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## Executive summary

ISUOG outreach capacity, impact & potential for  
scale-up

International Society of Ultrasound in Obstetrics and Gynecology (ISUOG)



# Executive Summary

**An assessment to understand ISUOG outreach capacity, impact and needs**  
Since 2008 *ISUOG Outreach* brings comprehensive and sustainable obstetric and gynaecology ultrasound education to lower resourced settings through a train the trainer's approach. Within ISUOG's ambition for more comprehensive programming, including global access to obstetric & gynaecology ultrasound and health systems strengthening, an assessment was conducted in 2021 that serves to understand ISUOG Outreach's current capacity & impact, align these with the global needs and inform its future strategy for sustainable impact.

## Four spheres of interest for ISUOG outreach

ISUOG outreach vision –every woman should undergo a safe and patient-centred quality ultrasound (US) as part of their healthcare evaluation – and its current theory of change were taken as a starting point to define ISUOG's spheres of interest and use these as a theoretical framework for the assessment that focused on three case-study countries (Sudan, Rwanda, Oman).

Four spheres of interest were defined:

1. Training & education - Ultrasound providers are equipped with sustained skills & knowledge
2. Health system Strengthening - Health systems are strengthened to deliver safe and quality ultrasound services
3. Global access -Women have access to safe and quality (obstetric and gynaecological) ultrasound (as part of reaching Universal Health Coverage - UHC)
4. Advocacy - Policy makers are committed to make ultrasound part of their UHC agenda

A document review, self-administered online survey, key-informant interviews and global literature study were done between May – June 2021 to assess ISUOG's current capacity, impact and needs within the four spheres of interest.

## The Findings

### 1. Training and education

ISUOG's training program resulted in increased knowledge and skills of trainees and had a considerable impact on the self-reported quality and daily practice of trainees and to the cascading of knowledge (see textbox 'the positive impact of ISUOG's training program').

Identified factors that facilitated the application of acquired knowledge and skills were mainly continuous training and mentoring from the ISUOG outreach team. Knowledge and skills were retained through self-learning and the use of WhatsApp groups. Though ISUOG did provide trainees with a one year free membership and access to the online learning platform, limited time and busy schedules prevented trainees from using the available online resources and trainings. While continuous learning was dependent on self-discipline, lack of CME credits or local quality assurance mechanisms for ultrasoundographers and services were identified as barriers to adopt ongoing education. Respondents suggested refresher courses, local regular seminars, provision of self-learning resources, peer to peer feedback, coaching & mentoring, accreditation and CME credits as tools to further sustain knowledge and skills.

#### The positive impact of ISUOG outreach in training & education :

- Almost all (96%) of the survey respondents indicated a need for the program, or indicated that it fills a gap that no other programs address.
- Participants are generally satisfied with the training and indicate how the training has helped them to improve practical skills, like holding the probe, conducting better sections and anomaly scans, as well as organizational skills, such as workflow management.
- Training pre-and post-tests in Sudan, Rwanda and Oman showed a knowledge increase between of 16-26% for both theoretical knowledge and practical skills. Knowledge retention between two training trips was generally 82%.
- The trainings have considerable impact on the *self-reported* quality and daily practice of trainees. Over 1 year post-training 94% of the surveyed trainees say that the quality of their scans has improved, 82% say to diagnose more cases that they would have missed before and 53% say the communication with their patients has been improved. These improvements were mentioned both by trainees that did their training over 1 year ago (e.g. Rwanda) as well as more than 4 years ago (e.g. Sudan). Longer-term retained quality of skills & knowledge were not re-assessed, nor monitored through program data.
- The trainings contribute to cascading knowledge, with 88% of the surveyed trainees indicating they are sharing gained knowledge with others during work, and trained trainers indicating to have further trained 21-50 professionals each. All survey respondents indicated that they shared their knowledge through formal training, informal peer to peer contact, mentoring/coaching, or during scientific meetings.
- ISUOG's approach of continuous training and mentoring facilitated retention of knowledge and application of acquired skills.

