Preterm Birth Clinic Overview and Referral Guidelines

Overview and referral information for the National Women's Health Preterm Birth (PTB) Clinic

The National Women's Health PTB Clinic is part of the Te Toka Tumai (Auckland City Hospital) Maternal Fetal Medicine (MFM) Service.

Purpose of this document

This document describes the principles and organisation of the PTB Clinic and the referral criteria and process for consultation and review of women in the PTB Clinic from within Te Toka Tumai area, by referring Te Toka Tumai-based lead maternity carers (LMCs) and from outside the Te Toka Tumai area.

Background

Preterm birth (delivery before 37 weeks gestation) occurs in 7-10% of pregnancies; approximately two thirds of these are associated with spontaneous preterm labour and/or spontaneous preterm pre-labour rupture of membranes (PPROM). Over recent years there have been a large number of prediction and prevention strategies proposed to overcome this major health issue, however, the field is evolving and new evidence is constantly being used to inform and update practice.

In women at high risk of spontaneous preterm birth current prediction strategies likely to be of benefit include detailed assessment of pre-existing risk factors, serial surveillance of cervical length and fetal fibronectin (fFN) testing. Prevention strategies include the modification of lifestyle factors, cervical cerclage, vaginal progesterone therapy and targeted treatment of infection.

Designated clinics for women at high risk of spontaneous preterm birth are becoming standard of care in several countries and provide an opportunity for a holistic multidisciplinary approach to management of women with a variety of risk factors who may benefit from a combination of prediction and prevention strategies.[1] Evidence from an established PTB Clinic in the United Kingdom has demonstrated high levels of patient satisfaction alongside significant reductions in preterm birth (14% at <37 weeks and 20% at <30 weeks) and an overall reduction in costs of in-patient care for women at high risk. Australasian evidence has also demonstrated reductions in rates of preterm birth when PTB clinics have been included in packages of preventative care.[2,3] Local research from our own National Women's Health PTB Clinic has confirmed high levels of patient satisfaction[4] and comparable outcomes to other PTB clinics internationally.[5]

Principles of the PTB Clinic

This is a dedicated multidisciplinary clinic providing an intensive level of clinical care for women at high risk of spontaneous preterm birth, predominantly during the second trimester of pregnancy. The clinic aims to use the latest evidence and innovative care strategies to maximise outcomes and avoid unnecessary interventions. Care will be provided in conjunction with the main maternity care provider/referrer (Te Toka Tumai clinics, LMCs and other health care providers). The responsibility of on-going care will remain with the main maternity care provider/referrer unless a formal handover of care occurs.

Evidence surrounding screening and identification of women at high risk and the optimal management for these women remains limited. The clinic is dedicated to enhancing knowledge in this field. Research is integral to this process and so women attending this clinic may be eligible for research projects being

undertaken in the clinic. Eligible women may be approached and asked to consider participation. All women will be assured that this is voluntary, and that their decision to take part will not affect the rest of their maternity care, but that it may be beneficial to them and for women in the future. We will use audit for on-going review of clinic practice and outcomes.

The PTB Clinic is also committed to teaching and training of health care professionals providing care for women at high risk of PTB. On occasions doctors, midwives and sonographers will be present in the clinic in a training capacity. This will be identified to women attending the clinic.

Referral criteria

Women with multiple gestation (twins or higher order) as their only risk factor for spontaneous preterm birth are not eligible for PTB Clinic review. However, women with multiple gestation and other referral criteria are eligible for review and should be referred.

- Previous spontaneous PTB/PPROM <36^{+0} weeks
- Previous spontaneous miscarriage ≥16^{+0} weeks
- Previous pregnancy requiring ultrasound-indicated or rescue cerclage (without preterm birth)
- History of LLETZ with histological evidence of ≥10mm depth of excision or >1 procedure (for primiparous women, or since last term birth for multiparous women
- History of knife cone biopsy or trachelectomy (for primiparous women, or since last term birth for multiparous women)
- Congenital uterine and/or cervical anomaly (including corrected/resected anomalies) e.g. uterine didelphys/double cervix, unicornuate uterus, bicornuate uterus, arcuate uterus, uterine septum
- Short cervix in current pregnancy ≤25mm at ≤24^{+6} weeks
- Rescue cerclage in current pregnancy
- Caesarean section at full dilatation and/or complicated (uterine or cervical tear) caesarean section in advanced labour in most recent pregnancy reaching >16 weeks
- Other risk factors e.g. ≥2 uterine instrumentations (surgical termination of pregnancy, evacuation of retained products of conception procedures), history of diethylstilboestrol exposure (woman or her mother), known collagen or connective tissue disorders (e.g. Ehlers-Danlos syndrome).

