



The Royal Australasian
College of Physicians

Specialist Advisory Committee in General and Acute Care Medicine

***Recommended training experiences for Advanced Trainees
with an interest in obstetric medicine***

TO BE USED IN CONJUNCTION WITH:

**General Medicine Advanced Training Guidelines
General Medicine Advanced Training Curriculum
Professional Qualities Curriculum**

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OVERVIEW OF THE SPECIALTY

There is a wide area of interface between obstetrics and internal medicine. With improved medical care over the last few decades, increasing numbers of women with significant medical conditions are becoming pregnant and electing to continue their pregnancy despite awareness of potential hazards. These women need physicians with a broad knowledge of the interaction between medical problems and pregnancy to collaborate with their obstetrician. The acquisition of appropriate skills in diagnosis and management to enable a physician to care for such patients requires specific subspecialty training.

This curriculum defines in broad terms a proposed body of knowledge in certain areas of internal medicine which are of most relevance to the physician called upon to deal with medical problems in pregnancy. It also details the scope and particulars of specific medical disorders that are seen only in pregnant women, and which need to be understood by physicians.

Physicians are often consulted by practitioners carrying out antenatal and postnatal care. They may be asked to see women with pre-existing medical problems before, during or after pregnancy or with medical conditions which arise during the pregnancy or the puerperium. The medical problems may be disorders specific to pregnancy which are alien to the usual daily practice of a general physician. Even in the management of familiar conditions there will be aspects of care which are unique to pregnant women and in which the physician may have had little experience. Furthermore, in all aspects of care during pregnancy, there is the ever present concern regarding litigation resulting from possible adverse outcomes to the fetus of any maternal disorder or its treatment.

For these reasons it is desirable that physicians who undertake to provide medical care to pregnant women are adequately trained and have had some experience in, or exposure to the practice of medicine in pregnancy.

The approach to management of medical problems in the pregnant patient must incorporate an understanding of the following.

1. Duality of patients

There are two patients - the mother and the baby. Management decisions therefore must be made in the context of balancing the risks and benefits for each.

2. Maternal Considerations

The physiological and anatomical changes of normal pregnancy have potential consequences for women with medical disorders, for example the development of cardiac failure in late pregnancy or the peripartum period in a woman with severe mitral stenosis. Another example is the increased risk of thromboembolic disease which pregnancy carries for women with thrombophilia of any cause.

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- i. The pregnancy itself may be associated with an increased risk of exacerbation of the disease (and also remission of some disorders such as rheumatoid arthritis). There is considerable evidence for a predictable decline in renal function, for example, in women with reflux nephropathy during and after pregnancy. Pregnancy worsens control of diabetes, exacerbates porphyria, precedes puerperal flares of thyroid disease and SLE, and often destabilises epilepsy until drug therapy is adjusted. All these are examples of medical conditions whose course is altered by gestation.
 - ii. The medical condition may predispose the woman to specific pregnancy complications not seen in non-pregnant individuals, such as the development of superimposed pre-eclampsia occurring in women with essential hypertension.
 - iii. Pregnancy may have an adverse long term effect on the natural history of the medical condition, such as in the case of diabetic nephropathy where evidence suggests that the decline in renal function may be accelerated by pregnancy, particularly with the cessation of ACE inhibitor therapy.

3. Fetal Considerations

All medical disorders in pregnancy are potentially of significance to the developing fetus, and many modalities of investigation and treatment carry implications for the fetus.

- i. The disease itself may affect the fetus, as in the case of diabetes mellitus, and anti-phospholipid syndrome.
- ii. There may be abnormalities associated with the disease, of little significance to the mother, which are pathogenic to the placenta or baby. An example would be the presence of anti Ro (SSA) antibody which is associated with congenital complete heart block in the fetus. A second example would be the presence of thyroid stimulating antibody in a woman with treated Graves' disease, which may cause illness in the baby even years after the disease ceased to be a problem for the mother.
- iii. A number of medical conditions are associated with placental insufficiency, thereby jeopardising fetal well-being and growth e.g. renal disease, essential hypertension, anti-phospholipid syndrome.
- iv. Many disorders have a genetic component and carry the possibility that the baby will develop problems later in life, such as polycystic renal disease.
- v. Metabolic disorders in the gravid female, such as calcium aberrations, hyperglycaemia, hyperphenylalaninaemia, all require assiduous attention during gestation to avoid problems for the fetus during the pregnancy, or in later life.
- vi. There is considerable recent evidence that the intra-uterine environment may be a major contributor to long term health of the individual. It appears, for example, that poor growth of the fetus and placenta may be reflected, many decades later, in an increased risk of hypertension and coronary heart disease for that individual. Also, gestational diabetes has now been associated with an increased risk of diabetes before age 20 in the offspring of that pregnancy.

