



Educational Objectives of the Subspecialty Residency Program in Gynecologic Reproductive Endocrinology and Infertility (GREI)

**GREI RPC Committee
Last Revised in June 2013**

**EDUCATIONAL OBJECTIVES
OF THE RESIDENCY/FELLOWSHIP PROGRAM
IN GYNECOLOGIC REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY**

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INTRODUCTION

This booklet describes the residency/fellowship program in the subspecialty of Gynecologic Reproductive Endocrinology and Infertility (GREI) at McGill University. The program educates a fully trained gynecologist to become a subspecialist in Reproductive Endocrinology and Infertility. It is a two-year integrated experience leading to expertise in reproductive endocrinology and infertility. Appointments are on a yearly basis and re-appointment is contingent on a satisfactory completion of the educational contract. Moreover, Royal College certification in GREI requires also successful completion of the certification examination in GREI; and completion of a clinical or basic research project relevant to GREI, which includes the submission of a report suitable for submission to a peer reviewed journal as documented in a letter from the program director.

The objectives of the training program described in this booklet are based upon the recent guidelines of the Royal College of Physicians and Surgeons of Canada (Objectives of training in the subspecialty of gynecological reproductive endocrinology & infertility, 2011), and the Royal College of Obstetricians and Gynaecologists (United Kingdom) incorporating the Can MEDS competencies. This is to achieve a minimum standard of competency related to knowledge, attitudes, and skills as a consultant in Reproductive Endocrinology and Infertility. These will be updated as new versions become available. In order to distinguish trainees in the specialty program (residents), we will use the words *fellows* for our all residents in this sub-specialty program and *fellowship program* instead of residency program.

Fellows perform their duties and accept responsibilities under supervision. Throughout the program, the fellows need to participate in the teaching of medical students, residents, general gynecologists and other health care professionals. Research is an integral part of the fellowship and, during the training period, fellows should present their work at a National or International Scientific Meeting and should eventually publish their work in a peer-reviewed journal. The program evaluates fellows every 3 months.

Each member of the program committee is in charge of a component of the program and conducts formal *reviews of educational components and assessment* of the program on regular basis. They report the suggestions to the program committee for further discussion and approval.

Compared to specialty residents, our fellows have completed their residency training in Obstetrics and Gynecology and they have chosen GREI for their future career. *Career planning and counseling* are conducted not only by the program director, but also by other staff at all levels of training. Most residents have decided at the beginning their training whether they would do more surgery, assisted reproductive technology (ART) or both; also whether they would do academic medicine or private practice. Although the core curriculum should be followed by all residents, the program could be tailored to the resident's needs. If a resident, at any level, shows a particular interest in a subject, the program makes special efforts to provide learning opportunities that will facilitate his/her career choice by helping to obtain off-service experience and fellowship training. In addition, the Federation des Medecins Residents du Quebec organizes out of province and Quebec career days annually. Residents are encouraged to participate to these events. In any event, our residents are often sent by their own institution and they already have a guaranteed position when they return.



GENERAL EDUCATIONAL GOALS AND CANMEDS OBJECTIVES

Following the completion of the program, the fellow should be able to:

- A)
 - 1. Obtain an advanced knowledge of embryology, anatomy, and histology of the male and female reproductive tracts and the anatomy, histology and physiology of the hypothalamo-pituitary-gonadal axis and related endocrine functions from fetal life to pregnancy and to post-menopausal years.
 - 2. Obtain an advanced knowledge of hormone action and endocrine pharmacology.
 - 3. Obtain an advanced knowledge of gametogenesis, gamete transport, fertilization, implantation, and early pregnancy development.
 - 4. Obtain an advanced knowledge of genetics, embryology, immunology, and microbiology of the reproductive process.
 - 5. Obtain an advanced knowledge of the pathophysiology of the reproductive tracts and the related systems.
 - 6. Obtain knowledge about epidemiology of reproductive disorders and an understanding of medical statistics for clinical and epidemiologic research.
- B)
 - 1. Demonstrate the ability to manage patients with infertility, patients seeking preservation of their fertility potential prior to gonadotoxic treatments, repeated pregnancy loss, ectopic pregnancy and other reproductive endocrine disorders.
 - 2. Demonstrate the ability to conduct a variety of reproductive operations, and advanced laparoscopic and hysteroscopic procedures. The fellow will be able to consult other gynecologists regarding the indications, safety, complications, limitation of surgery and non-surgical alternatives.
 - 3. Understand his or her own limitations and consult and collaborate with other physicians or health care experts including urologists, medical endocrinologists, general surgeons, oncologists, or geneticists for the management of complex reproductive disorders.
 - 4. Obtain competence in ultrasound and the principles and practice of assisted reproductive technology, including in vitro fertilization.
 - 5. Develop and execute an experimental design and collaborate with other researchers.
- C)
 - 1. Act as a consultant to other gynecologists, family physicians or other health care professionals.
 - 2. Demonstrate the ability to establish and maintain an effective doctor-patient relationship and to consult other physicians if necessary.
 - 3. Demonstrate the ability to function as an educator to patients, medical students, residents, colleagues, and other health care professionals.

The above objectives are consistent with those of Can MEDS competencies.



A) Medical Expert/Clinical Decision Maker

At the end of two-year fellowship, the fellows will be able to:

1. Demonstrate that he/she possesses knowledge appropriate to the area of his/her special interest:
 - a) In biological information basic to and related to his/her clinical specialty area (anatomy, biochemistry, physiology, sociology, etc.)
 - b) In understanding the status of standard clinical practice methods within REI
 - c) An awareness of current literature and ideas, which concern REI
 - d) An awareness of the deficiencies and problems within REI
2. Demonstrate compassionate and patient-centered care in his/her specialty area. These capabilities include interview and examination, appropriate laboratory or diagnostic procedures, expected therapeutic or rehabilitative procedures.
3. Demonstrate the appropriate use of those technical capabilities and the ability to interpret, synthesize, and integrate the data derived in the approach to the patient's problem.
4. Demonstrate the ability to prioritize professional duties when faced with multiple patients and problems.
5. Demonstrate the application of diagnostic and therapeutic skills of Reproductive Endocrinology and Infertility for ethical and effective patient care.
6. Demonstrate the ability to provide consultation with respect to patient care, education and, to a certain extent, ethics to other physicians, patients and allied health professionals.
7. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governments, as needed.

B) Communicator

1. Demonstrate a body of knowledge and skills deemed to be common to all areas of medicine:
 - a) History taking
 - b) Physical examination
 - c) Emergency care
 - d) Appropriate responses and initial management of acute emotional crises related to infertility, failed infertility treatment and recurrent miscarriages
2. Demonstrate the ability to establish and maintain an effective doctor-patient relationship. He/She should be able to explain to the patient in lay language the nature of the couple's problem. He/she should give her the options in management. This allows the patients to maintain their autonomy and empowers them to influence the decision. The final decision should be theirs in collaboration with the physician.
3. Demonstrate the ability to communicate with patients, their families, and the community. Develop a compassionate understanding of the patient's needs, background; explain the nature of disease in a conscientious manner; involve relatives appropriately.
4. Demonstrate the ability to gain respect from the patients and their relatives and to be culturally sensitive.

C) Collaborator



1. Demonstrate the ability to establish and maintain effective working relationships as a consultant with other physicians, allied health professionals, non-medical experts, and other institutions or departments. This is regardless of whether he/she is the leader or a member of the team.
2. Demonstrate the ability to contribute and collaborate with others. In this particular goal, respect among professional disciplines is to be stressed, as is an awareness of the various strengths and capabilities of the different professionals involved in health care.

D) Manager

1. Demonstrate the ability to use resources effectively and efficiently to balance patient care, to allocate resources wisely, to work effectively and efficiently in health care organization, to utilize information technology to optimize patient care and lifelong education, and to manage clinical practice.
2. Relationship to Health Care Team: The fellow must utilize the health care team appropriately i.e., support mutual academic activities; work with professional colleagues regarding vacation time, share of workload, service activity, and awareness of patient care.
3. Administrative Skills: The fellow must show efficient organization of his/her time. This would include punctuality and ability to allow appropriate time for self-learning, adequate preparation for journal club, research, and clinical assignments.

