



Training and Education of Ultrasound in Arabic Countries (The Republic of Sudan, The National Ribat University)

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INTRODUCTION

Diagnostic ultrasound is an emerging imaging technology which is widely used in both industrialized as well as developing countries. Ultrasound has found widespread application in anatomical imaging, blood-flow measurement and evaluation of physiology in almost all aspects of medicine as well as pathological changes.

Ultrasound training programs in Arabic countries found only in countries where there is Ian Donald School branches and the informations about these training programs are not shown in the activities of training program.

U/S TRAINING DISTRIBUTION OF THE ARAB WORLD



	<i>U/S training</i>	<i>No U/S training</i>
1	Bahrain	Morocco
2	Egypt	Algeria
3	Jordan	Syria
4	Lebanon	Iraq
5	Libya	Kuwait
6	Oman	Yemen
7	Qatar	Palestine
8	Saudi Arabia	Somalia
9	Sudan	Mauritania
10	Tunisia	Comoros
11	UAE	Djibouti

AIMS AND PRINCIPLES

- The medical use of ultrasound remains highly operator-dependent, in spite of advances in technology. The interests of the patient are best served by the provision of an ultrasound service trained personnel using equipment of appropriate quality.
- All who provide an ultrasound service are ethically and legally vulnerable if they have not been adequately trained.
- An appropriate level of training in ultrasound is one that allows for the provision of a safe and effective ultrasound service. This may be a purely diagnostic, predominantly interventional or a clinically focused service.

THE NEEDS

- The need for adequate education and training in ultrasonography exists in both industrialized and developing countries. Moreover, the challenge of providing adequate training in ultrasonography is made more difficult by the diversity of its utilization, since no single medical specialty has a monopoly on its use.

THE DIFFERENT ASPECTS COVERED BY THE ANALYSIS

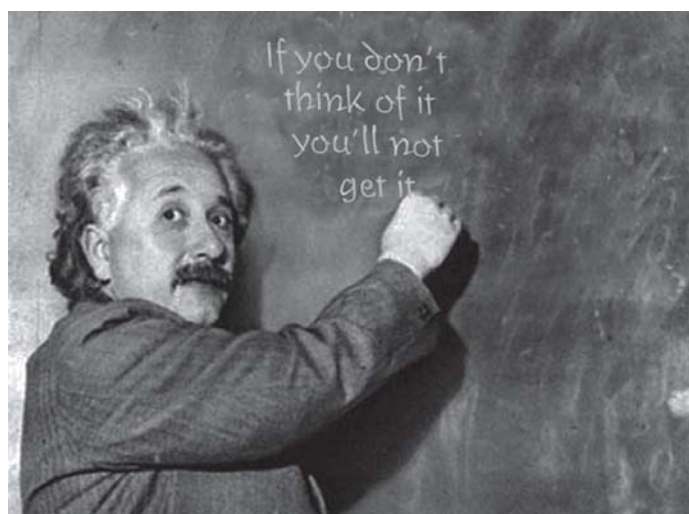
- Standards of clinical practice.
- Ultrasound in different hospitals of a country.
- Educational set-ups in universities and hospitals of that country.
- Role of health ministries in upgradation of standards of ultrasound.
- CME programs.
- National society/association.
- Radiologists vs nonradiologist controversies.
- Private sector.
- Ultrasound education set-ups.
- Guidelines and protocols.

CLINICAL ASSESSMENT

History and physical examination should be carried out by medically qualified personnel using appropriate diagnostic instruments.

The clinician should identify the patient, understand the major complaint and ask questions in order to explore the underlying cause of the complaint and make a clinical diagnosis. A major concern is to obtain the correct history of the patient and to clearly understand the complaints and their duration.

'If you don't think of it you'll not get it'



More detailed investigations by laboratory and/or diagnostic imaging services are needed for clarification.

ULTRASOUND EXAMINATIONS

The clinical application of ultrasound investigation requires extensive education and continuing training which is generally not provided at local training institutions.

Only very few countries have implemented regulations for the use of ultrasound examination, and examinations are often performed by insufficiently trained personnel. This may be of more harm than benefit to the patient because of the potential incorrect diagnoses made.

