PRELIMINARY EXPERIENCE WITH COMMENCING A "PILOT" STANDARDIZED CURRICULUM IN OB/GYN ULTRASOUND IN LEBANON

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DISCLOSURE

Reem S. Abu-Rustum, Nabil Helou, Imad Aboujaoude, Linda Daou and Fouad Ziade have no relevant financial disclosures.

Background

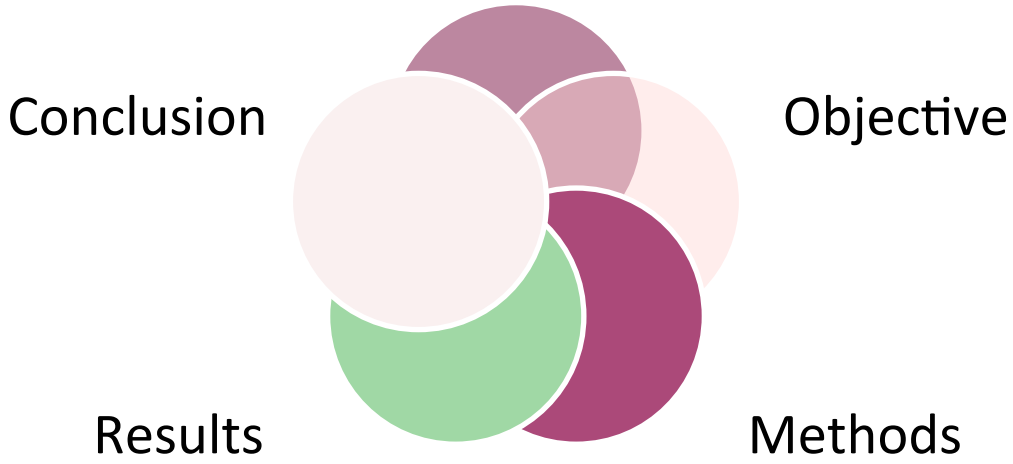
Conclusion

Objective

Results

Methods

Background



LEBANON FAST FACTS

- Total Physicians: 12200
- Total Ob/Gyn's: 1200
- Ob/Gyn Residencies: 7
- **Total Ob/Gyn Residents: 74**
- Lebanese Society of Ob/Gyn
- Ian Donald School of Ultrasound

www.undg.org/archive_docs/3344-Lebanon_MDG_Report_-_English.pdf

2011: STATUS OF US TRAINING

18–22 September 2011, Los Angeles, CA, USA

P25: QUALITY ASSURANCE

P25.01
Evaluation of ultrasound training in Ob/Gyn residency programs in Lebanon

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2011: STATUS OF US TRAINING

- E-Mail **survey**
- 6/7 Programs participated
- 1 Program (3) juniors declined
- Response rate: 53/74 (**72%**)

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RESIDENT RESPONSES

Questions	Responses
Exposed to US in Medical School?	21/53 (40%) exposed
Is your training in US Adequate?	3/53 **(6%)** felt training is adequate
Do you feel ready to graduate?	3/53 **(6%)** ready to graduate
Need more training in US?	52/53 **(98%)** need more training
Planning a fellowship?	45/53 (85%)
Trained by Ob/Gyn?	36/53 (67.9%)
Trained by Radiologist?	7/53 (13.2%)
Trained by Ob/Gyn & Radiologist?	7/53 (13.2%)

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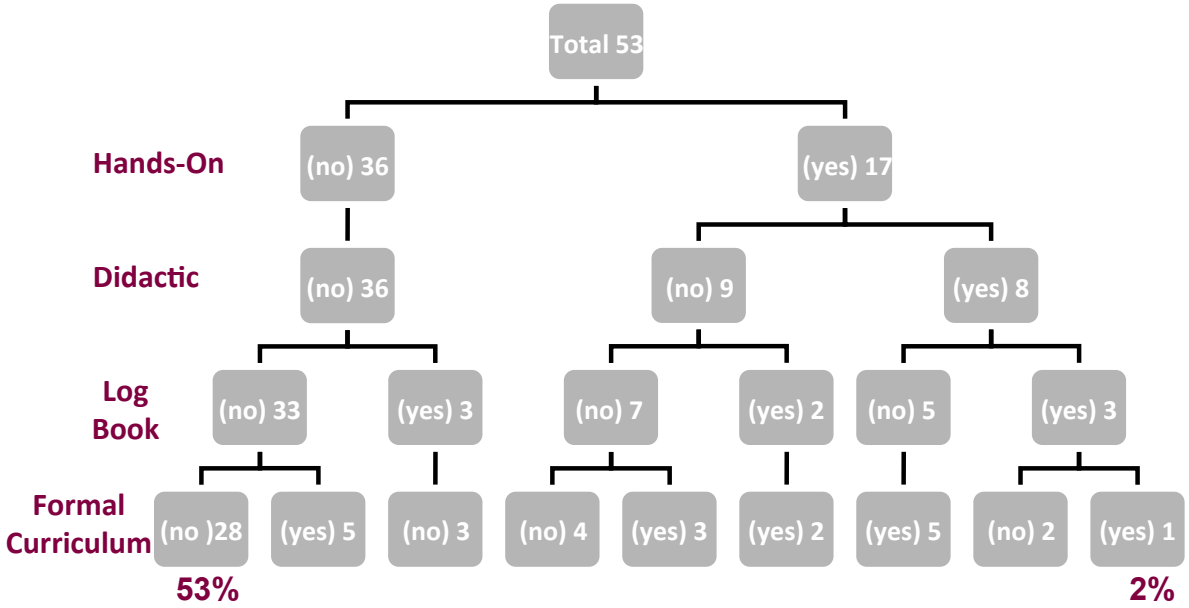
TYPE OF US TRAINING