E) Health Advocate

1. Demonstrate the ability to identify issues in human health and illness in the following manner:
 - a) Identify the existence of any such problem when it confronts him/her.
 - b) Identify the appropriate resources to solve the problems not in his/her area of training or expertise.
2. Demonstrate the ability to solve problems that are in his/her sphere of knowledge or activity, or arrange for the solution of those problems that are not in this specialty area.
3. Demonstrate the ability to contribute to improved health of patients and communities, and to recognize and respond to issues where advocacy is appropriate.
4. Demonstrate knowledge of regulations and changes in *Health Care and Reproductive Technologies*. In this goal, there is the implication of personal responsibility. Examples would be fellow's responsibility towards perusing the solutions to problems that may be more than just the immediate medical issue including drug abuse, or marital problems.

F) Scholar

1. Demonstrate the attitudes and habits necessary to ensure his/her continuing self-directed learning, and continuing medical education. This implies seeking information from archival sources, resource persons, colleagues, peers, regular reading, and study.
2. Contribute personally to the improvement of fellowship, medical, and community programs in which he/she is involved.
3. Demonstrate the ability to critically appraise medical literature, and to facilitate learning of patients, students, and allied health professionals.



4. Demonstrate the ability to contribute to development of new knowledge by presentations and publications

G) Professional

1. Demonstrate an awareness of his/her strengths, weaknesses, and feelings as they relate to his/her activities. Implied in this goal is a willingness to modify his/her own behavior, if possible, appropriate to the activities in his/her specialty area. It is important to consider the student's role in modifying his/her identified weaknesses during his/her training and the responsibilities of the program director to provide methods for evaluating this.
2. Demonstrate the ability to function as educator to junior learners, peers, patients, colleagues, students of all disciplines, and other allied health care professionals, within the limits of his/her competence. The educational techniques of adult education (emphasizing communication, negotiation, and support, as well as dialogue, decision making, and problem solving are de rigueur).
3. Responsibility and Intellectual Honesty: The fellow must at all times be honest in his/her work and not hesitate to report the facts about patients, including errors. He/she maintains the respect of colleagues and the confidence of patients by putting patient welfare ahead of personal considerations. He/she manifests increasing ability to accept the appropriate level of responsibility for patient care. He/she must recognize his/her own limitations and be able to seek help from others (and profit from the counsel). All residents must demonstrate acceptable demeanor in appearance appropriate to the educational or clinical setting.
4. Demonstrate the ability to deliver highest quality of care with integrity, honesty, compassion, and ethics, and to exhibit appropriate personal and interpersonal professionalism.



GOALS AND OBJECTIVES

1. General Infertility

Fellows will manage a large number of infertility patients. Here, they will be responsible for investigations and management of both male and female partners under the supervision of the faculty.

In general, the fellow should have knowledge of human reproduction sufficient for an understanding of the pathophysiology of infertility. He/she should have sufficient knowledge to take a history and perform a physical examination relevant to infertility and to identify deviations from normal. He/She should demonstrate an ability to evaluate disorders and make a diagnosis. He/She should understand the indications for referral to other specialist. The fellow should understand the role of other health care professionals in the field.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have the knowledge of infertility in general, etiologies and management of infertile couples and more specifically:
 - Embryology, anatomy, histology, physiology and genetics of the male and female reproductive tracts
 - Anatomy, histology, and physiology of the hypothalamic pituitary-gonadal axis and related endocrine functions throughout life
 - Mechanisms of reproductive hormone action and endocrine pharmacology
 - Disorders of function and physiology of the hypothalamic pituitary-gonadal axis, disorders of the menstrual cycle regulation through reproductive life, disorders of ovulation and follicle development, and disorders of the outflow tract
 - Principles of epidemiology, relevant to disorders of reproduction
 - Principles of assisted reproductive laboratory techniques, including gamete culture and micromanipulation techniques
2. Be familiar with the diagnostic testing of infertile patients, their indications, and contraindications, their limitations, sources of errors and interpretation.
3. Know the different types of ovulation inducing agents, the mechanism of action of clomiphene citrate, aromatase inhibitors, FSH and LH, and including the doses and regimens of usage and patient monitoring.
4. Promote prevention and effectively manage assisted reproductive technology (ART) complications such as high order multiple pregnancy, ovarian hyperstimulation syndrome (OHSS) and ectopic pregnancy.
5. Have knowledge of sperm preparation for artificial insemination and the different types of insemination.
6. Know the indications for hysteroscopy, laparoscopy, in-vitro fertilization and other assisted reproductive technologies.
7. Have the expertise for proper patient selection for medical and surgical management of infertility and for assisted reproductive technologies.



8. Acquire a competence in diagnostic laparoscopy, laparoscopic adhesiolysis, removal of endometriosis including endometrioma and laparoscopic microsurgical tubal anastomosis.
9. Know how to do diagnostic hysteroscopy, hysteroscopic myomectomy, resection of uterine septum and excision of intrauterine adhesions.
10. Ensure appropriate informed consent is obtained for procedures and therapies
11. Ensure patients receive appropriate end of treatment care
12. Have an appreciation of psychological, emotional, sexual, ethical, health economics, and social aspects of infertility.

Technical skill:

During general infertility rotation, fellows should be able to perform endometrial biopsy, transvaginal ultrasound, sonohysterography, artificial insemination, and *outpatient hysteroscopy* under local anesthesia.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history including the evaluation of endocrine disorders.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis.
3. Know how to develop a management plan including hormonal evaluation and treatment.
4. Be sensitive to the cultural and religious background of the couples.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between general medical disease and infertility.
2. Recognize his/her own limitations within his/her field of competence and collaborate with other specialties and other health allied for the care of the patient.

MANAGER

At the completion of the fellowship, fellows should:

1. Understand the rationale of basic male and female infertility investigations.
2. Apply appropriately clinical and laboratory methods of assessment of infertility.
3. Organize fertility tests and treatment accordingly.
4. Organize timing for testing and insemination.
5. Know and understand the health authorities' coverage of fertility treatments.
6. Be able to implement the health authorities' guidelines into daily REI practices.



HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of “couples” for infertile patients and the multidisciplinary management of infertility.
2. Understand and apply the importance of team effort in the management of infertility.
3. Understand and apply the principles of genetic counseling if necessary and recognition of the need of psychological assistance.
4. Advocate for fertility awareness.
5. Advocate for the effect of age on human fertility.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Use the basis of epidemiology with respect to morbidity of infertility.
2. Use evidence-based medicine for treatment.
3. Contribute to ongoing quality improvement.
4. Involve in patient-education in the community.

PROFESSIONAL

Fellows should:

1. Be on time.
2. See patients and the attending staff will review the case.
3. Follow his or her patient either by telephone calls or by visiting the patients who are in the hospital.
4. Educate their juniors including junior fellows, residents, medical students, and other allied professionals.
5. Review literatures for the weekly academic activities, ongoing clinical improvement, journal clubs, research, and publications.

2. Male Infertility

Fellows will be involved in the management of male infertility under the direction of Drs. Peter Chan, and Armand Zini. They are urologists with expertise in male infertility. When fellows encounter couples with this problem, they will refer the male partner to the consultant and they will follow the patient. Also, they assist to clinic for male infertility with urologists-andrologists in our unit.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have knowledge of fundamental biomedical sciences relevant to male infertility including:



- Embryology, anatomy, histology, physiology and genetics of the male reproductive tract
 - Mechanisms of reproductive hormone action and endocrine pharmacology
 - Microsurgical principles as they apply to reproductive surgery in male
2. Have knowledge of causes and management of male infertility.
 3. Obtain the knowledge of spermatogenesis and factors affecting this process.
 4. Be familiar with diagnostic testing of male infertility, indications, contraindications, limitations, sources of errors and interpretation.
 5. Be able to interpret hormonal results in the male.
 6. Know the value and limitation of medical treatment of male infertility.
 7. Know the value and limitation of varicocele and vasectomy reversal.
 8. Know the indications for and different methods to obtain spermatozoa: PESA (percutaneous epididymal sperm aspiration), TESA (testicular sperm aspiration) and microTESE (microscopic testicular sperm extraction), their value, limitations and possible complications.
 9. Ensure appropriate informed consent is obtained for procedures and therapies.
 10. Understand the importance of genetic testing and counseling for male infertility.

Technical skill:

Fellows of REI do not generally assist urological surgery. However, they should be able to do artificial insemination and be familiar with ART procedures.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history including the evaluation of the male reproductive system.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis.
3. Know how to develop a management plan with the consulting urologist.
4. Be sensitive to the cultural and religious background of the couples.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between general medical disease and male infertility.
2. Recognize his/her own limitations in male infertility and collaborate with other specialties and other health allied for the care of the patient.
3. Learn to establish a good rapport with the consulting urologist, geneticist, endocrinologist, and embryologist.



