Middle session

Time	Task	Presenter
11 am	Diabetes in pregnancy	Dr Amanda Love
11.30 am	Pharmacy	Karen Whitfield
11.40 am	Case work 2: Complex	All
12.40 pm	Antenatal testing for chromosomal abnormality	Pauline McGrath
1.10 pm	Lunch (30 minutes)	All

Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday, 7 October 2017

Skills Development Centre, Royal Brisbane and Women's Hospital

Diabetes in pregnancy

Amanda Love
Senior Medical Officer - Endocrinology
Royal Brisbane and Women's Hospital

This is a joint initiative between Metro North Hospital and Health Service and Brisbane North PHN

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Why do we care?

- Earliest possible diagnosis and treatment of hyperglycaemia in pregnancy is proven to be beneficial
- Prevalence
  - T1DM: 0.4%
  - T2DM: 1%
  - GDM: at least 10%

Risks of Hyperglycaemia Maternal

Short Term	Long Term
Pre-eclampsia	Recurrent GDM
Induction of labour	Increased risk T2DM
Operative birth	Cardiovascular disease
Poly-hydramnios	
Post-partum haemorrhage	
Infection	

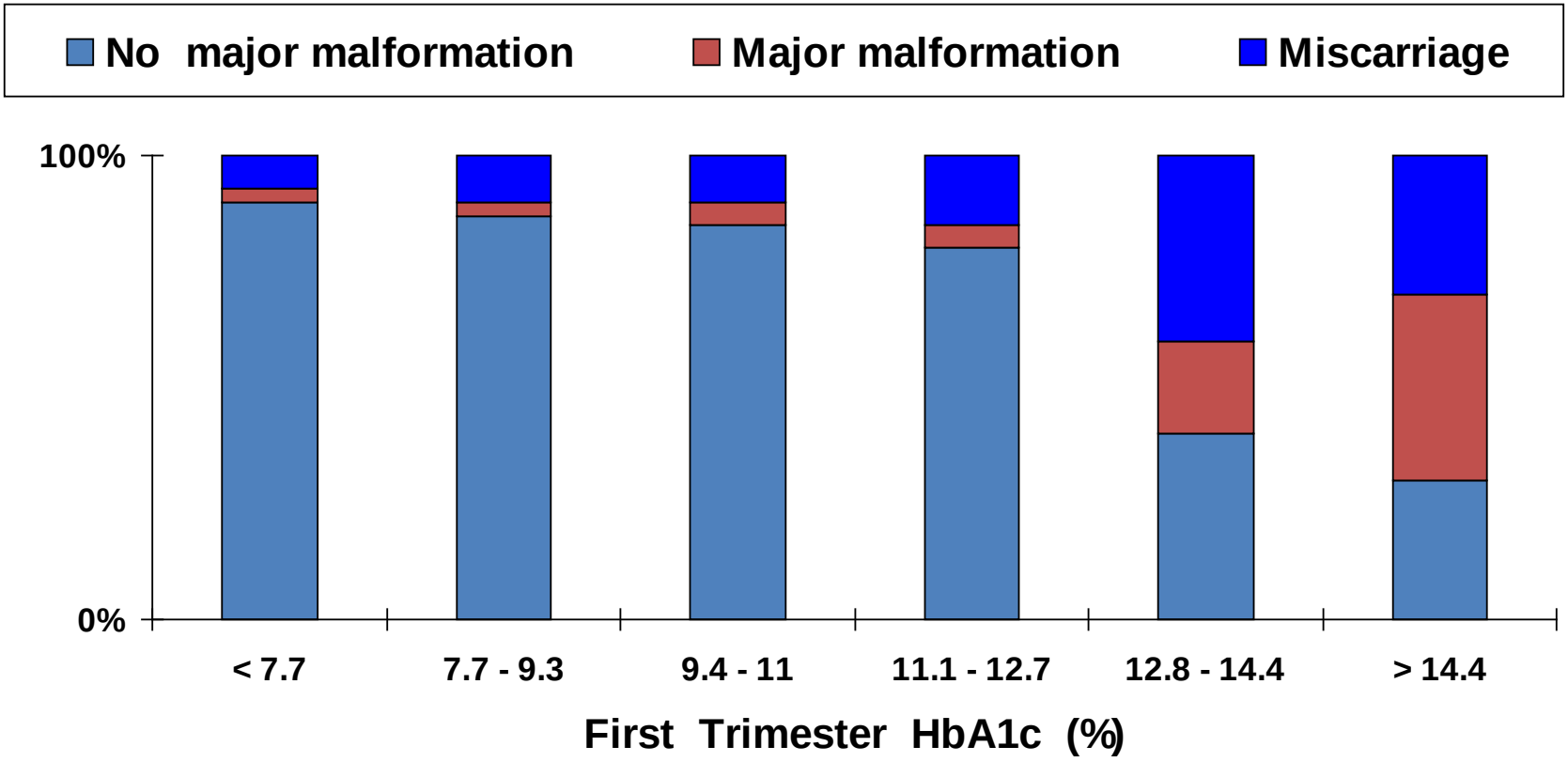
Risk of Hyperglycaemia Fetal / Neonatal

Short term	Long term
Respiratory distress	Impaired glucose tolerance
Jaundice	T2DM
Hypoglycaemia	Obesity
Premature birth	
Hypocalcaemia	
Polycythaemia	
Increased newborn weight / adiposity	
Macrosomia / associated risks	

T1DM / T2DM

- Pre-conception review ideal
- Otherwise refer as soon as pregnant
- 2 x HbA1c <7% prior to trying for pregnancy
- All complication screening up to date
  - Eye review (and treatment if needed)
  - Significant renal disease may be a contraindication to pregnancy
- Folic acid 5mg

Pre-gestational Diabetes



High Risk Patients – Early Screening

Risk factors for GDM

- **BMI > 30 kg/m^2** (pre-pregnancy or on entry to care)
- **Ethnicity** (Asian, Indian subcontinent, Aboriginal, Torres Strait Islander, Pacific Islander, Maori, Middle Eastern, non-white African)
- **Previous GDM**
- **Previous elevated BGL**
- **Maternal age ≥ 40 years**
- **Family history DM** (1st degree relative or sister with GDM)
- **Previous macrosomia** (birth weight > 4500 g or > 90th percentile
- **Previous perinatal loss**
- **Polycystic Ovarian Syndrome**
- **Medications** (corticosteroids, antipsychotics)
- **Multiple pregnancy**

Queensland Clinical Guidelines http://www.health.qld.gov.au/qcg/

Routine screening

- 75g OGTT
- All women at 24-28 weeks
- High risk women with normal OGTT early in pregnancy should be screened again at 24-28 weeks
- Fast 8-14 hours prior
- High CHO diet 3 days prior not required

New Diagnostic Criteria

One (or more) high reading only required

Time	Plasma Glucose Level mmol/L		
	Normal	GDM	DIP
Fasting	<5.1	5.1-6.9	≥ 7.0
1 hour	<10.0	≥ 10	
2 hours	<8.5	8.5-11.0	≥ 11.1

Referral Process RBWH - GDM

- GP sends fax to ANC GP liaison office
  - Clearly state “NEW DIAGNOSIS GDM”
  - Include OGTT pathology report
- Patient seen within the week of receiving referral by diabetes educator and dietician with ongoing review and escalation of treatment as needed depending on BGLs

Referral Process RBWH – T1/T2

- Pre-conception referral if possible
- Refer to CNC ANC ASAP after conception
- Seen in Endocrine Obstetric Medicine Clinic usually the Wednesday following referral being received

What do we do?

- Multidisciplinary clinic
- See patients frequently (1-4 weekly)
- Letter to GP at first visit + end of pregnancy
- Review BGLs and average them in QDIPS
  - BGLs qid: fasting and 2 hours post-prandial
- BP / urinalysis at every visit
- HbA1c every 4-6 weeks
- Other bloods as needed

Allied Health

- Diabetes Educators: Ph 3646 2158
  - Group session followed by one-on-one
  - All initial education regarding
    - GDM
    - HBGM (including supply of meter for testing)
  - Follow up of BGLs whilst in target
  - Initiation of therapy in conjunction with doctor
- Dieticians
  - Specialised dietary and exercise advice
  - At least 3 reviews during pregnancy

BGL Targets - RBWH

Time	Finger prick BGL (mmol/L)
Fasting	<5.0
1 hour post-prandial	<7.4
2 hours post-prandial	<6.7

Pharmacological Therapy

- Metformin or insulin if not achieving targets with lifestyle modification alone
- Decision to commence based on:
  - Degree and pattern of hyperglycaemia
  - Maternal choice
  - Gestational age
  - Foetal growth

Metformin

- MiG trial
  - Rowan JA et al. NEJM. 2008 May 8;358(19):2003-15
- MiG TOFU (2 year olds)
  - Rowan JA et al. Diabetes Care. 2011 Oct;34(10):2279-84
- 8 year olds
  - Rø et al. Scan J Clin Lab Invest. 2012 Nov;72(7):570-5

Metformin

- Continue metformin in T2 / PCOS patients
- Ongoing strict dietary adherence important
- Uptitrate to maximum 2g either SR or XR
- Good for:
  - Mild generalised hyperglycaemia
- Bad for:
  - GI side effects

Insulin

- Safety data well established
- Continue usual insulin in T1/T2
- Protaphane (Innolet) / Novorapid (Flexpen)
- Good for
  - BGLs very elevated
  - Early in pregnancy
  - Foetal macrosomia
- Start low and increase dose depending on BGL

Peripartum

- Individualised guidelines for
  - GDM diet
  - GDM insulin
  - T2DM no insulin
  - T2DM insulin
  - T1DM

Post-partum

- GDM
  - Stop all treatment immediately post-partum
  - Monitor sugars for 24 hours
  - If all normal nothing until 75g OGTT at 6-12/52 post-partum
- T1DM
  - Reduce insulin dose to ½ pre-pregnancy dose
- T2DM
  - Treatment as per pre-pregnancy

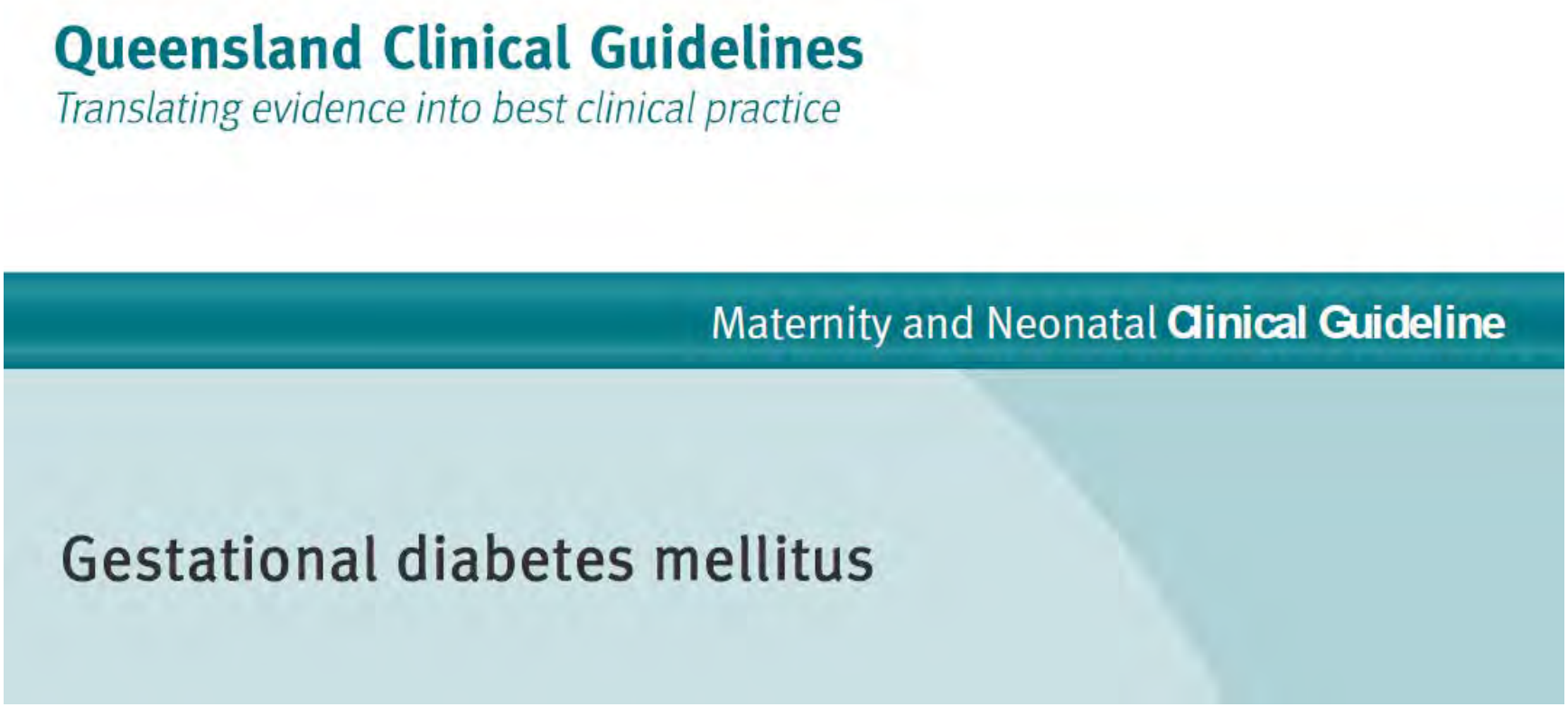
GDM – Post partum OGTT

- Form for OGTT given to all GDM patients at 36/40 by diabetes educators
- Results either given by phone or patient reviewed in clinic
- Diabetes educator sends a letter to GP with copy of OGTT results