Internationally, a number of studies have shown the positive effect of ultrasound training, often done in combination with task-shifting and tele-ultrasound. However, there is no adequate evidence available on the effectiveness, patient outcomes, or the sustainability of courses after donor funding has ended. Several resources make suggestions for the construction of sustainable education programs, including analysis of needs assessment findings, development of locally relevant curriculums, addressing health system factors, quality assurance and follow-up plans, strategic partnerships, and outcome measures. As part of having a sustainable trained workforce, ongoing supervision and guidelines are required for successful and quality ultrasound service provision. The absence of proper supervision and guidelines may create an environment for abuse and misuse and therewith leads to potential harm to the patient. Ongoing quality ultrasound services and training require political will and local governance to regulate services and assure quality. This means that appropriate guidelines should be in place on who should provide the services, the required level of training and certification and appropriate supervision to avoid over-use, under-use and/or abuse. A regulating authority where professionals and facilities providing ultrasound services are registered and quality assurance of the services is monitored and controlled will improve the quality of services. This implies the use of second opinions and mandatory continuous education for all practitioners. And a system where service provision is strictly hinged on mandatory updates.

The following considerations were provided for future programs:

- The current methodologies and train the trainer approach seem to be effective. However, attention should be given to a **clear and standardised monitoring system** for the training and knowledge retention.
- Content of the current curriculum seems to be effective and consists of highly expertise knowledge. However, more attention can be given to **the contextualisation and adaptation to local relevance and needs**.
- The curricular elements could **adopt a system for accreditation and certification** that meets the needs of respondents and local stakeholders. Simultaneously ISUOG could work with local authorities on the **governance system to regulate services and assure quality**.
- Retention of knowledge and skills is essential. ISUOG can further contribute by ensuring the **accessibility to resources for self-study**, provision of national workshops and refresher trainings. **Motivation for participation can be linked to the required accreditation and local quality assurance mechanisms**.
- Adoption of lay tools for direct communication such as WhatsApp facilitates sharing knowledge and consultations. Other initiatives like the virtual mentorship program might need to be reassessed.
- **Sharing knowledge** should continue to be encouraged, not only through formal trainings, but also through peer to peer and via regular scientific meetings.
- **Contextual factors should be taken into consideration when planning and implementing the outreach program**. This includes also health system factors that will be discussed in the next section.

## 2. Strengthened health systems

Survey respondents identified lack of training as the main health system challenge to the implementation of obstetric and gynaecological ultrasound in their countries, followed by a shortage of human resources, shortage of equipment, lack of monitoring and quality assurance and lack of maintenance. According to them, the ISUOG outreach program was addressing all these challenges to some extent, except for the shortage of equipment and lack of maintenance. Other challenges that were mentioned and where the outreach program had less influence were poor information management systems, poor referral mechanisms and that the policy makers do not recognise the importance or need of US. Such factors were variable from one country to another. Program data did not monitor on health system indicators.

### The positive impact of ISUOG outreach in strengthening health systems:

- According to survey respondents, the ISUOG program addresses the most important health system challenges, including lack of training, shortage of human resources, lack of monitoring and quality assurance and the inappropriate misuse/overuse of US at least to some extent.
- ISUOG works with national and regional governments contributing to the projects' successes, to national ownership, and sustainability of the results. According to 96% of survey respondents, national governments were collaborative in the implementation of the program.

The health system challenges for effective implementation of obstetric and gynaecological ultrasound that were identified by respondents in the survey are similar to findings in the global literature. Lack of adequate quality equipment, with secured power supply (via a power point or rechargeable batteries) and secure storage, capacity of maintenance and servicing of these machines are some of the most described feasibility challenges. Experiences in other US intervention programs led to suggestions that ultrasound interventions should only be conducted within a functioning health system with the required enabling environment, political will, substantial resources and continuous training and retraining. This reinforces the need to ensure that training interventions are conducted alongside health systems interventions to establish an appropriate ultrasound delivery system. Several resources, such as the RAD-AID radiology readiness tool and WHO recommendations on antenatal care for a positive pregnancy experience, provide tools for assessing, planning and implementation considerations.