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ADEQUACY OF TRAINING

Area Being Examined	Worst=1	2	3	4	Best=5	Rank/100
Determining fetal viability	5	2	7	17	22	73.0
Pregnancy location	6	4	15	15	13	61.8
Placental localization	7	9	12	18	7	53.8
Estimating fetal weight	9	8	11	18	7	52.8
Estimating amniotic fluid index	11	6	15	12	9	51.0
Uterus: size, myomas, version	12	14	13	9	5	41.0
Fetal Heart	11	18	11	9	4	39.3
Endometrial stripe, polyps	14	13	12	10	4	39.3
Adnexa	11	19	12	7	4	37.8
Genitalia	16	13	9	14	1	36.3
Extremities	15	17	14	5	2	32.0
Fetal Skeleton	18	18	10	7	-	27.8
Determining chorionicity	21	15	10	5	2	27.3
Gastrointestinal Tract	22	14	11	6	-	25.5
Measuring cervical length	22	15	12	4	-	24.0
Genitourinary Tract	24	14	9	5	1	24.0
Fetal Face and Neck	22	18	7	5	-	23.5
Fetal CNS	24	18	8	3	-	20.3
First trimester NT	27	15	7	3	1	19.8
Doppler Studies	39	11	3	-	-	8.0
3D/4D Ultrasound	48	5	-	-	-	2.0

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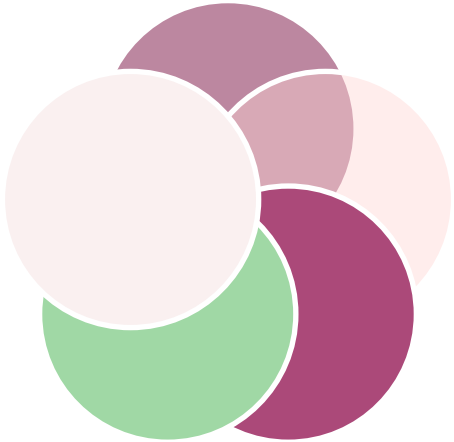
FAST FORWARD TO 2017...

Lebanon Pilot of ISUOG's Basic Training

Background

Conclusion



Objective

Results

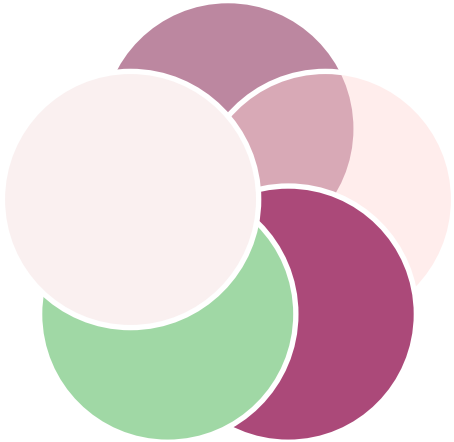
Methods

OBJECTIVE

To assess the **feasibility** of commencing a **standardized** curriculum in obstetrics and gynecologic ultrasound in Lebanon.

Background

Conclusion



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METHODS

- **Trainees**: 10
- **Trainers**: 4
- Pre-Course **Survey**
- **ISUOG BT** Curriculum
- **Pre- and post- test**
- Monthly **didactic** sessions
- **Hands-On**
- **Simulation**
- **DropBox**

LEBANON APPROACH

I. ISUOG BT Lectures

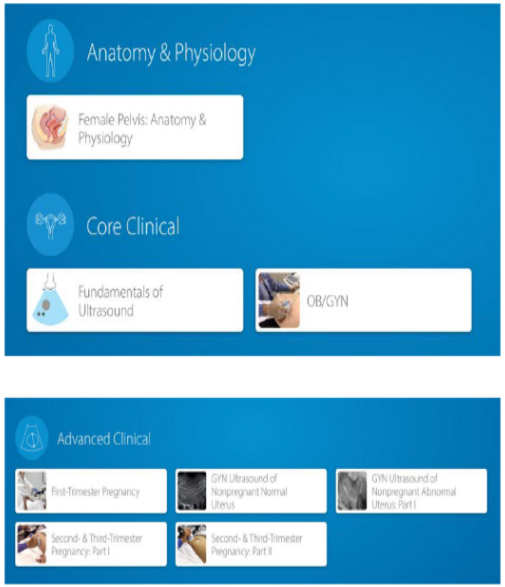
ISUOG BT's 32 lectures, listed below, will be delivered 4 at a time at each of the 8 full-day sessions. Trainees may access ISUOG's OnDemand for more educational material.

