

40TH PARLIAMENT



Education and Health Standing Committee

Issues Paper

PRENATAL METHAMPHETAMINE EXPOSURE

Time to wake up to another hidden harm

Presented by

Ms J.M. Freeman, MLA

June 2020

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ISSUES PAPER

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Report No. 9

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Ms J.M. Freeman, MLA

Laid on the Table of the Legislative Assembly on 25 June 2020

Chair's Foreword

MUCH has been written and spoken about methamphetamine use in our community, however the criminal focus on this public health problem has mostly neglected the impact on children exposed in utero. The capacity to learn from the experience of delayed public health responses to FASD and the social consequences which are now emerging is a powerful lesson in preventing adverse social outcomes.

The need for early diagnosis and treatment is familiar to what we now know about a fetal alcohol spectrum disorder (FASD), that children adversely affected by alcohol in utero can often be misdiagnosed. The benefit of a FASD diagnosis is that it explains troubling behaviour and interventions can be implemented. Similar concerns regarding misdiagnosis or no diagnosis are voiced about methamphetamine exposure, particularly as children may have cognitive and behavioural difficulties that become more obvious once they start school.

At the core of any discussion there is a need to be cautious about attributing blame and stigma which would limit the capacity to both assess and address the issue in a considered manner. The public health focus on the child's wellbeing is so eloquently articulated by researcher Tricia Wouldes from the IDEAL study (outlined in this report):

We're not finding irreversible brain damage, which I think a lot of people expect. It's behavioural problems that interfere with learning. And the behavioural problems might be a combination of exposure to drugs and the home environment.¹

Since 2010 the FASD model of care in WA has sought to address the risk and a similar strategy is needed for prenatal methamphetamine exposure (PME). While the illicit status of methamphetamine means there will be some differences compared with the approach to combatting alcohol use in pregnancy, there are also similarities. Indeed, it is presumed that a medical practitioner is less likely to know of methamphetamine use, yet research illustrates that less than half of doctors routinely ask about alcohol consumption in pregnancy.

An avoidance of impairment assessment given the stigma, coupled with an unaffordable and mostly inaccessible diagnostic service process, can leave both parents and children disadvantaged in their treatment. However, given the 2018 Auditor General's report which found methamphetamine has replaced alcohol as the major source of demand for treatment a systemic approach to risk is required despite the criticism that universal screening may lead to stigma and discrimination.

Obviously, with FASD and PME 'prevention is better than a cure' and we applaud public health strategies that reduce the risk for all in the community. In the case of FASD, measures that reduce accessibility through proactive policies like the Northern Territory Government's minimum floor pricing policy have delivered a marked decline in alcohol-related harm. Further, the recent report of the Legislative Council select committee into

¹ Chris Reed, 'Fighting the Demon: The children of the meth epidemic', *NZ Herald*, (web-based), 10 May 2019, accessed 17 January 2020, <nzherald.co.nz>.

alternative approaches to illicit drug use and its effects on the community noted the hurdles faced in treating methamphetamine dependence, including no pharmacotherapy, and reinforced the importance of early intervention. Such intervention as early identification in pregnancy could be vital and possibly life-changing for both parent and child

Given the Federal parliamentary enquiry into FASD, along with the challenges of conducting a health-based committee inquiry during the COVID-19 pandemic, the committee felt it appropriate at this time to explore prenatal methamphetamine exposure by means of an issues paper.

We are grateful to those who attended several briefings just before the state went into lockdown, particularly midwife Angela O'Connor who works at the coalface of this complex public health problem and generously shared her research and considerable insights.

From our preliminary exploration, it appears that there needs to be some sustained investment in research into the effects of prenatal methamphetamine exposure, guidelines for screening and diagnosis of potentially affected babies and children, and more rehabilitation and drug counselling services for women who want to stop using methamphetamine during pregnancy.

It is important to note here the successes of some FASD interventions that could form the basis of a strategy, such as the community-led Marulu Strategy in the Fitzroy Valley, that is outlined in the report.

I thank my fellow committee members for their support in airing this difficult topic, and the research staff for their assistance in preparing this paper.



MS J.M. FREEMAN, MLA
CHAIR

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Executive Summary

DESPITE methamphetamine being the most commonly used illicit drug amongst pregnant women in Western Australia, there has been little focus on monitoring the development of children exposed to the drug in utero. On the other hand, WA has had a model of care for Fetal Alcohol Spectrum Disorder (FASD) for 10 years. There is now also a national strategy and a Federal parliamentary inquiry into effective approaches to FASD is underway.

This issues paper looks at what is in place to deal with prenatal methamphetamine exposure (PME) and considers what lessons may be learnt from efforts to tackle FASD. There is no suggestion that resources be diverted from critical FASD projects in order to investigate PME; FASD is a persistent problem which needs to be addressed with ongoing investment.

Research into the effects of PME on cognitive skills and behaviour is relatively new. Establishing a direct link to methamphetamine is difficult because of confounding factors such as multiple drug use in pregnancy and the home environment of the child. However, several scientific studies and observations from parents, foster carers and teachers suggest that exposed children experience deficits in motor skills and language development and are more likely to have trouble concentrating, following directions, controlling impulses and regulating emotions.

It has been suggested that identifying babies with PME and monitoring their development at regular intervals in the early years would help to ensure the children are accurately diagnosed and receive appropriate support at home and school. However, there are no guidelines in place for the screening, diagnosis and management of meth-affected babies and children.

