

Syllabus for Certificate Course in Reproductive Endocrinology & Infertility

Definition

Subspecialists are defined as obstetricians and gynecologists who, after undertaking appropriate training in a formal subspecialty program and the acquisition of special expertise and who continue to devote at least half, and probably more, of their working time to it. This higher degree of specialization indicates intensive training, experience and expertise. The aims of subspecialisation are:

- 1) To improve knowledge, practice, teaching and research;
- 2) To promote the concentration of very specialized expertise, special facilities and clinical material that will be of considerable benefit to some patients;
- 3) To establish a close understanding and working relationship with other disciplines involved in each of the subspecialty fields;
- 4) To encourage coordinated management of relevant clinical services throughout a region;
- 5) To accept a major regional responsibility for higher training, research and audit in the subspecialty fields;
- 6) To improve the recruitment of talented graduates into the recognized subspecialties and into the specialty of obstetrics and gynecology as a whole.

General Requirements For Subspecialty Training Centers

To be eligible for subspecialty training a center must:-

- i) Provide a service for the referral and transfer of patients who would benefit from subspecialty facilities, expertise and experience;
- ii) Have established close collaboration with related disciplines to provide the high degree of teamwork and concentration of resources for the intensive investigation and management of such patients;
- iii) Have established close collaboration with other obstetricians and gynecologists within and outwith the center, including major regional roles in continuing postgraduate education and training, research advice and co-ordination, and audit;
- iv) Have an adequate workload providing a full range of experience in the subspecialty; alternatively two or more centers may combine to provide a program with all the required experience;
- v) Have a program director who will co-ordinate the training program, accept the main responsibility for its supervision and be actively involved in it; when more than one center provides the program, there must be a supervisor at each center, with one having overall responsibility as director. Directors and supervisors will be consultants with special experience in the relevant subspecialty field, and with the eventual development of subspecialisation the

directors and supervisors will themselves be trained subspecialists. If the program director changes the program and training center will be revisited.

- vi) Have adequate medical staffing to enable the trainee to be engaged in his/her subspecialty field on a full-time basis (or in the case of a part-time trainee, during all of his/her normal working hours); participation in emergency and on-call work outside normal working hours is not excluded, subject to approval by the Subspecialty Committee (applications for approval of training programs should include an outline of the on-call commitments etc., but all trainees must have suitable experience of emergency and on-call work relevant to their subspecialty. The program may need to be extended in light of future shift patterns and significant compensatory rest if this interferes with the program;
- vii) Have adequate library, laboratory and other resources to support subspecialty work, training and research, over and above that required for the recognition of MRCOG and higher training posts;
- viii) Provide the resources for a research program related to the subspecialty;
- ix) Provide sufficient clinical work, staffing, facilities and other support so that initiation of a subspecialty training post is not detrimental to the higher training or special interest training of other specialist registrars or lecturers in recognized posts.

Special Requirements For Training Centers in Reproductive Medicine

To be eligible for subspecialty training in reproductive medicine a center must:-

- i) Provide a service for the referral and transfer of patients with endocrine and infertility problems requiring special diagnostic and therapeutic facilities and expertise, with close collaboration with other gynecologists within and outwith the center;
- ii) Have an adequate clinical workload with a full range of gynecological endocrine, fertility and infertility (female and male) problems;
- iii) Have appropriate clinical facilities for investigating the relevant endocrine and infertility disorders;
- iv) Have access to appropriate endocrine and ultrasound investigations for monitoring women having ovulation inductions;
- v) Have an established assisted conception program, including assisted fertilisation with appropriate clinical and laboratory facilities;
- vi) Provide training in laparoscopic and hysteroscopic surgery for investigation and treatment including ovarian biopsy and cystectomy, oophorectomy, treatment of ectopic pregnancy, adhesiolysis, salpingolysis, treatment of endometriosis, endometrial biopsy, removal of endometrial polyps, endometrial resection/ablation, hysteroscopic resection of fibroids;
- vii) Participate actively in the investigation of male infertility and collaborate closely with consultant urologists/andrologists and their staff with commitments to the investigation and management of male infertility;
- viii) Have an established donor insemination program;

- ix) Collaborate with consultant physicians/endocrinologists and their supporting staff having definite commitments to the care of endocrine disorders in women during the reproductive years of life;
- x) Have an adequate gynecological pathology service;
- xi) Have a research program in the subspecialty field with access for the trainee to support his or her own training program.

