Maternal Fetal Medicine Service

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Background

Welcome to the Maternal Fetal Medicine Service at Auckland District Health Board. Maternal Fetal Medicine is a sub speciality branch of Obstetrics and Gynaecology. At the Auckland Maternal Fetal Medicine unit we have a small cohesive team who deliver an excellent service to women and their families/whanau.

Over the last fifteen years the service has grown from a small as needed service, to the largest and busiest service in New Zealand with a four fold increase in referrals and women seen. The Maternal Fetal Medicine Service in Auckland is the host for the New Zealand Maternal Fetal Medicine Network (NZMFMN) and the National Fetal Therapy Centre.

The area of Maternal Fetal Medicine has been developing very quickly over the last fifteen years. A number of reasons have contributed to this: increased use of fertility treatments, older mothers, better Ultrasound technology and development of minimally invasive devices for fetal treatment. Neonatal care has improved and we have had to consider viability at earlier gestations and this has created new challenges within the field.

Although Maternal Fetal Medicine is a very intense and often ethically challenging area to work in, it can also be very rewarding. Teamwork and collegiality are key to this. We work with specialist Maternal and Fetal Medicine Midwives and Sonographers within the unit.

As we look forward to the next five and ten years there is succession planning required and an increase in Specialists to be able to accommodate the growing Service and staffing needs. We have accreditation for two Maternal Fetal Medicine trainees. We are one of only three units in Australasia with the volume of work to support two trainees.

We are always keen to hear from health professionals who are interested in joining our enthusiastic team!

Dr Emma Parry

Clinical Director Maternal Fetal Medicine, Auckland
Maternal Medicine

The Maternal Medicine Service has grown over the last ten years as women become older and more complex medically. The service cares for women with a wide range of problems:

- **Hypertensive and autoimmune disease**
- **Renal Disease**
- **Transplants**
- **Cardiac conditions: includes congenital cardiac anomalies and rheumatic heart disease and heart valve replacements**
- **Respiratory conditions**
- **Inflammatory Bowel disease**
- **VTE**
- **Haemotological disorders**
- **Infectious disorders: includes Hepatitis B needing anti-virals and HIV**
- **Preterm Labour**
- **Severe Pre-eclampsia**

This list is not comprehensive! We manage women through this service as part of a multi-disciplinary team. The team includes specialist midwives and a strong Obstetric Medicine Service. There are five Obstetric Physicians and a registrar post. These Specialists come from a number of background: General Medicine, Endocrinology and Haematology. There is also access to Physiotherapy and Social Workers.
Fetal Medicine

The Fetal Medicine Service provides care to a large catchment area serving approximately 40,000 births per annum. Where possible women are managed as close to home as possible, but will attend for review antenatally as required.

We work within an organisation which provides links to many excellent services including: specialist Fetal MRI, genetics, Paediatric Surgery, neonatology and Perinatal Pathology.

The Maternal Fetal Medicine Service provides a New Zealand Paediatric Cardiology Service. Women are seen in a multi-disciplinary clinic staffed by Maternal Fetal Medicine staff and a Paediatric Cardiologist with midwives and paediatric cardiac nurse specialists. There is access to ECMO through the Cardiac surgery and Paediatric Intensive Care Unit.

NZMFMN Fetal Therapy Unit
Based at National Women’s Health, Auckland City Hospital

Background

It is over 40 years since the first effective fetal therapy, intrauterine transfusion was performed in Auckland by Professor Sir William Liley. Over the last 20 years Fetal Therapy has become a reality with the advent of modern ultrasound and formally trained specialists. These changes have permitted a number of other therapies have been developed. Improved imaging modalities for accessing the fetus have encouraged Maternal Fetal Specialists to look at ways of detecting, ameliorating or treating conditions in utero with the aim of enhancing postnatal outcomes. Avoidance of early delivery by being able to manage the baby in utero reduces the additional complications of prematurity and Fetal therapy has been shown to be a better option in many cases.
In Auckland over the last 10 years we have continued to expand the range of Fetal Therapies available and consolidate the Fetal Therapy Service to one centre in New Zealand. Some of the procedures which are undertaken include:

- **Fetal Blood Sampling and In-utero transfusion**
- **Fetal shunt placement**
- **Selective Fetoscopic Laser Photocoagulation**
- **Cord Occlusion**
- **Intra-Fetal Vessel occlusion eg for TRAP and Sacrococcygeal Teratoma**
- **Intra-amniotic treatment eg: thyroxine**
- **Ex-Utero Intrapartum treatment (EXIT)**

Some of these procedures are relatively new and as part of this service ongoing auditing is undertaken. The administrative team keep in contact with these women and their babies and liaise with our Neonatal colleagues to assess the development of these children at ages 2 and 5 years.

There are often new developments in this area and the list below is not finite as new procedures and or new indications for procedures are often becoming reality. Even in New Zealand with a population of > 4 million people and over 64,000 births per year, some of the procedures listed will be performed infrequently, require multidisciplinary teams and are of high opportunity cost.

Full supportive infrastructure as well as maintenance of clinical skills and expertise is important if the fetal and maternal outcomes are to be optimised.
Auckland District Health Board

Auckland District Health Board is one of the largest providers of Healthcare in New Zealand. It has many highly specialised Services and is the National Provider for a number of Services. Over 10,000 people work in the organisation across many different roles.

Key goals of the organisation

In order to lift the health of the people living in Auckland city, the Board must manage the finances available, find more efficient ways of working, and improve how we manage the flow of patients from other District Health Boards into Auckland for services.

The values of the organisation

**Integrity**
We are open, fair, honest and transparent in everything we do

**Respect**
We care about and will be responsive to the needs of our diverse people and communities

**Innovation**
We will provide an environment where people can challenge current processes and generate new ways of learning and working

**Effectiveness**
We will apply our learning and resources to achieve better outcomes
National Women’s Health, Auckland City Hospital, is a leading tertiary provider of women’s health and level three neonatal services to the northern part of the North Island; including subspecialty services in Reproductive Endocrinology and Infertility, Maternal Fetal Medicine, Gynaecological Oncology, Urogynaecology and Minimal Access Surgery. The hospital has a close association with the Auckland University Faculty of Health Sciences and has a leading role in research, undergraduate teaching and post graduate training.

National Women’s Health is accredited for Specialist Training and has trainees rotating through the Service from the Northern Region Programme. This is overseen by the Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG).

In addition there are three fellow positions for trainees in their final training year or first specialist year. These are in the areas of: Maternal Fetal Medicine, Reproductive Endocrinology and Infertility and a general post. These are keenly sought after positions.

New Zealand Maternal Fetal Medicine Network

The New Zealand Maternal Fetal Medicine Network was established in 2009 with support from the Ministry of Health to promote excellent MFM services around New Zealand and support maternity healthcare providers in District Health Boards. In addition we aim to encourage recruitment and retention within the sub-speciality field of Maternal Fetal Medicine.

The Maternal Fetal Medicine Service at ADHB is the host of the NZMFMN.

Since its inception there has been development of a website, ongoing teaching, development of a Fetal Therapy centre and recruitment of a Senior Fetal Medicine Midwife Specialist and Administrator. Fetal Medicine Update courses are run twice a year and are usually full at 200+ midwives, sonographers and Obstetricians from around New Zealand. Our terms of reference include the following:
Mission Statement

To facilitate excellent evidence based care to women with a high risk pregnancy wherever they live in New Zealand.

Reporting to:
The Ministry of Health

Function:
To support a network of Fetal Medicine Units which in turn provide tertiary referral services to secondary services. To develop and support a network of Clinical Associates within secondary units.

To provide Fetal therapy services.

To provide teaching opportunities in MFM.

To provide guidelines for care in the area of MFM.

To support service provision and succession planning.

