



Stiftung für medizinischen Wissenstransfer
Foundation for medical know how transfer

**THE MERU COUNTY GOVERNMENT,
MERU TEACHING & REFERRAL HOSPITAL (MeTRH), MERU UNIVERSITY OF
SCIENCE & TECHNOLOGY (MUST), KENYA METHODIST UNIVERSITY
(KeMU) AND STIFTUNG FÜR MEDIZINISCHEN WISSENSTRANSFER (SmW),
SWITZERLAND**

**AN EVALUATION REPORT ON TRAINING OF MODULE 1 OBSTETRIC
ULTRASONOGRAPHY COURSES AT MERU TEACHING & REFERRAL HOSPITAL
(MeTRH), MERU - KENYA
FROM 24TH MAY TO 2ND JUNE 2022**

BY:

THE TECHNICAL WORKING GROUP

TO:

SMW, SWITZERLAND & THE LOCAL PARTNERS

EXECUTIVE SUMMARY

A formal engagement commenced following the signing of a Memorandum of Understanding (MOU) by four (4) collaborating institutions in November, 2020. These were Meru Teaching & Referral Hospital (MeTRH) under the County Government of Meru, Meru University of Science & Technology (MUST), Kenya Methodist University (KeMU) and StiftungFürMedizinischenWissenstransfer (SmW), (Foundation for Medical Knowledge Transfer) - Switzerland.

The main objective of the collaboration was to provide high quality training to healthcare professionals namely; medical doctors, nurses, clinical officers and radiographers focusing on improving skills in the field of sonography/ultrasound. This was to bridge the skills gap in obstetrical ultrasonography and further improve efficiency in the health service delivery systems by bringing essential services closer to the people.

The training on “*Obstetrical Sonography Level 1 and Pregnancy Screening Scan Week 20-24*” was organized consisting of 2 (two) modules and 2 (two) courses of 4 (four) days each (May/June and November, 2022). The exam would be taken at the end of the second Module in November, 2022. The actual training was delivered at MeTRH between 24th – 2nd June, 2022. The course was piloted using a group of 25 (twenty-five) trainees drawn from the sub-county hospitals within Meru County and the local collaborating institutions (Course I), while Course II consisted a mixture of private, faith-based and collaborating institutions.

One week after the training, an evaluation was conducted by the Technical Working Group which was responsible for the general organization of the training at the local level. The evaluation was guided by the requirements captured in the MOU. The compiled report was considered and adopted by the Local Partners during a meeting held on 9th June, 2022.

From the report, a total of 49 (forty-nine) trainees cutting across various healthcare establishments in Meru County undertook the first module of training (Course I & II). About 348 pregnant mothers (excluding inpatient mothers) received free ultrasound services during the 8-day training period. The course evaluation data collected during the training indicated a high level of satisfaction from the trainees on various parameters relating to course delivery. In addition, it was observed that the trainees for both courses remained motivated throughout the training period.

In general, the main objective of the collaboration was largely achieved thus it can be concluded that the first module of the training was effective.

It is also worth noting that various areas of improvements and recommendations were cited in the report. These include among others, rolling out of the training to sub-county hospitals subject to availability of resources as well as monitoring and evaluation to determine the impact of the training.

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1.0 INTRODUCTON

1.1 Background

A healthy population is wealth to a nation. Many countries, especially in the developing world are increasingly and deliberately investing in their citizens in order to improve their quality of life. In this endeavour, Kenya developed Vision 2030 – a blue print to transform the country into an industrializing, middle-income country. This would aid in providing high quality life to all its citizens by 2030 in a clean and secure environment.

The blue-print is anchored on three pillars namely economic, social & political pillars. The Health sector falls under the social pillar as a key component and a priority area coming right after education and training. The provisions under the healthcare sector aim at developing a population that is healthy and productive and able to fully participate in and contribute to other sectors of the economy.

The healthcare system in Kenya is decentralized thus mainly managed by county governments. The sector is served by both the Government of Kenya (GOK) healthcare institutions as well as private and faith-based institutions.

1.2 Maternal Health Care

Kenya aims at reducing the Maternal Mortality Ratio (MMR) to 113 per 100,000 live births by 2030. To accelerate the process, the health sector requires programmes and policies that support women health and health education. These will ensure that women can attend pre-natal and post-natal clinics respectively, where they can access quality and life-saving services including obstetrical ultrasonography services within the health facilities.