Seeing the negative impact of not acting early enough to prevent serious adverse social outcomes for children affected by FASD should serve as a warning in regard to meth-affected children. The high cost of special education, behaviour remediation and incarceration may be avoided if susceptible children are monitored and treated early.

Some tools and strategies developed for FASD might be adapted or extended to PME. The AUDIT-C (Alcohol Use Disorders Identification Test – Consumption) questionnaire which asks pregnant women about their alcohol use could include questions about drug use. Children with PME disabilities could be recorded in the Western Australian Register of Developmental Anomalies in the same way as FASD to provide a sense of the scale of the problem in WA.

Targeting screening towards more at-risk groups, such as children in correctional facilities or siblings of affected children, as suggested by WA's FASD Model of Care and the national FASD plan, could also be valuable for detecting children affected by PME.

In schools, similar programs to those apparently in place for students and teachers to deal with FASD could be developed for meth-affected children.

Prevention of PME is obviously dependent on the mother being supported to cease use. While pregnancy is seen as a time when women are motivated to seek help for their methamphetamine addiction, places in residential rehabilitation facilities which accommodate women and children are very limited. While women are referred to the Women and Newborn Drug and Alcohol Service for their antenatal and postnatal care, women require more intensive support to detoxify and remain free of the drug.

In Aboriginal communities where methamphetamine use is high, the community-led approach of the Marulu Strategy developed to tackle FASD in the Fitzroy Valley might be usefully applied. The state needs more residential rehabilitation facilities such as the metropolitan Saranna Women and Children's Program and the Milliya Rumurra centre in Broome, which also helps women secure post-release accommodation away from other users.

Key messages

- There has not been enough research conducted into the prevalence of prenatal methamphetamine exposure, or into its long-term effects
- More targeted prevention measures and services would assist women to stop using methamphetamine before and during pregnancy
- There is a lack of investment in screening, diagnosis and treatment services for babies exposed to methamphetamine in utero
- Early intervention is vital to negate or minimise adverse impacts on a child's learning and behaviour
- Lessons learnt from responding to FASD can inform the approach to prenatal methamphetamine exposure

Prenatal methamphetamine exposure: Time to wake up to another hidden harm

Despite acknowledgement from peak government bodies that methamphetamine is a public health dilemma, we don't have any definitive strategies to diagnose, prevent or reduce the long-term effects.

Angela O'Connor, WANDAS, March 2020

1 The impact of methamphetamine use in pregnancy is yet to be established

While the harms caused to babies and children by alcohol consumption during pregnancy are well recognised, the impact of prenatal methamphetamine exposure is not so well established. With methamphetamine now the second most frequently used illicit drug in Australia (after cannabis)² and the most commonly used drug in pregnancy,³ the potential harms of prenatal methamphetamine exposure need to be given the same level of attention as the harms caused by alcohol.

West Australians remain the biggest users of methamphetamine in the country. While use has decreased between 2013 and 2016⁴ across all states, the proportion using ice, the most potent form of methamphetamine, has barely changed in that period and has in fact increased since 2010.⁵

The high rate of methamphetamine use is attributed to its ready access and availability, since it can be produced cheaply from ingredients easily obtainable from pharmacies.⁶ Perceived availability of methamphetamine is high, and highest for crystal methamphetamine.⁷ It also produces longer lasting euphoric effects than other drugs,⁸ making it a better value proposition. At the same time as purity has increased, the price has dropped in recent years.⁹ Methamphetamine sells for around \$50 a point (one-tenth of a

2 J Grigg et al., *Methamphetamine Treatment Guidelines: Practice Guidelines for Health Professionals (Second Edition)*, Turning Point, Victoria, 2018, p. 8.

3 Ms Angela O'Connor, Clinical Midwifery Consultant, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

4 The dates of a national household survey.

5 Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2016: detailed findings*, Drug Statistics series no. 31, Cat. no. PHE 214, AIHW, Canberra, 2017.

6 Women's Alcohol and Drug Service, Royal Women's Hospital, *Submission to the Inquiry into the Supply and Use of Methamphetamines, particularly ice, in Victoria*, 27 February 2014.

7 95% of users responding to the 2019 Illicit Drug Reporting System survey rated it 'easy or very easy' to obtain, according to the Australian Institute of Health and Welfare. AIHW, *Alcohol, tobacco & other drugs in Australia*, web report, Cat. no PHE 221, 23 April 2020, accessed 25 May 2020, <www.aihw.gov.au>.

8 M Good et al., 'Methamphetamine use during pregnancy: Maternal and neonatal implications', *Obstetrics and Gynaecology*, vol. 116, part 1, August 2010.

9 Government of Western Australia, *Methamphetamine Action Plan Taskforce – Final Report*, Department of Premier and Cabinet, Perth, November 2018, pp. 49-50.

gram), and even less – around \$20 a point – in some places (e.g. Broome).¹⁰ Anecdotally, this seems to have shifted during the COVID-19 closure of state and international borders. However, it is unclear whether this has resulted in an increase in local sources, and hence usage rates remaining unaltered.

While the prevalence of methamphetamine use in pregnancy is difficult to quantify, the Women and Newborn Drug and Alcohol Service (WANDAS), a specialist antenatal centre based at King Edward Memorial Hospital, says the steady increase in its admissions is due to an increase in methamphetamine use.¹¹

It is even more difficult to determine the number of babies who may be affected by exposure to methamphetamine in utero, since the babies do not exhibit signs of exposure in the same way as those affected by other substances, such as alcohol and opiates. But the signs of damage may emerge years later in the form of learning and behavioural difficulties.