Remember

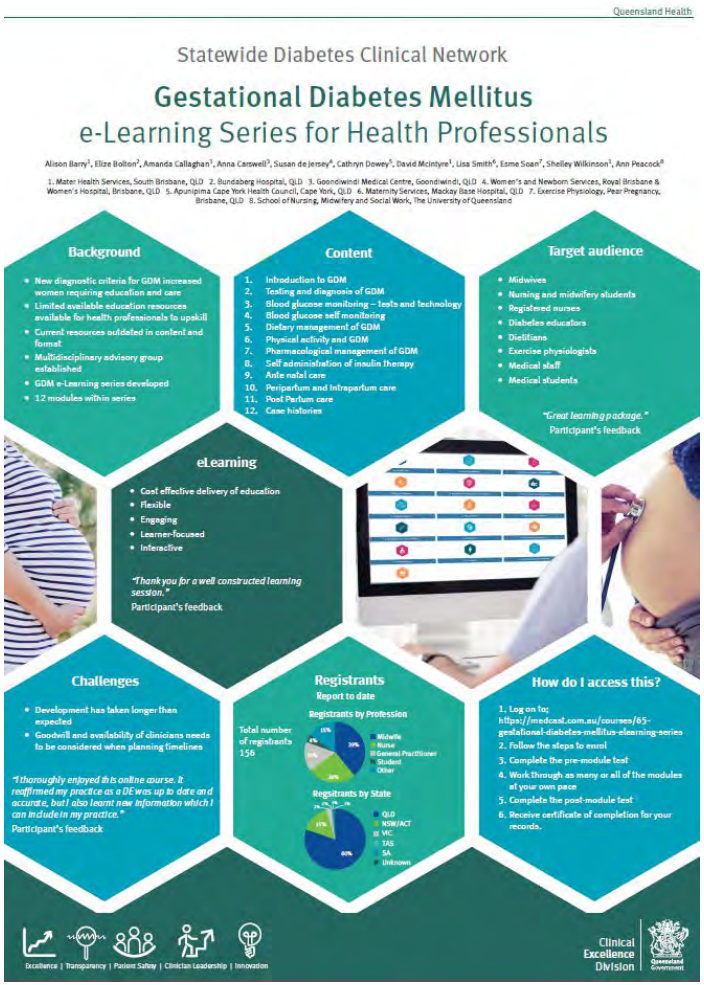
- Women with GDM
  - 70% lifetime risk of T2DM
    - Require post-partum OGTT 6-12/52 post-partum
    - Require 3 yearly screening as minimum ongoing
    - Annual screening if planning further pregnancy
  - Early OGTT next pregnancy as is “high risk”

On line resources



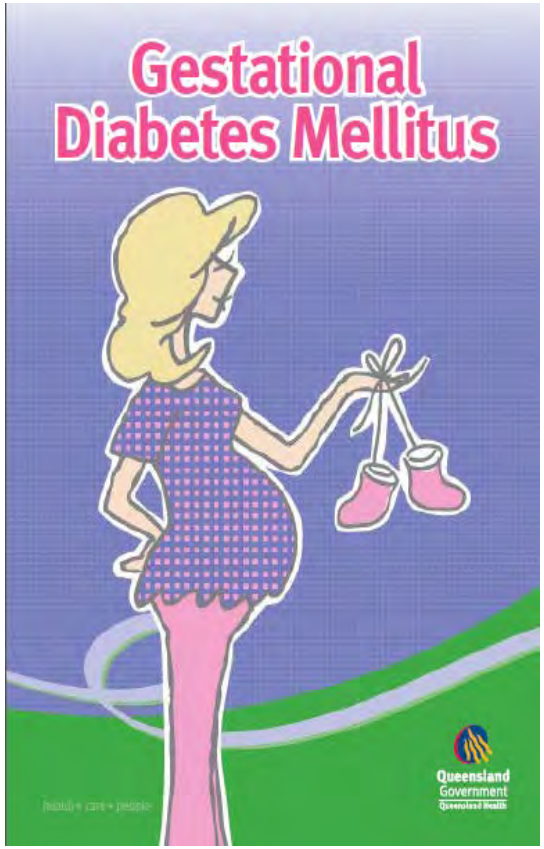
Queensland Clinical Guidelines www.health.qld.gov.au/qcg/

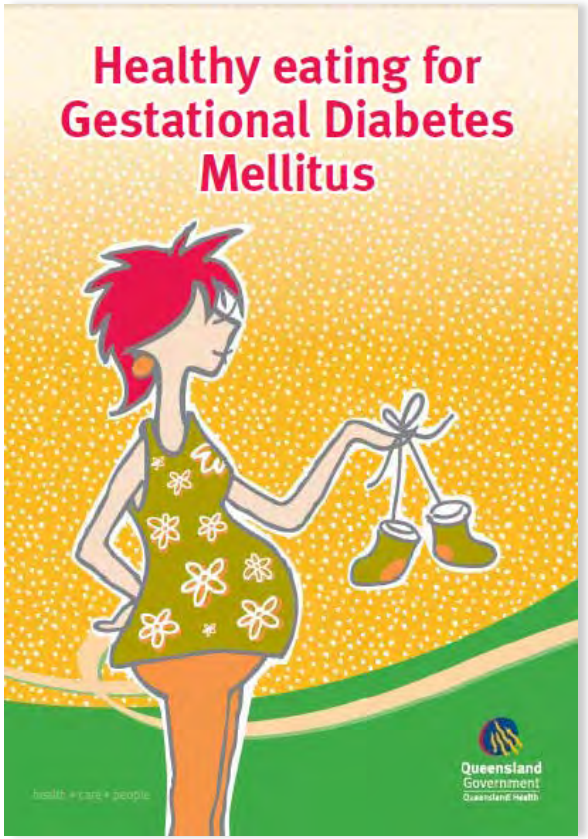
GDM e-Learning Series



https://medcast.com.au/courses/65-gestational-diabetes-mellitus-elearning-series

On line resources





www.health.qld.gov.au/caru/networks/docs/sdcn-gdmbooklet.pdf

www.health.qld.gov.au/caru/networks/docs/sdcn-healthyeating.pdf

On line resources

www.you2.org.au/

On line resources

- Australasian Diabetes in Pregnancy Society
  - www.adips.org
- Diabetes Australia
  - www.diabetesaustralia.com.au
- Australian Diabetes Educators Association
  - www.adea.com.au

Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday, 7 October 2017

Skills Development Centre, Royal Brisbane and Women's Hospital

Pharmacology

- General principles
- Organogenesis
- TGA pregnancy categories

Karen Whitfield
Pharmacy Team Leader
Women's and Newborn Services RBWH

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Medications in Pregnancy

- Use of a prescribed or non-prescribed medication 96-97% across trimesters

  (*Crowther HA. Patterns of medication use during and prior to pregnancy: the MAP study. Aust NZ J Obstet Gynaecol 2000;40:165-72)*

- Pre-pregnancy chronic health conditions are on the rise (CDC USA) – including cardiac, metabolic, mental health and respiratory)

  (Laura E. Riley et al. Improving Safe and Effective Use of Drugs in Pregnancy and Lactation: Workshop Summary. Amer J Perinatol 2017 https://doi.org/10.1055/s-0037-1598070)

Australian Categorisation System for Prescribing Medicines in Pregnancy (TGA)

A: Taken by a large number of pregnant women without any proven increase in frequency of malformations or other direct or indirect harmful effects on fetus

B: Taken by only limited numbers of pregnancy women, without an increase in frequency of malformation other direct or indirect harmful effects on fetus

Studies in animals:

B1 Show no evidence of fetal damage

B2 Inadequate/lacking but available data show no evidence of fetal damage

B3 Have shown evidence of increased occurrence of fetal damage, but human significance uncertain

C: Drugs which owing to their pharmacological effects, have caused or suspected of causing, harmful effects on human fetus or neonate without causing malformations. Effects may be reversible

D: Have caused or suspected to cause, an increased incidence of human fetal malformations or irreversible damage

X: High risk of permanent damage in the fetus-contraindicated

Reference sources

TGA classification

Drug Name	Category	Classification 1
Trimethoprim	B3	Antimicrobial

AMH 2017

Pregnancy

Avoid in the first trimester as trimethoprim has been associated with congenital anomalies, e.g. cardiovascular and neural tube defects, oral clefts. It is unlikely to pose a risk in the second and third trimesters.

Breastfeeding

Safe to use.

Product information Sheet

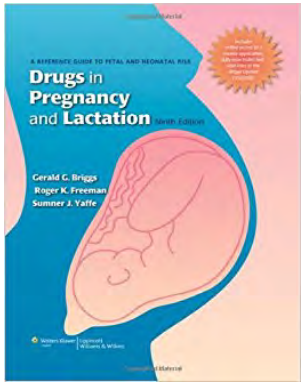
Use in pregnancy (Category B3)

Trimethoprim may interfere with folic acid metabolism and animal experiments have shown that administration of very high doses of trimethoprim during organ development may give rise to birth defects typical of folic acid antagonism.

Use in lactation Trimethoprim is excreted in human milk. When Alprim is administered to a nursing mother, alternative arrangements should be made for feeding the infant.

Additional resources

- Drugs in Pregnancy and Lactation (Gerald G Briggs)
  - More complex monographs, Additional information with human/animal studies
  - USA – different pregnancy categorisation
- Breast feeding – Medications in Mothers Milk(Dr Thomas Hale and Dr Hilary Rowe)
- Queensland Medicines Advice and Information Service (QMAIS)
  - Email: QMAIS@health.qld.gov.au
  - Phone: 36467098 or 36467599



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Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday, 7 October 2017

Skills Development Centre, Royal Brisbane and Women's Hospital

Case work 2: Complex cases

Green group - complex

- Kathy - 31 is planning her second pregnancy. You provided maternity shared care during her first pregnancy 5 years ago & diagnosed post natal depression, which responded well to Aropax (Paroxetine)
- Despite several attempts at weaning her antidepressant medication, she copes much better when she is on it
- She has delayed having a second child due to fear of a return of depression, but now her first child is in school, she feels it is now or never
- Does she need to stop the Aropax?
- Outline your care during and after pregnancy
- What resources are available to assist in care planning?

Perinatal depression

- Antenatal depression
  - More frequent during 2nd and 3rd trimesters
- Postnatal depression
  - Greatest depression risk period
  - Most common post-delivery complication of childbirth

Perinatal depression

Risk factors for postnatal depression	
• Antenatal depression	• Unplanned/unwanted
• Hx infertility	• Poor education
• Past Psych Hx	• Antidepressant discontinuation
• Lack of support	• Younger/more children (≥ 4) closer together; birth trauma
• Adverse life events	• Medical co morbidity
• Marital conflict	• Recent loss

Only 20% of depressed pregnant women are taking an antidepressant

Perinatal depression consequences

Mother	Baby
• Uterine irritability • Pregnancy induced Hypertension • Pre-eclampsia • Antepartum haemorrhage • Decreased uterine arterial flow • Pre-term delivery • Increased LSCS rate • Post natal depression	• Decreased Apgar • Decreased breastfeeding • Low birth weight • Failure to thrive • Increased NICU admissions • Fetal distress • Prematurity • Developmental delay

Antidepressant use during pregnancy

- Continue if depression severe & woman willing
- Slow withdrawal in low risk women pre-conception; recommence 2nd trimester if necessary
- Avoid in 1st trimester where possible
- Monotherapy if possible
- Avoid abrupt discontinuation
- Lowest effective dose
- Treat to remission

Antidepressant use during pregnancy

- Dose requirements may increase in 3rd trimester
- Unlikely benefit from tapering/discontinuing before birth; also there is a risk of recurrence
- Close monitoring of mother
- Close monitoring of baby

Signs of withdrawal or toxicity in baby	
• Floppy	• Shivering
• Irritable	• Restlessness
• Constant crying	• Increased tone
• Tremor	• Poor feeding & sleep changes

Management of perinatal mental illness

- Metro North HHS Perinatal Mental Health Service - Non-Acute
  - RBWH: 0417 819 949
  - Caboolture/Redcliffe: 0408 151 138
  - TPCH: 0413 482 684
  - Perinatal psychiatrist available
- 1300 MH CALL (1300 64 2255) - Acute

Queensland Centre for Perinatal and Infant Mental Health

Queensland Centre for Perinatal and Infant Mental Health

Our teams

Perinatal and infant mental health facts

Signs of perinatal and infant mental health problems

Looking after yourself in the perinatal period

Your stories

Where to get help

Health professionals

"Successful parenting is a principal key to the mental health of the next generation," John Bowlby.

About us

The Queensland Centre for Perinatal and Infant Mental Health (QCPIMH) supports parents, caregivers and communities to have the confidence, knowledge, skills and resources to support their own wellbeing and raise emotionally healthy and resilient children.

