

Queensland Clinical Guidelines

Translating evidence into best clinical practice

Maternity and Neonatal **Clinical Guideline**

Perinatal substance use: maternal

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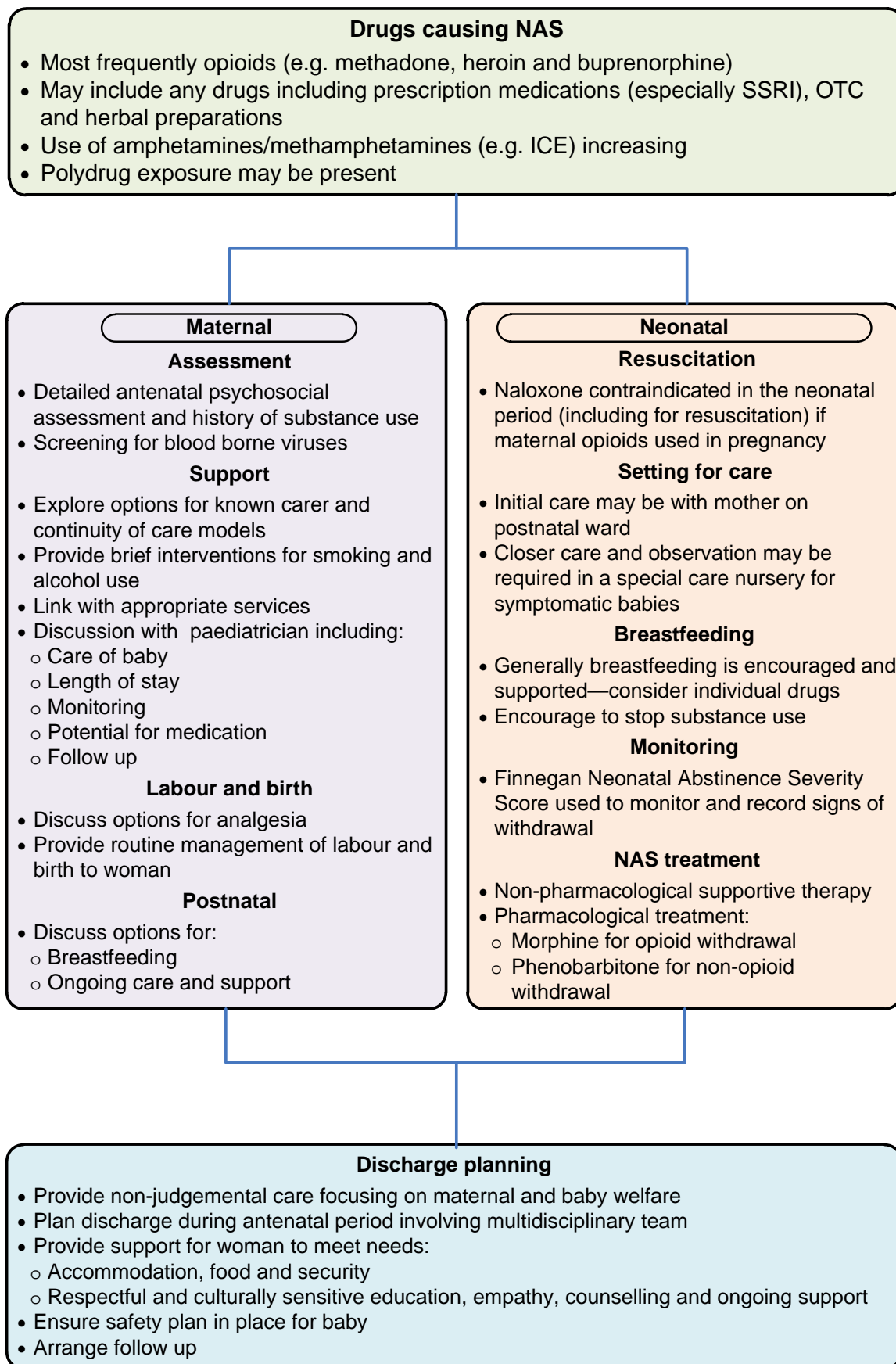
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Flow Chart: Perinatal substance use management



Abbreviations: NAS Neonatal Abstinence Syndrome; OTC Over the Counter; SSRI Selective Serotonin Re-uptake Inhibitors

Abbreviations

ADHD	Attention deficit hyperactivity disorder
CNS	Central nervous system
DoCs	Department of Communities, Child Safety and Disability Services
HBIG	Hepatitis B Immunoglobulin
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
NAS	Neonatal abstinence syndrome
NRT	Nicotine replacement therapy
SIDS	Sudden infant death syndrome
SNRI	Serotonin noradrenaline reuptake inhibitors
SSRI	Selective serotonin reuptake inhibitors
SUDI	Sudden unexplained death of an infant

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1 Introduction

Substance use in pregnancy is common. Drugs crossing the placenta may lead to a range of health problems such as abnormal fetal growth and development.¹

Population and demographic variations are reflected in different drug usage patterns between rural, remote and urban groups.¹ Patterns of drug use pre-pregnancy may carry into the antenatal period. Tobacco and alcohol are commonly used² and although their use in Australia is declining¹, the prevalence of their use by pregnant women continues to be of clinical concern for the woman and baby.³

Commonly used drugs include those classified as stimulants, depressants and hallucinogens. They include cannabis, opioids, heroin, amphetamines and methamphetamines and synthetic psychoactive drugs.² However there is also an increasing use of selective serotonin reuptake inhibitors (SSRI) in pregnant women to manage existing mental health issues.⁴ Other substances used in alternative and complimentary therapies are also of concern as there is limited information about the effects of these drugs on the fetus.⁵

Illicit drug use has a strong association with mental health issues¹, and many substance-using women are polysubstance users. Coexisting mental health disorders may contribute to substance use or the effect of substance use in pregnancy and include anxiety, schizophrenia and personality disorders.²

Perception of risk by the woman can be a predictor of continued use. This supports the importance of education about maternal and fetal effects. However some women with substance use disorders have difficulty discontinuing use during pregnancy. Management following early screening and referral can be of benefit.⁶

1.1 Incidence

Table 1. Incidence

Aspect	Consideration			
Context	<ul style="list-style-type: none"> • Prevalence reporting and comparison of substance use complicated by: <ul style="list-style-type: none"> ○ Different definitions and screening, assessment and diagnostic tools used in different countries ○ Variety and subtlety of clinical presentations ○ Different population characteristics⁷ • Regional variations to the components of some newer drugs • Generally prevalence of substance use higher in: <ul style="list-style-type: none"> ○ Non-pregnant women than pregnant women ○ Young pregnant women⁶ 			
Queensland*	Mental health/behavioural disorders due to drugs, alcohol or tobacco⁸			
	Year	Percentage	Number	Total Births
	2010	0.577	358	62 033
	2014	0.754	473	62 695
Australia**	Drug taking behaviours before and after knowledge of pregnancy¹			
	Substance	Before		After
	Alcohol	56%		26%
	Tobacco	17.4%		10.6%
	Illicit substances	2.4%		1.6%