Timing of referral

- ***In pregnancy***. Women should be referred as early as possible in pregnancy to allow for a first visit consultation at 10-12 weeks gestation. The majority will then have subsequent visits arranged from 16 weeks.
  In the event of referral due to a short cervix in the current pregnancy (<25mm at ≤24^{+6} weeks), the referral should be discussed with the MFM on-call SMO (week day 8am-5pm) by telephone on the day of ultrasound reporting. If accepted for care through the PTB Clinic a full written referral should be made within 2 days. Alternatively, advice will be given which may include referral to the acute on-call general obstetric service for further evaluation and on-going care.
- ***Pre-pregnancy***. Women with major risk factors may be referred for a pre-pregnancy consultation if this may influence their decision to proceed with pregnancy or if therapy prior to pregnancy may be considered advantageous (e.g. transabdominal cervical cerclage).
- ***Pregnancy loss review***. Women who have had a pregnancy loss due to extreme prematurity/second trimester miscarriage where the clinician caring for them is unable to provide appropriate expertise in counselling may be considered for a pregnancy loss review. However, it is strongly recommended that women are initially seen for review (including review of all investigations) by the team caring for the woman at the time of delivery.

How to refer

All referrals should be made on a completed PTB Clinic referral form accessed via the hospital intranet. All fields must be completed to limit delays in review/triage and to avoid the need to return incomplete referrals with insufficient information.

Referrals must include *copies of histology results* where referrals include cervical surgery as a clinic eligibility criteria.

All women must have had a *MSU and vaginal swabs for STI screen* taken in the current pregnancy. Referral must include *results or the date samples* were sent if results are still pending.

Completed PTB Clinic referral forms should be emailed to the Maternal Fetal Medicine Department: FetalMedicineScheduling@adhb.govt.nz

Women will be contacted directly regarding PTB Clinic appointments. Referrers will be notified of women not meeting the criteria for review and as required, advice will be given for appropriate on-going care with regards to their risk for preterm birth.

What women and maternity care providers may expect

Clinics take place in National Women's Health Outpatients Department, Level 9, Auckland City Hospital.

Women are provided with a brief patient information sheet in advance of their first appointment (sent as hard copy or email PDF with appointment letter). This information sheet will provide information on the role of the clinic and what they may expect to happen during clinic visits.

First visit consultation. This will be a 45 minute appointment (in pregnancy, pre-pregnancy and pregnancy loss review). This may include;

- Obstetric and medical review
- Vaginal examination and microbiological swabs (if not taken by referrer)
- Transvaginal ultrasound assessment of the cervix
- Counselling and information regarding individualised risk for preterm birth
- Discussion regarding potential interventions including; lifestyle and behaviour change, serial cervical length assessment, cervical cerclage and progesterone therapy
- An individualised plan of care

Subsequent visits. These will usually occur on a regular basis from 16-24 weeks (15 minute appointments). Frequency of reviews will be assessed at first visit and determined for each individual with consideration of the following levels of risk.

Subsequent visits may include;

- Review of pregnancy progress
- Transvaginal ultrasound assessment of the cervix
- Use of biomarkers for PTB prediction (quantitative fFN)
- Plan of care including interventions such as cervical cerclage, progesterone therapy and rarely, hospital admission and antenatal corticosteroid use.