	Introduction to Basic Training Course: Basic Physical Principles
1	Physical principles of ultrasound including safety
2	Transducers, image production, knobology, scanning planes (TV and TA) and measurements
3	The principles of Doppler ultrasound
4	Overview of the Basic Training Programme
5	Quality control processes for operators and programmes
6	Informed consent, image recording and report writing
7	Assessing normal and abnormal findings between 4 and 10 weeks in singleton and twin pregnancies
8	Assessing normal and abnormal findings between 10 and 14 weeks in singleton and twin pregnancies
	Second and Third Trimesters
9	The 6 steps approach
10	Fetal biometry: dating, assessing size and estimating fetal weight
11	Cervical assessment
12	Assessing the placenta and amniotic fluid in singleton and twin pregnancies
13	Distinguishing between normal and abnormal fetal size and growth patterns in singleton and twin pregnancies
14	Umbilical and uterine artery Doppler studies
15	Management of abnormal growth
16	Ultrasound in labour and postpartum, gynecology relating to pregnancy and triage
	Second and Third Trimesters: Normal and Abnormal
18	Distinguishing between normal and abnormal appearances of the fetal head and face
19	Distinguishing between normal and abnormal appearances of the fetal thorax
20	Distinguishing between normal and abnormal appearances of the fetal heart
21	Distinguishing between normal and abnormal appearances of the fetal abdomen
22	Distinguishing between normal and abnormal appearances of the fetal spine
23	Distinguishing between normal and abnormal appearances of the fetal limbs
24	Managing abnormal findings in the fetus
	Gynecology
25	Examining the uterus, ovaries and adnexae: normal and abnormal findings
26	Distinguishing between normal and abnormal appearances of the myometrium
27	Distinguishing between normal and abnormal appearances of the endometrium
28	The use of ultrasound in the management of abnormal uterine bleeding
29	Distinguishing between normal and abnormal appearances of the ovary
30	Distinguishing between normal and abnormal appearances of the adnexae
31	The role of ultrasound in managing pelvic pain and incidental findings
32	Managing abnormal findings in the female pelvis

LEBANON APPROACH

II. SonoSim's Online Modules

Each trainee will have access to SonoSIm's 8 online modules (listed below) for completion on his/her own time and for taking the MCQ assessment for each of the modules. Trainees' progress and grade will be assessed online.



LEBANON APPROACH

Adapted From ISUOG BT 20 Planes, 6-Step Approach and AIUM Competency

Trainees are required to demonstrate proficiency in obtaining and interpreting the below views. They will be scored on each image as per the AIUM image criteria in the following section (pages 20-31).

Category	View required
I.The Basics	
1-Probes (On machine)	Frequency, footprint, marker dot, probe selection
2-Machine Settings	Gain, depth, focus, zoom, and mode selection (2D, M-Mode)
3-Machine Safety	Demonstrate on machine TI
4-Image Interpretation	Transverse vs longitudinal image interpretation
5-Ergonomics	Correct chair height, abduction, screen
6-Components to a Report	Key components (name, LMP, indication, findings)
II.Early First Trimester (< 10 Weeks)	
7-Sonoembryology	Identify and measure YS, GS, fetal pole and FHT (M-mode)
8-Viability	Sonogrphic criteria for viable, non-viable and PUL
9-Ectopic	Sonographic features for diagnosis
10-Molar Gestation	Sonographic features for diagnosis
11-Subchorionic Hematomas	Sonographic features for diagnosis
12-Twins	Determine chorionicity
III.First Trimester (> 10 Weeks)	
13-Dating	Measure CRL. At what point to use BPD
14-Basic Anatomy	What not to miss
15-Twins	Chorionicity and criteria for discordance
IV.Second and Third Trimesters	
16-Focused Obstetrical Exam (6-Step)	State the 6 step then demonstrate them while scanning
17-CNS	Identify the falx, thalami, CSP, CB, CM. Measure BPD and HC
18-Face	Recognize orbits, profile, NB, upper lip
19-Chest	4 chamber and 3 vessel views
20-GI	Stomach, and measure AC
21-GU	Kidneys, cord insertion, bladder
22-Skeleton	Visualize 4 extremities and the sagittal spine. Measure FL
23-Fluid	Measure MVP and AFI
24-Placenta	Locate
25-Cervix	Locate, Cx length (TA versus TV)
26-Dating (cerebellum)	TCD measurement
27-Twins	Determine chorionicity
28-Growth	Interval growth and growth abnormalities (LGA and IUGR)