MANAGER

At the completion of the fellowship, fellows should:

1. Understand the rationale of semen analysis, artificial insemination, and intracytoplasmic sperm injection (ICSI).
2. Understand the logic of testicular sperm aspiration and percutaneous sperm aspiration.
3. Understand the importance of screening for donor sperm.
4. Coordinate timely sperm collection, artificial insemination, and in-vitro fertilization.
5. Have an appreciation of psychological, emotional, cultural, sexual, ethical, health economics, and social aspects of male infertility.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of procreation using homologous or heterologous sperms.
2. Understand and apply genetic counseling and recognition of risks of intracytoplasmic sperm injection.
3. Understand the importance and clinical and psychological implications of donor insemination

SCHOLAR

At the completion of the fellowship, fellows should:

1. Use evidence based data with respect to the couple's desire to conceive and methods to procreate.
2. Understand the importance of quality assurance in the use of donor insemination and assisted reproductive technology including ICSI.

PROFESSIONAL

Fellows should:

1. Manage and schedule insemination either with sperms of male partner or donor. This includes insemination on Saturdays or holidays.
2. Demonstrate the ability to deliver the service with integrity, honesty, compassion, and ethics, and to exhibit appropriate personal and interpersonal professionalism.

3. Recurrent Miscarriage

During the training, fellows will also manage women with recurrent miscarriage. They will be responsible for investigation and management of the patients under the supervision of the faculty and the recurrent miscarriage clinic.



MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have knowledge of fundamental biomedical sciences in this field including:
 - Endocrinology and immunology of pregnancy and the feto-placental unit
 - Physiology of gametogenesis, gamete transport, fertilization, embryo development, implantation and early pregnancy development
2. Have knowledge of the etiologies and management of repeated pregnancy loss.
3. Be familiar with the diagnostic testing of these conditions, their indications, and contraindications, their limitations, sources of errors and interpretation.
4. Be able to interpret hysterosalpingograms, ultrasound scans, and MRI images and detect abnormalities including uterine anomalies and intrauterine lesions.
5. Be familiar with possible infectious causes of miscarriages and their treatment.
6. Be familiar with possible genetic causes of miscarriages and their management
7. Be familiar with thrombophilia as a possible cause of early miscarriages.
8. Know the indications and contraindications of hysteroscopy.
9. Be able to perform diagnostic and operative hysteroscopy including resection of uterine septum, lysis of intrauterine adhesions and myomectomy.
10. Be familiar with the emotional aspects of repeated miscarriages and know how to counsel the patients.
11. Have an appreciation of sexual, ethical, health economics and social aspects of repeated pregnancy loss.
12. Be aware of the controversies in recurrent miscarriage, such as luteal phase defect, auto-immunity and unexplained recurrent miscarriage.
13. Ensure appropriate informed consent is obtained for procedures and therapies

Technical skill:

At the completion of the fellowship, fellows should:

1. Be able to perform office hysteroscopy.
2. Be able to perform surgical procedures to correct anatomical disorders including hysteroscopic metroplasty or myomectomy, lysis of adhesions, and abdominal myomectomy.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history including the evaluation of recurrent miscarriage.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis.



3. Know how to develop a management plan including inter-disciplinary consultation and concurrent care.
4. Be sensitive to the cultural and religious background of the couples.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between disorder of reproductive system, endocrine and immunologic disorder, and recurrent miscarriage.
2. Recognize his/her own limitations and collaborate with other specialties and other allied health professionals for the care of the patient.
3. Fellows must learn to establish a good rapport with the consulting hematologist, geneticist, endocrinologist, internal medicine specialist, psychologist, psychiatrist, and social worker, as well as referring physicians to coordinate ongoing care.

MANAGER

At the completion of the fellowship, fellows should:

1. Understand and able to coordinate investigations and treatment for recurrent miscarriage.
2. Understand and prepare the patients for another possible pregnancy loss.
3. Coordinate consultation with different specialties.
4. Have an appreciation of psychological, emotional, cultural, sexual, ethical, health economics, and social aspects of pregnancy loss.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of recurrent miscarriage and its multidisciplinary management.
2. Understand and apply the importance of team effort in the management of recurrent miscarriage.
3. Understand and apply the principles of genetic counseling if necessary and recognition of the need of psychological assistance.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Use evidence based data with respect to the couple's desire to conceive and methods to prevent repeated pregnancy losses.
2. Understand the importance of quality assurance in the investigations and management of recurrent miscarriage.
3. Understand the importance of follow up and data gathering for ongoing research.



PROFESSIONAL

Fellows should:

1. Initiate investigations and treatment for recurrent miscarriage including consultation to different specialties.
2. Demonstrate the ability to deliver the service with integrity, honesty, compassion, and ethics, and to exhibit appropriate personal and interpersonal professionalism.

4. Abnormal Uterine Bleeding

Infertile women often experience dysfunctional uterine bleeding. In our referral practice, we often encounter patients with abnormal uterine bleeding. Fellows will be involved in the management of these patients.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Understand normal and abnormal menstrual cycles.
2. Describe the anatomy and histopathology of the pelvic organs and the endocrinology of the hypothalamo-pituitary-ovarian axis.
3. Describe the etiology and management of abnormal uterine bleeding.
4. Be familiar with the various diagnostic tests, their indications and contraindications, their limitations, and interpretation.
5. Appreciate the difference between abnormal uterine bleeding in various age groups.
6. Know the different types of hormonal and non-hormonal treatments, the regimes, and administration of the medications and patient monitoring.
7. Be able to counsel patients on various treatment options (medical versus surgical) based upon desire for fertility and other criteria.
8. Be able to initiate treatment for each type of abnormal bleeding and know at what stage to refer in cases of malignancy.
9. Be aware of possible hematological disorders that cause abnormal uterine bleeding.
10. Know how to interpret laboratory results, ultrasound images, and hysterosonograms.
11. Ensure appropriate informed consent is obtained for procedures and therapies.

Technical skill:

At the completion of the fellowship, fellows should:

1. Be able to perform endometrial sampling and office hysteroscopy.
2. Be able to insert progesterone-containing IUD.
3. Be able to prepare endometrium before operative hysteroscopy with GnRHa.



4. Be skilled in performing operative hysteroscopy including polypectomy, adhesiolysis, myomectomy and endometrial ablation.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Be able to obtain an adequate history of abnormal uterine bleeding.
2. Be able to develop a differential and provisional diagnosis and convey this to the patient.
3. Be able to develop a management plan including imaging and consultation with other specialties including hematologist or endocrinologist.
4. Be able to consult patients regarding the implications, risks, and limitations of medical versus surgical treatment of abnormal uterine bleeding, including hysterectomy.
5. Be able to consult patients regarding myomectomy by laparoscopy or laparotomy.
6. Be able to consult patients regarding uterine fibroid embolization.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between endocrine disorders, hematologic disorders, and abnormal uterine bleeding.
2. Recognize his/her own limitations and collaborate with other specialties for the care of the patient.
3. Learn to establish a good rapport with the consulting hematologist, endocrinologist, interventional radiologist and other allied health professionals.

MANAGER

At the completion of the fellowship, fellows should:

1. Understand and be able to coordinate investigations and treatment for abnormal uterine bleeding.
2. Understand and be able to prepare patients for surgery or uterine artery embolization.
3. Coordinate consultation with different specialties.
4. Have an appreciation of psychological, emotional, cultural, sexual, health economics, and social aspects of abnormal uterine bleeding.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of surgical and non-surgical treatment of abnormal uterine bleeding including uterine artery embolization.
2. Understand and provide different options of treatments.
3. Understand and respect the wish of Jehovah witnesses.
4. Advocate for patient desiring fertility and having underlying malignancy.



SCHOLAR

At the completion of the fellowship, fellows should:

1. Use evidence based data with respect to the treatment of abnormal uterine bleeding.
2. Understand the importance of quality assurance in the investigations and management of abnormal uterine bleeding.
3. Understand the success rate of different approaches.
4. Understand the importance of follow up and data gathering for possible research.

PROFESSIONAL

Fellows should:

1. Provide investigations and treatment of abnormal uterine bleeding
2. Consult hematologist, endocrinologist, or interventional radiologist if needed.
3. Follow the patients following treatment.
4. Be able to gather information for possible research or quality improvement for repeated pregnancy loss including consultation with different specialties.
5. Demonstrate the ability to deliver the service with honesty, compassion and ethics, and to exhibit appropriate personal and interpersonal professionalism.

