and Gatwiri Murithi (Center for Experiential Learning (CEL), Jaramogi Odinga Oginga Teaching and Referral Hospital, Kenya) reached out to VAST's Directors enquiring about the possibility of brining VAST to their respective training sites. Following deliberation, a proposal was raised to run a VAST IC in Ethiopia; a centralised model of training whereby participants from Kenya and Sudan would become immersed in VAST, train alongside Ethiopian colleagues, and ultimately develop a robust and sustainable model for future VAST Course delivery. The plan for the week was to run the first 2 days of the VAST IC (Monday and Tuesday), then the 3-day VAST Course (Wed-Friday) and conclude with the 3rd and final day of the VAST IC (Saturday).

Attendees

Faculty and observers		
Name	**Background**	**Role**
Dr Adam Mossenson	Specialist anaesthesiologist	Course Instructor
Dr Tom Druitt	Specialist anaesthesiologist	Facilitator
Dr Bronwyn Rae	Specialist anaesthesiologist	Facilitator
Michelle Murray	Nurse educator	Course co-ordinator
Haben Haile	CASIEF project officer	Course co-ordinator
Dr Talitha de Vries	Anaesthesia trainee	Facilitator
Dr Megan Peake	Anaesthesia trainee	Facilitator
Dr Julian Barnbrook	Specialist anaesthesiologist	Facilitator
Dr Ananya Abate	Specialist anaesthesiologist	Facilitator
Dr Mahelet Tadesse Ibssa	Specialist anaesthesiologist	Facilitator
Dr Fethiya Alferid	Specialist anaesthesiologist	Facilitator

Instructor Course participants		
Name	**Clinical background**	**Role**
Dr Joseph Ong	Anaesthesia trainee	Trainee-facilitator
Dr Rahel Melaku	Specialist anaesthesiologist	Trainee-facilitator
Dr Henok Esayas	Specialist anaesthesiologist	Trainee-facilitator
Dr Adane Getachew	Specialist anaesthesiologist	Trainee-facilitator
Dr Tessema Baraki	Anaesthesia trainee	Trainee-facilitator
Dr Teshome Assefa	Specialist anaesthesiologist	Trainee-facilitator
Dr Awoke Getye	Anaesthesia trainee	Trainee-facilitator
Dr Mekdes Daba	Surgeon (obstetrician)	Trainee-facilitator
Gatwiri Murithi	CPHDEV program coordinator	Trainee co-ordinator
Dr Sarah Okiya	Specialist anaesthesiologist	Trainee-facilitator
Dr Nyamari Mmose	Specialist anaesthesiologist	Trainee-facilitator
Dr Mohamed Elaibaid	Anaesthesia trainee	Trainee-facilitator
Dr Ahmed Elshafie	Anaesthesia trainee	Trainee-facilitator
Dr Abubakr Obaid	Anaesthesia trainee	Trainee-facilitator

VAST Course participants	
Name	**Clinical background**
Dr Emebet Eshetu	Obs/gynae trainee
Dr Tseganesh Tulu	Specialist anaesthesiologist
Yeneayehu Tilahun	Nurse
Dr Netsanet Eseyneh	Anesthesia resident
Dr Meryem Abdulkader	Anesthesia resident
Dr Yared Jenberu	Anesthesia resident
Dr Gebrehans Kidanu	Anesthesia resident
Dr Yoseph Tulu	Anesthesia resident
Dr Jemal Yimam	Anesthesia resident
Dr Tsegay Gesesew	Anesthesia resident
Dr Tsegay G/Micheal	Anesthesia resident
Dr Samuel Ngagash	Paediatric surgery trainee
Adane Gashaye	Nurse

Venue and equipment

The Courses were conducted at Addis Ababa University (Black Lion Hospital). Course co- ordinators Haben Haile and Michelle Murray in conjunction with the two CASIEF Fellows (Dr de Vries and Dr Peake) assembled all the required course materials in preparation for the start of VAST IC. Despite having previously run VAST in Addis and currently implementing the VAST Curriculum, collating and preparing the required equipment for the course was a time-consuming process. Ongoing advocacy for a dedicated and complete set of VAST teaching materials will circumvent the need for this step in the future. Hard copy resources for the courses were able to be printed locally. The courses were held across several rooms in the simulation centre, a site that is utilised by many departments within the university. The CASIEF fellows, in conjunction with the local simulation co-ordinator, were able to secure sufficient space for the VAST IC. We were fortunate to be able to secure an additional very large teaching room for the VAST Course. This was used for whole group presentations as well as one of the simulation and debriefing spaces. Teaching resources were left in a VAST labelled suitcase for future use. It is encouraged that the local co-ordinator completes a stocktake of the existing materials and generates a list of the outstanding equipment to either be sourced locally or brought by future volunteers.