QCPIMH aims to bring perinatal and infant mental health needs to the attention of policy-makers, decision-takers and the general community, to improve the

Contact us

31 Robinson Road

Nundah QLD 4012

p: (07) 3266 3100

f: (07) 3266 4522

e: pimh@health.qld.gov.au

Management of perinatal mental illness

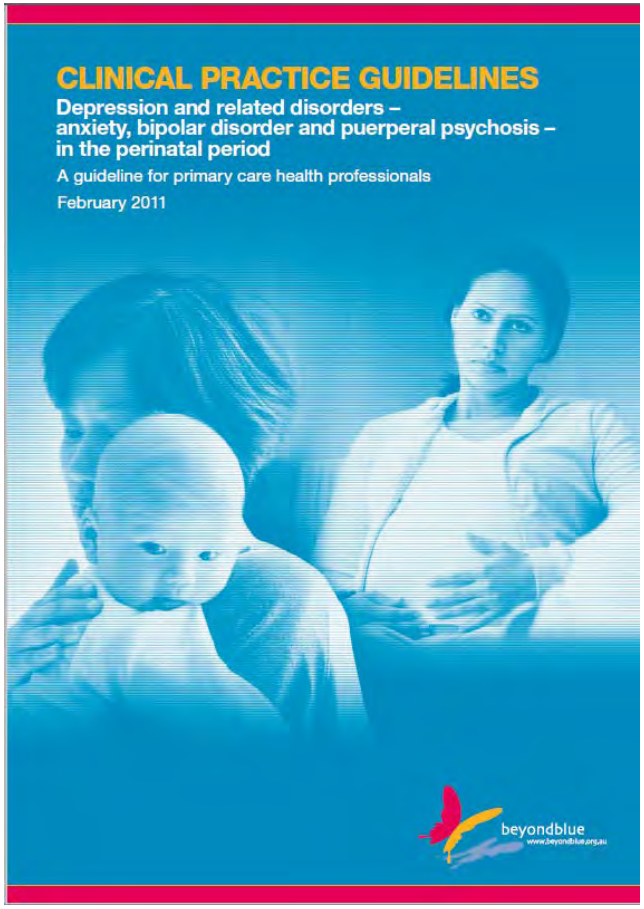
- Consider options including lifestyle & facilitating supports
- Cognitive behavioural therapy (CBT), interpersonal psychotherapy (IPT) and psychodynamic therapy have been shown to improve depressive symptoms in postnatal period
- Psychotherapy involving mother and baby may improve mother - baby interaction
- Options include:
  - Pregnancy support counselling
  - No Mental Health Plan required
  - 3 Medicare funded visits.
  - Search for eligible psychologists at:

    www.psychology.org.au

Management of perinatal mental illness

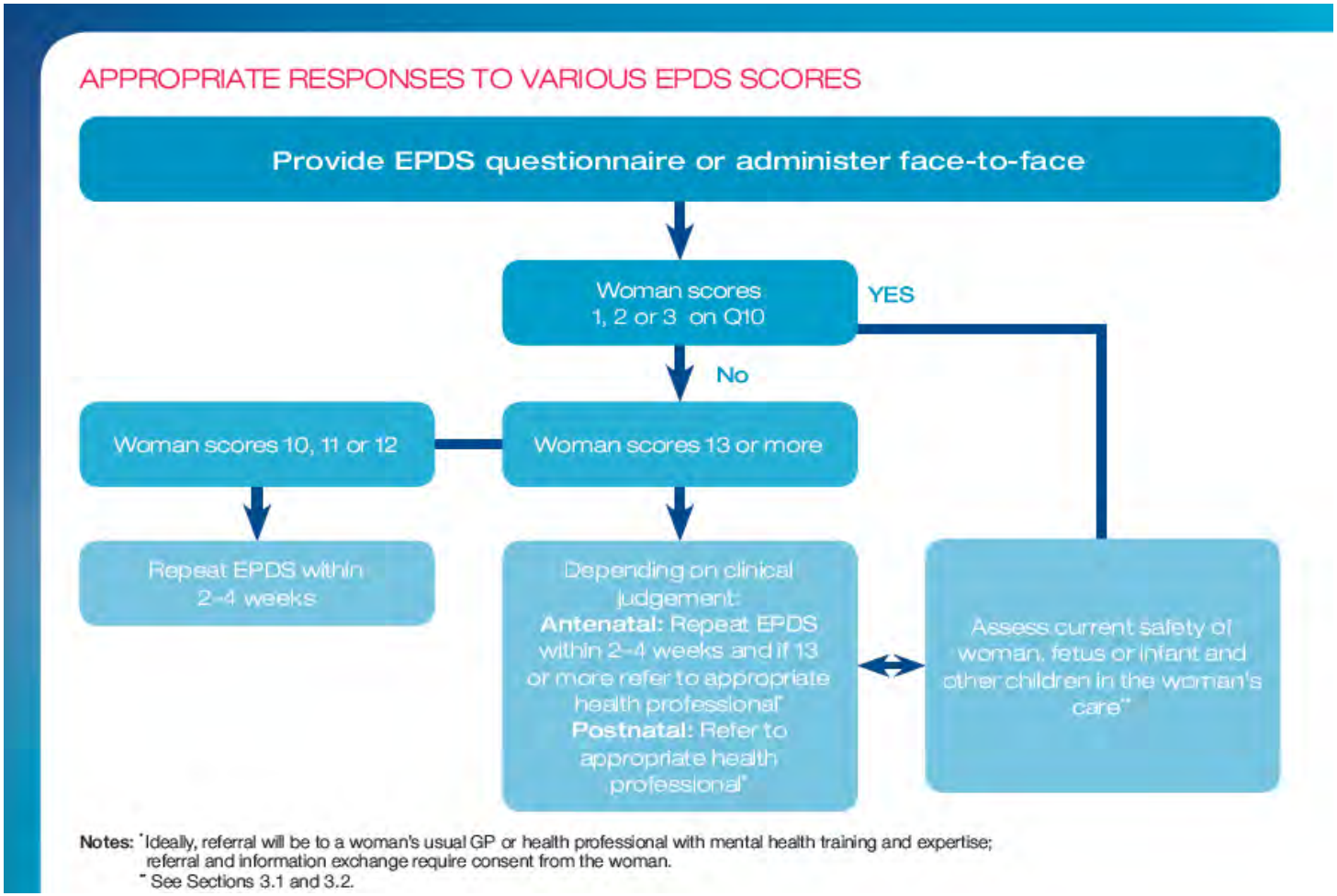
- Mental health treatment plan
- Psychiatry referral
- Private Practice Specialist Suite RBWH offers a one off assessment service with recommendations for ongoing care with GP
  - Reception / General Enquiries:
    (07) 3646 8346 / (07) 3646 8848

Management of perinatal mental illness



www.beyondblue.org.au

Management of perinatal mental illness



www.beyondblue.org.au

Perinatal Anxiety Screening Scale (PASS)

The Perinatal Anxiety Screening Scale (PASS):

Administration, Scoring and Interpretation Guidelines

Somerville, S., Dedman, K., Hagan, R., Oxnam, E., Wettinger, M., Byrne, S., Coo, S., Doherty, D., Page, A.C. (2014). The Perinatal Anxiety Screening Scale: development and preliminary validation. *Archives of Women's Mental Health*, DOI: 10.1007/s00737-014-0425-8

Description of the Scale

The PASS is a valid and reliable 31-item self-report instrument designed to screen for problematic anxiety in antenatal and postpartum women. It differentiates between high and low risk for presenting with an anxiety disorder by measuring four domains that address specific symptoms of anxiety as they present in perinatal women. These domains form subscales which include: 1) Excessive Worry and Specific Fears, 2) Perfectionism, Control and Trauma, 3) Social Anxiety, and 4) Acute Anxiety and Adjustment. The PASS was validated for perinatal (i.e., pregnant or less than 1 year postpartum) women who are English-speaking, literate, and aged 18 years and older. The average time taken for respondents to complete the PASS is 6 minutes.

Administration and Scoring

The PASS is suitable for use by researchers and clinicians in a variety of settings to screen for problematic perinatal anxiety. Respondents self rate each of the four clusters of anxiety symptoms, indicating the frequency of the symptoms over the previous month. The items are on a scale ranging from 0 ("not at all") to 3 "("almost always"). Example scoring:

	Not at all	Some times	Often	Almost Always
1. Worry about the baby/pregnancy	0	1	2	3

Total Score

A total PASS score is obtained by adding all of the items on the PASS. A **cut-off score of 26** is recommended to differentiate between high and low risk for presenting with an anxiety disorder.

Recommended severity ranges:

Anxiety Severity	Range of scores
Asymptomatic	0 - 20
Mild-moderate symptoms	21 – 41
Severe symptoms	42 – 93

Subscales

Subscale items describe clusters of symptoms which are characteristic of various anxiety disorders. Raised item scores indicate risk of types of anxiety disorder presentations as indicated in the table below.

The PASS is **not** a diagnostic scale. However for clinical purposes it can be useful to have some indication of the nature of the anxiety symptoms being experienced. In addition, the answers to **item 7** should be considered individually, as this item is a **clinical indicator of phobia**.

PASS subscales and items	*Anxiety symptoms indicating risk of disorders*
1. Excessive Worry and Specific Fears	
1. Worry about the baby/pregnancy	*Generalised or specific anxiety*
2. Fear that harm will come to baby	*Generalised anxiety, specific fears*
3. Sense of dread - something bad is going to happen	*Generalised anxiety, panic*
4. Worry about many things	*Generalised anxiety*
5. Worry about the future	*Generalised anxiety*
6. Feeling overwhelmed	*Generalised anxiety, panic*
7. Really strong fears about things eg blood, birth, pain, needles	*Phobia*
8. Sudden rushes of extreme fear/discomfort	*Phobia, panic*
9. Repetitive thoughts difficult to control	*Generalised anxiety, obsessive*
10. Difficulty sleeping even when there is the chance to sleep	*General anxiety symptom, adjustment, generalised anxiety*
2 . Perfectionism, Control and Trauma	
11. Having to do things in a certain way or order	*Perfectionism, obsessive compulsive*
12. Wanting things to be perfect	*Perfectionism, obsessive*
13. Needing to be in control of things	*Perfectionism, obsessive, trauma*
14. Difficulty stopping checking or doing things over and over	*Obsessive, compulsions*
15. Feeling jumpy or easily startled	*Trauma*
16. Concerns about repeated thoughts	*Trauma, Obsessive tendencies*
17. Being 'on guard' or needing to watch out for things	*Trauma*
18. Upset about repeated memories, dreams or nightmares	*Trauma*
3. Social Anxiety	
19. Worry that I'll embarrass myself in front of others	*Social-interpersonal*
20. Fear that others will judge me negatively	*Social-interpersonal*
21. Feeling really uneasy in crowds	*Social-interpersonal, specific fears*
22. Avoiding social activities because I might be nervous	*Social-interpersonal*
23. Avoiding things which concern me	*General anxiety symptom, phobia*
4. Acute Anxiety and Adjustment	
24. Feeling detached like watching yourself in a movie	*Dissociation, trauma, panic*
25. Losing track of time and can't remember what happened	*Dissociation, trauma, panic*
26. Difficulty adjusting to recent changes	*Adjustment*
27. Anxiety getting in the way of being able to do things	*Adjustment, general anxiety symptom*
28. Racing thoughts making it hard to concentrate	*Panic*
29. Fear of losing control	*General anxiety symptom, panic*
30. Feeling panicky	*Panic*
31. Feeling agitated	*Panic, adjustment, generalised anxiety*

Source: Women and Newborn Health Service. King Edward Memorial Hospital. WA

Medication use for depression in pregnancy

- **SSRIs -** preferred medication with most evidence of safety
  - main risk is neonatal withdrawal
- **Paroxetine** is Cat D due to reported ↑ risk of cardiovascular complications (Septal defects)
- Less evidence exists for TCADs, however can be considered if previously effective
- Growing body of safety around SNRIs

Medication use for anxiety in pregnancy

- **Benzodiazepines (BZD)** can be used short term while awaiting onset of SSRI or TCAD
- Side effects include sedation, preterm birth, low birth weight and low Apgar
- Long acting BZD are to be avoided

Medication use for bipolar disorder

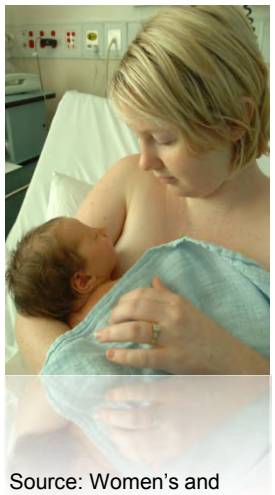
- **Sodium valproate** (Epilim) associated with major birth defects and cognitive deficits and **should not be used** without consulting a psychiatrist
- **Lithium** associated with very small increased risk of birth defects and consultation with a psychiatrist is advised

Medication use for bipolar disorder

- First-generation antipsychotics associated with:
  - low birth weight
  - low gestational age
  - preterm birth
- Risks associated with second-generation antipsychotics less clear, but clozapine (Clopine) should **NOT** be initiated during pregnancy or in women contemplating pregnancy, without consulting a psychiatrist

Breastfeeding

- Depression
  - Very low levels of SSRIs & TCADs pass into breast milk
  - No contraindications to SSRIs & TCADs
  - Fluoxetine (Prozac) can accumulate in baby & 'jitteriness' has been described
  - Venlafaxine (Efexor, an SNRI) may accumulate in breast milk in levels at higher end of accepted safe range



Source: Women's and Newborn Services. RBWH

Breastfeeding

- Anxiety
  - Short-acting benzodiazepines - for a limited period
  - Long-acting benzodiazepines - avoid
  - Specific regimens around timing of breastfeed are not considered necessary as on balance, there is a very small exposure to baby via breast milk

Breastfeeding

- Bipolar disorder and puerperal psychosis
  - Limited evidence for safety of anticonvulsants during breastfeeding.
  - Passage of lithium into breast milk more variable than other psychotropic medications.
  - If mother chooses to breastfeed, lithium should be used with particular caution and as with sodium valproate and clozapine should NOT be used without consulting a psychiatrist.

