The need for a better integrated reproductive medicine and surgery service in Europe

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Reproductive surgery

1960s

Tubal pathologies were treated through **laparotomy** (macrosurgery).

Cons: Invasive technique; results not guaranteed

The hypothesis to replace damaged tubes with prosthesis was formulated.

This idea was abandoned shortly after since, unlike tubes, these artifacts could not transport and nourish the embryo in the first days of pregnancy.

Reproductive surgery

1970s

Introduction of **gynaecological microsurgery**.

Good pregnancy rate (20% to 60% depending on the type of damage)

Passage from **diagnostic laparoscopy** to **operative laparoscopy**

Pros:

- minimally invasive
- brief post-surgical course (in some cases laparoscopy can be performed in day surgery regimen)

Both microsurgery and laparoscopy provide **similar results** in terms of pregnancy rate.

Reproductive surgery

1970s

The idea to replace the functions of damaged tubes using *in vitro* techniques leads to the development of ART.

In 1978 Lesley Brown a woman suffering from tubal occlusion gave birth to the first baby conceived following IVF.


Evening News

Meet Louise, the world's first test-tube arrival

SUPERBABE

Initially ART results were worst than the ones obtained following surgery, but developments in Assisted Reproduction quickly led to a progressive dismissal of surgical techniques.

Reproductive surgery

From the mid-1980s

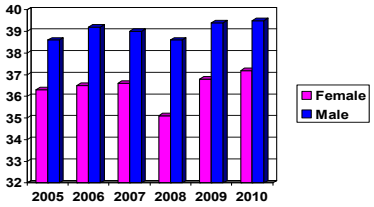
The preponderant role that surgery had in the early days of ART has been constantly decreasing due to:

- Social Factors
- Clinical Factors
- Legal Factors
- Logistic Factors

Social Factors

- Increased female age

Practitioners tend to bypass surgery and start treatments immediately in order to speed up the process



Data Source: S.I.S.Me.R.

Clinical Factors

- Advancements in ART
  - The need for complex surgical procedures have been reduced
- Changes in indications for ART
  - **Previously:** mainly mechanical factors (adhesions, endometriosis, tubal occlusion)
  - **Now:** female age and male factor

⇧ Male Surgery Female surgery ⇩	Improvements in male surgery (TeSE, MicroTeSE)

- Developments in endoscopic surgery

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However….

The contribution of surgery to ART is not always positive.

There is growing evidence suggesting that ovarian reserve and responsiveness are negatively affected following surgical excision of ovarian endometriomas.

Possible explanations

1) The presence of a cyst may per se cause damage to ovarian tissue
2) Accidental damage to healthy ovarian tissue during surgery

Studies evaluating ovarian reserve and responsiveness in women who underwent monolateral excision of endometriotic cysts generally showed a decrease in follicular development compared to the contralateral ovary.

At present it is not possible to determine whether this is due by endometrioma per se, but what is proved is that ovulation and ovarian response are negatively affected in ovaries with endometriomas.

Benaglia et al. Human Reproduction, Vol.25, No.3 pp. 678–682, 2010

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Rate of ovarian damage following surgery for endometriomas

Table I Studies comparing the number of follicles in the operated and in the contralateral non-operated ovaries during ovarian hyperstimulation for IVF.

Authors	Number of cycles	Operated ovary	Control ovary	P
Loh et al. (1999)	12	4.6*	3.6*	n.s.
Ho et al. (2002)	38	1.9 ± 1.5	3.3 ± 2.1	<0.001
Somigliana et al. (2003)	46	2.0 ± 1.5	4.2 ± 2.5	<0.001
Ragni et al. (2005)	38	1.8 ± 1.8	4.5 ± 2.0	<0.001
Duru et al. (2007) (LPS)	28	3.1 ± 1.8	4.4 ± 1.0	<0.05
Duru et al. (2007) (LPT)	10	2.1 ± 1.4	5.0 ± 2.0	<0.05
Alborzi et al. (2007)	70	3.2 ± 1.1	3.2 ± 1.7	n.s.

Data are expressed as Mean ± SD.
*SD was not reported.
n.s., not significant; LPS, laparoscopy; LPT, laparotomy.
Only studies referring to surgical excision of endometriomas were included.