Moderate risk *First visit at 10-12 weeks, subsequent visits at approximately 16, 20 and 23 weeks*	**High risk** *First visit at 10-12 weeks, subsequent visits approximately 16, 18, 20, 22 and 24 weeks*
• Previous spontaneous PTB/PPROM 34^{+0} to 35^{+6} weeks • Single LLETZ procedure with histological evidence of 10-15 mm depth (for primiparous women, or since last term birth for multiparous women) • Uncomplicated caesarean section at full dilatation in most recent pregnancy reaching >16 weeks • Multiple uterine instrumentations • Known collagen or connective tissue disorders	• Previous spontaneous PTB/PPROM $<34^{+0}$ weeks • Previous spontaneous miscarriage $\geq16^{+0}$ weeks • Complicated (uterine or cervical tear) caesarean section in advanced labour in most recent pregnancy reaching >16 weeks • LLETZ with histological evidence of >15 mm depth of excision or >1 procedure (for primiparous women, or since last term birth for multiparous women) • Knife cone biopsy or trachelectomy (for primiparous women, or since last term birth for multiparous women) • Congenital uterine and/or cervical anomaly (including corrected/resected anomalies) • Rescue cerclage in current pregnancy
Individual risk assessment • Short cervix in current pregnancy ≤25mm at $\leq24^{+6}$ weeks • Previous pregnancy requiring ultrasound indicated or rescue cerclage (without preterm birth)	

Women referred from within Te Toka Tumai and by referring Te Toka Tumai-based LMCs (registered for birth at Te Toka Tumai) will be seen until approximately 24 weeks. In general women referred from outside the Te Toka Tumai area will have a first visit consultation appointment only to provide appropriate advice to local maternity care providers.

Where interventions are required these will be provided by the PTB Clinic staff including cervical cerclage and prescribing for progesterone therapy. Admission to hospital for surgical procedures will be the responsibility of the MFM team.

For other hospital admissions women will be under the care of the referring maternity care provider/ general obstetric service unless specific to preterm labour risk at $<28^{+0}$ weeks. For admissions specific to preterm labour risk at $<28^{+0}$ weeks women will be admitted under the care of the MFM team.

Final visit. Women will generally be discharged from the PTB Clinic after a final visit at 23-25 weeks. At this visit an overall risk assessment of *very early* preterm birth will be made. If deemed to be at significantly high risk, this assessment will include use of the QUiPP calculator. This calculator uses data on obstetric history, gestational age, quantitative fFN and cervical length to provide risk estimates for preterm birth within one, two and four weeks of assessment and <30, <34 and <37 weeks gestation in asymptomatic women. The final visit report will include a plan for on-going care.

Clinic reports. After each clinic visit a report will be generated and sent to the LMC, referrer and the woman's GP (if identified). Reports will also be available via the Regional Clinical Portal (RCP) with a brief report and reference made to the clinic attendance in the Te Toka Tumai electronic maternity record.

References

1. Dawes L, Groom K, Jordan V, Waugh J. The use of specialised preterm birth clinics for women at high risk of spontaneous preterm birth: a systematic review. BMC Pregnancy Childbirth. 2020 Jan 29;20(1):58. doi: 10.1186/s12884-020-2731-7.
2. Newnham JP, White SW, Lee HS, Pedretti MK, Arrese CA, Keelan JA, Kemp MW, Dickinson JE, Doherty D. Reducing preterm birth by a statewide multifaceted program: an implementation study. *American Journal of Obstetrics and Gynecology* 2017; 216 (5): 434-442. doi:10.1016/j.ajog.2016.11.1037.
3. Jin W, Hughes K, Sim S, Shemer S, Sheehan P. The contemporary value of dedicated preterm birth clinics for high-risk singleton pregnancies: 15-year outcomes from a leading maternal centre. *Journal of Perinatal Medicine* 2021; 4(9):1048-1057. doi: 10.1515/jpm-2021-0020.
4. Dawes L, Waugh JJS, Lee A, Groom KM. Psychological well-being of women at high risk of spontaneous preterm birth cared for in a specialised preterm birth clinic: a prospective longitudinal cohort study. *BMJ Open* 2022; 12(3): e056999. doi: 10.1136/bmjopen-2021-056999.
5. Dawes L Restall A, de Sousa J, Pole JR, Waugh J, Groom K. The experience and outcomes of a specialised preterm birth clinic in New Zealand. *ANZJOG* 2020: 60:6; 904-13. DOI: 10.1111/ajo.13176.