Subspecialist Training in Reproductive Medicine

Definition

Subspecialists in reproductive medicine should have a broad knowledge of endocrine and fertility problems in female and male patients. They must be clinically competent in reproductive endocrinology and the surgery relevant to fertility in these disorders. They should be involved in basic and applied investigation in reproductive endocrinology and should be able to provide a consultancy service to other obstetricians/gynecologists. They must have a working understanding of modern methods of assisted conception, including IVF and assisted fertilization.

Training Program

The following advanced knowledge and skills should be acquired:-

- a) An advanced understanding of:-
 - i) Endocrine physiology, pharmacology of substances that regulate the reproductive systems and the relevant aspects of the thyroid and adrenal systems;
 - ii) The endocrine dynamics of pregnancy and the menstrual cycle;
 - iii) the physiology of conception and reproductive tracts related to fertility and reproduction, aspects of basic and applied embryology and the techniques of in vitro fertilisation, including assisted fertilisation and assessment of sperm function;
 - iv) Immunology and genetics related to reproduction;
 - v) Psychosomatic aspects of reproductive endocrinology;
- b) Basic knowledge of:-
 - i) Clinical pharmacology of hormones;
 - ii) Gross and microscopic pathology relating to reproductive medicine;
- c) The capacity to interpret, perform and/or supervise endocrine laboratory diagnostic procedures with the relevant statistical methodology. This should include a module of laboratory training with the personal involvement in an established assay and an understanding of how a new assay is established and validated;
- d) Clinical competence in the management of endocrine and fertility problems including:-
 - i) Diagnosis of pituitary, central nervous system, thyroid and adrenal disease relating to reproduction;
 - ii) Diagnosis and management of ovarian disease related to reproduction;
 - iii) Biological and chemical assessment of endocrine function related to reproduction, including experience in the performance and supervision of appropriate endocrine studies;

- iv) Management of endocrine deficiency states including spontaneous and induced menopause;
- v) Expertise in assisted conception, including ovarian stimulation and the management of hyperstimulation syndrome, sperm and ovum retrieval techniques and management of their complications;
- vi) Expertise in endoscopic techniques related to the diagnosis and treatment of reproductive problems; including laparoscopic and medical management of ectopic pregnancy;
- vii) Experience in open and minimal access surgery designed to correct reproductive and particularly infertility problems; this would include an understanding of the role of tubal microsurgery;
- viii) Fertility control and family planning;
- ix) Expertise in ultrasound of the uterus and ovary in order to perform follicle tracking and diagnosis of early pregnancy and its problems;
- x) Early pregnancy problems; clinical competence and detailed understanding of the differences in aetiology and management of:
 - sporadic miscarriages and their complication
 - recurrent miscarriage, diagnostic criteria, management and counselling.
 - ectopic pregnancy
- e) Experience and knowledge of:-
 - i) Administration and management
 - ii) Teaching
 - iii) Legal and ethical issues
 - iv) Epidemiology, statistics, research and audit

GUIDES TO LEARNING

Clinical Pharmacology of Hormones

Objectives:

The trainee should understand and be able to discuss:-

- .1 absorption, excretion, distribution and biotransformation of drugs and hormones, showing knowledge of these mechanisms for transfer across membranes (e.g., placenta) and into breast milk, storage, metabolism, enzyme systems, renal, hepatic and faecal excretion;
- .2 discuss general mechanisms of drug and hormone action including structure-activity relationships, receptors and sites of action;
- .3 characterize drug and hormone effects, including dose-responses, biological variations, spectrum of effects and factors that modify effects (e.g., age, sex, body weight, route of administration, tolerance and drug or hormonal interactions), agonist and antagonist;
- .4 relate drug toxicity and hormone reaction to allergy, teratogenicity, dependence and addiction;
- .5 indicate governmental and pharmaceutical regulations pertaining to drugs and hormones and their developments;
- .6 understand the design analysis, and organisation of participation in clinical trials.
- .7 understand the toxicity of drugs commonly used for ovulation induction, treatment of endometriosis, hormone replacement therapy, and assisted reproduction.