V.Anomalies Not to Be Missed	
29-Hydrops Fetalis	Recognize key sonographic features in all 3 trimesters
30-CNS	Anencephaly, encephalocele, hydrocephaly
31-Face	Large facial cleft
32-Chest	Ectopia cordis, situs, univentricular heart
33-GI	Absent stomach, double bubble, abdominal wall defects
34-GU	Megacystis, hydronephrosis, absent bladder
35-Skeleton	Absent limb, large NTD
36-Fluid	Oligo, poly
37-Placenta	Previa, morbidly adherent
38-Cervix	Funnel, shortness
39-Twins	Monochorionic, monoamniotic, TTTS
VI.Gyn	
40-Basics	Holding and rotating probe, image interpretation
41-Uterus	Measure in 3D, identify and measure End, recognize pathology
42-Adnexa	Measure in 3D, differentiate physiologic changes from pathologic
43-Common Pathologies	Of both uterus and adnexa
44-IUD Localization	Appearance, proper placement

Background

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OUR RESIDENTS

Table 1: Personnel characteristics

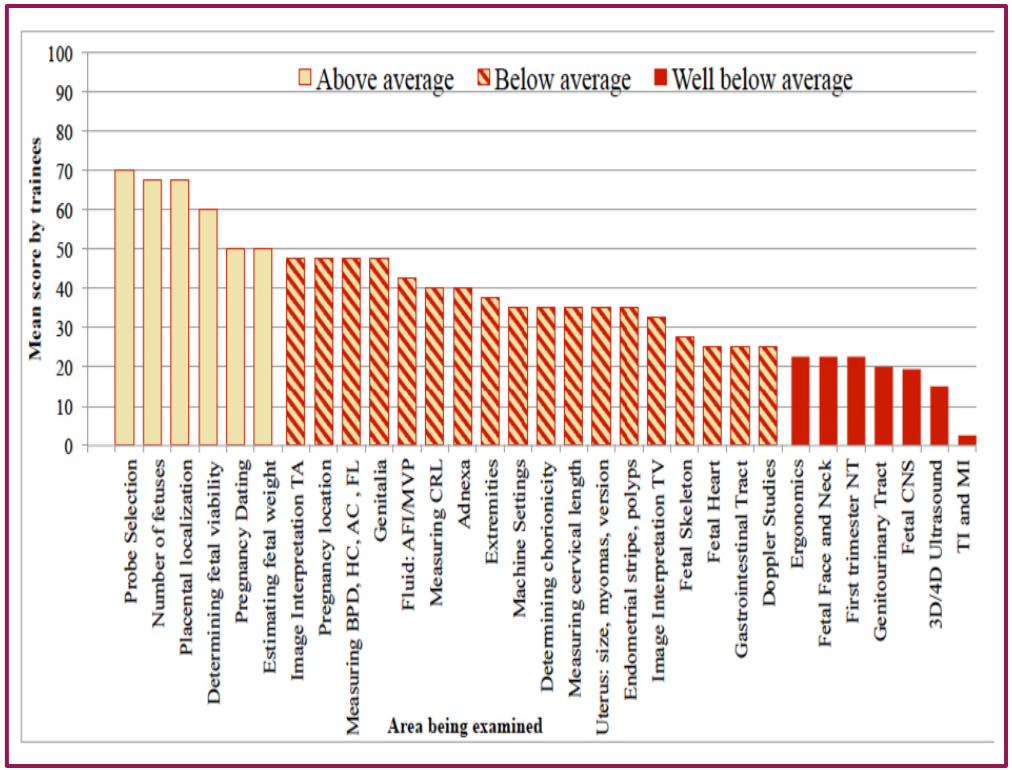
	N	Percent
Age (years)		
26	6	60.0
27	3	30.0
29	1	10.0
Sex		
Female	4	40.0
Male	6	60.0
Current Residency Program		
OB	4	40.0
Radio	6	60.0
Medical School attended		
Lebanese University	7	70.0
University of Balamand	3	30.0
Exposure to Ultrasound		
No	9	90.0
Yes	1	10.0
Year in training		
1	3	30.0
2	7	70.0

THEIR TRAINING

Table 2: Ultrasound training

	N	Percent
Do you feel your current ultrasound training is adequate?		
No	5	50.0
Somewhat		50.0
Yes	5	
Are you being trained by Ob/Gyn, radiologists or both?		
Ob/Gyn	4	40.0
Radiologist	6	60.0
Both		
Is there a formal curriculum for teaching ultrasound in your program?		
No	10	100.0
Yes		
Is there focused hands-on training in Ob/Gyn ultrasound?		
No	10	100.0
Yes		
Is there focused didactic training in Ob/Gyn ultrasound?		
No	10	100.0
Yes		
Are you required to keep a log book of the number of cases done?		
No	10	100.0
Yes		
Are you formally evaluated on your ultrasound capabilities?		
No	10	100.0
Yes		
Are you required to attend any specialized ultrasound training courses?		
No	10	100.0
Yes		