Composition:
Fetal Medicine Units as defined by:

Units run by CMFMs or Obstetricians and Gynaecologists who possess the DDU

Paediatric Surgery services and level 3 neonatal services within the DHB

Access to Genetic services and perinatal pathology services

Recognised regional provider of Maternal Fetal Medicine
Research

Improving knowledge is one of the key directives of the RANZCOG Sub specialties. The Auckland Maternal Fetal Medicine Service has an active research programme which has a broad approach.

Within the group of Maternal Fetal Medicine Specialists working in the department, a number have joint appointments with the University of Auckland Faculty of Medical and Health Sciences and the Liggins Institute.

In addition the Maternal Fetal Medicine Specialists are heavily involved in supervising and running research programmes with Obstetrician and Gynaecologists in training. There are lots of opportunities to undertake research within Maternal and Fetal Medicine field within the unit.

In addition members of the Maternal Fetal Medicine team take key roles in arranging research conferences such as RANZCOG ASM, IFMSS, MFM Colloquium and PSANZ.

A list of recent publications and presentations can be found on the NZMFMN website (www.nzmfm.health.nz).
Our Staff

Emma Parry
MBBS, MD, FRANZCOG, FRCOG, CMFM

Emma Parry is a Specialist Obstetrician and Gynaecologist who is also a Subspecialist in Maternal Fetal Medicine. Emma is the Clinical Director of the National Women’s Maternal Fetal Medicine Service and the New Zealand Maternal Fetal Medicine Network.

Emma was born and grew up in the United Kingdom, completing her medical degree at Guys Hospital, London. She subsequently moved to New Zealand.

Emma has varied clinical interests, but is especially interested in complex multiple pregnancy, 3D scanning of fetal anomalies, fetal cardiac scanning, information storage and retrieval and preterm labour.

Emma is a member of several committees both within Auckland City Hospital and New Zealand. She is a regular invited speaker and organizes conferences and workshops in New Zealand and Australia through several organizations.

Her research fields include Preterm Labour, Induction of Labour, Health Informatics in Women’s Health and improving Maternal and Perinatal Health in the Developing World. She has published a book covering the role of Health Informatics in Women’s Health.

http://www.igi-global.com/reference/details.asp?id=8299

Peter Stone
MB ChB, Dip Obs, FRCOG, FRANZCOG, DM (Bristol) DDU CMFM

Peter Stone is Professor of Maternal Fetal Medicine. His postgraduate training was in Britain, gaining a Doctor of Medicine based on Doppler studies in fetal growth restriction from the University of Bristol. He is a member of a number of Ministerial advisory groups currently on the screening advisory groups for HIV and Down
Syndrome as well as being the RANZCOG member of the Ministerial Review of Quality and Safety of Maternity Services in 2008.

He is part of the ISTAR group, a non profit organisation which brought Mifepristone into New Zealand.

He has been a councillor for the RANZCOG and then Chaired the New Zealand Training Accreditation Committee of RANZCOG. Peter was awarded the prestigious Distinguished Service Medal in 2012 by RANZCOG for his work in Women’s Health.

Principle research interests include fetal welfare assessment, ultrasound studies of the cervix in pregnancy, and early pregnancy development including implantation and trophoblast deportation and screening for fetal health. Other research interests include teaching and evaluation of quality improvement learning.

He has developed an ultrasound teaching programme in Obstetrics and Gynaecology especially for the Pacific and other low resource environments in association with the Pacific Women’s Health Research Development Unit, a research cluster within the Department, based at Middlemore Hospital at Counties Manukau District Health Board in South Auckland.

He is on the editorial board for the Journal of Fetal Diagnosis and Therapy and is a referee for a number of journals in maternal fetal medicine.

Lesley McCowan

MB ChB, FRANZCOG, MD, CMFM, ONZM

Lesley McCowan is a Professor, sub-specialist in Maternal Fetal Medicine and is Head of the University of Auckland Department of Obstetrics and Gynaecology. Her clinical work is in high risk pregnancy and she chairs the hospital perinatal mortality review process.