Meru County

Data availed by the County Human Resource office indicated that the County Government of Meru has **2,027** healthcare workers spread across various cadres. These consist of **1,175** nurses, **229** clinical officers, **84** general medical officers, **16** radiographers and **25** medical specialists. There is only **1 (one)** consultant radiologist out of the 25 medical specialists in the County.

These data indicate that there is inadequate numbers of trained healthcare workers to serve all the sub-counties with Meru County. Training of healthcare professionals on obstetric ultrasound would enhance their skills as well as increase accessibility of these

services in the rural health facilities.

2.0 SHORT COURSES ON OBSTETRICS SONOGRAPHY

2.1 Establishment of Collaboration

Following expression of interest to bridge the identified skills gap in obstetrical ultrasonography, a collaboration was established comprising of Meru Teaching & Referral Hospital (MeTRH) under the County Government of Meru, Meru University of Science & Technology (MUST), Kenya Methodist University (KeMU) and StiftungFürMedizinischenWissenstransfer (SmW), Switzerland (Foundation for Medical Knowledge Transfer).

StiftungFürMedizinischenWissenstransfer (SmW), Switzerland (Foundation for Medical Knowledge Transfer) is a not-for-profit organization in Switzerland. The foundation provides training on voluntary basis.

Formal engagement started following the signing of a Memorandum of Understanding (MOU) by the four collaborating institutions in November, 2020.

The main objective of the collaboration was to provide high quality training to healthcare professionals namely; medical doctors, nurses, clinical officers and radiographers focusing on improving skills in the field of sonography/ultrasound. This would bridge the skills gap in the area by offering obstetrics sonography and pregnancy screening services to mothers at various healthcare levels within the County. Efficiency in the health service delivery systems would further be enhanced by bringing essential services closer to the people.

It was also envisaged that following successful completion of the basic course, other courses like Point of Care Ultrasound (POCUS) would be introduced. The courses would also be rolled out to other parts of the Country in future.

2.2 Implementation

The training on Obstetrical Sonography Level 1 and Pregnancy Screening Scan Week 20-24 was organized consisting of 2 (two) modules and 2 (two) courses of 4 (four) days each (May/June and November, 2022). The exam would be taken at the end of the second Module in November, 2022.

The courses were delivered at MeTRH between 24th – 2nd June, 2022. Course 1 was a pilot group was (course one) was drawn from the sub-county hospitals in Meru County and the local collaborating institutions, while course two consisted a mixture of private, faith-based and collaborating institutions.

The local partners and the international collaborator had distinct responsibilities in the delivery of the short courses as spelt in the MOU. However, it is worth noting that SmW was responsible for offering for free, a structured and approved course concepts (under the auspices of the Swiss Society for Ultrasound in Medicine). The Foundation also donated (six) modern ultrasound machines which were used during the training and provided training reference material. The county government of Meru partially sponsored the pilot group of 25 participants by providing meals and training consumables as well as custom clearing of donated machines and transporting them to MeTRH. No allowances were paid to trainees, local instructors, technical working group or any other officers involved in the planning and implementation processes.

A fee of Kshs.24,000/- (Kenya Shillings twenty-four thousand only) to cater for their meals and training consumables was charged for Course II. All local participants & trainees catered for their transport and/or accommodation expenses.

2.3 Course Curriculum

SmW offered for free structured and approved course concepts and teaching experts from Europe. The courses are under auspices of the Swiss Society for Ultrasound in Medicine www.sgum.ch and endorsed by the European Federation of Societies for Ultrasound in Medicine and Biology EFSUMB www.efsumb.org.

2.4 Course preparation and implementation

General organization at local level was undertaken by a Technical Working Group comprising of officers drawn from the collaborating institutions and centrally co-ordinated from MeTRH. Oversight role was provided by the Chief Executive Officers or their respective nominees of local institutions with the overall liaison role undertaken by Prof. J.K. Magambo.