Reflections

The week of VAST activities were punctuated with inspiring examples international collaboration and wonderful mentorship. The IC participants fully immersed themselves in the process of facilitator training. Keen to exercise their new skills, they rapidly developed in their capacity to run and debrief simulation scenarios. The use of pre-recorded videos of simulation scenarios allowed a stepwise exploration and application of the elements central to VAST debriefing methodology. Concerns regarding 'crowd control' were well managed; the relatively large trainee-facilitator pool was accommodated by alternating between session facilitation and time dedicated to preparation for upcoming sessions. This process allowed for more targeted and in- depth mentorship by experienced faculty. The VAST Course was executed with precision, in line with the timetable and with a fitting balance between trainee-facilitators and facilitators taking the lead to conduct sessions. The majority of the case discussions and workshops were delivered expertly by Ethiopian faculty, evidence of the approaching ability for autonomous VAST Course delivery in Ethiopia.

The final day of the VAST IC saw thoughtful implementation plans generated for new sites. In addition, there was enthusiasm for development of locally driven research, monitoring and evaluation of VAST's impact. Enabled by the funding secured through the ANZCA Health Equity Grant, visiting teams from Sudan and Kenya were equipped with a set of VAST simulation resources and templates of the hard copy print materials required to deliver VAST. Armed with these resources, they will be able to explore local cost effective, sustainable and viable options for printing course materials.

Summary of participant evaluations

VAST Course:

During the introduction session of VAST, participants are encouraged to express their desired learning outcomes for the course. There was great concordance between these desired outcomes and subsequent participant feedback. Daily evaluation forms asked participants to reflect on what they liked about the day, key take home messages and suggestions for change in the future.

Key themes emerged:

1. Participants valued the facilitators, the interactive learning environment and interplay between case discussions, workshops and simulation scenarios
2. There was appreciation of the focus on non-technical skills as well as the targeted and easy to follow presentations and course materials
3. The take home messages centred on core elements of non-technical skills and principles of effective crisis management, including the use of clinical frameworks and promoting effective teamwork
4. The value of integration of the patient and family in clinical care was commonly reflected upon
5. There was a strong sentiment that the Course should either be longer or repeated on a regular basis, with desire for expanded delivery of VAST in Ethiopia

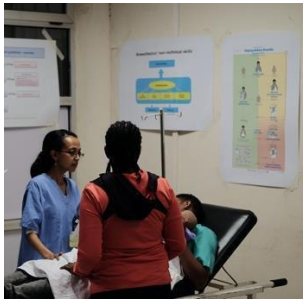
VAST IC:

VAST IC participants are encouraged to complete daily evaluation forms asking for reflection on what they liked about the day, key take home messages and suggestions for change in the future. The group appreciated elements of course design, such as the ability to role play and repeated practise across multiple scenarios. There was positive reflection on the sense of improvement in their skills as the course progressed, peer-to-peer support and mentorship by experienced faculty. The power of simulation training and the importance of ANTS was a common reflection by participants. There was a strong sentiment of the utility in developing skills in simulation facilitation and the value of VAST training. The need to reinforcement new skills in facilitation was recognised and was central to the IC participants' drive for dissemination of VAST in the region.

