Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday 22nd October 2022

Hypertension and Pre-eclampsia

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Royal Brisbane and Women's Hospital

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

Hypertension and pre-eclampsia in pregnancy

- Case
- Definitions / classifications
- Investigations
- Management - antepartum and postpartum
- Pre-eclampsia risk reduction

Case Mrs KW

- 36 yo G1P0 at 35+5 weeks presents with new onset headaches
- Blood pressure 155/90mmHg
- Background
  - IVF pregnancy
  - Diet controlled GDM diagnosed at 28/40
  - No other significant medical problems
  - Medications: prenatal vitamins

Further History

- Headaches – across forehead - occurring persistently over the past 3 days
- No visual changes
- Increasing leg swelling over the past week – present all day, doesn't settle with resting. Has had to take off rings due to hand swelling
- No epigastric or right upper quadrant pain
- No contractions
- Feeling normal fetal movements

Examination

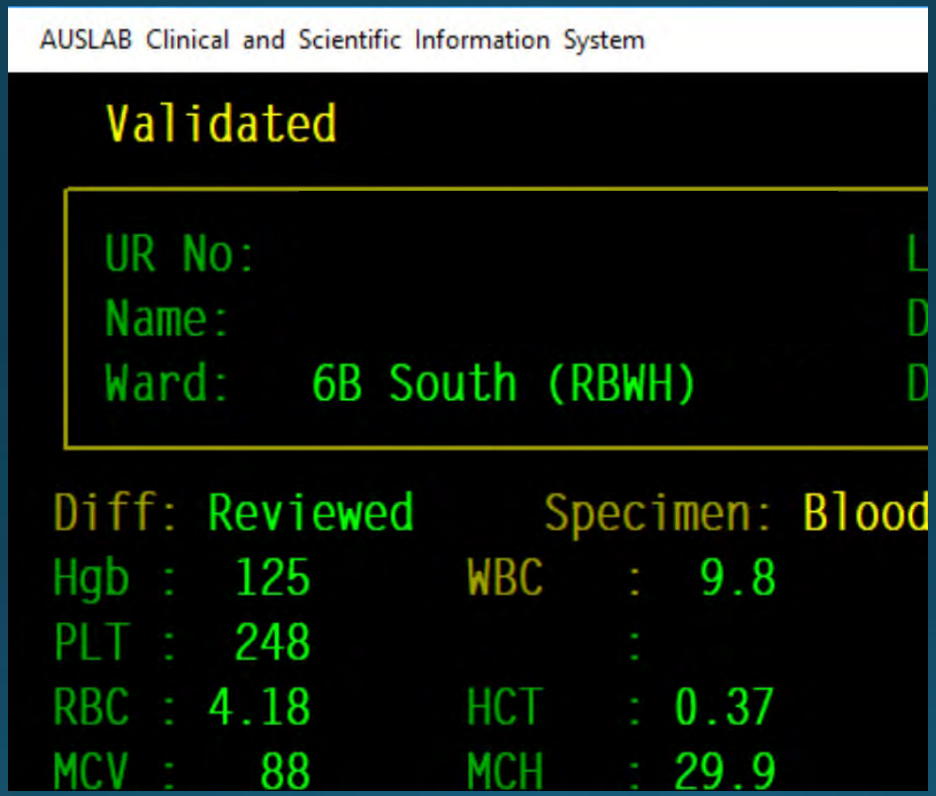
- BP 155/90 both arms large cuff (arm circumference 40cm); PR-80, regular; SpO2-99% RA; afebrile
- Cardiovascular: heart sounds dual with no murmurs; JVP not elevated; chest clear
- Abdomen soft; no epigastric and no right upper quadrant tenderness
- Bilateral lower limb oedema to knees
- Reflexes brisk bilaterally with 3 beats of clonus

Disposition

- Send to obstetric review centre

URINE PROTEIN STUDIES

Urine type	Random				
	Concentration			Creatinine Ratio	
Creatinine	17.2	mmol/L			
Protein	4000 H	mg/L	(< 100)	230 H	g/mol creat (< 15)


AUSLAB Clinical and Scientific Information System
Validated
UR No:
Name:
Ward: 6B South (RBWH)
Diff: Reviewed
Specimen: Blood
Hgb : 125
WBC : 9.8
PLT : 248
RBC : 4.18
HCT : 0.37
MCV : 88
MCH : 29.9

Specimen type		Blood		Urate	0.47	H	mmol/L	(0.10 - 0.30)	Phosphate	2.19	H mmol/L (0.75 - 1.5
Sample Appearance		Clear		Protein	50	L	g/L	(61 - 75)	Magnesium	2.31	H mmol/L (0.70 - 1.1
Sodium	135	mmol/L	(135 - 145)	Albumin	28	L	g/L	(35 - 50)	OSM(Calc)	287	mmol/L (275 - 295)
Potassium	5.2	mmol/L	(3.5 - 5.2)	Globulin	22	L	g/L	(25 - 45)			
Chloride	106	mmol/L	(95 - 110)	Bilirubin	26	H	umol/L	(< 20)			
Bicarb.	18	mmol/L	(18 - 26)	Bili(Conj)	< 4		umol/L	(< 4)			
Anion Gap	11	mmol/L	(4 - 13)	ALP	81		U/L	(20 - 120)			
Glucose	5.0	mmol/L	(3.0 - 7.8)	Gamma GT	10		U/L	(< 38)			
Fasting RR	-->		(3.0 - 6.0)	ALT	32		U/L	(< 34)			
Urea	6.4	mmol/L	(2.1 - 7.1)	AST	30		U/L	(< 31)			
Creatinine	92	H umol/L	(32 - 73)	LD	210		U/L	(120 - 250)			
Urea/Creat.	70		(40 - 100)	Calcium	2.07	L	mmol/L	(2.10 - 2.60)			
eGFR	71	mL/min/1.73m^2	(> 60)	Corr Ca	2.31		mmol/L	(2.10 - 2.60)			

Comment: Age:33 years I H L KC

CHEM 20 PROFILE

Press Shift F1 for more information on Osmolality calculation

Diagnosis = Pre-eclampsia (PET)

- Features:
  - Hypertension
  - Proteinuria
  - Headaches + hyperreflexia
  - Oedema
  - Acute kidney injury

Hypertension

- Definition
  - Systolic blood pressure ≥ 140mmHg
  - Diastolic blood pressure ≥ 90mmHg
  - Severe: Systolic ≥ 170mmHg +/- diastolic ≥ 110mmHg (increased maternal morbidity and mortality)
- Blood pressure recording
  - Woman should be seated with legs resting on the floor
  - Arm resting at the level of her heart
  - Accurate size cuff

Classification

- Preeclampsia
- Gestational hypertension
- Chronic hypertension
  - Essential
  - Secondary
  - White coat

Pre-eclampsia

Hypertension after K20 with one or more of the following:

Renal	• Random urine protein to creatinine ratio greater than or equal to 30 mg/mmol[14] from an uncontaminated specimen (proteinuria) • Serum or plasma creatinine greater than or equal to 90 micromol/L[14] ***or*** • Oliguria (less than 80 mL/4hours or 500 mL/24 hours)
Haematological	• Thrombocytopenia[14] (platelets under 150 x 10^9/L) • Haemolysis[8] (schistocytes or red cell fragments on blood film, raised bilirubin, raised lactate dehydrogenase (LDH), decreased haptoglobin) • Disseminated intravascular coagulation (DIC)[8]
Liver	• New onset of raised transaminases[14] (over 40 IU/L) with or without epigastric or right upper quadrant pain[8,15]
Neurological	• Headache[8] • Persistent visual disturbances (photopsia, scotomata, cortical blindness, retinal vasospasm) • Hyperreflexia with sustained clonus • Convulsions (eclampsia) • Stroke
Pulmonary	• Pulmonary oedema[14]
Uteroplacental	• Fetal growth restriction (FGR)[8] • Suspected fetal compromise[14] • Abnormal umbilical artery Doppler wave form analysis • Stillbirth

Qld Clinical Guidelines: Hypertension and pregnancy

Gestational Hypertension

- New onset hypertension K20 without any maternal or fetal features of pre-eclampsia
- Return of BP to normal within 3 months post-partum

Chronic Hypertension

- **Essential Hypertension**
  - BP ≥ 140/90 confirmed before pregnancy or before K20 without a known cause
- **Secondary Hypertension**
  - chronic kidney disease
  - Renal artery stenosis
  - systemic disease with renal involvement
  - endocrine causes - primary hyperaldosteronism, phaeochromocytoma, Cushing's disease
  - coarctation of the aorta
- **Pre-eclampsia superimposed on chronic hypertension**
  - pre-existing hypertension is a strong risk factor for pre-eclampsia
  - occurs when a woman with chronic hypertension develops one or more of the systemic features of preeclampsia after20 weeks gestation

Investigations

For all women presenting with new onset hypertension after K20:

- spot urine PCR
- full blood count
- creatinine, electrolyte, urate
- liver function tests
- ultrasound assessment of fetal growth, amniotic fluid volume, umbilical artery doppler

Model of care

- **Outpatient care:**
  - mild-moderate hypertension without evidence of pre-eclampsia
  - resides close to maternity facility
  - capacity to understand risk and monitor own BP
- **Combined obstetric and physician outpatient management:**
  - previous pregnancy complicated by PET
  - known chronic hypertension requiring drug therapy
  - known renal disease
  - other medical conditions
- **Day assessment unit / inpatient care**
  - BP > 140/90mmHg and signs/symptoms of PET present
  - Response to treatment and biochemical/sonographic markers of PET will guide subsequent management

Hypertension Management

- Anti-hypertensive therapy should be considered when BP >140/90mmHg
- BP targets
  - 110-140 / 85mmHg (Qld Clinical Guidelines)
- Drugs – initial doses
  - Methyldopa 125-250mg bd
  - Labetalol 100mg bd
  - Nifedipine SR 20-30mg daily
  - Hydralazine 25mg bd
  - Prazosin 0.5mg bd

Table 16. Oral antihypertensive drug therapy

Drug	Initial dose	Maintenance Dose	Maximum daily dose
Methyldopa[57]	125–250 mg BD	250–500 mg 2–4 times daily	Maximum/day 2 g
Labetalol[58]	100 mg BD	200–400 mg 2–4 times daily	Maximum daily dose: 2.4 g
Hydralazine[59,60]	25 mg BD	25–100 mg BD	Maximum daily dose: 200 mg
Nifedipine (SR)[61,62]	20–30 mg daily	60–120 mg daily	Maximum daily dose: 120 mg
#Nifedipine (IR)[61,63]	10–20 mg BD	20–40 mg BD	Maximum daily dose: 80 mg
Prazosin[64]	0.5 mg BD	1 mg TDS	Maximum daily dose: 20 mg
Clonidine[65,66]	50–100 microgram BD	150–300 microgram BD	Maximum daily dose: 600 microgram

#Special Access Scheme (SAS) authority required. Note: Nifedipine formulations available with SAS authority

Old Clinical Guidelines: Hypertension & pregnancy

Pre-eclampsia management

Delivery is the definitive management for PET

Timing depends on severity of maternal disease and gestation

Indications for delivery in pre-eclampsia	
Maternal indications	**Fetal indications**
Gestational age ≥ 37 weeks	Placental abruption
Inability to control hypertension	Severe FGR
Eclampsia	Lack of interval growth
Deteriorating platelet count	Non-reassuring fetal status
Intravascular haemolysis	
Deteriorating liver function	
Deteriorating renal function	
Persistent neurological symptoms	
Persistent epigastric pain, nausea or vomiting with abnormal LFTs	
Pulmonary oedema	

Other management considerations

- VTE prophylaxis
  - Pre-eclampsia is a major risk factor for VTE
- Antenatal corticosteroid administration
  - women expected to deliver preterm
- Fetal surveillance
  - Adverse perinatal outcome is increased in women with all subcategories of hypertensive disease

Prevention of Eclampsia

In women with pre-eclampsia

- Indications may include presence of signs and symptoms such as persistent headache, hyper-reflexia with clonus, severe hypertension
- Magnesium sulphate is the drug of choice
  - 4g loading dose followed by 1g/hr

Eclampsia management

- **Resuscitation**
  - seizures usually self-limiting
  - ensure patent airway, oxygen by mask, IV access
  - whilst magnesium sulphate is being prepared, may give IV diazepam (2mg/min to max 10mg) or clonazepam (1-2mg over 2-5 mins) if seizures prolonged
- **Prevention of further seizures**
  - treatment with magnesium sulphate as a 4g loading dose (diluted in normal saline) over 15-20 mins followed by infusion of 1-2g /hr continued for 24 hours after last fit
  - magnesium sulphate is excreted by the kidneys and should be used in extreme caution in women with oliguria and renal impairment
- **Control of hypertension**
- **Delivery when stable**

Resolution of pre-eclampsia and gestational hypertension

- D1-D2 post delivery, LFT elevations and thrombocytopenia may worsen before they improve
- D3-D5 post-delivery fluid shifts - BP can worsen
- all clinical and laboratory derangements will recover - can take several days
- hypertension can persist for up to 3 months

Postpartum management

- Avoid NSAIDs - may adversely affect hypertension, renal function and platelet function
- Postpartum agents (if breastfeeding)
  - Captopril/Enalapril
  - Labetalol/Metoprolol
  - Nifedipine XR
  - Prazosin
- Target BP <150/90mmHg
- Preconception counselling, contraception
- Long-term blood pressure monitoring and CV risk management

Postpartum management

After pre-eclampsia, relative risk of[49-51]:	Relative risk [95% CI]
• End stage renal disease	4.70 [3.60 to 6.10]
• Heart failure	4.19 [2.09 to 8.38]
• Cerebrovascular disease/stroke	2.50 [1.43 to 3.47]
• Chronic hypertension	2.20 [2.10 to 2.30]
• Deep vein thrombosis	2.10 [1.80 to 2.40]
• Type II diabetes	1.80 [1.60 to 1.90]
• Hypercholesterolaemia	1.30 [1.30 to 1.40]

Qld clinical guidelines: Hypertension & pregnancy

Example discharge blood pressure plan

Your current medications are:

- Labetalol 400mg three times/day 0600, 1400, 2200
- Enalapril 10mg twice a day 0800- 2000
- Nifedipine SR 30mg 0800

1. Check blood pressures at home daily – random times
2. Safe blood pressure is less than 150 systolic (upper reading) on 95 diastolic (lower reading) i.e. 150/95mmHg
3. If blood pressure is more than or equal to 150/95mmHg or experiencing the symptoms below, please seek medical review:
   - severe headache not relieved by paracetamol
   - worsening swelling
   - visual disturbances (Stars/flickers of light/loss of vision)
4. If feeling light headed or giddy:
   - Check blood pressure
   - If blood pressure (BP) is less than 110 systolic (upper BP reading) then withhold next dose of labetalol and see your GP or Obstetric Review Centre

Weaning Regimen:

1. If BP continues to be in normal range <120/80mmHg consistently, commence gradual tapering regimen - Firstly stop Nifedipine
2. If BP continues to be in normal range <120/80mmHg consistently, Half labetalol to 200mg three times daily
3. If BP continues to be in normal range <120/80mmHg consistently, Stop lunch time labetalol - so take to 200mg twice a day
4. If BP continues to be in normal range <120/80mmHg consistently, Reduce labetalol to 100mg twice a day
5. If still consistently <120/80mmHg after 24 hours – stop all labetalol
6. If still consistently <120/80mmHg after 24 hours – take enalapril in the morning only
7. If still consistently <120/80mmHg after 24 hours – STOP enalapril - you should no longer be on any meds
8. Once off medications – ensure you check BP to 24 hours to ensure <140/90mmHg
9. If at any stage your blood pressure returns >140/90mmHg – recommence prior medication from step above and see your GP

Predicting pre-eclampsia

- Maternal risk factors
- Mean arterial pressure
- First trimester risk screening (not routinely recommended by Qld Clinical Guidelines)
- Second & third trimester screening

Table 7. Clinical risk factors for pre-eclampsia

Risk factor	Relative risk [95% CI]
Previous history of pre-eclampsia[20]	8.40 [7.10 to 9.90]
*Adolescent pregnancy (10–19 years)[21]	6.70 [5.80 to 7.60]
Systemic lupus erythematosus[22]	5.50 [4.50 to 6.80]
Chronic hypertension[20]	5.10 [4.00 to 6.50]
Assisted reproductive technology (donor oocytes)[20]	4.34 [3.10 to 6.06]
Pre-existing diabetes[20]	3.70 [3.10 to 4.30]
Family history of pre-eclampsia[23]	2.90 [1.70 to 4.93]
Twin pregnancy (increased risk with multiples)[24]	2.93 [2.04 to 4.21]
Body mass index (BMI) before pregnancy (> 30 kg/m^2)[20]	2.80 [2.60 to 3.60]
Antiphospholipid syndrome[20]	2.80 [1.80 to 4.30]
Nulliparity[20]	2.10 [1.90 to 2.40]
Pre-existing kidney disease[20]	1.80 [1.50 to 2.10]
Assisted reproductive technology (donor sperm)[20]	1.63 [1.36 to 1.95]
Maternal congenital heart defects[25]	1.50 [1.30 to 1.70]
Maternal anxiety or depression[26]	1.27 [1.07 to 1.50]
Inter-pregnancy interval greater than 10 years[20]	1.10 [1.02 to 1.19]
Gestational trophoblastic disease[27]	Unavailable
Fetal triploidy[28]	Unavailable
Fetal aneuploidy[2]	Unavailable

*Limited data (primarily from low resourced countries) may suggest higher incidence in adolescent pregnancies

Qld Clinical Guidelines: Hypertension & pregnancy

First trimester risk screening

- Placental growth factor
- Uterine artery pulsatility index (UTPI)
- Pregnancy associated plasma protein A (PAPP-A)

Table 9. Detection rates for preterm pre-eclampsia by screening method

Baseline method	Detection rate (%)	Add to baseline method	Final detection rate (%)	Additional cases detected (%) 95% CI
MF alone	41.55	+ MAP	49.30	7.75 (1.60 to 14.60)
		+ UTPI	61.97	20.42 (12.9 to 28.5)
		+ PIGF	59.15	17.61 (10.1 to 25.7)
		+ PAPP-A*	45.07	3.52 (-1.70 to 9.20)
MF + MAP	49.30	+ PIGF	68.31	19.01 (11.7 to 27.0)
		+ UTPI	73.94	24.65 (16.7 to 33.0)
MF + MAP + UTPI	73.94	+ PLGF	81.69	7.75 (2.30 to 14.10)
MF + MAP + PIGF	68.31	+ UTPI	81.69	13.38 (8.00 to 20.2)
MF + UTPI + PIGF	70.42	+ MAP	81.69	11.27 (5.30 to 18.2)

MAP: mean arterial pressure, MF: maternal factors, PAPP-A: pregnancy-associated plasma protein-A, PIGF: placental growth factor, UTPI: uterine artery pulsatility index, values in parentheses are 95% confidence interval (CI)
#Preterm pre-eclampsia defined as detection at less than 37 weeks gestation
*Note: results not significant for increase in detection rates

Qld Clinical Guidelines: Hypertension & pregnancy

Second and third trimester screening

- In second and third trimester, **sFlt-1/PlGF** ratio can aid prediction of short-term likelihood and timing of onset of pre-eclampsia in high-risk women
- Up to five weeks before the onset of clinical symptoms of pre-eclampsia, serum concentrations of soluble fms-like tyrosine kinase 1 (sFlt-1) are increased and PlGF concentrations are decreased resulting in an increased sFlt-1/PlGF ratio
- Where available and practicable , consider after K20 in high-risk women with symptoms and signs suspicious for, but not diagnostic of pre-eclampsia (including those that may mimic pre-eclampsia, such as SLE)

Pre-eclampsia risk reduction

- Aspirin
  - reduced risk of pre-eclampsia in high-risk women
  - 100 - 150mg daily, preferably at night
  - ideally before K16
  - consider discontinuing at K36

- Calcium
  - may reduce risk of pre-eclampsia in high-risk women where there is insufficient calcium intake
  - recommend 1.2-2.5g/day

Who should receive aspirin for PET risk reduction?

- Women with a single “high risk” clinical risk factor
- Women with 2+ “moderate risk” clinical risk factors

Table 1. Clinical Risk Assessment for Preeclampsia*

Risk Level	Risk Factors	Recommendation
High†	• History of preeclampsia, especially when accompanied by an adverse outcome • Multifetal gestation • Chronic hypertension • Type 1 or 2 diabetes • Renal disease • Autoimmune disease (systemic lupus erythematosus, antiphospholipid syndrome)	Recommend low-dose aspirin if the patient has one or more of these high-risk factors
Moderate‡	• Nulliparity • Obesity (body mass index greater than 30) • Family history of preeclampsia (mother or sister) • Sociodemographic characteristics (African American race, low socioeconomic status) • Age 35 years or older • Personal history factors (eg, low birthweight or small for gestational age, previous adverse pregnancy outcome, more than 10-year pregnancy interval)	Consider low-dose aspirin if the patient has more than one of these moderate-risk factors§
Low	• Previous uncomplicated full-term delivery	Do not recommend low-dose aspirin

*Includes only risk factors that can be obtained from the patient's medical history. Clinical measures, such as uterine artery Doppler ultrasonography, are not included.

†Single risk factors that are consistently associated with the greatest risk of preeclampsia. The preeclampsia incidence rate would be approximately 8% or more in a pregnant woman with one or more of these risk factors.

