



**VITAL
ANAESTHESIA
SIMULATION
TRAINING**

OPERATIONS MANUAL

VAST

OPERATIONS MANUAL

May 2019

Authors

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VAST has been developed with the support of



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Dr Adam Mossenson
Founder and Managing Director - VAST

Disclaimer

The authors of this manual have endeavoured to provide accurate and up-to-date information. This manual may contain errors. Ultimate clinical responsibility rests with the individual practitioner, not the authors. Health care providers must use their clinical judgement, check local guidelines and be aware that treatment modalities may vary across and within countries.

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Preface

This VAST Operations Manual supports sustainable implementation and delivery of VAST in a new location. This manual is an adjunct to the VAST Course Manual and VAST Facilitator Course manual which are used to conduct the VAST Course and VAST Facilitator Course respectively.

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Background

First piloted in Rwanda in January 2018, VAST enables delivery of simulation-based education in under-resourced areas. The VAST Course is a three-day simulation-based program designed de-novo to focus on core clinical practices and non-technical skills that promote safe perioperative care in low-resource settings. The course uses low-cost materials in an immersive simulated environment to replicate common cases managed in district hospitals in low-resource settings. Throughout VAST there is a dedicated focus on non-technical skills. The two-day VAST Facilitator Course (VAST FC) centres on the theory and skills behind effective simulation facilitation for the VAST Course. Ongoing mentorship of trainee-facilitators, during subsequent VAST Courses, develops local capacity for sustainable delivery of VAST and simulation-based education. The VAST Simulation Curriculum expands upon the foundations established in VAST and provides a year-long curriculum for ongoing simulation-based training expanding greatly on principles introduced in VAST Course. Implementing the various elements of VAST requires significant planning and preparation. The VAST Operations Manual aims to help to guide this process.

Principles

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Effective delivery of the VAST Course is a complex task:

- Implementation planning and initial delivery of VAST requires close coordination with the VAST directors and project officers
- VAST should only be delivered by those who have undergone VAST instructor or facilitator training
- Each course requires a VAST Instructor – an experienced facilitator that is responsible for ensuring quality control, mentorship and generation of the course report.

To optimise learning for participants and to streamline the development of trainee-facilitators:

- Participant and facilitator numbers should be in line with the recommendations below
- At least one VAST instructor must be included in the faculty group
- Delivery of VAST and its FC should adhere to the materials as outlined in the respective manuals.

Handover of delivery to local facilitators:

- Handover of delivery to the local network of VAST Facilitators is the goal
- Handover to full local responsibility for VAST Course delivery will vary from one location to another
- Frequent assessment of the needs of the trainee-facilitators must occur
- The VAST region director should work closely with an experienced VAST instructor to determine a transition plan for the region
- Ongoing external mentorship, monitoring and evaluation should occur

Limitations in delivery:

- The safety of VAST volunteers is a priority. There is limited capacity to deliver VAST in countries with a high degree of risk for travel and in particular active travel advisories against all travel. Refer to the implementation of VAST in a new region section for more information on how VAST can be supported in these regions.

Initiating contact

If you are interested in getting involved with VAST, please contact us via:

- Email: vastcourse@gmail.com or
- Our website: <http://vastcourse.org>

Terminology of VAST roles

The roles below are not mutually exclusive. An individual may hold multiple roles.

VAST Course Director:

- The local lead based in the area of proposed course delivery. The course director may or may not have completed a prior VAST Course
- Responsible for:
 - o Implementation and delivery VAST in a geographical region
 - o Coordination with VAST steering committee and directors
 - o Course delivery, from implementation planning to post-course follow up
 - o Recruitment of participants
 - o Local course arrangements, including venue and catering

VAST Instructor:

- An experienced facilitator, familiar with all aspects of VAST delivery and evaluation
- Responsible for:
 - o Assisting with the implementation of VAST in a new region
 - o Mentorship of trainee-facilitators
 - o Ensuring quality control of VAST delivery
 - o Writing the course report

VAST Simulation Co-ordinator:

- The simulation coordinator supports smooth delivery of the course. A medical background is not required.
- Responsible for:
 - o Supporting facilitators in the delivery of VAST and VAST Facilitator courses
 - o Management of equipment and logistics of VAST delivery
 - o Maintaining inventory of equipment pre- and post-course

VAST Facilitator:

- Capable of facilitating on the VAST Course with minimal to no supervision

VAST Trainee-facilitator:

- A graduate of the VAST FC
- Requires ongoing mentorship and training to become a VAST Facilitator

Participant:

- A learner in the VAST Course

Implementing VAST in a new location

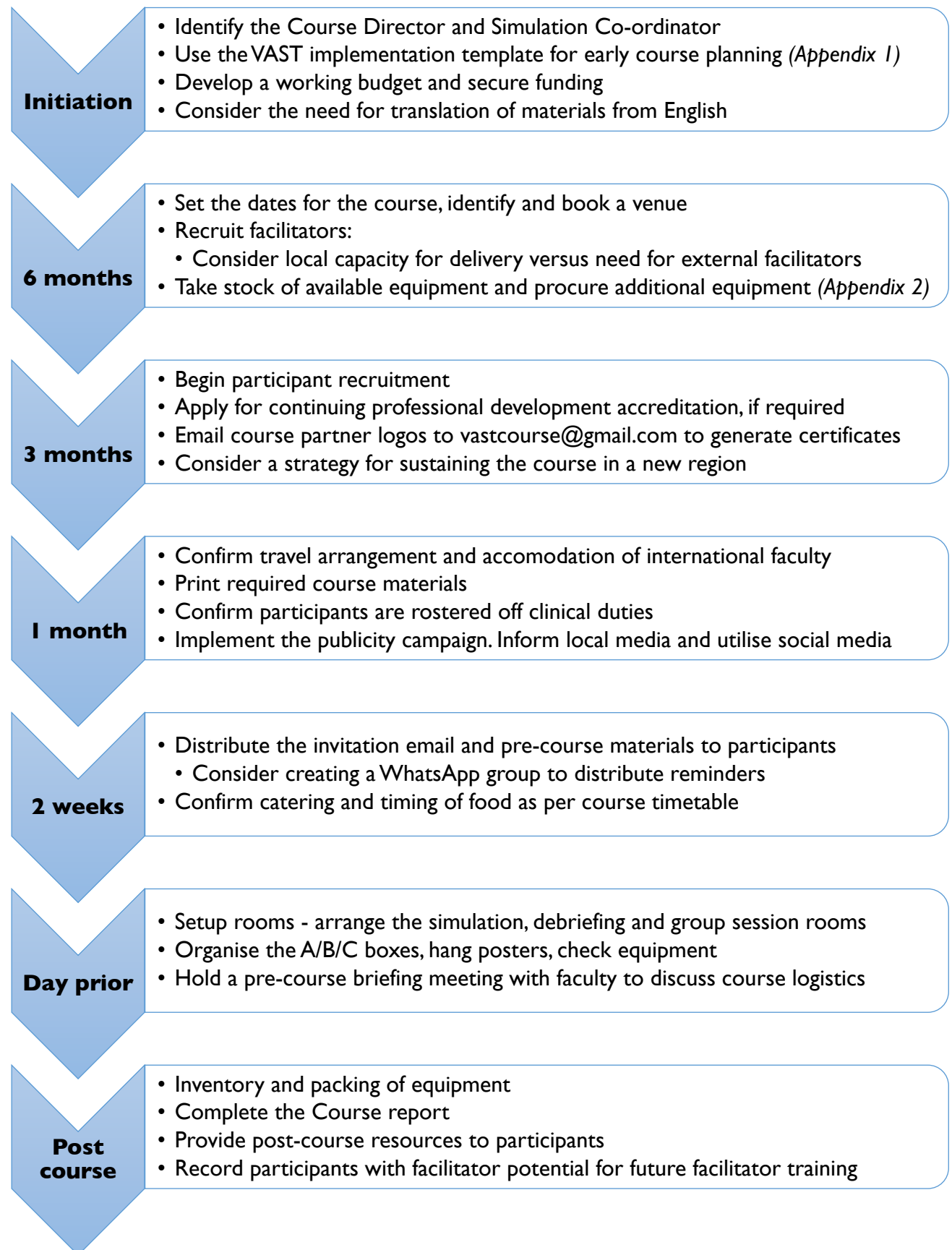
Organisation and logistics	
<i>Local knowledge</i>	<p>Prior to implementation planning it is essential that a representative from VAST develops understanding of the local context and discusses implementation planning with senior staff in country. This understanding may already be in-place through longstanding relationships, however a planning visit by a VAST representative may be required.</p>
<i>Engagement</i>	<p>Engagement of the local anaesthesia societies, training partners and government is central to planning sustainable course delivery. In the early stages of implementation planning for VAST, it should be a priority of the VAST Course Director to reach out to the respective organisations to get their endorsement and to support the delivery of VAST.</p>
<i>Budget</i>	<p>VAST implementation planning should focus on a funding model that will support delivery of VAST in an ongoing fashion. The funding model and funds required for the initial courses will vary from those required for ongoing course delivery. Although the VAST Course uses simple materials, there is a need for basic mannequins (e.g., intubating heads), simple equipment, iPads to function as simulated patient monitors, instructor travel, venue and catering. Course costs will vary from one region to another depending on existing infrastructure. If mannequins are already available, venue is free, and limited travel is required, the course costs will be mainly printing and catering.</p> <p>Establish your working budget as one of the first steps in course planning. Identify:</p> <ul style="list-style-type: none"> - Potential sources of funds, including government and agency support - Need for external grant application - Already available local equipment and resources <p>VAST and its associated courses function as non-profit enterprises. Course facilitators donate their time on a voluntary basis and are not paid a salary or honorarium, however they should be reimbursed for costs associated with course attendance and delivery. Course participants may be asked to make a small contribution towards the running costs of the course. This will depend on the region in which the course is being run and should not preclude potential participants attending the course.</p> <p>In your budget, account for the following items (<i>see below for more details</i>):</p> <ul style="list-style-type: none"> - Faculty - Participants - Venue - Equipment - Printing - Catering - Travel and accommodation - Applying for continuing professional development (CPD) credits

<p><i>The first course</i></p>	<p>VAST is designed to make immersive simulation training accessible to all anaesthesia providers. However, the first course in a new region is unique and requires dedicated planning in the selection of VAST Course participants, VAST FC participants and facilitators.</p> <p>VAST Course:</p> <ul style="list-style-type: none"> - The first course should focus on recruiting senior anaesthesia providers, nurses and surgeons - The goal is to promote VAST amongst these influential clinicians, encourage their 'buy-in' to the program and have them promote VAST's integration into educational strategies in the region. <p>VAST Facilitator Course:</p> <ul style="list-style-type: none"> - The VAST FC may be delivered prior to the first VAST Course - Aim to have 4-6 'trainee-facilitators' attend the first Facilitator Course - Select experienced teachers who are interested in developing skills in simulation-based education. Generating a strong group of trainee-facilitators is essential to drive the program forward and enable earlier handover - Incorporate these trainee-facilitators into course delivery - Throughout all VAST Courses, facilitators should identify participants with capacity and interest in facilitator training. These participants should be incorporated into future VAST FCs. <p>Facilitators:</p> <ul style="list-style-type: none"> - Facilitators who have experience with the implementation of VAST in a new region will be required
<p><i>Participants</i></p>	<p>The VAST Course can be run for one group of 7 or two concurrent groups of 7 (total 14) people, if space and resources allow. Each simulation group should comprise of seven participants, with:</p> <ul style="list-style-type: none"> - 4 anaesthesia providers - 2 nurses - 1 surgeon or medical officer <p>Identify the local model of anaesthesia service provision:</p> <ul style="list-style-type: none"> - <i>For example, are there anaesthesia assistants or technicians that support the anaesthesia provider?</i> <ul style="list-style-type: none"> o If so, aim to include them in the participant group - <i>What is the level of surgical sub-specialisation?</i> <ul style="list-style-type: none"> o Aim to invite surgeons with relevant skills to day of VAST whereby their skills can be utilised - <i>See the notes below on managing a multi-professional group</i> <p><u>Communication:</u></p> <ul style="list-style-type: none"> - Consider starting a group chat for each group (i.e. WhatsApp group) to effectively provide course information and answer logistics questions that participants may have.