In view of this, the Committee thought there might be lessons to be learned from tackling fetal alcohol spectrum disorder (FASD) which would help the State move ahead of the curve in dealing with the consequences of methamphetamine use during pregnancy. The intention would never be to divert resources away from FASD; rather, approaches to prenatal methamphetamine exposure may benefit from the experience with FASD, and, considering alcohol and methamphetamine are frequently used together, some combined strategies might be appropriate.

There is now a national strategy in place to address FASD, along with a number of state initiatives, and while progress may not be rapid, FASD is at least broadly acknowledged as a problem requiring a sustained approach.

Conversely, there have been six inquiry or taskforce reports on the impact of methamphetamine use published in Australia in the past five years, none of which addresses prenatal exposure to methamphetamine. (Appendix 3 lists the reports.) Many focus on law enforcement, which is somewhat concerning since methamphetamine use disorder is at least as much a health and community issue as a policing issue.

As well as considering how FASD strategies might inform the approach to prenatal methamphetamine exposure, this issues paper will present an overview of methamphetamine use, review the evidence of short and longer term effects on offspring, outline existing strategies and services for pregnant women and children affected by methamphetamine, and summarise the progress that has been made with FASD.

This issues paper draws primarily on existing literature and several briefings the Committee conducted which provided a useful overview of methamphetamine use in pregnancy, FASD initiatives and mental health and alcohol and drug (AOD) services in our state.¹² A full inquiry on the topic would provide a greater range of views and depth of understanding through submissions and hearings and may be contemplated by a future committee.

¹⁰ Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

¹¹ *ibid.*

¹² See Appendix 2.

2 What is methamphetamine?

Amphetamines are synthetic psychostimulants created from the central nervous system stimulant phenylethylamine. They include legally prescribed substances (e.g. dexamphetamine, to treat attention deficit hyperactivity disorder) and those manufactured illegally, such as methamphetamine and MDMA (commonly known as 'ecstasy').

Methamphetamine can be manufactured as a powder (known commonly as speed), a paste, and in crystal form (commonly known as ice or crystal meth). It can be injected, snorted, smoked or ingested. Crystal meth, or ice, is the most potent form. Unlike the other forms, it is usually smoked, which enables more rapid absorption by the brain. The potency and consumption method of ice results in higher rates of problematic use and dependence than the other forms.¹³

As a central nervous system stimulant, methamphetamine triggers the release of dopamine, noradrenaline and serotonin. The dopamine release has been found to be much higher than for any other drug (three times that of cocaine) or pleasurable activity. Users become more alert, energetic, self-confident, sociable and sexually aroused and require less food and sleep. They have an enhanced sense of control and competency. However, with long-term regular use, the dopamine receptors in the brain become damaged by the drug-related bursts and the brain can no longer experience pleasure naturally. Users may depend on methamphetamine to prompt a normal response.¹⁴

Depending on the dose and how it is administered, the acute effects of methamphetamine can last for 8 to 24 hours, with the recovery period lasting several days. The comedown from methamphetamine can make the user irritable, restless, anxious, confused and fatigued and can result in tremors, teeth grinding, insomnia, increased and irregular heartbeat, abdominal pain, sweating, dilated pupils and parasitosis (picking and scratching at the skin). Higher and/or more frequent doses can result in dental problems, high blood pressure, kidney failure, depression, poor memory, aggressive and violent behaviour, panic attacks, delusions, hallucinations and paranoia. An overdose can cause heart failure resulting in death.¹⁵

Long-term regular use can cause functional and structural changes to the brain which can persist for one or two years after a person has ceased use. Cardiovascular problems, weight loss and mood and anxiety disorders are also long-term effects.¹⁶

13 J Grigg et al., *Methamphetamine Treatment Guidelines: Practice Guidelines for Health Professionals (Second Edition)*, Turning Point, Victoria, 2018, pp. 8, 30.

14 Government of Western Australia, *Methamphetamine Action Plan Taskforce – Final Report*, Department of Premier and Cabinet, Perth, November 2018, pp. 40, 42; Ju Lee Oei et al., 'Amphetamines, the pregnant woman and her children: a review', *Journal of Perinatology*, vol. 32, 2012, pp. 737-747; Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

15 J Grigg et al., pp. 9-10; Government of Western Australia, *Methamphetamine Action Plan Taskforce – Final Report*, p. 41; Ju Lee Oei et al., 'Amphetamines, the pregnant woman and her children: a review', *Journal of Perinatology*, vol. 32, 2012, pp. 737-747.

16 Australian Institute of Health and Welfare, *Alcohol, tobacco & other drugs in Australia*, web report, Cat. no PHE 221, 23 April 2020, accessed 25 May 2020, <www.aihw.gov.au>; Government of Western Australia, *Methamphetamine Action Plan Taskforce – Final Report*, p. 42.

3 How much is being consumed?

3.1 Ice use has increased

Rates of drug use are only ever an estimate, since accurate data collection is difficult. Illicit drug use is likely to be under-reported in surveys due to a reluctance to self-report an illegal and socially undesirable activity. Furthermore, some segments of the population, such as homeless people who may be more prone to drug use, are often not included in surveys.

A commonly cited data source is the National Drug Strategy Household Survey, conducted every three years. Results of the 2019 survey are not yet available so data reported here are from the 2016 survey. The survey report notes that the methamphetamine use figure is likely to be an underestimate since it represents only those who said it was their *main form* of drug use in the previous 12 months.¹⁷

The survey findings show that 2.7% of people living in Western Australia reported using methamphetamine in the previous 12 months, much higher than the national average of 1.4%. As Figure 1 shows, WA had the highest use.