Useful resources

- Massachusetts General Hospital Center for Women's Mental Health https://womensmentalhealth.org/?doing_wp_cron=1482262772.0649859905242919921875
- Just speak up (beyondblue Support Service) justspeakup.com.au
- Black Dog Institute blackdoginstitute.org.au
- Panda Perinatal Anxiety & Depression Australia panda.org.au
- Centre of Perinatal Excellence cope.org.au
- MoodGYM Training Program www.moodgym.anu.edu.au
- Gold Coast Health - small talk EDITION 2
- https://www.goldcoast.health.qld.gov.au/sites/default/files/st-edition-3.pdf

Useful resources

- Queensland Centre for Perinatal and Infant Mental Health Library Service http://qcpimh.libguides.com/Library/home
- Victorian Government – Better Health Channel https://www.betterhealth.vic.gov.au/health/healthyliving/postnatal-depression-pnd
- PCL *Women talk, we listen…* http://www.pcl.org.au/
- Women's Health Queensland Wide – Midwife Check-in http://womhealth.org.au/services/midwife-check-in
- Peach Tree http://peachtree.org.au/

Take home message

- Perinatal mental illness is a significant cause of morbidity and mortality, affecting maternal and neonatal outcomes, health of families and the community
- EPDS to be administered at hospital booking in, repeated by 34 weeks, at 6 weeks post partum and prn
- Identification & appropriate treatment essential
- Suicide is a leading cause of maternal death in the developed world

"In 2012 and 2013, the leading cause of death of women during pregnancy and within 365 days of the end of pregnancy was suicide"

Source: Queensland Maternal and Perinatal Quality Council Report 2015

Red group - complex

- Nicole is 9 weeks pregnant. She looks pale and ill at ease as she walks into the consulting room
- Her partner, Shaun is with her, looking agitated. *"She's been spewing her guts up doc; you've got to help! The dumb chemist gave her some vitamins, which cost me money and haven't helped at all"*
- Her BP is 90/60 sitting, 80/55 standing, her PR is 104 and she reports that she isn't passing much urine. You notice a suspicious bruise as you take her blood pressure
- Outline your approach

Nausea and vomiting in pregnancy

- Nausea - most common GI symptom of pregnancy affecting 80-85% of women
- Vomiting occurs in about 52%
- ~ 90% will have symptoms settle by 16-20 weeks

Source: Clinical Practice Guidelines, Antenatal Care Module 1
http://www.health.gov.au/antenatal

Nausea and vomiting in pregnancy

- Only 11-18% of women have symptoms limited to the morning
- Hyperemesis gravidarum is ***not*** common, affecting 0.3-1.5% of women
- Decreasing iron supplementation can ease symptoms of severe nausea

Source: Clinical Practice Guidelines, Antenatal Care Module 1
http://www.health.gov.au/antenatal

Nutrition Education Materials Online (NEMO)

- Home
- Finalised materials
- Aboriginal & Torres Strait Islander resources
- Allergy
- Antenatal
- Cardiovascular disease
- Culturally and linguistically diverse resources
- Cystic fibrosis
- Diabetes
- Gastroenterology
- General nutrition
- HIV
- [+] Mental Health
- Nutrition Care Process Terminology
- Nutrition support
- Oncology
- Paediatrics

For Professionals > Health Professionals > Nutrition Education Materials Online

Antenatal resources

Resources are designed to be used by health professionals.

Approved nutrition education materials

Resource	Author
Folate	Food Standards Australia & New Zealand
Healthy eating and weight gain during pregnancy	NEMO Antenatal group
Healthy eating for breastfeeding mothers	NEMO Antenatal group
Iron for pregnant women	NEMO Antenatal group
Listeria	Food Standards Australia & New Zealand
Nutrition for vegetarian pregnant & breastfeeding mothers	NEMO Antenatal group
Nutrition for vegan pregnant & breastfeeding mothers	NEMO Antenatal group
Managing morning sickness	NEMO Antenatal group
Mercury	Food Standards Australia & New Zealand
Gestational diabetes mellitus large file 1MB	NEMO Antenatal group
Gestational diabetes presentation large file 4.2MB	NEMO Antenatal group
Pregnancy weight gain chart for BMI < 25kg/m2 (PDF, 495KB)	NEMO Antenatal group
Pregnancy weight gain chart for BMI > 25kg/m2 (PDF, 499KB)	NEMO Antenatal group

top of page

Hyperemesis gravidarum - assessment

Exclude:	
• Pyelonephritis	• Appendicitis
• Cholecystitis	• Intestinal obstruction
• Hepatitis	• Diabetes
• Pancreatitis	• Thyrotoxicosis
• Trophoblastic disease	• Twin pregnancy
• Pre eclampsia	

Hyperemesis gravidarum

- Investigations:
  - Bloods (FBC, BHCG, ELFT, TFT, HbA1c, Serum Amylase), MSU, USS
- Review diet and supplements
- Weigh daily
- Admission - IV rehydration+/- parenteral nutrition
- Supplements - Vitamin B6 (Pyridoxine)
- Anti-emetics - Metoclopramide, Ondansetron, Chlorpromazine, Domperidone
- Anti-depressant - Mirtazapine
- Other - Corticosteroids

Recognising Domestic Violence

- Physical
  - Pushing, shoving, punching, injuring
- Verbal
  - Constant put downs, name calling
- Sexual
  - Forced or unwanted sexual contact
- Social
  - Controlling where you go and what you do
- Financial
  - Being denied/refused access to money

Recognising Domestic and Family Violence

- Physical
  - Direct assaults on the body, pushing, punching, causing or threatening personal injury using objects or weapons; assaults on children, being denied access to the home, deprivation of sleep or food.
- Verbal
  - Constant put downs, name calling, humiliation, focus of insults around sexuality, body image, intelligence or parenting skills.
- Sexual
  - ANY forced or unwanted sexual contact
- Social
  - Systematically controlling who one sees, who is speak to or receives phone calls, emails, text messages from. Control where one lives; social and geographic isolation.
- Financial
  - Being denied/refused access to money, prevented from seeking or holding a job.

https://www.dvconnect.org/mensline/what-is-domestic-and-family-violence/

Recognising Domestic and Family Violence

- Damage to personal property
  - Using physical strength or violence to intimidate by causing or threatening to cause damage to property and valuables. E.g. Kicking holes in walls, throwing things, pulling doors of hinges, or damaging furniture, car or personal belongings.
- Psychological
  - Behaviour and/or comments or taunts to undermine sense of self, personal security or which are likely to impose a sense of vulnerability around personal safety or mental health and well being. E.g. driving dangerously, threatening or causing injury to pets, making threats about custody of children, or asserting that no one or courts will believe the story.
- Spiritual/Cultural
  - Not allowing practise of chosen religion or cultural beliefs, misusing spiritual/religious traditions to justify physical or other abuse.
- Stalking
  - Constant worrying or frightening by following, watching, phoning or messaging and waiting outside home or workplace

https://www.dvconnect.org/mensline/what-is-domestic-and-family-violence/

Management

- Organise a follow up appointment
  - without partner if possible
- Resources (consider safety)
  - Domestic Violence Hotline

    1800 811 811 / http://www.dvconnect.org/
- Facilitate early referral to hospital
  - Flag concerns via referral to social work directly Ph 3646 8268

Reporting responsibilities

- As a doctor or registered nurse, you are a mandatory reporter and have a:
  - legal responsibility to report physical or sexual abuse under *s13E Child Protection Act 1999*
  - duty of care responsibility to report any other form of child abuse (emotional) and neglect under *s13A Child Protection Act 1999*

- Child Safety Services Regional Intake Brisbane 1300 682 254 (business hours)
- Child Safety After Hours Service Centre 1800 177 135 https://www.communities.qld.gov.au/childsafety/protecting-children/reporting-child-abuse

Blue group - complex

- Anna - age 32, presents anxiously for advice. Her 11 year old step-daughter, who stayed with her last weekend, has just been diagnosed with Chicken Pox. Anna is 17 weeks pregnant.
- Outline your approach
- What are current Australian recommendations for preconception, antenatal and postnatal vaccination? (all vaccines, not just Varicella)

Varicella - exposure

- ‘Exposure’ = sharing home/face to face

  > 5 minutes
- Check serology if no reliable history of chicken pox or immunisation
- If negative IgG, and
  - Exposure < 96hrs, give ZIG (order through Red Cross 07 3838 9010)
  - Exposure > 96hrs, no ZIG, give aciclovir if risk factors for maternal complications (> 20/40, lung disease, immunocompromised, smoker)

Varicella in pregnancy

- At risk times for baby:
  - 12-20 weeks 2% risk of Fetal Varicella Syndrome (scarring of skin, low birth weight, prematurity, problems affecting limbs, brain and eyes)
  - ≤ 5 days before birth high risk as baby develops infection without maternal antibodies
- At risk times for mother:
  - Risk of maternal compromise throughout pregnancy e.g. Pneumonitis
  - Give aciclovir if seen within 24 hours of onset of symptoms
  - Risk higher if > 20 weeks gestation

Varicella in pregnancy

- Refer all women with Varicella in pregnancy
- Liaise by phone with the GP Liaison Midwife in first instance to reduce risk to other pregnant women (isolation will be required)
- http://www.asid.net.au/documents/item/368 Algorithms pages 82-87

Vaccination before, during, after...

- Preconception
  - MMR, Varicella, (check status prn) dTpa, Influenza and Pneumococcus for at risk women (including smokers)
- During pregnancy
  - Influenza
  - dTpa in third trimester of **each** pregnancy
  - Other inactivated vaccines if benefits of protection from vaccination outweigh the risks; avoid fever
  - Only **absolute C/I** = smallpox, although all **live attenuated vaccines are C/I** because of hypothetical risk of harm
- Post partum
  - dTpa, MMR prn

Source: www.immunise.health.gov.au

Cytomegalovirus (CMV)

- Evidence limited to support screening for CMV during pregnancy
- As CMV may be transmitted to baby and can have serious consequences, the focus is on giving women advice about hygiene measures that reduce risk of infection

Source: *Australian Health Ministers' Advisory Council 2014, Clinical Practice Guidelines: Antenatal Care – Module II*
Australian Government Department of Health, Canberra
http://www.health.gov.au/antenatal

Cytomegalovirus (CMV)

- Consensus-based recommendations
  - Advise pregnant women about hygiene measures to prevent CMV infection such as frequent hand washing, particularly after exposure to a child's saliva or urine
  - Only offer screening to pregnant women if they come into frequent contact with large numbers of very young children (e.g. child care workers)

Source: *Australian Health Ministers' Advisory Council 2014, Clinical Practice Guidelines: Antenatal Care – Module II*
Australian Government Department of Health, Canberra http://www.health.gov.au/antenatal

Zika Virus

- Management of pregnant women
  - Inquire about travel history
  - If history of travel to a Zika virus affected country during/immediately prior to pregnancy → evaluate
- Remind travellers to all areas where mosquito borne diseases are present to use mosquito bite prevention measures

http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-zika.htm

Zika Virus - Preventing sexual transmission

- Men who have travelled to Zika virus affected areas whose partner **is** pregnant:
  - Avoid unprotected sex for duration of pregnancy
- Men who have had a confirmed Zika virus infection, whose partner is **not** pregnant:
  - Defer pregnancy and unprotected sex for at least six months

http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-zika-health-practitioners.htm#02

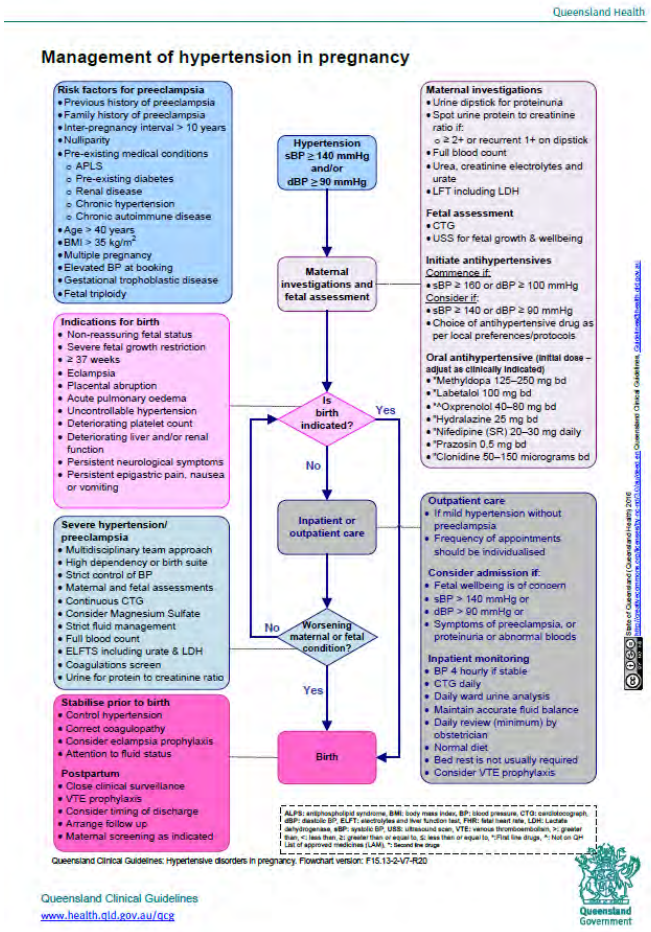
Orange group - complex

- Janice - G1P0 is stressed! Running late for appointment (caught in traffic), to discover you are running late anyway; she must leave ASAP to get back to work in time for important meeting
- She's had a “stinker” of a headache all week and is not surprised that her BP is elevated at 162/97. She is certain it will settle once she calms down Now K 28
- Despite her protests (must get to meeting!!), you take her BP again after 5 minutes and the best you can get is 153/92
- Outline your approach

Online resources

Queensland Clinical Guidelines www.health.qld.gov.au/qcg/

Hypertension in pregnancy



Source: Queensland Clinical Guideline https://www.health.qld.gov.au/qcg/

Pre-eclampsia

- Most common serious medical disorder of human pregnancy
- Most common in primiparous women
- Only occurs when a woman is pregnant
- Only cure is to end pregnancy, even if baby premature

Pre-eclampsia

Signs and symptoms…	
• Hypertension	• Oedema -hands, feet & face
• Renal dysfunction	• Proteinuria
In severe cases …	
• Dizziness	• Visual disturbances
• Headaches	
• Left untreated can lead to …	
• Convulsions and other life-threatening problems for mother and baby	

Pre-eclampsia

- In Australia
  - mild pre-eclampsia occurs in 5-10% of pregnancies
  - severe pre-eclampsia in 1-2% of pregnancies
  - pre-eclampsia and associated complications account for 15% of direct maternal mortality and 10% of perinatal mortality
  - Is indication for 20% of labour inductions and 15% of caesarean sections
  - Accounts for 5-10% of preterm births

Source: www.thewomens.org.au/Preeclampsia

Pre-eclampsia

2.2 Diagnosis of preeclampsia

Hypertension arising after 20 weeks gestation confirmed on 2 or more occasions and accompanied by ***one or more*** of the organ/systems features identified in Table 3. Diagnosis of preeclampsia.