Thus, medical and obstetric measures taken to improve maternal health, nutrition, and control of disease are probably of very long term benefit to individual health, as well as to general health status of the community in future generations.

MEDICAL DISORDERS SPECIFIC TO PREGNANCY

There are a number of medical disorders seen only in pregnant individuals. These include pre-eclampsia, acute fatty liver of pregnancy, cholestasis of pregnancy, herpes gestationis, amniotic fluid embolism, cardiac complications of tocolytic therapy and peripartum cardiomyopathy.

It is incumbent upon the physician who aspires to deal with these patients to gain as much experience as possible in these conditions. It is most unlikely that training in the usual round of medical specialty rotations will provide the necessary experience. Most physicians will see a very limited number of pregnant patients each year and be inadequately equipped to deal optimally with many of the above problems, although clearly the intellectual approach based on their sound clinical training will allow most physicians to be able to provide useful assistance to their obstetric colleagues.

PURPOSE OF THIS DOCUMENT

This document outlines the training rotations, training settings, and knowledge and skills appropriate for Advanced Trainees in general medicine who wish to manage women with medical disorders complicating present or planned pregnancy. Several components of this document are regarded as important for physicians wishing to practice general medicine in non-metropolitan settings as these are likely to be referred patients with obstetric medical problems.

All training must be conducted within the guidelines set by the Specialist Advisory Committee (SAC) in General and Acute Care Medicine for Advanced Training in general medicine.

KNOWLEDGE AND SKILLS

1. Physiology of pregnancy

Trainees must be able to explain the physiology of normal pregnancy, including changes/adaptations to:

- cardiovascular system
- renal function
- electrolyte maintenance
- hepatic function
- endocrine function
- respiratory function
- other physiological factors

Trainees must be able to determine alterations in laboratory normal values imparted by pregnancy and explain reasons for these changes.

2. Clinical aspects of normal pregnancy

Pregnant women experience many symptoms which may mimic disease. To account for this trainees must be able to:

- describe the range of normal symptoms experienced during pregnancy
- differentiate normal altered physiology from disease states
- describe the widened range of normality for findings of physical examinations due to pregnancy
- distinguish physiological flow murmurs of pregnancy from valve disorders.

Oedema, physiological anaemia of pregnancy, various varicosities, acne, hirsutism, goitre and numerous other findings may be reasons for referral and require consideration of differential diagnoses.

3. Minor ailments of pregnancy

Trainees should be familiar with symptoms, causes and treatment of minor ailments of pregnancy, including:

- early pregnancy nausea
- constipation
- dyspnoea
- palpitations
- oedema
- oesophageal reflux
- back pain
- carpal tunnel syndrome
- meralgia

4. Pre-existing medical disorders

Trainees must develop the skills necessary to treat pregnant women with pre-existing medical disorders. Trainees must be able to:

- provide pre-conception counselling for both males and females
- manage pre-existing medical disorders during pregnancy, e.g. valvular heart disease
- describe the effect of pregnancy on pre-existing medical disorders
- describe fetal implications of the disease, e.g. thyroid disorders
- describe potential intra-partum complications, e.g. cardiomyopathy
- describe potential post-partum complications

5. Medical disorders arising in pregnancy

Trainees must be able to diagnose and develop management plans for medical disorders arising in pregnancy, such as:

- pre-eclampsia and its complications, including eclampsia
- hypertension, pre-eclamptic and otherwise
- gestational diabetes
- hyperemesis gravidarum
- gestational liver disease
- anaemia of pregnancy
- urinary abnormalities, including proteinuria and haematuria
- medical complications of tocolytic therapy
- thrombosis and embolism – antenatal
- respiratory complications of pyelonephritis and chorioamnionitis
- amniotic fluid embolism.

6. Puerperal medicine

Trainees must be able to identify and explain management for common medical conditions of the puerperal period, including:

- thrombosis and embolism
- puerperal fever, sepsis
- pre-eclampsia complications
- psychiatric complications

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- epidural complications
 - diabetes
 - post-natal thyroid disorders.

7. Medical aspects of contraception

Trainees must be able to explain the medical aspects of the oral contraceptive pill (OCP), including:

- effects of OCP on medical disorders, e.g. hypertension, previous thrombosis, thrombophilia, liver disease, migraine, cardiac disease
- interactions between OCP and other drugs, e.g. anticonvulsants and antibiotics
- alternatives to the OCP (in the context of thrombophilia, hypertension, liver disease etc).