In 2016 in WA and most other states, the proportion of methamphetamine users consuming ice was greater than the proportion using some other form of methamphetamine. While the survey results show overall methamphetamine use decreasing since 2013, there are other worrying trends hidden in the data. For example, frequent use (weekly or more often) more than doubled from 9.3% in 2010 to 20% in 2016. By way of comparison, the proportion of cocaine users who consume at this frequency is only 2%, and for MDMA (ecstasy) the proportion is 3%. And the proportion of people injecting methamphetamine doubled from 2013, representing nearly one-fifth of users in 2016. Injecting poses increased risks for the user, including contracting blood borne viruses.

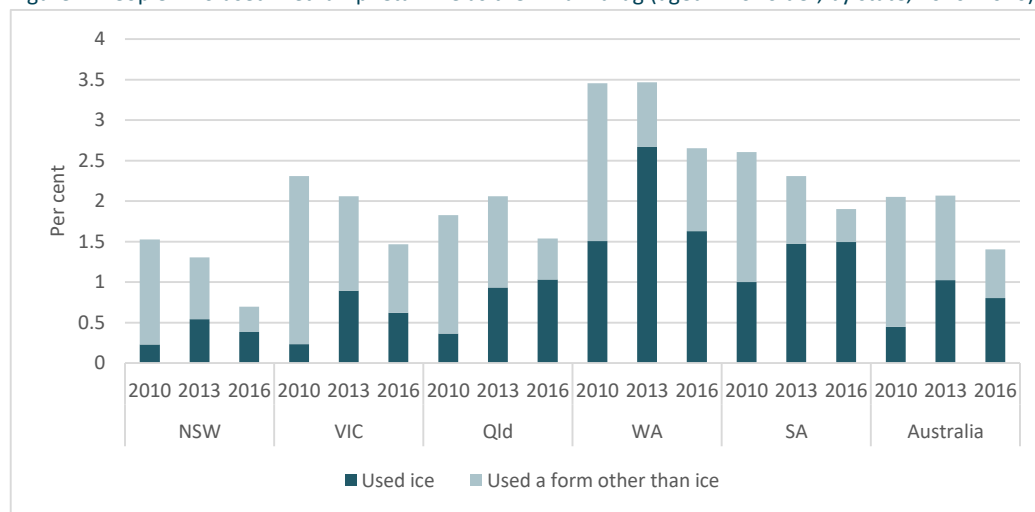
In 2018 a WA auditor general's report into methamphetamine treatment services found that methamphetamine had replaced alcohol as the major source of demand for treatment. While the number of people receiving residential rehabilitation treatment for a major methamphetamine problem in 2012-13 was 162, by 2016-17 the figure was 582.¹⁸

Another way to measure consumption is to monitor levels of the drug in wastewater. This is done nationally by the Australian Criminal Intelligence Commission as part of its National Wastewater Drug Monitoring Program, and in Perth and selected regional locations by the Western Australia Police Force. This is not a measure of how many people are using methamphetamine, but can indicate changes in the scale of consumption.

17 Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2016: detailed findings*, Drug Statistics series no. 31, Cat. no. PHE 214, AIHW, Canberra, 2017, p. 69.

18 Western Australian Auditor General, *Treatment Services for People with Methamphetamine Dependence*, Report 9, Office of the Auditor General, Perth, December 2018.

Figure 1: People who used methamphetamine as their main drug (aged 14 or older, by state, 2010–2016)



Source: Graph created using data from National Drug Strategy Household Survey, Table 7.28

From the first year of the national program (2016-17) to the third year (2018-19), methamphetamine consumption increased from 8405kg to 11,516kg. In WA, consumption decreased slightly in the same period (from 1547kg to 1482kg). But in terms of doses per 1000 people per day, WA's consumption is still well above the national average for both capital and regional areas. In the most recent testing cycle (August 2019), consumption by dose was highest in regional WA and Victoria, followed by metropolitan South Australia.¹⁹

The WA Police analysis also shows regional consumption to be higher than metropolitan. Remote communities are also affected. Water analysis in 2016 showed methamphetamine use in all but one of 34 remote Aboriginal communities tested in the Pilbara, Goldfields and Kimberley regions.²⁰

Another data source recording an increase is the Drug Use Monitoring in Australia survey, which collects information from police detainees. The percentage of detainees testing positive for methamphetamine at the WA test site increased from 42% in 2014 to 59% in the first quarter of 2018.²¹

Similarly, the National Prisoner Health Data Collection shows that in 2015, for the first time, methamphetamine was the most common illicit drug used among prison entrants in the previous 12 months, overtaking cannabis (50% compared with 41%). WA recorded a similar trend: 47% reporting methamphetamine use compared with 40% reporting cannabis use.

19 Australian Criminal Intelligence Commission, *National Wastewater Drug Monitoring Program – Report 9*, Commonwealth of Australia, 2020, p. 73.

20 Government of Western Australia, *Methamphetamine Action Plan Taskforce – Final Report*, p. 53.

21 *ibid.*, p. 59.