*Source: Perinatal Data Collection, Department of Health (Extracted 8 July 2015)⁸

**Source: Australian Institute of Health and Welfare 2015 (2013 data)³

1.2 Commonly used/misused substances

Table 2. Substances commonly used/misused

Opioids⁵(CNS depressants)	Agonists⁵ <ul style="list-style-type: none"> • Codeine⁹ • Fentanyl • Heroin (Diacetyl morphine/Diamorphine) • Hydromorphone • Morphine • Methadone • Meperidine • Oxycodone • Propoxyphene 	Antagonists <ul style="list-style-type: none"> • Naltrexone 	Mixed agonist–antagonists⁹ <ul style="list-style-type: none"> • Buprenorphine (Subutex)⁹ • Butorphanol • Nalbuphine • Pentazocine
CNS stimulants	Psycho stimulants <ul style="list-style-type: none"> • Caffeine⁵ • Cocaine^{5,9,10} • Nicotine⁵ • Dissociative anaesthetics • Phenylcyclidine (PCP) • Ketamine Mild stimulants <ul style="list-style-type: none"> • Ephedrine Stronger stimulants⁵ <ul style="list-style-type: none"> • Ecstasy • Khat • Slimming tablets (Duromine, Tenuate, Dospan, Ponderax) 	Serotonin–noradrenaline reuptake inhibitors (SNRIs)^{4,9-11} <ul style="list-style-type: none"> • Venlafaxine hydrochloride (Efexor) Selective serotonin reuptake inhibitors (SSRIs)^{4,9-11} <ul style="list-style-type: none"> • Citalopram (Cipramil, Celapram, Talam) • Escitalopram oxalate (Lexapro, Esipram) • Fluoxetine (Prozac, Lovan) • Fluvoxamine maleate (Luvox, Voxam) • Sertraline (Zoloft, Zydep, Seprone) 	Amphetamines⁵ <ul style="list-style-type: none"> • Amphetamine (AMPH) • Dextroamphetamine • Methamphetamine Amphetamine related <ul style="list-style-type: none"> • Benzphetamine • Diethylpropion • Ephedrine⁵ • Fenfluramine • Mazindol • Methcathinone • Methylphenidate (Ritalin) • Pemoline • Phendimetrazine • Phentermine • Phenylpropanolamine
CNS depressants	Alcohol^{5,9,10} Barbiturates⁵ GHB (Gamma–hydroxybutrate)⁵ Some solvents and inhalants⁵	Benzodiazepines^{5,10} <ul style="list-style-type: none"> • Alprazolam • Clonazepam • Diazepam • Flunitrazepam • Oxazepam • Temazepam 	Cannabinoids^{9,10} <ul style="list-style-type: none"> • Cannabis/Marijuana • Hashish
Hallucinogens	Alkaloids <ul style="list-style-type: none"> • Lysergic acid diethylamide (LSD)⁵ • Psilocin • Psilocybin • Phencyclidine (PCP) • Dimethyltryptamine (DMT) • Diethyltryptamine (DET) Phenylethylamines⁵ <ul style="list-style-type: none"> • Mescaline • Peyote 	Stimulant with hallucinogenic properties <ul style="list-style-type: none"> • Entactogens • Methylenedioxyamphetamine (MDA) • 3-methoxy-4,5-methylenedioxyamphetamine (MMDA) • 3,4-methylene dioxamphetamine (MDMA) (Ecstasy)⁵ • 3,4-methylenedioxyamphetamine (MDEA) 	Inhalants <ul style="list-style-type: none"> • Solvents/aerosols (glues, gasoline, paint thinner, cleaning solutions, nail polish remover, freon) CNS depressants with hallucinogenic properties: Cannabis ⁵ Others <ul style="list-style-type: none"> • Nitrites • Nitrous oxide • Hallucinogens

1.3 Opioids/opiates exposure

Opiates are alkaloid compounds derived from the opium poppy and include psychoactive compounds such as Morphine and Codeine. They are analgesic and can induce euphoria and in high doses—stupor, coma and respiratory depression. Whereas, opioids include alkaloids derived from the opium poppy as well as synthetic drugs interacting with the same receptors in the brain and include oxycodone, heroin and methadone. They are analgesic and produce euphoria.¹²

1.3.1 Pregnancy, fetal and neonatal exposure

Table 3. Opioid/opiate exposure potential outcomes—pregnancy, fetal and neonatal

Aspect	Potential outcomes
Pregnancy ¹³⁻¹⁵	<ul style="list-style-type: none"> • Stillbirth • Preterm labour and rupture of membranes • Placental insufficiency • Placental abruption • Preeclampsia
Fetal ¹³⁻¹⁵	<ul style="list-style-type: none"> • Fetal growth restriction • Readily absorbed from maternal circulation into placental tissue • Buprenorphine¹⁶ <ul style="list-style-type: none"> ○ Released less readily into fetal circulation from placenta ○ Less maximal opioid effect and dissociation from receptors
Neonatal ^{13-15,17}	<ul style="list-style-type: none"> • Neonatal abstinence syndrome (NAS)—severity is not dose related • Opioid receptors concentrated in CNS and gastrointestinal tract • Negative association with gestational age birth weight, length, head circumference¹⁵ • Onset of withdrawal signs depends on type of drug(s) used: <ul style="list-style-type: none"> ○ Methadone^{2,15,18-20}: <ul style="list-style-type: none"> ▪ Usually occurs within 72 hours of birth and may last days to weeks ○ Buprenorphine^{15,16,21-25}: <ul style="list-style-type: none"> ▪ Similar to Methadone exposure with less severe NAS ▪ May manifest later ○ Heroin <ul style="list-style-type: none"> ▪ Usually occurs within 24 hours of birth²⁰ • Predominant signs of opioid withdrawal in neonate^{14,22,26}: <ul style="list-style-type: none"> ○ CNS irritability interferes with: <ul style="list-style-type: none"> ▪ Self-organisation and self-regulation ▪ Ability to communicate cues to caregivers ○ Autonomic over reactivity interferes with: <ul style="list-style-type: none"> ▪ Feeding including less rhythmic swallowing ▪ Sleeping and ability to be alert ▪ Gastrointestinal dysfunction—increased metabolism • Strabismus • Sudden infant death syndrome (SIDS) • Impaired bonding and emotional dysregulation in infancy²⁷ • Compromised postnatal growth and development¹⁵ • Will require observation and management in hospital. Refer to Queensland Clinical Guideline <i>Perinatal substance use: Neonatal</i>²⁸