‡A combination of multiple moderate-risk factors may be used by clinicians to identify women at high risk of preeclampsia. These risk factors are independently associated with moderate risk of preeclampsia, some more consistently than others.

§Moderate-risk factors vary in their association with increased risk of preeclampsia.

Modified from LeFevre, ML. U.S. Preventive Services Task Force. Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med 2014;161:819–26.

ACOG committee – low-dose aspirin use during pregnancy

Pre-eclampsia risk reduction with aspirin

Table 11. Effects of antiplatelet agents on risk of preeclampsia: summarised in Reference (242)

Population	RR [95%CI] for preeclampsia	NNT [CI]
Primary prevention	0.90 [0.84-0.97]	
Low risk women	0.93 [0.81–1.08]	
All at risk	0.83 [0.77-0.89]	72 [52,119}
High risk women	0.75 [0.66-0.85]	19 [13,34]
Recurrent preeclampsia	0.86 [0.77-0.97]	
Aspirin dose >75 mg/day	0.64 [0.51-0.80]	

SOMANZ Guidelines – Guidelines for the Management of Hypertensive Disorders in Pregnancy

References

Qld Clinical Guidelines: Hypertension & Pregnancy

SOMANZ Guidelines - Guideline for the Management of Hypertensive Disorders in Pregnancy

NICE Guidance: Hypertension in Pregnancy: Diagnosis and Management

ACOG: Preeclampsia and Hypertension in Pregnancy

Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday 22nd October 2022

Pre-term Birth Prevention, optimising timing of birth, still birth prevention

Dr Christoph Lehner

Maternal Fetal Medicine Subspecialist Obstetrician

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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An Australian Government Initiative

Queensland Government

Preterm birth: **what you need to know**

Up to **10%** of births in Australia are preterm.

This figure is significantly higher in developing countries.

The rate of preterm birth for Aboriginal mothers is almost **DOUBLE** that of non-Aboriginal mothers.

The annual cost of preterm birth to Australia is **$1.4 billion**

More than $350 million is spent each year on those needing education assistance due to their early birth.

Preterm birth is the **leading cause of death and disability** in children up to five years of age in the developed world.

Worldwide **15 million babies** are born preterm each year.

More than **26,000** Australian babies are born preterm each year.

In 2015, preterm birth was responsible for nearly **1 million deaths worldwide** – World Health Organization.

Preterm birth

is defined as birth before 37 and after 20 completed weeks of pregnancy.

Risk Factors for Preterm Birth

2 Risk assessment

The cause of spontaneous preterm labour remains unidentified in up to half of all cases.[13] Although many factors have been associated with an increased risk of spontaneous PTB[3], there is a relative paucity of high level research.[13,14] The majority of women with traditional risk factors will not experience PTB and of those women who do, many have no identifiable risk factors. Whether or not some risk factors are markers for other conditions and/or other risk factors is unknown.

Table 2. Risk factors associated with preterm birth

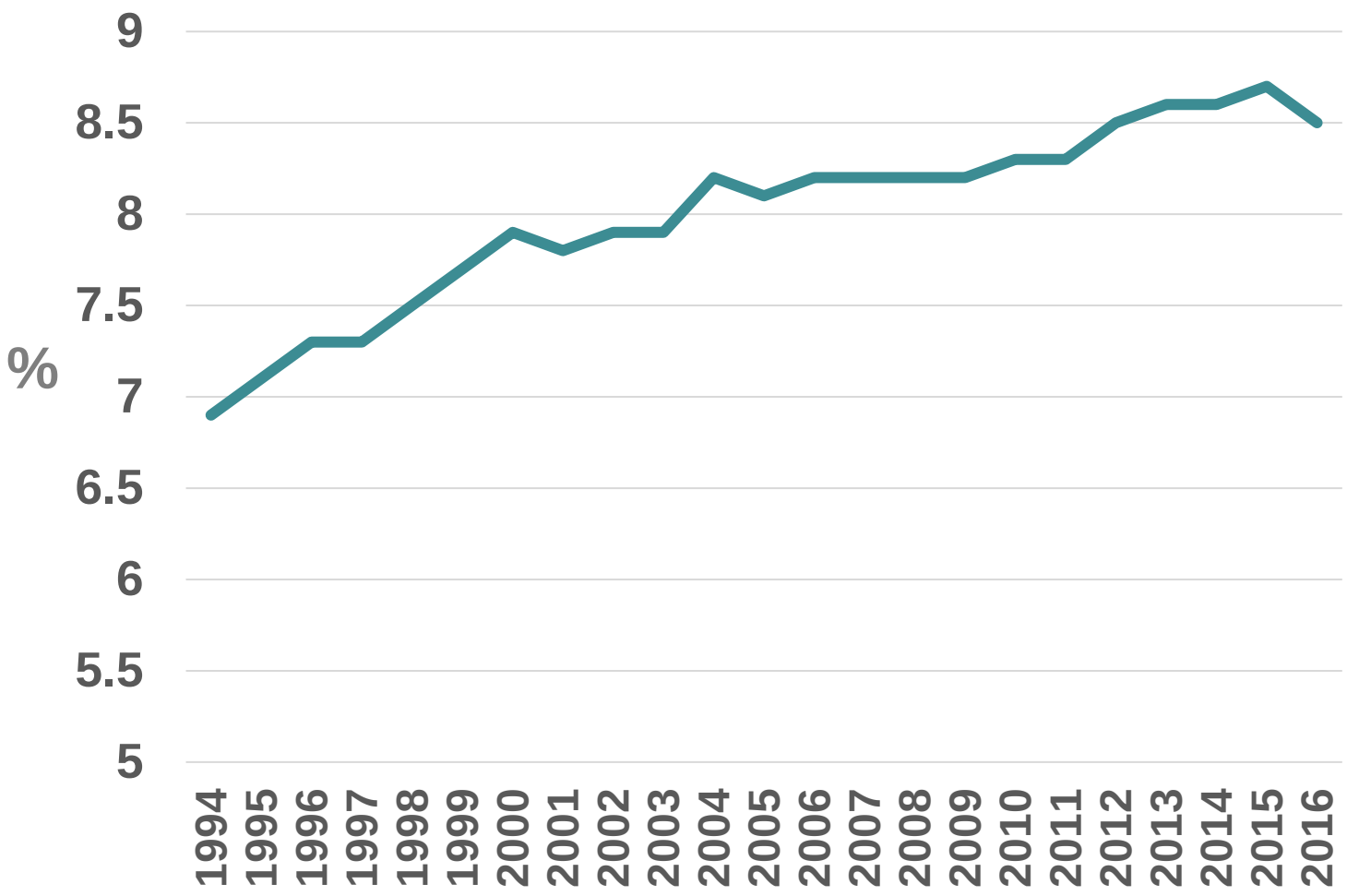
Aspect	Consideration

Maternal characteristics	• Age of woman[3,5]:
	  ○ Younger than 20 years
	  ○ Older than 40 years
	• Women who smoke during pregnancy[5]:
	  ○ 13.6% babies are born preterm compared to 8.1% of babies whose mothers did not smoke
	• Women residing in rural and remote areas[5]:
	  ○ 13.5% babies are born preterm compared to 8.4% in major cities
	• Women who identify as Aboriginal and/or Torres Strait Islander[5]:
	  ○ 14.2% babies are born preterm compared to 8.5% of babies born to non-Indigenous women
	• Late or no antenatal care
	• Lack of continuity of care
	• Low socio-economic status
	• High or low body mass index (BMI)

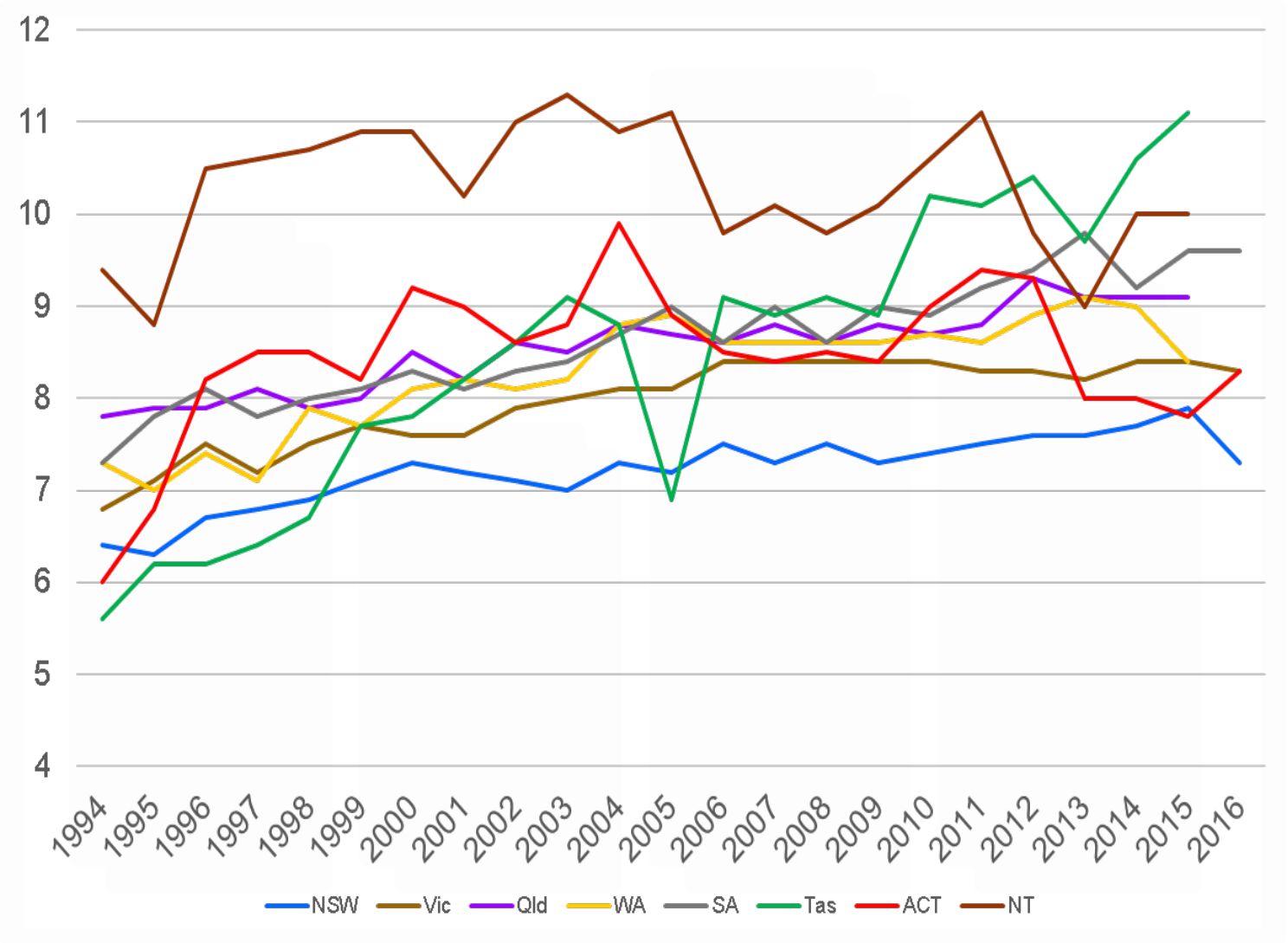
Medical and pregnancy conditions	• Multiple birth[5]:
	  ○ 66% of twins
	  ○ 98.2% of all other multiples (triplets and higher order)
	• Presence of fetal fibronectin (fFN) in the vaginal secretions
	• Short cervical length[15]:
	  ○ Previous PTB recurrence risk related to gestational age of prior PTB[16]
	  ○ Approximately 30% of women who give birth prematurely in a prior pregnancy will give birth before 37 weeks in a subsequent pregnancy[6]
	  ▪ Extremely preterm: 0.5%, AOR 2.0, (95% CI 1.6 to 2.3)[16]
	  ▪ Very preterm: 6.8%, AOR 3.0, (95% CI 2.9 to 3.2)[16]
	  ▪ Moderately preterm: 37.7%, AOR 2.2, (95% CI 2.2 to 2.3)[16]
	• Genital tract infections[1]:
	  ○ Bacterial vaginosis[17] risk of PTB doubled
	• Urinary tract infections[18]
	• Vaginal bleeding[18]
	• Assisted reproduction[18] associated with two-fold risk of PTB
	• Preterm prelabour rupture of membranes (PPROM)
	• Surgical procedures involving the cervix[19]
	• Uterine anomalies[18]
	• Polyhydramnios/oligohydramnios
	• Chronic medical conditions
	• Acute medical conditions (e.g. preeclampsia, antepartum haemorrhage)

Maternity and Neonatal Clinical Guidelines | Queensland Clinical Guidelines | Queensland Health

Australian preterm birth rates 1994 to 2016

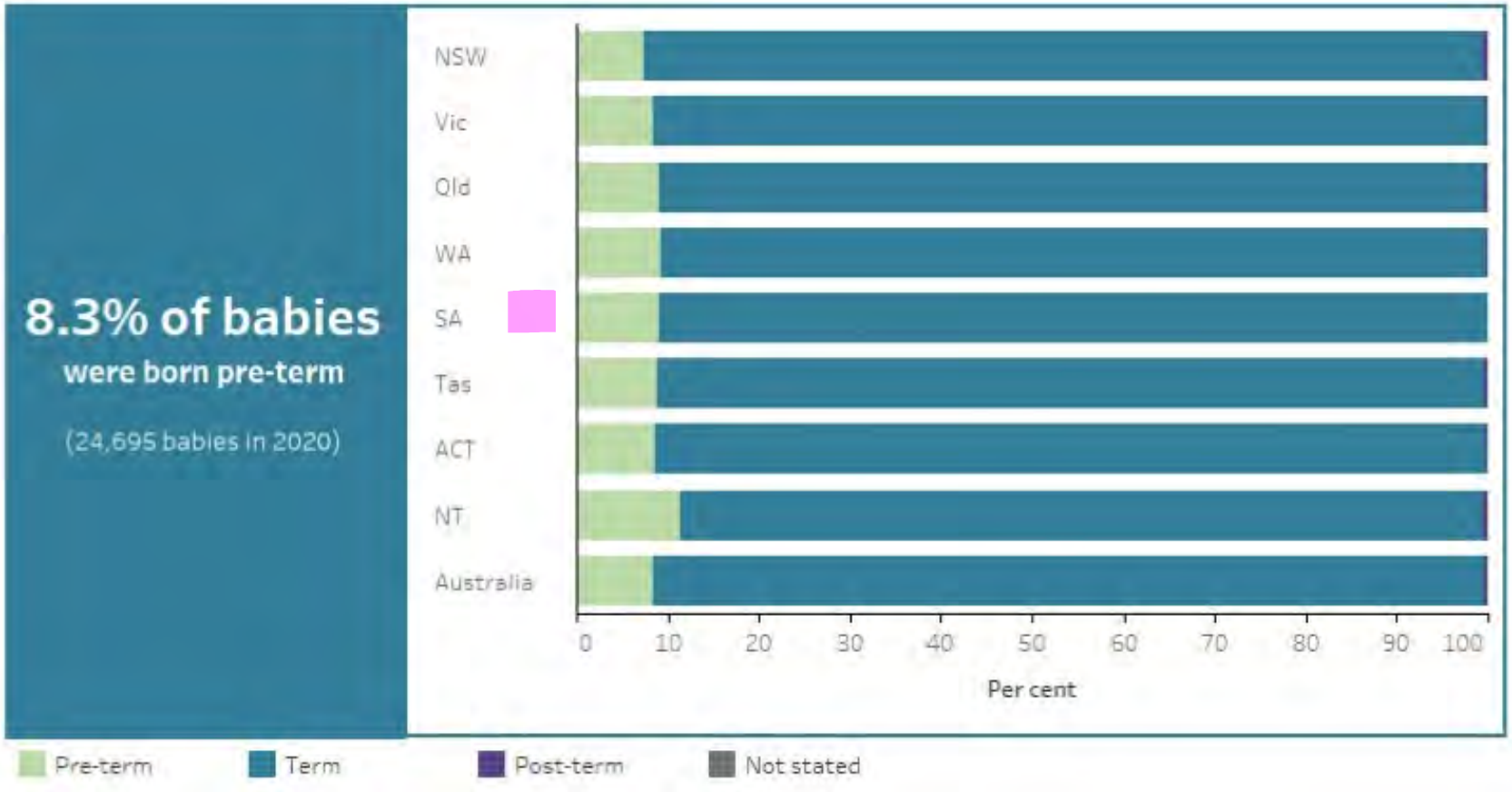


Preterm birth rates Australian states and territories 1994 – 2016 (%)

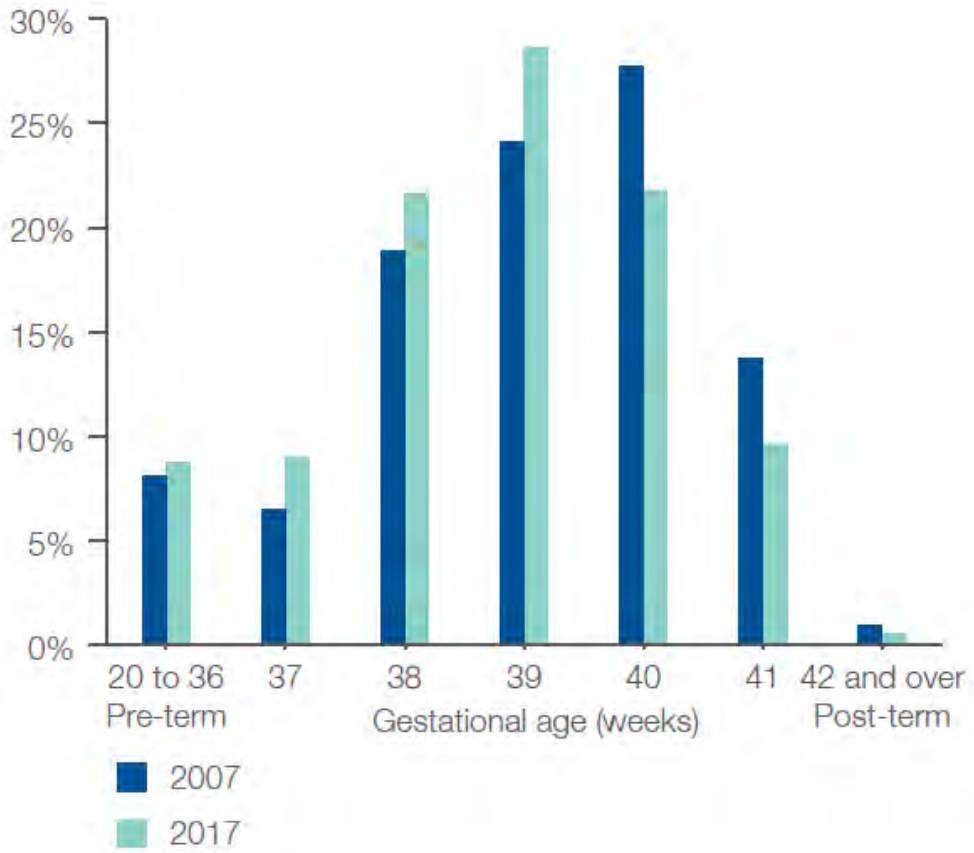


AIHW 2020 National Perinatal Data Collection

Queensland 9.3 %



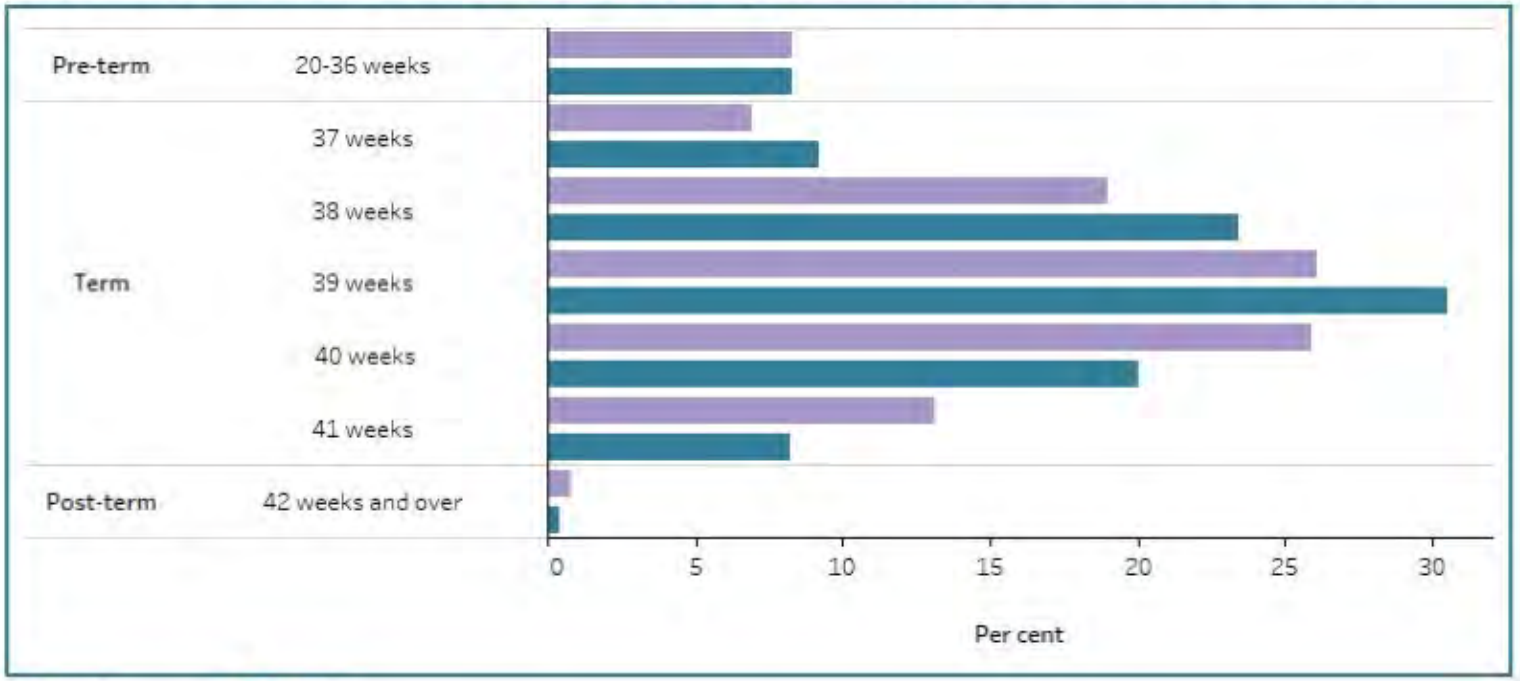
Percentage of babies by gestational age
Australia's Mothers and Babies | 2007 and 2017



Note:
Pre-term births may include a small number of births of less than 20 weeks gestation
Source: *Australia's Mothers and Babies 2017: In brief*[31]

AIHW 2020 Australia's mothers and babies

Proportion of babies, by gestational age grouped by term and completed weeks, 2010 and 2020



Note: Pre-term births may include a small number of births of less than 20 weeks gestation.

