With generous support from Johnson & Johnson, ACOG has completed the implementation phase of surgical skills and operative obstetrics training in Uganda. Together with our partners, we are poised to expand the program to ensure sustainable integration of the necessary range of surgical skills and operative obstetrics required to prevent death and lifelong, debilitating injury to women and their newborns in Uganda.

OBJECTIVES

ACOG will meet the objectives of improved overall quality of health care for women, adolescents and children through this program by:

- Building surgical capacity among health care providers especially in operative obstetrics.
- Enhancing and expanding national surgical education curricula and training among ob-gyns, other physicians and non-physician clinicians to provide quality surgical care.
- Supporting the government of Uganda’s goal of increasing access to Cesarean deliveries and other comprehensive emergency obstetric and neonatal care services as part of its Roadmap to Accelerate Reduction of Maternal and Neonatal Mortality and Morbidity.
- Strengthening partnerships to support national surgical plans to include operative obstetrics and support local implementation of guidelines.
- Identifying innovations in technology and implementation to ensure long-term sustainability of surgical obstetric care.

ACOG'S PARTNERSHIP APPROACH

ACOG proposes to expand upon its successful surgical obstetrics training program through:

- **Stakeholder engagement** with relevant parties to disseminate findings from the SOO program and to develop a plan for sustainable integration of the training into medical education. Long-term advocacy will include engaging national stakeholders, including the Ministry of Health (MOH), universities and facilities to integrate surgical skills and operative obstetrics into national surgical plans and health care funding and to standardize surgery curricula across the country.
- **Curriculum refinement** to contextualize the pre-service education and training of ob-gyns and other providers in surgical skills and operative obstetrics and to discuss innovations in training and mentoring. This modified curriculum will be utilized in the continued training program at Makerere and Mbarara Universities, while expanding it to other universities.
- **Integration of innovative approaches** to training and mentorship, including integration of midwives and other healthcare providers into team-based training to ensure that the entire team supporting mother and baby develop communications and clinical skills to ensure consistent, high quality care.
PROGRAM PLAN

I. Next Phase of Stakeholder Engagement and Curriculum Development

Stakeholder Meeting to Review the First Phase of Training
ACOG proposes conducting a Stakeholder Forum in Kampala, Uganda to disseminate findings from the SOO program and to develop a plan for sustainable integration of the training into medical education. ACOG and Drexel would convene this forum. Discussion will include opportunities to integrate this training into the pre-service training of other health care providers including non-physician clinicians, depending upon scope of practice requirements.

The Stakeholder Meeting will allow participants to discuss identified challenges and develop solutions to address them. Local experts will address specific needs and objectives of the universities and will integrate lessons learned from previous trainings to finalize its integration into residency training. Additionally, candid conversations about the requirements necessary to sustain this training program will take place to make sure that the program will continue as part of the training of health care providers. These issues include space requirements, data collection and follow up, and simulation lab supplies. Stakeholders include chairs of the Departments of Obstetrics and Gynecology, professional ob-gyn associations, Ministries of Health and Education, ACOG Fellows, US university programs on-site, other NGO partners working in the country.

Curriculum Forum to Review Surgical Obstetrics Curriculum, Teaching Methods and Implementation
It is the consensus of US and Ugandan faculty that the surgical obstetrics curriculum needs to be revised; indeed, it has been updated as trainings have been conducted. The Curriculum Review Forum will bring together about 15 key stakeholders including university faculty that run ob-gyn residency programs, US educators, students of the Makerere and Mbarara training program, other universities working in Uganda, and Ministries of Health and Education to review current operative obstetrics curricula. Stakeholders recognize the need for standardization and have begun to address the issue; this forum will be the next step in making recommendations for a standardized, Ugandan curriculum in surgical skills and operative obstetrics.

Multiple associations and educational institutions, including ACOG, APCO, FIGO and CREOG\(^1\), have simulation and surgical curricula resources that can be drawn upon and modified for local use. The forum will provide an opportunity to discuss the training components, including new ideas for training materials and possible virtual training components that could be added to this curriculum to strengthen it and leverage the most current training methods. ACOG will support country-led programming to define learning objectives and core competencies, conduct assessments of training needs and define standards for training that are aligned with and enhance national guidelines.

In addition, partners will discuss further enhancement of data collection systems, monitoring mechanisms and supportive supervision programs, which will allow for ongoing quality improvement of care delivery. We anticipate that both the Stakeholder forum and curriculum review will be conducted in the first quarter of 2018.