1.3.2 Lactation and childhood

Table 4. Opioid/opiate exposure potential outcomes–lactation and childhood

Aspect	Potential outcomes
Lactation	<ul style="list-style-type: none"> • Small amounts may be transferred in breast milk however this does not appear detrimental to the baby • May provide milder withdrawal signs • May reduce the pharmacological treatment required²⁹ • Encourage breastfeeding unless other contraindication • Refer to Queensland Clinical Guidelines <i>Perinatal substance use: neonatal</i>^{28,30}
Childhood ^{15,31,32}	<ul style="list-style-type: none"> • Increased lethargy • Impaired attachment relationships, emotional dysregulation • Addiction vulnerability • Methadone: <ul style="list-style-type: none"> ○ Reduced performance on learning and memory tasks • Buprenorphine: <ul style="list-style-type: none"> ○ Hyperactivity ○ Visual impairment/delayed visual development ○ Memory problems ○ Possible delay in general cognitive functioning ○ Anxiety ○ Aggression ○ Feelings of rejection ○ Disruptive/inattentive behaviour including Attention deficit hyperactivity disorder (ADHD) ○ Poor neurodevelopment

1.4 Psychostimulants exposure

Stimulants, also known as psychostimulants, act to increase neurotransmitters dopamine, noradrenaline and serotonin. They produce euphoria, wellbeing, energy, wakefulness and alertness. Concurrent administration with other drugs may alter the drug effect and toxicity profile.¹²

1.4.1 Amphetamines/Methamphetamines

Table 5. Amphetamines/Methamphetamines

Aspect	Potential outcomes
Pregnancy	<ul style="list-style-type: none"> Health risks in pregnancy not clearly established May contain other unknown substances with unpredictable effects³³ Inconsistent reports of development of ischaemic lesions following in utero exposure³⁴ May reduce blood flow to placenta increasing risk of miscarriage, preterm birth,³⁵ placental abruption, fetal growth restriction and stillbirth²⁶ Consider the pregnancy high risk
Fetal	<ul style="list-style-type: none"> Congenital anomalies including: <ul style="list-style-type: none"> Cardiac Cranial/oral clefts Central nervous system (CNS) Limbs Abnormal brain development/microcephaly^{15,32} Negative association with gestational age^{15,35}, birth weight^{11, 13, 16}, length, head circumference^{13,15,22,36}
Neonatal	<ul style="list-style-type: none"> Lower one minute Apgar score³⁶ May be excessively somnolent or feed poorly³⁵ May develop NAS although may not require medication Use close to birth may cause baby to be agitated and overactive Neurobehavioural effects: decreased arousal, increased stress and poor quality of movement (dose-response relationship)³² May be dose-response relationship resulting in neurotoxic effects Heavy use related to lower arousal, more lethargy and increased physiological stress observed as difficulty maintaining normal, regular respirations^{14,22,37,38} Impaired bonding and emotional dysregulation³⁹ Compromised postnatal growth and development³¹
Lactation	<ul style="list-style-type: none"> Amphetamines concentrated in breast milk 2.8 to 7.5 times maternal plasma³³ Encourage and support to discontinue substance use
Childhood	<ul style="list-style-type: none"> Potential for severe morphological changes in brain (smaller subcortical volumes) associated with cognitive defects⁴⁰ Long term neurotoxic effects on behaviour, cognitive skills and physical dexterity²⁶ Behavioural disorders including aggression and ADHD¹⁵ Poor performance on sustained attention and delayed verbal memory⁴⁰ Learning difficulties from deficits in attention, memory and motivation¹⁵ Difficulty achieving milestones³⁶

1.4.2 Nicotine

Table 6. Nicotine

Aspect	Potential outcomes
Maternal ²	<ul style="list-style-type: none"> • Miscarriage and preterm birth • Preterm rupture of membranes • Placental abruption • Non-pregnancy risks include: <ul style="list-style-type: none"> ○ Increased risk of cancer, cardiovascular and pulmonary diseases
Fetal	<ul style="list-style-type: none"> • Greater fetal exposure to nicotine results in higher risk of poor birth outcomes⁴¹ <ul style="list-style-type: none"> ○ Spontaneous miscarriage ○ Preterm birth ○ Low birth weight^{14,22} and small for gestational age (twice as likely as non-smokers)⁴¹ ○ Decreased birth weight length and head circumference^{14,22}
Neonatal	<ul style="list-style-type: none"> • Passive smoking risks include: <ul style="list-style-type: none"> ○ Increased incidence of SIDS^{2,14,22,42}, asthma, bronchitis and ear infections⁴²
Childhood	<ul style="list-style-type: none"> • Increased risk of asthma and respiratory infections, childhood cancers, hypertension, obesity⁴¹ • Excitability and hyper tonicity^{14,22} • Conduct disorder, reduced intelligence quotient (IQ), aggression, antisocial behaviour, impulsivity, ADHD^{14,22} <ul style="list-style-type: none"> ○ May be associated with cumulative psychosocial risk • Disturbed maternal-infant interaction • Excitability • Hypertonia • Stress abstinence disorder (e.g. unable to self sooth, abnormal sucking and gaze aversion) • Tobacco use and dependence¹⁴ • Some risks may be subtle and transient¹⁴

1.4.3 SSRI/SNRI

Table 7. SSRI/SNRI

Aspect	Considerations and potential outcomes
Context	<ul style="list-style-type: none"> • SSRI/SNRIs are drugs of choice for the treatment of: <ul style="list-style-type: none"> ◦ Depression and other mood and behavioural disorders (e.g. obsessive-compulsive disorder, panic disorder and anxiety disorders^{43,44}) • Depression and other mood disorders occur in approximately 10% of pregnant women • Concerns regarding neonatal complications have resulted in a caution to women when used late pregnancy⁴³
Maternal	<ul style="list-style-type: none"> • Occur as a result of either discontinuation (withdrawal) or toxicity (excess of 5-HT) • Discontinuation syndrome symptoms primarily subjective and may: <ul style="list-style-type: none"> ◦ Occur within a few days of cessation probably due to a hypo-serotonergic state⁴³ ◦ Include headache, dizziness, nausea, tiredness, anxiety and low mood • Toxicity syndrome symptoms are primarily objective and may include: <ul style="list-style-type: none"> ◦ Mental state changes (agitation, confusion), neuromuscular hyperactivity (tremor, myoclonus, rigidity, hyperreflexia), and autonomic hyperactivity (fever, sweating, tachycardia, tachypnoea)
Fetal	<ul style="list-style-type: none"> • First trimester exposure increases risk of spontaneous abortion⁴⁵ • First trimester exposure to Paroxetine may be linked to cardiac malformations but evidence is inconclusive⁴⁶
Neonatal	<ul style="list-style-type: none"> • There is evidence of adverse signs in babies born to mothers prescribed SSRIs during pregnancy⁴⁴ <ul style="list-style-type: none"> ◦ Usually present within hours of birth ◦ Mild and usually resolve within two weeks ◦ Unclear whether neonatal withdrawal or neonatal toxicity (serotonergic) or a combination of both⁴⁶ • Neonatal behavioural signs may occur in up to 30% of SSRI exposed babies^{4,11,43} • Third trimester use linked to neonatal withdrawal or toxicity syndromes including respiratory, motor, CNS and gastrointestinal signs^{26,46} <ul style="list-style-type: none"> ◦ Subtle negative neonatal neurobehavioural outcomes • Persistent pulmonary hypertension in the newborn (PPHN)^{29,46,47} (very rare), • Neonatal hypoglycaemia^{11,34} • Hypoglycaemia²⁶ • Possible delayed motor development⁴⁸ • Serotonergic hyperstimulation (toxicity) and discontinuation syndrome difficult to differentiate¹¹: <ul style="list-style-type: none"> ◦ Signs due to toxicity likely to be present immediately from birth ◦ Drug levels of SSRIs with short half-lives (Paroxetine) may be high enough at birth to cause toxicity, and decline rapidly enough to produce signs of withdrawal • Low incidence of low birth weight or preterm birth⁴⁸ • Exposed babies require observation in hospital for a minimum of two to three days^{4,46} <ul style="list-style-type: none"> ◦ Low incidence of admission to special care nursery⁴⁸
Breastfeeding	<ul style="list-style-type: none"> • Minimal amounts found in breast milk⁴ • Fluoxetine may accumulate and cause jitteriness⁴⁸ • Venlafaxine levels may be at higher end of accepted safe ranges⁴⁸ • Encourage breastfeeding¹¹