Source: AIHW analysis of National Perinatal Data Collection

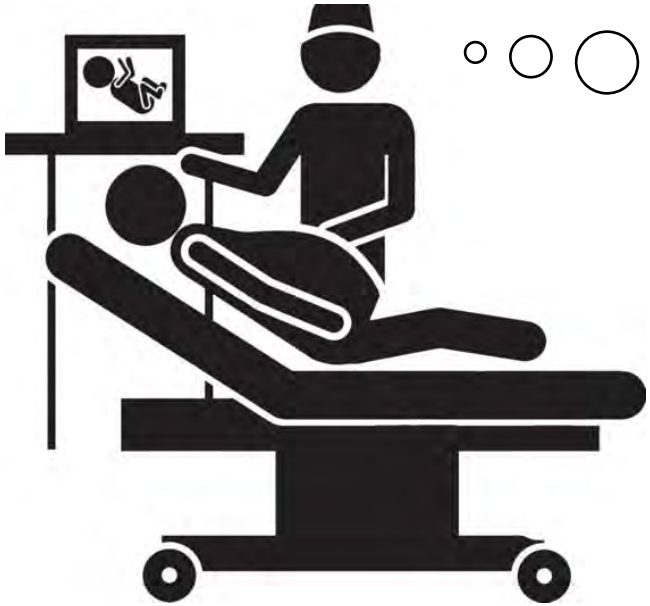
Over time, the proportion of babies born between 20 and 36 weeks remained steady (8.3% in both 2010 and 2020), while the proportion born between 37 and 39 weeks increased (for example, babies born at 38 weeks increased from 19% in 2010 to 23% in 2020) and the proportion born from 40 weeks onwards decreased (for example, babies born at 40 weeks decreased from 26% in 2010 to 20% in 2020).

Australia's planned births before 39 completed weeks
Fourth Australian Atlas of Healthcare Variation | 2017

In 2017, Caesarean section with no medical or obstetric indication*

Before 37 weeks	Before 38 weeks	Before 39 weeks
13% to 19%	**25% to 33%**	**43% to 56%**

* Ranges are based on rates from seven states and territories. NT is excluded. Data limitations include that main reason for caesarean section is used as a proxy for reason for early caesarean section.



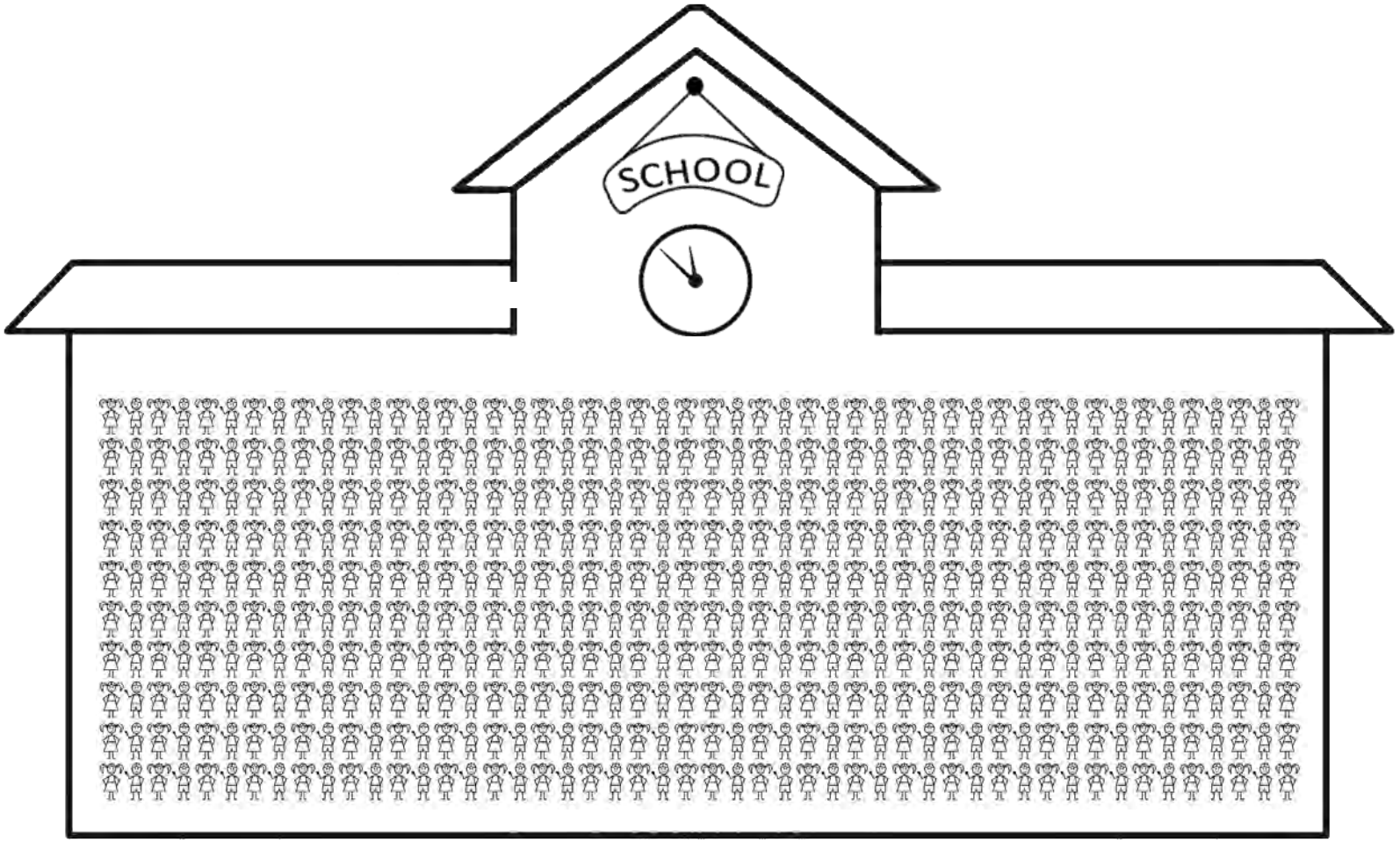
37 weeks…
should I deliver today or
should I wait until 39 weeks?

Imagine…
all the children from this
obstetrician go to one school

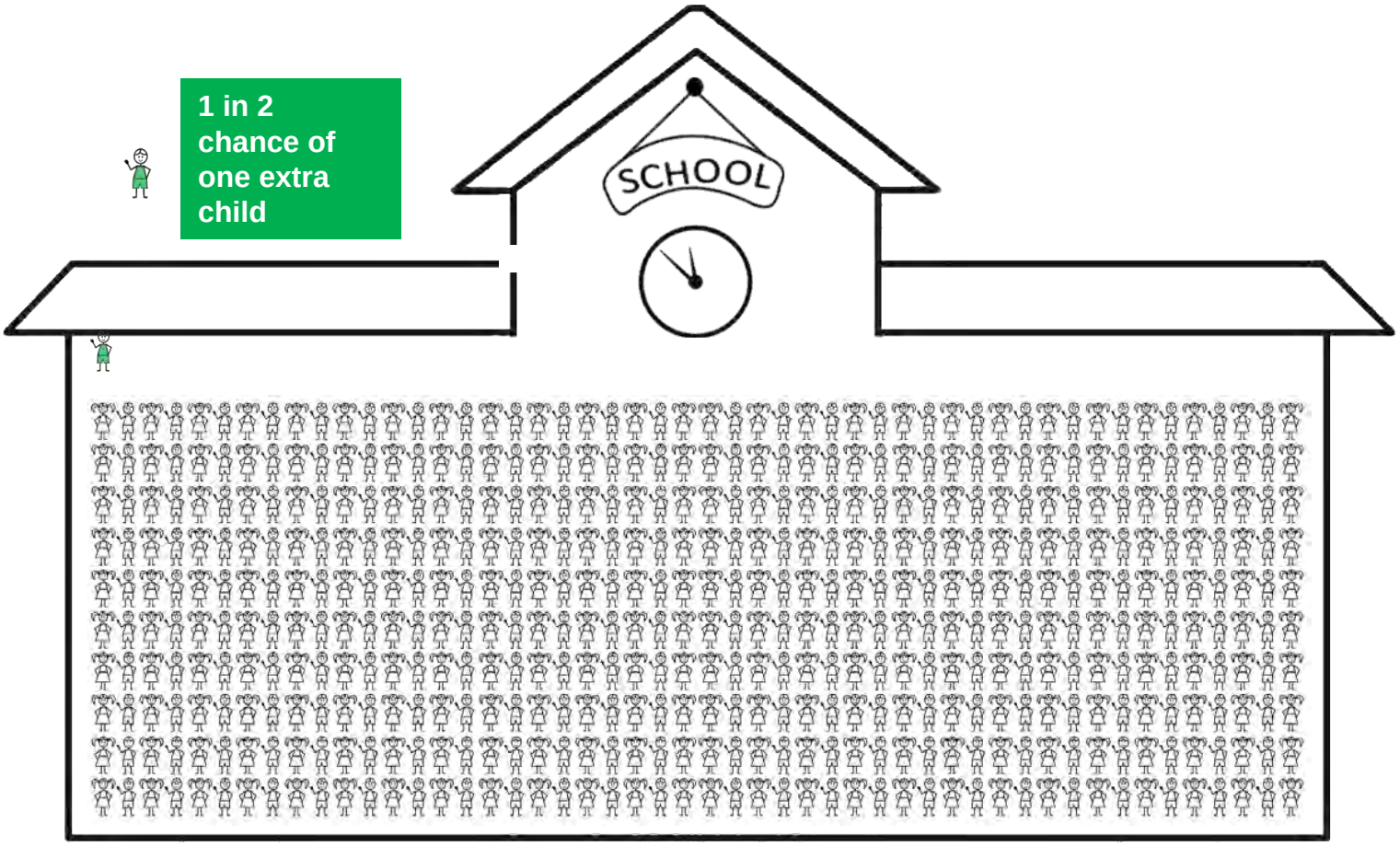
…in 8 years time
what would the school look like?

White SW and Newnham JP, Seminars in Fetal and Neonatal Medicine 24 (2019) 33-36

In a school of 500 children following a policy of electively ending all pregnancies at 37 weeks' gestation compared with 39 weeks

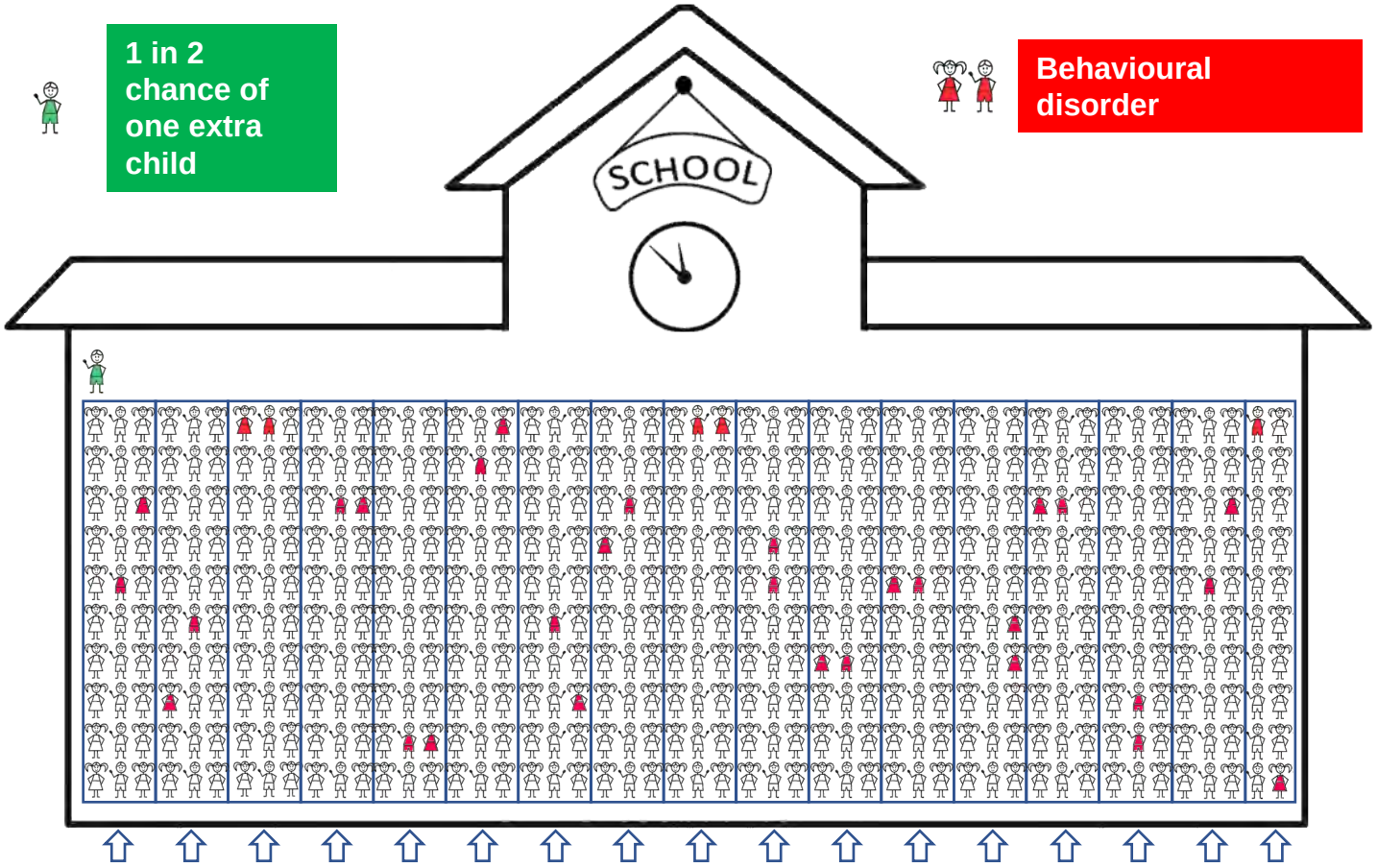


In a school of 500 children following a policy of electively ending all pregnancies at 37 weeks' gestation

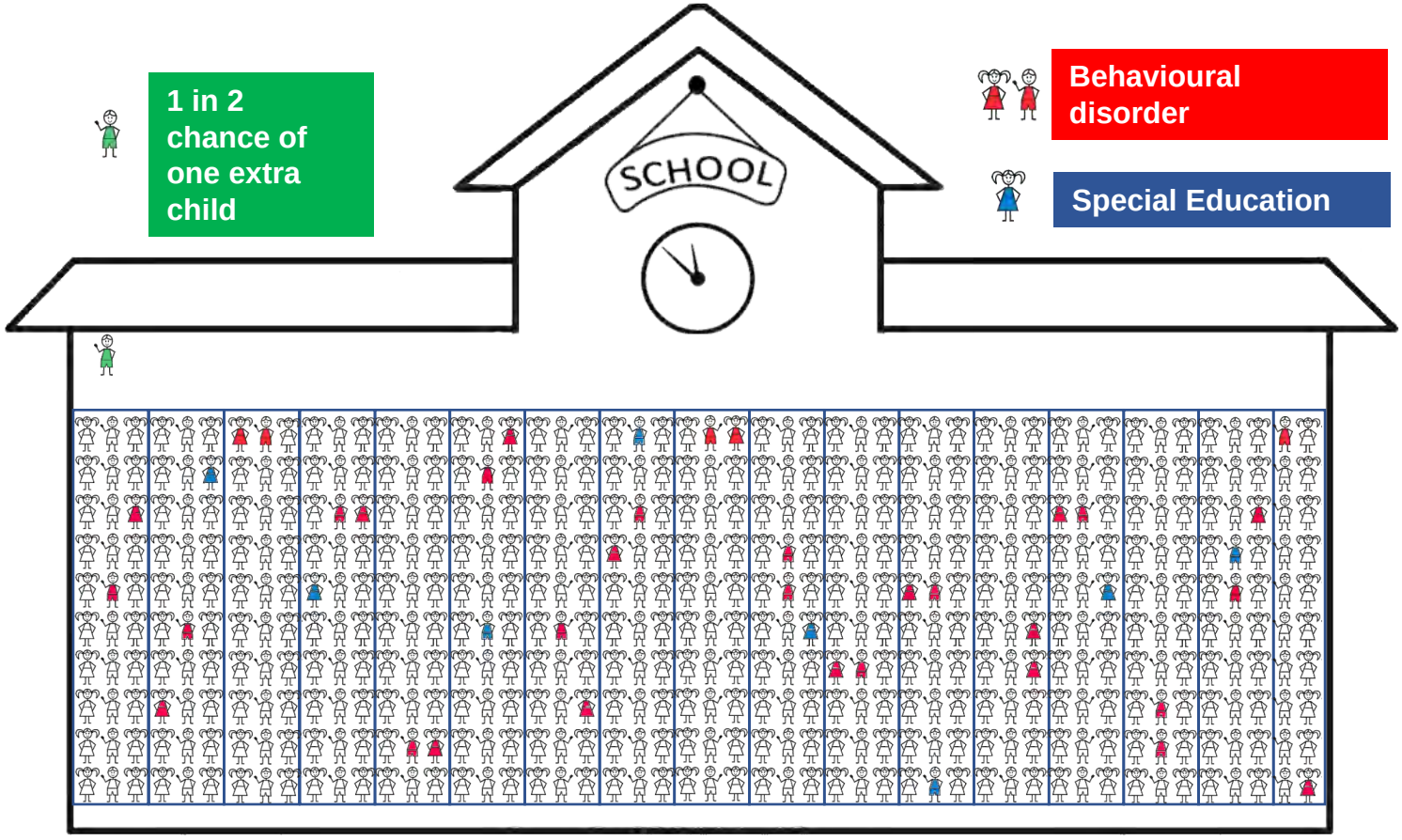


There is a 1 in 2 chance there may be one or more children in the school (prevented a stillbirth) (NNT about 1350 births)

In a school of 500 children following a policy of electively ending all pregnancies at 37 weeks' gestation

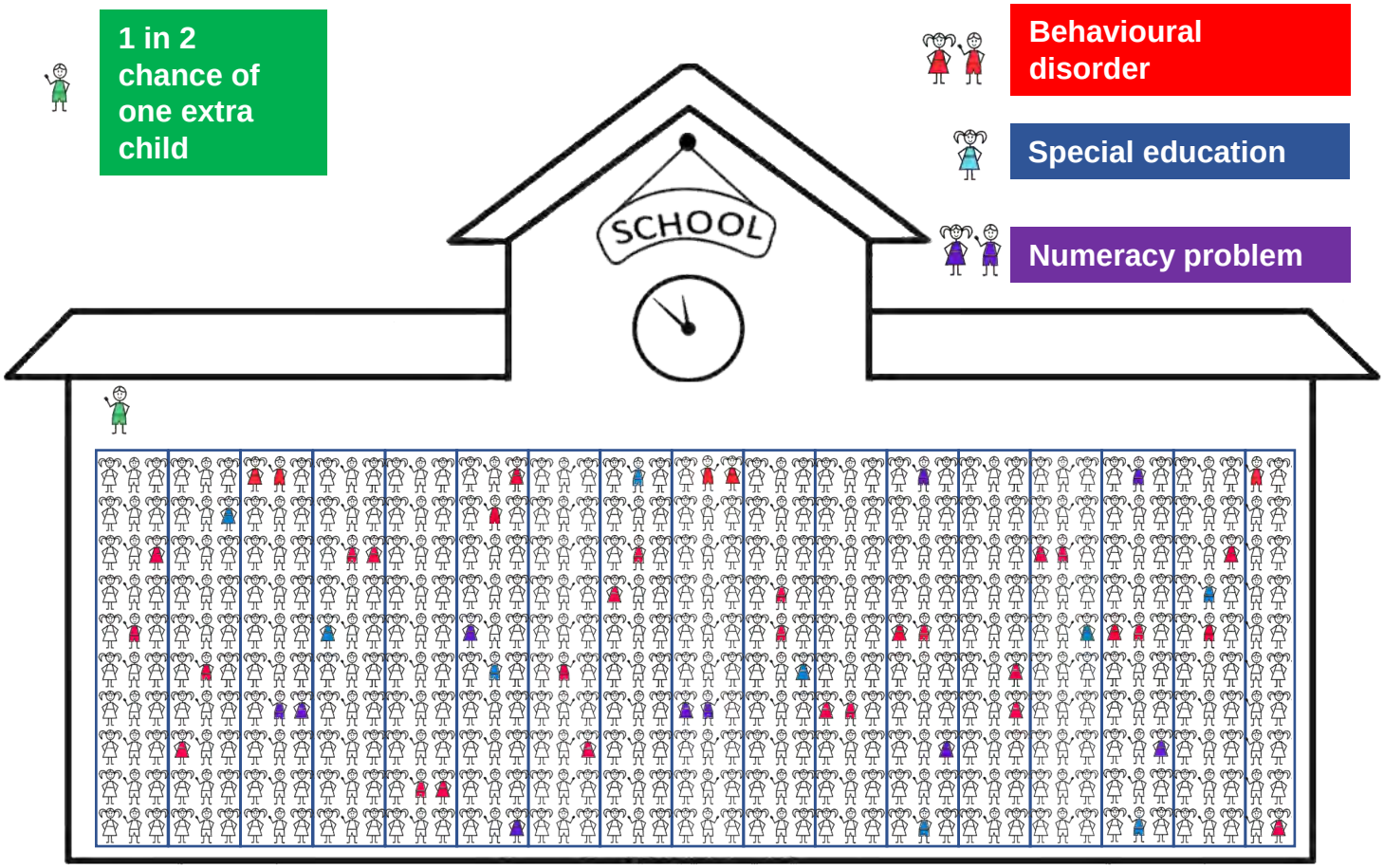


In a school of 500 children following a policy of electively ending all pregnancies at 37 weeks' gestation