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Advanced Access publication on January 17, 2010 doi:10.1093/humrep/dep464

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Legal factors

ART legislation can have an impact on the practice of reproductive surgery.

In **Italy**, for example, **from 2004 to 2009** the prohibition of embryo cryopreservation and the low number of fertilizable oocytes led to a comeback of pelvic surgery in the attempt to increase success rates of ART treatments.

Reproductive surgery + ART = complementary strategies

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Logistic Factors

Reproductive surgery, and in particular endoscopic surgery, requires:

- Dedicated **facilities**
- Skilled **personnel**
- Technologically advanced **equipment**

According to a survey carried out by the ESHRE T.F. on Management of Fertility Units in 2010, 32% of the Centers who participated (212 from all over the world) were **FREE STANDING UNITS** that only performed ART treatments.

In order to contain costs, these structures usually do not own surgical facilities, **referring patients to other clinics** (public or private) **for this kind of procedures**.

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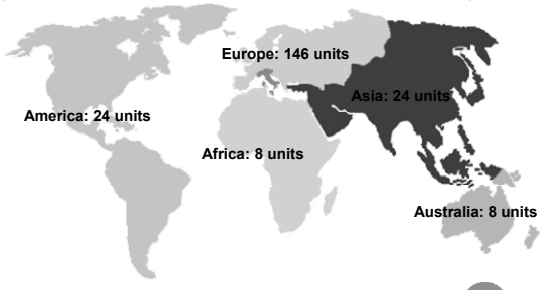
B. General details

Total surveys: 212 units
(199 ESHRE members , 13 non-ESHRE members)



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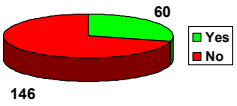
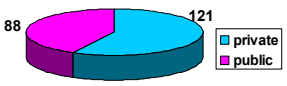
B. General details

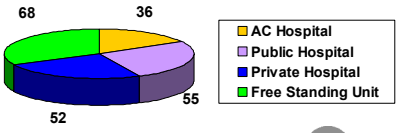
Corporate net



Unit denomination



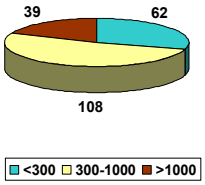
Location



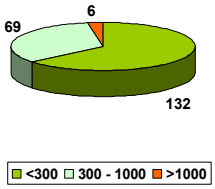
B. General details

Size of the unit by number of embryo transfers

Fresh embryo transfer



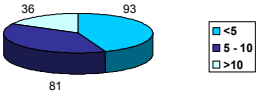
Frozen embryo transfer



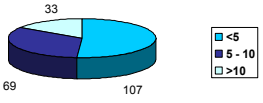
B. General details

Number of persons working in the unit/centre/clinic

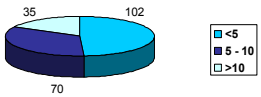
Fertility doctors



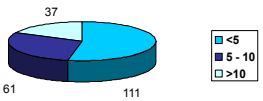
Nurses



Laboratory staff



Other allied personnel



Surgical Training

Another issue affecting reproductive medicine and surgery service in Europe is that medical school curricula and continuing education have not kept pace with the challenges that characterize an era of **global mobility**.

⇩

Free circulation of workers and students throughout the European Union urges Countries to develop a **more integrated education system in Medicine**

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A first step: the "Bologna Declaration"

The Bologna Declaration is a pledge by 29 countries to reform the structures of their higher education systems in a convergent way

Signed in Bologna in **1999**, this document started the so-called "**Bologna process"**

Goals:

- to create a **European space for higher education** in order to enhance the employability and mobility of citizens and to increase the international competitiveness of European higher education;
- the adoption of a **common framework of readable and comparable degrees**
- a European dimension in **quality assurance**, with comparable criteria and methods

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The role of ESHRE

Subspecialist training program in Reproductive Medicine

UEMS – OB/GYN Section
Union Européenne des Médecins Spécialistes

European Board and College of Obstetricians and Gynaecologists (EBCOG)

ESHRE

The management of infertile couples requires special training in endocrinology, andrology, reproductive surgery, reproductive biology, genetics, psychology of both partners.

EBCOG considered that **reproductive medicine should be recognized as a subspecialty in Europe**.

Educational objectives and requirements for training in these sub-specialist areas have been defined with acknowledged experts from the European Society of Human Reproduction and Embryology (ESHRE). The role of a sub-specialist is complementary to the specialist in Obstetrics and Gynaecology.