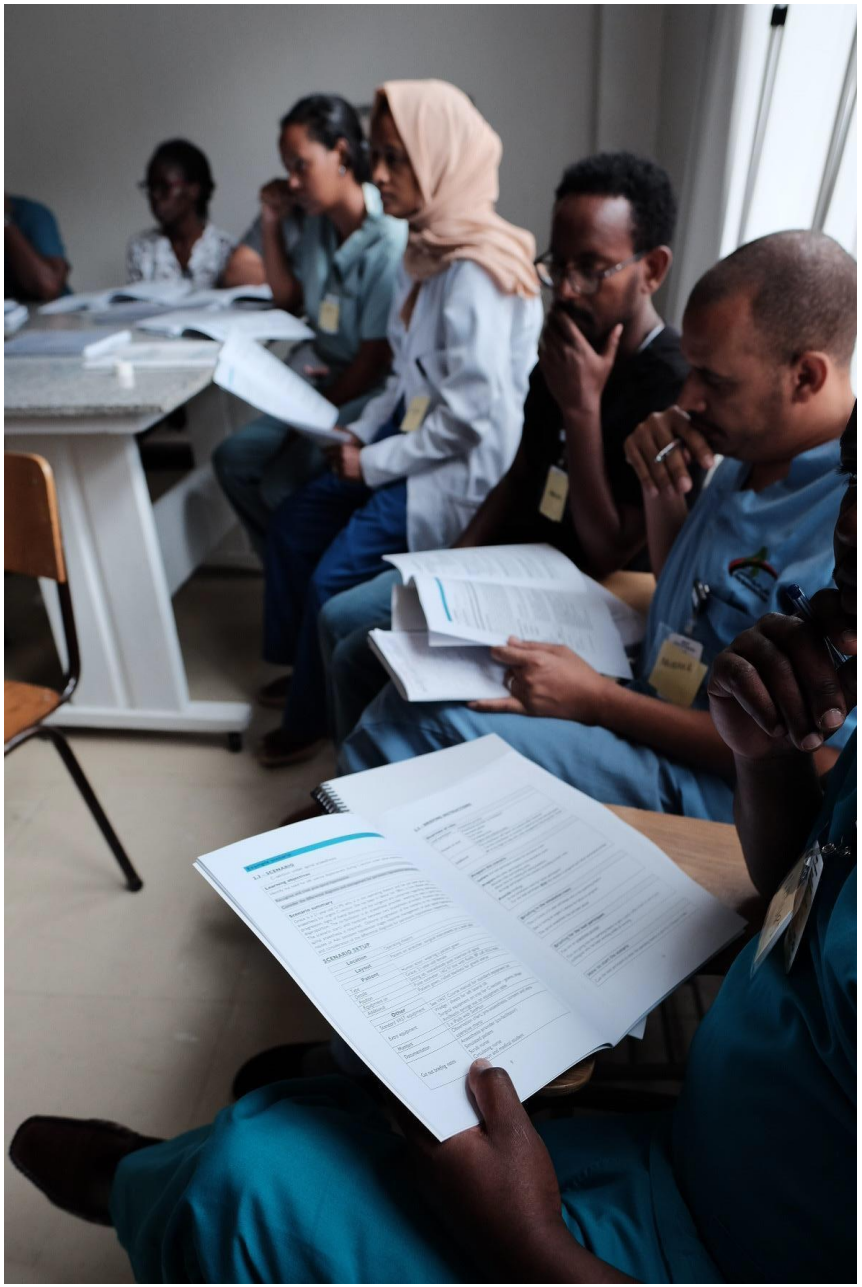
Future directions

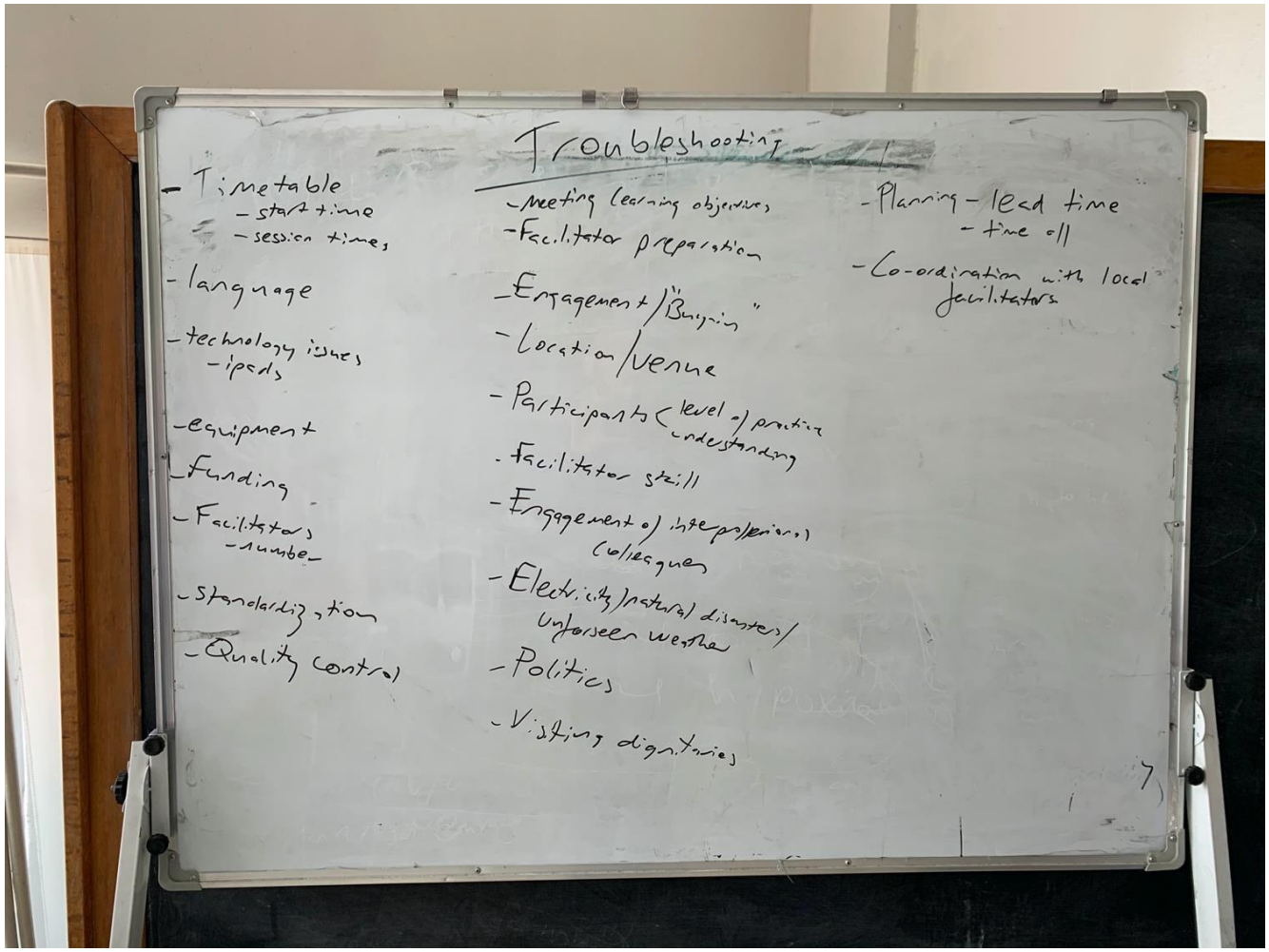
The future for VAST in East Africa is bright. The VAST leadership team will continue to work with CASIEF to support the ongoing delivery of the VAST Curriculum at Addis Ababa University as well as provide regular offerings of the VAST Course. Priority setting and strategic planning for a broader dissemination of VAST in Ethiopia should be driven by the local facilitator team, in conjunction with CASIEF and VAST. In Sudan, Dr Elaibaid and colleagues will explore rolling out of the VAST Curriculum at Al Awasi as a stepping stone towards VAST Course delivery. This will allow for ongoing practice and development of facilitation skills, in a smaller scale and less time and cost prohibitive fashion. Ms Murithi will explore partnerships and opportunities to support the delivery of VAST at CEL. A provisional target for delivery is July 2020. There was wonderful sentiment for collegiate support and cross-country collaboration; future projects in the region should aim to integrate faculty from neighbouring East-African countries.