Embryology

Objectives:

The trainee should understand and be able to discuss:-

- .1 the embryonic development of the genital tract including the factors controlling male and female development of the gonadal primordia, internal duct system and external genitalia;

- .2 how patients with developmental abnormalities of the genital tract including ambiguous genitalia, imperforate hymen and vaginal septa, uterine anomalies, Mullerian agenesis and gonadal dysgenesis should be diagnosed and managed;
- .3 the embryology of the hypothalamic-pituitary and other pertinent endocrine systems;
- 4 the embryology of the urological system;
- .5 the various stages of oocyte and sperm maturation and of fertilisation;
- .6 the pre-implantation development of the human embryo in vitro and in vivo.

Genetics

Objectives:

The trainee should understand and be able to discuss:-

- .1 normal genetics (e.g. Mendelian inheritance, the structure and identification of chromosomes and gametogenesis);
- .2 abnormal genetics including chromosome abnormalities and genetically transmitted abnormalities of sexual development (e.g. hermaphroditism, Turners syndrome);
- .3 inherited, non-reproductive disorders referable to reproduction (e.g., congenital adrenal hyperplasia, diabetes mellitus);
- .4 genetic studies including pedigree, karyotype analysis, antenatal diagnosis of genetic disease, including use of gene probes and associated techniques; indications and arrangements for specialised genetic diagnosis and counselling;
- .5 inherited causes of infertility and early pregnancy loss;
- .6 genetic aspects of artificial insemination and assisted fertilisation;
- .7 techniques, methods and implications of preimplantation genetic diagnosis.

Anatomy, Physiology and Pathophysiology

.Neuroendocrine Function CNS-Hypothalamic-Pituitary System and Disease States

Objectives:

The trainee should understand and be able to discuss:

- .1 anatomical-functional aspects of the hypothalamus, neurovascular relationships, hypothalamo-hypophyseal portal circulation and target cells of the pituitary;
- .2 suprahypothalamic structures and neuronal systems relevant to regulation of reproductive processes;
- .3 the site of production, biological action and control of secretion of oxytocin, vasopressins and neurophysins;
- .4 biochemical basis of neuroendocrine action of neuropharmacology of agonists and antagonists;
- .5 the pineal gland: the blood brain barrier;
- .6 sex steroid concentrating neurones;
- .7 distribution and cellular characteristics of pituitary hormone producing cells with special reference to gonadotrophe and lactotrophe;
- .8 anatomical and functional aspects of the peptidergic and catecholaminergic system and their control of the pituitary hormone secretion;
- .9 structure and function of pituitary reproductive hormones and neuropeptides;
- 10 control of secretory activities of the pituitary hormones, including long and short- term rhythms, and their target organs and feedback systems;
- 11 neuroendocrine regulation of the menstrual cycle;
- 12 neuroendocrine function of the fetus and placenta;
- 13 hypothalamic and pituitary hypopituitarism and disorders of over secretion of pituitary hormones;
- 14 organic lesions and/or functional disorders of the hypothalamic-pituitary system;

15 ectopic hormone syndromes.

Ovarian Function and Disease States

Objective:

The trainee should understand and be able to discuss:-

- .1 cyclic changes in endocrine activities within the ovary;
- .2 synthesis and secretion of hormone substances by the various compartments and cell types of the ovary. Intra and extra ovarian control mechanisms;
- .3 mechanism of protein/steroid hormone action in the ovary;
- .4 regulation of hormone receptors;
- .5 atresia and selection of the dominant follicle;
- .6 luteolysis;
- .7 hormone producing tumours of the ovary;
- .8 ovarian activity during gestation;
- .9 age-related changes in ovarian structure and function;
- .10 clinical and pathophysiological correlates of disorders of the human ovary (structure and function).