1.4.4 Cocaine

Table 8. Cocaine

Aspect	Potential outcomes
Maternal	<ul style="list-style-type: none"> • Associated with: <ul style="list-style-type: none"> ○ Increased risk of intrauterine growth restriction ○ Placental abruption ○ Premature rupture of membranes ○ Preterm birth³⁴ • Risk of HIV and hepatitis if injected^{49,50} • Effects may be explained by concurrent use of tobacco, cannabis or environmental factors³⁴
Fetal	<ul style="list-style-type: none"> • Inconsistent evidence as effects may be associated with concurrent use of tobacco, cannabis or quality of environment³⁴ • Magnitude of any effects is dependent on dosage, gestational timing, duration of timing, duration of exposure and/or postnatal care¹⁵
Neonatal	<ul style="list-style-type: none"> • Crosses blood brain barrier¹⁵ • Negative association with gestational age, birth weight, length and head circumference^{14,15} • Neurobehavioural abnormalities most commonly occur on second or third postnatal days²⁶ • Early neurobehavioural deficits¹⁴ include: <ul style="list-style-type: none"> ○ Orientation, state regulation, autonomic stability, attention, sensory and motor asymmetry, jitteriness¹⁵ seizures, tachycardia, irritability, tremors, high pitched cry, excessive sucking and agitation^{26,29}, poor clarity of infant cues during feeding, delayed information processing, general cognitive delay¹⁴, lower arousal, poor quality of movement, poor self-regulation, non-optimal reflexes¹⁵ • Intraventricular haemorrhage¹⁴
Lactation	<ul style="list-style-type: none"> • Cocaine and metabolites have been detected in baby's urine for up to 60 hours following breastfeed • Discourage use when breastfeeding: <ul style="list-style-type: none"> ○ After individual dose, discontinue breastfeeding for twenty four hours ○ If woman a regular user, breastfeeding is not recommended²⁹
Childhood	<ul style="list-style-type: none"> • Lower nonverbal perceptual reasoning • Attention problems • Disruptive behaviours^{14,15} • Lower weight for height and weight curve trajectories¹⁴ • Language deficits • Executive functioning abnormalities¹⁵

1.4.5 Ecstasy

Table 9. Ecstasy

Aspect	Potential outcomes
Ecstasy	<ul style="list-style-type: none"> • Crosses placenta • Miscarriage⁵ • Preterm birth¹⁵ • Poor infant mental and motor development (dose dependent)^{5,15}

1.5 Depressant exposure

These drugs cause the body to slow down and relax and can cause drowsiness and slowed breathing and heart rate.¹²

1.5.1 Alcohol–maternal

Table 10. Alcohol–maternal

Aspect	Considerations and potential effects
Context	<ul style="list-style-type: none"> • 56% of women consumed alcohol while pregnant in 2013 • Proportion of women who knew they were pregnant and did not consume alcohol increased slightly between 2010 and 2013¹ from 49% to 53% (not statistically significant) • 26% of women continued to consume alcohol once they knew they were pregnant⁵¹ • Physical and behavioural teratogen^{52,53} and folate antagonist⁵⁴ • Adverse effects on brain and nervous system development in the fetus can occur from earliest stage and throughout⁵⁵ due to decreased folate, choline and Vitamin B12 levels⁵⁴ • Alcohol consumption reduces maternal folate transfer to fetus <ul style="list-style-type: none"> ○ Folate has protective and beneficial effects on CNS and behavioural development)⁵⁴ ○ Alcohol interferes with one carbon metabolism pathway including folate, choline (a derivative of homocysteine)⁵⁴
Maternal	<ul style="list-style-type: none"> • Use common in pregnancy and lactation although may not be disclosed to health care providers • Provide information and education about no alcohol in pregnancy as the safest option^{5 48} and the importance of Folate supplementation • Heavy alcohol use requires (with woman's agreement): <ul style="list-style-type: none"> ○ Thiamine injections ○ Inpatient treatment with Diazepam substitution and withdrawal • Outpatient support including follow up and ongoing support² • High levels may result in: <ul style="list-style-type: none"> ○ Miscarriage ○ Stillbirth ○ Preterm birth^{5,53}
Lactation	<ul style="list-style-type: none"> • Alcohol enters breast milk and persists for several hours • Adversely affects lactation, infant behaviour (feeding and arousal) and psychomotor development of the breastfed baby^{48,56} • More than two standard drinks per day linked to: <ul style="list-style-type: none"> ○ Decreased lactation-reduced milk ejection reflex, milk production and milk consumption by baby ○ Earlier cessation of breastfeeding ○ Altered sleep-wake behavioural patterns in the baby ○ Psychomotor deficits⁴⁸