Faculty	<p>For a full <u>course of 14 participants</u>, aim to have a minimum of:</p> <ul style="list-style-type: none"> - 4 Facilitators with an identified: <ul style="list-style-type: none"> o Course director o Course instructor - 1 Simulation Co-ordinator - <i>Optional</i> additional trainee-facilitators
Venue	<p>Space requirements for a VAST Course:</p> <ul style="list-style-type: none"> - Simulation space with room for: <ul style="list-style-type: none"> o A stretcher o A small table o 10 people (Participants and facilitators) - Debriefing space: <ul style="list-style-type: none"> o Chairs for all participants and faculty o A whiteboard / large notepad for debriefing - Breakout space <ul style="list-style-type: none"> o For breaks and lunch - Toilet facilities nearby - If running two simultaneous simulation groups: <ul style="list-style-type: none"> o A second simulation space o A second debriefing space o A group presentation space with audio-visual equipment suitable for 20 people
Equipment	<p>VAST utilises simple and robust equipment to be able to deliver immersive simulation outside the confines of a dedicated simulation space</p> <p>Refer to Appendix 2 for the VAST equipment list.</p> <p>Aim to establish a VAST storage box; roughly 60cm x 20cm x 40cm, plastic labelled box with a lid that can house all the simulation equipment required to deliver VAST for one simulation room.</p> <p>Prior to and following each VAST Course, the VAST equipment checklist, which is in the simulation resources folder, should be used as an equipment to ensure a complete set of equipment exists for the course.</p>
Printing	<p>Printed materials are required for the VAST Course. Some materials can be printed once and kept for future courses (i.e. simulation scenario materials), while other materials will need to be printed for each course (i.e. participant handbooks and VAST ID Clips). For establishing VAST in a new region, it is simpler for the international facilitators to bring the one-time-only course materials with them. Local options for printing ongoing course materials should be explored to make delivery more sustainable and to support local business.</p>
Catering	<p>Refer to the course timetable to co-ordinate the timing of tea breaks and lunch. The timetables are found in the VAST Course and VAST FC manuals. The VAST Course Director should be responsible for arranging catering.</p>
Travel and accommodation	<p>Factor into your budget the travel and accommodation costs for local and international faculty and where relevant participants.</p>

<p><i>CPD Credit</i></p>	<p>The VAST Course Director should determine if attaining CPD credits is a priority for course participants. Early co-ordination with the appropriate agency is important to allow sufficient time for granting CPD accreditation to upcoming VAST Courses.</p>
<p><i>Incorporation of the VAST Simulation Curriculum</i></p>	<p>If there is established anaesthesia training occurring in a region, there is value in implementing the VAST Simulation Curriculum as a supplement to the VAST Course and VAST FC. Potential benefits are:</p> <ul style="list-style-type: none"> - Longitudinal delivery of simulation-based education for anaesthesia trainees - Development and application of new skills over time - Building experience and confidence with simulation-based medical education for both facilitators and learners <p>If the VAST Simulation Curriculum is introduced, ongoing delivery of the VAST Course should be directed towards anaesthesia providers with limited access to simulation-based education.</p>
<p><i>Limitations in delivery</i></p>	<p>VAST's volunteer network and ability to support delivery in all locations is limited. Prioritisation for implementation planning in a new region is at the discretion of the VAST steering committee and is a process that will continue to evolve.</p> <p>There is limited capacity to deliver VAST in countries with a high degree of risk for travel and in particular active advisories against all travel.</p> <p>Options to support VAST and simulation training more broadly in regions whereby the implementation of VAST cannot currently be supported include, but are not limited to:</p> <ul style="list-style-type: none"> - Enrolment of participants in future VAST Courses in neighbouring countries - Engagement of future VAST implementers in a VAST Instructor Courses held at centralised locations – i.e. Canada and Australia - Support and advice more broadly on implementation planning of simulation training

Course countdown:



VAST resources

Access to VAST resources occurs via a shared Dropbox™ folder, made available to course directors.

Description of the VAST resources	
VAST Course Manual	Assists facilitators in conducting the VAST Course
VAST Course Manual Supplement	A loose page of supplementary notes reflecting key lessons learnt by previous VAST facilitators on optimal conduct of VAST: <ul style="list-style-type: none"> - It is a working document and should be updated from course to course - Implementation of its recommendations will vary depending on course location and logistics
VAST Participant Handbook	Given to VAST Course participants
VAST Facilitator Course Manual	Assists instructors in conducting the VAST FC
VAST Facilitator Handbook	Given to trainee facilitators in the VAST FC
Simulation resources folder	The simulation resource folder contains: <ul style="list-style-type: none"> - Materials required for simulation scenarios: <ul style="list-style-type: none"> o Coded briefing cards for participants o Coded patient documentation o Coded photos of pathology and imaging o Observer briefing cards - VAST equipment inventory - VAST documentation inventory - VAST Course USB with: <ul style="list-style-type: none"> o PowerPoint presentations o Electronic versions of VAST resources o Audio files: <ul style="list-style-type: none"> ▪ Crying baby and laryngospasm audio loops <p>There must be one simulation resources folder in each simulation room for facilitator use throughout the courses.</p>
Presentations	All presentations are stored electronically on the VAST Dropbox™ folder: <ul style="list-style-type: none"> - PowerPoint presentations all have facilitator notes - Copies of the presentations and facilitator notes are in the course manuals.
ID Clips	The ID Clip serves several functions throughout the course: <ul style="list-style-type: none"> - It incorporates the VAST pre-anaesthesia check and crisis management card - It is used to co-ordinate allocation of participants into simulation groups and identify the lead participant for scenarios <p>Currently these are sourced centrally and stored in Canada and Australia. Co-ordinate with the visiting faculty to ensure there are enough ID Clips to for participants in all courses.</p>