- Raised BP is common but not always the first manifestation
- Pre-existing hypertension is a strong risk factor for the development of preeclampsia[1] and requires close clinical surveillance
- Proteinuria is common but should not be considered mandatory to make the clinical diagnosis[1]

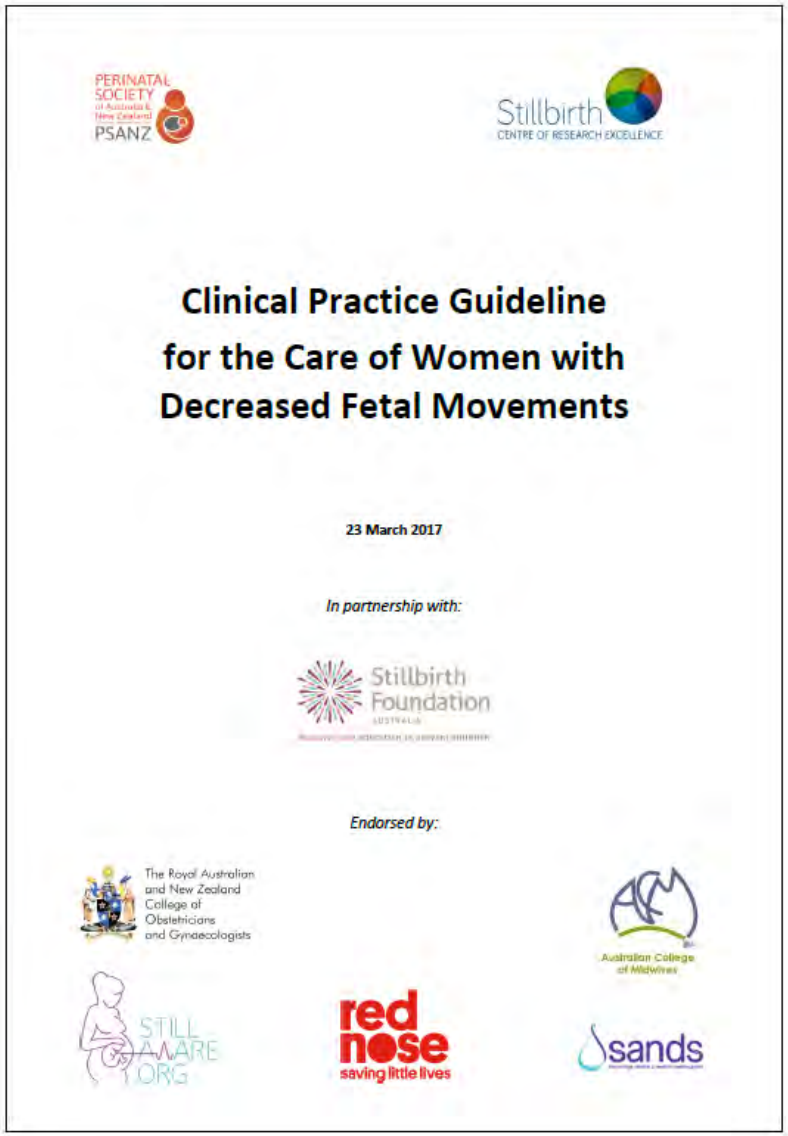
Table 3. Diagnosis of preeclampsia

Organ/System	Feature
Proteinuria	• Random urine protein to creatinine ratio greater than or equal to 30 g/mmol
Renal	• Serum or plasma creatinine greater than or equal to 90 micromol/L or • Oliguria
Haematological	• Thrombocytopenia (platelets less than 100 x 10^9/L) • Haemolysis: schistocytes or red cell fragments on blood film, raised bilirubin, raised lactate dehydrogenase (LDH), decreased haptoglobin • Disseminated intravascular coagulation (DIC)
Liver	• Raised transaminases • Severe epigastric or right upper quadrant pain
Neurological	• Severe headache • Persistent visual disturbances (photopsia, scotomata, cortical blindness, retinal vasospasm) • Hyperreflexia with sustained clonus • Convulsions (eclampsia) • Stroke
Pulmonary	• Pulmonary oedema
Uteroplacental	• Fetal growth restriction (FGR)

Queensland Clinical Guidelines www.health.qld.gov.au/qcg/

Pink group - complex

- Anna presents at 35 weeks for an unscheduled appointment
- Her pregnancy has been progressing smoothly, but she is clearly anxious. Her baby, who usually 'kicks like a world cup soccer player', has been noticeably quiet since yesterday afternoon. She asks "Is something wrong with my baby?"
- What do you say to her?
- What do you do if you can hear the fetal heart?
- What do you do if you cannot hear the fetal heart?



https://stillbirth.centre.uq.edu.au/files/992/DFM%20Clinical%20Practice%20Guideline%20Update_Final_23032017.pdf

Obstetric Review Centre (ORC)

- Common presentations include:
  - Labour/Preterm labour
  - Uncertainty about ruptured membranes or premature rupture of membranes
  - Reduced or no fetal movements
  - Review of hypertensive women referred by their GP, obstetrician or midwife
  - Bleeding after 14 weeks
  - Headaches
  - Feeling unwell

Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday, 7 October 2017

Skills Development Centre, Royal Brisbane and Women's Hospital

Antenatal testing for chromosomal abnormality

Pauline McGrath
Senior Genetic Counsellor
Churchill Fellow
Genetic Health Queensland RBWH
pauline.mcgrath@health.qld.gov.au

This is a joint initiative between Metro North Hospital and Health Service and Brisbane North PHN

phn BRISBANE NORTH
An Australian Government Initiative

Queensland Government

Prenatal diagnosis and screening

- Screening
- Invasive testing
- PAPP-A
- Referrals

Chromosome risk by maternal age (at term)

Age-Maternal	Downs Syndrome	All chromosomal risks
25	1 in 1350	1 in 476
30	1 in 940	1 in 385
35	1 in 350	1 in 179
36	1 in 270	1 in 149
37	1 in 200	1 in 123
38	1 in 150	1 in 105
39	1 in 110	1 in 81
40	1 in 85	1 in 63
45	1 in 35	1 in 19

Assess knowledge and provide information

- Variable patient understanding of Down syndrome (trisomy 21), Edward syndrome (trisomy 18) and Patau syndrome (trisomy 13)
- Cultural and language barriers
- Information delivery in verbal and written forms
- Document
  - Information provided, offer of test/s, response of patient

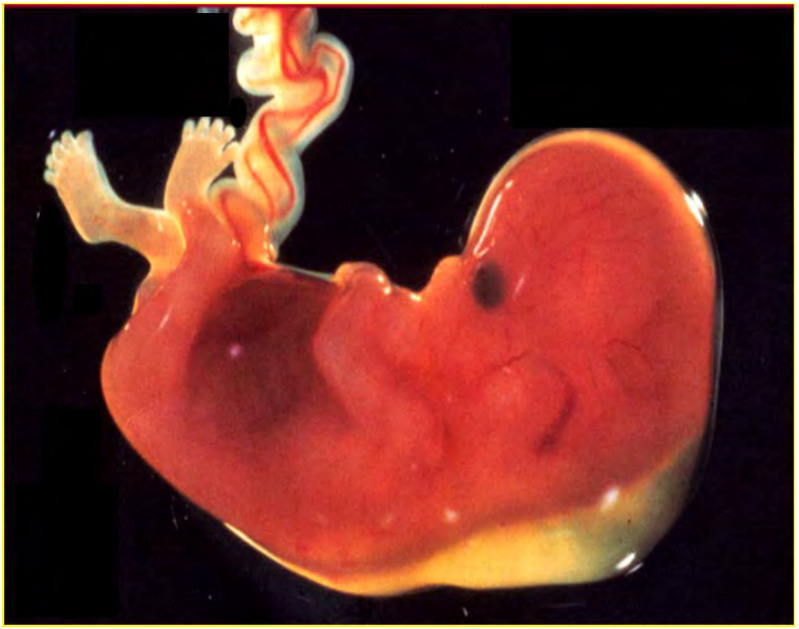
Advantages of screening

- More accurate than age-related risk alone
- Screening in first trimester enables diagnostic testing
- Reduction in utilisation of invasive tests
- Highest detection rate
  - NIPT – 99% detection rate for trisomy 21
  - Combined first trimester screen - 85-90% detection rate

Aneuploidy tests compared

Test	Down Syndrome Detection Rate	Screen positive rate
Non-Invasive Prenatal Testing (NIPT)	99%	0.1%
Nuchal translucency scan (NTS)	70%	5%
Combined NTS, Serum testing (B HCG, PAPP-A)	85-90%	5%
Second trimester serum test (Free B HCG, oestriol, AFP +/- Inhibin)	65-70%	5%
Morphology scan	20-50%	10-15%

Nuchal translucency scan 11 to 13^{+6} weeks



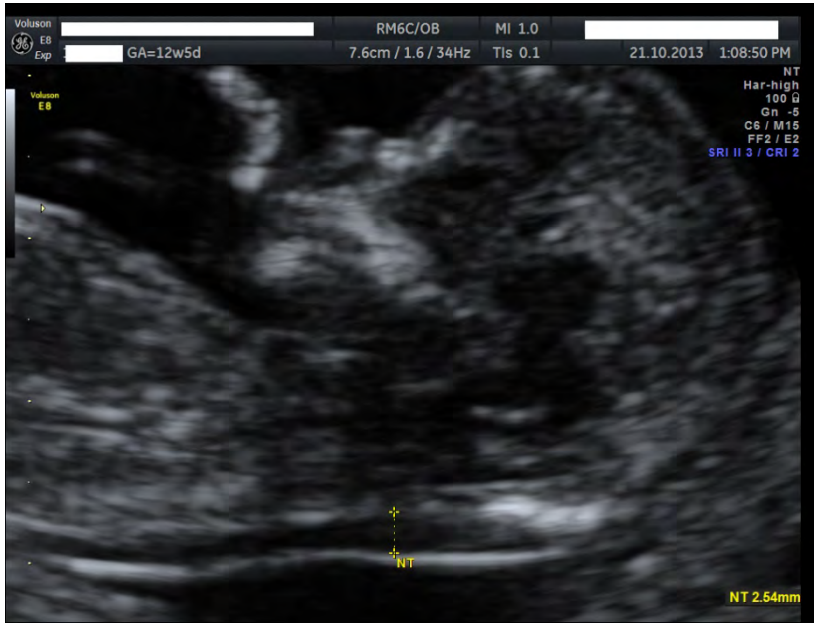


Image source: Maternal Fetal Medicine RBWH

Sensitivity (detection rate) = 70%
Screen positive rate = 5% (1/20 screened ‘high risk’)

Nasal bone (NB)