For more than 20 years Lesley’s main research interest has focused on many aspects of growth restricted pregnancies. In 2004 Lesley McCowan and Professor Robyn North were awarded $6.2 million in funding to undertake the SCOPE study (Screening for pregnancy Endpoints Study). SCOPE is a large Auckland led international screening study aiming to identify early in pregnancy, nulliparous women, who will later develop preeclampsia, preterm birth or have a growth restricted baby (www.scopestudy.net). The SCOPE study has established one of the best pregnancy databases in the world which is FDA complaint and has inbuilt data monitoring. We also have a unique high quality pregnancy biobank containing maternal,
paternal and baby specimens. The achievement of successful funding for the SCOPE study in Auckland provided the necessary leverage to recruit a collaborative team of international experts in the fields of clinical and biomarker research in the areas of preeclampsia, SGA pregnancies and spontaneous preterm birth. Our overarching goal is to develop predictive algorithms to enable reliable prediction of women at high risk of these pregnancy complications early in pregnancy using clinical, ultrasound and biomarker variables.

Lesley’s other main current research interest is the epidemiology of stillbirth. She is the lead Investigator in an Auckland wide case control study which aims to identify risk factors for stillbirth. The long term goal of this research is to develop preventative strategies to reduce this tragic pregnancy complication.

Lesley is the representative of The Royal Australian and New Zealand College of Obstetrics and Gynaecologists (RANZCOG) on the New Zealand Perinatal and Maternal Mortality Review Committee and also on the Ministry of Health ‘Tackling Smoking in Pregnancy’ technical advisory group.

Dr Katie Groom

MBBS, BSc, PhD, FRANZCOG, CMFM

Katie Groom is a Senior Lecturer in the Department of Obstetrics and Gynaecology, University of Auckland and a Subspecialist in Maternal Fetal Medicine at National Women’s Health, Auckland City Hospital. She graduated in medicine from Imperial College London and commenced specialist training in obstetrics and gynaecology in the United Kingdom. Katie completed her PhD at Queen Charlotte’s Hospital, Imperial College London. Her thesis examined the potential of a novel therapy (COX-2 inhibitor) for the prevention of preterm birth.

After relocating to Auckland, Katie completed her specialist training in obstetrics and gynaecology and subspecialist training in maternal and fetal medicine. Her research now focuses on clinical trials of therapies and interventions for the prevention and treatment of the major complications of pregnancy – preterm birth, preeclampsia and fetal growth restriction. She is the Principal Investigator of the EPPI Trial – a randomised controlled trial of enoxaparin for the prevention of preeclampsia and fetal growth restriction in women at high risk of these complications and is currently developing a randomised placebo controlled trial of sildenafil for the treatment of severe early onset fetal growth restriction.
Katie is the Secretary of the Perinatal Society of New Zealand (PSNZ), an honorary Senior Lecturer at the Liggins Institute, an Associate Investigator of Gravida, the National Research Centre for Growth and Development and a Medical Advisor to NZAPEC (New Zealand Action on Preeclampsia Charitable Trust). She also enjoys teaching with a particular interest in obstetric emergency training. She is an instructor for the MOET (Management of Obstetric Emergencies and Trauma) and the PROMPT (Practical Obstetric Multi-Professional Training) courses.

**Dr Bronwen Kahn**

MD, FACOG, MFM

Bronwen Kahn is a Consultant in Obstetrics and Gynecology and a Subspecialist in Maternal Fetal Medicine.

She grew up in New York, attended Wellesley for her undergraduate education, and then spent a few years as a professional musician before attending medical school at Columbia University College of Physicians and Surgeons. Her Residency in Obstetrics and Gynecology and Fellowship in Maternal Fetal Medicine were completed at the University of Colorado in the United States. Her research has focused on ultrasound detection of fetal adiposity in the setting of maternal obesity and diabetes. She spent three years in private practice in the US and has recently moved to New Zealand with her family.