<p><i>Participant registration template</i></p>	<p>The registration template is used:</p> <ul style="list-style-type: none"> - To sign in participants on each day the VAST Course - On day 1 to allow facilitators to: <ul style="list-style-type: none"> o Pre-allocate participants to simulation groups o Assign a lead participant for the day's scenarios - At the end of day 1 and 2 to co-ordinate allocations for the following days - To identify scenarios with a non-anaesthesia provider lead and allocate this role accordingly - To collect demographic data
<p><i>Facilitator allocation template</i></p>	<p>Allows for facilitator allocation to sessions:</p> <ul style="list-style-type: none"> - Is used at the end of the VAST FC and enables trainee facilitators to know ahead of time what sessions they will deliver and prepare accordingly
<p><i>Certificate templates</i></p>	<p>Certificate templates exist for VAST and VAST FCs:</p> <ul style="list-style-type: none"> - There is provision to add in logos of local anaesthesia societies and sponsors of the Course - The Course Director should email vastcourse@gmail.com with the required logos to be included and specific certificates for each course will be generated.
<p><i>Additional printed resources</i></p>	<p>You will need to also print the following posters for the simulation and debriefing rooms:</p> <ul style="list-style-type: none"> - Handover - SBAR - The ANTS System - Anaesthetists' non-technical skills - WHO surgical safety checklist - Difficult airway society algorithm - Helping Babies Breathe Algorithm <p>The VAST Course Director will be given access to a Dropbox™ folder with access to print ready versions of these files.</p>

<p>VAST Simulation Curriculum resources</p>	
<p><i>General information</i></p>	<p>The VAST Simulation Curriculum is available via Dropbox™:</p> <ul style="list-style-type: none"> - The curriculum is designed to be delivered over one year (48 half-day sessions) - It is suitable for first year physician and non-physician anaesthesia trainees - 2 VAST facilitators are required to run the simulation sessions in the curriculum <p>Please contact us via email if you would like more information on the curriculum.</p>

Course updates

There will be periodical review and revision of VAST and its associated resources. You will have access to a VAST Course Manual Supplement, a living document that incorporates advice and critical updates acting as a bridge between course revisions. Prior to each Course, the VAST Course supplement should be printed and inserted into the front of the VAST Course Manual.

Managing a multi-professional group

It is important to aim for a multi-professional group of participants in order to:

- Make scenarios more realistic, with participants playing their actual clinical role
- Generation meaningful discussions in the debrief
- Create solutions to challenges that include all members of the team.

Consider the following for the various non-anaesthesia provider participants:

Anaesthesia assistants or technicians:

- In some setting, anaesthesia providers have an assistant or technician working with them
- If this is the case in the area of course delivery, invite assistants and technicians as additional participants to the course
- Promote discussion about the non-technical skills and teamwork between the lead anaesthesia provider and the assistant in the debrief

Nurses and or midwives:

- There are specific roles designed for nurses and/or midwives in VAST
- Ensure these roles are allocated to nurses or midwives appropriately
- Promote discussion about the non-technical skills between anaesthesia, surgery and nursing staff in the debrief
- Note – the nurses and midwives will be outnumbered by anaesthesia providers. Aim to avoid the potentially intimidating environment by creating a supportive learning environment

Surgeons:

- Identify the level of training and role of the surgeon in the area of course delivery (e.g., general surgeon who delivers all surgical services versus subspecialist care)
- If care is provided by a general surgeon, it is worthwhile encouraging the surgeon to attend for the full three days of VAST
- If care is provided by subspecialist surgical providers, consider inviting:
 - o Day 1 VAST – one general surgeon per simulation group
 - o Day 2 VAST – one obstetrician per simulation group
 - o Day 3 VAST – one paediatric surgeon per simulation group.

Additional participants not immediately involved in the scenario:

- Engage these participants during the briefing phase of the scenario by distribution of the observer briefing card
- Highlight specific non-technical skills for them to observe
- Draw on their observations during the debrief

Facilitator training

Facilitator training and ongoing mentorship is central to sustainable delivery of VAST. Following participation in the VAST FC, trainee-facilitators should be incorporated into an upcoming VAST Course. The Course Director and Instructor should work closely to determine when a trainee facilitator has the required competencies to be an independent facilitator. This will vary considerably between individuals and has little to do with number of VAST Courses attended and more to do with the capacity to learn nuances of simulation-based medical education.

Monitoring and evaluation

The process for monitoring and evaluation of VAST is evolving.

Data collection currently includes:

- Participant sign in sheet at registration
- End of day evaluation forms
- Encouraging participants and trainee facilitators to utilise log-books. Log-books are incorporated into the VAST and VAST FC participant handbooks.

Course reporting is an important step in the planning of ongoing VAST delivery in a region. Please see appendix 3 for an example template for course reporting.

Health and safety

Volunteers participating in VAST travel at their own risk

All VAST volunteers are expected to take reasonable precautions and care for the health and safety of themselves and the participants on a VAST Course. This includes:

- Considering their personal risks of travel
- Seeking guidance from a travel clinic regarding required and recommended vaccinations and medications
- Obtaining personal travel insurance and seeking appropriate medical advice prior to travel
- Registering with your government travel advisory website and adhering to travel advisory warnings

Disclaimer:

- VAST cannot be held responsible or liable for accidents or injury incurred whilst undertaking VAST related activities

All VAST volunteers are required to sign the VAST volunteer agreement (appendix 4) in acknowledgement that they consent to participate in VAST related activities under the terms stipulated in the agreement.

