

Reproductive Endocrinology and Infertility Objectives (CanMeds format)

1. Role: Medical Expert/Clinical Decision Maker

A. Knowledge of Basic Sciences

- Genetics
 - Genetic basis of the following conditions:
 - Normal and abnormal mullerian development
 - Disorders of androgen excess
 - Recurrent pregnancy loss
 - Principles of preimplantation genetic diagnosis (PGD)
- Physiology
 - Hypothalamic pituitary ovarian axis (HPO)
 - Adrenal steroid and catecholamine synthesis
 - Thyroid gland
 - Female and male gametogenesis
 - Hormonally regulated tissue receptors
 - The normal process of steroid hormone biosynthesis
 - The relationship between ovarian and adrenal androgen production and hyperinsulinemia
- Embryology and developmental biology
 - normal mullerian development
 - The pathogenesis of abnormal mullerian development
 - The pathogenesis of disorders of sexual differentiation
- Anatomy
 - Interpretation of anatomy on
 - HSG
 - Transvaginal ultrasound
 - Sonohysterogram
 - CT
 - MRI
 - Normal and abnormal reproductive tract abnormalities on
 - Hysteroscopy
 - Laparoscopy
 - Gross anatomic appearance of mullerian abnormalities
 - Gross anatomic appearance of disorders of sexual differentiation
- Pharmacology
 - Medications to
 - Induce ovulation
 - Inhibit ovulation (GnRH agonist and antagonist, OCP)
 - Inhibit the effects of prostaglandins
 - Hormone replacement therapy (HRT) and selective estrogen receptor modulators (SERMS)
 - Medication used to inhibit bone resorption (bisphosphonates)
- Pathology and neoplasia
 - Histologic appearance of endometriosis
 - Histologic changes of the endometrium associated with

- Normal menstrual cycle
 - Ovulation inducing or inhibiting drugs
 - Chronic anovulation
 - Histologic appearance of the ovary
 - Normal state
 - Androgen excess disorders ie PCOS and hyperthecosis
- Microbiology and immunology
 - Normal bacteriologic flora of the lower genital tract
 - Histologic alterations in the endometrium and fallopian tubes associated with bacterial infection

B. Clinical Application of Knowledge

- Pediatric and adolescent gynecology
 - Anatomy/physiology
 - Changes of genital tract and breasts at different ages
 - Sex hormonal changes at different ages
 - Hormonal changes at puberty
 - Pediatric gynecology
 - Vulvovaginitis
 - Vulvar disease
 - Lichen sclerosis
 - Labial adhesions
 - Prepubertal vaginal bleeding
 - Trauma
 - Foreign body in vagina
 - Sexual abuse
 - Abnormal pubertal development
 - Ambiguous genitalia
 - Effects of long term diseases on reproduction
- Precocious Puberty
- Developmental anomalies of the reproductive tract
 - Hymenal abnormalities
 - Vaginal agenesis
 - Vaginal septum
 - Uterine septum
 - Unicornuate/bicornuate uterus
 - Uterine didelphys
 - Uterine horn
- Adolescent gynecology
 - Normal and abnormal pubertal development
 - Primary amenorrhea
 - Breast mass
 - Menstrual irregularities
 - Dysmenorrheal
 - Vulvovaginitis
 - Sexuality

- Contraceptive needs
- Sexually transmitted diseases
- Pregnancy
- Sexual abuse
- Ovarian diseases and masses
- Endometriosis
- Pelvic pain
- Delayed puberty
- Menstrual and endocrine disorders
 - Dysmenorrhea-primary and secondary
 - Dysfunctional uterine bleeding
 - Amenorrhea
 - Galatorrhea
 - Premenstrual syndrome
 - Hirsutism
 - Poly cystic ovarian syndrome
- Infertility
 - Evaluation female and male
 - Reproductive technologies-awareness of indications for, prognosis and complications of
 - Gonadotropin therapy
 - In Vitro fertilization
 - Gamete donation
 - Intracytoplasmic sperm injection
 - Preimplantation genetic diagnosis
- Climacteric period
 - Menopause
 - Osteoporosis

C. Appropriate and directed use of lab and diagnostic testing for topics listed above including:

- Pediatric and adolescent specific testing
 - Microbiologic cultures of lower genital tract
 - Vaginoscopy
 - Vaginal lavage
 - Ultrasonography
 - CT/MRI
 - Endocrinologic assays
 - Peripheral blood karyotype assessments
- Adult
 - Microbiologic cultures of lower genital tract
 - Ultrasonography/sonohysterogram
 - CT/MRI
 - Endocrinologic assays
 - Cervical and endometrial cytology
 - Hysteroscopy
 - Laparoscopy