Across every two classes will be 1 child with need for special educational assistance

In a school of 500 children following a policy of electively ending all pregnancies at 37 weeks' gestation



Across every three classes there will be 2 children with a basic numeracy problem

The seven interventions

AUSTRALIAN Preterm Birth Prevention ALLIANCE

2014

1. No pregnancy to be ended until 39 weeks gestation unless there is obstetric or medical justification

2. Measurement of the length of the cervix at all mid-pregnancy scans.

3. Natural vaginal progesterone 200mg each evening if cervix <25mm (TV)

4. If cervix continues to shorten, consider cerclage

5. Vaginal progesterone if prior history of spontaneous preterm birth (or PPROM)

6. Women who smoke should be identified and offered *quitline* support

7. The King Edward Memorial Hospital Preterm Birth Prevention Clinic

Preventing Preterm Birth – The Western Australian Initiative

Reports of Major Impact ajog.org

Reducing preterm birth by a statewide multifaceted program: an implementation study

John P. Newnham, MD; Scott W. White, MBBS; Suzanne Meharry, MBBS; Han-Shin Lee, MBBS; Michelle K. Pedretti, MAppSc; Catherine A. Arrese, PhD; Jeffrey A. Keelan, PhD; Matthew W. Kemp, PhD; Jan E. Dickinson, MD; Dorota A. Doherty, PhD

BACKGROUND: A comprehensive preterm birth prevention program was introduced in the state of Western Australia encompassing new clinical guidelines, an outreach program for health care practitioners, a public health program for women and their families based on print and social media, and a new clinic at the state's sole tertiary level perinatal center for referral of those pregnant women at highest risk. The initiative had the single aim of safely lowering the rate of preterm birth.

OBJECTIVE: The objective of the study was to evaluate the outcomes of the initiative on the rates of preterm birth both statewide and in the single tertiary level perinatal referral center.

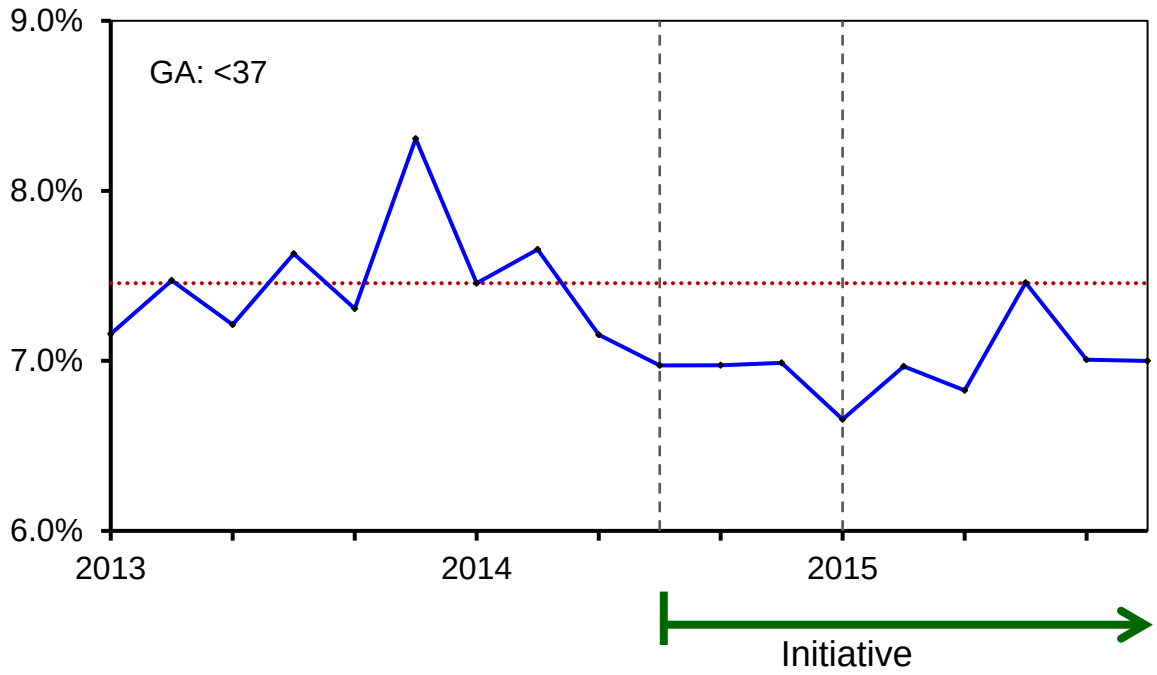
STUDY DESIGN: This was a prospective population-based cohort study of perinatal outcomes before and after 1 full year of implementation of the preterm birth prevention program.

RESULTS: In the state overall, the rate of singleton preterm birth was reduced by 7.6% and was lower than in any of the preceding 6 years. This reduction amounted to 196 cases relative to the year before the introduction of the initiative and the effect extended from the 28–31 week gestational age group onward. Within the tertiary level center, the rate of preterm birth in 2015 was also significantly lower than in the preceding years.

CONCLUSION: A comprehensive and multifaceted preterm birth prevention program aimed at both health care practitioners and the general public, operating within the environment of a government-funded universal health care system can significantly lower the rate of early birth. Further research is now required to increase the effect and to determine the relative contributions of each of the interventions.

Key words: implementation, population-based study, preterm birth, prevention

Western Australia

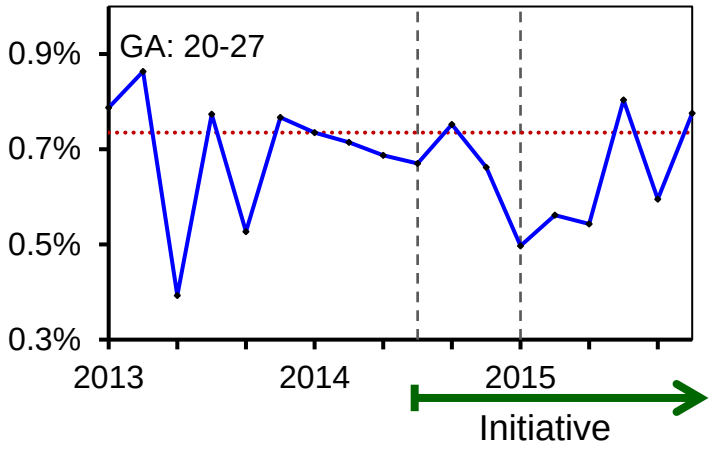


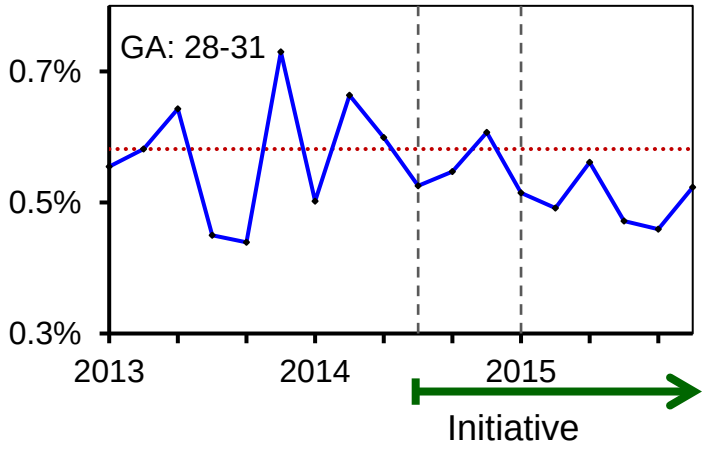
In 2015, the rate of PTB was reduced by 7.6%

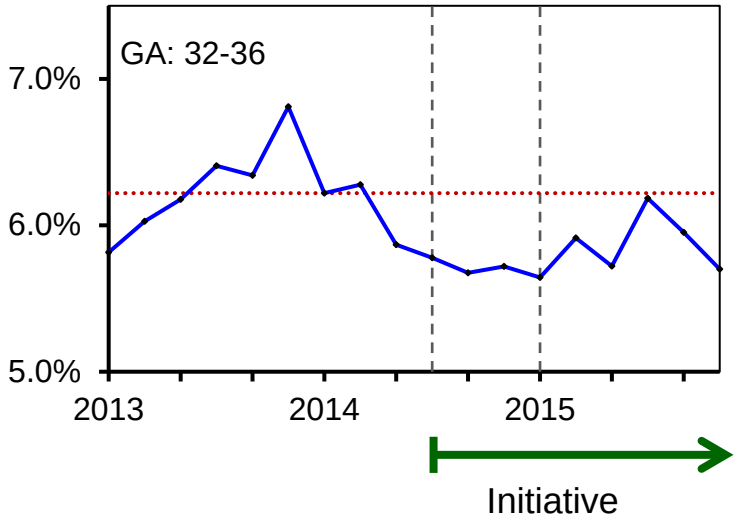
Preterm birth singleton rates:

- 2012 7.4%
- 2013 7.5%
- 2014 7.2%
- 2015 6.9%

Western Australia



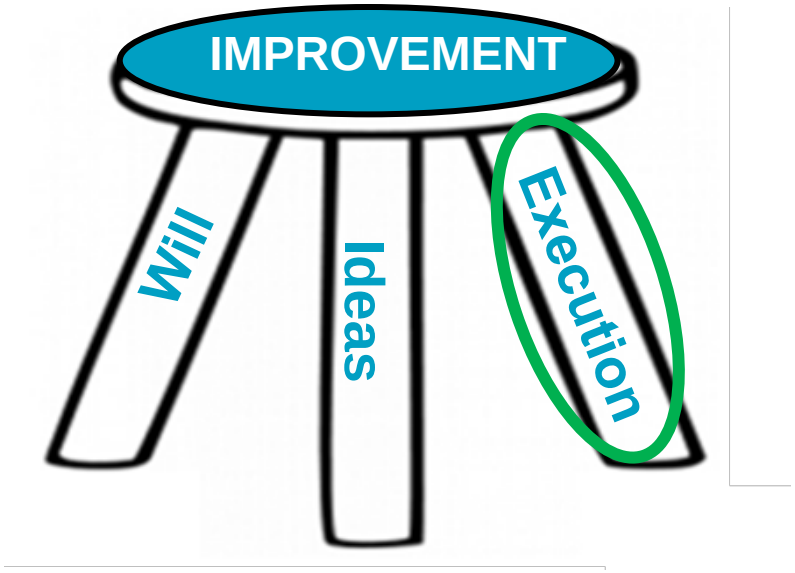


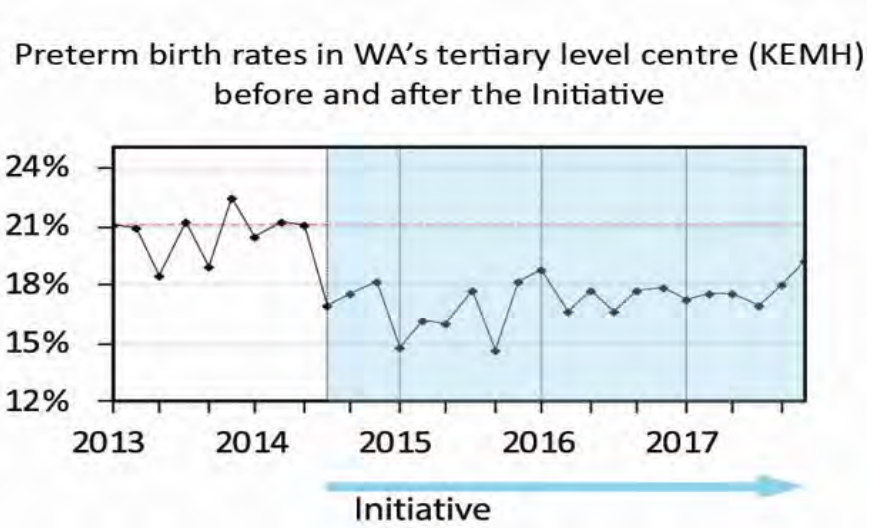


Rates of preterm birth were decreased in:

- 32 – 36 week group
- 28 – 31 week group
- 20 – 27 week (not statistically significant)

How can we achieve sustained improvement?





AUSTRALIAN
Preterm Birth
Prevention
ALLIANCE

Australian Preterm Birth Prevention Alliance

- Grew from the WA state-wide initiative 2014
- Became national in June 2018
- Supported by an NHMRC Partnership grant
- The world's first national PTB prevention program

ANZJOG

Original Article

Preventing early births in a regional tertiary maternity unit: Evaluating preterm and early term birth rates before and after implementation of the Preterm Birth Prevention Initiative in the Australian Capital Territory

Roberto Orefice ✉, Julia Smythe, Dorota A. Doherty, Boon Lim

First published: 24 March 2021 | https://doi.org/10.1111/ajo.13328

16 months post implementation
Canberra Hospital
Significant reduction of

- preterm birth by 10 %
- iatrogenic early term births with no medical indication by 34.5 %

Preventive Health – Preventing pre-term birth

The Australian Government is investing $13.7 million for the national rollout of a world-leading program to prevent pre-term birth in Australia. This investment includes:

- $8.8 million to roll out the successful Australian Preterm Birth Prevention Alliance (The Alliance) program nation-wide
- $2.5 million to deliver a national education campaign to raise awareness of safe and effective strategies to prevent pre-term birth, and
- $1.9 million to improve data and analysis for future policy development.

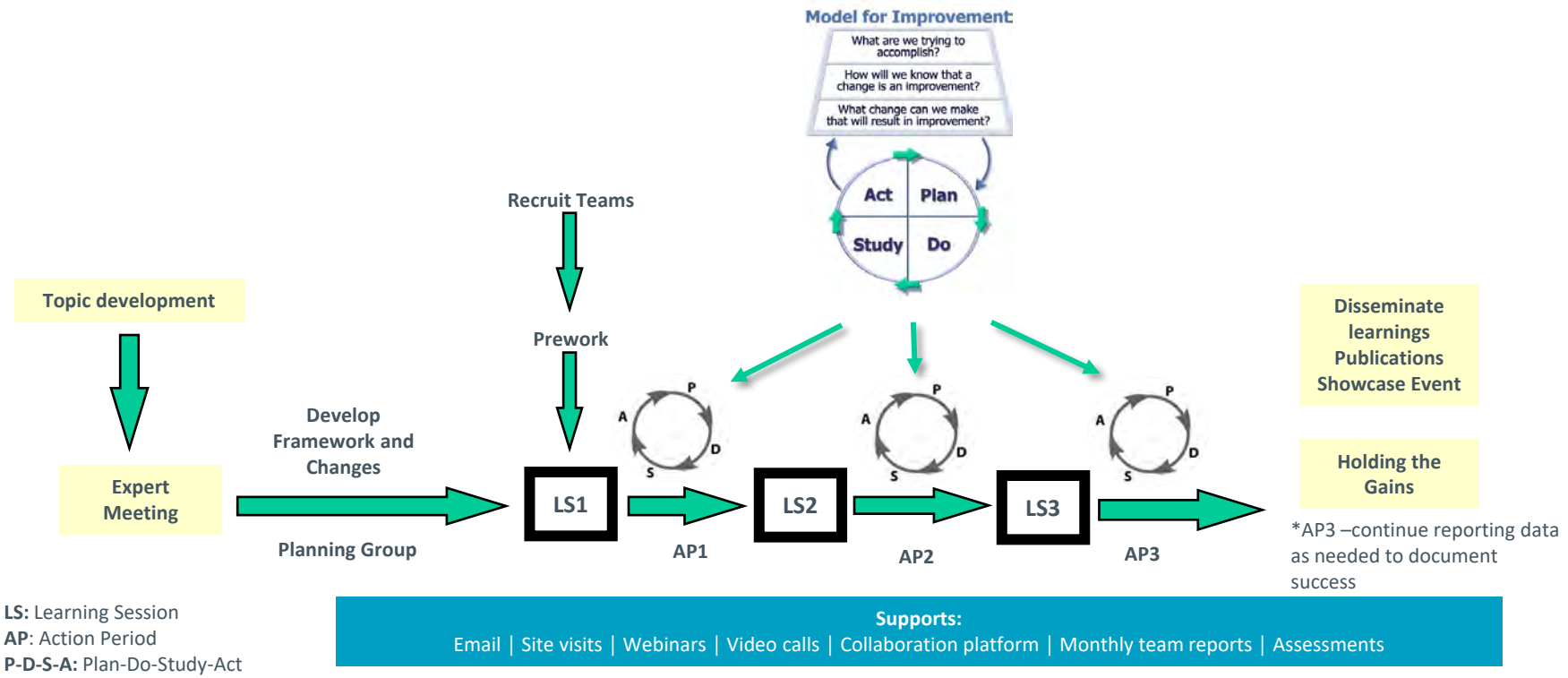
The Alliance is a partnership of clinical leaders, researchers, maternity hospitals, and communities working together to safely reduce the rate of early birth.

What have we learnt so far?

1. We can safely lower the rate of preterm, and early term birth, in the Australian environment using existing knowledge.
2. The program needs to be population based and is most effective in cases that would have been considered low risk.
3. The program needs to be sustained or the effect will dissipate. Cultural change is required.
4. We have met with success in jurisdictions with smaller populations and with a single centre of influence (WA, ACT, Tas).
5. The larger states, with multiple major centres, will require a different strategy.
6. Collaborative breakthrough methodology is our next chosen strategy.
7. A change package is required rather than a prescriptive bundle, to cater for our large nation, multiple population groups and uncertainty in some of the published evidence.