1.5.2 Alcohol–fetal/neonatal

Table 11. Alcohol–fetal/neonatal and childhood

Aspect	Considerations and potential effects
Fetal/neonatal	<ul style="list-style-type: none"> • Fetus at greatest risk in first three to six weeks of gestation especially if frequent high levels of alcohol consumed^{48,53} • Risk to fetus is likely to be low if alcohol consumption was small⁴⁸ • Level of risk is difficult to predict and is influenced by maternal and fetal characteristics⁴⁸ • Outcomes thought to result from differences in: <ul style="list-style-type: none"> ○ Pattern and quantity of alcohol consumption (dose and frequency) ○ Timing of alcohol consumption in relation to fetal development ○ Maternal genetic ability to metabolise alcohol ○ Socio-behavioural risk factors (e.g. maternal age, duration of drinking, low socio-economic status, race, genetic differences, polydrug use^{48,52,57}) • Teratogen⁴⁸ that may result in fetal alcohol spectrum disorders (FASD) and fetal alcohol syndrome¹⁵ may result <ul style="list-style-type: none"> ○ Microcephaly, holoprosencephaly and associated abnormalities of corpus callosum, brainstem and cerebellum⁵² ○ Features include neurodevelopmental and intellectual impairment and facial dysmorphic features², behavioural, cognitive and neural alterations¹⁵
Childhood	<ul style="list-style-type: none"> • Physical, mental, behavioural and/or learning disabilities⁵ including: <ul style="list-style-type: none"> ○ Global deficits or delays ○ Attention problems ○ Deficits in executive functioning ○ Motor and visual spatial functioning delays ○ Problems associated with poor social skills ○ Sensory problems, pragmatic language problems, memory deficits and impaired response to common parenting problems^{48,58}

1.5.3 Benzodiazepines

Table 12. Benzodiazepines

Aspect	Potential outcomes
Maternal	<ul style="list-style-type: none"> • Health risks in pregnancy not well established • Progressive supervised withdrawal suggested^{33,34}
Fetal	<ul style="list-style-type: none"> • Crosses placenta • Inconsistent reports of morphological problems³³
Neonatal	<ul style="list-style-type: none"> • Possible risk of preterm birth, low birth weight and low Apgar score³⁴ • May be associated with NAS which may have delayed onset: <ul style="list-style-type: none"> ○ May be floppy and lethargic for one or two days (dose related) and be extremely sleepy⁵ ○ Signs of withdrawal including excessive irritability and poor feeding may be present for several days <ul style="list-style-type: none"> ▪ More likely if woman is a polydrug user • Requires: <ul style="list-style-type: none"> ○ Observation in hospital for 5–7 days using Finnegan score³⁴ to assist with identifying signs of NAS ○ Education to parents about signs of withdrawal and need to present for care if discharged from hospital ○ Outpatient review within four weeks of age • Treatment includes: <ul style="list-style-type: none"> ○ Supportive care ○ Phenobarbitone may be required if treatment threshold is reached (Finnegan score of eight or more) <ul style="list-style-type: none"> ▪ Loading dose likely to be more beneficial²⁰ • Research on the longer-term effects on the child exposed to benzodiazepines is largely lacking³³
Lactation	<ul style="list-style-type: none"> • Transferred into breast milk²⁹ • Assess breastfeeding decisions on an individual basis

1.5.4 Cannabis

Table 13. Cannabis

Aspect	Potential outcomes
Maternal	<ul style="list-style-type: none"> • More likely to use other substances in pregnancy and lactation • Moderate to heavy users: <ul style="list-style-type: none"> ◦ May show deficits in self-care, ability to drive a motor vehicle, quality of parenting, family relationships, ability to study or maintain employment² • May cause financial hardship, increase rate of mental health disorders such as psychosis, depression and suicide²
Neonatal	<ul style="list-style-type: none"> • Mild withdrawal signs • Delayed state regulation¹⁴ • Sleep disturbances • Shorter high pitched cry • Altered responses to visual stimuli • Increased startles and tremors¹⁵
Lactation	<ul style="list-style-type: none"> • Not recommended when breastfeeding <ul style="list-style-type: none"> ◦ Tetrahydrocannabinol (THC)—primary ingredient in marijuana—accumulates in breast milk • Smoke exposure detrimental to baby's health and increases risk of Sudden unexplained death in infancy (SUDI) and SIDS⁵⁹
Childhood	<ul style="list-style-type: none"> • Reading, spelling difficulty • Early tobacco and marijuana use¹⁴ • Evidence of neurodevelopmental delay or deficit • Executive function impairment • Attention deficits¹⁵ and memory problems, difficulty concentrating <ul style="list-style-type: none"> ◦ Cognitive deficit ◦ Visual dysfunction ◦ Impulsivity, increased hyperactivity ◦ Depression • Sleeping problems at age around three years • Reduced height at 6 years of age^{5,29,34}

1.6 Hallucinogens exposure

Hallucinogens change perception. They affect all senses and may cause hallucinations—making a person see, hear or feel something that is not there¹².

Table 14. Hallucinogens

Aspect	Potential outcomes
Hallucinogens	<ul style="list-style-type: none"> • Varies depending on drug • Miscarriage • Increased risk of birth defects⁵

2 Antenatal screening

Psychosocial, drug and alcohol and blood borne virus screening are undertaken at first contact with the woman in the antenatal period and throughout pregnancy as indicated.

2.1 Psychosocial

Table 15. Psychosocial screening and management

Aspect	Good practice point
Screening	<ul style="list-style-type: none"> • Screen women for risk of postnatal depression, psychological distress, other possible mental health issues and exposure to domestic violence • Use validated tools in the Pregnancy Health Record⁶⁰
Management	<ul style="list-style-type: none"> • Respond to: <ul style="list-style-type: none"> ○ Parental mental health ○ Preparedness for baby ○ Home environment support ○ Child safety concerns including other children • Refer to appropriate health and community services following multidisciplinary assessment including social worker and primary care provider (e.g. GP) • Ensure mental health issues are managed appropriately due to strong association with substance use³⁴ • Respect the pregnant and breastfeeding woman's autonomy: <ul style="list-style-type: none"> ○ Fully inform them of risks and benefits for themselves and fetus • Be responsive to multiple needs including: <ul style="list-style-type: none"> ○ Child care needs ○ Co-morbid mental and concurrent medical conditions ○ Blood borne and other infectious diseases ○ Poor diet • Provide support for psychosocial issues including: <ul style="list-style-type: none"> ○ Relationships with partner/other people living in same household ○ Homelessness ○ Poverty ○ Violence³³ • Provide care and treatment without discrimination or stigmatization <ul style="list-style-type: none"> ○ Use non-judgemental, respectful, non-stigmatising and empathetic manner ○ Be sensitive to age, culture and language differences ○ Provide verbal and literacy level appropriate information • Respond sensitively to disclosure of information³³