Appendix I – Course implementation template

Overview																			
VAST Course dates																			
VAST FC dates																			
Proposed venue																			
Funding source																			
Available budget																			
Projected costs	<table border="1"> <thead> <tr> <th>Item</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>Venue</td> <td></td> </tr> <tr> <td>Catering</td> <td></td> </tr> <tr> <td>CPD accreditation</td> <td></td> </tr> <tr> <td>Travel</td> <td></td> </tr> <tr> <td>Accommodation</td> <td></td> </tr> <tr> <td>Equipment</td> <td></td> </tr> <tr> <td>Print materials</td> <td></td> </tr> <tr> <td>Total</td> <td>\$</td> </tr> </tbody> </table>	Item	Cost	Venue		Catering		CPD accreditation		Travel		Accommodation		Equipment		Print materials		Total	\$
	Item	Cost																	
	Venue																		
	Catering																		
	CPD accreditation																		
	Travel																		
	Accommodation																		
	Equipment																		
	Print materials																		
Total	\$																		

Faculty		
	Name	Email
Country Director		
Course Director		
Simulation Co-ordinator		
Course Instructor		
Local Facilitators		
Trainee Facilitators		
International Facilitators		

Equipment	
Outstanding equipment	

Notes

Appendix 2 – Equipment list

The equipment list below is for **one simulation group**:

- For 2 parallel simulation groups, 2 sets of the complete equipment list will be required

Category	Detail
General	<p>Laptop Projector and cable for laptop Speaker White board or large paper for debriefing Markers USB loaded with course materials and presentations Printed materials:</p> <ul style="list-style-type: none"> - VAST Course manual - VAST Course scenario documentation - VAST Facilitator Course manual - VAST Participant handbooks - VAST Facilitator handbooks - VAST ID clips, including: <ul style="list-style-type: none"> o Pre-anaesthesia and crisis management aide-memoire o Plastic name badge holder (<i>can be used in the future for a work ID card</i>) o Blank name badge - Supplementary resources: <ul style="list-style-type: none"> o Equipment checklist o Scenario documentation inventory o Participant registration template o Course timetable o Evaluation forms o Certificates: <ul style="list-style-type: none"> ▪ VAST Course ▪ VAST Facilitator Course <p>Wall posters:</p> <ul style="list-style-type: none"> - SBAR for handover - AMPLE for history - A to E for examination - ANTS framework - WHO Surgical Safety Checklist <p>Blu-Tack or adhesive for hanging posters Post-it® notepads (4 inch x 6 inch) Masking tape</p>
Mannequins	<p>Adult intubation trainer Paediatric intubation trainer (age ~ 3 years) Infant mannequin</p>
Monitors	<p>SimMon App loaded on 2 devices (iPad + iPad <u>or</u> iPad + iPhone) https://itunes.apple.com/ca/app/simmon/id364731597?mt=8</p>

Simulation equipment	<p>Organise equipment into 4 boxes:</p> <ul style="list-style-type: none"> - Boxes 1,2 and 3 are for use during all scenarios <ul style="list-style-type: none"> o Boxes 1, 2 and 3 should be located near the anaesthetic workstation - Box 4 contains <u>extra equipment</u> that is only required for certain scenarios <p><u>Box 1 - Airway equipment:</u></p> <ul style="list-style-type: none"> - Oral airway (3,4,5), nasal airway - Yankauer sucker, laryngoscope, laryngoscope blade (Mac 3) - ETT size 4, 5, 6, 7, 8, bougie, stylet - LMA (size 3 – ideally 2nd generation) - Tie, 20ml syringe <p><u>Box 2- Breathing equipment:</u></p> <ul style="list-style-type: none"> - Self-inflating bag (adult, paediatric, neonate) - Mapleson F circuit (Ayres T-piece) - Mask (adult, paediatric, neonate) - Nasal prongs, O₂ mask - Pulse oximeter probe (does not need to function) <p><u>Box 3 – Circulation equipment and medications:</u></p> <ul style="list-style-type: none"> - IV cannulae (14, 16, 18, 20, 22G) - 1 litre IIV fluid bag (empty), tubing - 500ml IV fluid bag (empty) with drug additive label - Oxytocin 40 IU, tubing - Tourniquet, tape - BP cuff, stethoscope, ECG leads - Labelled empty syringes – ketamine, thiopentone, propofol, succinylcholine, rocuronium, morphine, fentanyl, midazolam, adrenaline, atropine, ephedrine, ondansetron, antibiotic, oxytocin, ergometrine, carboprost, labetalol, hydralazine, MgSO₄, lignocaine, Tetanus immunisation - Labelled empty tablet containers – misoprostol, nifedipine, methyl dopa <p><u>Box 4 – Extra equipment:</u></p> <ul style="list-style-type: none"> - Surgical drape and clips x2 - Surgical gown x 2, gloves, hats - Surgical instruments (<i>a small range of general instruments</i>) - Patient gown - Spare scrubs (<i>note - participants are instructed to wear their own scrubs</i>) - C-spine collar - Pre-cut shirt and pants, reassembled with Velcro - Sheets for gravid uterus - Wedge or sheets for lateral tilt - 'Blood'-soaked pads: <ul style="list-style-type: none"> o Simple blood: Add a few drops of red food colouring in water o More realistic blood: Add 1 tablespoon of flour to 250mls of water. Simmer over a low heat for 30minutes. Allow to cool. Add red food colouring and ½ a drop of blue food colouring. Mix well. Keep refrigerated. Discard at the end of each Course. - Clean dressings for paediatric burns - Neonatal resuscitation equipment: <ul style="list-style-type: none"> o Neonatal self-inflating bag, neonatal mask o Suction (bulb or suction device) o Cord clamp or tie o Scissors o Towel <p><u>Additional large equipment required:</u></p> <ul style="list-style-type: none"> - Stretcher or operating room table - Pillow x 2 - Sheet x 2 - Small table x 2 (For surgical and anaesthesia equipment) - IV pole x 2
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Appendix 3 – Course reporting template (sample)

Please see below a recent course report as an example template for future course reports:



VITAL ANAESTHESIA SIMULATION TRAINING

VAST Course report - Hyderabad, India

25 Feb – Mar 1 2019

Dr Adam Mossenson



Executive summary

Situation

VAST and its associated Facilitator Course (VAST FC) were successfully delivered for the first time in Hyderabad, India in late February 2019.

