



VITAL
ANAESTHESIA
SIMULATION
TRAINING



VAST Course and VAST FC Course

Kigali, Rwanda, December 13-15, 2024



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Executive summary

Situation

Vital Anesthesia Simulation Training Facilitator Course (VAST FC) was offered to a group of staff from King Faisal Hospital Rwanda (KFH) and group from Kigali University Teaching Hospital (CHUK). This course was organized and led by Dr. Jackson Kwizera and Dr Gaston Nyirigira, through the collaboration of VAST Ltd (led by Dr Adam Mossenson) and the Initiative for Medical Equity and Global Health (led by Dr Eugene Tuyishime). This course was sponsored by King Faissal Hospital (KFH) and Canadian Anesthesiologists Society International Education Foundation (CASIEF).

Background

VAST course was developed to help teach and reinforce essential clinical practice and non-technical skills for the perioperative teams in resource-constraints settings with the use of low-fidelity equipment. VAST FC allows to train new facilitators with a focus on didactic materials of VAST course, scenario preparation, pre-brief, scenario conduct, and doing a meaningful debriefing while ensuring a conducive environment.

VAST Foundation Year (FY) is a simulation program for first year residents which was designed since 2019, but it faced lack of trained simulation facilitators as a major barrier to its successful implementation in Rwanda. Conducting this VAST FC was an essential step to increasing the number of competent simulation facilitators needed to run VAST FY at the University of Rwanda and other residency programs across Rwanda.

The experienced VAST Facilitators are planning to mentor trainee VAST Facilitators (after completion of the VAST FC) while running VAST FY curriculum on monthly basis for first year residents throughout the academic year (2024-2025).

Assessment

The audience (19 participants) was very engaged, and the take-home messages indicated that they found the course to be useful. Participants showed various levels of understanding and background experiences with simulation especially the senior anesthesiologists without enough exposure to simulation during their training. Debriefing seemed to be new and difficult concept for some participants. Conversational techniques were viewed as an interesting topic for most participants. Debriefing being a complex concept and skill, participants promised to find opportunities for regular training such as teaching the VAST FY.

Recommendations

- Continue with the plan to provide VAST FC to all eligible participants. Training more simulation facilitators will lead to a sustainable simulation training for anesthesia residents and other perioperative healthcare providers.
- Provide opportunities for mentorship to new trainee facilitators towards becoming independent and competent simulation facilitators.
- Conduct VAST FY courses at different workplaces (teaching hospitals) with help by VAST Facilitators decreasing logistical challenges and increasing trainee facilitators' participation rate and the chance of sustainability of the VAST FY program.
- Arrange the VAST FY teaching schedule ahead of time to allow the flexibility to teach based on the availability of Facilitators (both trainee and experienced).

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Acknowledgements

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1. CASIEF
2. King Faisal Hospital
3. VAST Ltd
4. IMEGH

Attendees

| VAST Facilitator Course | | | |
|--------------------------------|--------------------------------|------------------------|--------------------|
| Name | Professional role | Course role | Workplace |
| Jackson Kwizera Ndekezi | Anesthesiologist | Course director | Rwanda |
| Gaston Nyirigira | Anesthesiologist | Instructor | Rwanda |
| Yvonne Rugasaguhunga | Clinical officer of anesthesia | Facilitator | KFH |
| Malaika Asabwe | Critical care nurse | Simulation coordinator | KFH |
| Josue Nzarora | Anesthesiologist | Participant | CHUK |
| Angelique Ntegerejuwampaye | Anesthesiologist | Participant | CHUK |
| Dona Fabiola Gashame | Anesthesiologist | Participant | CHUK |
| Samuel Muhumuza | Anesthesiologist | Participant | CHUK |
| Guillaume Butungane | Anesthesiologist | Participant | Rwamagana Hospital |
| Eric Turinayo | Anesthesia resident | Participant | UR |
| Sabrine Niyirera | Anesthesia resident | Participant | UR |
| Jean de Dieu Singirankabo | Anesthesia resident | Participant | UR |
| Belancille Maniriho | Surgery resident | Participant | UR |
| Gilbert Gasengayire | Nurse | Participant | CHUK |
| Christophe Ndikubuhange | Nurse | Participant | CHUK |
| Alex Ndayisaba | Nurse | Participant | CHUK |
| Nadine Mukamuvunyi | Nurse | Participant | CHUK |
| Solange Nyirabihogo | POCCS director | Participant | CHUK |
| Jean Claude Kubwimana | Head theatre nurse, KFH | Participant | CHUK |
| Elie Hategekimana | Head anesthetist, KFH | Participant | CHUK |
| Francis Ntawukuriryayo | Head Resuscitation team, KFH | Participant | CHUK |

Venue and equipment

Venue

The VAST FC was conducted at Solace ministries conference rooms, Kigali-Rwanda.