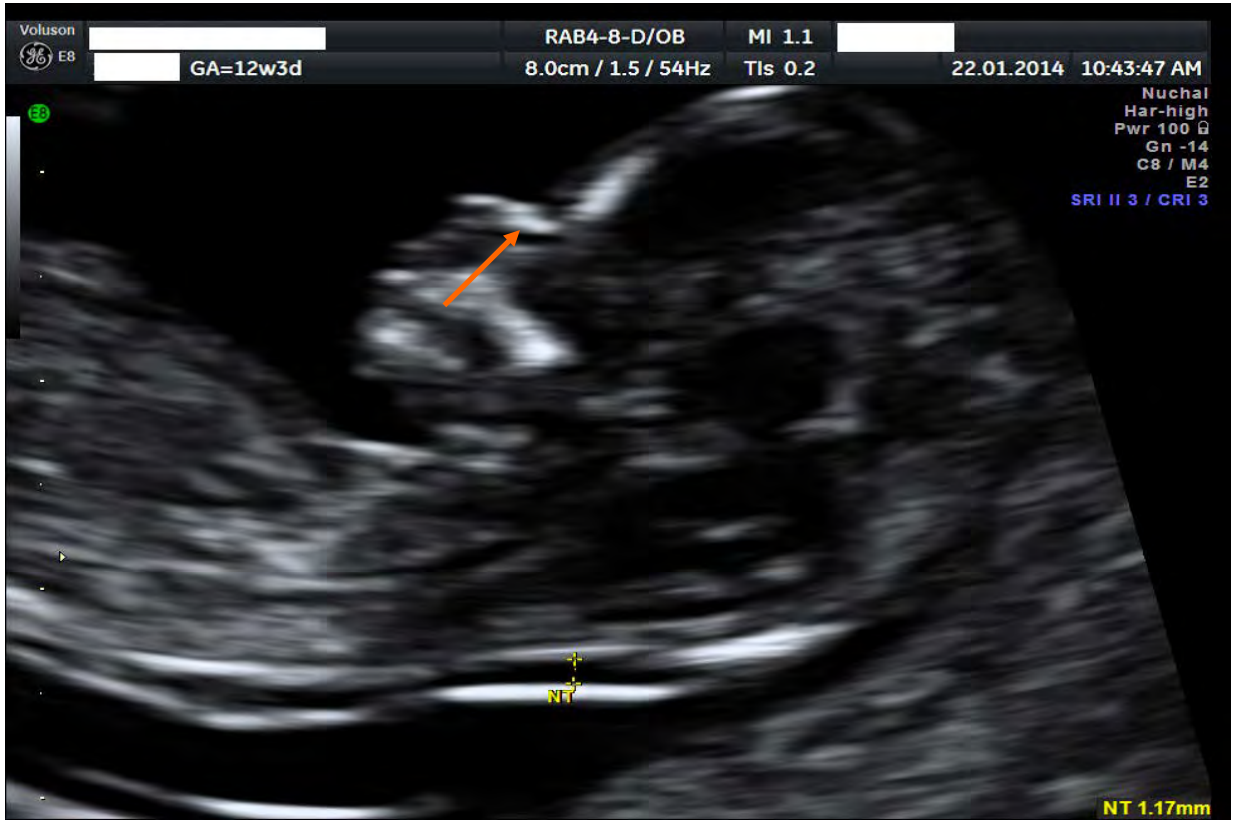


Image source: Maternal Fetal Medicine RBWH

Presence of NB increases screening sensitivity

Absent nasal bone

What is it?

- Delayed ossification of NB
- It does NOT mean that baby does not have a nose

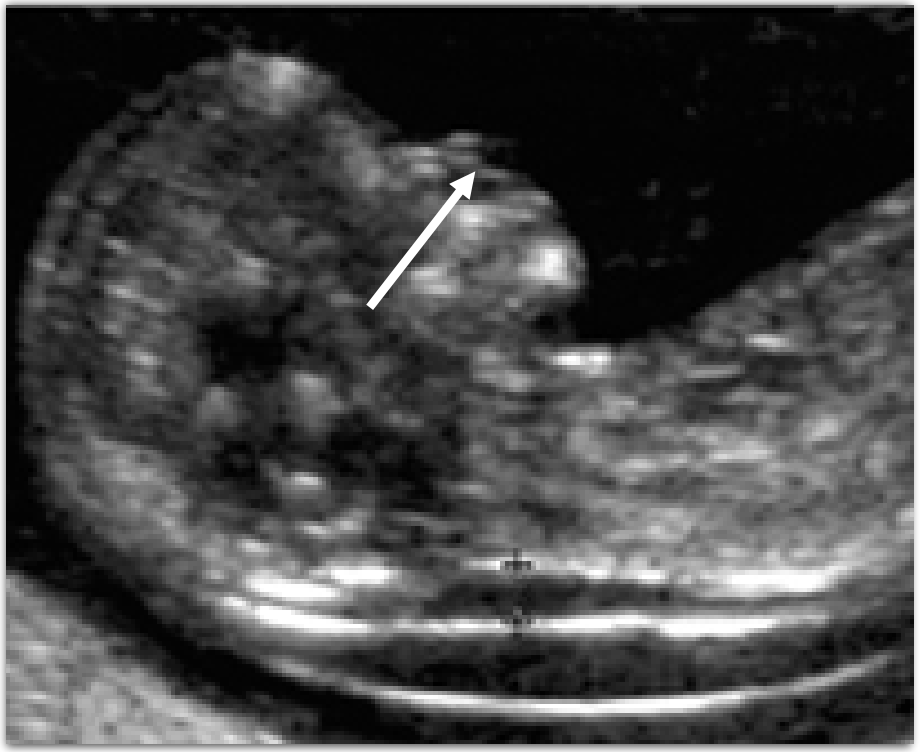


Image source: Maternal Fetal Medicine RBWH

Absent nasal bone

- At 11-13 weeks gestation, ~1-2% of normal fetuses have an absent nasal bone
- ~60% of fetuses with trisomy 21 have an absent nasal bone
- Overall effect on screening is increased detection and reduced screen positives

Combined First Trimester Screen

- Nuchal translucency scan and maternal serum -PAPP-A and fβhCG (9-13 weeks)
- Cut-off for high risk 1/300
- Test results should be ‘combined’ and not provided separately

	Trisomy 21	**Trisomy 18**	**Trisomy 13**
Background risk:	1 : 267	1 : 640	1 : 2010
Ultrasound risk:	*1 : 2173*	*1 : 3215*	*1 : 25877*
Biochemistry risk:	*1 : 626*	*1 : 4552*	*1 : 5169*
Adjusted risk:	1 : 5115	1 : 12794	1 : 40199

Example Report

Indication:
1st Trimester screening.

History:
Maternal age: 33 years, pre-pregnancy weight 62.0 kg, height 170.0 cm, BMI 21.5, blood group: O, (Rh D): Rh +ve. Conception spontaneous. Non-smoker.
Obstetric History: **Gravida: 5**. **Para: 2**. CMV infection.

EDD by ultrasound: 7 January 2011.
Gestational age: 13 weeks + 3 days

First Trimester Ultrasound:
Transabdominal US with Voluson E8. Ultrasound view: good.
Fetal heart action present. Frequency 149 bpm.

Crown-rump length (CRL)	75.0	mm	50th%
Nuchal translucency (NT)	1.92	mm	

Nasal bone present
Fetal anatomy: **skull/brain** appears normal, **heart** not examined, **spine** appears normal, **abdomen** appears normal, **stomach** visible, **bladder** visible, **hands** both visible, **feet** both visible.
Additional Markers for Risk Assessment: Ductus Venosus (a-wave): positive.
Placenta: posterior, structure normal. Amniotic fluid: normal. Cord: 3 vessels.
Cervix length 46 mm.

Summary of ultrasound findings: normal intrauterine pregnancy.
Size agrees with dates. I could not see any fetal abnormality on today's scan. Ultrasound is unable to detect all fetal abnormalities.

Maternal Serum Biochemistry:
Sample taken on 30 June 2010.
No. of fetuses: A. Maternal weight: 62.0 kg. Non-smoker. Ethnic origin: White. Parity > 0. Manufacturer: Kryptor.
Free beta hCG: 99.000 IU/l, equivalent to 2.7078 MoM.
PAPP-A: 2.000 IU/l, equivalent to 0.5254 MoM.

Estimated risk for chromosomal abnormalities:

	Trisomy 21	Trisomy 18	Trisomy 13
Background risk:	1 : 360	1 : 924	1 : 2886
Adjusted risk:	1 : 110	1 : 18484	1 : 57726

Nuchal translucency size and outcome

Nuchal translucency	% Chromosomal defects	% Normal karyotype – fetal death usually prior to 20 weeks of gestation	% Normal karyotype – major fetal abnormalities	% Normal karyotype – alive and well
< 95th centile	0.2	1.3	1.6	97
3.5 – 4.4mm	21.1	2.7	10.0	70
4.5 – 5.4mm	33.3	3.4	18.5	50
5.5 – 6.4mm	50.5	10.1	24.2	30
> or equal to 6.5mm	64.5	19.0	46.2	15

What else can be detected with cFTS?

- Increased nuchal translucency (>3.5mm)
  - cardiac malformations, genetic syndromes
  - Recommend tertiary morphology scan 18-20 weeks gestation
- Low PAPP-A (<0.4 MoM)
  - associated with pre-eclampsia, growth restriction & stillbirth
  - fetal growth & uterine artery doppler assessment at 22-24 weeks gestation

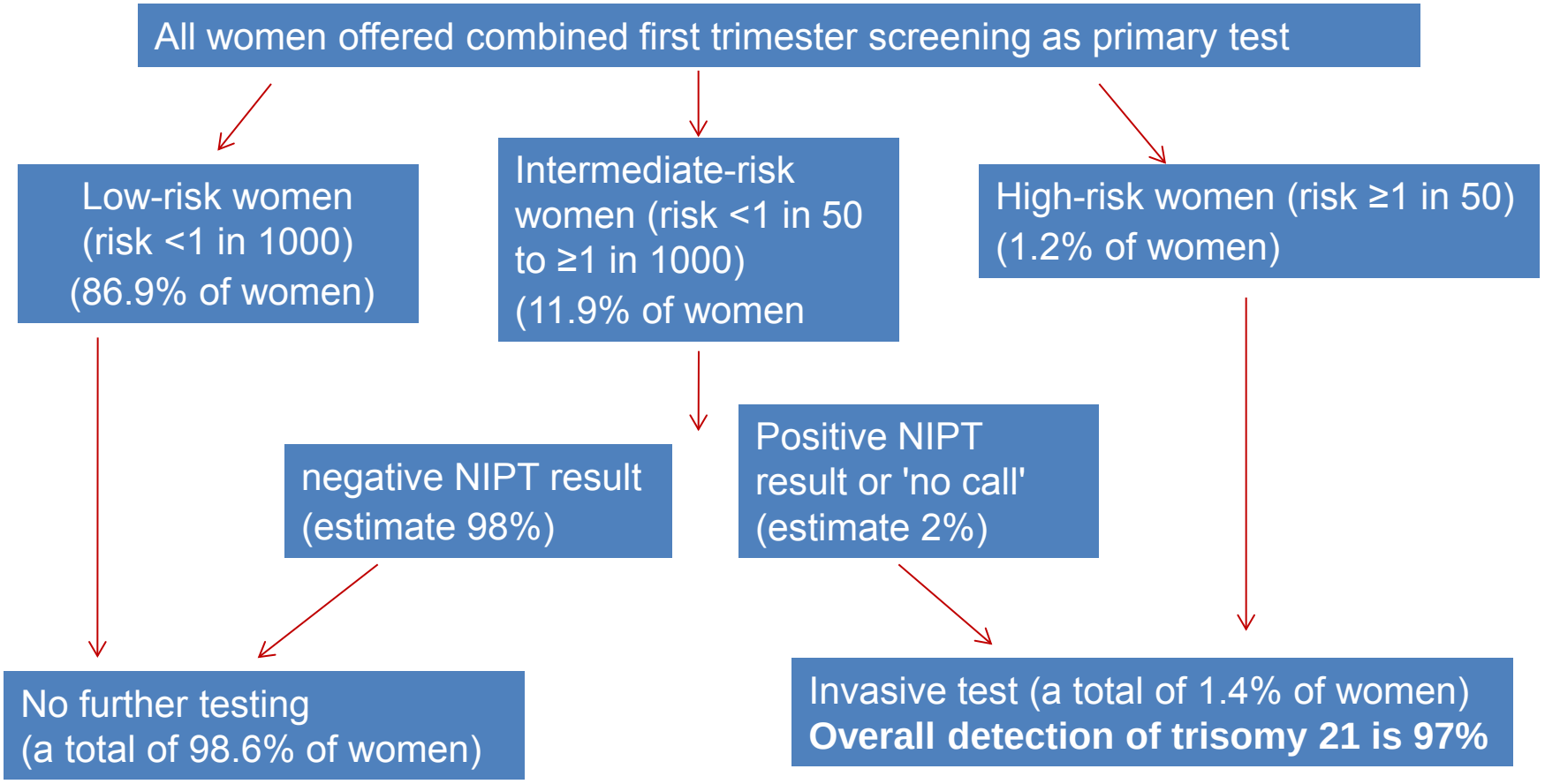
Non-invasive Prenatal Testing (NIPT)

- Fetal cell-free DNA found in plasma of pregnant women from 10 weeks gestation
- Testing of fetal DNA in maternal blood poses no risk to pregnancy
- Major benefit is significant reduction in need to perform invasive test
- 96.6% positive predictive value
- 100% negative predictive value
- Not a diagnostic test, **abnormal results should be confirmed via invasive testing**

Benefits and limitations of NIPT

- Highest sensitivity and specificity
- Reduces invasive testing
- Beneficial for women unable to access cFTS or later gestation
- No Medicare rebate, costs vary
- Abnormal results require confirmation by invasive testing
- Advantages of cFTS
  - assess number of fetuses, structural abnormalities and PAPP-A

Contingent screening model



Triple test

- Rarely used
- Blood test at 15-20 weeks gestation
- fβhCG + Oestriol + alpha fetoprotein (AFP)
- Detection rate 70%
- Provided risk assessment for open neural tube defects (AFP)
- Used 1 in 250 cut-off for high risk for chromosomal abnormalities
- Provides an option for screening later in gestation

Purpose of the 18-20 week morphology ultrasound scan

- **Confirm**
  - viability
  - gestational age by measuring fetal biometry
- **Assess**
  - number of fetuses
  - placental site
  - amniotic fluid volume
  - fetal anatomy

Source: Women's and Newborn Services RBWH

Detection rates for fetal abnormalities at 18-20 week morphology scan

- Neural tube defects (>90%)
- Cardiac abnormalities (major 40-75%)
- Cleft lip (>75%)
- Trisomy 21 (20-50%)
- Trisomy 13 (>90%)
- Trisomy 18 (>90%)