Another concern is the globally described barriers to referral for ultrasound-diagnosed complications (barriers in cost, transportation, distance, disapproval by community members or previous bad experiences with the hospital, as well as in-facility barriers), leading to ethical questions on providing a patient with a diagnosis that she cannot be helped with. mHealth (meaning the use of mobile wireless technologies, such as mobile phones, for health) could help in sharing screening results with community health workers who, in turn, could help convince families of the need for supporting referrals. Furthermore it could help to notify hospitals of referred patients before their arrival and mHealth systems could track pregnancies, building a database with which to better understand pregnancy outcomes in their catchment areas.

The following considerations were provided for future programs:

- **The current needs assessment prior to the project can adopt a wider health systems lens** and identify health system interventions needed in order to establish appropriate ultrasound delivery systems. These could be taken along in comprehensive programming with partners.
- Apart from training, effective programming for US should **address equipment barriers, task-sharing/shifting, referral strengthening and other health system interventions.**
- Programs should be **tailored to local (education & health system) needs.**
- The curriculum could **expand on governance, organisation, and other non-technical skills** that contribute to capacity building of national staff. The program could also address capacity building and system wide issues regarding quality assurance and image archiving.
- ISUOG should further **engage with national stakeholders** like the government, educational institutions, public health experts and health system partners **to design and implement comprehensive programming.**
- **Involvement** of the national society members, trainers, and trainees **in the program planning and execution** can contribute to capacity building and might open the door for other health system initiatives.
- **Program monitoring should include measurements on service delivery** that provide an indication on the impact of the program. This can also allow the identification of priority impact areas.
- The program should explore **the potential for applications of digital Health in training and service provision.**



### 3. Global Access

#### ISUOGs capacity and impact

Respondents identified geographic accessibility and low awareness on need as some of the main barriers to access to ultrasound services. Other issues that were mentioned to a lesser extent were that services are not available, too expensive, or women do not consider the services of good quality or culturally appropriate. Respondents felt that the program had at least some partial influence on availability of services, geographic accessibility and quality perception. Other possible barriers in access, such as appropriateness, affordability and acceptability, were found to be less influenced. Program data did not monitor access indicators.

#### The positive impact of ISUOG outreach on access:

- Respondents felt that the program had at least some partial influence to availability of services (50% mentioned partial or positive influence on non-availability), geographic accessibility (59% mentioned partial or positive influence on services being far away) and quality perception (45% mentioned partial or positive influence on quality perception by women).

#### Global needs and dev

Though there is no evidence that ultrasound reduces maternal and perinatal mortality or health outcomes, evidence does show that women are willing to be screened and tested for a variety of conditions, that they appreciate the knowledge and information they can get and that offering ultrasound services may lead to earlier antenatal care attendance, all if services are delivered in a caring and culturally sensitive manner. However, in many resource-poor settings, antenatal ultrasound is only available to a privileged few in urban centres, and remaining barriers of accessibility perpetuate inequalities. Various initiatives have taken place to bring services closer to the people, often combining training, the use of portable devices, task-sharing and telecommunication at the supply side and increasing community awareness and acceptability at the demand side. Mhealth and telecommunication provide an opportunity to track, exchange, consult and bring services closer to the people. The development of Artificial Intelligence may, in the near future, assist non-specialised health workers in detecting risk factors and arranging timely referrals.

#### Considerations

The following considerations were provided for future programs:

- In order to improve universal access to safe quality ultrasound, in line with ISUOG's outreach strategy, program design should **consider a comprehensive approach that includes the study of and interventions that address access in all its aspects (5AQ).**
- For this ISUOG can **improve collaboration with public health experts, community-based organisations with knowledge on and access to communities, and with universities or knowledge institutes** that can facilitate research for situational analysis and effectiveness studies.
- Design can **learn from previous and current initiatives that aim to bring services closer to the people, including task-sharing, telecommunication/AI, community involvement and public-private partnerships**, but evidence on what is effective needs to be strengthened.