OVERALL SCORE



CRITERIA

Table 4: comfort level in each of the following categories (0 being not comfortable at all, and 100 being extremely comfortable)

2017

Area Being Examined	0	25	50	75	100	Mean rank
Probe Selection		2	2	2	4	70.0
Number of fetuses		1	3	4	2	67.5
Placental localization			5	3	2	67.5
Determining fetal viability	1	2	2	2	3	60.0
Pregnancy Dating		3	4	3		50.0
Estimating fetal weight		2	6	2		50.0
Image Interpretation TA	3	1	2	2	2	47.5
Pregnancy location	1	2	5	1	1	47.5
Measuring BPD, HC, AC , FL		3	5	2		47.5
Genitalia	1	3	3	2	1	47.5
Fluid: AFI/MVP		4	5	1		42.5
Measuring CRL		4	6			40.0
Adnexa	1	3	5	1		40.0
Extremities	2	2	5	1		37.5
Machine Settings	2	4	2	2		35.0
Determining chorionicity	1	4	5			35.0
Measuring cervical length	2	4	2	2		35.0
Uterus: size, myomas, version	2	3	4	1		35.0
Endometrial stripe, polyps	1	5	3	1		35.0
Image Interpretation TV	3	3	2	2		32.5
Fetal Skeleton	3	3	4			27.5
Fetal Heart	3	4	3			25.0
Gastrointestinal Tract	3	4	3			25.0
Doppler Studies	4	2	4			25.0
Ergonomics	5	2	2	1		22.5
Fetal Face and Neck	3	5	2			22.5
First trimester NT	3	5	2			22.5
Genitourinary Tract	4	4	2			20.0
Fetal CNS	4	3	2			19.4
3D/4D Ultrasound	6	2	2			15.0
TI and MI	9	1				2.5