5. Ectopic Pregnancy

During the fellowship, fellows will encounter patients with ectopic pregnancy.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have an advanced knowledge of gamete transport.
2. Have knowledge of the etiology and prevention of ectopic pregnancy.
3. Have knowledge of predisposing factors for ectopic pregnancy.
4. Be able to diagnose early ectopic pregnancy.
5. Be familiar with various diagnostic tests for this condition, their indications and contraindications, their limitations, sources of errors and interpretation.
6. Know the advantages, disadvantages, and risks of medical and surgical treatment of ectopic pregnancy.
7. Know how to make proper patient selection for medical or surgical treatment.
8. Be familiar with the side effects and dosage of methotrexate and be able to follow the patient after treatment.
9. Know when to administer the second dose of methotrexate and to perform surgery if indicated.



10. Know how to manage cervical pregnancy, abdominal pregnancy and cornual pregnancy.
11. Understand the implications of Rh incompatibility.
12. Be able to diagnose persistent ectopic pregnancy and to manage it.
13. Know the indications and contraindications of medical versus conservative versus radical treatment of ectopic pregnancy.
14. Be familiar with the emotional aspects of ectopic pregnancy and know how to consult for patients, who have a recurrent ectopic pregnancy.
15. Ensure appropriate informed consent is obtained for procedures and therapies.

Technical skill:

At the completion of the fellowship, fellows should:

1. Be able to resuscitate and manage patients in shock.
2. Be able to perform transvaginal ultrasound and diagnose ectopic pregnancy including heterotopic pregnancy.
3. Be able to perform laparoscopic treatment of ectopic pregnancy including salpingostomy or salpingectomy.
4. Be able to perform laparotomy if needed.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history of ectopic pregnancy.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis.
3. Know how to develop a management plan including diagnostic testing, medical or surgical treatment of ectopic pregnancy.
4. Be able to consult for patients regarding the implications and risks of different types of treatment.
5. Be able to advise patients about possible tubal rupture.
6. Be able to consult patients regarding Rh sensitization and future pregnancy.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Be able to communicate and establish a good relationship with pharmacist, staff of emergency department, and operating room staff including anesthesiologist.
2. Recognize his/her own limitations and collaborate with other specialties for the care of the patient.



MANAGER

At the completion of the fellowship, fellows should:

1. Understand and be able to coordinate investigations and treatment of ectopic pregnancy.
2. Understand and be able to prepare patients for medical or surgical treatment.
3. Have an appreciation of psychological, emotional, health economics of ectopic pregnancy.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of medical and surgical treatment of ectopic pregnancy.
2. Instead of laparotomy for surgical treatment, advocate laparoscopy.
3. Understand and provide different options of treatments.
4. Understand and respect the wish of Jehovah witnesses.
5. Advocate awareness to decrease the occurrence of ectopic pregnancy.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Use evidence based data with respect to the treatment of ectopic pregnancy.
2. Understand the importance of quality assurance in the investigations and management of ectopic pregnancy.
3. Understand the success rate of different approaches.
4. Understand the importance of follow up and data gathering for possible research including non-tubal ectopic pregnancy.

PROFESSIONAL

Fellows should:

1. Provide investigations and treatment of ectopic pregnancy.
2. Provide tests before medical treatment with methotrexate.
3. Warn the patient about the possible tubal rupture.
4. Give methotrexate injection and follow the patients following treatment.
5. Be able to assume preoperative preparation before surgery and organize surgery.
6. Gather information for possible research or quality improvement.
7. Demonstrate the ability to deliver the service with honesty, compassion and ethics, and to exhibit appropriate personal and interpersonal professionalism.



6. Research

During his/her training, each fellow will undertake an independent research project. The project may focus on research using model organisms or on issues of more direct clinical relevance. *Basic research, typically using model organisms, takes place in the laboratory under the direction of a member of the Research Division of the Department or in collaboration with scientists from another department. Clinical research is carried out under the supervision of a member of the Department of Obstetrics and Gynecology.*

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Understand the scientific and medical background literature relevant to the research project.
2. Formulate the hypotheses and design a scientific project.
3. For relevant clinical experiments, perform a power analysis.
4. Understand the principles underlying different experimental methods.
5. Be technically proficient in these methods.
6. Understand the value and limitations of different experimental methods.
7. Perform a coherent set of experiments that may provide significant contribution to scientific or medical knowledge.
8. Demonstrate the ability to interpret the results of the experiment.
9. Understand basic principles of statistics and perform routine statistical calculations.
10. Write an abstract for presentation.
11. Present the results of their research at a national or international scientific meeting.
12. Write a manuscript for publication in a peer-reviewed journal.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with study participants in an ethical manner and without coercion in the context of participation in a clinical trial
2. Know how to record data carefully, completely, and systematically.
3. Be able to counsel patients regarding participation and non-participation in a study.
4. Be able to work as a team player with other researchers including technicians in the context of participation in basic research

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Communicate and establish good relationships with collaborators.
2. Recognize his/her own limitations and collaborate with experts such as a statistician.



MANAGER

At the completion of the fellowship, fellows should:

1. Understand and be able to formulate and execute research.
2. Be able to write a research protocol, including designing forms for the Research and Ethics Board.
3. Understand and be able to prepare patients for clinical trials.
4. Have an appreciation of ethical principles and practices that govern clinical and animal-based research.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for ethical conduct of research.
2. Advocate for human and animal rights.
3. Advocate against plagiarism.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Understand the limitations of the study.
2. Understand conflict of interests
3. Know how to perform basic statistics.
4. Present the data at national or international meeting.
5. Write the manuscript.
6. Write responses to journal queries and evaluations.
7. Understand the importance of careful and complete data gathering.

PROFESSIONAL

Fellows should:

1. Formulate a research project, write a research protocol, complete forms for Ethics Board.
2. Prepare participants for clinical trial.
3. Prepare animals or reagents for basic research.
4. Perform data analysis and write abstract for presentation and the manuscript for publication.
5. Demonstrate the ability to conduct research thoroughly with compassion and ethics.



7. Menopause

Fellows will encounter menopausal women in the clinic and after iatrogenic menopause (surgical, post-radiation or chemotherapy). Fellows will conduct investigation and management of patients under the supervision of the faculty. This will include teaching on the assessment of risk factors for health during aging.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have knowledge of the physiology and endocrinology of menopause and premature ovarian failure.
2. Have knowledge of clinical and psychology of menopause.
3. Have knowledge of bone metabolism in menopausal age.
4. Be familiar with various diagnostic tests, their indications and contraindications, their limitations, sources of errors and interpretation.
5. Have the knowledge of hormonal replacement therapy; understand the controversies, side effects, and complications.
6. Have the knowledge of non-hormonal treatments of menopause and other complimentary and alternative treatments.
7. Be familiar with diet, vitamin supplementation and exercise recommendations for menopausal women.
8. Know the different types of hormonal and non-hormonal treatments, the administration of the medications and patient monitoring.
9. Know how to prevent and treat osteoporosis.
10. Know how to manage post-menopausal bleeding, atrophic vaginitis, atrophic urethritis, and other menopausal symptoms.
11. Know how to manage an adnexal mass in menopausal women.
12. Be skilled in performing endometrial sampling.
13. Be able to understand the psychological and sexual implications of menopause.
14. Understand the effects of oophorectomy on hormone levels as compared to spontaneous menopause.
15. Ensure appropriate informed consent is obtained for procedures and therapies.

Technical skill:

At the completion of the fellowship, fellows should:

1. Be able to perform endometrial sampling in menopausal women when it is required.
2. Be able to perform office hysteroscopy in women with postmenopausal bleeding.



COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history.
2. Know how to record information in a systematic fashion so that it will lead to a diagnosis and, with the appropriate interpretation of any additional information, to the development of a clinical management.
3. Know how developing a management plan including imaging and consultation with other specialties including “bone specialist,” dietician, radiologists and other professionals.
4. Be able to consult for patients regarding the implications, risks, and limitations of non-hormonal treatment and hormonal replacement therapy.
5. Be able to consult patients regarding prevention of osteoporosis, and other aging-related conditions including diet and exercise.
6. Be able to consult patients the need, risks, and implications of oophorectomy.
7. Be able to manage the changes in sexual function in menopause, including psychiatric, pain and libido issues.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between menopause, age-related conditions, and other medical disorders.
2. Recognize his/her own limitations and collaborate with other professionals including internist, dietician, psychologist, or sexual counselor for the care of the patient.
3. Know how establishing a good rapport with the consulting internist, dietician, and other health professionals.