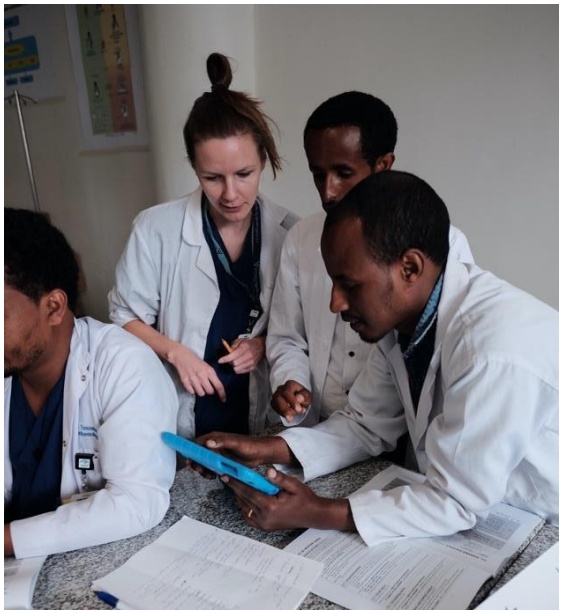
Appendix 1 – Course Photos




Well
Recognize their was problem
Help - lots of it




Troubleshooting
- Timetable
- start time
- session times
- language
- technology issues
- ipads
- equipment
- Funding
- Facilitators
- number
- Standardization
- Quality control
- meeting learning objectives
- Facilitator preparation
- Engagement / "Buy-in"
- Location / venue
- Participants (level of practice / understanding
- facilitator skill
- Engagement of interpreters / colleagues
- Electricity / natural disasters / unforseen weather
- Politics
- Visiting dignitaries
- Planning - lead time
- time off
- Co-ordination with local facilitators