Equipment

The ID badges, equipment identification, and posters and cognitive aids were brought by the VAST team. VAST also provided the printing of the translated course materials and the office supplies during the week. Some of the materials were rent from VAST Ltd.

Materials were checked and put into place by the VAST team. We didn't miss anything in regard to necessary equipment and materials.

VAST Facilitator Course

Preparation:

This course was delivered to a multidisciplinary team of participants made up of doctors, nurses and non-physician anesthetists (NPs) from CHUK, KFH and University of Rwanda by the VAST faculty team. Coordination of the process was under VAST and IMEGH administration. We were using English as teaching language. Course materials have been already prepared by the VAST organization. The schedule was modified slightly to focus on the VAST FY facilitation on day 3 of the course.

Facilitation and debriefing practice

Simulation facilitation was a novel concept to some participants. The practice of all 4 elements of VAST scenario facilitation: Briefing, iPads/prompts/scenario conduct, debriefing, and co-facilitation was pivotal to the successful conduct of the course. Presence of VAST facilitation checklist also played a big impact on the success of the course. Participants were divided into two groups to allow enough time for simulation practice and rotation between different roles during facilitation between the groups. Meta-debriefing was done at every step for the 4 elements of facilitation to make sure they get the maximum out of the course.

Scenario design:

Participants worked into 4 sub-groups to design new scenarios using the VAST scenario template. The groups were formed based on profession; and the CHUK team made two groups as they were enough number to do so. Each group presented its scenario to the rest of the group. We didn't have time for them to go through the scenario and try playing them due to time constraints.

Application of learned skills during VAST FC

The VAST FC was an opportunity for the VAST FC graduates to start practicing the VAST principles in facilitation and debriefing of majority of the VAST Course scenarios. Graduates had time to prepare the scenario, do briefing, facilitate the scenario sequence and practice the debriefing of very case scenario. The team of VAST instructors helped with PowerPoint presentations and mega-debriefs during every step of scenario facilitation. We also had the opportunity to apply the VAST facilitation checklist throughout the VAST FC.

What went well

- VAST has got a different and unique approach to teaching
- I enjoyed learning something new
- Team-working spirit
- No judgement to anyone in the team
- Equality in power of teamworking
- How to conduct a scenario, do give tasks and importance of non-technical skills
- It clarifies well what we've been doing into the participants manual
- Importance of debriefing and debriefing frameworks
- Simulation is a fantastic way to learn and achieve more skills
- Simulation needs more practice
- The SBAR approach, and the Capt. Sully movie
- Time management during scenario simulation and conducting a scenario facilitation
- The structured way of debriefing
- I enjoyed being part of this facilitator course and I will keep sharing knowledge and skills
- The engagement of all the participants, Encouragement from Facilitators
- Thanks. We are very satisfied with the training. And it is very practical and interactive
- The facilitators are so encouraging. They make the participants feel safe to learn and even when they are giving us points to improve, they do it in an encouraging and supportive manner. It is very cool to watch
- I like the mantra...we are all smart and capable. It redirects us to learning and our ability and knowledge as healthcare professionals and keeps us focused on the objectives of the scenarios.

Challenges

- Time management
- Non-technical skills as novel practice to us
- Linking all actors of a scenario if there are more than one lead participants
- Mastering when to prompt an actor to play his role
- Mixing up language so that we can understand every single message of the course
- Focus more on how to design and define scenarios
- Maximizing practice helps to understand to objectives of this course
- More practice is needed to make graduates more familiar with facilitations
- Give more scenarios
- Formulating non-judgmental questions
- Debriefing strategies that help formulate questions which prompt trainees to actively participate into discussions
- More time to prepare simulations scenarios
- Clear instructions before scenario conduct
- Scenario design and need more time in the schedule

Take home messages

- To work in enthusiastic environment
- Group dynamics where there is no Boss
- Systematic approach to clinical crisis
- Design a scenario, Implementing the practice, how to brief, and debriefing
- Non-technical skills are important
- The education based on simulation is on top and VAST is doing its best to improve education using its methods
- Sharing skills and knowledge back home
- Non-judgmental practice
- Clinical frameworks like SBAR, APMLE and A-E
- Right questions are key
- Conducting debriefing with regards to learning objectives
- Share with my colleagues the importance of NTS in our daily work by preparing presentations and playing scenarios
- Debriefing techniques by using RAAT techniques
- Formulating learning objectives
- Conduct many scenarios to learn how to conduct debriefing

Evaluation of the course facilitators:

- Well prepared materials
- A very well structured teaching that helped during scenarios
- Reduce theory and increase practical sessions
- Good teaching methodologies and good listeners
- They are excellent
- Super facilitation
- Time management
- At the starting point, the introduction was done well but next time make it more clear
- Facilitators were knowledgeable of the content and tasks
- Well organized, wonderful team of facilitator
- Lovely team who transmitted knowledge
- Help the new team of VAST FC graduates to achieve a maximum level of VAST skills