Background

VAST was developed as a collaborative project between partners in high and low-resource countries and was piloted in Rwanda, January 2018. VAST uses immersive, low-fidelity simulation and covers core aspects of safe anaesthesia delivery, with a specific focus on non-technical skills. The Course underwent revision following the pilot and this most recent Course in Hyderabad represents the first time VAST has been delivered with the financial support of the WFSA and its funding partner Massimo. Given the time constraints of international and local faculty, an adapted two-day VAST FC preceding the three-day VAST Course. In total, 6 trainee facilitators attended the VAST FC and 16 participants the VAST Course.

Assessment

Both the VAST Course and its associated VAST FC were exceptionally well received. Whilst medical education and the standard of anaesthesia delivery in Hyderabad is advanced in comparison to low-resource settings, simulation represented a new platform for education for the majority of course participants. Course content was applicable and relevant in this context. The multidisciplinary nature of the simulation groups was a great asset in both scenario delivery and debriefing. There is a great thirst for ongoing VAST Courses and simulation-based training more broadly in India. Trainee-facilitators developed greatly over the week, however, ongoing mentorship and skill development is required before their reaching of independence in simulation delivery.

Recommendation

The overwhelmingly positive reception of VAST in Hyderabad and desire for further simulation-based training supports planning future courses. VAST was able to engage multidisciplinary learners and simulate realistic team dynamics; all future course should continue to strive for participants of mixed clinical backgrounds (i.e. anaesthesia, nursing, midwifery and surgery). Ongoing development of trainee-facilitators must occur following a set of courses. The encouragement of practising debriefing in their workplace, engagement with and ongoing mentorship by international facilitators on future VAST Courses will help hasten the development of the local capacity for simulation delivery and sustainable future delivery.

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Course background

Since its inception, VAST has been a project endorsed by the WFSA. To date, previous VAST Courses have sourced funding from other agencies and institutions. The delivery of VAST in Hyderabad represents the first WFSA funded VAST Course. The external donor was Massimo. Essential to the planning, delivery and sustainability of VAST is a country coordinator or 'local champion'. The WFSA chose wisely in the appointment of Dr Gita Nath as VAST Telangana coordinator. Dr Nath seamlessly coordinated the venue, participants, was instrumental in course logistics as well as being an integral member of the trainee-facilitator group. A conscious decision was made to recruit senior clinicians and academic staff for the inaugural VAST course; the purpose was promote 'buy-in' to the program from the top-down. In addition, there was engagement with the local chapter of the Indian Society of Anaesthesiologists (ISA) and the Indian Association of Paediatric Anaesthesiologists (IAPA) and a welcome dinner was organised for all parties involved in the course.

Faculty and attendees

International faculty:

- Dr Adam Mossenson (Australia), specialist anaesthetist, VAST Founder and Managing Director
- Michelle Murray (Canada), nurse simulation specialist
- Dr Anna West (Australia), specialist anaesthetist
- Dr Tom Druitt (Australia), specialist anaesthetist

Observers:

- Amal Paonaskar (London), WFSA projects officer
- Giresh (India), Nurse at Care Institute of Health Sciences

Participants:

Name	Clinical role	Gender	VAST Course	Facilitator Course

Venue and equipment

The Care Institute of Health Sciences (CIHS) was chosen as the location for the Course. The motivation for this was multifactorial, in part due to Dr Nath's experience of running courses with CIHS and due to the relatively short preparatory time frame for course organisation. The venue proved to be an ideal space for running two parallel simulation groups, with isolated debriefing rooms, a large central discussion area and all the required IT to run VAST. In addition, Michelle took the opportunity to train Giresh (CIHS staff with a nursing background) in the processes of running a VAST Course. Giresh will be a great asset for the future delivery of VAST if there is an ongoing association with CIHS.

Equipment was predominantly supplied by CIHS. All simulation mannequins and nearly all other simulation equipment was provided. There were no specific paediatric mannequins, but as in previous courses, we made use of the adult mannequins for the paediatric scenarios. The visiting Faculty/WFSA provided all the of the VAST teaching materials, printing, iPads (4) and spare scrubs. A small surplus of VAST ID clips and aide-memoirs was also left. All of these resources were inventoried and left in the care of Dr Nath. For future course delivery there will need to be printing of VAST/VAST FC handbooks. Local printing of future course materials should be encouraged where feasible.

Summary of evaluations

VAST Course:

There was an appreciation expressed regarding both the technical components covered in VAST and the focus on non-technical skills. The supportive and organised approach of the faculty was widely appreciated. There was an overwhelming sentiment amongst the group that VAST should be offered on a rolling basis in Telangana and the Very VAST simulation curriculum (still under development) should be included into post-graduate anaesthesia medical education.

VAST Facilitator Course:

It was evident from the outset that simulation and non-judgemental participant lead debriefing was a radically different mode of medical education, even for this extremely experienced group of medical educators. The enthusiasm and drive to develop this new skill amongst the trainee facilitators was palpable. Two comments made during reflection at the end of day 2 of the facilitator course resonated deeply with the sentiments expressed in the formal evaluation forms (see appendix 2):

- "It is liberating to know there is a different way of teaching"
- "Our students will never have experienced such kindness"

There was a strong desire amongst the trainee-facilitator group to be involved in future VAST Courses and more broadly to expand simulation-based education as a regular component of teaching in their institutions.