MANAGER

At the completion of the fellowship, fellows should:

1. Understand and be able to coordinate investigations, prevention and treatment menopause-related conditions.
2. Understand and be able to prepare patients for oophorectomy.
3. Fellows should be able to prescribe preventive measures and treatments of menopause-related conditions.
4. Have an appreciation of psychological, emotional, cultural, sexual, health economics, and social aspects of menopause.



HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of prevention of osteoporosis and other menopause-related conditions.
2. Understand and provide different options of treatments including HRT, non-hormonal treatment, and other complementary and alternative treatments.
3. Advocate healthy life style including moderate consumption of alcohol, discontinuation of smoking and exercise.
4. Advocate annual mammogram, and bone density measurement on regular basis.
5. Explain the use of steroids for hypoactive sexual dysfunction.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Use evidence based data with respect to the management of menopause.
2. Understand the importance of quality assurance in the investigations and management of menopause.
3. Understand HRT vs. non-hormonal treatment.
4. Understand the importance of complementary and alternative treatments.
5. Understand the implications of surgical menopause.
6. Understand the limitations and risks of androgen replant in female menopause.

PROFESSIONAL

Fellows should:

1. Provide investigations and treatment menopause-related conditions.
2. Be able to organize preventive investigations incl. mammogram and bone density.
3. Follow the patients following treatment.
4. Be able to gather information for possible research or quality improvement.
5. Demonstrate the ability to deliver the service with honesty, compassion and ethics, and to exhibit appropriate personal and interpersonal professionalism

8. Fertility Preservation

Fellows will provide consultation to young women and men before gonad-toxic treatments, surgical or medical under supervision of the faculty. They will also participate in the management of these patients.



MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have knowledge of effects of different types of chemotherapy, radiation, and surgeries to the gonads.
2. Obtain the knowledge of spermatogenesis and oogenesis and factors affecting this process.
3. Be familiar with different methods of fertility preservation in men and women, their limitations, and possible complications.
4. Be familiar with sperm, oocytes, embryo, and ovarian tissue cryopreservation.
5. Know the indications and contra-indications of the procedures.
6. Be familiar with new advances of fertility preservation.
7. Have an appreciation of psychological, emotional, and ethical aspects of fertility preservation.
8. Ensure appropriate informed consent is obtained for procedures and therapies

Technical skill:

At the completion of the fellowship, fellows should:

- Have knowledge and the potential to perform ovarian suspension.
- Be able to perform ovarian excision or oophorectomy for ovarian cryopreservation.
- Be able to perform oocyte retrieval for oocyte cryopreservation.
- Have the knowledge of ovarian autograft.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient within the special circumstances of patients before gonad-toxic treatments so that he/she will be able to obtain an adequate history.
2. Know how to record information in a systematic fashion so that it will lead to a diagnosis and, with the appropriate interpretation of any additional information, to the development of a clinical management.
3. Be able to inform patient and family in a sensitive and compassionate way if the patient is not a candidate for fertility preservation.
4. Know how to develop a management plan including consultation with the consulting hematologist/oncologist, and methods of fertility preservation.
5. Recognize the sensitivity of the young age of the patients and the subject for future fertility.
6. Be able to consult for patients regarding the implications, risks, and limitations of the methods.
7. Be able to consult patients regarding the development of the relatively new techniques of oocytes and ovarian cryopreservation.
8. Be able to consult patients about the possibility of failure despite these preventive techniques.
9. Be able to communicate to the patients and the family the possible use of a third party, i.e. oocyte donation or sperm donation, or gestational carrier.



COLLABORATOR

At the completion of the fellowship, fellows should:

1. Recognize the importance of collaboration between our service and the consulting hematologist, medical and radiation oncologist, and the surgeons and embryologist.
2. Recognize the importance of timing of fertility-preservation methods and medical treatment of the patient's existing illness.
3. Recognize his/her own limitations and collaborate with other professionals including psychologist.
4. Recognize the importance of team effort including nursing and counseling services.

MANAGER

At the completion of the fellowship, fellows should:

1. Understand and be able to coordinate investigations, and methods to preserve fertility.
2. Understand and be able to prepare patients for oocyte retrieval, for laparoscopic ovarian wedge removal or ovarian transposition.
3. Organize the timing of the procedures with the laboratory for cryopreservation.
4. Manage the resources allocated by the health authorities for fertility preservation.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the concepts of fertility preservation in young patients and family members of patients undergoing radiation, chemotherapy or surgery.
2. Understand and provide different options of treatments.
3. Promote the concept of fertility preservation among health care providers treating patients with gonad-toxic treatments, i.e. Oncology, Radiation Oncology, Surgery, Hematology and Young Adult Oncology.
4. Advocate for the follow-up of patients who underwent gonad-toxic treatments, whether or not they had a treatment to try to preserve their fertility potential.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Use evidence based data with respect to fertility preservation.
2. Understand the importance of quality assurance in the new concept of fertility preservation.
3. Understand the importance of follow-up of these patients.
4. Understand continuous advances in technologies in this regard

PROFESSIONAL

Fellows should:



1. Organize management of young women who wish to have “fertility preservation.”
2. Discuss the condition with the treating hematologist/oncologist.
3. Follow the patients following treatment.
4. Be able to gather information for possible research or quality improvement.
5. Demonstrate the ability to deliver the service with honesty, compassion and ethics, and to exhibit appropriate personal and interpersonal professionalism.

9. Medical, Reproductive and Neuro-Endocrinology

During the rotation, fellow will receive a detailed clinical introduction into pathologies of reproductive endocrine disorders. The trainee will interview and examine women with abnormalities of the menstrual cycle, hirsutism, and anovulation on a regular basis. Occasionally, fellows might encounter male patients with hypogonadism.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Be able to understand normal steroid pathway and to interpret steroid pathway anomalies.
2. Know how to diagnose reproductive endocrine disorders including polycystic ovarian syndrome (PCOS), weight-related menstrual disorders and other menstrual dysfunction, prolactinoma, hypogonadotropic hypogonadism, premature ovarian failure and hirsutism.
3. Be familiar with the diagnostic testing of the above disorders, their indications and contraindications, their limitations, sources of errors and interpretation.
4. Ensure appropriate informed consent is obtained for procedures and therapies
5. For **PCOS**
 - a. Be able to examine and clinically classify patients with PCOS, including accurate measurement of hirsutism, identification acanthosis nigricans, central weight distribution and other important factors.
 - b. Be able to assess the metabolic and endocrine risk factors including insulin resistance, glucose intolerance, diabetes and adrenal hyperandrogenism.
 - c. Be able to induce ovulation using weight modification, insulin resistance modification, adrenal suppression, and clomiphene citrate and gonadotropin therapy.
 - d. Have an understanding of the principles of ovulation induction with pulsatile GnRH therapy.
 - e. Be able to treat androgen excess with anti-androgen therapies.
 - f. Be able to intervene medically in patients with the Metabolic Syndrome to protect their future health.
6. For **hyperprolactinemia**
 - a. Be able to examine patients with pituitary disease.
 - b. Be able to arrange endocrine tests and to interpret their results.
 - c. Be able to order and to interpret radiological images of the pituitary gland.
 - d. Be able to diagnose prolactinoma.
 - e. Be able to institute treatment and to monitor the results of therapy.



- f. Have an understanding which patients require surgical treatment.
7. For **hypogonadotropic hypogonadism and hypopituitarism**
 - a. Be able to suggest the differential diagnosis by history and examination.
 - b. To understand the impact of low weight on reproductive function in women.
 - c. Be able to suggest appropriate endocrine and imaging investigation of such patients.
 - d. Be able to administer hormonal replacement, GnRh and gonadotropin therapy.
8. For **Premature Ovarian Failure (POF)**
 - a. Know how to define and to diagnose POF.
 - b. Know the differential diagnosis of the underlying pathology.
 - c. Be able to diagnose the associated endocrinopathies.
 - d. Be able to manage this condition, including an understanding of the long-term risks.
9. For **menstrual dysfunction**
 - a. Be able to understand the factors responsible for interfering with normal cyclicity (see above)
 - b. Be able to investigate the etiological factors predisposing to menstrual abnormalities.
 - c. Be able to propose effective interventions to reverse these abnormalities.
10. For **reproductive dysfunction** (disorders of sexual function in females, males and couples)
 - a. Become knowledgeable about the common sexual concerns and complaints of men and women, including those in clinical populations (clients with co morbid conditions such as anxiety, depression, substance abuse, history of sexual trauma, eating disorders).
 - b. Be able to investigate the endocrine basis of hypogonadism including semenological abnormalities.
 - c. Be able to understand the relationship between the Metabolic Syndrome and male hypofunction.
 - d. Be able to understand and treat endocrine factors in male and female reproductive dysfunction.
11. For **hirsutism, alopecia and acne**
 - a. Be able to apply the same rigorous investigation as in PCOS to determine the associated risks and etiologies.
 - b. Be able to offer effective, safe treatment.
12. For **hypothyroidism**
 - a. Understand the function of the thyroid gland
 - b. Demonstrate proper examination of the thyroid gland.
 - c. Be able to suggest appropriate endocrine and imaging investigation of such patients including types of antibodies present in autoimmune hypothyroidism.
 - d. Be able to institute treatment and to monitor the results of therapy.
13. For **adrenal hyperplasia**
 - a. Understand the function of the adrenal gland and the HPA axis.
 - b. Know the enzyme defects and presentations of the various forms of congenital adrenal hyperplasia
 - c. Understand the treatment of congenital adrenal hyperplasia and long-term implications for under and over treatment with glucocorticoids.