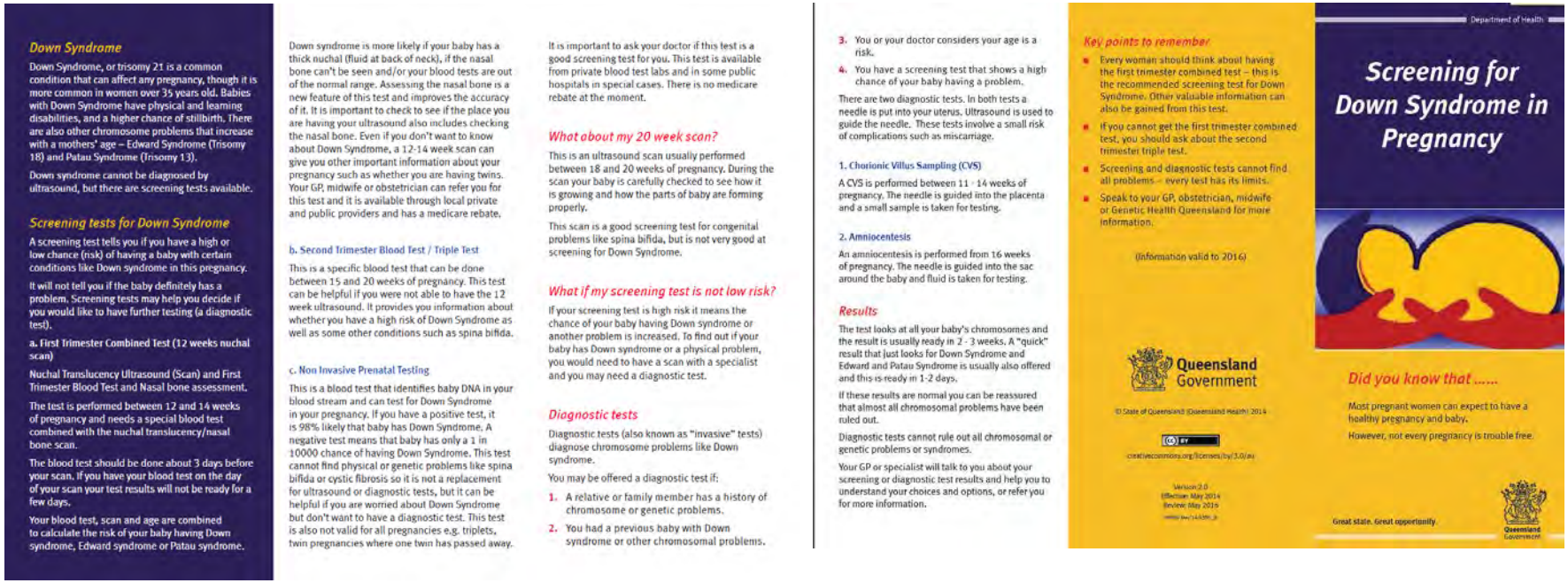
Morphology scan as Down syndrome screen

- Detection rates reported as low as 17% (Finland)
- Markers on morphology scan that are useful
  - thickened nuchal fold >6mm
    - short or absent nasal bone
    - Echogenic bowel
- Echogenic bowel
  - associated with early onset growth restriction, CMV and cystic fibrosis

When should 3D/4D ultrasound be used in pregnancy?

- Main application is for ‘entertainment’ or ‘keepsake’ imaging
- Fetal anomaly detection not enhanced
- Can assist for surface anatomy abnormalities e.g. facial cleft
- Not used in screening for chromosomal abnormalities

Consumer fact sheet



Down Syndrome

Down Syndrome, or trisomy 21 is a common condition that can affect any pregnancy, though it is more common in women over 35 years old. Babies with Down Syndrome have physical and learning disabilities, and a higher chance of stillbirth. There are also other chromosome problems that increase with a mothers' age – Edward Syndrome (Trisomy 18) and Patau Syndrome (Trisomy 13).

Down syndrome cannot be diagnosed by ultrasound, but there are screening tests available.

Screening tests for Down Syndrome

A screening test tells you if you have a high or low chance (risk) of having a baby with certain conditions like Down syndrome in this pregnancy.

It will not tell you if the baby definitely has a problem. Screening tests may help you decide if you would like to have further testing (a diagnostic test).

a. First Trimester Combined Test (12 weeks nuchal scan)

Nuchal Translucency Ultrasound (Scan) and First Trimester Blood Test and Nasal bone assessment.

The test is performed between 12 and 14 weeks of pregnancy and needs a special blood test combined with the nuchal translucency/nasal bone scan.

The blood test should be done about 3 days before your scan. If you have your blood test on the day of your scan your test results will not be ready for a few days.

Your blood test, scan and age are combined to calculate the risk of your baby having Down syndrome, Edward syndrome or Patau syndrome.

Down syndrome is more likely if your baby has a thick nuchal (fluid at back of neck), if the nasal bone can't be seen and/or your blood tests are out of the normal range. Assessing the nasal bone is a new feature of this test and improves the accuracy of it. It is important to check to see if the place you are having your ultrasound also includes checking the nasal bone. Even if you don't want to know about Down Syndrome, a 12-14 week scan can give you other important information about your pregnancy such as whether you are having twins. Your GP, midwife or obstetrician can refer you for this test and it is available through local private and public providers and has a medicare rebate.

b. Second Trimester Blood Test / Triple Test

This is a specific blood test that can be done between 15 and 20 weeks of pregnancy. This test can be helpful if you were not able to have the 12 week ultrasound. It provides you information about whether you have a high risk of Down Syndrome as well as some other conditions such as spina bifida.

c. Non Invasive Prenatal Testing

This is a blood test that identifies baby DNA in your blood stream and can test for Down Syndrome in your pregnancy. If you have a positive test, it is 98% likely that baby has Down Syndrome. A negative test means that baby has only a 1 in 10000 chance of having Down Syndrome. This test cannot find physical or genetic problems like spina bifida or cystic fibrosis so it is not a replacement for ultrasound or diagnostic tests, but it can be helpful if you are worried about Down Syndrome but don't want to have a diagnostic test. This test is also not valid for all pregnancies e.g. triplets, twin pregnancies where one twin has passed away.

It is important to ask your doctor if this test is a good screening test for you. This test is available from private blood test labs and in some public hospitals in special cases. There is no medicare rebate at the moment.

What about my 20 week scan?

This is an ultrasound scan usually performed between 18 and 20 weeks of pregnancy. During the scan your baby is carefully checked to see how it is growing and how the parts of baby are forming properly.

This scan is a good screening test for congenital problems like spina bifida, but is not very good at screening for Down Syndrome.

What if my screening test is not low risk?

If your screening test is high risk it means the chance of your baby having Down syndrome or another problem is increased. To find out if your baby has Down syndrome or a physical problem, you would need to have a scan with a specialist and you may need a diagnostic test.

Diagnostic tests

Diagnostic tests (also known as "invasive" tests) diagnose chromosome problems like Down syndrome.

You may be offered a diagnostic test if:

1. A relative or family member has a history of chromosome or genetic problems.
2. You had a previous baby with Down syndrome or other chromosomal problems.
3. You or your doctor considers your age is a risk.
4. You have a screening test that shows a high chance of your baby having a problem.

There are two diagnostic tests. In both tests a needle is put into your uterus. Ultrasound is used to guide the needle. These tests involve a small risk of complications such as miscarriage.

1. Chorionic Villus Sampling (CVS)

A CVS is performed between 11 - 14 weeks of pregnancy. The needle is guided into the placenta and a small sample is taken for testing.

2. Amniocentesis

An amniocentesis is performed from 16 weeks of pregnancy. The needle is guided into the sac around the baby and fluid is taken for testing.

Results

The test looks at all your baby's chromosomes and the result is usually ready in 2 - 3 weeks. A "quick" result that just looks for Down Syndrome and Edward and Patau Syndrome is usually also offered and this is ready in 1-2 days.

If these results are normal you can be reassured that almost all chromosomal problems have been ruled out.

Diagnostic tests cannot rule out all chromosomal or genetic problems or syndromes.

Your GP or specialist will talk to you about your screening or diagnostic test results and help you to understand your choices and options, or refer you for more information.

Key points to remember

- Every woman should think about having the first trimester combined test – this is the recommended screening test for Down Syndrome. Other valuable information can also be gained from this test.
- If you cannot get the first trimester combined test, you should ask about the second trimester triple test.
- Screening and diagnostic tests cannot find all problems – every test has its limits.
- Speak to your GP, obstetrician, midwife or Genetic Health Queensland for more information.

(Information valid to 2016)

Queensland Government

Department of Health

Screening for Down Syndrome in Pregnancy

Did you know that .....

Most pregnant women can expect to have a healthy pregnancy and baby.

However, not every pregnancy is trouble free.

Great state. Great opportunity.

Queensland Government

Download from:
http://www.health.qld.gov.au/qcg/documents/o_downscreen.pdf

Screening summary

- *Inform and offer* screening tests for chromosomal abnormality to **ALL** pregnant women
- NIPT has best detection rate for trisomy 21
  - No Medicare rebate
- cFTS – reliable detection rate and offers additional morphological findings
  - Medicare rebate available

Post screening appointment

- Explain risk results using different methods e.g. 1 in 100 = 1% percent
- Offer diagnostic testing by CVS or amniocentesis **where appropriate**
- Provide referral to Maternal Fetal Medicine for CVS or amniocentesis or additional counselling
- Provide written information

Chorionic Villus Sampling (CVS) (from 11 weeks)

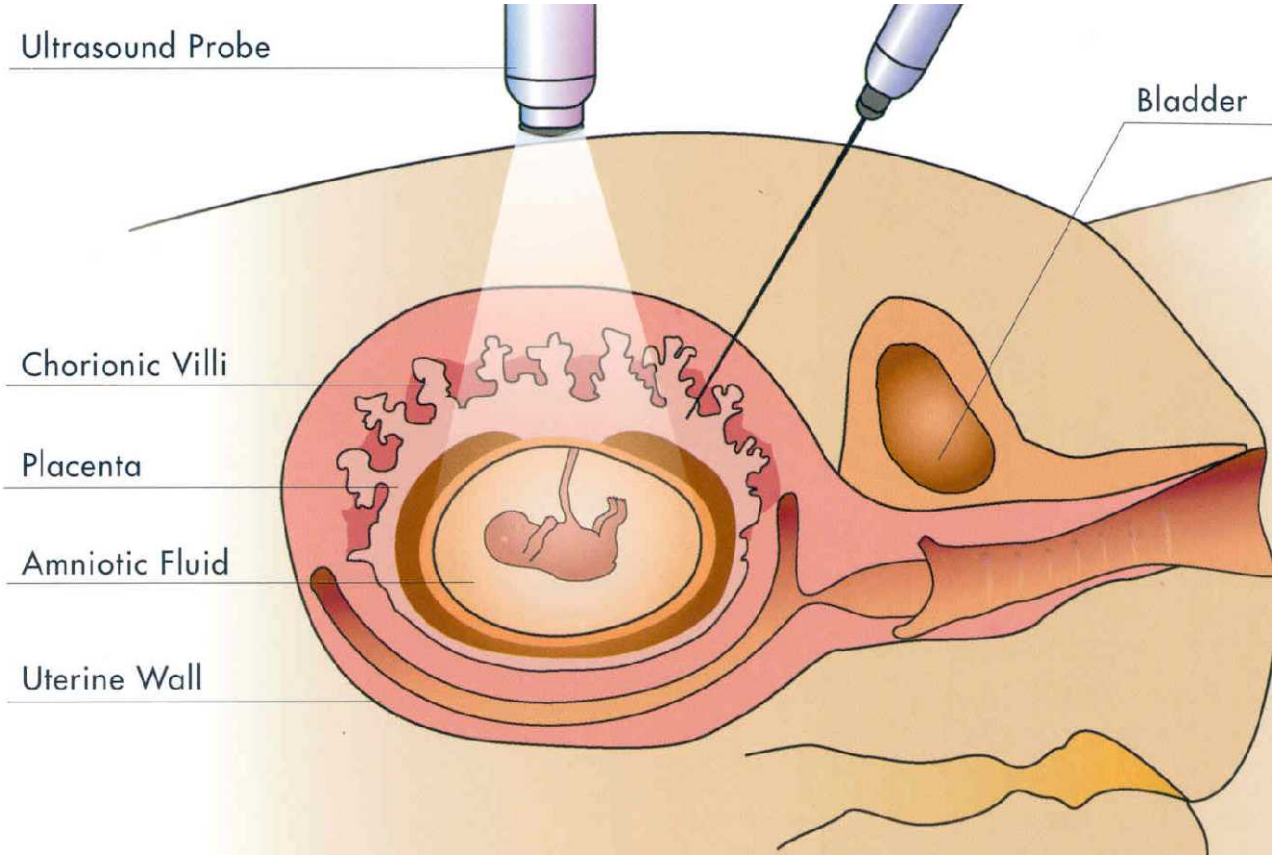


Image source: Google images

Amniocentesis (from 16 weeks)