2011

Area Being Examined	Worst=1	2	3	4	Best=5	Rank/100
Determining fetal viability	5	2	7	17	22	73.0
Pregnancy location	6	4	15	15	13	61.8
Placental localization	7	9	12	18	7	53.8
Estimating fetal weight	9	8	11	18	7	52.8
Estimating amniotic fluid index	11	6	15	12	9	51.0
Uterus: size, myomas, version	12	14	13	9	5	41.0
Fetal Heart	11	18	11	9	4	39.3
Endometrial stripe, polyps	14	13	12	10	4	39.3
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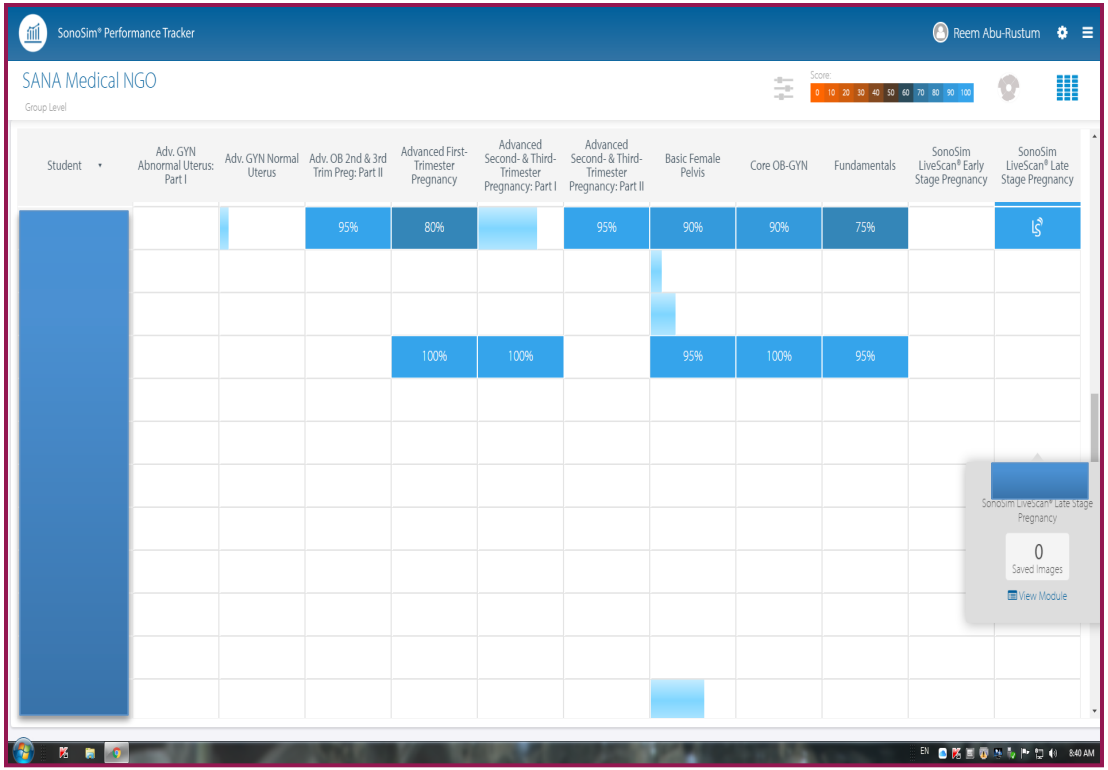
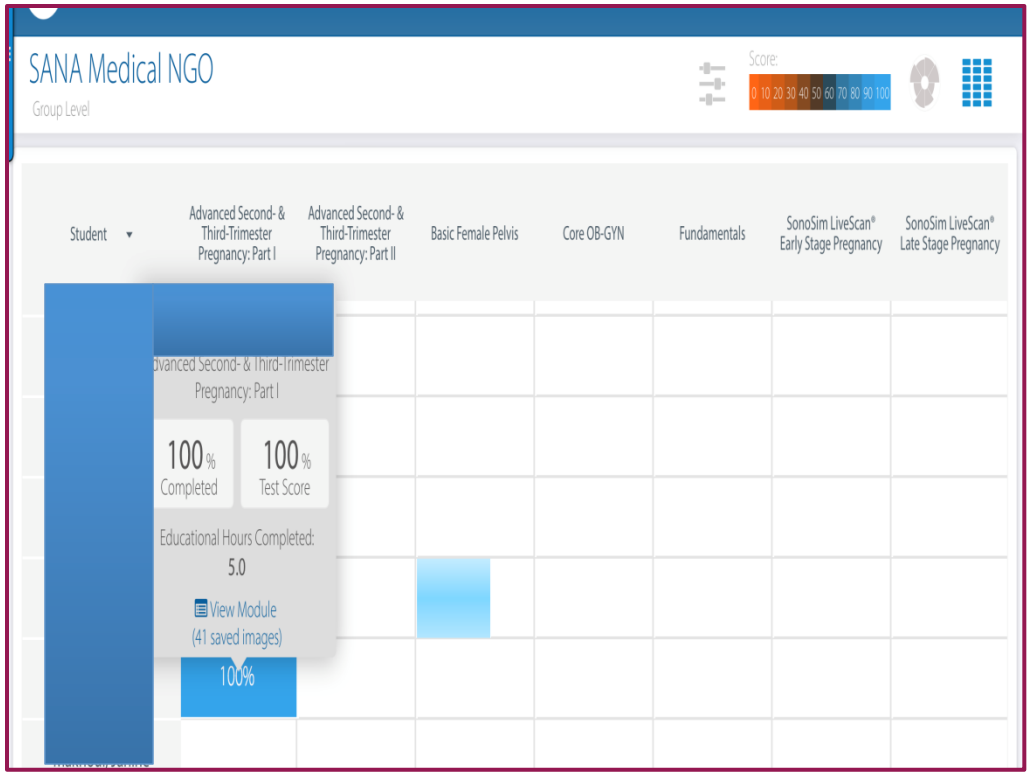
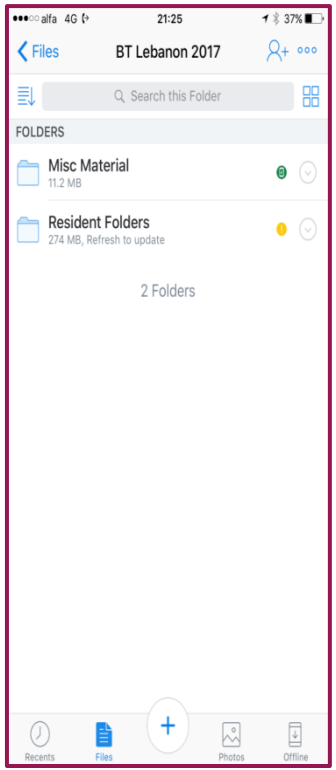
LEBANON APPROACH: THEORETICAL