14. For **Cushing syndrome**

- a. Know the signs, symptoms and laboratory findings consistent with glucocorticoid excess
- b. Understand that cortisol excess from excess ACTH may be pituitary mediated, ectopic or a result of ectopic CRH secretion.
- c. Understand that ACTH independent Cushing syndrome may be secondary to a benign or malignant adrenal tumor or from steroid administration including topical, oral, inhaled or injected glucocorticoids.
- d. Know the various modalities to evaluate and treat (pituitary surgery, radiotherapy, adrenalectomy) pituitary mediated Cushing's syndrome including risks and potential for long term cure.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history including the evaluation of endocrine disorders.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis.
3. Know how to develop a management plan including hormonal evaluation and treatment.
4. Be sensitive to the cultural and religious background of the couples.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between disorders of the reproductive system and hormones.
2. Recognize his/her own limitations and collaborate with medical endocrinologist.

MANAGER

At the completion of the fellowship, fellows should:

1. Understand and be able to coordinate investigations and treatment.
2. Understand the timing and preparation of the patients for hormonal tests including dynamic hormonal testing.
3. Be able to coordinate consultation with other specialties.
4. Be able to have an appreciation of psychological, emotional, cultural, sexual, ethical, health economics, and social aspects of hormonal imbalance.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate for the awareness of hormonal imbalance.
2. Identify the existence of a hormonal problem when it confronts him/her.



3. Identify the appropriate resources to solve the problems not in his/her area of training or expertise.
4. Recognize his/her own limitations and collaborate with a medical endocrinologist.
5. Demonstrate the ability to organize hormonal testing and apply the importance of collaboration with other services including the laboratory.
6. Understand the implications of hormonal disorders on general health.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Know how using evidence based data with respect to the management of the patient including infertility-related conditions.
2. Understand the importance of quality assurance in the investigations and management of hormonal disorder.
3. Understand the importance of follow up and data gathering for possible research.
4. Demonstrate the attitudes and habits necessary to ensure his/her continuing self-directed learning, and continuing medical education especially in medical endocrinology. This implies inclusion of endocrine related disorders in the weekly academic activities, and organizing speakers in this regard.

PROFESSIONAL

At the completion of the fellowship, fellows should:

1. Know how to initiate investigations and organize hormonal tests including dynamic testing.
2. Know how to initiate treatment in consultation with a medical endocrinologist if needed.
3. Demonstrate the ability to deliver the service with integrity, honesty, compassion, and ethics, and to exhibit appropriate personal and interpersonal professionalism.

10. Assisted Reproductive Technology

During this rotation, the fellows will encounter a wide variety of assisted reproductive technologies (ART). They will manage the patients under the supervision of the faculty.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Obtain a basic knowledge of oogenesis, spermatogenesis, and embryogenesis.
2. Have a clear understanding of different techniques of assisted conception, their indications, and limitations.
3. Be able to perform a simple sperm analysis, Post Coital Test (PCT), interpret the results and to recommend appropriate assisted conception techniques for different types of semen abnormalities.



4. Be familiar with different superovulation protocols and the use of GnRHa in assisted reproduction. They should be able to determine the protocol for “poor responders” and women with polycystic ovarian syndrome.
5. Be able to decide the proper management including dosages of hormonal treatment.
6. Be able to manage patients with azoospermia and severe asthenospermia.
7. Be able to discuss the genetic testing required prior to assisted conception and to suggest appropriate treatments.
8. Have an understanding of the different types of sperm extraction and the indication of their use.
9. Have an understanding of the technique of ICSI (Intracytoplasmic Sperm Injection) and of the possible developmental implications in the babies born due to this technique.
10. Have an understanding of factors influencing the results of ART.
11. Understand the implications of transferring multiple embryos and the negative effects of multiple pregnancies on the pregnancy outcome and on the health system, understand the emotional and the financial impacts of multiple pregnancies, and understand the indications, contraindications, and implications of selective embryo reduction.
12. Understand the implications of gamete donation. They should obtain knowledge of hormonal manipulation of the recipients in the oocyte donation program, and they should be familiar with legal, ethical, and emotional aspects of oocyte and sperm donation.
13. Be familiar with the process of selection and counseling of potential oocyte and sperm donors.
14. Ensure appropriate informed consent is obtained for procedures and therapies

Technical skill:

At the completion of the fellowship, fellows should:

- Be able to interpret a simple sperm analysis.
- Become proficient in ultrasound scanning of patients undergoing assisted conception with a special emphasis on the technique of accurate measurement of multiple follicles.
- Be able to assist at and perform oocyte collection(IVF or IVM) under local or general anesthetic
- Be able to assist with and perform embryo transfers.
- Be able to assist with and perform office hysteroscopy and /or hydrososonography as part of uterine evaluation before ET.
- Be able to assist at and perform paracentesis by TVUS guidance or abdominal.
- Be able to assist and perform TVUS for cyst aspiration/aspiration of hydrosalpinges.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the couple so that he/she will be able to obtain an adequate history and perform a general and pelvic examination.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis and treatment options.



3. Demonstrate the ability to communicate with the couple in lay language, ethically and with empathy.
4. Demonstrate the sensitivity of the treatment.
5. Demonstrate the sensitivity of the cultural and religious background of the couple.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand that treatment with ART is a team effort.
2. Demonstrate the ability to collaborate with all parties involved including the nurses, technicians, embryologists, and administrative staff.
3. Be able to recognize his/her own limitations within her field of competence and collaborate with other specialties and other health allied for the care of the patient.

MANAGER

At the completion of the fellowship, fellows should:

1. Demonstrate the ability to use resources effectively.
2. Utilize the health care team appropriately, share workload and most importantly awareness of patient care.
3. Demonstrate administrative skill in organizing treatment for the patients.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Advocate team effort of ART.
2. Understand and apply the principles of genetic counseling if necessary and recognition of the need of psychological assistance.
3. Demonstrate knowledge of ethics.
4. Demonstrate knowledge of regulations and changes in Health Care and Reproductive Technologies.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Be able to apply the basis of epidemiology with respect to morbidity of ART and to the value of ongoing quality improvement.
2. Demonstrate the ability to continuing medical education for the fellow as well as the patients.
3. Demonstrate the ability to contribute to development of new knowledge by presentation and publication.



PROFESSIONAL

Fellows should:

1. Be on time.
2. See patients and the attending staff will review the case. Fellows should follow his or her patient either by telephone calls or by visiting the patient who are in the hospital.
3. Be able to function as an educator to other allied health professionals as well to the patients.
4. Be honest in his or her work and not hesitate to report the facts about patients including errors.
5. Be responsible for the patient care.
6. Deliver the care with integrity, honesty, compassion.
7. Follow all aspects of ethics.

11. Ultrasound

During the fellowship training, fellows will be performing transvaginal ultrasound on a variety of patients undergoing initial assessment and treatment of infertility. Fellow will perform ultrasound with the assistance of ultrasound technicians under the direct supervision of the faculty.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Have a clear understanding of the physical principles of ultrasound and Doppler technologies
2. Be able to discuss the advantages of transvaginal and transabdominal approaches and explain the advantages of different frequency probes used in ultrasound
3. Have knowledge of the advantages of color Doppler ultrasound over standard Doppler technology
4. Become proficient in ultrasound scanning of patients undergoing assisted conception treatment, with a special emphasis on the technique of accurate measurement of multiple follicles.
5. Obtain a basic understanding of color Doppler measurements of uterine and ovarian arterial flow, and be able to discuss their use in assisted conception.
6. Become familiar with the normal morphological characteristics of intrauterine pregnancy at the different stages of early gestation.
7. Ensure appropriate informed consent is obtained for procedures.