Thyroid Function and Disease States

Objectives:

The trainee should understand and be able to discuss:-

- .1 TRH-TSH-thyroid physiology;
- .2 the diagnostic value of TSH, thyroid hormones total and free, thyroid stimulating immunoglobulins and related diagnostic tests;
- .3 the biosynthesis, control and metabolism of thyroid hormones;
- .4 the clinical and pathophysiological correlates of hypo and hyperthyroidism, particularly as related to menstrual disorders and fertility;
- .5 pregnancy and hormone induced changes of thyroid function in the mother and the effect of abnormal maternal thyroid function on the fetus;
- .6 thyroid physiology in the newborn. Identification of cases at high risk of neonatal thyrotoxicosis;
- .7 the effects of thyroid replacement and anti-thyroid drug therapy on the fetus;
- .8 pathophysiology of thyroiditis;
- .9 thyroid function in struma ovarii, molar pregnancy and choriocarcinoma;
- 10 medical and surgical management of non-toxic goitre, hypo- and hyperthyroidism.

Adrenal Function and Disease States

Objectives:

The trainee should understand and be able to discuss:-

- .1 regulation and secretion of adrenocortical hormones;
- clinical and laboratory assessment of adrenocortical function;
- 2 pharmacology of naturally occurring and synthetic glucocorticoids and mineralocorticoid;
- .3 adrenocortical hypo- and hyperactivity (e.g., Cushing's hyperplasia, adenoma, carcinoma);
- 4 congenital adrenal hyperplasia (see Genetics);
- .5 effects of aberrations of adrenocortical function on hypothalamo-pituitary- ovarian function, including Nelson's Syndrome;
- .6 aldosterone and disorders of the renin-angiotensin system;
- 7 catecholamine disorders.

Androgen Disorders

Objectives:

The trainee should understand and be able to discuss:-

- .1 production, physiology and metabolism of androgens in normal women and describe the mechanisms of action of androgens;
- .2 the symptoms and signs of androgen excess together with any causes based on pathophysiology of androgen excess;
- .3 the physiology of normal and abnormal hair growth;
- .4 ovarian tumours, benign and malignant, which secrete androgens;
- .5 those benign stromal changes in the ovary which may result in increased androgen production;
- .6 relate polycystic ovarian disease to abnormal hormone production;
- .7 androgen resistant states;
- .8 congenital and acquired adrenal hyperplasia in terms of aetiology, genital morphology, general metabolic effects and differentiate action and treatment;
- .9 the management of androgen excess and of hirsutism and undertake such management;
- 10 the pharmacology of anti-androgens;
- 11 androgen production and its control in the testis.

Disorders of Menstruation

Objectives:

The trainee should understand and be able to discuss:-

- .1 endocrine criteria of the normal menstrual cycle. Understand the effects of sex steroids on the endometrium;
- .2 the effects of steroids in relation to proliferation of the endometrium, secretory changes, and menstruation, including spiral arteriolar change, lysosome stability and fibrinolysis;
- .3 the pathophysiology of disorders of menstruation;
anovulation and the resultant hormonal changes indicating any effect on the endometrium, including endometrial hyperplasia;
- 4 Assessment including methods of quantitating menstrual blood loss and undertake the medical and surgical treatment of patients with abnormal menstrual bleeding;
- .5 management of non-gynecological causes of abnormal bleeding (e.g., hypothyroidism, blood dyscrasias and anti-coagulants).
- .6 Amenorrhoea and the Menopause

Objectives:

The trainee should understand and be able to discuss:-

- .1 the pathophysiology of amenorrhoea, including nutritional and psychological aspects;
- .2 structural abnormalities of the genital tract associated with amenorrhoea;
- .3 discuss amenorrhoea in relation to puberty and menarche;
- .4 the clinical manifestations of conditions associated with amenorrhoea (e.g., polycystic ovarian syndrome, hypopituitarism, gonadal dysgenesis);
- .5 the physiology and pathophysiology of prolactin secretion. The management of patients with inappropriate prolactin secretion;
- .6 the techniques for the evaluation and therapy of patients who require ovulation induction;
- .7 the interpretation of tests used to evaluate amenorrhoea;
- .8 a rational diagnostic and therapeutic approach to patients with amenorrhoea;
- 9 the treatment options for young women with ovarian failure, with particular regard to future fertility;
- 10 the advantages and disadvantages, risks and benefits of hormone replacement therapy.

