Clinical Practice Guideline Advanced Maternal Age
Peninsula Care Goal Safe

Purpose
Antenatal care and delivery of women with advanced maternal age (AMA)

Scope
Midwives, obstetric medical staff, GPs providing antenatal care.

Responsibilities
Obstetric medical team, responsible for providing antenatal and intrapartum care, assessing the woman's history, antepartum Foetal growth and well being, timing, indications and potential contraindications for induction of labour, prescribing oxytocin and monitoring the response and progress and Foetal well being during labour, in collaboration with midwifery staff. Midwives involved in providing antenatal care, risk assessment, patient admission, assessment and intrapartum care. To liaise with ANUM and obstetric registrar on call regarding progress and fetal wellbeing as described below.
General Medical Practitioners providing antenatal care.

Definitions
AMA Advanced Maternal Age – Age of mother ≥ 35 years at the time of delivery
CS Caesarean Section

Guideline:
Literature reviewed:
After reviewing the available literature on advanced maternal age which besides others includes the following important publications:

- Population based cohort studies on association of advanced maternal age and adverse pregnancy outcomes - from USA (1,2), Sweden (3), UK and Ireland (4), NSW Australia (5, 14).
- Studies on association of advanced maternal age with increased risk of still birth at term – 37 -41 weeks of gestation (6,7,8,9,10)
- Studies on optimal time of delivery in advanced maternal age mothers to achieve the best outcome (8,9,10,11)
- Studies on the optimal time to start antepartum monitoring in advanced maternal age mothers (8,10)
- Induction of Labour at 39 weeks does not increase the risk of CS – the ONLY RCT available.
- RCOG scientific impact paper 34: Induction of labour at Term in Older Mothers (110
- Two Australian CPGs available on this topic from Queensland Health and Royal Hospital for Women Sydney (13,14,15)
- Patient information documents from RHW Sydney and Ontario Midwives Association Canada (15,16)

In summary it can be concluded that:
The average age of childbirth is increasing in Australia, as is the case in the other high-income countries. In a population based study from NSW by Gordon et al the mean maternal age is 30.6 years; approximately 1:4 to 1:5 deliver a baby aged 35 years or older (Advanced Maternal Age - AMA) and 5% are 40 years or older at the time of delivery (5). Data from our hospital, which is consistent with state average, also reveals that approximately 20% mothers giving birth are aged 35 or over and 4% are 40 years or older.

There are numerous population based cohort studies (1,2,3,4,5) showing a linear correlation between increasing maternal age and adverse maternal and foetal outcomes during pregnancy and delivery which are due to:

- Decreases in fertility and fecundity with advancing maternal age.
- Increase in ART use, IVF pregnancies, multiple pregnancies
- The risk of miscarriage increases. Women aged over 45 years have a very high risk of miscarriage.
- The association between maternal age and chromosomal aberrations, and malformations even without chromosomal aberrations, is well known.
- Increased risk of hypertensive disorders in pregnancy and pre-eclampsia.
- Higher incidence of pre-existing diabetes and risk of gestational diabetes.
- Obesity increases with advanced maternal age.
- Uterine abnormality such as fibroids
- Increased risk of small-for-gestational-age infants with advancing maternal age
- Risk of preterm delivery increases with advanced age.
- Incidence of placenta praevia increases with AMA
- Higher rates of malpresentations at delivery
- Dysfunctional labour, specially prolonged second stage and rates of instrumental Birth / vaginal operative births increase with AMA
- Caesarean delivery rates increase with advanced maternal age.
- Overall increase in the perinatal loss and morbidity.

Risk of Stillbirth

- Advanced maternal age (≥ 35 years old at the time of delivery) is associated with an increased risk of stillbirth – both antepartum and Intra-partum (6,7,8,9,10,11). This risk increasing in linear fashion with increasing age and increasing gestation between 37 – 42 weeks of pregnancy.
- Women ≥ 35 years old had 2 times and ≥ 40 years old almost 3 times higher risk of having a stillbirth at 42 weeks gestation as compared to women < 30 years old.
- The risk of having a stillbirth for women aged between 40 and 44 years at 39 weeks of gestation and aged ≥ 45 years at 38 week gestation are comparable with that of women aged 25–29 years at 42 gestational weeks.
- This risk is even higher in AMA women having their first babies and / or when there are associated co-morbidities such as obesity, hypertensive disorders, diabetes or IUGR; all of which have higher prevalence in AMA pregnancies

Age	Primiparous	Multiparous
<35yrs	3.72	1.29
35-39	6.41	1.99
40yrs +	8.65	3.29

Reddy, Ko et al 2006

- The higher risk of stillbirths persists even after excluding all of the above co-morbidities and when analysed nearly 3 in 4 stillbirths occurring in women with AMA did not have any other pregnancy complications apart from just AMA.
- The reason for the higher risk of stillbirth with AMA remains unclear. Placental insufficiency does not seem to be the reason for this increased risk as incidence of IUGR / SGA was not found to be higher in still born babies in advanced maternal age women.