2.2 Blood borne viruses

Table 16. Blood borne virus screening and management

Aspect	Good practice point
Assessment	<ul style="list-style-type: none"> • Ask woman about intravenous drug use and discuss risk of transmission of viruses including hepatitis B virus (HBV), hepatitis C virus (HCV) and human Immunodeficiency virus (HIV)² <ul style="list-style-type: none"> ○ Past or present intravenous drug use increases risk of HCV⁶¹ • Screen all women for HBV, HCV and HIV <ul style="list-style-type: none"> ○ HBV surface antigen positive women provide passive immunity to baby reducing risk of vertical transmission ○ HCV may be transmitted during birth with increased risk in presence of HIV co-infection³⁴ • Re-screen women with continued high risk drug behaviour • If exposed to HBV during pregnancy undertake urgent serology to test for immunity <ul style="list-style-type: none"> ○ If uninfected woman is anti-HBs negative and then has high risk exposure: <ul style="list-style-type: none"> ▪ Administer HBV vaccine and hepatitis B Immunoglobulin (HBIG) within 72 hours ▪ Complete HBV vaccination course ▪ Test for HBV surface antigen (HBsAg) at three months post exposure⁶² • Provide support for women seropositive for HBV, HCV and HIV
HBV positive	<ul style="list-style-type: none"> • Refer woman to infectious diseases specialist or hepatologist for ongoing management including advice, interpretation of additional investigations (e.g. eAg, liver function tests and HBV viral load) • Ensure sexual and or household contacts receive counselling, testing, follow-up and vaccination where required • Vaginal birth does not increase the risk of vertical transmission • Obtain consent from woman antenatally for administration of HBIG and HBV vaccine to baby within twelve hours of birth⁶²
HCV positive	<ul style="list-style-type: none"> • No increased risk of obstetric or perinatal complications • Risk of mother to child transmission is low • Refer woman for management and monitoring in postnatal period by infectious diseases specialist or hepatologist • Further research required before recommendation on mode of birth can be made⁶²
HIV positive	<ul style="list-style-type: none"> • Refer to infectious diseases specialist for treatment during pregnancy⁶² • May be transmitted to baby during pregnancy, birth or via breastfeeding • Elective caesarean section (CS) reduces risk of transmission • Antiviral therapy to woman and baby reduces risk of transmission⁶²

2.3 Substance use

Table 17. Substance use screening and management

Aspect	Good practice point
Screening	<ul style="list-style-type: none"> • Screen/question all pregnant women about their substance and alcohol use (past and present) at the initial history taking visit and throughout antenatal period^{2,33,63} • Use validated screening tools • Include in drug screening/questioning the use of prescription medications including opioid replacement therapies and over the counter medications (e.g. paracetamol, herbal and other complimentary therapies and other substances including illicit drugs, inhalants and non-prescribed benzodiazepines³⁴) • Efficacy of urine drug screening in pregnant women unclear <ul style="list-style-type: none"> ○ Self-disclosure may be more reliable in trusting professional relationship³⁴
Management	<ul style="list-style-type: none"> • Ensure access to treatment and prevention programs including: <ul style="list-style-type: none"> ○ Enrolment in an opioid treatment program (Methadone or Buprenorphine) ○ Education regarding safety of opioid replacements in pregnancy and lactation • Implement appropriate secondary prevention initiatives including education and treatment programs to improve maternal and fetal health⁶⁴: <ul style="list-style-type: none"> ○ Relapse prevention and supportive counselling ○ Smoking cessation program³³ • Provide brief interventions to substance using women: <ul style="list-style-type: none"> ○ Pregnant substance using adolescent women have been shown to reduce use after single session standardised brief intervention⁶⁵ • Provide support and education including written information • Refer to other services as appropriate^{33,34} including drug and alcohol services and adult mental health services • Identify risk factors: <ul style="list-style-type: none"> ○ Maternal report of drug use ○ Late presentation for antenatal care or no care ○ Previous unexplained fetal demise ○ Precipitous labour ○ Placental abruption²⁶
Amphetamines	<ul style="list-style-type: none"> • Advise woman of potential health risks to herself and her baby <ul style="list-style-type: none"> ○ Encourage reduction or cessation of amphetamine use ○ Provide harm reduction advice⁵¹ ○ Pharmacotherapy is not recommended for treatment of dependence³³ ○ Focus treatment on psychosocial interventions³³ • Monitor mental health • Advise woman regarding breastfeeding <ul style="list-style-type: none"> ○ Refer to Table 23.
SSRIs	<ul style="list-style-type: none"> • Individual risk-benefit analysis: <ul style="list-style-type: none"> ○ Balance treatment for depression versus mild transient withdrawal by the baby⁴ ○ Discuss risks and benefits to woman and baby, including risk of neonatal behavioural syndrome with pregnant women^{4,11} • Maintaining treatment reduces risk of relapse • Consider maternal dose reduction in late third trimester to reduce the risk of neonatal effects • Advise woman regarding breastfeeding <ul style="list-style-type: none"> ○ Refer to Table 23.
Benzodiazepine	<ul style="list-style-type: none"> • Advise woman regarding breastfeeding <ul style="list-style-type: none"> ○ Refer to Table 23.

2.4 Alcohol and tobacco

Table 18. Alcohol and tobacco screening and management

Aspect	Good practice point
Alcohol	<ul style="list-style-type: none"> • Complete alcohol screening and brief intervention as per Pregnancy Health Record⁶⁰ <ul style="list-style-type: none"> ○ Ask about alcohol consumption ○ Assess readiness to stop alcohol ○ Advise about the risks of alcohol in pregnancy and that no alcohol in pregnancy is safest option ○ Assist and arrange for education and further support including: <ul style="list-style-type: none"> ▪ Written resources for woman and partner ▪ Referral to local support service ▪ Referral to Indigenous Health Clinic (if applicable) ○ Ask again at every opportune visit • For women who report alcohol use <ul style="list-style-type: none"> ○ Test for impaired folate mediated one metabolism⁵⁴ <ul style="list-style-type: none"> ▪ Measure red cell and plasma folate, vitamin B12 and homocysteine ○ Advise: <ul style="list-style-type: none"> ▪ Increase choline intake by increasing milk consumption and eating at least two cooked eggs daily ▪ Pregnancy multivitamin containing at least 0.5 mg Folic Acid⁴⁸ ▪ Consider nutritional supplementation⁶⁶ including additional Folic Acid⁶⁷, Choline or Vitamin B12⁵⁴
Tobacco	<ul style="list-style-type: none"> • Complete tobacco screening and brief intervention as per Pregnancy Health Record⁶⁰ <ul style="list-style-type: none"> ○ Ask about smoking status ○ Assess quitting stage ○ Advise about the benefits of quitting for the woman and her partner, her pregnancy, baby, breastfeeding and family ○ Assist and arrange for education and further support including: <ul style="list-style-type: none"> ▪ Written resources for woman and partner ▪ <i>Quitline</i> number ▪ Referral to Indigenous Health Clinic (if applicable) ○ Ask again at every opportune visit for smokers and recent quitters ○ Discuss resources to support quitting including general practitioner ○ Cessation is recommended rather than 'cutting down' (harm reduction) as this is not supported by evidence that it provides protection to fetus³⁴
Nicotine replacement therapy (NRT)	<ul style="list-style-type: none"> • Limited evidence regarding safety in pregnancy³⁴ • Positive and negative impacts on pregnancy, baby and smoking cessation⁴² • Considered less harmful than cigarette smoke because of removal of other toxins and lower dose of nicotine² • Consider when woman is otherwise unable to quit after two or more weeks of psychosocial interventions (e.g. cognitive behavioural therapy, counselling and group support) • Unlikely to cause hazard to fetus in first trimester • Discuss risks and benefits with woman • Pulsatile NRT—gum, lozenge, inhaler or sublingual tablet preferred because of smaller daily nicotine dose delivered^{2,34} • Larger or combination therapy may be required • If NRT patches used, advise woman to remove patch before going to bed to protect fetus from ongoing nicotine exposure² • Monitor blood nicotine levels to assess level of drug delivery • Discontinue use early in pregnancy once cessation achieved³⁴