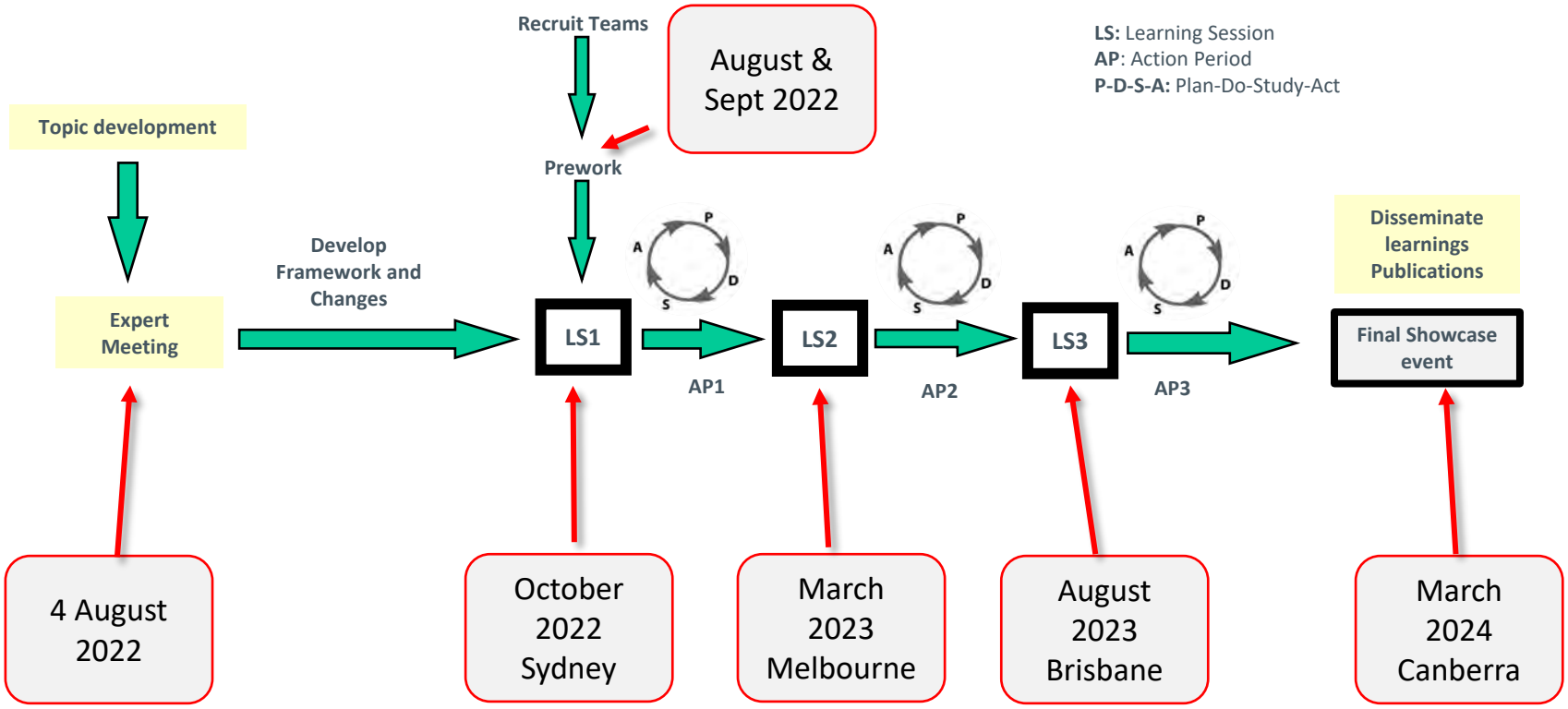
IHI's Breakthrough Series Collaborative Model

An improvement method that relies on the **spread** and adaptation of **existing knowledge** to **multiple settings** to accomplish a **common aim**



For more information: http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx
http://www.ihi.org/resources/Pages/IHIWhitePapers/TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.aspx

Collaborative Timelines: 2022-2024



Safer Baby Bundle

WORKING TOGETHER TO REDUCE STILLBIRTH

Element 1:	Supporting women to stop smoking in pregnancy
Element 2:	Improving detection and management of fetal growth restriction
Element 3:	Raising awareness and improving care for women with decreased fetal movements
Element 4:	Improving awareness of maternal safe going-to-sleep position in late pregnancy
Element 5:	Improving decision-making about the timing of birth for women with risk factors for stillbirth

Brochure for women


Every week counts
Re-thinking term

EVERY WEEK COUNTS TOWARDS THE END OF PREGNANCY

Every week that a baby is born close to 40 weeks decreases their risk of morbidity[1] and having to spend time in intensive care

Early (at <39 weeks) planned birth is associated with an increased risk of learning difficulties at school entry[3]

Stillbirth rate remains <1 per 1000 ongoing pregnancies up to 40 weeks, rising to >1 at 41 weeks and beyond[2]

BROWSE PUBLISH ABOUT

PLOS MEDICINE

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Maternal cigarette smoking before and during pregnancy and the risk of preterm birth: A dose–response analysis of 25 million mother–infant pairs

Buyun Liu, Guifeng Xu, Yangbo Sun, Xiu Qiu, Kelli K. Ryckman, Yongfu Yu, Linda G. Snetselaar, Wei Bao

Published: August 18, 2020 • https://doi.org/10.1371/journal.pmed.1003158

Mega Cohort, US birth certificate data

Any maternal smoking (compared to non smoking)

3 months precon – T1	PTB OR 1.17
T2	OR 1.45
1-2 cigs a day precon + quit T1	OR 1.13
Quit in 3 months precon	OR 1.01

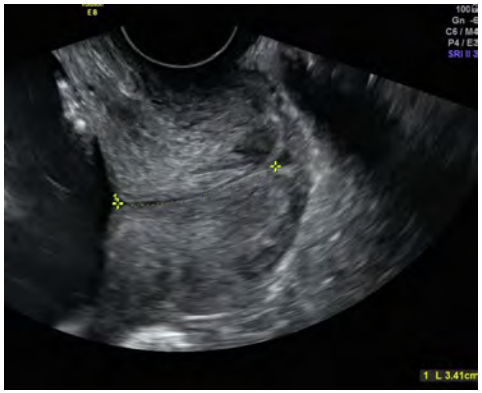
No safe level for cigarette smoking in pregnancy

Smoking also increases the risk of

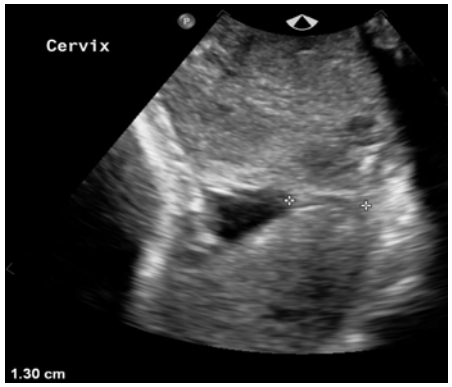
- Stillbirth
- Miscarriage
- Placental abruption
- Sudden unexpected death in infancy (SUDI)
- Congenital anomalies
- Low birthweight, small for gestational age
- Impaired child growth and development
- Chronic diseases later in life

Anderson et al. Pediatrics 2019
Flenady et al. Lancet 2011
Hackshaw et al. Human Reproduction Update 2011
Marufu et al. BMJ Public Health 2015
Zhao et al. European Journal of Preventative Cardiology 2019
Lawder et al. BMJ open 2019
Quelhas et al. BMC Public Health 2018

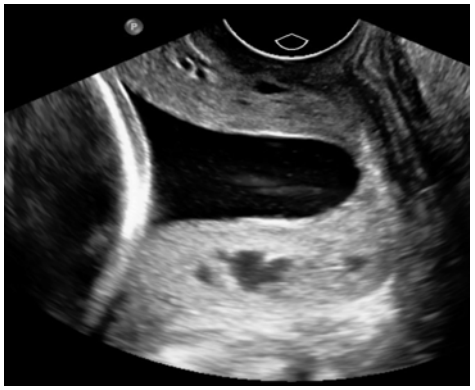
The short cervix on trans-vaginal scan 16 – 24 weeks



Normal
(34 mm)



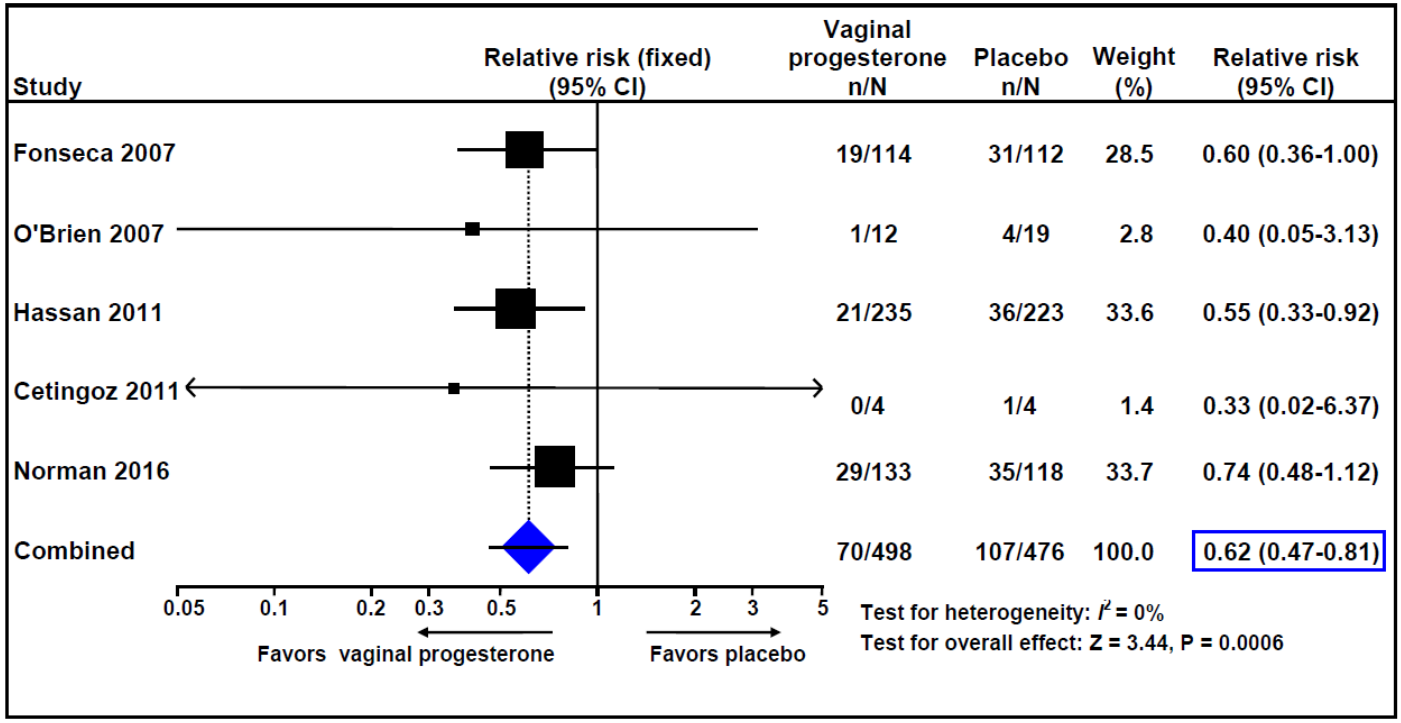
Short with open cervix
(13 mm)



Open cervix

Natural vaginal progesterone pessaries will halve the risk of preterm birth in women with a short cervix in mid-pregnancy

Vaginal progesterone for short cervix - PTB < 33 weeks



Meta-analysis of Individual Patient Data (IPD)

Romero et al, AJOG Feb 2018

Cervical length measurement

- Best efficacy between 16 and 24 weeks
- Offer transvaginal ultrasound (TVU) if significant Hx preterm birth/cervical surgery
- Otherwise routine transabdominal (TA) screening at morphology scan
- Cut off TA: cervical length 35 mm (full bladder)
- TVU if ≤ 35 mm TA or cervix cannot be seen across its entire length with certainty
- Cut off TVU: 25 mm
- If shorter: urgent referral and commence natural vaginal Progesterone pessaries (200 mg nocte) the same day

The Centre of Research Excellence in Stillbirth (stillbirthcre.org.au)

ABOUT US | RESEARCHERS + CLINICIANS | PARENTS

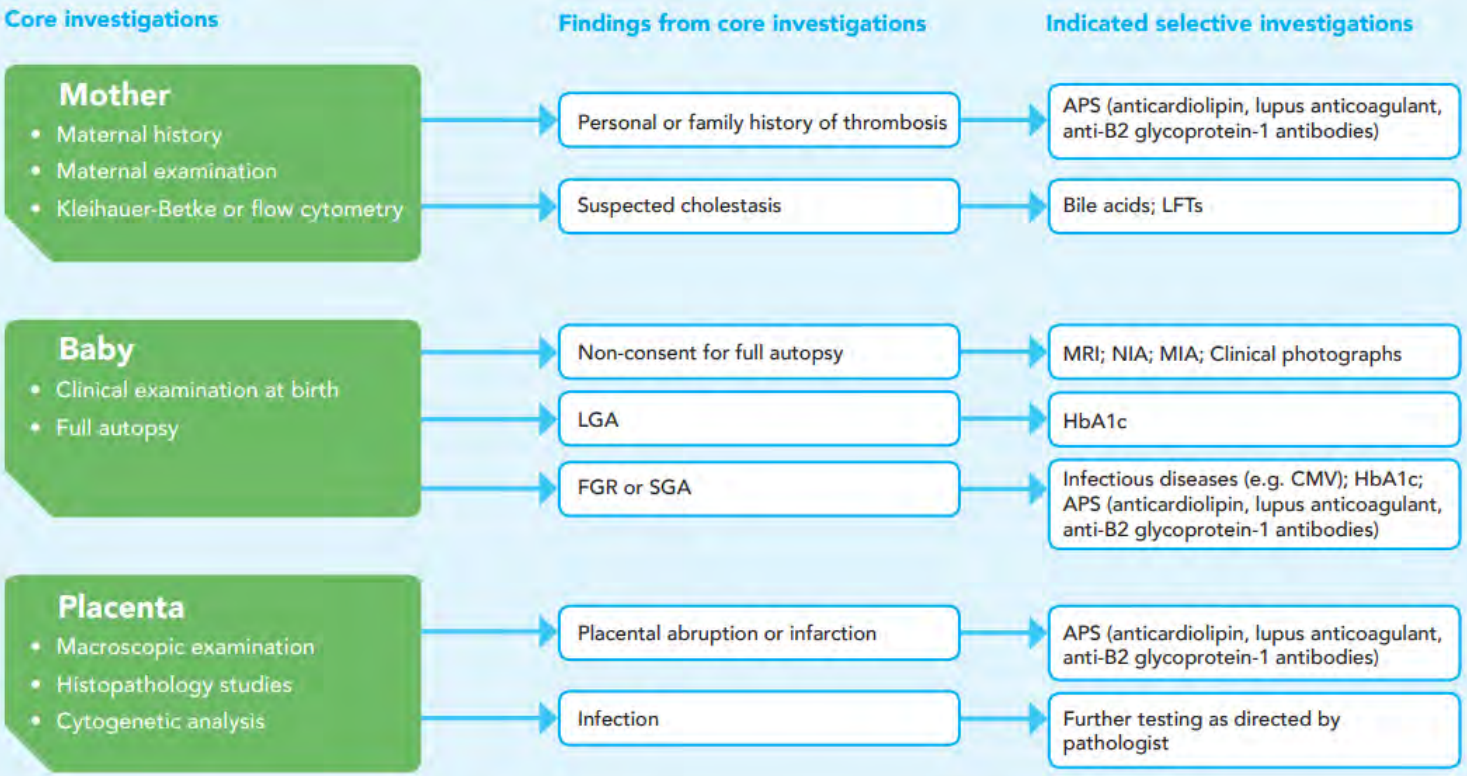
RESEARCH PUBLICATIONS EDUCATION + WORKSHOPS GRANTS + OPPORTUNITIES RESOURCES GET INVOLVED

Centre of Research Excellence in Stillbirth

Leading national research, resources and evidence-based advice dedicated to preventing stillbirth and improving health and social outcomes for women.

Learn More

Stillbirth Investigations Flowchart



APS: Antiphospholipid syndrome; CMA: Chromosomal microarray; CMV: Cytomegalovirus; FGR: Fetal growth restriction; LFTs: Liver Function Tests; LGA: Large for gestational age; HbA1c: Haemoglobin A1c; MIA: Minimally-invasive autopsy; MRI: Magnetic Resonance Imaging; NIA: Non-invasive autopsy; SGA: Small for gestational age

1. Perinatal Society of Australia and New Zealand Clinical Practice Guideline for Perinatal Mortality Audit Third Edition, December 2015

PERINATAL SOCIETY of Australia & New Zealand PSANZ

SANDA Stillbirth And Neonatal Death Alliance

Stillbirth CENTRE OF RESEARCH EXCELLENCE

Resources

The Whole Nine Months Magazine 2022

www.pretermalliance.com.au

https://www.drivetimeradio.com.au/preterm

Metro North **GP Alignment Program**

MATERNITY WORKSHOP

Saturday 22nd October 2022

Complex Case Studies

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

Red group - complex

- Jessica is now 9 weeks pregnant with twins. She looks pale and ill at ease as she walks into the consulting room
- Her partner, Luke is with her, looking agitated. *"She's been spewing her guts up doc; you've got to help! The chemist gave her some vitamins, which 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 of pregnancy

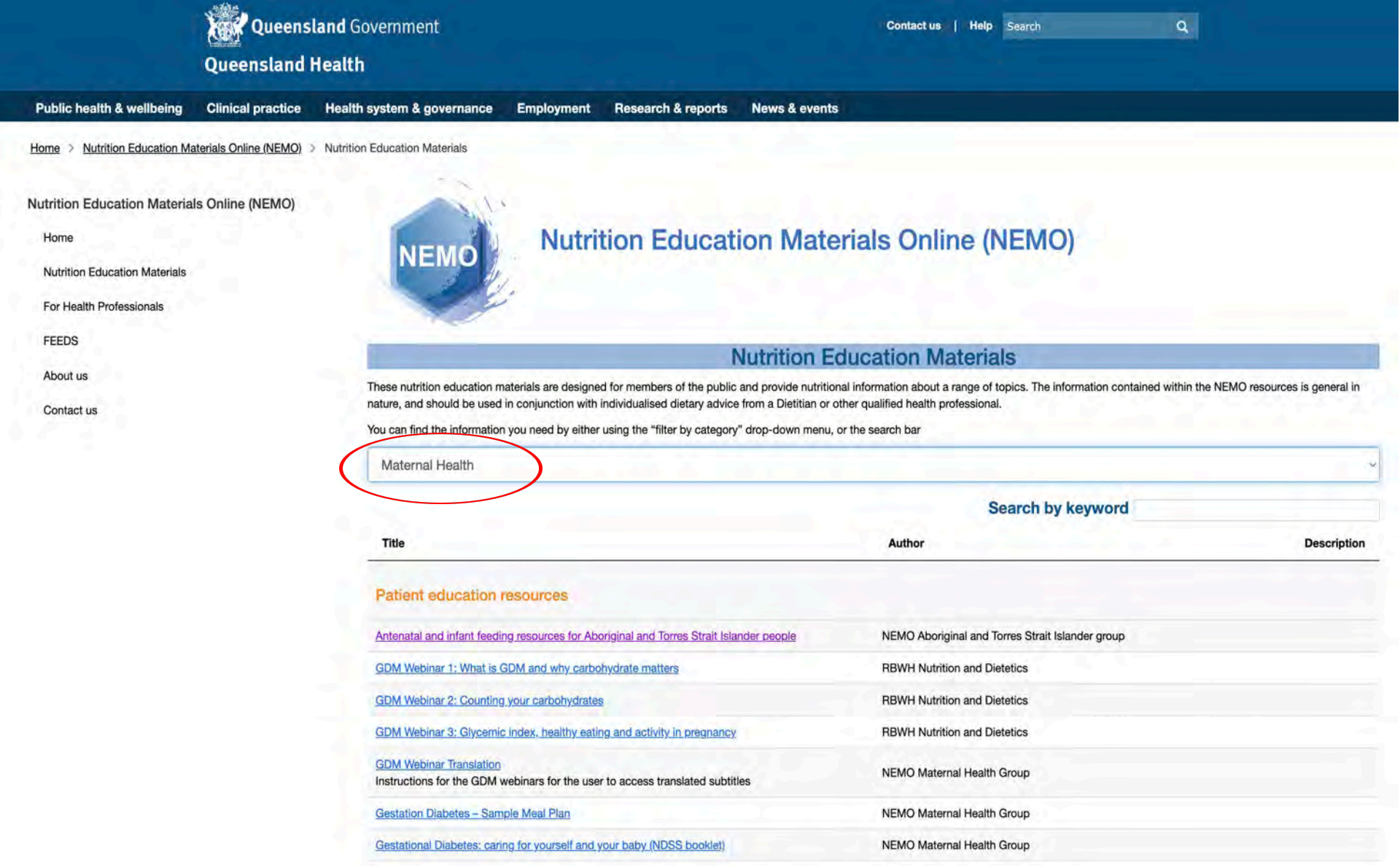
- Nausea - most common GI symptom of pregnancy, occurring in 80 - 85% of pregnancies
- Associated with vomiting in approx. 52%
- ~ 90% report cessation of symptoms by 16 - 20 weeks

https://www.health.gov.au/resources/pregnancy-care-guidelines

Nausea and vomiting in pregnancy

- Only 11 - 18% of women report having nausea & vomiting confined to the mornings
- Hyperemesis gravidarum is ***not*** common, affecting 0.3 - 1.5% of women
- Discontinuing iron supplementation/multivitamin may improve symptoms
- Continue iodine and folate if possible

https://www.health.gov.au/resources/pregnancy-care-guidelines



NEMO Maternal Health > *'Managing morning sickness'* fact sheet

https://www.health.qld.gov.au/nutrition/patients

SOMANZ

SOCIETY OF OBSTETRIC MEDICINE OF AUSTRALIA AND NEW ZEALAND

GUIDELINE FOR THE MANAGEMENT OF NAUSEA AND VOMITING IN PREGNANCY AND HYPEREMESIS GRAVIDARUM

2019

Lowe SA, Bowyer L, Beech A, Robinson H, Armstrong G,

Marnoch C, Grzeskowiak L.

These are the recommendations of a multidisciplinary working party convened by the Society of Obstetric Medicine of Australia and New Zealand. They reflect current medical literature and the clinical experience of members of the working party. The accompanying Executive Summary and Treatment Algorithms (1 and 2) summarise the key recommendations. These should be read in conjunction with this complete guideline which also includes a Patient Information Leaflet and a template for an Individual Patient Management Plan.

The authors declare there are no conflicts of interest.