Recommended Management Interventions:
Despite the fact that we have known for many years that AMA gravidas are at an overall higher risk, there is a lack of clear clinical guidelines on the management of pregnancy in this sub-group.

Many women are not fully aware of the consequences of delaying childbearing and the higher risks associated with it.

Antenatal Care
Though there is no clear evidence to suggest any additional care during antenatal period leads to reduction in the stillbirth rate in pregnancies carrying past 20 weeks gestation associated with AMA, however, it seems reasonable to recommend that in addition to the routine antenatal care as per our other CPGs :

- AMA women ≥ 40 years old (at the time of delivery) be triaged as 'Medium Risk' for ANC in the absence of any additional risk factor and
- 'High risk' if there are additional risk factors such as: having their first baby and / or there are other co-morbidities such as obesity, hypertension / pre-eclampsia, diabetes – gestational or pre-existing, obesity, smoking / substance abuse or IUGR.
- Early GTT and if normal, repeat at 28 weeks due to higher risk of GDM.
- Because of increased risk of IUGR/SGA – to include AMA - ≥ 40 years as one of the major indications for fetal growth and wellbeing monitoring with ultrasound scans at 28, 32 and 36 weeks gestation
- Maternal age ≥ 35–39 years to be considered as a minor risk factor and when combined with any other risk factors for IUGR/SGA to have fetal growth monitoring ultrasound scans at 28/32/36 weeks gestation.
- Initiate antepartum fetal well being testing such as CTG @ 38 weeks for maternal age ≥ 40 without any additional complication and @ 37 weeks if there are additional complication associated with AMA. (8,9,10)

Induction of Labour;
The only intervention that is thought to reduce the risk of stillbirth in AMA mothers at term (37–42 weeks gestation); is to offer induction of labour electively (6,7,8,9,10,11). Given that risk of stillbirth in women ≥ 40 years old at 39 weeks gestation is same as at 42 weeks gestation in women < 30 years old; it would appear reasonable to intervene at 39 weeks gestation in older women to reduce the increased risk of stillbirth in this subgroup (11,13,14,15,16). The lowest perinatal loss rate for women over 35yrs has been shown to be around 39/40, but the large numbers needed to treat this group of women to prevent one perinatal loss needs to be balanced against the impact of medical intervention on women, especially multiparous women over 35 who represent a large proportion of pregnancies. (8,11).

A recent RCT (12) has shown that IOL at 39 weeks (versus expectant management) in ≥ 35 old women did not increase or decrease the CS rate. Therefore it is reasonable to offer women induction at the following gestations:

Age	Primiparous	Multiparous
≥45 yrs	38/40	39/40
≥40 yrs	39/40	40/40
≥35 yrs	40/40	41/40

Offer induction in the week of the gestation shown

- Consider earlier induction for women with additional risk factors such as hypertension, pre-eclampsia, diabetes, high BMI, substance abuse, IUGR/SGA or race other than Caucasian.
- The above sub groups to be offered and recommended admission and induction of labour instead of conservative management in case they have PROM and term.

Intrapartum care:
In view of the increased complications during labour (as listed above):

- ≥ 40 old women not to be classed as low risk births whether they come in spontaneous labour or have induction of labour, and therefore receive continuous intra-partum CTG monitoring

Evaluation
Effectiveness of this guideline will be monitored and evaluated through:

Mandatory reporting of birth outcomes via the BOS system and reporting to the department of health. Evaluating adverse events through the VHIMS system. Collecting and reporting data to the Women's Health Unit M&M meeting. Case based reviews and in depth case reviews where indicated. Clinical Audit.

Key Aligned Documents
- Hand Hygiene & Aseptic Technique
- Photography & Video Images
- Models of Antenatal Care Referral Criteria for Obstetric review
- Prenatal Screening Tests
- Diabetes in Pregnancy
- OGTT Test Protocol
- Indications for Antenatal Ultrasound
- Peninsula Health Guide to Antenatal Ultrasound Assessment
- Intrauterine Foetal death and stillbirth.
- Management of Pregnancy and Child Birth for Women with BMI more than or equal to 35
- Management of the small for gestational age or growth restricted Foetus
- Hypertension in Pregnancy (pre-eclampsia, eclampsia)
- Prolonged Pregnancy
- Reduced Foetal Movements
- Antenatal Steroids
- Admission in Labour
- Normal Labour and Birth
- Induction of Labour (IOL) with Dinoprostone (PGE_2) Vaginal Pessary (Cervidil®) Guideline
- Pre-labour Rupture of Membranes ≥ 37 weeks gestation
- Management of Meconium Stained Liquor (MSL)
- Fetal Blood Sampling During Labour
- Assisted Delivery Guideline
- Third Stage Labour- Management
- Retained Placenta.
- Resuscitation of the Newborn
- Cord Blood Collection for pH testing
- Anti-RH (D) Immunoglobulin Antenatal and Postnatal Administration
- Normal Labour and Birth

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(includes a patient information document)

16. In Due Time …. Pregnancy Beyond 40 and Induction of Labour: Association of Ontario Midwives 2015 (a patient information document)

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