Recommendations

- More exercises and practice to be familiar with facilitation
- Make sure there is enough time for this course
- suggest this course to be delivered to other departments
- Continue use of new cognitive aid in debriefing, it was well received and utilized
- Consider developing the scenarios created by the groups further to increase number of scenarios available in courses
- Consider keeping scenario design but due to time may not always be possible to trial them in a simulation

- Encourage VAST facilitator course graduates to take part in VAST courses in lesser resource hospitals or countries that are French speaking as all were strong participants and would be great VAST ambassadors

Challenges and lessons learnt

- Starting time has been an issue for participants specifically due to combining their daily duties (ward round, morning handover)
- Most of the VAST Course scenarios were designed to be conducted by the anesthesia provider: the other members of the team were not aware of what should be next during scenario simulation.
- Hierarchical tendencies that govern their daily work. They knew that this task is assumed by maybe a doctor not by a nurse or anesthetist. The answer to that was to tell them that in a crisis you don't have time for hierarchy but rather to save the patient.
- Simulation was a new concept to some of the attendees and difficult to understand: One of the solutions was to give enough time for simulation practice with guidance and allowing participants to ask questions in Kinyarwanda specifically on their roles and communication.

Overall recommendations:

1. Can we start considering the adaptation of an inclusive name of the VAST Course like "Perioperative" instead of anesthesia into the acronym VAST or for the Rwandan context, we can find another name like "Perioperative VAST Course". This can allow access to more support from other professional organizations and potentially to reach more participants. Some new scenarios led by other members of the perioperative team might be needed.
2. Recommend the introduction of VAST into essential resuscitative courses that are certified and recommended by the Ministry of Health, Rwandan regulating councils, and University
3. Conduct VAST FC course for senior anesthesiologists and surgeons in Rwanda and specifically at University of Rwanda to enlighten the need for adult teaching adaptation in Rwanda
4. VAST and IMEGH should find a sustainable funding model to deliver VAST FC and VAST FY courses regularly in Rwanda