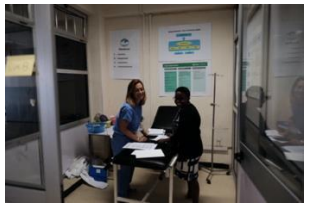


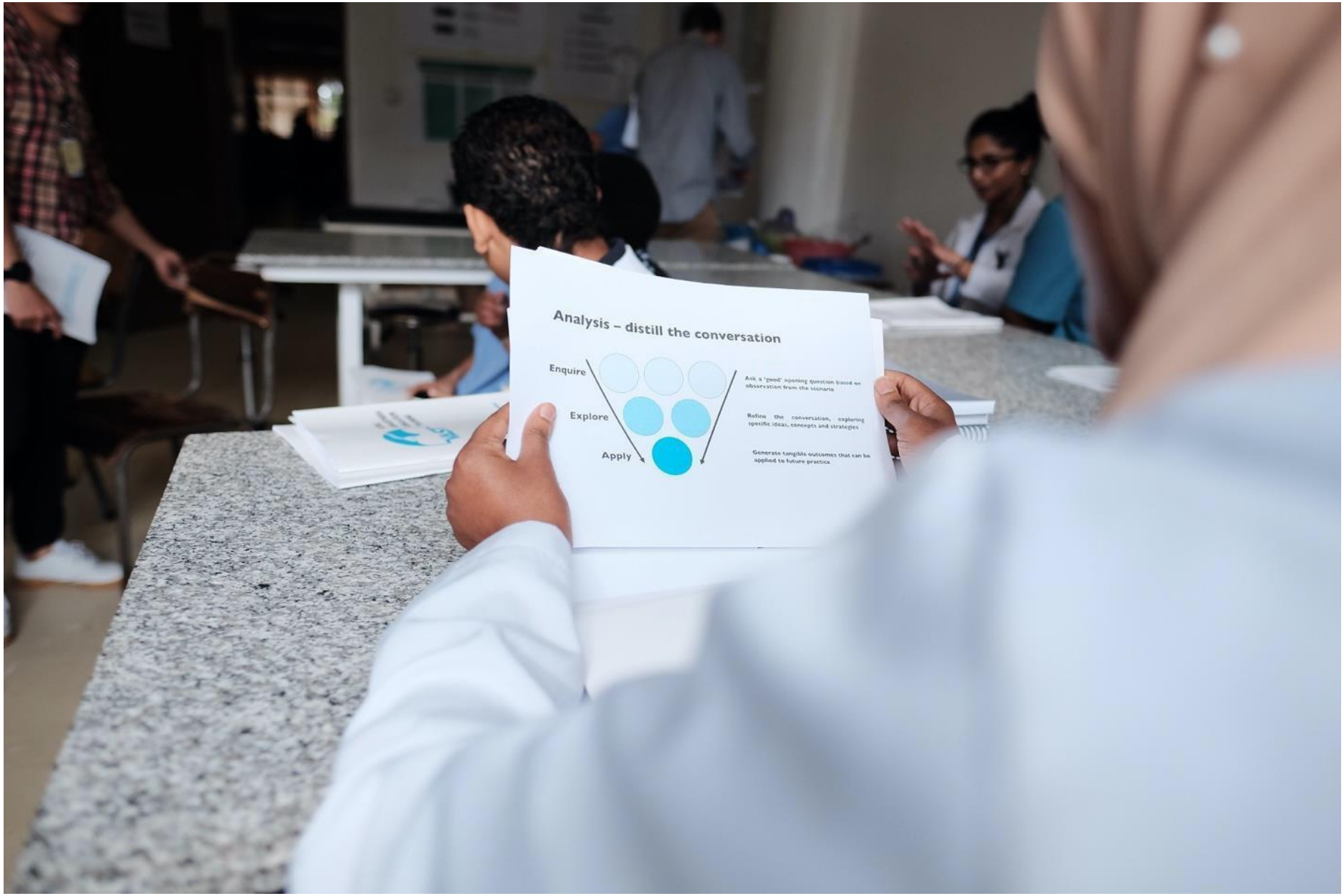


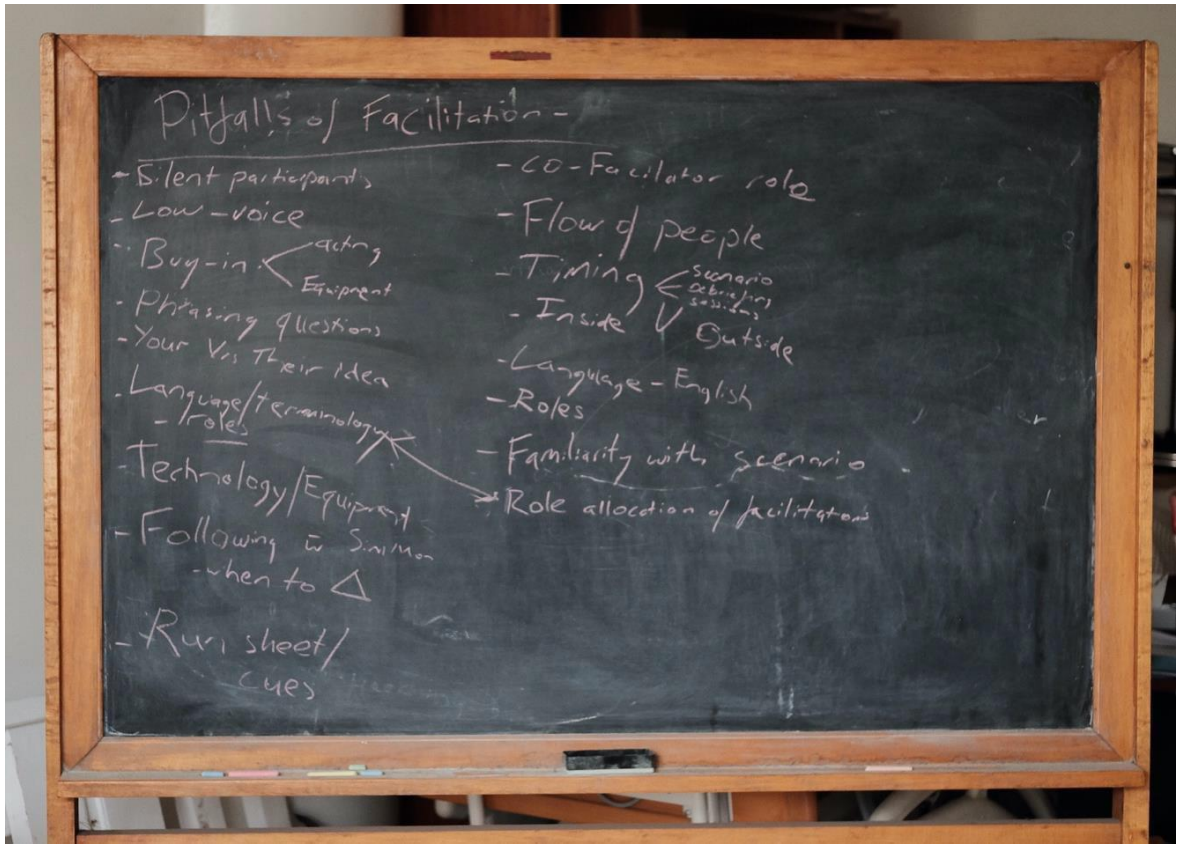


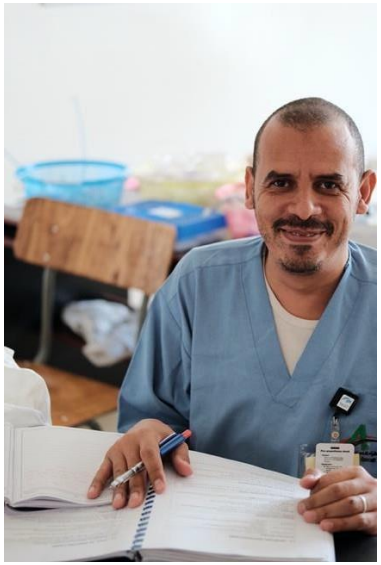


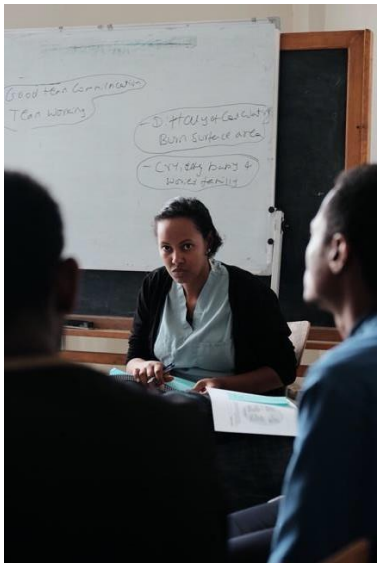


Handover
S - situation
B - background
A - assessment
R - recommendation




Analysis – distill the conversation
Enquire
Explore
Apply
Ask a 'good' opening question based on observation from the scenario
Refine the conversation, exploring specific ideas, concepts and strategies
Generate tangible outcomes that can be applied to future practice


Pitfalls of Facilitation -
- Silent participants
- Low - voice
- Buy-in
acting
Equipment
- Phrasing questions
- Your Vs Their Idea
- Language/Terminology
- Roles
- Technology/Equipment
- Following in Simulation
- when to
- Run sheet/
Cues
- CO - Facilator role
- Flow of people
- Timing
scenario
debriefing
session
- Inside V Outside
- Language - English
- Roles
- Familiarity with scenario
Role allocation of facilitators