This guideline has been endorsed by the following organisations:

- *Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG)*
- *Royal Australasian College of Physicians (RACP)*
- *Royal Australasian College of General Practitioners (RACGP)*
- *Australasian College for Emergency Medicine (ACEM)*
- *Society of Hospital Pharmacists' Association (SHPA)*
- *New Zealand Hospital Pharmacists' Association (NZHPA)*

https://www.somanz.org/content/uploads/2020/07/NVP-GUIDELINE-1.2.20-1.pdf

Table 2. Motherisk PUQE-24 scoring system

Total score: mild ≤6; moderate 7 to 12; severe ≥13 (Scores in brackets)

1. In the last 24 hours, for how long have you felt nauseated or sick to your stomach?				
Not at all (1)	1 hour or less (2)	2-3 hours (3)	4 to 6 hours (4)	More than 6 hours (5)
2. In the last 24 hours, have you vomited or thrown up?				
I did not throw up (1)	1 to 2 (2)	3 to 4 (3)	5 to 6 (4)	7 or more times (5)
3. In the last 24 hours, how many times have you had retching or dry heaves without throwing up?				
None (1)	1 to 2 (2)	3 to 4 (3)	5 to 6 (4)	7 or more times (5)

https://www.somanz.org/content/uploads/2020/07/NVP-GUIDELINE-1.2.20-1.pdf

Nausea and vomiting in pregnancy

- Anti-emetics
  - ginger 250mg QID
  - vitamin B6 (Pyridoxine) 10 - 25mg TDS – QID
  - doxylamine, metoclopramide, prochlorperazine
  - ondansetron (second-line)
- Acid suppression
  - famotidine, nizatadine or omeprazole
- Manage/prevent constipation
  - docusate sodium

https://www.somanz.org/content/uploads/2020/07/NVP-GUIDELINE-1.2.20-1.pdf

Queensland Government

Royal Brisbane and Women's Hospital

Emergency & Trauma Centre (ETC)

VOMITING IN EARLY PREGNANCY (VEP) CLINICAL PATHWAY

(Affix patient identification label here)

URN:

Family Name:

Given Names:

Address:

Date of Birth: Sex: ☐ M ☐ F ☐ I

INCLUSION CRITERIA

- ☐ <14 weeks pregnant with nausea & vomiting
- ☐ >14 weeks pregnant documented history of Hyperemesis this pregnancy

EXCLUSION CRITERIA

- ☐ Per Vaginal (PV) bleeding
- ☐ Lower abdominal pain without USS confirmed location of pregnancy

Respiratory Rate (RR): ..... /min

Blood pressure (BP): ..... / .....

% Weight loss - .....

[(Pre-pregnancy weight – current weight) ÷ pre-pregnancy weight] x 100

RED FLAGS – If present for Consultant review & consider early referral to Obstetric Medicine

- ☐ HR <50 or >120
- ☐ Ataxia
- ☐ Altered consciousness
- ☐ Systolic BP <80 or >130
- ☐ Headache
- ☐ Visual disturbance

☐ **HISTORY & EXAMINATION**: Documentation of

- ☐ Gestation
- ☐ USS findings this pregnancy
- ☐ Medical conditions
- ☐ Previous pregnancies with hyperemesis
- ☐ Current treatment for Early Pregnancy Vomiting
- ☐ Complete PUQE tool and record score

Pregnancy Unique Quantification of Emesis (PUQE) index

Total score is sum of replies to each of the three questions. PUQE 24 score: Mild 6; Moderate = 7-12; Severe= 13-15

Motherisk PUQE – 24 scoring system:

In the last 24 hours, how long have you felt nauseated or sick to your stomach?	Not at all (1)	1 hour or less (2)	2-3 hours (3)	4-6 hours (4)	More than 6 hours (5)
In the last 24 hours have you vomited or thrown up?	7 or more time (5)	5-6 times (4)	3-4 times (3)	1-2 times (2)	I did not throw up (1)
In the last 24 hours how many times have you had retching or dry heaves without bringing anything up?	No time (1)	1-2 times (2)	3-4 times (3)	5-6 times (4)	7 or more times (5)

How many hours have you slept out of 24 hours? ..... Why? .....

On a scale of 0 to 10, how would you rate your wellbeing? .....

Can you tell me what causes you to feel that way? .....

Initial management in the ETC

- ☐ **Urine** – Dipstick and ketones; M/C/S - if indicated
- ☐ **Bloods** – FBC, CHEM20, BHCG if no previous level (TFTs if representation & not completed this pregnancy) consider antenatal screen for complex social patient if not done.
- ☐ **IVC** – 1L Normal Saline STAT then 1L Normal Saline 250 ml/hr or as clinically appropriate
- ☐ **Stat medications** (as appropriate in clinical context and with allergies)
- ☐ **Pyridoxine 25 mg PO**
- ☐ **Antiemetic – one or both of Metoclopramide 10 mg IV/PO; Ondansetron 4 – 8 mg IV/PO**
- ☐ **Thiamine 300 mg IV/PO**
- ☐ **Refer to SSU** – if no oral intake or symptom resolution after 1 hour of treatment
- ☐ **Consider USS Pelvis & Transvaginal** – if there is another clinical indication

Indications for referral to obstetric medicine *(one or more of)*

- ☐ Severe electrolyte disturbance
- ☐ Excess weight loss (5% or more)
- ☐ Not tolerating oral medication or adequate intake within SSU after trial of IV fluids & medication
- ☐ 3rd presentation to ED within 2 weeks whilst on maximal medical management
- ☐ Significant Comorbidity – Insulin Dependent Diabetes, Eating Disorder, BMI <18

Queensland Government

Royal Brisbane and Women's Hospital

Emergency & Trauma Centre

VOMITING IN EARLY PREGNANCY (VEP) CLINICAL PATHWAY

(Affix patient identification label here)

URN:

Family Name:

Given Names:

Address:

Date of Birth: Sex: ☐ M ☐ F ☐ I

Ongoing management in short stay unit (ssu)

- ☐ Review investigations & treat identified issues – *eg: Electrolyte derangement, UTI*
- ☐ Regular medications on arrival *(as appropriate in clinical context and with allergies)*
  - ☐ Pyridoxine 25 mg PO TDS
  - ☐ Metoclopramide 10 mg PO/IV TDS
  - ☐ Ondansetron 4–8 mg PO/IV TDS
  - ☐ Thiamine 100 mg PO/IV TDS
  - ☐ Doxylamine 12.5 mg PO Nocte *(night and early morning vomiting)*
    If tolerated and severe symptoms, consider increasing to 25 mg nocte + 12.5 mg midday
- ☐ Additional medications to consider: .....
- ☐ Pantoprazole 40 mg daily prn if symptomatic of reflux (epigastric burning, burping etc)
- ☐ Doxylamine 25 mg PO Nocte and 12.5 mg midday for sever case.
- ☐ Coloxyl 120 mg - 2 tabs PO Nocte PRN for constipation
- ☐ IV Fluids - Titrate to encourage oral intake. , Normal Saline or Hartmann's 125 ml/hr or as clinically appropriate
- ☐ Weight & strict fluid balance
- ☐ **Patient to complete -** MR 61079 Scoring Template for Edinburgh Postnatal Depression Scale (EPDS)

Score of 13 and above please refer to Perinatal MH Service: Perinatal-Mental-Health@health.qld.gov.au

Indications for discharge

- ☐ Adequate oral intake
- ☐ All abnormalities addressed and corrected (electrolyte derangement, dehydration)
- ☐ Planned follow-up with GP or obstetrician within 72hrs
- ☐ Discharge pack with **Script, Early Pregnancy Vomiting Handout and medication advice**

Discharge script: Ensure the discharge medications reflects admission medications.

- ☐ Metoclopramide 10 mg PO TDS PRN; Qty 30
- ☐ Ondansetron 4 mg tablet (not wafer) 1-2 PO TDS PRN; Qty 30
- ☐ Pantoprazole 40 mg PO daily prn Qty 30
- ☐ Coloxyl 120 mg 2 tabs PO, Nocte, PRN; Qty 100
- ☐ Pyridoxine 25 mg PO TDS; Qty 100
- ☐ Doxylamine 25 mg ½ to 1 PO Nocte +/- 12.5 mg Midday PRN; Qty 20

Must be accompanied by EPV Handout with medication titration advice

Short Stay Clinician to complete

Name:	Designation: .....
Signature:	Date: ..... / ..... / .....

Differential diagnosis of NVP in pregnancy [more common causes in bold]

Gastrointestinal
- Infectious gastroenteritis
- Gastro-oesophageal reflux disease-Helicobacter Pylori
- Infectious hepatitis
- Pancreatitis
- Biliary tract disease
- Peptic ulcer disease
- Bowel obstruction
- Gastroparesis
- Appendicitis
- Peritonitis

Genitourinary
- Urinary tract infection including pyelonephritis
- Ovarian Torsion
- Nephrolithiasis

Metabolic/Toxic
- Drugs-including pregnancy vitamins
- Use and/or withdrawal of cannabinoids or other illicit drugs
- Diabetic ketoacidosis
- Addison's disease
- Thyrotoxicosis
- Non-infectious hepatitis
- Hypercalcemia
- Eating Disorders

Central-nervous system disease
- Migraine
- Infection
- Tumours
- Raised intracranial pressure
- Vestibular system pathology: labyrinthitis, Meniere's

https://www.somanz.org/content/uploads/2020/07/NVP-GUIDELINE-1.2.20-1.pdf

Hyperemesis gravidarum

- Examination
  - PR, BP, temperature, weight, any signs of dehydration
  - abdomen
  - other e.g. CNS
- Investigations:
  - FBC, BHCG, ELFTs, Mg, TFTs, HbA1c, lipase, urine M/C/S, USS to assess for multiple gestation and gestational trophoblastic disease
- Admission
  - IV rehydration +/- enteral/parenteral nutrition
  - IV/SC anti-emetics
  - consider corticosteroids
  - monitor weight and fluid balance

Recognising Domestic and Family Violence

- Physical
  - assaults on the body; denying access to home; deprivation of sleep or food
- Verbal
  - constant put downs; ridicule; name calling; humiliation; insults
- Sexual
  - any forced or unwanted sexual contact or activity
- Social
  - controlling who you see, who you communicate with, where you go
- Financial/economic
  - refusing you access to money, employment

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

Recognising Domestic and Family Violence

- Damage to personal property
  - damage or threatening to damage to your property or valuables
- Psychological/emotional
  - behaviour and/or comments or taunts to undermine sense of self, personal security
- Technological/digital
  - using technology to bully, harass, intimidate; controlling who you can be friends with on social media
- Spiritual/Cultural
  - not allowing you to practise your chosen religion or cultural beliefs; misusing religious or spiritual traditions to justify abuse
- Stalking
  - following, watching, phoning, writing letters, or messaging; waiting outside home or workplace

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

Management

- Organise a follow up appointment without partner if possible

- Indicate concerns on Maternity booking in referral

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 (psychological or emotional) or neglect under *s13A Child Protection Act 1999*

Child Safety Services' Regional Intake Brisbane 1300 682 254 (business hours)

Child Safety After Hours Service Centre Queensland 1800 177 135

https://www.cyjma.qld.gov.au/protecting-children/reporting-child-abuse

Domestic Violence Services List – GP's

- Brisbane Domestic Violence Service (BDVS) – **(07) 3217 2544**
  - BDVS provides support to any adult (regardless of gender), young person or child to reach a stage where they are safe and free from fear of DFV in the Brisbane Local Government Area. BDVS provide a range of services including information and referral, crisis support, practical assistance, advocacy and counselling and emotional support https://www.bdvs.org.au

- DVConnect (Womensline) – **1800 811 811**
  - 24/7 telephone crisis response for anyone identifying as a female, including the LGBTQ+ community. They provide emergency transport and safe accommodation (including for pets), safety planning, crisis counselling, information and referrals. http://www.dvconnect.org/womensline/

- DVConnect (Mensline) – **1800 600 636**
  - 9am – midnight, 7 days telephone crisis counselling and support for anyone identifying as male, including the LGBTQ+ community who may be experiencing or using domestic and family violence; information and referral to men's behavioural change programs http://www.dvconnect.org/mensline/

- 1800 RESPECT - **1800 737 732**
  - Open 24 hours to support people impacted by sexual assault, domestic or family violence and abuse. https://www.1800respect.org.au

- CADA Inc. – Centre for Domestic Abuse Inc.
  - Servicing Moreton Bay Region and surrounds https://www.cada.org.au
  - **Caboolture (07) 5498 9533, Redcliffe (07) 3283 6930, Pine Rivers (07) 3205 5457**

- WWILD – **(07) 3262 9877**
  - Supports people with intellectual or learning disabilities who have experienced sexual abuse or have been victims of crime https://wwild.org.au

https://metronorth.health.qld.gov.au/refer-your-patient-page/gp-events/education-resources

- Immigrant Women's Support Service (IWSS) – **(07) 3846 3490**
  - Practical and emotional support to immigrant and refugee women from non-English speaking backgrounds who have experienced domestic and/or sexual violence http://www.iwss.org.au

- Victim Assist Queensland (VAQ) – **1300 546 587**
  - Access to support services and financial assistance to help victims of violent crime – including DFV – to recover https://www.qld.gov.au/law/crime-and-police/victims-and-witnesses-of-crime

- Q Life – **1800 184 527**
  - Counselling and referrals focussed on the well-being of LGBTIQ people https://qlife.org.au

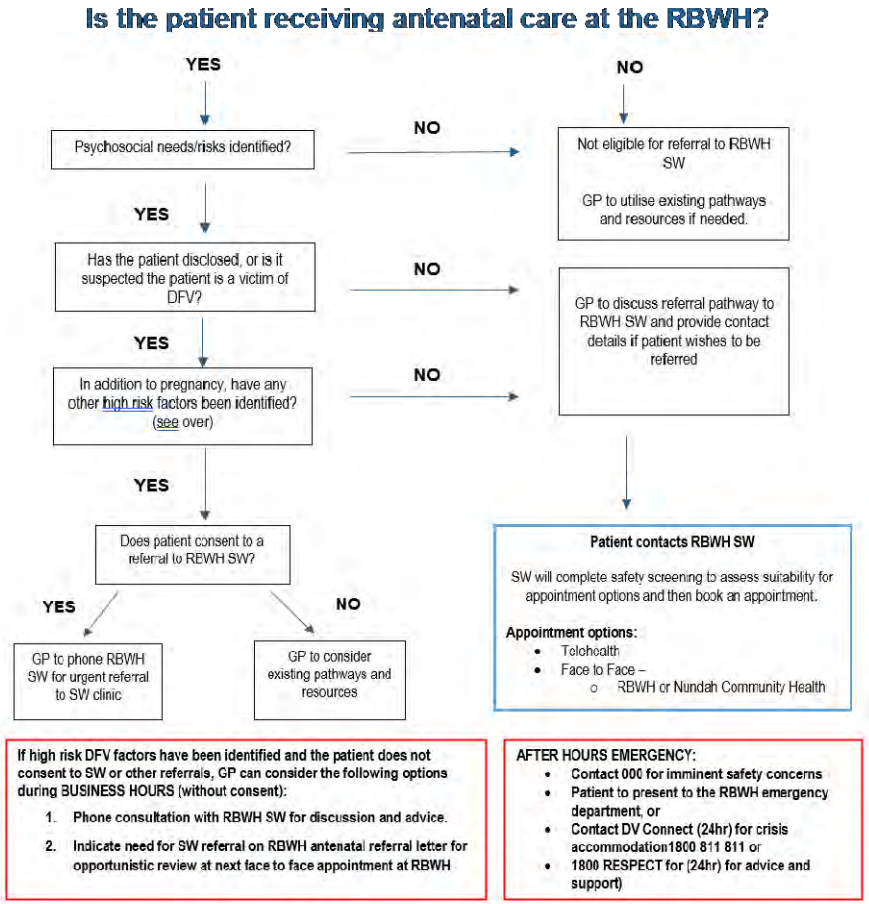
- Men's Information and Support Association Inc. (MISA) – **(07) 3889 7312**
  - Men's information and support services https://misa.org.au

- Women's Legal Service – **1800 957 957**
  - Free legal assistance for women in Queensland https://wlsq.org.au

- Brisbane North Health Pathways has a localised Domestic and Family Violence Support Services health pathway
  - https://brisbanenorth.communityhealthpathways.org
    Username: Brisbane
    Password: North

Metro North Health | Queensland Government

Royal Brisbane & Women's Hospital (RBWH)
Social Work Referral Flowchart – GP



Identification of high risk factors

Has the person using violence ever:

- threatened to kill or seriously harm the victim-survivor? (can include threats to incinerate or commit arson).
- tried to choke or strangle the victim-survivor? (includes attempts to smother or drown) (If yes, note whether consciousness was lost, difficulty in breathing, etc.)
- threatened to or used a weapon against the victim-survivor? (noting a weapon could be anything used to harm)
- used violence against the victim- survivor during pregnancy?
- harmed or threatened to harm a pet or animal?
- forced the victim-survivor to participate in sexual acts when they did not consent? (including the presence of intimidation, threats, force, being asleep and/ or persistent and relentless demands for sex.)
- used coercive control? (including using isolation or deprivation tactics; degraded, harassed or threatened; monitored or surveilled; manipulated the victim survivor; used the children against the victim survivor.

Where there are children has the person using violence ever:

- tried or threatened to harm the children? (including physical, emotional and other harms)
- attempted to take the children when visiting under parenting arrangements?

Domestic and family violence common risk and safety framework - End domestic and family violence reform program - Publications | Queensland Government

https://metronorth.health.qld.gov.au/refer-your-patient-page/gp-events/education-resources

RBWH Department of Social Work Services
Women's & Newborns Team
Reception: (07)) 3646 8268 | **Fax:** (07) 3646 5256
Email: SWS_Mat-Neo@health.qld.gov.au
Business Hours: 8:00am – 4.30pm Monday to Friday

V2 Effective: October 2022 Review: October 2024

Metro North Health | Queensland Government

Blue group - complex

- Kylie - 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. Kylie is 17 weeks pregnant.
- Outline your approach
- What are current Australian recommendations for preconception, antenatal and postnatal vaccinations, 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 to reduce risk to other pregnant women (isolation will be required)

Vaccination before, during, after...

- Preconception
  - MMR, Varicella, Influenza, COVID-19
  - Pneumococcus (for at risk women including smokers)
- During pregnancy
  - Influenza, COVID-19
  - dTpa at 20 - 32 weeks in **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
  - MMR as required
  - dTpa, Influenza, COVID-19 if not vaccinated during pregnancy

https://immunisationhandbook.health.gov.au/

Cytomegalovirus (CMV)

- May be transmitted to baby and can have serious consequences
- Limited evidence to support screening for CMV during pregnancy
- Advise hygiene measures that reduce risk of infection including avoiding contact with children's saliva or urine and hand washing after such exposure

https://www.health.gov.au/resources/publications/pregnancy-care-guidelines

Cytomegalovirus (CMV)

- Offer screening to pregnant women who have frequent contact with large numbers of very young children (e.g. child care workers) – CMV IgG
- Offer testing to pregnant women if they have symptoms suggestive of cytomegalovirus that are not attributable to another specific infection or when imaging findings suggest fetal infection

https://www.health.gov.au/resources/pregnancy-care-guidelines

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

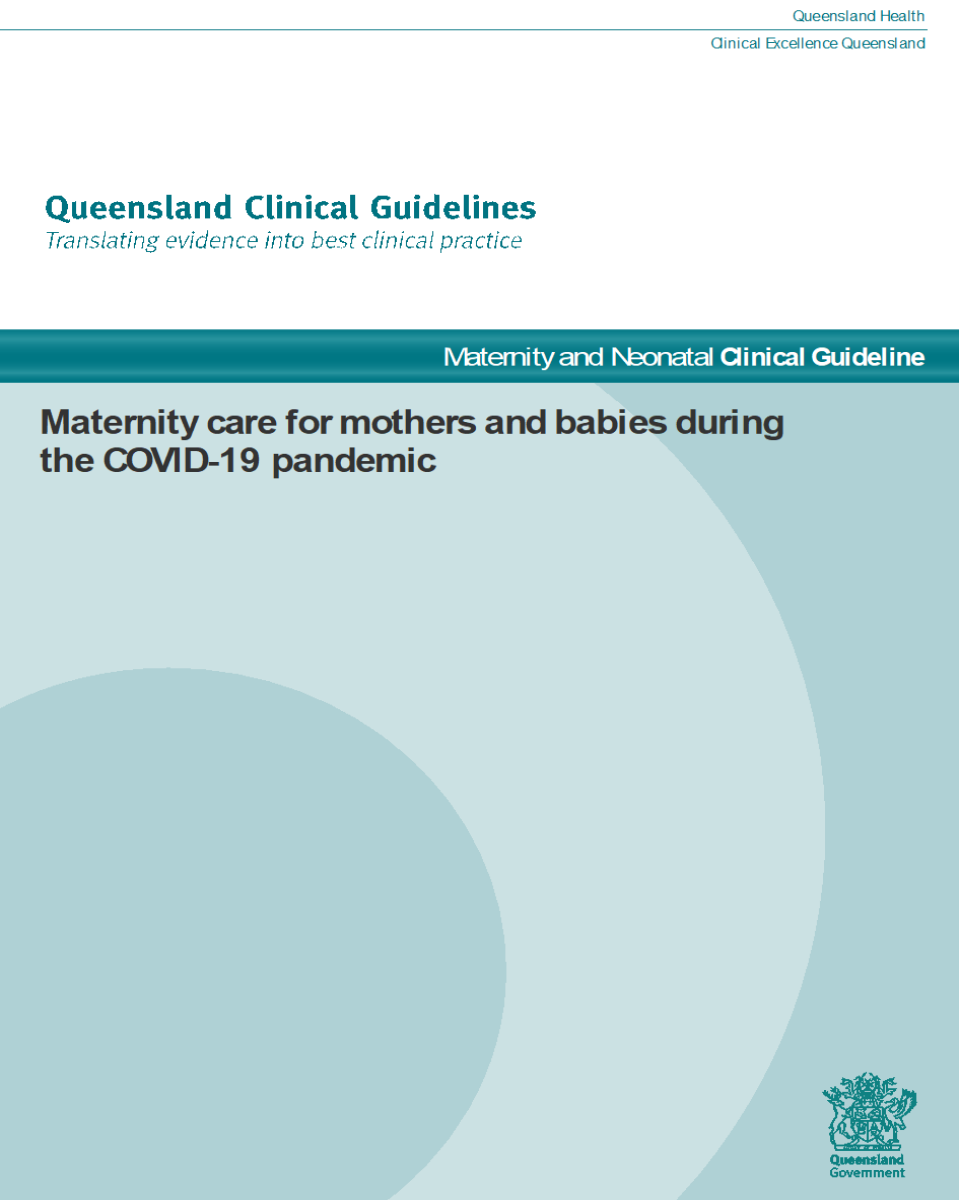
https://www.health.gov.au/diseases/flavivirus-infection-including-zika-virus
https://www.healthdirect.gov.au/zika-virus