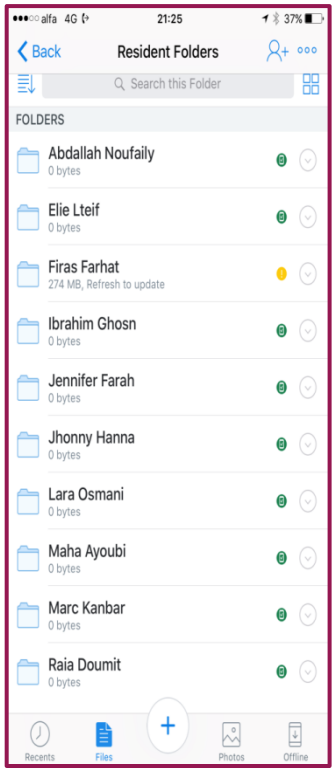


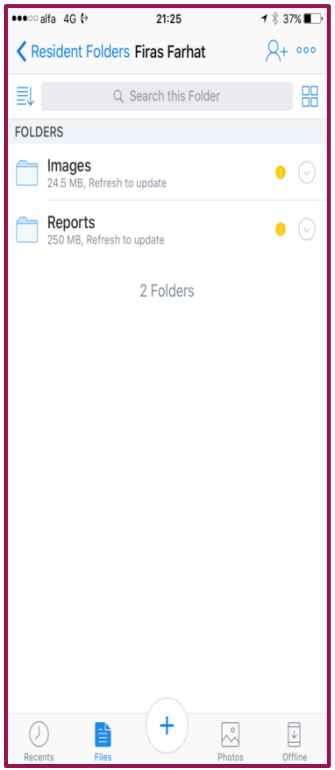
LEBANON APPROACH: THEORETICAL



LEBANON APPROACH: PRACTICAL







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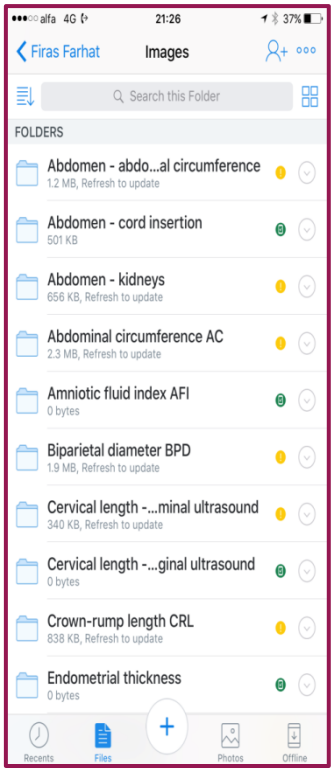

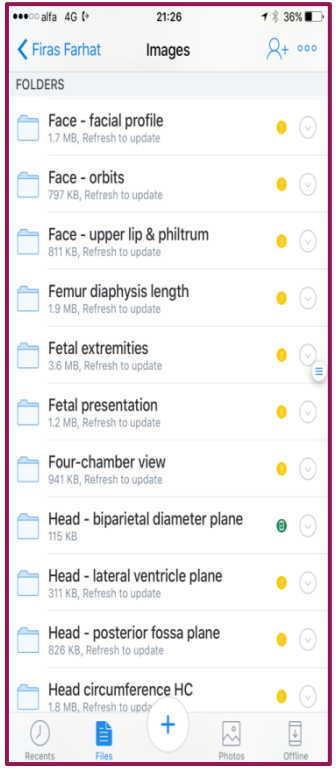

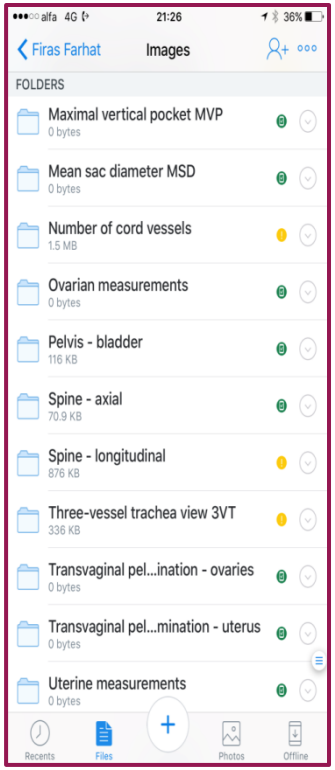

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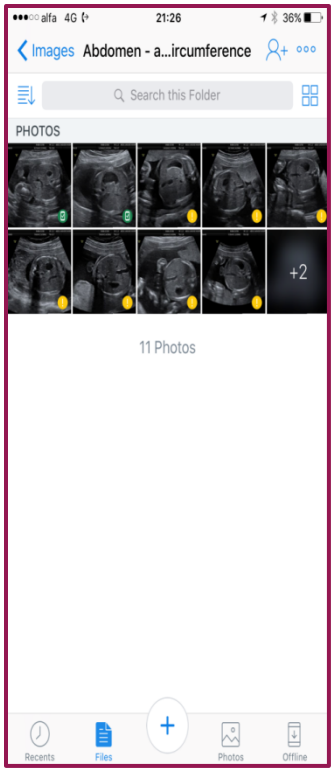