## 4. Advocacy

### ISUOGs capacity and impact

Respondents indicated to feel a strong commitment from policymakers to ensure access to safe and quality ultrasound. At the same time, there is a realisation that many more challenges need to be addressed in order to reduce inequities and achieve high-quality care for all women. One of the main issues that were felt to need improvement was the collection of data for effective advocacy on how ultrasound influences decisions and health outcomes.

#### The positive impact of ISUOG outreach on advocacy:

- A large majority of the survey respondents agreed (22%) or even strongly agreed (65%) that policy makers are committed to ensure access for safe and quality ultrasound. Also in interviews, key informants emphasized on the strong commitment they feel/have from local policy makers.
- Long-term sustainable partnerships with local institutions and government contributed to a successful training program.

### Needs

Policymakers want to know about clinical evidence and economic affordability, especially as it has globally been hard to demonstrate the direct impact on maternal mortality and, in low resource settings, many critical system improvements compete for scarce resources.. Therefore, secondary indicator evidence needs to be solid and economic efficiency is critical.

### Considerations

The following considerations were provided for future programs:

- Continue to **invest in long-term sustainable partnerships with local institutions and governments**, as well as other women's health organisations that can contribute to holistic programming.
- Policymakers are committed to ensuring access to safe and quality ultrasound, but **data is needed on how ultrasound influences decisions and health outcomes**. This could further strengthen local awareness and induce resource mobilisation. ISUOG could work with partners to design comprehensive interventions and monitor on what works, how, for whom and for what (type of health outcomes).
- **Data on long-term effects of the training program can be used to advocate for the effectiveness of the training** and should be used alongside data that prove the effect of simultaneous interventions in comprehensive programming.



## Conclusion and cross-cutting overall recommendations

ISUOG has a strong comparative advantage with an enormous network of professionals with technical expertise in imaging and well-developed training curricula. The outreach program seemed to be well established with clear evidence for its direct effects on knowledge and skills-building of the trainees, as deduced from pre-post test results and triangulated with the qualitative responses of this evaluation. The program adopts a compelling evidence-based curriculum and is taught by competent outreach trainers. Respondents in this evaluation expressed the positive impact of the program on the quality and practices of the trainees.

Qualitative perspectives from professionals that had been involved in the program, together with evidence from the global literature, confirmed the need to further invest in sustainable quality-assured training and health systems alongside interventions that address access for patients.

The following overall recommendations should assist ISUOG in moving towards more comprehensive programming.

1. In order to work towards ISUOG's outreach vision and advocate with donors and policymakers on the need for training and access to ultrasound services, effective strategies need to be developed with evidence-generation of their success. A global theory of change with strategies for effective ultrasound implementation should address training, health system factors and universal access (5AQ).
2. ISUOG outreach can promote its comparative advantage with its technical expertise on imaging and well-developed training curricula and seek programmatic partners with expertise on other domains. Partners should have expertise on, but not limited to, public & community health, research, medical education, health system management and governance. Stakeholder mappings should be conducted globally and locally to identify the needed partners to achieve identified results.
3. ISUOG outreach should develop indicators for country selection that include health indicators and health system factors and could also consider political will and governance structure.
4. Programs should take local contexts into account and be designed based on locally identified relevance and needs, both for training, as well as for other strategies that improve access to US services. The needs assessment should adopt a wider health system and access lens.
5. Following country selection needs assessment and identification of required partners, a locally adapted theory of change can be developed together with local partners; starting with the impact level goals and then work backwards on what is needed to achieve those in terms of training, health system strengthening and improving access.
6. A logframe approach will clarify the steps from intervention to result, and clearly set indicators at output, outcome and impact level will have to be monitored throughout. Indicators should include training, service delivery, access and health outcome indicators.
7. Based on the findings in this assessment, specific elements that should be considered are outlined in the considerations for each sphere of interest.