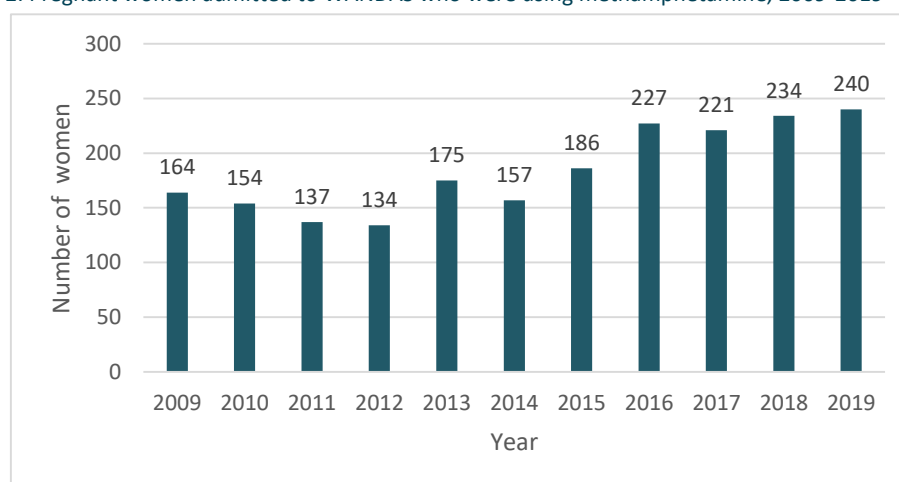
3.2 Prevalence in pregnancy is hard to determine

It has been reported that 6.3% of Australian women over the age of 18 used amphetamines in pregnancy, with methamphetamine being the most potent. The women reported higher doses than for other drugs and earlier initiation of use.²²

Other prevalence data is mainly derived from hospital data, which is often site specific, with anecdotal reports of use in pregnancy filling in the gaps. The Women and Newborn Drug and Alcohol Service (WANDAS) in Perth says the number of women using the service because of methamphetamine addiction is increasing (see Figure 2). It is now the most commonly used illicit drug in pregnancy, whereas 10 years ago opioids held that position. In 2019 the service saw 240 women who were taking methamphetamine, mostly in combination with cannabis, benzodiazepines, prescription medications and alcohol.²³

It is a similar story across Australia according to Sydney neonatologist Ju Lee Oei and colleagues, who say studies from individual centres in 2006 and 2010 showed there had been an increase in amphetamine use by known pregnant drug users of two to three times, while heroin use decreased or remained static.²⁴

Figure 2: Pregnant women admitted to WANDAS who were using methamphetamine, 2009-2019



Source: WANDAS

WANDAS says better coding would more accurately capture the type and various combinations of alcohol/drug use of its patients. Service lead Angela O'Connor also points out that the service does not catch all pregnant drug users – some women may fly under the radar because of the stigma associated with drug use and pregnancy. Many of the women also fear Child Protection and Family Support and infant removal to out-of-home care.²⁵

22 A O'Connor et al., 'Methamphetamine Use in Pregnancy: Maternal and Neonatal Outcomes from A Specialist Drug and Alcohol Service (Western Australia),' *EC Gynaecology*, vol. 8.9, 2019, pp. 763-773, citing National Drug Strategy Household Survey 2016 figures.

23 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

24 Ju Lee Oei et al., 2012, pp. 739-740.

25 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

Dr Oei also points out that highly functioning methamphetamine users (that is, with jobs and stable family environments) may not view their occasional use as posing a problem for their unborn child, so they do not disclose use and hence do not show up in hospital statistics.²⁶

The majority of the women (70%) in a study of methamphetamine use in pregnancy in Western Australia (conducted by Ms O'Connor) reported heavy use, most injecting almost daily. Around one-third did not reduce their use throughout the pregnancy.²⁷ The study will be discussed in more detail later.

4 Research into the effects of exposure is developing

Research into the effects of prenatal methamphetamine exposure is relatively new. Determining outcomes of methamphetamine exposure in the long term is particularly difficult because, beyond a potential withdrawal phase after birth, the affected children rarely require medical attention which may otherwise bring them into contact with the health system.

Furthermore, many children can be difficult to track long-term because of unstable home lives which often result in transience and multiple carers. Isolating the cause to methamphetamine is also complicated by the fact that many of the mothers have used multiple drugs and/or have other environmental and psychiatric stressors that can impact the child.²⁸

While there are numerous studies which consider the medical and physiological impacts of drugs (including amphetamines) on the fetus, research into developmental effects is less common. There is only one longitudinal study, the US/NZ Infant Development, Environment, and Lifestyle (IDEAL) study, which has measured the developmental effects of methamphetamine on children until the age of 7.5.

Risks to the expectant mother and impacts on the newborn will be outlined before focusing on the longer term impacts.

4.1 Complications can arise during pregnancy

The effects of methamphetamine discussed earlier can be particularly concerning for pregnant women. Higher blood pressure and poor maternal nutrition resulting from drug-induced loss of appetite can lead to vasoconstriction (constriction of blood vessels), restricting nutrients and oxygen to the baby and impeding its growth.²⁹

26 Ju Lee Oei, 'What impact does meth use during pregnancy have on babies?', *Focus with Jessica Strutt, ABC Radio* (web-based), 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.

27 A O'Connor et al., 'Methamphetamine Use during Pregnancy, and Early Infant Development Using the Ages and Stages Questionnaire (ASQ-3) Assessment', *Journal of Addiction Research and Therapy*, vol. 10, no. 5, 2019, p. 3.

28 Ju Lee Oei, 'Adult consequences of prenatal drug exposure', *Internal Medicine Journal*, vol. 48, Royal Australian College of Physicians, 2018, pp. 25–31.

29 MA Plessinger, 'Prenatal exposure to amphetamines. Risks and adverse outcomes in pregnancy', *Obstet. Gynecol. Clin. N. Am.*, vol. 25, no. 1, 1998, pp. 119–138.