Table 2.1: Oversight

S/No.	Name	Designation	Institution	Role
1.	Dr. James Kirimi	Chief officer, Health	Meru County Government	County Rep.
1.	Dr. Joseph W. Mukundi	Chief Executive Officer	MeTRH	Chairperson
2.	Dr. Fredrick Ndede	Lecturer	KeMU	Member
3.	Prof. Japhet K. Magambo	Professor	MUST	Member
4.	Dr. Consenta Gatumi	Clinical Executive, Reproduction Health/	MeTRH	Member/Chair TWG

Table 2.2: Technical Working Group

S/No.	Name	Designation	Institution
1.	Dr. Consentia Gatumi	Clinical Executive, Reproduction Health/ Chairperson	MeTRH
2.	Dr. Justus Mutuku	Clinical Executive, Imaging - MeTRH	MeTRH
3.	Dr. Fredrick Ndende	CoD, Reproductive Health	KeMU
4.	Ms Purity Kathambi	Clinical Executive, Nursing Services	MeTRH
5.	Mr. Henry Gatobu	Deputy Director, Finance	MeTRH
6.	Mr. Kennedy Awour	Clinical Officer I/c	KeMU
7.	Mr. Morris Murithi	Nursing Officer	MUST
8.	Mr. Norbert Kaimenyi	Clinical Officer	MUST
9.	Ms Sylvia Kinyamu	Executive Secretary/ Secretariat	MUST

3.0 TRAINING REVIEW

A training review aimed at continual improvement was undertaken by the Technical Working Group during a meeting held on 9th June, 2022. The report was further considered and adopted by the local partners' representatives on 6th July, 2022. Below are the main highlights of the Committee discussion:-

Table 3.1: Training Review

S/N	Item/Activity	Discussion/observation	Remark(s)
1.	Official launch of the programme	<p>(i) A representative Deputy Director, Medical Services - Dr. Lenah Naitore launched the programme on behalf of H.E. the Governor – Meru County.</p> <p>(ii) Though the attendance fell below the planned numbers, all partners were represented at the cocktail dinner.</p> <ul style="list-style-type: none"> ▪ MeTRH: Dr. Pauline Gacheri, Ag. Chief Executive Officer ▪ KeMU: Dr. Rev. Mary Kinoti, Deputy Vice-Chancellor, Academic & Student Affairs ▪ MUST: Prof. Simion Thurania, Ag. Deputy Vice-Chancellor, Academic & Student Affairs 	Successful

		(iii) The Module I training was officially opened by the Chief Officer-Health, Dr. James Kirimi on 24 th May, 2022.	
2.	Course organisation	<p>Planning</p> <p>(i) The Technical Working Group was committed throughout the planning phase including the actual implementation of the programme.</p> <p>(ii) The Principals (local reps) continually guided the TWG through the process.</p> <p>Communication</p> <p>All local and international communication was well co-ordinated and channels of communication were effective.</p>	Successful
3.	Participants Registration & Attendance	<p>(i) Challenges recruiting participants from private and faith-based hospitals.</p> <p>(ii) Course I: 24 out of 25 participants turned out as registered. A replacement was done for one participant who did not show up.</p> <p>(iii) Course II: 24/24 attended as registered.</p> <p>(iv) “Meet the expert” sessions started quite early (7:30 a.m.) with majority of trainees who were travelling from far unable to attend.</p> <p>Remedies:</p> <p>(i) In future, there is need to initiate and intensify publicity of courses early enough.</p> <p>(ii) Registration of participants was done on reporting day only. It is recommended that a daily attendance be maintained for accountability and further support certification of trainees.</p>	Area of improvement
4.	Delivery of courses	<p>(i) The blended (theory and practical) sessions were well organized.</p> <p>(ii) Course evaluation by students was positive.</p>	Successful
5.	Venues	<p>(i) Location of practical rooms was ideal - close proximity to the wards;</p> <p>(ii) Though sub-divided into stations, all SmW</p>	Area of improvement