Appendices

1. Course Photos



Group photo for VAST FC



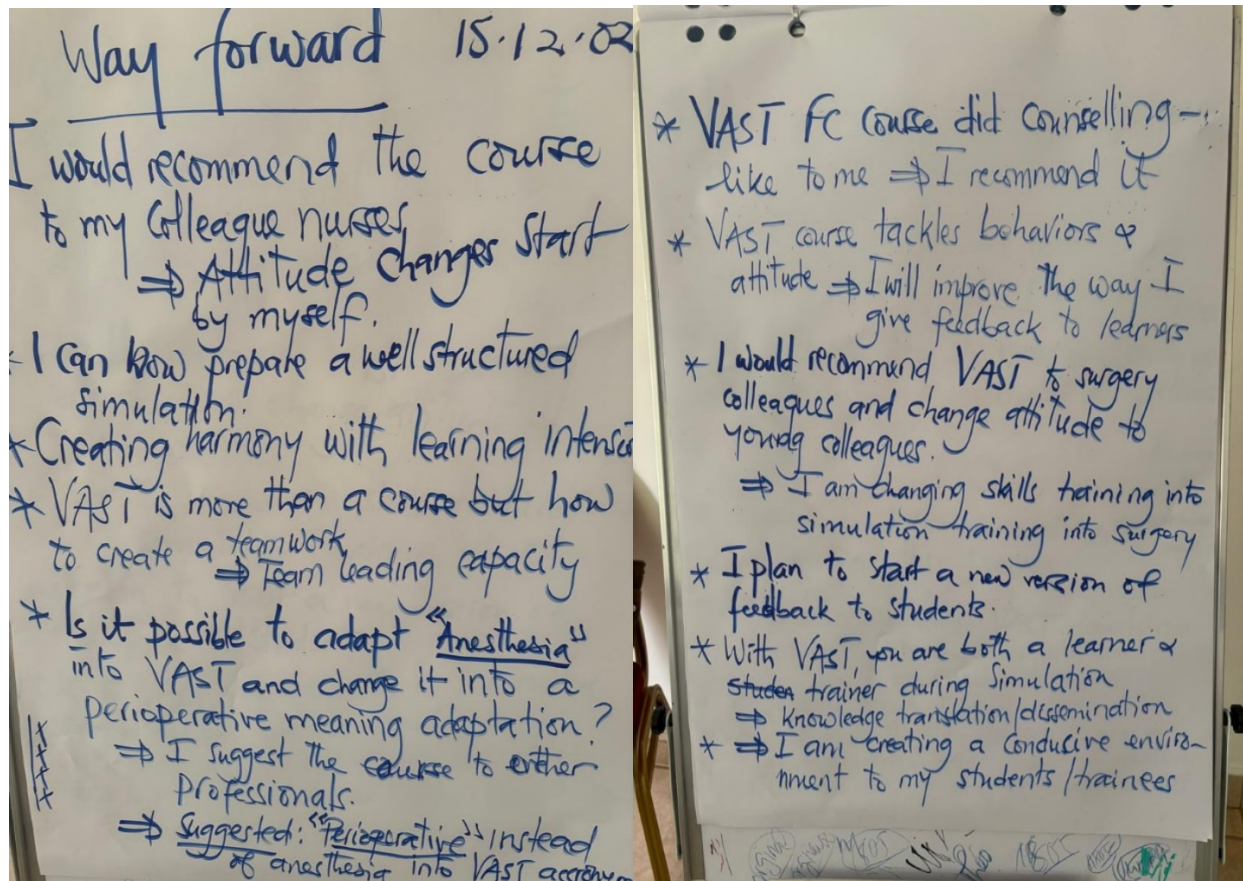
During Simulation scenario



During didactics on how to conduct scenario facilitation



Post course Certification



Some of the reflections and objectives of VAST FC at the starting point

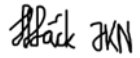
2. VAST schedule

| Day I | | |
|------------------|-------------------------------|--|
| Time | Session | Facilitator |
| 0800-0815 | Registration | |
| 0815-0845 | Introduction | Dr Jackson Kwizera |
| 0845-0915 | Orientation and demonstration | Yvonne Rugasaguhunga |
| 0915-09:45 | Nuts and bolts | Dr Jackson Kwizera |
| 09:45-1015 | Scenario design 1 | Dr Celestin Seneza and Dr Jackson Kwizera |
| 1015-1030 | Morning tea | |
| 1030-11:45 | Debriefing framework | Dr Jackson Kwizera |
| 1045-1230 | Facilitation practice | Dr Gaston Nyirigira and Yvonne Rugasaguhunga |
| 1230-1315 | Lunch | |
| 1315-1345 | Scenario design 2 | Dr Gaston Nyirigira and Yvonne Rugasaguhunga |
| 1345-1430 | Conversational techniques | Dr Jackson Kwizera |
| 1430-1445 | Afternoon tea | |
| 1445-1615 | Facilitation practice | Yvonne Rugasaguhunga and Dr Jackson Kwizera |
| 1615-1645 | Scenario design 3 | Dr Gaston Nyirigira and Yvonne Rugasaguhunga |
| 1645-1700 | End of day evaluation | All team |
| | Debriefing | All team |

| Day 2 | | |
|------------------|-----------------------------------|---|
| Time | Session | Facilitator |
| 0800-0815 | Day 1 reflection | Dr Jackson Kwizera |
| 0815-0900 | Simulation in context | Dr Jackson Kwizera |
| 0845-1015 | Non-technical skills | Dr Gaston Nyirigira |
| 1015-1030 | Morning tea | |
| 1030-1200 | Facilitation practice | Dr Jackson Kwizera and Yvonne Rugasaguhunga |
| 1200-1230 | Scenario design 4 | Yvonne Rugasaguhunga |
| 1230-1315 | Lunch | |
| 1315-1430 | Facilitation practice | Dr Gaston Nyirigira and Dr Jackson Kwizera |
| 1430-1445 | Afternoon tea | |
| 1445-1515 | New scenario delivery and debrief | Yvonne Rugasaguhunga |
| 1515-1530 | End of day evaluation | All team |
| | Debriefing | All team |

| Day 3 (VAST Foundation course practice) | | |
|---|-------------------------------------|---|
| Time | Session | Facilitator |
| 0800-0815 | Day 2 reflection | |
| 0815-0830 | Introduction | Dr Jackson Kwizera |
| 0830-0930 | Operating room preparation | Yvonne Rugasaguhunga / Participants 1,2&3 |
| 0930-1000 | Emergency Induction | Dr Jackson Kwizera/ Participants 4,5&6 |
| 1000-1030 | Morning tea | |
| 1030-1100 | Regional anaesthesia | Yvonne Rugasaguhunga / Participants 7,8&9 |
| 1100-1200 | Postpartum haemorrhage | Dr Jackson Kwizera/Participants 10,11&12 |
| 1200-1245 | Lunch | |
| 1245-1330 | Complex paediatric emergencies | Dr Gaston Nyirigira/Participants 13,14&15 |
| 1330-1415 | Trauma ongoing life threats | Dr Jackson Kwizera/Participants 16,17&18 |
| 1415-1430 | Afternoon tea | |
| 1430-1515 | Mega-debriefing | Dr Gaston Nyirigira |
| 1515-1600 | Way Forward/Discussion | Dr Jackson Kwizera |
| 1600-1615 | Certificates and Group photo | All team |
| | Final Debriefing | All team |

Prepared by



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