The IDEAL study found no difference in maternal complications between women who used methamphetamine and those who did not.³⁰ However, a 2019 US study comparing birth outcomes of methamphetamine and opioid-affected births with other hospital births found methamphetamine-affected births had the highest rates of preeclampsia, placental abruption, preterm delivery, caesarean delivery and severe maternal morbidity and mortality.³¹

Pregnant women who use methamphetamine have complex personal lives. Their circumstances may mean they do not receive as much family support or antenatal care as women in the general population (although organisations such as WANDAS go to great lengths to try to provide support to the women in their care), and under the influence of the drug, a mother-to-be may engage in risky behaviours.

While many women use methamphetamine throughout their pregnancy, some try to reduce their use or abstain completely. However, stopping use suddenly could prompt withdrawal symptoms. There are no recommended pharmacological treatments for the symptoms of methamphetamine withdrawal, either during or outside of pregnancy. While 'blocking' or substitution medications such as methadone are used for heroin withdrawal, there is no equivalent for methamphetamine. Therapy within a medically supported inpatient setting or therapeutic community services which offer close supervision of detoxification are recommended. This will be discussed further in section 6.3.

While there is scant information on the specific risks or harms of methamphetamine withdrawal during pregnancy,³² it is considered to be harmful to the fetus. Since stimulant drugs alter the brain chemistry involved in pleasure and reward, sudden withdrawal can result in depression, drug cravings, fatigue, anxiety and possibly suicidal thoughts, which may be exacerbated by pregnancy.³³ However, Australian clinical guidelines on managing substance use in pregnancy report that symptoms associated with withdrawal from psychostimulants are uncommon in pregnant women.³⁴

30 L Smith et al., 'Developmental and behavioral consequences of prenatal methamphetamine exposure: a review of the Infant Development, Environment, and Lifestyle (IDEAL) Study', *Neurotoxicology and Teratology*, vol. 51, Sep-Oct 2015, pp. 35-44.

31 LK Admon et al., 'Amphetamine- and opioid-affected births: incidence, outcomes, and costs, United States, 2004-2015', *American Journal of Public Health*, vol. 109, 2019, pp. 148-54.

32 More is known about the effects of opioid and alcohol withdrawal. A 2019 Canadian review of withdrawal management and treatment for pregnant women addicted to crystal methamphetamine found no literature on clinical effectiveness of interventions and no evidence-based guidelines. Ref: Canadian Agency for Drugs and Technologies in Health (CADTH), *Withdrawal management and treatment of crystal methamphetamine addiction in pregnancy: a review of clinical effectiveness and guidelines*, Ottawa, June 2019.

33 American Addiction Centers, *Detoxing while pregnant*, 3 February 2020, accessed 17 April 2020, <<https://americanaddictioncenters.org>>; Committee on Health Care for Underserved Women, 'Committee Opinion No. 479 (Methamphetamine Abuse in Women of Reproductive Age)', American College of Obstetricians and Gynecologists, *Obstet Gynecol*, vol. 117, 2011, pp. 751-5.

34 NSW Ministry of Health, *Clinical guidelines for the management of substance use during pregnancy, birth and the postnatal period*, 2014, p. 61.

4.2 Newborns are typically quiet and sleepy

In the days after birth, babies of women using drugs and alcohol are monitored for withdrawal from the drug(s) which they have been receiving via the mother's placenta. Babies affected by the abrupt removal of the drug supply may be diagnosed as having neonatal abstinence syndrome (NAS). However, the symptoms can vary widely according to the drug. While babies affected by heroin cry incessantly, meth-affected babies are typically sleepy and quiet.³⁵ Given the range of symptoms, babies are scored on a Finnegan neonatal abstinence scoring chart (from two hours after birth to five days old) to determine whether they require treatment in a special care nursery and/or with medication.³⁶ However, as noted in the Women and Newborn Health Service clinical guidelines for NAS, no significant withdrawal syndrome is evident in babies affected by amphetamines.³⁷

As demonstrated in a recent study by WANDAS, babies assessed using the Finnegan tool do not score highly enough on the NAS chart to warrant admission to the special care nursery. Some babies in the study were admitted to the nursery but for different reasons (such as such as preterm birth, ventilation support and feeding).³⁸ (The Finnegan scoring chart for detecting NAS in babies exposed prenatally to methamphetamine will be discussed further in section 6.1.)

The largest research project so far to examine the effects of prenatal methamphetamine exposure, the IDEAL study (see Box 1), also recorded no NAS requiring pharmacologic intervention.³⁹ But the fact that no obvious withdrawal syndrome has been identified does not mean an absence of symptoms.

Apart from sleepiness, babies may be lethargic and have difficulty establishing breastfeeding or bottle feeding.⁴⁰ Although hard to arouse, once awakened they could also be more difficult to calm and settle,⁴¹ attracting the label of 'light-switch babies'.⁴²

35 'Crystal babies: Germany's daunting drug problem flows from mother to unborn child', *DW (Deutsche Welle)* (web-based), 20 April 2016, accessed 3 February 2020, < <https://www.dw.com/> >.

36 The Finnegan scale was developed by US doctor Loretta Finnegan in the 1970s and later modified. It lists 21 symptoms of withdrawal in newborn infants, including tremors, seizures, excessive crying, diarrhoea, vomiting, congestion and sneezing. The symptoms are weighted on a scale from 1 to 5 according to severity. A daily average score is created from measurements taken every four hours. If the baby records a score of 8 or more three times consecutively NAS treatment is started.

37 Women and Newborn Health Service, Neonatal Directorate, *Clinical Practice Guideline – Neonatal Abstinence Syndrome*, North Metropolitan Health Service, Government of Western Australia, 24 March 2020, p. 3.