		<p>standard requirements for the practical rooms were met.</p> <p>(iii) Improvised conference room was quite small.</p> <p>(iv) Not all washrooms were functional as the building was under construction.</p> <p>Remedy/Recommendation</p> <p>(i) Consider a larger room once the new building is complete.</p> <p>(ii) The practical room A be burglar-proofed (reinforcement of windows with grills) to secure the ultrasound machines.</p>	
6.	Generator/ power Backup	The building under construction was not served by the generator. There were occasional interruptions of practical sessions in one station which was located in the Conference room during power outages.	Area of improvement
7.	Organizing mothers for practical sessions	<p>Though two nurses were assigned this role, there were occasional lapses when patients were brought in late especially during Course II.</p> <p>Remedies</p> <p>(i) Triage nurses be well briefed of their roles during the training;</p> <p>(ii) Proper hand-over be done should a change of triage nurse occur within the training period.</p>	Area of improvement
8.	Availability of Pregnant mothers/pati ents	<p>Exceeded expectation. However, on 1st June, 2022 (Public holiday) the turn-out was low.</p> <p>NB:</p> <p>(i) Pre-registration of pregnant mothers /recruitment be done through the MCH, in order to cap the numbers to 30 per day. This would avoid overstressing the radiology department which catered for excess patients.</p> <p>(ii) Avoid obvious public holidays in identifying training dates.</p>	Successful
9.	2-3 local experts as instructors/le	At least two (2) local instructors were available at any given time, with 1 standby instructor.	Successful

	lecturers during courses		
10.	Budget for Module I & II	<p>(i) Course I was a pilot training course funded by County Government of Meru.</p> <p>(ii) Course II (Module I & II): Kshs.24,000 was charged to participants.</p> <ul style="list-style-type: none"> • Expected Revenue: Kshs.576,000 • Actual rev.: 16 pax. x 24,000 = Ksh.384,000 • Revenue due: 8*24000=192,000 <ul style="list-style-type: none"> ✓ MeTRH – 6 Pax ✓ GEM Memorial – 2 Pax. <p>(iii) There was delayed release of funds by the county government</p> <p>(iv) Budget for the two courses - Kshs.384,000</p> <p>Agreed:</p> <p>(i) Actual expenditure be provided by MeTRH to inform on appropriateness of fee charged.</p> <p>(ii) In future all courses be charges for sustainability.</p>	Area of improvement
11.	Publicity material (Brochures, Wall Posters, e-posters)	<p>(i) Delayed release of publicity material.</p> <p>(ii) Budget constrains to produce publicity material.</p> <p>(iii) Media announcements and publicity well co-ordinated.</p> <p>Remedy</p> <p>Early publicity for message to reach greater audience especially the trainees - for early and informed decision making.</p>	Area of improvement
12.	Meals	<p>(i) The identified Caterer was flexible to accommodate the TWG budget.</p> <p>(ii) Very good service for Course I (week one)</p> <p>(iii) Well organized menus</p> <p>(iv) Quality of food went down during course II (week two);</p> <p>(v) Occasional late delivery</p> <p>(vi) Inadequate staff to man the service point.</p>	Area of improvement

13.	Clearing of machines & transport to Meru	<ul style="list-style-type: none"> (i) Good collaboration with the County Government of Meru. (ii) Machines cleared and delivered to Meru way before the start of courses. (iii) The County government provided clearing & logistical support. 	Successful
14.	Course Evaluation	<ul style="list-style-type: none"> (i) Participants were very enthusiastic of the training. (ii) Generally, instructors were well rated. (iii) Availability of machines & longer period of training were some of the trainees' immediate needs as per the evaluation forms. 	successful
15.	Provision of materials for practical sessions	<ul style="list-style-type: none"> (i) Septi-wipes and jelly were provided by SmW (ii) Tissue papers/Serviettes provided by MeTRH (iii) In future, the materials would be provided by the local team. 	successful
16.	Practical Sessions	<p>Practical sessions comprised with groups of trainees either with or without prior knowledge/experience in the field of US.</p> <p>Remedy:</p> <p>Groups for practical sessions could be improved with a good mix of those with experience and those without to promote peer training and build trainees' confidence.</p>	Area of improvement
17.	Documentation of patient's data	<p>There was no standardization in reporting and documentation of patient's information.</p> <p>Remedies:</p> <ul style="list-style-type: none"> (i) Have a structured way of handling patients and their documentation - Charts, printouts of reports etc (ii) Registration of patients and follow-up of those that require intervention of a doctor/consultant be done. (iii) Have enough resources to provide complete information to patients. (iv) Duly filling-in of the reporting forms/charts especially the conclusion part and explaining to patients the outcome. 	Area of improvement

		(v) Need to keep re-assuring patients with adequate information during the process. (vi) Both outpatient and inpatient records be maintained.	
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3.0 POST-TRAINING FOLLOW-UP

It was noted that Dr. J. Mutuku would be the overall co-ordinator of supervised group trainings in OB/GYN between the courses.