Puberty

Objectives:

The trainee should understand and be able to discuss:-

- .1 the normal sequence of pubertal changes in the female and male and their chronology;
- .2 the effects of hormones on bone growth and epiphyseal closure;
- .3 the hormonal changes and gametogenesis relative to the reproductive cycle from intrauterine life to the development of normal reproductive cycles (e.g., gonadotrophin secretion in the fetus and the neonate; sensitivity of the feedback system during fetal and neonatal life and childhood; the role of adrenal androgens);
- .4 delayed puberty indicating the differential diagnosis evaluation and appropriate therapy;
- .5 sexual precocity indicating the differential diagnosis, evaluation and appropriate therapy.

Infertility - Female

Objectives:

The trainee should be able to:-

- .1 take an appropriate history and examine the woman;
- .2 evaluate, describe, diagnosis and plan therapy for:
 - 1 ovulatory disorders: including use of basal body temperature, plasma progesterone and endometrial biopsy; diagnosis of causes of anovulation: syndromes of inappropriate prolactin secretion, CNS-hypothalamic- pituitary syndromes and other causes; selection of ovulation induction utilising anti-oestrogens, gonadotrophins, dopamine agonists, GNRH, GNRH analogues and other agents;
 - 2 tubal disorders: including correct use of and interpretation of studies of tubal function (e.g., ultrasound, hysterosalpingography and laparoscopy); indications for tubal reparative procedures including micro-surgery/ or laparoscopic surgery, versus assisted conception;
 - .3 endometriosis and other peritoneal disorders: including diagnosis and staging of endometriosis and other peritoneal causes of infertility; knowledge of the medical management of endometriosis;
 - 4 cervical factors: including tests for sperm/cervical mucus interaction and possible therapy;
 - 5 artificial insemination including the indications and contra-indications; selection of donors and sperm banking;
 - .6 ovum donation: indications, recruitment, counselling and methods for preparation of donors and recipients;
 - .7 adoption: including the indications for adoption; knowledge of appropriate counselling methods; familiarity with various local agencies and legal implications dealing with adoption.
 - 8 surrogacy: indications, knowledge of appropriate counselling methods;

Infertility - Male

Objectives:

- .1 The trainee should be able to take an appropriate history and examine the man, including detailed genital examination and arrange /perform appropriate investigations and treatment.
- .2 The trainee should understand and be able to discuss:-
 - 1 the formation and content as well as examination of the seminal fluid;
 - 2 the cycle of spermatogenesis, including endocrinological control mechanisms, its abnormalities and the effects of drugs;
 - .3 the physiology and pathophysiology of sexual function;
 - .4 causes of azoospermia and aspermia;

- .5 the biosynthesis of oestrogens, androgens and progestogens by the human testis and the biological action of testosterone in man;
- .6 investigation, diagnosis and therapy of infection of the male reproductive system;
- .7 cryobiology of semen, counselling of donors and recipients of DI, sperm banking;
- .8 in vitro and laboratory tests of sperm function e.g., mucus penetration, zona free hamster egg penetration, biochemistry etc;
- .9 the value and limitations of testicular biopsy and endocrine assessment such as plasma FSH;
- .10 vasography;
- .11 the physiology of endocrine and gametogenic function of the testes and accessory glands.
- .12 indications and methods of assisted fertilisation, including intracytoplasmic sperm injection;
- .13 methods of surgical sperm retrieval.