VAST
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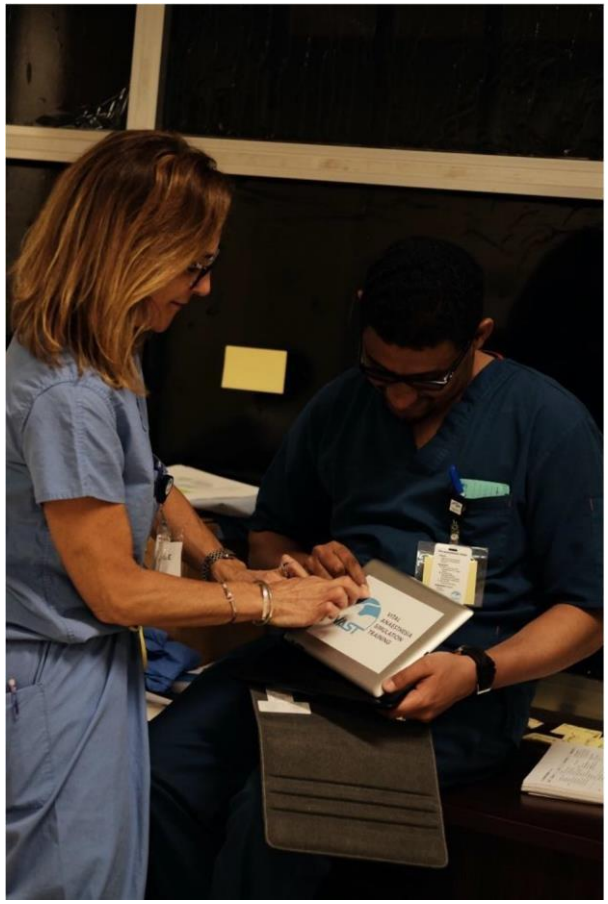
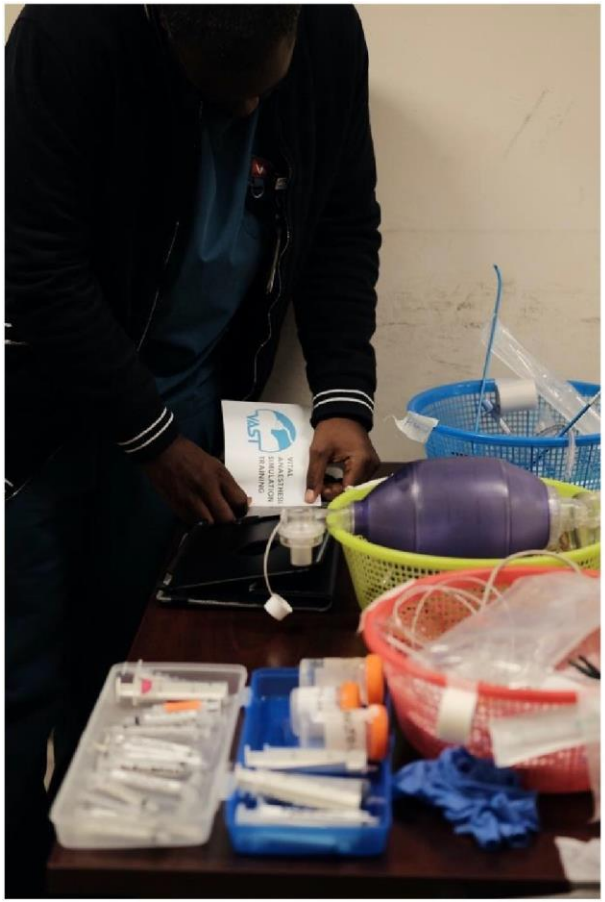
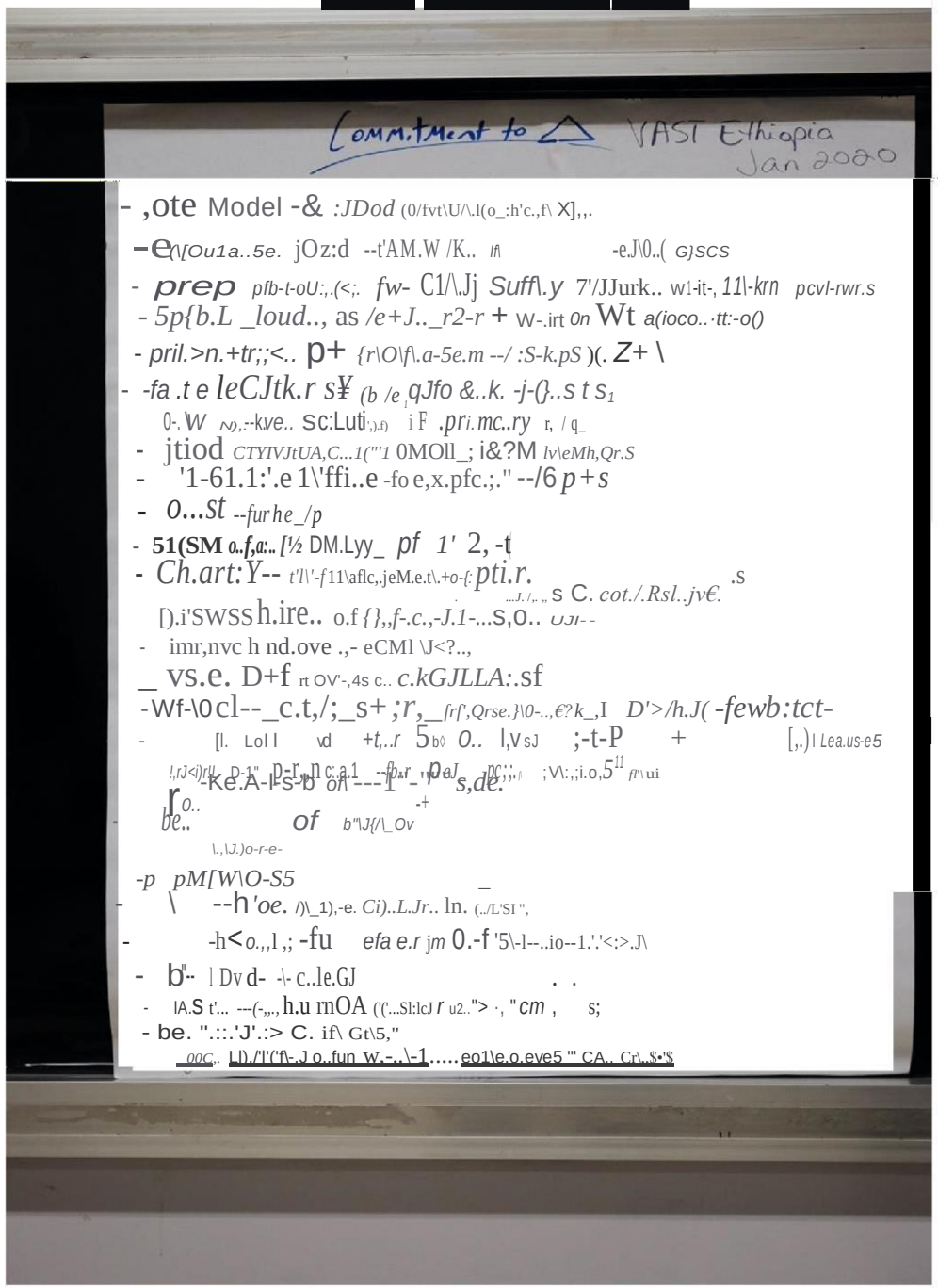
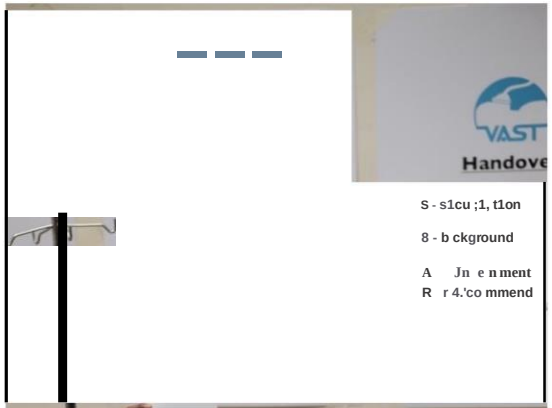
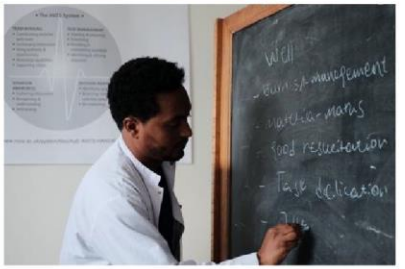