The person doing the ultrasound examinations must have sound medical knowledge as well as sufficient training in sonography because these are essential for correct and safe examinations.

However, there are increasing demands for ultrasound services to include direct access, to facilitate immediate clinical decisions in areas, such as 'one-stop' clinics and, potentially, in the newly configured independent sector treatment centers.

THREE LEVELS OF MINIMUM TRAINING REQUIREMENTS

Level 1

Practice at this level would usually require the following abilities:

- To perform common examinations safely and accurately.
- To recognize and differentiate normal anatomy and pathology.
- To diagnose common abnormalities within certain organ systems.
- To recognize when a referral for a second opinion is indicated.
- To understand the relationship between ultrasound imaging and other diagnostic imaging techniques.

Within most medical specialties, the training required for this level of practice would be gained during conventional postgraduate specialist training programs.

Level 2

Practice at this level would usually require most or all of the following abilities:

- To manage referral from level 1 practitioners.
- To recognize and correctly diagnose almost all conditions within the relevant organ system and to have sufficient understanding of ultrasound depiction of pathology to optimize the referral of the patient if the condition falls out with the practitioner's skill.
- To perform common non-complex ultrasound-guided invasive procedures.
- To teach ultrasound to trainees and level 1 practitioners.
- To conduct some research in ultrasound.

The training required for this level of practice would be gained during a period of subspecialty training which may either be within or after the completion of a specialist training program.

Level 3

This is advanced level of practice which includes some or all of the following abilities:

- To manage referrals from levels 1 and 2 practitioners.
- To perform specialized ultrasound examinations.
- To perform advanced ultrasound-guided invasive procedures.
- To conduct substantial research in ultrasound.
- To teach ultrasound at all levels.
- To be aware of and to pursue developments in ultrasound.

The boundaries between the three levels are difficult to define precisely and the above should only be regarded as a guide to different levels of competence and experience.

A system for recording the results of any ultrasound examination in the patients record is mandatory. The permanent recording of images, where appropriate, is desirable for the purposes of correlative imaging, future comparison, audit and legal issues.

Knowledge of the appropriate use and integration of other imaging techniques as well as the clinical and economic impact of ultrasound on the demand for other imaging should be required.

Training should be related to the specialist requirements of the trainee, i.e. training should be modular. Within any one level of training, it may be appropriate for a trainee to become proficient in some but not all of the individual modules and only undertake ultrasound practice in this/these areas.

Regular appraisal should take place during the training period. At the end of a period of training, a competency assessment form should be completed for each trainee, which will determine the area or areas in which they can practice independently.

Following training, regular and relevant continuing medical education (CME/CPD) should be undertaken and documented. It is the responsibility of the trainee to ensure that their practical skills are maintained by ensuring that regular ultrasound sessions are undertaken and that there is an adequate range of pathology seen in their ultrasound practice.

THE ROLE OF TELEMEDICINE IN THE TRAINING OF U/S

It is an application of communication technologies for medical purposes.



AREA OF SCOPE

Remote consultations—gives specialist practice in rural locations in Obs/Gyn field.





INTERNAL REQUIREMENT

- Policies, procedures and protocols work as controlling monitoring and assessment.
- Good awareness of society and public to the change which leads to patient satisfaction.
- Trained human resource.
- Qualified medical and supportive IT resources.
- Standard infrastructure.

METHODOLOGY OF LEARNING

- Workshops
- Self learning

- Interactive learning
 - Closed circuits
 - Hands-on training
 - E-learning
 - Video conference
- Arab Institute for Continuing Professional Development (AICPD)—www.acid.org.

EVALUATION PROCESS

- Continuous assessment
- Periodical assessment > case studies—problem solving.
- Final assessment:
 - Written
 - Practical
 - Oral examinations
 - For the diploma: 8 courses 12/12 ~ 380 hours
 - For short courses: 2/52 > 3/12
 - Master degree: 18/12 > 24/hours
 - Doctorate degree: 3 > 4 years.

RECOMMENDATION

To encourage the Ian Donald School branches to supervise the different training programs in collaborations with the academic and training institutions in each country.