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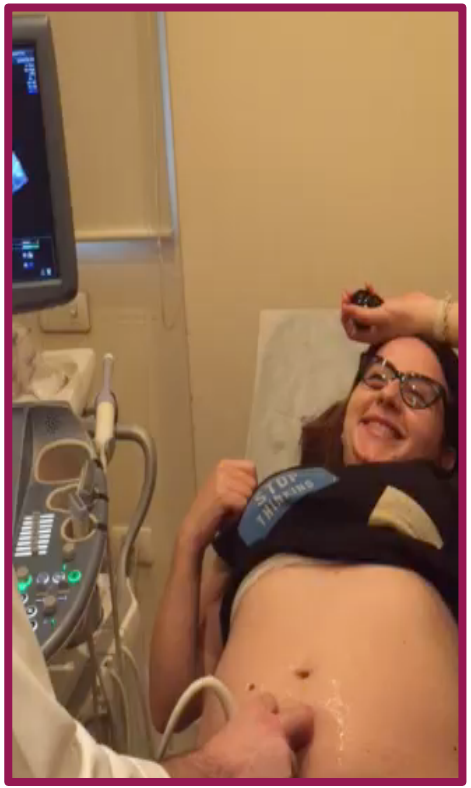

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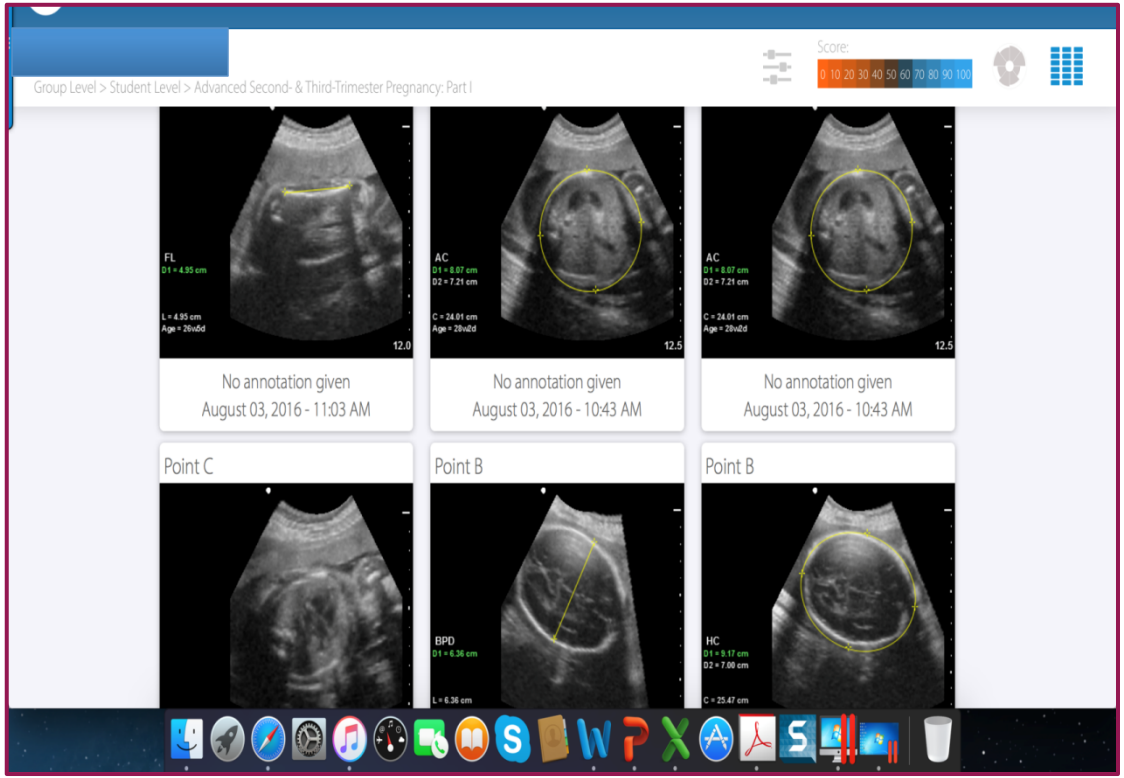

RESULTS

- Clear need for **structured** training
- Close to **100%** attendance
- **ISUOG BT Lectures**: well received
- **Online simulation-based modules**: well recieved
- Greatest **challenge**: acquiring the required images
- Experience: most **impactful**

Background

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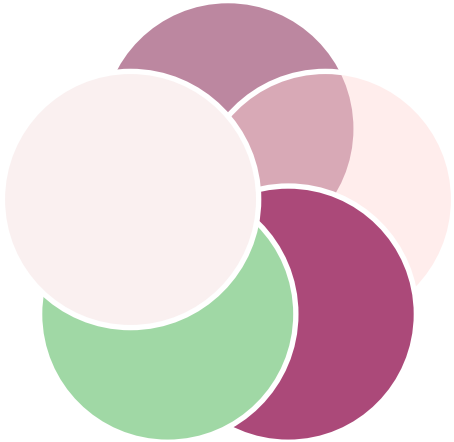

Results

Methods

CONCLUSION

Once a passionate core team is available, it is feasible to:

- Introduce a **standardized curriculum** in Ob/Gyn ultrasound given the availability of high quality online educational material and simulation
- This requires time and dedication from both trainers and trainees
- Our experience shall hopefully set the stage for a standardized national curriculum in Ob/Gyn Ultrasound in Lebanon

THANK YOU…

Photos at www.sanango.org and SANA's Facebook Page