3 Management and care

The outcome for the baby is dependent on the quality of antenatal care.³⁴

3.1 Model of care

Table 19. Model of care

Aspect	Good practice point
Context	<ul style="list-style-type: none"> • Providing coordinated assessment and management including development of care plan has a positive impact and informs the development of a coordinated discharge plan³⁴ • Coexisting mental health disorders may contribute to substance use or the effect of substance use in pregnancy² • Psychosocial interventions are a useful adjunct to pharmacological treatment by reducing physiological withdrawal symptoms⁶⁸ • Avoiding judgemental language facilitates openness and trust³⁴
Model of care	<ul style="list-style-type: none"> • Offer multidisciplinary and where appropriate, multi-agency approach to care • Include and make referrals to services that provide management of medical, adult mental health, psychosocial, pregnancy and drug and alcohol issues² • Referral to available infant mental health or child and youth mental health services if: <ul style="list-style-type: none"> ○ Significant psychosocial complexity and intensive parent-infant relationship support required ○ Baby is at risk of non-organic failure to thrive and emotional neglect • Involve paediatricians in antenatal counselling of parents regarding neonatal outcomes and plan of care² • Provide usual antenatal care • Provide comprehensive care preferably through continuity of care and carers^{33,69} that includes as appropriate: <ul style="list-style-type: none"> ○ Alcohol and drug use support and liaison with community alcohol and drug agencies ○ Enrolment in an opioid treatment program (Methadone or Buprenorphine) ○ Education regarding safety of opioid replacements in pregnancy and lactation ○ Relapse prevention and supportive counselling ○ Smoking cessation program³³ including referral to <i>Quitline</i>
Engagement	<ul style="list-style-type: none"> • Reassure woman she will be treated in non-judgemental, compassionate manner³⁴ • Establish systematic communication strategies between members of the pregnancy care team • Involve woman's partner, family and other support persons² • Access to antenatal care by woman may be intermittent • Allocate case manager to oversee care and liaise with other health care team members: <ul style="list-style-type: none"> ○ Provide contact details to woman and other team members ○ Ensure all members are aware of case manager's role ○ Participate and facilitate regular case conferences ○ Ensure formal handover of care in the intrapartum and postpartum period • Ensure close liaison with pharmacotherapy prescriber and/or dosing point³⁴ • Consider child protection issues and refer appropriately⁷⁰ <ul style="list-style-type: none"> ○ Complete and submit <i>Suspected child in need of protection</i> form to Department of Communities, Child Safety and Disability Services (DoCs)^{71,72}

3.2 Pregnancy

Table 20. Pregnancy management

Aspect	Good practice point
Education	<ul style="list-style-type: none"> • Provide education and support regarding dental health including dental check up² • Provide information regarding importance of a healthy diet and healthy eating suggestions⁷³ <ul style="list-style-type: none"> ○ Discuss the importance of folate supplementation: <ul style="list-style-type: none"> ▪ At least 0.4 mg Folic acid daily to prevent neural tube defects ▪ Folic acid 5 mg daily if increased risk of neural tube defect or malabsorption^{2,48} • Counsel woman (and partner where appropriate) regarding: <ul style="list-style-type: none"> ○ Expected length of stay depending on substance use ○ Finnegan scoring and parental involvement ○ Expectations regarding care of baby, signs of NAS, assisting with Finnegan scoring, techniques of pacification, and circumstances requiring baby to be admitted to special care nursery (SCN)
Fetal growth	<ul style="list-style-type: none"> • Increased risk of fetal growth restriction • Assess fetal growth by routine measurement of symphysis-fundal height • If inadequate growth, implement usual obstetric protocols for biophysical monitoring³⁴
Anaesthetic assessment	<ul style="list-style-type: none"> • Consider anaesthetic review in third trimester to discuss: <ul style="list-style-type: none"> ○ Optimum modes of analgesia for labour, birth and postpartum ○ Venous access • Potential crisis situations³⁴
Late presentations ³⁴	<ul style="list-style-type: none"> • Women presenting for the first time in third trimester or labour are at increased risk of pregnancy complications due to inadequate antenatal care • Preferred management: <ul style="list-style-type: none"> ○ Admit to hospital (regardless of drugs used) ○ Undertake comprehensive assessment including history of drug and alcohol use ○ Undertake psychosocial and blood borne virus screening <ul style="list-style-type: none"> ▪ Refer to Table 15. Psychosocial screening and management and Table 17. Substance use screening and management ○ Liaise with GP and other community health providers ○ Develop detailed management plan including for discharge ○ Initiate or refer for drug and alcohol treatment or counselling if indicated and woman agrees • If presenting in labour: <ul style="list-style-type: none"> ○ Urgently assess level of opioid tolerance and dependence as this: <ul style="list-style-type: none"> ▪ Impacts on analgesia in labour ▪ Influences management of baby at risk of NAS

3.3 Labour

Refer to Queensland Clinical Guidelines *Normal birth*⁷⁴ and *Intrapartum fetal surveillance*⁷⁵

Table 21. Labour

Aspect	Good practice point
Preparation	<ul style="list-style-type: none"> • Usual antenatal preparations and child birth education
Analgesia	<ul style="list-style-type: none"> • Options for opioid dependent women [refer to Table 22. Pain]
Timing and mode of birth	<ul style="list-style-type: none"> • Consider risk factors including HIV and vertical transmission of blood borne viruses • Advise woman to present early in labour to minimise need for self-medication and monitor drug use • Women with complex or unstable drug or alcohol use: <ul style="list-style-type: none"> ○ Allow time prior to elective (CS) or induction of labour (IOL) to assess and stabilise ○ Consider IOL or elective CS early in week to allow close observation of baby for signs of NAS when staff more readily available³⁴
Women on opioid treatment program	<ul style="list-style-type: none"> • Follow local protocols with regard to: <ul style="list-style-type: none"> ○ Notifying usual dosing clinic/community pharmacy and hospital pharmacy of woman's admission ○ Arrangements for take-away doses ○ Relevant information confirmation of identification, last dose and current prescription • Take drug history and ascertain recent opioid use • Observe for signs of withdrawal³⁴