Commitment to VAST Ethiopia
Jan 2020


VAST
Handover




VAST
Handover

Appendix II – Participant evaluations

VAST Course

What participants liked	
Facilitation	The trainers are fantastic Presentations were interactive and catchy The facilitators of the discussions at the end of the simulation I liked the setup and the energetic facilitators Organisation and time management
Content	Trauma presentation Paediatric resuscitation of the burns patient Neonatal resuscitation Excellent points on how leaders should act in a crisis The scenarios choses are what we actually encounter in our practice Approach to obstetric haemorrhage Sepsis recognition and management Lecture on obstetric complications and discussions Having a discussion about increasing awareness of burnout Burnout discussion The complex cases with complex people interactions I like the content of the simulation, the course is very interesting
Course design	Simulation technique keeps us alert and active All equipment, materials and mannikins where available Open discussions The way the course alternates between simulation and short lectures Everyone got to be a lead participant Very organise approach The case selection and organisation
Skill development	Use your time effectively to do things on time Interprofessional communication is key to medical practice We covered many important simulations on obstetric cases Approach and management of emergency situations Early recognition of the patient condition I learnt about the importance of pain management Call for help and use your team
Key take home messages	
Non-technical skills	Not to panic in an emergency situation Developing non-technical skills is critical Prioritisation saves lives Clear task allocation will achieve the goal Be assertive in your decision making Be aware of your environment and your colleagues Non-technical skills are very helpful to manage a crisis and smooth your job

Teamwork	How to be a team leader and manage our team well Share ideas amongst the team We should discuss with many colleagues before making a difficult decision A leader should stand outside the crisis situation to have overall control Use good handover to the team Work with your colleagues in a friendly way
Practice change statements	How to prepare and manage a difficult airway scenario Prioritise your patient needs before anything else Reassuring the family of the patient is important / can help in management Preparation before a crisis will lead to a good outcome Not to be afraid to do it in the real situation Prepare standards for common clinical cases Addressing family concerns is important Reassuring patients has an important role in order for them to know what is going on
Wellbeing	Awareness about physician burnout Create a strategy to prevent burnout Acknowledging the hard work your colleague has done will help avoid burnout
Clinical frameworks	It is important to follow a structured approach and use algorithms in emergency situations RAT system for pain management Approach the obstetric emergency in a systematic way We shouldn't be distracted by pathology when doing the primary survey and should approach it in a systematic way Use of the surgical safety checklist
Suggestions for improvement and general comments	
Logistics	3 days is too short for this training Repeating the training Not much, but the scenario should be managed by the senior at least Is it possible to see this simulation in our real situations?
Course design	It was well done, I have no negative comments Nice to have this kind of simulation and interactive lectures This simulation is offering me a lot of advantages, it is good as it is Video showing real scenarios Better if we had more discussions

General comments	Thank you for coming and giving us the opportunity to learn a lot from you I really enjoyed the course and look forward to being involved in a VAST course in the future The experience overall was interesting and very helpful Make the program regular and it will help us a lot to progress This VAST training is very important in making the physician ready for crisis management. It should continue on a regular basis if possible Including PACU nurses in the simulation is good I am grateful Keep it up The course is very fantastic This type of simulation should be given in any clinical practice for all hospitals Please make it regularly It's well organised, I like this training Awesome to be part of this training

Instructor Course

What participants liked	
General comments	The most important way of learning is simulation The skills are transferable to non-VAST training Professional and friendly in addition to collaborator Improved both facilitation and debriefing skills Willingness to help each other We are noticing improvements in our performance Playing a variety of roles Inclusive of everyone Significant improvement from the start of the course
Content	Debriefing workshop Better understanding of ANTS Anaesthesia non-technical skills Pitfalls of facilitation session Implementation planning
Design	Reflection and summarisation in the morning Time management and flow of activities Clear objectives about the VAST Course
Key take home messages	
Simulation principles	Simulation is participant led learning Co-facilitator plays a key role to direct the learning Learning will be more valuable if students participate We can improve, even with low-resources The power of simulation training is NTS Simulation provider in-service to improve

Scenario facilitation	Practice makes you an expert
Debriefing	Formulate good questions so they will give you the answer they need Be a good thinker and think before asking aquestion Integration of ANTS into debriefing NTS play a crucial role in debriefing Debriefing is challenging, but constant practice makes it easier
Suggestions for improvement and general comments	
Design	Consider allowing the trainee facilitators to debrief a whole scenario from start to finish
	If there are more recorded videos of simulation once can use these to practice debriefing more More videos to highlight the key roles in scenarios
Logistics	It is better if the training is to be given two times per year Consider sending videos before the start of the course Needs more time Mix up the teams more frequently
General comments	You did a nice job, GOD bless you and thank you so much This training makes me more happier than before, in my training I expect a lot from VAST Course I hope to be involved in more simulation training as a facilitator to develop my skills I think VAST will have a bright future in Africa, it addresses a big problem and provides real value for participants which is translated directly on patient safety Everything is good, but what is difficult to me is we have no post scenario plan to improve