Psychosexual Aspects of Reproductive Medicine

Objectives:

The trainee should understand and be able to discuss:-

- .1 the psychodynamics of growth and development, puberty and the establishment of the gender role;
- .2 antenatal hormone influence on subsequent behaviour and psychological function;
- .3 psychological factors in amenorrhoea;
- .4 the psychological changes associated with treatment of infertility;
- .5 the psychological changes associated with hormonal therapy;
- .6 the psychological and endocrine factors associated with the premenstrual syndrome;
- .7 the psychological and endocrine factors associated with the menopause;
- .8 the effects of infertility upon the family;
- .9 the general concepts of normal and abnormal sexual function and gender and awareness of local facilities for counselling.
- .10 Endocrinology of Pregnancy

Objectives:

The trainee should understand and be able to discuss:-

- .1 the feto-placental unit as relates to the physiology and pathophysiology of steroid hormones (e.g., oestrogen, progestogen, corticosteroids);
- .2 the physiology of decidua-chorionic-placental peptide hormones (e.g, gonadotrophins, somatomammotrophin, thyrotrophin, ACTH/opioid peptides and prolactin);
- .3 the initiation of parturition including physiology, pathophysiology and pharmacology of prostaglandins;
- .4 the physiology of fetal adrenal gland;
- .5 the endocrine pathophysiology of preeclampsia and eclampsia including the possible roles of renin, angiotensin, aldosterone, nitric oxide and prostaglandins (refer to fetal medicine);
- .6 the physiology and pathophysiology of fetal hypothalamic-pituitary-gonadal function and pancreatic function;
- .7 the pathophysiology of altered maternal thyroid, adrenal and pancreatic status during pregnancy.
- .8 endocrine mechanisms contributing to the successful and unsuccessful implantation.

Clinical Diagnostic Techniques and Imaging

Objectives:

- .1 The trainee should:
 - 1 be competent in operative procedures: including biopsies of the vagina, cervix and endometrium, cytological studies; endoscopy with dye instillation and endoscopic biopsy; laparotomy, with biopsy; diagnostic laparoscopy, hysteroscopy and other intra - abdominal diagnostic techniques;
 - 2 understand and be able to interpret: hysterosalpingography; sella turcica imaging by MRI; arteriography; computerised tomography; arterial catheterisation, digital subtraction angiography, venous catheterisation; intravenous and retrograde urography and isotope imaging methods;
 - .3 understand the endocrinological measurement of hormonal substances in biological fluids for evaluation of the various endocrine systems including the hypothalamus, pituitary, parathyroid, thyroid, adrenal gonadal systems and pregnancy and also be able to perform and interpret dynamic endocrinological testing of these systems;
 - .4 other techniques: be able to perform field examination; appropriately utilise and interpret chromosomal studies and karyotyping;
 - .5 ultrasound skills: The trainee should be competent in:-
 - appearance of normal and abnormal uterus including fibroids. Endometrial assessment including normal cyclical changes, changes associated with hormone replacement, hyperplasia and malignancy;
 - assessment of ovarian, parovarian and tubal masses;
 - tracking of folliculo genesis and formation and disappearance of corpus luteum;
 - use of ultrasound for assessment of tubal patency using contrast media;
 - confirmation of intrauterine gestational sac with embryo, yolk sac, cardiac pulsation;
 - diagnosis of ectopic pregnancy;
 - assessment of gestational age;
 - assessment of cervical length and dilation.
 - 6 understand the risks and limitations of procedures; diagnosis and evaluation of diagnostic procedures; understanding the validity of diagnostic tests, variability and reliability criteria;
 - 7 understand the need for clinical record keeping and data storage including use of photography;
- .2. The trainee should have seen in clinical practice and understand the implications of the results for management and be able to discuss:-
 - 1 nuclear magnetic resonance;
 - .2 bone densitometry.