\(^1\) APGO-Association of Professors of Gynecology and Obstetrics; FIGO-International Federation of Gynecology and Obstetrics; CREOG-Council on Residency Education in Obstetrics and Gynecology
**Expected Outcomes**

- A revised, localized curriculum being used in future trainings and integrated into pre-service education
- Engaged stakeholders working to integrate operative obstetric pre-service education as a requisite for the national surgical and anesthesia plans and national health plan of Uganda
- Standardized curriculum and competency requirements in surgical skills and operative obstetrics being used to train ob-gyns in all targeted universities in Uganda, with a long-term goal of reaching all clinicians who lead surgical obstetrics care teams

**II. Training Program Integration and Expansion**

**Integrating Surgical Skills and Operative Obstetrics Training at Makerere and Mbarara Universities**

ACOG’s model of surgical skills training is designed to integrate training and supervision of skills into pre-service curricula. ACOG Fellows train Master Trainers in surgical and operative obstetrics. Master Trainers are experienced physicians, mostly ob-gyns, who will lead implementation of training programs within their departments. Master Trainers then train instructors in techniques for training providers, usually interns and residents.

Observation of clinical skills is a key component of the trainings to ensure quality of practice; providers are required to perform some number of surgeries under observation by instructors. In the existing program model, we train a mixture of residents and interns throughout the school year in supervised deliveries of basic surgical techniques, operative vaginal skills, repair of cervical lacerations, and Cesarean deliveries. The number of students is contingent upon enrollment which typically caps at 20-25. Residents are being trained to become ob-gyns and take departmental class all year. Interns rotate through the ob-gyn specialty for three months, in addition to other specialties. We will continue the training program at Makerere and Mbarara utilizing the refined curriculum, with a plan to extend data collection of processes and outcomes. *(See Box 1 for a summary of the training program.)*

Each training consists of: 1) interactive lectures, directed by instructor based on learning materials, diagrams, books, online tools and videos narrated by experts; 2) instructor-led training on bench models; 3) precepting of Cesarean deliveries by providers under the supervision of an instructor. The simulation-based portion the training is consistently highlighted as the most valuable. The trainee practices skills on a simulator with a mentor until proficient in specific techniques, primarily Cesarean delivery.

ACOG will work with partners to explore ways to acquire or create low-fidelity simulators from within Uganda to ensure a steady supply at low cost. University partners have shared that they rely on external partners to supply these simulators from abroad, which increases the cost of trainings.

**Expansion to Cover More Ob-Gyn Training Programs**

ACOG will work with stakeholders to identify a third university to expand the training. Other universities under consideration include Gulu University School of Medicine and Busitema University Faculty of Health Sciences, where ACOG Fellows at Drexel University have an established relationship.²

² Like Makerere and Mbarara, both Gulu and Busitema are public universities; the only other public medical school in the country is Soroti University School of Health Sciences.
ACOG staff recently met with Dr. Annette Nakimuli, Chair of the Department of Obstetrics and Gynecology at Makerere University to discuss the training program, which has informed some revision to the original proposal. ACOG will coordinate with Dr. Nakimuli and her counterparts at Mbarara and a third university to schedule trainings synchronized with the ob-gyn rotations of the medical school year to optimize the number of course participants. Regularly scheduled meetings with all universities will be held to coordinate upcoming trainings, review data, provide course correction, and communicate program success or challenges to participants and stakeholders. We anticipate that we will complete 10 trainings over the course of 12 months at three universities. Exact dates will change based on schedules and availability of Ugandan and US stakeholders.

Expected Outcomes

- Ongoing, integrated training at Makerere, Mbarara and a third university for all ob-gyn residents and other clinicians, utilizing the new curriculum
- Ongoing evaluation and refinement of curriculum to ensure effectiveness
- Integration of training and supervision at each university led by a cadre of Master trainers with the skills and capacity to train instructors for sustainability (See Box 1 for estimated numbers of trainees)

Multidisciplinary Team Training
Evidence suggests that simulation and classroom-based team-training can improve team communication, coordination and cooperation that are associated with improved patient outcomes.1 Colleagues in Uganda have been receptive to the idea of more robust team-based training. ACOG will implement an integrated, multidisciplinary approach to improve maternal surgical safety by integrating non-physician clinicians in surgical training to begin to develop a common work culture that fosters communication, team building, team function, multi-disciplinary collaboration, and leadership among providers. Training will include drills, simulations, and team training. Midwives, anesthetists, and other providers will take part in the simulation portions of surgical skills and operative obstetrics courses. Relevant teamwork concepts such as situational awareness, communication, and decision-making will be introduced for all providers who support a woman before, during and after surgery. ACOG will supply tools utilized in multidisciplinary team training to improve maternal health, which have been successfully implemented in low-resource settings.

We anticipate that the revised curriculum and use of video will consolidate the training schedule and allow for the addition of midwives into the training program.

Video of Training and Observed Cesarean Sections for Mentoring
Video of each training can replace or supplement lectures, saving time for busy faculty and can provide a more compelling learning experience. The Instructor and Provider trainings will be filmed at each university. Edited into units, the videos will be utilized in subsequent trainings and made available for refresher training.