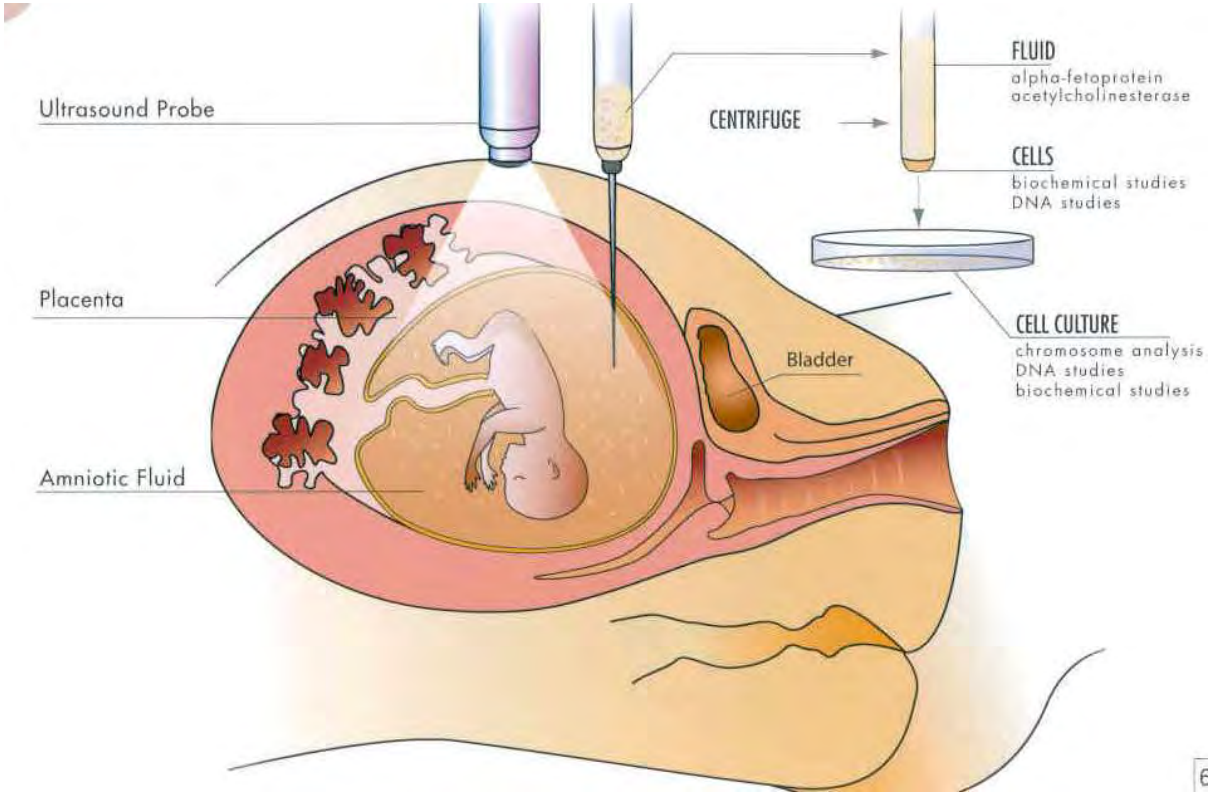


Image source: Google images

Pregnancy loss rate of 0.5-1% for both transabdominal CVS and amniocentesis

Benefits vs. Risks of testing

- Invasive testing – only method of diagnosis in pregnancy
- Some parents will choose to terminate for fetal abnormality
  - *In 2007-08 50.4% of pregnancies affected by Down Syndrome were terminated prior to 20 weeks gestation in Queensland (Howell, 2009)*
- Preparation for birth is a valid reason for testing
- Monitoring
  - T21 has 30% risk of fetal demise between 12 – 40 weeks
  - Fetal echocardiography (50% T21 have cardiac anomaly)

What is PAPP-A?

- Pregnancy associated plasma protein - A
- Measured in IU/L, which is what is shown on blood test results
- In the first trimester screen, the result is in **MoM** (multiple of the median) as the value changes with gestation

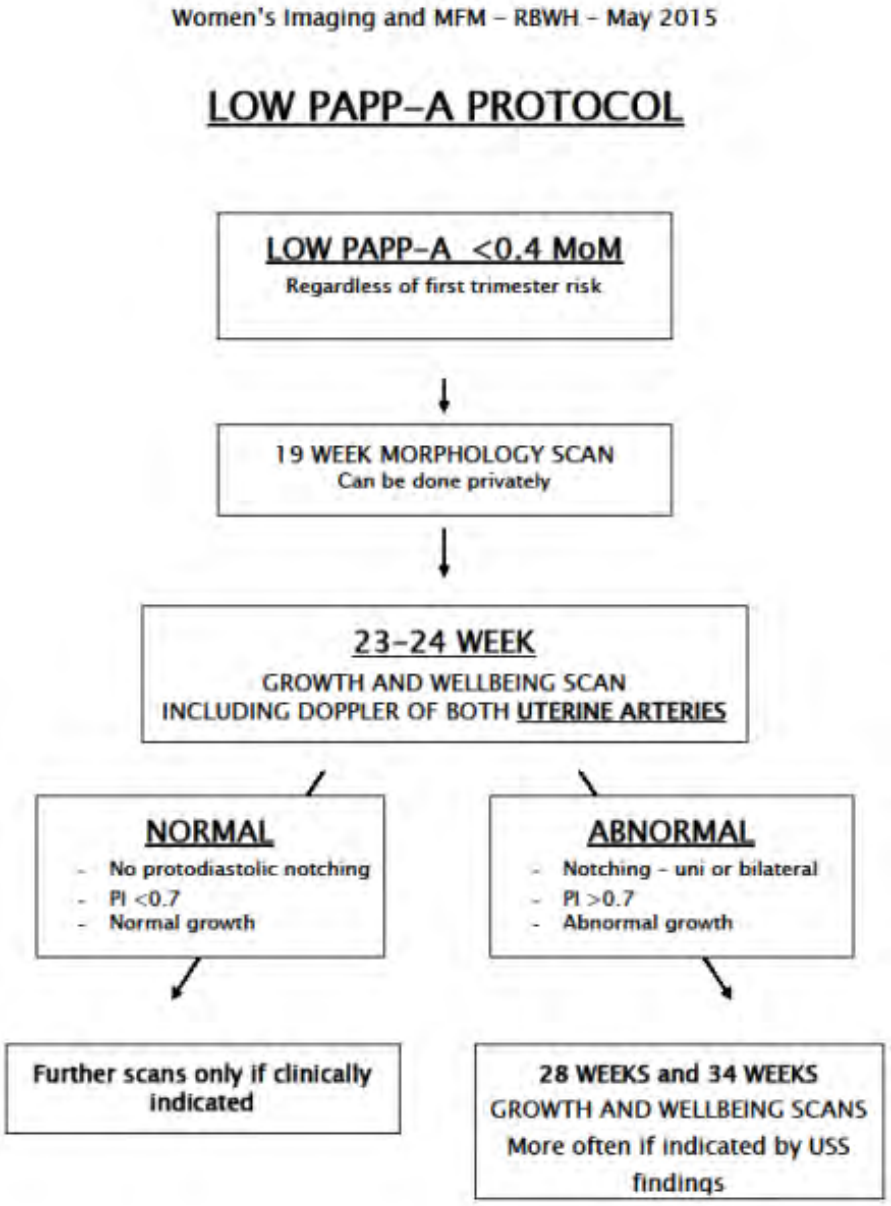
Role of PAPP-A

- Produced by the placenta
- Multiple roles including in angiogenesis
- A low PAPP-A represents a poor placentation which may result in adverse pregnancy outcomes

Adverse pregnancy outcomes

- Association with
  - IUGR (2x <0.4, 5x <0.3)
  - PET
  - Premature delivery
  - IUFD
- With PAPP-A <0.20MoM and abnormal uterine artery dopplers; there is >65% risk of poor outcome

Low PAPP–A protocol



Low PAPP-A

- Cut-off for intervention varies depending on centres
- 0.37 is the 5% and 0.20 is 1% in SA
- 0.40 is the 5% in FASTER trial

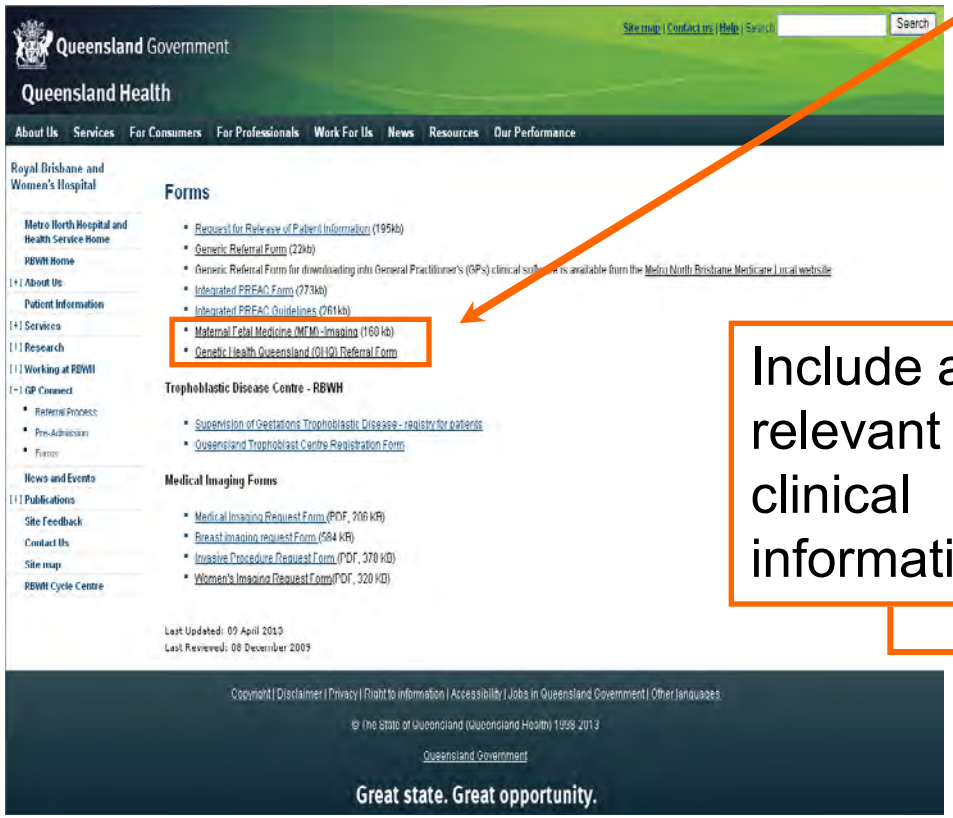
- A low PAPP-A is more frequent in IVF pregnancies

Why an ultrasound at 23-24 weeks?

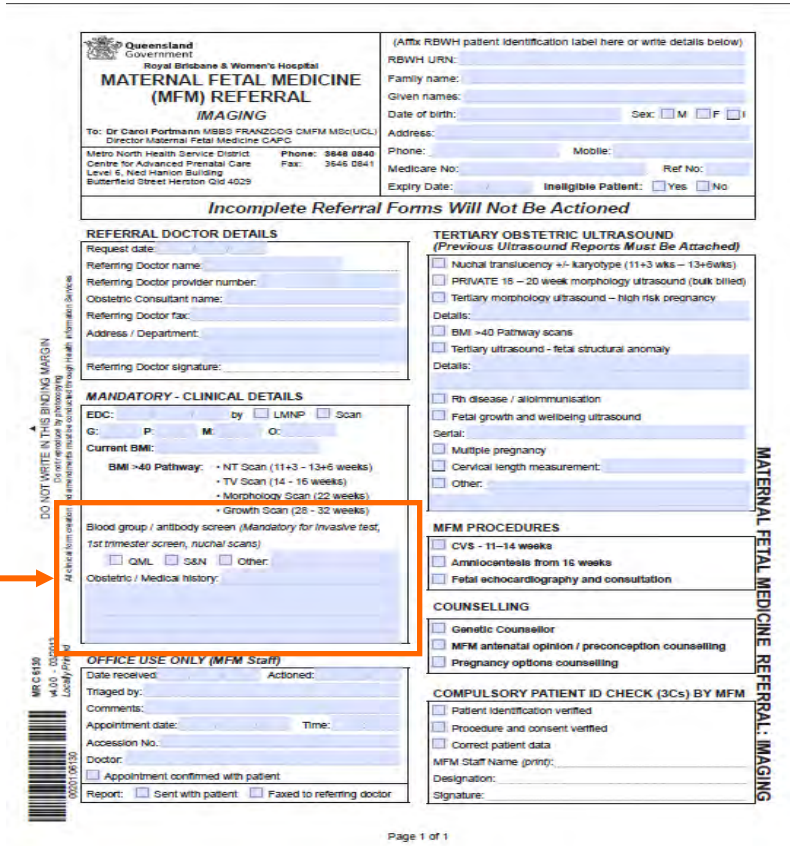
- 14% of patients with low PAPP-A have an adverse outcome
- Improves the PPV of the screening

Referral

- RBWH Maternal Fetal Medicine
- Genetic Health Queensland



Include all relevant clinical information



http://www.health.qld.gov.au/rbwh/gpconnect/forms.asp

We are here

Time	Task	Presenter
11 am	Diabetes in pregnancy	Dr Amanda Love
11.30 am	Pharmacy	Karen Whitfield
11.40 am	Case work 2: Complex	All
12.40 pm	Antenatal testing for chromosomal abnormality	Pauline McGrath
1.10 pm	Lunch (30 minutes)	All

Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday, 7 October 2017

Skills Development Centre, Royal Brisbane and Women's Hospital

Skills Stations

1. Growth Charts
2. Weight Gain Charts
3. Antenatal testing
4. Abdominal examination

This is a joint initiative between Metro North Hospital and Health Service and Brisbane North PHN

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An Australian Government Initiative

Queensland Government