**Caroline A Crowther**

Professor of Obstetrics and Gynaecology

MB ChB, DCH, FRANZCOG, MD, DDU, FRCOG, CMFM

Caroline Crowther is a maternal fetal medicine subspecialist and holds professorial research appointments at The University of Adelaide, South Australia and at The Liggins Institute, The University of Auckland, New Zealand. Professor Crowther has interests in research synthesis, randomised trials, indigenous maternal and perinatal health, international maternal and child health and translational research. She was a co-investigator for the SEA-ORCHID (South East Asia Optimising Reproductive and Child Health In Developing Countries), and Chairperson for the WOMBAT (Women and Babies Action Through Trials) Collaboration.
Professor Crowther has extensive experience in the design, conduct and analysis of randomised clinical trials and has co-ordinated many large, multicentred trials that focus on the evaluation of new perinatal therapies or care practices, in collaboration with researchers in key institutions in Australia, New Zealand and overseas. These trials are recognised as of high quality internationally and have led to translation of the research into clinical practice guidelines, improving maternal and perinatal health worldwide.

Professor Crowther has been involved in many studies that focus on areas such as therapies to improve outcomes following preterm birth, prevention of hypertensive disease, improved health outcome in multiple pregnancy, birth after caesarean, obesity in pregnancy and gestational diabetes. Professor Crowther regularly provides grant reviews for major funding bodies and is a regular reviewer for major medical journals.

Professor Philip Baker has recently been recruited to New Zealand, to the joint positions of Director of the National Research Centre for Growth and Development (NRCGD) and Professor of Maternal and Fetal Health at the Liggins Institute. The NRCGD brings together leading investigators from different disciplines, is New Zealand’s largest research centre, and is one of the world’s biggest and best funded pregnancy/child research centres. Professor Baker graduated from the Nottingham University (UK) and was subsequently awarded a Doctorate in Medicine. He then completed his training as an obstetrician and gynaecologist in the UK.

Professor Baker has balanced clinical practice in obstetrics with his research career. He has published 16 textbooks, over 250 peer-reviewed scientific articles, and has an H-index of approximately 50. He has been able to obtain research monies (> $30M) both for his own research portfolio, and also for each of the institutions he has worked for (> $80M). The calibre of his research led to his election as a Fellow of the Academy of Medical Sciences (UK) in 2008. In addition he was principal author of the position paper on “Health of Women and Children” considered at the G8 Summit in June 2010.

Studies investigating pre-eclampsia and intrauterine growth restriction form major parts of his research portfolio; he is currently co-PI of MRC (UK) and EU FP7 programme grants and a Wellcome Trust Translational award. He has made a major/significant contribution to our understanding of these conditions and is now translating his work for patient benefit, as exemplified by a multicentre clinical trial to determine if Sildenafil therapy benefits pregnancies complicated by severe fetal growth restriction, and by studies of the use of metabolomic biomarkers to screen for problem pregnancies.

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Alison Hedge

BSc (Hons), Dip HE (midwifery), RM

Alison is the Fetal Medicine Midwife Specialist. Alison has a background in science and then trained in midwifery in 2001. Since becoming a midwife, she has worked in a number of different primary and secondary care environments including delivery unit, antenatal and postnatal care.

Alison is the Inaugural NZFMFN Fetal Medicine Midwife Specialist and was appointed in 2009. Since then she has developed the Network alongside the Medical team and has supported midwifery colleagues around New Zealand with advice and training.
In addition to the Specialists working in the Maternal Fetal Medicine Service, we have a dedicated group of midwives, sonographers and administrators. Our midwives specialise in Fetal or Maternal Medicine and are involved in training and teaching other midwives including student midwives. The sonographers in the unit have extremely high standards and are experts in anomaly scanning and Doppler interrogation.
Maternal Fetal Medicine Service

Contact

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