Technical skill:

At the completion of the fellowship, fellows should:

1. Know how to visualize the uterus and ovaries and how to measure uterine dimensions and ovarian volume.
2. Be able to recognize and measure uterine fibroids and polyps, to determine the position of fibroids in relation to the uterine cavity, and to recognize common anatomical uterine malformations by using ultrasound technology.



3. Be able to measure endometrial thickness and to describe and discuss the implications of different endometrial appearances.
4. Be able to perform and to interpret the results of hysterosonogram.
5. Be able to distinguish between different types of ovarian cysts and have a clear understanding of the appearance of endometriotic cysts and to determine their position in the pelvis.
6. Be able to recognize the ultrasonic appearance of hydrosalpinges.
7. Be able to recognize the following normal findings of the first trimester of pregnancy:
 - Gestational sac size
 - Embryo
 - Cardiac activity including normal embryonic heart rate
 - Amnion
 - Chorion
 - Crown-rump length measurement
 - Correlation with BHCG levels and menstrual dates
8. Ability to recognize the following anormal findings of the first trimester of pregnancy:
 - Spontaneous complete/incomplete abortion
 - Ectopic pregnancy
 - Blighted ovum, embryonic death
 - Gestational trophoblastic disease
9. Be able to diagnose multiple gestation (chorionicity and amnionicity)

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Appropriately communicate and interact with the couple to develop a shared plan of care
2. Be able to produce radiologic reports that are accurate, concise and grammatically correct.
3. Accurately elicit, synthesize and document relevant information regarding urgent or unexpected ultrasound findings
4. Demonstrate the ability to communicate with the couple in lay language, ethically and with empathy.
5. Be sensitive to patients receiving bad news.
6. Demonstrate the sensitivity of the cultural and religious background of the couple.

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Demonstrate the ability to collaborate with all parties involved including the referring physician of the couple, the nurses, ultrasound technologists, and administrative staff.
2. Work with other health professionals and clinic staff to prevent, negotiate, and resolve conflicts.



MANAGER

At the completion of the fellowship, fellows should:

1. Demonstrate the ability to use healthcare resources effectively.
2. Utilize the health care team appropriately, share workload and most importantly awareness of patient care.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Be able to respond to individual patient health needs and issues as part of patient care.
2. Demonstrate knowledge of regulations and changes in Health Care and Reproductive Technologies.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Augment medical and ultrasound knowledge by correlating clinical information and medical literature.
2. Demonstrate the ability to continuing medical education for the fellow as well as the patients.
3. Demonstrate the ability to contribute to development of new knowledge by presentation and publication.

PROFESSIONAL

Fellows should:

1. Be on time.
2. Present oneself as a professional in appearance and communication.
3. Demonstrate respect for patients and all members of the health care team.
4. Respect patient confidentiality.
5. Deliver the care with integrity, honesty, compassion.
6. Follow all aspects of ethics.

12. Reproductive/Endoscopic Surgery

During the first two months of the surgical rotation, fellows should understand the basic principles of endoscopic surgery. Depending upon their level of expertise, they will start with simple procedures such as diagnostic laparoscopies. Alternatively, they will perform complicated procedures such as laparoscopic excision of endometriosis or myomectomy.

During the fellowship, they will assist at many advanced endoscopic procedures including laparoscopic myomectomy, hysterectomy, tubal anastomosis and other operations that previously required a laparotomy under the direction of Drs. Tulandi, Buckett or Demirtas. They will also assist at office



hysteroscopy and other advanced hysteroscopic procedures. These include hysteroscopic myomectomy, lysis of adhesions, endometrial ablation, and resection of uterine septum. Fellows will also assist a laparotomy if laparoscopy is not feasible or contraindicated.

MEDICAL EXPERT

At the completion of the fellowship, fellows should:

1. Apply knowledge about anatomy, including:
 - anatomic structure of the pelvis, including the bony structures, muscles, blood vessels, lymphatics, and nerves.
 - pelvic viscera, their anatomic relationships to one another, and to the other structures of the pelvis.
 - the embryology of the pelvic viscera.
 - the layers, vascular supply, and nerve supply of the abdominal wall.
 - the retroperitoneum and retroperitoneal spaces of the pelvis, including the prevesical space (Space of Retzius), the paravesical space, the vesicovaginal space, the rectovaginal space, the pararectal space, and the presacral space.
 - the course of the ureter and the major vessels through the lower abdomen and pelvis.
2. Have the knowledge of the indications, safety, complications, and limitation of endoscopic surgery as well non-surgical alternatives.
3. Acquire a working knowledge of advanced gynecologic endoscopic operations including the indications, safety, complications, and limitation of endoscopic surgery as well non-surgical alternatives.
4. Be able to act as a consultant to general gynecologists.
5. Ensure appropriate informed consent is obtained for procedures and therapies

Technical skill:

At the completion of the fellowship, fellows should:

- Be able to conduct a proper diagnostic laparoscopy, laparoscopic adhesiolysis, excision of endometriosis, and endometrioma or other ovarian cyst.
- Be able to assist tubal anastomosis procedure.
- Be able to perform diagnostic hysteroscopy, hysteroscopic myomectomy, hysteroscopic polypectomy, lysis of adhesions, and resection of uterine septum.
- Have assisted at least 25 cases of laparoscopies and 25 cases of hysteroscopies.

COMMUNICATOR

At the completion of the fellowship, fellows should:

1. Know how to establish a good rapport with the patient so that he/she will be able to obtain an adequate history including consulting the patient for surgical vs. non-surgical management of her condition.
2. Know how to record information in a systematic fashion so that it will lead to a differential diagnosis and, with the appropriate interpretation of any additional information, to the development of a provisional diagnosis and treatment.



3. Know how to develop a management plan including expectant management, surgical or non-surgical treatment.
4. Be sensitive to the cultural background of the couples.
5. Be sensitive to the religious background of the patients such as Jehovah witnesses

COLLABORATOR

At the completion of the fellowship, fellows should:

1. Understand the relationship between general medical disease and surgery.
2. Recognize his/her own limitations and collaborate with other specialties including anesthesiologist, general surgeon, urologist, gastroenterologist and other specialties.
3. Know how establishing a good rapport with the operating room staff and other health professionals including the pathologist and laboratory personnel.

MANAGER

At the completion of the fellowship, fellows should:

1. Demonstrate the ability to use health care resources effectively.
2. Know how to organize preoperative management of the patient, booking and preparation of the patient before surgery.
3. Know how to coordinate preoperative treatment if needed.
4. Know how to coordinate consultation pre or postoperatively with other specialties if needed.
5. Know how to prescribe postoperative management and follow-up.
6. Be able to have an appreciation of psychological, emotional, cultural, sexual, ethical, health economics, and social aspects of surgery.

HEALTH ADVOCATE

At the completion of the fellowship, fellows should:

1. Demonstrate the knowledge of the need of treatment of a certain condition.
2. Demonstrate the knowledge of choosing between expectant management, surgical or non-surgical treatment.
3. Be able to advocate for the concepts of indicated-surgery.
4. Be able to advocate the concept of minimally invasive surgery.

SCHOLAR

At the completion of the fellowship, fellows should:

1. Be able to apply evidence based data for patient's management.
2. Understand the importance of quality assurance.
3. Be able to use the data for clinical investigations.



PROFESSIONAL

Fellows should:

1. Manage and schedule preoperative testing, consultation with other specialties if needed.
2. Manage preoperative treatment if needed for example administration of GnRHa 1 or 3 months prior to myomectomy.
3. Demonstrate the ability to identify high-risk patient and to administer proper judgment for surgical or non-surgical treatment.
4. Understand the limitation of surgical treatment and the fellow's limitation in surgery.
5. Demonstrate the ability to deliver the service with integrity, honesty, compassion, and ethics, and to exhibit appropriate personal and interpersonal professionalism.

13. Medical Ethics

Fellows will encounter many ethical issues during the fellowship training. This includes participating in research projects, taking a course in Ethics, attending meetings of the MRC Ethics Committee and in the daily clinical setting. All research proposals from our institution need approval by the Research and Ethics Board. Fellows will take a course in Ethics under the direction of Dr. Eugene Bereza, a medical ethicist, and a seminar on the ethics of third party reproduction given by Dr. Janet Takefman. They also discuss topical issues as they arise, in consultation with Dr. Bereza and Dr. Takefman.