Definition of the Reproductive Medicine Sub-specialist

The Reproductive Medicine sub-specialist is a specialist in Obstetrics and Gynaecology who has had theoretical and practical training in:

- **medical and surgical management of infertility**. This may involve treatment of the male if practiced by the gynaecologists in the country. It will involve a range of assisted reproductive techniques (ART), reproductive endocrinology.

- Comprehensive management of these problems includes **diagnostic, therapeutic procedures and audit of outcome**.

Sub-specialists, after completion of their training, **continue to devote at least half**, and probably more, **of their working time to the field of Reproductive Medicine**.

Aims and objectives of the training

1) to **improve the care of patients** with disorders of reproductive function in collaboration with other care providers.

2) to train a sub- specialist to be capable of:
- **improving** knowledge, practice, teaching, research and audit;
- **co-ordinating and promoting** collaboration in organizing the service;
- **providing leadership** in the development and in research within the subspecialty.

Organization of training

Training program should be in a **multidisciplinary centre** and should be organised by a sub-specialist or an accredited sub-specialist.

Centres should use **guidelines and protocols** finalised by national professional bodies reviewed at regular intervals.

Training as a sub-specialist in Reproductive Medicine **does not imply an exclusive activity** in that field.

Means of training

Entry requirements:
• a recognised specialist qualification in Obstetrics & Gynaecology or have completed a minimum of five years in an approved training program .
• the availability of a recognised training positions.

For each country, the number of training positions should reflect the **national need for subspecialists** in reproductive medicine as well as the facilities and finance available for training.

Fellows should participate in **all hospital activities** such as the care of out-patients and in-patients, on call duties, performing endoscopic surgery, assisted reproductive techniques such as ovulation induction, insemination, IVF/ICSI and **participating in educational activities**, including the teaching of other health professionals. Participation in audit and clinical or basic research is essential.

Means of training

Duration of subspeciality training should include a **minimum of two years** in an approved program and should cover the clinical and research aspects of the following areas :

• Andrology
• Counselling and psychology
• Endocrinology
• Genetics
• Reproductive biology
• Reproductive surgery
• Ultrasound imaging

Training should be structured throughout with **clearly defined targets** to be met after specified intervals. An **educational plan** should be drawn up in consultation with the Fellow at the beginning of each attachment and progress should be monitored regularly by mean of the **log book**.

Assessment of training

In all European countries approval of training and trainers should be the responsibility of a **national or regional authority** which has the power to withdraw recognition if necessary.

Availability of:
- Multidisciplinary **team regularly involved in the management of reproductive medicine**
- **Reproductive biologist**
- **Ultrasound unit**
- **Optional:** unit of genetics and urology

Assessment of training

Fulfilment of **defined criteria** for minimum activity:

-**100** new infertility cases per year **for a first Fellow and 60 more for a second one** would be the minimum number necessary to provide quality care, fellowship training and research;

- **participation in Reproductive Medicine courses**, in particular those recognised by EBCOG, advised by ESHRE;

- completion of a **log book** of clinical experience in Reproductive Medicine;

- peer review **publications** in a nationally recognised journal.

On completion of training, Fellows should have performed the minimum number of diagnostic and therapeutic procedures and technical acts under supervision, and be able to carry these out independently, properly and safely.

Accreditation of a Centre for training

1 - Application by the Centre to ESHRE (or to EBCOG/Subspecialties Subcommittee, which forwards it to ESHRE).

2 - The EBCOG/Subspecialties Subcommittee is notified to log the application, check if the Ob/Gyn Department of the applying Centre has been visited or has applied for visitation, and provide (at the initial phase) one experienced visitor.

3 - ESHRE nominates 2 additional visitors. After experience is accumulated, all 3 visitors will be nominated by the ESHRE.

4 - The visiting Committee prepares the report and submits it to the ESHRE Board for approval.

5 - The report is submitted to the EBCOG Board for approval.

6 - EBCOG and the ESHRE jointly issue the Diploma for the Centre.

ESHRE Accreditation Committee

Chair:

Prof. Basil Tarlatzis

Members:

Prof. Klaus Diedrich

Dr. Pedro Barri

Prof Anders Nyboe Andersen

Prof Bart Fauser