3.4 Pain management

Table 22. Pain management

Aspect	Consideration
General principles	<ul style="list-style-type: none"> • Discuss, plan and document analgesic requirements may be increased in drug dependent women due to opioid tolerance • Offer both pharmacological and non-pharmacological options • Continuity of care by known carer reduces interventions and improves women's birthing outcomes • Discuss options antenatally including: <ul style="list-style-type: none"> ○ Transcutaneous nerve stimulation (TENS) machine ○ Water ○ Paracetamol ○ Opioids ○ Entonox • Use simple analgesia for low severity of pain (e.g. Paracetamol^{34,76} one gram six hourly with not greater than four grams being taken in total combination over a 24 hour period⁷⁷) <ul style="list-style-type: none"> ○ Other non-steroidal anti-inflammatory drugs (NSAIDs) are contraindicated in the third trimester⁷⁸ • Offer regional anaesthesia and epidural if required
Women on Methadone or Buprenorphine	<ul style="list-style-type: none"> • Refer women antenatally for anaesthetic review⁷⁹⁻⁸¹ • Pain management challenges^{34,79,81} include: <ul style="list-style-type: none"> ○ Increased pain sensitivity ○ Inadequate analgesia ○ Difficult intravenous access <ul style="list-style-type: none"> ▪ May be an indication for a central venous line³⁴ ○ Anxiety about experiencing pain because of history of substance use⁸¹ • Administer usual Methadone dose in liquid form³⁴ • Opioids : <ul style="list-style-type: none"> ○ Safe and effective ○ May require higher doses and more frequent administration for analgesia⁸¹ <ul style="list-style-type: none"> ▪ Withdrawal symptoms may be precipitated and analgesic effect reduced by Buprenorphine⁷⁷ ○ Titrate to response³⁴ • Consider regional anaesthesia if non-pharmacological means are ineffective • Seek specialist advice, planning and documentation for pain management: <ul style="list-style-type: none"> ○ Prior to labour commencing or operative birth ○ Post operatively where required^{34,79,81} • Consult with drug and alcohol team for difficult to manage pain after surgical intervention³⁴
Intractable pain	<ul style="list-style-type: none"> • Exclude pathological causes of pain (e.g. pyelonephritis and sacroiliac joint abscess³⁴)
Anaesthetic agents to avoid	<ul style="list-style-type: none"> • Ketamine is contraindicated for women using or suspected of using psychostimulants <ul style="list-style-type: none"> ○ Catecholamine effects may result (e.g. hypertension and tachycardia³⁴)

3.5 Breastfeeding

Table 23. Breastfeeding and substance use

Aspect	Consideration
Context	<ul style="list-style-type: none"> • Undertake individual risk-benefit analysis⁸¹ • Generally breastfeeding is not contraindicated unless woman is a polysubstance user³⁴ but may require advice regarding time from substance use to breastfeeding or expressing breast milk for baby⁴⁸ • Advise woman that not using alcohol, tobacco and or other substances is preferable to not breastfeeding • Refer to Queensland Clinical Guidelines <i>Perinatal substance use: neonatal</i>²⁸ and <i>Establishing breastfeeding</i>³⁰
Cautions/ contraindications	<ul style="list-style-type: none"> • Breastfeeding is contraindicated in HIV positive woman even if being treated and has a low viral load^{29,61} • Breastfeeding not recommended if persistent maternal use of heroin or stimulants (e.g. amphetamines, cocaine and alcohol²⁹)
Hepatitis C	<ul style="list-style-type: none"> • Hepatitis C positive is not a contraindication to breastfeeding³⁴ <ul style="list-style-type: none"> ○ Transmission risk not increased ○ Consider expressing and discarding milk if nipples cracked and bleeding⁶¹
Benzodiazepines	<ul style="list-style-type: none"> • Short acting benzodiazepines may be used for a limited time but long acting should be avoided^{2,45} • Advise not to breastfeed immediately after taking short acting benzodiazepines^{2,34,45}
Amphetamines	<ul style="list-style-type: none"> • Advise: <ul style="list-style-type: none"> ○ Not to breastfeed for 24 hours after using amphetamines ○ To express and discard milk after drug use ○ To have supplementary feeding plan³⁴
Alcohol	<ul style="list-style-type: none"> • Advise: <ul style="list-style-type: none"> ○ To limit alcohol to two standard drinks in a day ○ Not to consume immediately before feeding ○ Consider expressing breast milk in advance⁴⁸
Codeine	<ul style="list-style-type: none"> • Codeine use is contraindicated in breastfeeding women⁸¹ <ul style="list-style-type: none"> ○ May be dose-response relationship between maternal Codeine use and neonatal toxicity⁸²

3.6 Formula feeding

Table 24. Formula feeding

Aspect	Consideration
Formula feeding	<ul style="list-style-type: none"> • May be primary source of nutrition where woman chooses or is not available to breastfeed • Provide education : <ul style="list-style-type: none"> ○ Regarding suitable formula and formula preparation, transport and storage of formula; appropriate warming of feeds ○ Cleaning of bottles and other equipment⁸³

3.7 Postnatal care

Table 25. Postnatal care

Aspect	Consideration
Follow up other medical problems	<ul style="list-style-type: none"> Refer for ongoing surveillance and management of medical conditions, (e.g. liver disease and sexually transmitted diseases⁸¹)
Contraception	<ul style="list-style-type: none"> Discuss reliable and easy to use methods Provide relevant information and referrals³⁴ Discuss future pregnancy planning if substance use is continuing to facilitate planned rather than unplanned pregnancies and minimise harm to unborn baby
Management of mood disorders	<ul style="list-style-type: none"> Continue postnatal surveillance and referral for treatment of postpartum mood and anxiety disorders⁸¹
Drug treatment programs	<ul style="list-style-type: none"> Assess continued substance use and support and encourage attendance at drug treatment programs³⁴ Tobacco use: continue support in postpartum period as tobacco use rates rebound substantially compared to use in pregnancy³³
Primary care	<ul style="list-style-type: none"> Link with GP for ongoing primary care for woman and baby⁸¹
Timing of discharge	<ul style="list-style-type: none"> Support woman to remain in hospital with baby experiencing NAS as patient or border depending on facility capacity <ul style="list-style-type: none"> Facility accommodation for relatives may be option once woman fit for discharge Ensure formal handover of responsibilities from hospital to community services Provide postnatal home visiting by midwife/child health nurse and drug and alcohol services if available, to provide ongoing support particularly to women who may not engage well with community services³⁴ Active engagement of woman by community services to ensure wellbeing of woman and baby and identify any ongoing care and developmental issues³⁴
Parent education	<ul style="list-style-type: none"> Safe sleeping including smoke free environment and risk minimisation if continuing substance use Assessment and management of baby Substance use and care of baby including safety plan Refer to Queensland Clinical Guideline <i>Perinatal substance use: neonatal</i>²⁸ Advice about planning for next pregnancy including substance use, folate supplementation and nutrition

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