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 travelled to a high or moderate risk country whose partner is **not** pregnant:
  - avoid pregnancy and unprotected sex for at least six months

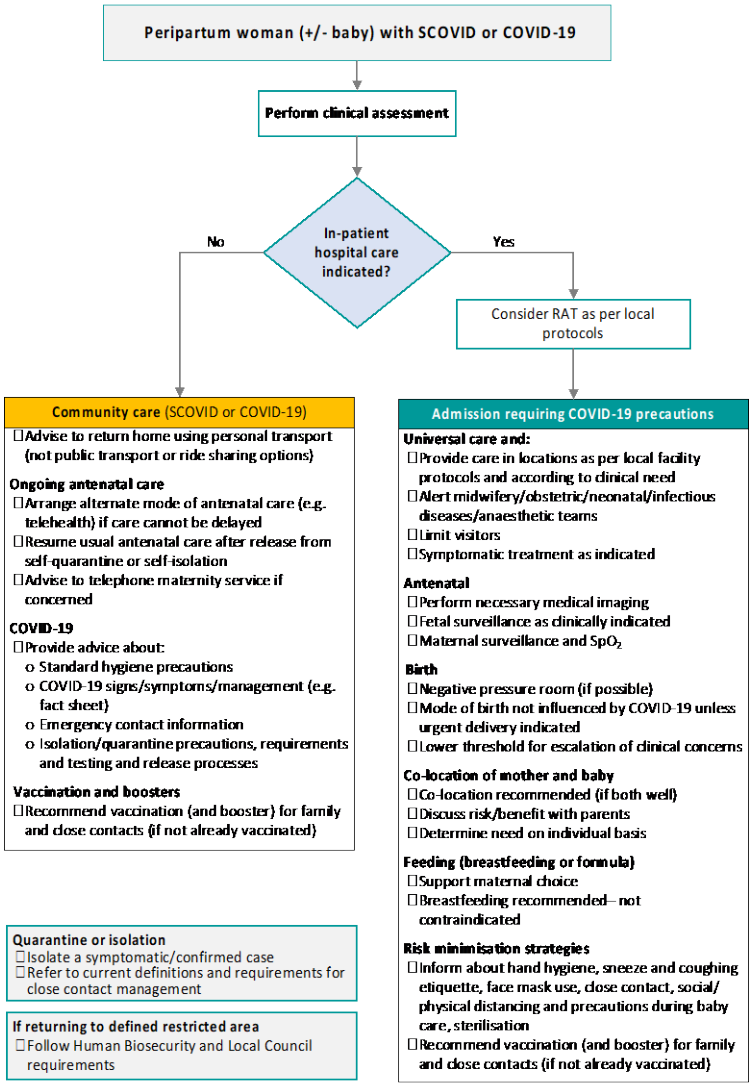
https://www.health.gov.au/diseases/flavivirus-infection-including-zika-virus
https://www.healthdirect.gov.au/zika-virus

COVID-19



https://www.health.qld.gov.au/qcg

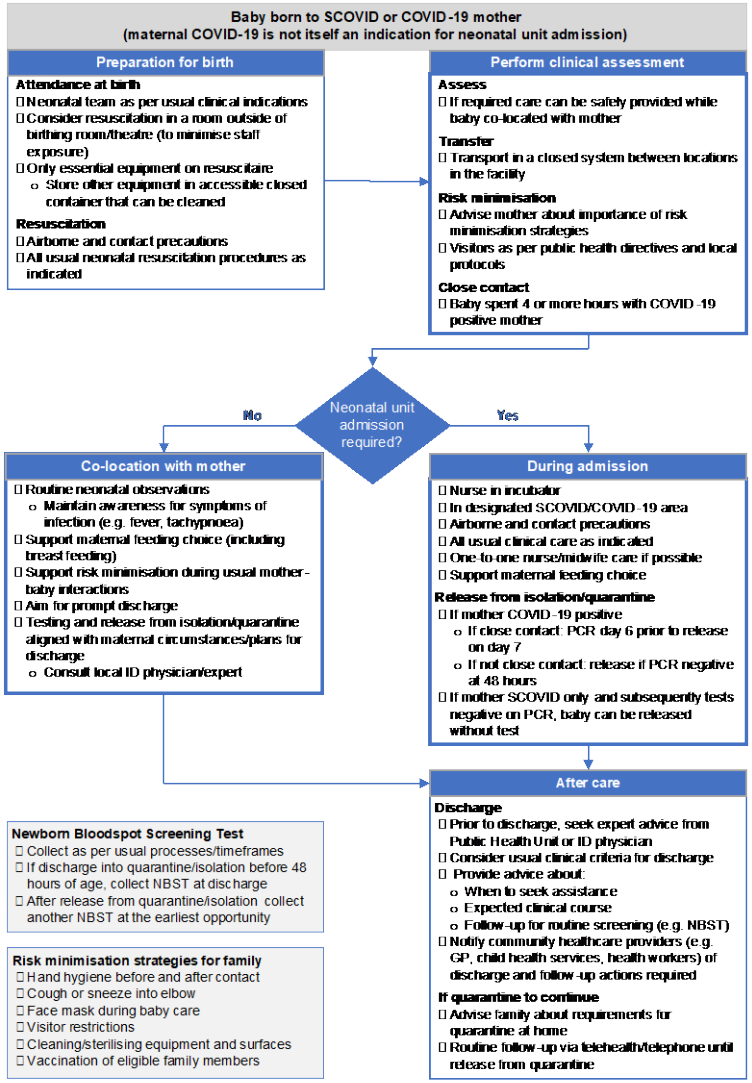
Flowchart: Care of SCOVID or COVID-19 peripartum woman



RAT: rapid antigen test, SCOVID: suspected COVID-19 positive, SpO_2: peripheral capillary oxygen saturation

Flowchart: F21.63-1-V7-R26

Flowchart: Neonate of SCOVID or COVID-19 mother



AGP: aerosol generating procedure, GP: general practitioner, ID: infectious diseases, NBST: newborn bloodspot screening test, PPE: personal protective equipment, SCOVID: suspected COVID-19 positive

Flowchart: F21.63-2-V7-R26

Green group – complex

- Amanda suffered postnatal depression in her first pregnancy which responded well to sertraline
- 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
- Does she need to stop the sertraline?
- Outline your care during and after pregnancy
- What resources are available to assist in care planning?

Perinatal Mental Illness

- Perinatal mental illness is a significant cause of morbidity and mortality, affecting maternal and neonatal outcomes, health of families and the community
- Early identification & appropriate intervention essential
- Suicide is a leading cause of maternal death in the developed world

In Qld in 2018 and 2019, suicide was the leading cause of death of women during pregnancy and within a year of the end of pregnancy

Source: Queensland Maternal and Perinatal Quality Council Report 2021

Perinatal Mental Illness

- 1 in 10 women experience depression in pregnancy
- 1 in 7 experience depression in the year following birth
- 1 in 5 women experience anxiety in pregnancy and in the year following birth
- Common for women to experience depression and anxiety concurrently

Perinatal Mental Illness

- Prevalence of schizophrenia & bipolar disorder: 1 in 100 in general population
- Prevalence of post-partum psychosis: 1 in 1000 pregnancies
- Increased risk of new onset psychosis post partum
- Risk of relapse of pre-existing mood disorders increases across the perinatal period

Perinatal Mental Illness

Risk factors

- PHx/FHx mental illness/perinatal mental illness
- Psychosocial risk factors
- ATSI, migrants, refugees, LGBTIQ
- Isolation, lack of support
- Life stressors/trauma e.g. domestic and family violence, marital conflict, child safety, emotional/physical/sexual abuse, loss, change, disability
- Advanced maternal age, IVF, body image & obesity, hyperemesis gravidarum, birth trauma, IUFD

Perinatal Mental Illness

Consequences - Mother

- Smoking, alcohol, unhealthy eating
- Increased pregnancy symptoms e.g. nausea & vomiting
- Gestational diabetes
- Gestational hypertension
- Pre-eclampsia
- Intrauterine Fetal Growth Restriction
- Antepartum haemorrhage
- Preterm labour
- LUSCS
- Postnatal depression & mood disorders
- Maternal death

Perinatal Mental Illness

Consequences – Baby

- Preterm birth
- Low birth weight
- Fetal distress
- Decreased Apgars
- Increased NICU admission
- Decreased breast feeding
- Failure to thrive
- Adverse neurodevelopmental outcomes
- Perinatal death

Perinatal Mental Illness

- Screen for Depression – EPDS
  - as early as practical in pregnancy
  - repeat at least once later in pregnancy
  - 6 – 12 weeks post partum and again in the first postnatal year
  - arrange further assessment if EPDS score 13 or more
  - arrange immediate further assessment if positive score Q10

Perinatal Mental Illness

- Screen for Anxiety
  - use anxiety items from other screening tools e.g. EPDS, DASS, K10, ANRQ
- Assess Psychosocial Risk factors
  - SAFE Start Tool
  - ANRQ with domestic and family violence items
- Consider language and cultural appropriateness of tools in ATSI, migrant and refugee women

Management of Perinatal Mental Illness

- Mild to Moderate Perinatal Depression and Anxiety
  - Cognitive behavioural therapy (CBT), interpersonal psychotherapy (IPT) and psychodynamic therapy
  - Psychotherapy involving the infant may improve mother - baby interaction

Medication for Perinatal Mental Illness

- Moderate to Severe Depression
  - **SSRIs** preferred e.g. sertraline, escitalopram
  - **TCAs** can be considered especially if previously effective
- Moderate to Severe Anxiety
  - **SSRIs** preferred
  - **TCAs** can be considered especially if previously effective
  - Short-term use **benzodiazepines** while awaiting onset of action of SSRI or TCA
  - Avoid long acting benzodiazepines, particularly around time of birth
- **SSRIs**, **TCAs**, **short acting benzodiazepines** OK in breast feeding

Medication for Perinatal Mental Illness

- Bipolar disorder
  - Use caution with anticonvulsants as mood stabilisers in pregnancy and breast feeding
  - **Sodium valproate** associated with major & cardiac malformations and adverse cognitive outcomes
  - **Do not prescribe sodium valproate** (wean over 2-4 weeks with Folic acid 5mg/day)
  - **Carbamazepine** & **lamotrogine** may be associated with major malformations
  - Avoid **lamotrogine** in breast feeding

Medication for Perinatal Mental Illness

- Bipolar disorder
  - **Lithium** may be associated with increased risk of malformations
  - Closely monitor blood levels
  - Reduce dose just prior to onset of labour & recommence after birth at pre-pregnancy dose
  - Avoid **lithium** in breast feeding

Medication for Perinatal Mental Illness

- Bipolar disorder
  - Use caution with any antipsychotic in pregnancy
  - Monitor for excessive weight gain and GDM
  - Do not initiate **clozapine** in pregnant women and use with caution in breast feeding (monitor infant's WCC weekly for first 6 mo.)

Medication for Perinatal Mental Illness

- Choose medication with lowest risk profile for woman, fetus and baby
- Consider previous response to medication
- Use lowest effective dose
- Use a single drug if possible
- Dosages may need to be adjusted due to changes in pharmacodynamics in pregnancy

Medication for Perinatal Mental Illness

- Detailed morphology USS at 18-20 weeks if exposure to psychoactive medications in first trimester
- Pharmacological review early post partum in women who cease psychoactive medications during pregnancy
- Observe infants exposed to psychoactive medications for first 3 days post partum

Medication for Perinatal Mental Illness

- Antenatal Pharmacists
  - RBWH
    - P: 3647 0810 Monday - Friday
    - F: 3646 3544
    - E: pharmacy-maternityoutpatients-RBWH@health.qld.gov.au
  - Redcliffe Hospital
    - P: 3883 7160 Monday - Friday
    - F: 3883 7908
    - E: redh-pharmacy@health.qld.gov.au

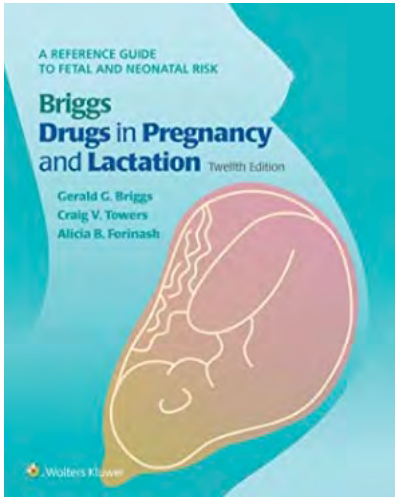
Medication for Perinatal Mental Illness

- Queensland Medicines Advice & Information Service (QMAIS) for Health Professionals

  P: 07 3646 7599 or 07 3646 7098

  E: QMAIS@health.qld.gov.au
- LactMed - U.S. National Library of Medicine https://www.ncbi.nlm.nih.gov/books/NBK501922/
- Drugs in Pregnancy and Lactation Gerald Briggs et al
- Medications and Mothers' Milk Online

  https://www.halesmeds.com

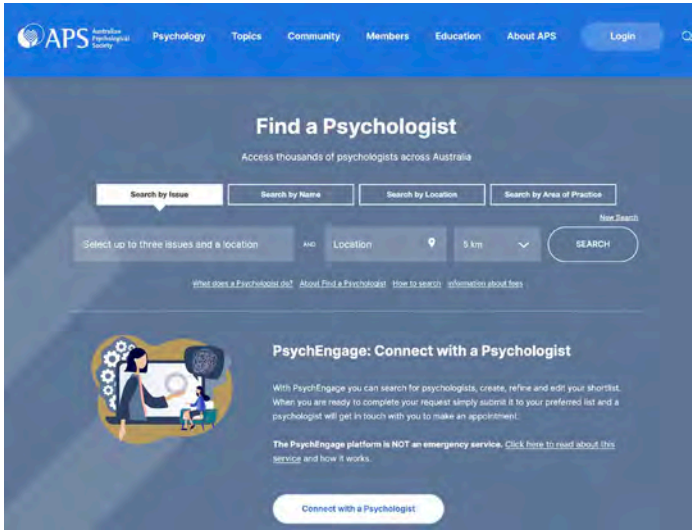


Source: Google images

Source: Google images

Management of Perinatal Mental Illness

- Non directive pregnancy support counselling
  - No Mental Health Treatment Plan required
  - 3 Medicare funded visits.
  - Search for eligible psychologists https://psychology.org.au/find-a-psychologist
- Mental health treatment plan (Better Access/Brisbane Mind)



Metro North Perinatal Mental Health Service

- Metro North HHS Perinatal Mental Health Service - Non-Acute
  - https://metronorth.health.qld.gov.au/rbwh/healthcare-services/perinatal-mental-health
  - P: 07 3146 2525
  - F: 07 3146 2314
  - E: Perinatal-Mental-Health@health.qld.gov.au
  - Perinatal Psychiatrist – Dr Anastasia Braun – fax referral 07 3646 1821

- 1300 MH CALL (1300 64 2255) - Acute

MN294

DO NOT WRITE IN THIS BINDING MARGIN

Queensland Government

Metro North Hospital and Health Service

PERINATAL WELLBEING TEAM REFERRAL (NON-ACUTE SERVICE)

(Affix patient identification label here)

URN:

Family Name:

Given Names:

Address:

Date of Birth: Sex: ☐ M ☐ F ☐ I

Does the patient give verbal consent to contact? ☐ Yes – phone number: ..... ☐ No

Gestation K:..... G:..... P:..... M:..... T:..... EDC:...../...../.....

Baby's Name:..... DOB:...../...../.....

Edinburgh Perinatal Depression Scale (EPDS): *Please attach if available (Only if ≥ 6 weeks postpartum)*

SCORE:.../30

Was this completed in the last 7 days? ☐ Yes ☐ No

If score was ≥ 13 generic letter sent to GP ☐ Yes ☐ No

Was there a positive score on Q10? ☐ Yes ☐ No

If yes, please comment and outline the protective factors

.....

.....

If Yes, MH CALL 1300642255 details were provided to the patient? ☐ Yes ☐ No

What are the current mental health symptoms or concerns following the review today? *Please attach notes if relevant*

.....

.....

Is there a history of mental health / alcohol / drug issues? ☐ Yes ☐ No

.....

.....

Is the patient currently taking medication for their mental health? ☐ Yes ☐ No

Has the patient ceased medication for their mental health during the pregnancy? ☐ Yes ☐ No

If yes, please comment:

.....

.....

Are there current MH care providers? *Please tick below as applicable.* ☐ Yes ☐ No

☐ Psychiatrist ☐ Psychologist ☐ GP ☐ Adult MH team ☐ Peach Tree ☐ NGO service

If yes, please comment:

.....

Additional referrals?

.....

Referrer Details:

Name: Signature:

Designation: ☐ Midwife ☐ Medical ☐ Child Health ☐ Dietitian ☐ Pharmacist ☐ SW ☐ Other:.....

Date:...../...../..... Contact number:.....

PLEASE ENSURE REFERRAL FORM IS FULLY COMPLETED TO ENABLE TIMELY TRIAGE

Email referral to: perinatal-mental-health@health.qld.gov.au

PERINATAL WELLBEING TEAM REFERRAL (NON-ACUTE SERVICE)

Queensland Government

Metro North Hospital and Health Service

PERINATAL WELLBEING TEAM REFERRAL (NON-ACUTE SERVICE)

(Affix patient identification label here)

URN:

Family Name:

Given Names:

Address:

Date of Birth: Sex: ☐ M ☐ F ☐ I

- All referrals are emailed **perinatal-mental-health@health.qld.gov.au**
- Perinatal Wellbeing Team is available Monday-Friday 8-430pm **– Intake Officer ph 3146 2525**
- All referrals with an EPDS score of ≥ 13 and above, and referrals requiring further triage will be called by the service within 3 business days
- All referrals with EPDS ≤ 13 are sent a letter inviting them to opt in to the service and providing local perinatal support resources and then closed pending contact

COMPLETION OF THE EDINBURGH PERINATAL DEPRESSION SCALE (last seven days)

Questions to consider if the overall scores are high

- Are there any physical issues causing distress eg pain, nausea, vomiting or recent concerns with the pregnancy/baby?
- Are there any recent events in your life causing distress eg finances, accommodation issues, illness, domestic or family violence?
- Have you recently stopped medication?

RISKS IDENTIFIED ON QUESTION 10

ASK ABOUT

- Self-harm/suicidal thoughts, plan, lethality, means, history of suicide and protective factors

CONSIDER

- Have you ever hurt yourself before?
- Are you worried you may hurt yourself?
- What stops you from hurting yourself?
- How long have you had thoughts like this?
- Who helps you or who do you turn to when you are feeling this way?

Fleeting thoughts of self-harm or suicide but no current plan, means or intent and good protective factors	Self-harm/ suicidal thoughts are present but no current plan or means and good protective factors	Continual and specific self-harm thoughts and/or suicidal ideation with plan and intent, or disclosure of recent suicide attempt Minimal protective factors
• Provide MH CALL details 1300642255 • Referral to perinatal wellbeing team	• Provide MH CALL details: 1300642255 • Referral to perinatal wellbeing team	• Clinician to make MH CALL referral: 1300642255 • Discuss option of presenting to Emergency for urgent assessment • Discuss with Team Leader if relevant

DOCUMENT ACTIONS TAKEN IN RESPONSE TO QUESTION 10 IN CLINICAL RECORD

DO NOT WRITE IN THIS BINDING MARGIN

MN294
V1.00 - 07/2021
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MN294

Other helpful supports

- Lifeline **13 11 14** – 24 hours
- Beyond Blue 1300 22 46 36 https://healthfamilies.beyondblue.org.au
- PANDA www.panda.org.au or 1300 72 63 06 – mobile app
- Peach Tree Perinatal Wellness1800 732 249 www.peachtree.org.au
- Mum Space www.mumspace.com.au
- Mums mood booster https://mummoodbooster.com/public/au
- iCOPE www.cope.org.au
- SMS 4 Dads www.sms4dads.com.au or text 0437 281 215
- DV Connect www.dvconnect.org.au or 1800 81 18 11

When and how should I urgently seek medical

If you have acute concerns about your own or another person's mental health and need urgent support - please contact the mental health access team available 24 hours.

MH CALL 1300 64 22 55
If life is in danger call 000

Perinatal Wellbeing Team

Intake Officer: Mon-Fri 0800-1630

P: 07 3146 2525

F: 07 3146 2314

A: Nundah Community Health Centre, 10 Nellie Street, Nundah Q 4012

E: perinatal-mental-health@health.qld.gov.au

Antenatal Clinics are offered at Caboolture, Royal Brisbane and Women's, Redcliffe Hospital's and the Nundah Community Health Centre.

Postnatal appointments are available at Nundah Community Health Centre or at other community locations.

Telehealth is also available.

Metro North Health | Queensland Government

About the Perinatal Wellbeing Team

Who are we?

We are a nurse led service that supports emotional health and wellbeing of women, their partners and families during the perinatal period, conception to a year after the birth of a baby

- Non urgent
- Monday-Friday service 8am-4.30pm

What is perinatal wellbeing?