REI program has clear objectives in biomedical ethics. These objectives are in a defined curriculum integrated into the educational program and evaluated by the evaluation system of the Fellowship Program Committee.

OBJECTIVES

Objectives should include a working knowledge of biomedical ethics as it relates to REI subspecialty, including basic principles and processes, which facilitate the development of appropriate ethical attitudes and behavior in physicians in a variety of different medical settings. In developing appropriate objectives, the Fellowship Program Committee should consider the following:

1. Knowledge

- a) awareness of the major ethical theories, perspectives and principles and laws pertaining to Assisted Human Reproduction;
- b) knowledge of ethical issues that are commonly encountered in practice including:
 - informed choice (consent or refusal) in competent and incompetent patients (including decision making for and with pediatric patients and assessment of capacity and substitute decision making), coercion, free will, emotional incapacity
 - confidentiality
 - allocation of resources
 - truth-telling
 - dealing with medical error and mishaps
 - professional conduct, including confidentiality, boundary issues, and competence



- conflict of interest
- dealing with differences in value systems, e.g. between individuals or institutional vs. personal values
- cultural differences and sensitivities
- c) knowledge of relevant professional codes of ethics;
- d) knowledge of law as it applies to ethical decision making in medicine, particularly law on consent and confidentiality
- e) identification of the ethical dimensions of discipline-specific issues as they arise, e.g. new reproductive technologies and therapies;
- f) awareness of the ethical issues arising in the teaching and learning environment;
- g) awareness of the ethical components of medical research including experimental design and valid consent;
- h) awareness of the law of Canada respecting Assisted Human Reproduction and the Quebec laws of same.

2. Attitudes

- a) an appreciation of the presence of ethical dimensions in all medical decision-making;
- b) respect for diversity and differences including race, national or ethnic origin, religion, sex, age, or mental or physical status;
- c) heightened awareness of the patient's and the resident's religious, cultural beliefs and values, biases or prejudices that may influence ethical decision-making.

3. Skills

- a) the ability to identify and analyze ethical issues when making decisions;
- b) the ability to acknowledge uncertainty and the possibility of error in ethical decision making;
- c) the ability to communicate effectively to promote full discussion of ethical issues, including the encouragement and support of patients and families and other health professionals in making ethical decisions. This will include the ability to understand the appropriate mode of communication;
- d) the ability to recognize and deal with conflict;
- e) the ability to develop mature professional relationships with patients and their families, other health care providers and other physicians and fellows.

SETTINGS

Settings suitable for biomedical ethics teaching and learning include:

- Role model relationships and mentoring: Faculty-patient-fellow in ambulatory settings, e.g. office and outpatient department.
- Team or group interactions involving multiple health care professionals e.g. CTU, teaching rounds and seminars, small group management sessions.



- Formal educational sessions: institutional rounds, grand rounds.
Participation on institutional ethics committees, research ethics boards.

EVALUATION

1. Fellow Evaluation

The Fellowship Program Committee should identify those areas of the biomedical ethics curriculum to be evaluated and ensure that appropriate evaluation methods are included in the program in-training evaluation system.

The program should separately assess:

- a) the knowledge, attitudes, and skills the fellow has in discussing and dealing with the ethical and legal components of practice and clinical research, and
- b) the personal ethical behavior of the resident.

2. Program Evaluation

The biomedical ethics component of the program should be reviewed at least once a year by the Fellowship Program Committee and must be reviewed at the time of an internal review by the University Postgraduate Medical Education Committee and when a survey by the Royal College takes place.

14. Quality Assurance and Improvement

Accreditation Committee Position Paper QUALITY ASSURANCE / IMPROVEMENT
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Quality Assurance/Improvement is defined as a systematic assessment of the appropriateness and effectiveness of patient care and the quality control of laboratory and other procedures. It includes both the assessment of quality of care and the mechanisms established to improve the quality when necessary. The efficiency of care includes a consideration of the relationship of benefit to cost.

As defined by the Royal College, the following general objectives will be reflected in the curriculum of the program. These general objectives are linked to specific CanMEDS roles as follows:

1. **Knowledge:** At the end of their training, residents should be able to master the:
 - a) knowledge of the components of a comprehensive quality assurance/improvement program including those of their own specialty training program,
 - b) knowledge of available outcome measurements for quality assurance/ improvement programs as well as how to measure them, and
 - c) ability to design outcome measures, to analyze study variables, to interpret results, and to feed them back into the process for further improvement.



Medical Expert

- Contribute to the enhancement of quality care and patient safety in Gynecologic Reproductive Endocrinology & Infertility, integrating the available best evidence and best practices.

Manager

- Describe the structure and function of the health care system as it relates to Gynecologic Reproductive Endocrinology & Infertility, including the roles of physicians.

2. Abilities: At the end of their training, residents should be able to demonstrate:

- a) a capacity to work with a multi-disciplinary team
- b) an ability to identify a problem in need of improvement, and
- c) an ability to design standards of care

Collaborator

- Work with others to assess, plan, provide and review other tasks, such as research problems, educational work, program review or administrative responsibilities
- Participate effectively in interprofessional team meetings
- Enter into interdependent relationships with other professions for the provision of quality care

Professional

- Demonstrate a commitment to delivering the highest quality care and maintenance of competence
- Recognize and respond to others' unprofessional behaviors in practice

3. Skills: At the end of their training, residents should be able to:

- a) construct algorithms with interlocking steps connected with outcomes
- b) implement such algorithms
- c) be able to oversee the program implementation, and
- d) apply, and eventually design, methods of clinical evaluation

Manager

- Participate in systemic quality process evaluation and improvement, such as patient safety initiatives
- Lead or implement change in health care

Scholar

- Evaluate the impact of any change in practice

Methods to achieve these goals are diverse. Didactic sessions on this subject will be included in our curriculum. Also, each fellow is asked to complete a project from start to finish.



15. Communication Skills

TEACHING AND ASSESSMENT OF COMMUNICATION SKILLS

Communication skills are of vital importance for physicians as they communicate with other physicians on an individual or group basis, work with other health care workers in developing plans for patient care, advocate for the public and as they assume roles as physician administrators. Communication takes place in a number of different manners including both written and verbal means. It is well known that most of the complaints brought against physicians to licensing bodies are related to communication skills. There is also well-documented evidence that patient outcome can be influenced by the ability of a physician to communicate with patients.

CanMEDS 2000 describes the competencies of the communicator as follows. The specialist (fellow) must be able to:

- establish a therapeutic relationship with patients/families
- obtain and synthesize relevant history from patients/families/communities
- listen effectively
- discuss appropriate information with patients/families and the health care team

Good communication in both official languages, French and English, is required to impart information, to educate, to solicit opinion, to convey a treatment plan as well as to be a health care advocate and a life-long learner.

It is assumed that fellows will start their program with a set of communication skills learned during medical education directed toward obtaining a medical history. These communication skills will need refinement as the fellow gains experience. Communication skills can be taught through a variety of processes including didactic sessions, role-playing, reflection, observation and evaluation with specific objectives for improvement. Communication skills can be evaluated. Assessment may be performed informally by discussion with peers, other health care professionals, and students and by the review of written records by the fellow. Formal assessment is also possible through observation (direct or videotaped), use of standardized patients, role-playing, and other structured programs. Assessment and feedback should be done on a standard marking scale to allow the identification of areas, which require improvement or modification. Additionally, such a scale may provide a framework for the reflective physician to modify and refine skills throughout a practice career.

Fellows will find themselves in new situations as the relationship between physician and patients become part of a daily routine. The relationship with colleagues and supervisors also changes as new responsibilities are encountered. Areas that may require special emphasis are the delivery of bad news, obtaining informed consent, helping families make life-impacting decisions, and being an empathetic listener without compromising truth or principles.

Techniques for interviewing patients with difficult behaviors (e.g. sadness, seductiveness, vagueness, etc.) must be developed and assessed. Areas that fellows may need to develop include the ability to communicate with patients where there is a language or physical communication barrier, in a situation where they disagree with a patient, and situations where they are challenged by patients. Fellows must be able to understand the principles and practices of obtaining informed consent.



All fellowship programs should ensure that the principles of appropriate communication skills are taught in a variety of venues and that there is a formal method of assessing communication skills. This should take place in addition to the regular "on the job" feedback given regularly to the fellows by consultants. Assessment may take place in a standardized environment, by review of videotaped interviews, by direct observation of interactions and in consultation with other health care professionals. The method of evaluation will differ with the situation and context of the assessment.