In addition, observed Cesarean deliveries performed by newly trained providers will be videoed for use as a learning tool. Mentors and students will review together to observe errors, address challenges and note progress. ACOG Fellows will review some videos for mentoring of instructors and for quality improvement of the training methodology.
Videos on surgical techniques will be provided for mastery of skills and refresher training, which is shown to be valuable for physicians who do not perform procedures often. Surgeries performed by expert ob-gyns may be recorded and used as teaching tools.

**Expected Outcomes**

- Active participation of AOGU members and other ob-gyns in mentoring providers, including District Health Officers in surgical obstetrics
- Stronger team communication and high-quality team-based care for surgical obstetric patients
- Video tools for training and mentoring of providers

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**Box 1 Multi-Phase Structured Operative Obstetrics Training in Uganda**

ACOG is finalizing a Master Trainer surgical obstetrics course, in partnership with Drexel University faculty and the Canadian Network for International Surgery, at two universities in Kampala, Uganda. Eligible Master Trainers are leading Provider courses for residents and interns. Final trainings will be held at Makerere and Mbarara Universities in November 2017.

**2015 - 2017 at 5 courses at Mulago Hospital, Makerere University (MU) and Mbarara University of Science and Technology (MUST):**

- 68 faculty and observers took the Master trainer course
- 56 newly eligible instructors trained
- 102 Providers completed requirements to receive an Operative Obstetrics Certificate

**In 2018:**

- 14 surgical training courses will be held (6 at MU, 4 at MUST, and 4 at Gulu (or other TBD))
- 140 Master trainers will participate in the course
- These 140 Master trainers will train 350 Providers
- Providers will complete requirements to receive an Operative Obstetrics Certificate

**Total anticipated by January 2019:**

- 196 Master trainers at MU, MUST, and GULU (or other TBD)
- 495 Providers who will complete requirements to receive a SOO certificate
III. Data for Monitoring and Evaluation

ACOG and university partners will continue to collect data, evaluation metrics and performance indicators and will evaluate subsequent trainings based on the baseline assessment supported by EngenderHealth Fistula Care Plus. Training/data collection assistants at each university will continue to collect data in 3-month cycles after each training. At the Stakeholder meeting, current data will be evaluated and performance indicators refined as necessary. Monitoring tools will include: training evaluation, mentor checklists of trainees, and program evaluations from mentors and trainees. Analysis of data for decision making and quality improvement will be supported by ACOG experts. ACOG will seek to utilize data collected at facilities by other programs to inform pre- and post-intervention improvements in surgical care.

Expected Outcomes

- Data collection methods established to evaluate provider outcomes
- Standardized data collection and analysis tools being used in all training programs
- Metrics for determining impact of enhanced surgical training on patient outcomes

Year 2 Expansion and Innovation

Dr. Nakimuli and colleagues in Uganda have advised that integration of the new curriculum into training and transfer to local management will be best accomplished over two years. ACOG has therefore designed a two-year program to address the needs of our partners and that will build upon the accomplishments we anticipate after Year 1.

In Year 2, ACOG will work with university partners to ensure that the training curriculum is integrated into all residency training programs in the country. In addition, we will seek to integrate new techniques and technologies into training and mentoring and to expand multidisciplinary team training for maternal healthcare.

ACOG will co-host a Year 1 Close out meeting to review trainings and the updated curriculum and to launch Year 2 trainings. In Year 2, Makerere University will hold an additional five trainings; Mbarara will hold three trainings. The budget for these activities is attached.

In addition, ACOG is working with partners to develop several innovations to this training program, which will require additional funding to enhance and strengthen the training of residents and other healthcare providers in Uganda. These innovations include use of technology for remote training, team-led simulation and debriefing and virtual supportive supervision programs. They will be designed to be replicable in other countries as well.

Expected Outcomes

- Fully integrated surgical skills and obstetrics training at Makerere and Mbarara Universities and a third university
- Use of videos in trainings and ongoing mentoring
- Development of innovative training and mentoring programs
For more information, please contact Carla Eckhardt at eckhardt@acog.org or at (202) 863-2579.

i Weaver SJ, Dy SM, Rosen MA, Team-training in health care: a narrative synthesis of the literature

ii Indicators that we seek to collect include:
- Number of trainers trained and certified through Instructor training program
- Adequate infrastructure, equipment, and supplies at the training sites
- Complete package of technical resources (curriculum, data collection tools, etc.) required to implement the training program
- Institutional support from training sites
- Number of trainings conducted
- Number of certified Instructors who carry out training of providers
- Number of providers trained
- Number/% of trainees completing six observed Caesarean sections within three months post-training
- Number/% of trainees who perform six Caesarean sections to standard post-training under observation
- Number/% of certified trainees who report satisfaction with the training and mentoring process six months post-training.
- Number/% of certified trainees who report confidence in their surgical clinical skills six months post-training.