3.1 Record keeping during trainees practice at MeTRH

The following modalities were agreed upon during a meeting between SmW and local partners in a meeting held on 2nd June, 2022 at MeTRH:-

- (i) That all patients' files would be opened and managed by the Records office where forms filled-in by trainees would be stored.
- (ii) No written reports/forms generated by the trainees shall be released to the patients.
- (iii) Dr. J. Mutuku would liaise with "team champions" to establish trainees who require assistance.
- (iv) That the trainees who do not have US machines at their work stations would train from MeTRH.

3.2 Proposed supervised Group Training by Mr. B. Waithaka

Reported that:

- (i) Mr. Waithaka was willing to provide guided group practice to the trainees before module II.
- (ii) For informed decision making, there was need to get additional information on who would take care of the costs incurred.
- (iii) Training be organized in a way so as not to cause manpower shortages at various hospitals as trainees would be required to convene at MeTRH.

3.3 Ultrasound machines for practice

Reported that:

An agreement on use of the two machines was duly signed during the closing meeting for module 1.

3.4 Trainees

Observed that:

- (i) All trainees seemed enthusiastic about the training.
- (ii) In future, all registered trainees need to accept to be trained, whether one has experience in ultrasound or not.

- (iii) There was need to distribute trainees uniformly during practical sessions (those with prior training and those without).
- (iv) Have U/S training champions who can provide peer guidance to other trainees within their work stations.
- (v) Improve on attendance especially in the morning.

4.0 TRAINING OUTPUTS/BENEFITS

4.1 Module I trainees

Following successful completion of module two, the following achievements were made:-

Table 4.1: Number trained

S/No.	Course	Beneficiary institutions	Number	Sponsorship
1.	Course I (Pilot)	Sub-County hospitals (Meru County), MeTRH, KeMU & MUST.	25	Partial – Meru County Government
2.	Course II	Private, faith-based, MeTRH, MUST	24	Paid by trainees/institutions
Total:			49	

NB: All staff from SmW offered their services free of charge

4.1: Pregnant Mothers

Available records from the outpatient department indicated that about 348 pregnant mothers were able to access ultrasound services free of charge with no records available for the inpatient pregnant mothers.

Table 4.2: Records generated from outpatient

S/No.	Description	Number
1	Pregnant mothers seen	348(three hundred & forty-eight)
2	Slow leaking optic pregnancy	1 (one)
3	Antepartum hemorrhage	1 (one)
4	Threatened abortion	1 (one)
5	Premature rapture of membranes	1 (one)
6	Latent phase of labour	1 (one)
7	Twin pregnancy with fetal tachycardia	1 (one)

4.3 Nutritional Counseling Services

The would-be mothers benefited from nutritional training services which were offered at the Mother-Child Healthcare clinic as mothers waited to be served.

5.0 CONCLUSION

A total of 49 (forty-nine) trainees undertook the first module of training cutting across various healthcare establishments in Meru County. About 348 pregnant mothers received free ultrasound services during the 8-day training period. Data collected at the end of each of the courses indicated a high level of satisfaction from the trainees on various parameters relating to course delivery. In addition, it was observed that the trainees for both courses remained motivated and enthusiastic throughout the training period. In general, it is the TWG's opinion that the first module of "Obstetrical Sonography Level 1 and Pregnancy Screening Scan Week 20-24" training was effective hence the main objective of the collaboration was achieved.

6.0 RECOMMENDATIONS

Though the training was effective and generally met the minimum requirements as enumerated in the MOU, the TWG recommends:

- (a) Implementation of remedial actions as captured in various sections of the report. In particular, there is need to consider recommendations under section *3.0 (3.1)- training review*.
- (b) Monitoring & Evaluation of training be done including the impact at various levels.
- (c) To ensure that the training has impact at grass root levels, the TWG recommends the rolling out to the training to sub-county hospitals subject to availability of additional ultrasound machines.
- (d) In order to have manageable numbers in future, booking of free-ultrasound would be done through the MCH at MeTRH and numbers be capped at 30 per day to avoid overstressing the facility.