8. Obstetric pharmacology

Trainees must be able to explain aspects of obstetric pharmacology, including:

- altered pharmacokinetics in pregnancy
- fetal effects of drugs, e.g. teratogenic, fetotoxic and late pregnancy effects
- lactation pharmacology.

EXPERIENCE AND TRAINING

Trainees with an interest in obstetric medicine should consider terms in the specialty areas outlined below. All training must be conducted in line with the guidelines of the SAC in General and Acute Care Medicine.

1. Desirable medical experience

Terms in:

- endocrinology (diabetes most importantly)
- general medicine
- nephrology
- immunology and rheumatology (with emphasis on auto immune disease)
- cardiovascular medicine (with emphasis on hypertension, general cardiology and congenital and valvular heart disease)
- haematology (with an emphasis on thrombosis, platelet disorders and the thrombophilic states)
- intensive care medicine.

2. Useful but not essential medical experience

Terms in:

- gastroenterology and liver disease
- respiratory medicine
- neurology
- infectious disease and HIV medicine
- clinical genetics

3. Non-internal medicine experience which might be considered useful

Terms in:

- obstetrics

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- neonatal paediatrics
 - gynaecology
 - family planning
 - psychiatry

CLINICAL SETTINGS FOR OBSTETRIC MEDICINE

There are several clinical situations in which the expertise of an obstetric physician might be called upon.

1. Outpatient practice

- maternity hospital maternal-fetal medicine clinic
- maternal or general hospital medical referral clinic
- private obstetric medicine referral clinic where patients are referred for:
 - advice re: management before, during or after pregnancy
 - pre-conception counselling for both women and men
 - post-partum follow up of medical complications of pregnancy (e.g. medical assessment of women who had severe pre-eclampsia, thrombosis in pregnancy or still birth)

2. General hospital inpatient practice

Referral from physicians or surgeons for advice regarding potential interaction between their proposed management and ongoing pregnancy e.g.

- pregnant women with asthma – advice sought regarding safety of certain medications in pregnancy
- pregnant women with pulmonary embolism – advice sought regarding anti-coagulation for gestation
- woman with SLE – consultation requested to discuss prognosis, advisability of continuation vs. termination etc.

3. Maternity hospital diabetic clinic

The physician plays an essential role in the team management of diabetes in pregnancy with obstetricians, dieticians and diabetes education midwives.

Responsibilities may include:

- pre-conception counselling for the woman with diabetes planning pregnancy
- surveillance for renal, vascular, ophthalmic neurologic and other complications during pregnancy

4. Maternity hospital inpatient practice

Full range of referrals involving women with any of the above disorders in pregnancy or the peri-partum period, e.g.

- severe pre-eclampsia at early gestation
- diabetic ketoacidosis complicating pregnancy
- women with cardiac disease in labour
- hyperemesis gravidarum
- diagnostic problems, including thrombocytopenia, liver abnormalities and dyspnoea
- post-partum non-pelvic sepsis
- post-partum hypertension

A defined period of training would need to be spent in a maternity hospital with a multidisciplinary high risk pregnancy service for inpatients and a neonatal intensive care unit. Attendance of appropriate clinical meetings would be required.

5. Women's hospital or general hospital gynaecology referrals

Many medical problems complicate gynaecologic practice and may lead to referral, e.g.

- ovarian hyperstimulation syndrome
- exclusion of medical cause for recurrent abortion
- peri-operative thrombosis prophylaxis
- peri-operative diabetes management
- surgical risk assessment
- post-operative complication including sepsis pulmonary embolism.

Medical aspects of menopause, e.g.

- hormone replacement and thrombophilia
- hormone replacement and heart disease
- hypertension and hormone replacement.

Many of the last category of referral would be within the sphere of practice of a general physician but the physician attending a women's hospital is likely to be called upon more frequently to deal with such situations.

EDUCATIONAL ACTIVITIES AND RESEARCH

Included in the objectives of training in obstetric medicine should be an interest in and desire to contribute to the advancement of knowledge in the field. Original enquiries by means of clinical or basic research, case note review, case-control and other studies are required into many aspects of the practice of obstetric medicine. It is expected that those who choose to practise in this area of medicine will be involved in such activities.

Undergraduate and postgraduate education of medical students, junior and senior medical staff, nurses, midwives and paramedical staff comprises an important responsibility for those who practise obstetric medicine. Obstetric medical problems usually represent a small and infrequent component of the workload of obstetricians, GP obstetricians and physicians, but provide difficult and demanding clinical situations. Those who see these patients are generally enthusiastic attendees at educational activities.