The perinatal period is a time of great change in a women's life. Adjusting to pregnancy and parenthood can bring both joy and stress to families. It is not uncommon to feel scared and overwhelmed; focussing on all aspects of your physical, social, emotional and mental health is essential for your overall wellbeing.

Getting support early is key for you, your infant and your family.

What do we offer?

- Pre-conception medication advice clinic – treatment options
- Specialist perinatal mental health assessment, liaison and education – during the antenatal and postnatal period including telehealth appointments
- Referral to Psychiatry or Nurse Practitioner clinic to review medication in the perinatal period
- Telephone consultation to support GP around medication use in pregnancy and breastfeeding
- Works with you, your family, GP and other services to ensure you have support

Who can use our service?

- Women 18 years or older
- Antenatal women birthing at a hospital in Metro North Health area
- Postnatal women living in the Metro North Health area
- Partners of perinatal women as above

Have you considered if?

- Your baby is sleeping but you can't?
- You avoid going out or have withdrawn from friends/family?
- You worry constantly about harm coming to your baby through everyday activities?
- You or others notice that you are more irritable and/or frustrated/angry?
- You think about your birth and get sad/distressed?
- You have stopped looking forward to things or enjoying activities that you used to?
- That you can't put your baby down, or let others help you, or that you need to check the baby more than what is needed?
- You stopped medication before or in early pregnancy and have noticed your mood or anxiety symptoms have got worse?
- You wake up with dread or anxiety?
- You are unable to relax despite being exhausted?
- You are overwhelmed by your usual day to day activities or routine?
- Your pregnancy/body changes have triggered you?

Referral process

- Self-Referral
- GP or other health care professional involved in your pregnancy or postpartum care

Our services >

Aboriginal and Torres Strait Islander children's health homepage >

Mental health services >

Babies and young children (aged 0 to 4 years)

Kids (aged 5 to 11 years)

Teens (aged 12+)

For parents and carers

Music and mental health

Where to get help

Find your local CYMHS

Mental Health Act

Queensland Centre for Perinatal and Infant Mental Health

The Queensland Centre for Perinatal and Infant Mental Health (QCPIMH) aims to support 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 brings perinatal and infant mental health needs to the attention of policy-makers, decision-takers and the general community, to improve the emotional wellbeing of all Queensland parents, infants and young children, and families.

Contact us

31 Robinson Road Nundah
QLD 4012
t: 07 3266 0300
f: 07 3266 0344
e: pimh@health.qld.gov.au

Useful resources

QCPIMH brochure
QCPIMH Charter

Queensland Health

Clinical **Excellence** Queensland

Queensland Perinatal Mental Health Support Services

Below is a guide for health professionals outlining perinatal mental health support services currently available in Queensland and Nationally. For referrals to clinical services, please contact these services directly. Virtual tools for perinatal mental health screening can be accessed through the COPE website (https://www.cope.org.au/). Several national services offer support via telephone and/or online: where appropriate, consumers may be encouraged to access these services directly.

The first point of contact for most women during pregnancy and in the postpartum period for mental health screening and support will be their General Practitioner (GP), Midwife or Child Health Nurses. GPs, Midwives and Child Health Nurses screen women for perinatal mental health difficulties and support referral to public or private mental health services. A Mental Health Care Plan (MHCP) enables the provision of a Medicare rebate for services. Alternatively, some services may be claimed via private health insurance if applicable.

To access public mental health services in Queensland, new referrals triage and intake, **contact Mental Health Call: 1300 64 22 55. If a person is experiencing a mental health crisis: Call 000** and ask for emergency services (ambulance or police).

https://www.childrens.health.qld.gov.au/chq/our-services/mental-health-services/qcpimh/resources-for-health-professionals/

Version 1.00 | Effective: June 2020 | Review: February 2021

pimh@health.qld.gov.au

Queensland Government

Mental Health Care in the Perinatal Period

Australian Clinical Practice Guideline

October 2017

COPE
Centre of Perinatal Excellence
cope.org.au

Useful resources

- Centre of Perinatal Excellence
  cope.org.au
- beyond blue
  https://www.beyondblue.org.au/
- Massachusetts General Hospital Center for Women's Mental Health
  https://womensmentalhealth.org/?doing_wp_cron=1482262772.0649859905242919921875
- Black Dog Institute
  blackdoginstitute.org.au
- Panda Perinatal Anxiety & Depression Australia
  panda.org.au
- Queensland Centre for Perinatal and Infant Mental Health Library Service
  http://qcpimh.libguides.com/Library/home
- Lavender Mother and Baby Unit Gold Cost University Hospital
  https://www.goldcoast.health.qld.gov.au/our-services/lavender-mother-and-baby-unit
- Victorian Government – Better Health Channel
  https://www.betterhealth.vic.gov.au/health/healthyliving/postnatal-depression-pnd

Useful resources

- Just speak up https://healthyfamilies.beyondblue.org.au/pregnancy-and-new-parents
- MoodGYM Training Program
  https://moodgym.com.au
- White Cloud Foundation
  http://whitecloudfoundation.org
- AMEND http://betterrelationships.org.au/services/counselling/amend/
- Smiling Mind App
  https://www.smilingmind.com.au/smiling-mind-app/
- Encircle Young Parents Program
  http://encircle.org.au/young-parents-program/
- Assistance to Survivors of Torture & Trauma
  http://qpastt.org.au
- CALD Mental Health Care & Support https://metrosouth.health.qld.gov.au/qtmhc

Useful resources

- Pregnancy Counselling Link *Women talk, we listen…*
  http://www.pcl.org.au/
- Women's Health and Equality Queensland
  https://wheq.org.au/
- Lifeline 13 11 44
  https://www.lifeline.org.au
- Parentline Queensland
  https://parentline.com.au/
- Peach Tree
  http://peachtree.org.au/
- Mum Space
  https://www.mumspace.com.au
- SMS for Dads
  www.sms4dads.com.au

Australian Perinatal Psychology/Mental Health Professional Facebook group

- closed group for AHPRA registered health professionals interested in perinatal health treatment, prevention, research and training

Orange group - complex

- Nicole - G1P0 K28, GDM, is stressed - running late for appointment (caught in traffic), discovers 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
- Despite her protests, you take her BP again after 5 minutes and the best you can get is 153/92
- Outline your approach

Hypertension and pregnancy

Queensland Health

Clinical Excellence Queensland

Queensland Clinical Guidelines

Translating evidence into best clinical practice

Maternity and Neonatal **Clinical Guideline**

Hypertension and pregnancy

Queensland Government

http://www.health.qld.gov.au/qcg/

Flow Chart: Management of hypertension in pregnancy

Risk factors for pre-eclampsia
- Previous history of pre-eclampsia
- Family history of pre-eclampsia
- Inter-pregnancy interval ≥ 10 years
- Nulliparity and/or multiple pregnancy
- Pre-existing medical conditions
  - Congenital heart defects
  - Pre-existing diabetes
  - Renal disease
  - Chronic hypertension
  - Chronic autoimmune disease
- Age ≥ 40 years
- BMI ≥ 30 kg/m^2
- Maternal depression or anxiety
- Assisted reproductive technology
- Gestational trophoblastic disease
- Fetal triploidy

Indications to consider birth
- Non-reassuring fetal status
- Severe fetal growth restriction
- Uncontrollable pre-eclampsia
- Eclampsia
- Uncontrollable hypertension
- Placental abruption
- Acute pulmonary oedema
- Deteriorating platelet count, liver and/or renal function
- Persistent neurological symptoms
- Persistent epigastric pain, nausea or vomiting with abnormal liver function tests

Severe hypertension/pre-eclampsia
- Multidisciplinary team approach
- Manage in birth suite/HDU
- Strict control of BP
- Maternal and fetal assessments
- Continuous #CTG
- Consider magnesium sulfate
- Consider corticosteroids if preterm labour anticipated
- Strict fluid management
- FBC, ELFT including urate & LDH
- Coagulations screen
- Urine for protein to creatinine ratio
- Consider transfer to higher level facility, if required

Stabilise prior to birth
- Control hypertension
- Correct coagulopathy
- Consider eclampsia prophylaxis
- Attention to fluid status

Postpartum
- Close clinical surveillance for postpartum hypertension
- Consider VTE prophylaxis
- Consider timing of discharge
- Arrange follow up
- Maternal screening as indicated

Hypertension sBP ≥ 140 mmHg and/or dBP ≥ 90 mmHg

↓

Maternal investigations and fetal assessment

↓

Is birth indicated?

Yes → Birth

No ↓

Inpatient or outpatient care

↓

Worsening maternal or fetal condition?

No → Is birth indicated?

Yes ↓ Birth

Maternal investigations
- Urine dipstick for proteinuria
- Spot urine protein to creatinine ratio if:
  - ≥ 2+ or recurrent 1+ on dipstick
- Full blood count
- Urea, creatinine electrolytes and urate
- LFT including LDH

Fetal assessment
- #CTG
- USS for fetal growth & wellbeing

Initiate antihypertensives

Commence if:
- sBP ≥ 160 or dBP ≥ 110 mmHg

Consider if:
- sBP ≥ 140 or dBP ≥ 90 mmHg
- Choice of antihypertensive drug as per local preferences/protocols

Oral antihypertensive (initial dose – adjust as clinically indicated)
- Methyldopa 125–250 mg bd
- Labetalol 100 mg bd
- Nifedipine (SR) 20–30 mg daily
- Hydralazine 25 mg bd
- ^Nifedipine (IR) 10–20 mg bd
- Prazosin 0.5 mg bd
- Clonidine 50–100 micrograms bd

Outpatient care
- If mild-moderate hypertension without preeclampsia
- Individualise of appointments

Consider admission if:
- Fetal wellbeing is of concern
- sBP ≥ 140 mmHg or
- dBP ≥ 90 mmHg or
- Symptoms of pre-eclampsia, or proteinuria or pathology results abnormal

Inpatient monitoring
- BP 4 hourly if stable
- #CTG daily
- Ward urinalysis, as required
- Maintain accurate fluid balance
- Daily review (minimum) by obstetrician
- Normal diet
- Bedrest is not usually recommended
- Consider VTE prophylaxis

ALPS: antiphospholipid syndrome, BMI: body mass index, BP: blood pressure, CTG: cardiotocograph, dBP: diastolic BP, ELFT: electrolytes and liver function test, FBC: full blood count, FHR: fetal heart rate, HDU: high dependence unit, LDH: Lactate dehydrogenase, sBP: systolic BP, USS: ultrasound scan, VTE: venous thromboembolism, >: greater than, <: less than, ≥: greater than or equal to, ≤: less than or equal to, ^Nifedipine formulations available with SAS authority, #interpret CTG with caution when gestational age less than 28 weeks

Flowchart: F21.13-2-V9-R26

Hypertension

- Most common medical problem in pregnancy
- A leading cause of perinatal and maternal morbidity & mortality
- sBP ≥ 140 &/or dBP ≥ 90 = mild - moderate
- sBP ≥ 160 &/or dBP ≥ 110 = severe
- sBP ≥ 170 = medical emergency

Classification of hypertension in pregnancy

- Chronic hypertension occurring in pregnancy
- White coat hypertension
- Masked hypertension
- Transient gestational hypertension
- Gestational hypertension
- Pre-eclampsia
- Pre-eclampsia superimposed on chronic hypertension

Oral antihypertensives

Table 16. Oral antihypertensive drug therapy

Drug	Initial dose	Maintenance Dose	Maximum daily dose
Methyldopa[57]	125–250 mg BD	250–500 mg 2–4 times daily	Maximum/day 2 g
Labetalol[58]	100 mg BD	200–400 mg 2–4 times daily	Maximum daily dose: 2.4 g
Hydralazine[59,60]	25 mg BD	25–100 mg BD	Maximum daily dose: 200 mg
Nifedipine (SR)[61,62]	20–30 mg daily	60–120 mg daily	Maximum daily dose: 120 mg
[#]Nifedipine (IR)[61,63]	10–20 mg BD	20–40 mg BD	Maximum daily dose: 80 mg
Prazosin[64]	0.5 mg BD	1 mg TDS	Maximum daily dose: 20 mg
Clonidine[65,66]	50–100 microgram BD	150–300 microgram BD	Maximum daily dose: 600 microgram

[#]Special Access Scheme (SAS) authority required. Note: Nifedipine formulations available with SAS authority

Pre-eclampsia

- Multisystem disorder
- Hypertension & involvement of 1 or more other organ systems and/or fetus
- Resolves within 3 mo. postpartum
- Hypertension may not be the first manifestation
- Proteinuria common but not mandatory to make the clinical diagnosis

Risk factors for pre-eclampsia

Table 7. Clinical risk factors for pre-eclampsia

Risk factor	Relative risk [95% CI]
Previous history of pre-eclampsia[20]	8.40 [7.10 to 9.90]
*Adolescent pregnancy (10–19 years)[21]	6.70 [5.80 to 7.60]
Systemic lupus erythematosus[22]	5.50 [4.50 to 6.80]
Chronic hypertension[20]	5.10 [4.00 to 6.50]
Assisted reproductive technology (donor oocytes)[20]	4.34 [3.10 to 6.06]
Pre-existing diabetes[20]	3.70 [3.10 to 4.30]
Family history of pre-eclampsia[23]	2.90 [1.70 to 4.93]
Twin pregnancy (increased risk with multiples)[24]	2.93 [2.04 to 4.21]
Body mass index (BMI) before pregnancy (> 30 kg/m^2)[20]	2.80 [2.60 to 3.60]
Antiphospholipid syndrome[20]	2.80 [1.80 to 4.30]
Nulliparity[20]	2.10 [1.90 to 2.40]
Pre-existing kidney disease[20]	1.80 [1.50 to 2.10]
Assisted reproductive technology (donor sperm)[20]	1.63 [1.36 to 1.95]
Maternal congenital heart defects[25]	1.50 [1.30 to 1.70]
Maternal anxiety or depression[26]	1.27 [1.07 to 1.50]
Inter-pregnancy interval greater than 10 years[20]	1.10 [1.02 to 1.19]
Gestational trophoblastic disease[27]	Unavailable
Fetal triploidy[28]	Unavailable
Fetal aneuploidy[2]	Unavailable

*Limited data (primarily from low resourced countries) may suggest higher incidence in adolescent pregnancies

First Trimester Screening for pre-eclampsia

- Maternal risk factors
- Mean arterial pressure
- Sonographic markers
  - uterine artery pulsatility index (UTPI) measured between 11+0 – 13+6 weeks
- Biochemical markers
  - placental growth factor (PIGF)
  - pregnancy associated plasma protein-A (PAPP-A)

Pre-eclampsia risk reduction

- Aspirin 100 – 150 mg at night - commence before 16+0 weeks

- 1200 – 2500 mg calcium if intake < 600mg/day

Symptoms of pre-eclampsia

- Severe headache
- Visual disturbance
- Severe upper abdominal pain (epigastric or RUQ)
- Nausea and vomiting
- Sudden or progressive peripheral oedema

Diagnosis of pre-eclampsia

3.3 Diagnosis of pre-eclampsia

A diagnosis of pre-eclampsia requires both[6]:

- Hypertension arising after 20+0 weeks gestation, confirmed on 2 or more occasions AND
- ***One or more*** of the organ/system features related to the mother and/or fetus identified in Table 5. Diagnosis of pre-eclampsia.

Note:

- Hypertension may not be the first manifestation
- Pre-existing hypertension is a strong risk factor for the development of pre-eclampsia[6] and requires close clinical surveillance
- Proteinuria is common but is not mandatory to make the clinical diagnosis[6,8]

Table 5. Diagnosis of pre-eclampsia

Aspect	Consideration
Renal	• Random urine protein to creatinine ratio greater than or equal to 30 mg/mmol[14] from an uncontaminated specimen (proteinuria) • Serum or plasma creatinine greater than or equal to 90 micromol/L[14] ***or*** • Oliguria (less than 80 mL/4hours or 500 mL/24 hours)
Haematological	• Thrombocytopenia[14] (platelets under 150 x 10^9/L) • Haemolysis[8] (schistocytes or red cell fragments on blood film, raised bilirubin, raised lactate dehydrogenase (LDH), decreased haptoglobin) • Disseminated intravascular coagulation (DIC)[8]
Liver	• New onset of raised transaminases[14] (over 40 IU/L) with or without epigastric or right upper quadrant pain[8,15]
Neurological	• Headache[8] • Persistent visual disturbances (photopsia, scotomata, cortical blindness, retinal vasospasm) • Hyperreflexia with sustained clonus • Convulsions (eclampsia) • Stroke
Pulmonary	• Pulmonary oedema[14]
Uteroplacental	• Fetal growth restriction (FGR)[8] • Suspected fetal compromise[14] • Abnormal umbilical artery Doppler wave form analysis • Stillbirth

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

Pink group - complex

- Kate 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?

Clinical practice guideline for the care of women with decreased fetal movements for women with a singleton pregnancy from 28 weeks' gestation

Endorsed by:

Version 2.3
September 2019

https://stillbirthcre.org.au/resources/decreased-fetal-movements-dfm-clinical-practice-guidelines/

Safer Baby Bundle

- Supporting women to stop smoking in pregnancy
- Improving detection and management of fetal growth restriction (FGR)
- Raising awareness and improving care for women with decreased fetal movements (DFM)
- Improving awareness of maternal safe going-to-sleep position in late pregnancy
- Improving decision making about timing of birth for women with risks for stillbirth

https://stillbirthcre.org.au/researchers-clinicians/download-resources/safer-baby-bundle-resources/

Stillbirth eLearning modules

Safer Baby Bundle

The Safer Baby Bundle module provides evidence based information for maternity health care providers on the 5 elements of the bundle: Smoking Cessation, Fetal Growth Restriction (FGR), Decreased Fetal Movements (DFM), Side Sleeping and Timing of Birth.

Start Module

IMPROVE

This is a training package of six courses and is designed to support healthcare professionals in responding to women who have experienced stillbirth, and gain crucial learnings.

Each course takes approximately 20 minutes to complete and provides essential training for obstetricians, midwives, nurses, general practitioners and antenatal staff.

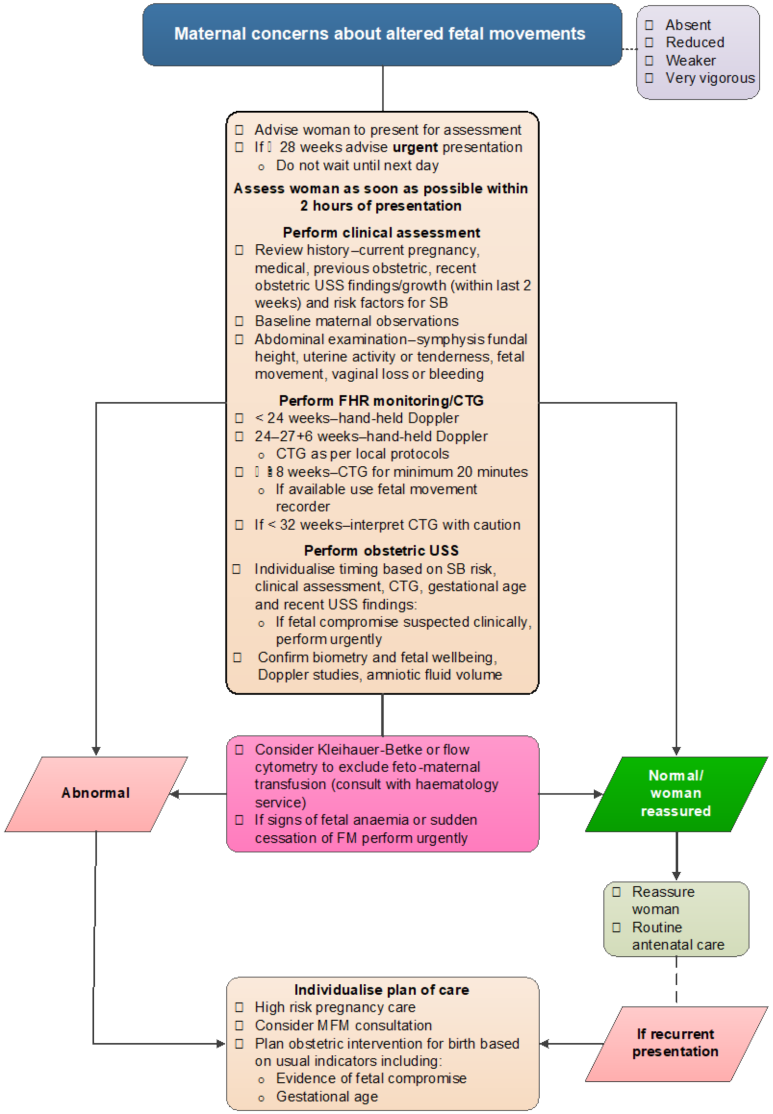
Start Module

The Centre of Research Excellence in Stillbirth (The Stillbirth CRE) is a national collaboration addressing the neglected tragedy of stillbirth. Through a priority driven program, the Stillbirth CRE aims to reduce the rate of stillbirth and improve care for parents and families whose baby is stillborn.

Visit the Stillbirth CRE website for more information →

https://learn.stillbirthcre.org.au/

Altered fetal movements



CTG: cardiotocograph; **FHR:** fetal heart rate; **FM:** fetal movements; **MFM:** maternal fetal medicine; **SB:** stillbirth; **USS:** ultrasound scan; **≥:** greater than or equal to; **<:** less than

Queensland Clinical Guideline. *Fetal movements* Flowchart: F18.46-1-V2-R23

http://www.health.qld.gov.au/qcg/

Obstetric Review Centre (ORC)

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