Challenges and lessons learnt

Take home messages:

- The VAST Course has a demonstrated applicability and utility for specialist anaesthetists in India
- Low-fidelity simulation can generate meaningful discussions and learning relating to core clinical practises and non-technical skills
- Delivery of VAST in region should be planned as a longitudinal initiative with multi-course funding to support the development of the VAST Network of facilitators and promote the local capacity for simulation-based education more broadly
- The VAST Facilitator Course can be adapted for use prior to the first VAST Course in a new setting for a group of senior educators with good command of the clinical content of VAST
- Ongoing mentorship, graded exposure and realistic goal setting regarding independence in facilitation is required following participation in the VAST FC
- Tailored and responsive delivery of facilitator training is a must

VAST Course:

This was a novel course in relation to the high calibre of the participants. Notwithstanding, the course content and focus on non-technical skills appeared to have great relevance and generated meaningful learning even for this group of senior clinicians. Future courses would however benefit from a more varied spread of anaesthesia providers, in particular to garner perspectives from anaesthesia trainees through to senior consultants. It was a real asset having nurses and surgeons as part of the simulation groups. The cases and clinical content were identified as reflective of their practice and did not need amending.

The need to build confidence and engagement of the nursing colleagues was acknowledged by all faculty. Each simulation group however only had one nurse, potentially isolating this participant and expecting them to represent all nurses opinions on a subject. As per our recommendations in the facilitator manual, ideally, each simulation group should have 2 nurses and a surgeon to combat this potential issue.

In the months preceding this course, there were repeated attempts to identify a suitable person to fill the role of simulation coordinator. This coordinator works to inventory equipment, setup and changeover the sim rooms and enable the facilitators to focus on the delivery of the sim and debriefing. Prior to the course, this person was not clearly identified. Michelle aptly trained Giresh (staff at the CIHS) in this role. Giresh's ability to be part of ongoing VAST courses outside of CIHS are unclear. For future courses, someone with a clear affiliation with the VAST coordinator (i.e. Dr Nath), who can have assured ongoing association VAST should be clearly identified.

VAST FC:

Development of the local facilitator network, promoting sustainable course delivery and eventual handover is central to the design of VAST. We widely acknowledge in the VAST FC that the concepts of simulation are complex and development of skills in facilitation is a long journey; achieving independence in facilitation after only one course is an unrealistic goal for the majority of trainee facilitators. Even amongst this group of senior clinicians, the need for ongoing development in the skills of facilitation is clear. Going forward, an approach towards facilitator evaluation and competence assessment needs to be incorporated into training and mentorship.

Over the week, we emphasised to trainee-facilitators that there are many avenues for ongoing development of skills in debriefing, the more complex component of facilitation. All trainee-facilitators were strongly encouraged to regularly participate in teaching using the VAST

debriefing framework in their clinical practice with the trainees and/or theatre teams. This can occur during routine clinical practice or following review of a critical incidence. In addition, there was a strong desire to plan another VAST Course to follow 3-6 months in order to consolidate skills.

Post-course follow-up

Following the course, electronic resources were shared with participants. These resources expand upon some of the key discussions and themes discussed throughout the Course. Course participants were also encouraged during the commitment to change workshop to keep a logbook of cases whereby their learning from VAST and new appreciation of non-technical skills impacted on patient care. We will endeavor to follow up participants in the months following the course to allow ongoing reflection and application of their new skills.

Future directions

Dr Nath has initiated the conversation regarding the future of VAST in Telangana. To quote from her follow-up email after the course, the key components that need to be considered are:

- Timing of the next course: We might want to have another course in 3-4 months time so that the skills we facilitators learnt can be reinforced. Maybe 2 external facilitators can come for this and we can also invite the participants we identified to be trained as facilitators so that we build up a base of enough facilitators to run future courses.
- Venue for the next course: The choice is between having it at CIHS versus doing it at a hotel. If we decide to do it at a hotel, we will need to procure all the equipment which was provided by CIHS – the cost will have to be calculated. Also, the back-stage help which was provided by Girish, Madhu, Dinesh etc will not be there.
- Costing: How many future courses will be financed by the WFSA? I understand that the Telangana project finishes at the end of 2020.
- Participants: I think we should start inviting trainees with at least 2 years anaesthetic experience as well as practising anaesthetists as participants for the course. So that we start doing what the course is meant to do, which is to improve crisis management and anaesthetic non-technical skills in practising anaesthetists.

Dr Nath has aptly highlighted the issues that need to be considered in the future planning of VAST in Telangana. Securing ongoing funding to sustainably support the delivery of the VAST Course is essential. In addition, it is our goal to support the delivery of simulation education more broadly and VAST will share its Very VAST simulation curriculum, supporting the delivery of longitudinal simulation in post-graduate anaesthesia education. Several members of the trainee-facilitator pool are in the position to institute this curriculum in their institution which will incorporate regular simulation to a large number of anaesthesia trainees. VAST has a long term vision for the incorporation of simulation design training for local simulation facilitators who have developed experience with VAST and wish to design tailor made simulation for their local context.

Course report appendix I – Participant evaluations

VAST Facilitator Course Feedback

Hyderabad, India, Feb 25 – 26, 2019

What did you like:

- Splitting the various steps of facilitation into stages and practising them
- Clear explanation
- Simulation was made easy to understand x 2
- Good focus on skill development
- Friendly and supportive facilitators x 2
- How to highlight protocols like SBAR and AMPLE
- Debriefing practice x 5
- Fun learning atmosphere x 3
- Good venue
- Involved everybody
- Course content
- Planning and teaching
- Appreciating the difference between conventional teaching and debriefing
- The importance of non-technical skills was made evident
- Enjoyed the conversation on colleagues who need support
- Realistic scenarios with minimal equipment

Suggestions for improvement:

- Make debriefing easier to understand
- Consider a skills session post lunch to keep us more alert
- More time to practice
- It would be easier to have done the facilitator course after having done the VAST Course first
- Continue to emphasise non-technical skills – there is very little NTS taught in India in a systematic way x 2
- Pocket cards to be made available for quick reference when debriefing
- Introduce participants on day 1 to the way of debriefing and facilitating to reach objectives of their own

What can you take away from the course:

- Depersonalise debriefing
- Observe non-technical skills and discuss them
- Keep clinical teaching to a minimum
- Non-threatening way of communicating
- Stay focused on the learning objectives
- Organised and streamlined way of doing things
- Self-reflective learning is the best way of learning and the facilitator needs to tailor it to the needs of the group
- Do your homework well before
- Importance of meticulous presentations
- Tips and tricks for debriefing
- Importance of debriefing x 2
- Importance of summarising and communication
- Focus on developing non-technical skills x 2