38 A O'Connor et al., 'Neonatal Abstinence Syndrome (NAS) and Methamphetamine Use: A Review of Finnegan's as an Assessment Tool in The Women and Newborn Drug and Alcohol Service', *International Journal of Nursing and Health Care Research*, (online), 9 Jul 2019, <www.gavinpublishers.com>

39 L Smith et al., 2015, pp. 35-44.

40 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

41 American Academy of Pediatrics, 'Newborns exposed to methamphetamine before birth are hard to arouse, hard to calm down, study suggests,' *Science Daily* (web-based), 2 May 2011, accessed 29 April 2020, <www.sciencedaily.com/releases>.

42 Dr Stacy Blythe, 'What impact does meth use during pregnancy have on babies?', *Focus with Jessica Strutt, ABC Radio* (web-based), 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.

Box 1: The IDEAL study

The Infant Development, Environment, and Lifestyle (IDEAL) study, for which recruitment began in 2002, is the first prospective study to identify behaviour problems associated with prenatal methamphetamine exposure.

Subjects were initially recruited in Los Angeles (California), Honolulu (Hawaii), Des Moines (Iowa) and Tulsa (Oklahoma), with a further cohort recruited in New Zealand. The New Zealand participants had a higher frequency of use with less variability in methamphetamine purity. The addition of the New Zealand cohort also enabled the researchers to study a society with a less punitive approach to drug dependent mothers. While in the US meth-using mothers are often reported for suspected child endangerment, there is no legal mandate in New Zealand to report a pregnant woman who reveals substance use during her pregnancy.

The US sample consisted of 412 mother-infant pairs (204 exposed to meth in utero and 208 unexposed) and the NZ sample consisted of 223 mother-infant pairs (108 exposed and 115 unexposed). Results of tests for the exposed group were compared with those of the unexposed group. The US children in the study were followed up at one month and then at 12, 24, 30, 36, 60, 66, 78, 84, and 90 months (or 7.5 years) of age. The NZ children (who were enrolled later) were followed up at the same intervals up until 36 months.

Source: L Smith et al., 'Developmental and behavioral consequences of prenatal methamphetamine exposure: a review of the Infant Development, Environment, and Lifestyle (IDEAL) Study', *Neurotoxicology and Teratology*, vol. 51, Sep-Oct 2015, p. 38.

While meth-affected babies are often small for gestational age and can have a smaller head circumference, they show no greater incidence of physical malformations, such as skeletal or cardiac defects or the facial dysmorphism that can be evident in babies affected by alcohol.

Some articles in medical journals in the past two decades in particular have identified that neurological stress may be responsible for the baby's lethargy and also manifest in poor quality of movement and hypotonicity (decreased muscle tone). Researchers who assessed muscle tone, reflexes, behavioural state, motor development and stress in newborns during the first four days of life and again at one month of age said these could indicate whether the baby would do well later on.⁴³

4.3 Studies show cognitive ability may be adversely affected

Research into the longer term effects of prenatal methamphetamine exposure (PME) centres on cognitive function. Longer term physical deficiencies appear to be confined to height.⁴⁴

Despite progress made by the IDEAL study, the effect of PME on postnatal neurodevelopment requires further research. However, some researchers believe that cognitive ability – in particular motor skills, executive function and sustained attention – is negatively impacted, which can lead to educational deficits and social and behavioural problems.⁴⁵

43 American Academy of Pediatrics, 2011, <www.sciencedaily.com/releases>.

44 T Woudes & B Lester, 'Stimulants: How big is the problem and what are the effects of prenatal exposure?', *Seminars in Fetal and Neonatal Medicine*, vol. 24, 2019, pp. 155–160.

45 S Diaz et al., 'Effects of prenatal methamphetamine exposure on behavioral and cognitive findings at 7.5 years', *Journal of Pediatrics*, vol. 164, no. 6, pp. 1333–1338; N Eze et al., 'School-Aged Outcomes following Prenatal Methamphetamine Exposure: 7.5 Year Follow-Up from the Infant Development, Environment, and Lifestyle (IDEAL) Study', *Journal of Pediatrics*, vol. 170, 2016, pp. 34–38.

Neurodevelopment is the ability of the brain to develop neural (nerve) pathways between areas of the nervous system which enable the brain to learn, focus and develop memories and social skills, among other things. Numerous brain development processes occur in utero, hence neurodevelopment could be impacted by PME. Some structural differences in parts of the brain (e.g. the caudate nucleus and white matter) have been observed in preschool children with PME.⁴⁶

The IDEAL study, which tracked the progress of children with PME from birth to 7.5 years, has generated a range of projects over its life examining different aspects of development. Throughout the first 3 years, exposed children recorded poorer motor outcomes (which may include lags in learning to crawl or walk and to hold or pick up objects) than their non-exposed counterparts.⁴⁷ At 3 and 5, the exposed children were more likely to experience increased emotional reactivity and anxiety and depressed moods than the non-exposed children. Heavy exposure to methamphetamine was related to attention problems and withdrawn behaviour. By 5, externalising and attention-deficit/hyperactivity disorder (ADHD) problems were more evident in the exposed children. Externalising behaviours, which include disobedience, hostility and aggression, were evident again at 7.5 years.⁴⁸

4.3.1 Impaired executive function can lead to learning and behavioural problems

Dr Stacy Blythe, a nurse and senior researcher at Western Sydney University, has noted problems with executive function in the course of her work and in her role as a foster carer. Executive function and self-regulation skills depend on three inter-related types of brain function:

- working memory – the ability to retain and manipulate pieces of information
- mental flexibility (also known as cognitive flexibility or flexible thinking) – the ability to shift attention or thinking in response to different demands or settings
- self-control (also called inhibitory control) – the ability to prioritise and resist impulsive actions.⁴⁹

Executive functioning skills usually develop in early childhood and into the teenage years. They are considered foundational for academic, psychosocial and behavioural function. People whose executive skills are lacking may struggle with prioritising and completing tasks, following directions, time management, switching between tasks, adjusting to changes to rules or routines, and organising their thoughts.