- Progesterin challenge test
- Hysterosalpingogram
- Semen analysis
- Bone densitometry

D. Analytical thinking regarding diagnosis and treatment option for topics above

E. Application of evidence based medicine for topics above

F. Technical/Procedural – performance of

- Endometrial biopsy
- Hysterosalpingogram
- Transvaginal ultrasound
- Hysterosonogram
- Diagnostic laparoscopy
- Diagnostic hysteroscopy
- Hysteroscopic removal of endometrial polyp
- Hysteroscopic removal of IUCD
- Hysteroscopic resection of minor Ashermans syndrome
- Laparoscopic sterilization
- Laparoscopic Needle aspiration of simple cysts
- Laparoscopic Ovarian biopsy
- Laparoscopic Lysis of adhesions
- Laparoscopic Laser or diathermy for endometriosis
- Laparoscopic Linear salpingostomy/salpingectomy for ectopic pregnancy
- Laparoscopic Salpingectomy/salpinogopherectomy
- Laparoscopic ovarian cystectomy
- Awareness of
 - Advanced laparoscopy and hysteroscopy
 - Hysteroscopic metroplasty
 - Tubal reanastomosis
 - Tuboplasty
 - Reproductive technologies
 - Oocyte collection
 - Embryo transfer
 - Preimplantation genetic diagnosis
 - ICSI

G. Self assessment of personal traits and expertise

2. Role: communicator

- Listens effectively
- Creation of therapeutic relationship with patient/family/others
- Obtain and synthesize relevant history
- Present management plan
- Counselling and education patient/family/parents

- Long term consequences of precocious puberty
- Long term consequences of genital tract anomalies
- Adolescent health
 - Psychologic health
 - Confidentiality issues
 - Normal anatomic and psychologic development
 - Menses
 - Sexuality
 - Prevention of pregnancy, STDs, emergency contraception
- Long term consequences of delayed puberty and effect on reproduction
- Reproductive health for adolescents/adults with developmental delay and physically disabilities
- Dysmenorrhea, galactorrhea, hirsutism
- Long term consequences and follow-up of amenorrhea
- PMS
- Long term consequences and follow-up of PCOS
- Long term prognosis for infertility and associated treatments
- Long term follow up of climacteric and osteoporosis

3. Role: Collaborator

- Identification and use of other physicians/health care professional
 - Other consultant physicians
 - Family physicians
 - Nurses
 - Psychology
 - Dietician
 - Embryology
 - Lab personnel
- Involves patient/family in decision making
- Contributes to interdisciplinary activities as above

4. Role: Manager

- Ability to prioritize and designate tasks
- Utilizes resources appropriately
- Understands structure, funds health care organization and works effectively /efficiently in it
- Effective utilization IT
- Optimize patient care, life-long learning and other activities
- Balances work/study and personal lives
- Functions in administrative capacity

5. Role: Health advocate

- Identifies determinants of health that affect patient (psychological/economic/biologic/gender/age/cultural)
- Recognized and responds to issues where advocacy is appropriate

- Access to information/public education
 - Infertility treatment and evaluation
 - Procedural information
 - Diagnostic information
 - Unexplained infertility
 - PCOS
 - Male factor infertility
 - Tubal disease
 - endometriosis
 - Lifestyle management
 - Weight loss/gain
 - Alcohol
 - Smoking
 - Caffeine
- Access to treatment/care
 - Social services
 - Support
 - Medication
 - Housing
 - Transportation

6. Role: Scholar

- Demonstrates evidence based medicine to manage patient/problem based learning (see topics of clinical application)
- Applies critical appraisal to medical information (see topics of clinical application)
- Implements learning portfolio to develop continuing education strategy
- Participation in research
- Facilitates learning of patients, students and other personnel

7. Role: Professional

- Exhibits appropriate personal/interpersonal behaviours
- Practise ethically consist with obligations of a physician
- Delivers high quality care with integrity, honesty and compassion, sensitive to equity issues, legal issues

Resident evaluation- REI- Dr. Terry O'Grady, Dr. Sarah Healey

A. OSCE/structured oral

- Evaluation of infertile couple
- Unexplained infertility
- Anovulatory infertility
- Male factor infertility
- Tubal disease infertility
- Amenorrhea
- Vaginal bleeding in pediatric patient
- Dysfunctional uterine bleeding
- Hirsutism
- Galactorrhea
- Menopause
- Osteoporosis

B. Written questions

- Short answers
- MCQ

C. Slides

- With short answer questions