Surgical Techniques

Objectives:

- .1 The trainee should be competent of independent practice in:-
 - fertility control: including laparoscopy and laparotomy techniques; reversal of sterilisation;
- .2 diagnostic techniques: including hysterosalpingography and endoscopy (see clinical diagnostic techniques and imaging);
- .3 infertility surgery: including
 - (a) uterus - septate uterus, myomectomy, lysis of uterine synechiae;
 - (b) fallopian tube - reparative techniques for tubal and/or adhesive pelvic disease;
 - (c) ovaries - cystectomy and reconstruction; ovarian diathermy/laser drilling
 - (d) endometriosis - staging, surgical therapy;
- .4 the role of endoscopic surgery in the treatment of the above conditions;

- .5 management of imperforate hymen and vaginal septa;
 - .6 complications: including the incidence and the preventive and other therapeutic measures for immediate and late complications of reproductive and infertility surgery.
- .2 The trainee should understand:-
- .1 developmental disorders: including those of:-
 - vagina - vaginal reconstruction by dilatation or surgery
 - uterus - knowledge of Mullerian anomalies with obstruction of drainage;
 - .2 Ambiguous genitalia: including involvement in the assignment of sex of rearing for an infant with ambiguous genitalia, techniques for surgical construction of unambiguous functioning female external genitalia and vagina (e.g., vaginoplasty, clitoridectomy and clitoral resection), indications and techniques for gonadectomy;

Contraception and Induced Abortion

Objectives:

The trainee should understand and be able to discuss:-

- .1 The pharmacodynamics, metabolic effects and complications of the various oral and injectable contraceptive preparations;
- .2 the mechanism of action and complications in intrauterine contraceptive devices (e.g., inert, copper and progestogen containing);
- .3 the indications, advantages, disadvantages, side effects, complications, and efficacy of traditional contraceptive methods (e.g., barrier, vaginal spermicide and periodic abstinence) as compared to non-utilisation of contraceptives;
- .4 male contraception and sterilisation (see also Infertility - Male);
- .5 female sterilisation (see also infertility - Female, and Surgical Techniques);
- .6 interruption of pregnancy, including: techniques of estimation of gestational age; the various techniques of pregnancy interruption (e.g., postcoital oestrogen, menstrual extraction, medically induced methods, dilatation and evacuation, mid- trimester abortion with prostaglandins and other agents); and details of the possible hazards and long-term fertility complications of such procedures;
- .7 potential techniques applicable to male and female contraception indicating any appropriate findings.

In-Vitro Fertilisation (IVF) and other Assisted Reproduction Techniques

Objectives:

The trainee should be competent for independent clinical practice in:

- .1 conditions for which IVF and related techniques of assisted reproduction are appropriate;
 - .2 determination of the menstrual cycle to plan synchronisation;
 - .3 follicular stimulation and monitoring by ultrasound, steroid and peptide assays;
 - .4 the timing of oocyte aspiration, laparoscopic, and ultrasound based procedures;
 - .5 in-vitro gamete transport, maturation and fertilisation;
 - .6 surgical and non-surgical methods of sperm retrieval and their use in assisted fertilisation.
 - .7 timing and methods of embryo transfer;
 - .8 monitoring of implantation;
 - .9 assessment of genetic abnormalities and their potential treatment;
 - .10 relevant aspects of cryobiology;
 - .11 psychological assessment and management of gamete donors and recipients;
- Ethical and Legal Aspects

Objective

The trainee should be able to discuss the ethical and legal aspects of the clinical practice of their subspecialty and should have particular knowledge of the relevant areas listed below:-

- .1 Legislation, particularly recent, relevant to their subspecialty practice;
- .2 Ethics of health care provision and resource allocation
- .3 medical confidentiality;
- .4 consent: -
 - a) nature of consent
 - knowledge
 - capacity
 - voluntariness
 - b) treatment of minors
- c) treatment of the incapacitated patient
- .5 medical negligence;
- .6 role and relevance of ethics committees;
- .7 Reproductive Medicine:
assisted conception techniques; detailed knowledge of the Human Fertilization and Embryology Act (1990) and its relevance to the practice of:
 - gamete storage and donation;
 - surrogacy;
 - fertility control;
 - termination of pregnancy;
 - fetal reduction;
 - pre-implantation diagnosis;
 - gene therapy;
 - research on embryo;
 - donation of fetal and ovarian tissue;
 - role of HFEA, the HFEA code of practice and role and duties of the "person responsible".