- Distil information during debriefing
- How to frame questions in the analysis phase
- How to facilitate without getting into the conversation
- Time management
- Participant driven take home messages x 2

Other comments:

- We had a fun learning time and did not feel stressed to learn new things x 2
- Its good to be part of facilitator training
- Keep up the good work
- This team is fantastic, just perfect
- The course could be a little longer – maybe 3 days to have more practice
- A little bit tiring – maybe because I had a lot of background things running in my mind other than VAST

VAST Course Feedback

Hyderabad, India, Feb 27 – Mar 1, 2019

What did you like:

- The debriefing method x 5
- Recognising the small gaps in communication that would probably affect patient outcome
- Committed faculty, ideal environment and space x 2
- Simulated case-based scenarios were realistic and relevant x 4
- Interactions in scenarios x 2
- Skilled teachers x 2
- Friendly learning environment x 5
- Involved every single candidate
- Fun to learn
- Group performance will give team spirit
- The concept of simulation is new to me
- Helping babies breathe plan x 2
- Pain management session x 3
- Difficult intubation sessions
- Encouragement of participation
- Team leader role
- Interactions with the rest of the team
- Importance of non-technical skills
- Very good and very helpful
- Group discussion will bring the best management
- Management of eclampsia patients
- Management of labour patients
- How to handle septic patients
- We learnt how to handle the patient and the critical situation
- Orientated to practical situations
- Everybody gets involved x 3
- Gained a lot of knowledge and skills
- Common clinical scenarios were discussed
- Team approach for task management
- No easy answers session

- A-E approach for emergency situations
- Demonstration scenario by the facilitators helped me understand the simulation better
- Trauma situations x 2
- Complex case scenarios and multitasking x 2
- Lots of improvement in communication with team members
- Efforts to create reality in the situations
- Management of burns

Suggestions for improvement:

- Nothing x 6
- More scenarios (feedback on day 1)
- More learning videos (audiovisual)
- Should be incorporated into the learning manuals at the postgraduate level x 3
- Provide hard copy of course materials ahead of time
- Organise some videos of simulation for day 1 to better understand the how to involve into the roles given to participants
- During debriefing, facilitators should share their views at the end x 2
- Improved models / level of simulation
- Facilitators should explain the importance of the take home messages
- If the demonstration (repeat) scenario was done on the first day it would have been better for us to understand simulation
- Continuous evaluation by attending these learning and refresher courses
- Continue these programs for helpful self-confidence and motivation

What can you take away from the course:

- How to manage pain
- Checklists are important x 9
- Patient safety is first. It can be improved with technical and non-technical skills
- Practice using protocols and guidelines
- Use good communication and team approach x 3
- Non-technical skills x 2
- We should implement debriefing after facing any critical event in day to day practise
- Every student must be exposed to all kinds of rare emergencies (in simulation) before they finish their post-graduation x 2
- Working as a team with good coordination reduces errors and stress x 2
- Simulation learning made us strong (less panic) during a real scenario
- Complete the surgical safety checklist
- Handover systematically x 2
- To avoid human error get team involvement
- Do not hesitate to call for help for safety of the patient x 2
- Patient counselling, reassure and support x 2
- Tackle hierarchy in your workplace x 2
- Prevent burnout in your colleagues x 2
- How to manage time
- Coordination of the team and multitasking x 5
- Prepare, preplan and prioritise in various situations x 6
- Assess, intervene but respect each other's feelings
- Team work is a must x 2
- Communicate and call for help in a crisis x 4
- Professional respect and support colleagues x 2

- How to utilise resources
- Don't create hierarchy situations x 2
- Don't shift patients when unstable clinically
- Situational awareness with quick assessment and re-assessment
- Keep your eyes wide open
- Team leader should be assertive and allot specific tasks

Other comments:

- Organised well x 2
- We should conduct more simulation trainings to improve our skills
- Great way of learning new things
- It's very helpful in crisis management to learn this systematic approach
- Great work
- It's an effective way of teaching and learning
- Simulation is a powerful way of teaching
- Enjoyed the training x 2
- Training needs to be done more regularly
- Trainers are efficient and friendly
- Encouraging facilitators with good communication skills
- It is new and very informative in understanding the relevance and importance of non-technical skills and other important aspects like checklists, planning and executing the plan
- It was a wonderful learning experience. Thank you for including us and kudos to the team for a great workshop!
- All the facilitators and team from abroad were excellent, friendly with good commitment x 2
- Sessions were good in that they made us realise our backlogs
- Great job! Well designed course. Great new respect for teamwork

Course report appendix – Course Photos

Appendix 4 – VAST volunteer agreement

Name	
Date of birth	
Address	
Contact number	
Email	
Emergency contact: - Name - Mobile no	

Thank you for volunteering to be part of Vital Anaesthesia Simulation Training (VAST).
Please note the following policies in relation to your involvement in VAST:

Delivery:

- VAST aims to build capacity for simulation-based education in under-resourced environments with the principle aim of improving perioperative safety and outcome for patients. You will endeavour to deliver VAST in line with the frameworks and instructions set out in the VAST teaching materials.

Conduct:

- Volunteers will aim to empower local educators and mentor the local faculty in order to promote sustainable ongoing delivery of VAST
- Engagement with colleagues should be guided by the ideals of respect, equality and avoidance of discrimination.

Liability and insurance:

- Volunteers participate in VAST at their own risk
- VAST cannot be held responsible or liable for accidents or injury incurred whilst undertaking VAST related activities
- In the event of kidnap, ransom or force majeure VAST will not be able to provide any compensation or assistance
- It is your responsibility to ensure you are covered for personal travel insurance and professional liability insurance.

By reading and signing the volunteer agreement, you acknowledge and consent to participate in VAST in accordance with the principles described in this agreement

Signature: _____

Date: _____