Dr Blythe has observed how drug exposure interferes with the ability of children to control impulses and adapt to their surroundings and new situations. Problems regulating their

46 S Diaz et al., 'Effects of prenatal methamphetamine exposure on behavioral and cognitive findings at 7.5 years', *Journal of Pediatrics*, vol. 164, no. 6, pp. 1333–1338; N Eze et al., 'School-Aged Outcomes following Prenatal Methamphetamine Exposure: 7.5 Year Follow-Up from the Infant Development, Environment, and Lifestyle (IDEAL) Study', *Journal of Pediatrics*, vol. 170, 2016, pp. 34–38.

47 T Wouldes et al., 'Prenatal methamphetamine exposure and neurodevelopmental outcomes in children from 1 to 3 years', *Neurotoxicology and Teratology*, vol. 42, 2014, pp. 77–84.

48 L Smith et al., 2015, pp. 35–44; N Eze et al., 2016, pp. 34–38.

49 Centre on the Developing Child, Harvard University, *Executive function and self-regulation*, accessed 28 April 2020, < <https://developingchild.harvard.edu>>.

emotions usually follow, when the child is unsure how to deal with the inability to adapt. She proposes this could present as defiance.⁵⁰

Dr Blythe suggests problems with behaviour commonly surface when a child starts kindergarten or pre-school because areas of the brain related to executive function have not developed at the same rate as their peers, and the child's behaviour may be more akin to that of a two to three-year-old.

Kindergarten was described as a challenge by the grandmother and carer of a West Australian child affected by methamphetamine, who was unable to sit still, follow directions or concentrate.⁵¹ A similar account was given by a New Zealand mother who said her young son was frustrated because he did not understand why he reacted the way he did.⁵²

Dr Blythe said the children she dealt with often had ongoing struggles with sensory overload, attention deficit issues, emotion regulation difficulties and information processing difficulties.⁵³ Greater deficits in processing speed as children grew older was also noted by Brinker et al. (2017). The authors theorised that ways of compensating for processing difficulties that children may have used in early childhood prove insufficient as processing demands increase with age, 'potentially resulting in greater academic and functional deficits in later childhood and adolescence'.⁵⁴

4.3.2 Babies in a West Australian study were found to be at risk

In 2015 and 2016, WANDAS, led by midwife Angela O'Connor, recruited women attending the service to participate in the first Australian study of the effects of methamphetamine use in pregnancy.

The 109 infants in the WANDAS study sample had been exposed to larger cumulative methamphetamine dosages than those in the IDEAL cohort (96% of women using at least weekly compared with 61%), and had more complex social disadvantages. It was expected that this could potentially place them at higher risk of adverse neurodevelopmental outcomes.⁵⁵

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- 50 Elicia Kennedy, 'Babies born to meth-affected mothers seem well behaved, but their passive nature masks a serious problem', *ABC News* (web-based), 3 January 2020, accessed 10 January 2020, www.abc.net.au/news; Dr Stacy Blythe, 'What impact does meth use during pregnancy have on babies?', *Focus with Jessica Strutt, ABC Radio*, 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.
- 51 Fay Alford, 'What impact does meth use during pregnancy have on babies?', *Focus with Jessica Strutt, ABC Radio*, 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.
- 52 Chris Reed, 'Fighting the Demon: The children of the meth epidemic', *NZ Herald* (web-based), 10 May 2019, accessed 17 January 2020, <nzherald.co.nz>.
- 53 Dr Stacy Blythe, 'What impact does meth use during pregnancy have on babies?', *Focus with Jessica Strutt, ABC Radio*, 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.
- 54 M Brinker et al., 'Neurocognitive and neurodevelopmental impact of prenatal methamphetamine exposure: A comparison study of prenatally exposed children with non-exposed ADHD peers', *Applied Neuropsychology: Child*, vol. 8, no. 2, 2017, pp. 132-139.
- 55 A O'Connor et al., 'Developmental outcomes following prenatal exposure to methamphetamine: A Western Australian perspective', *Journal of Paediatrics and Child Health*, Paediatrics and Child Health Division (The Royal Australasian College of Physicians), 2019.

Box 2: Methods for WANDAS study

Women who had been accepted for antenatal care with WANDAS and identified methamphetamine as being their primary drug of choice were approached to participate. Recruitment took place between July 2015 and December 2016. A structured questionnaire from the 2010 National Drug and Alcohol Survey was administered to the 112 participants, with tailored questions covering demographics, past and current drug use patterns (particularly methamphetamine use), motivations for use, mental health status and support services involved.

The average age for the women in this study was 28.9 years at the time of the first antenatal visit. The women ranged from 17 to 41 years old. Data, including methamphetamine use, were obtained throughout each trimester of pregnancy. Statistics related to the newborn (weight, Apgar score, NAS outcome scores, feeding method etc) were entered into a database for analysis. 109 infants were assessed at birth, with 89 completing the Ages and Stages Questionnaire follow-up at 4 months and 75 at 12 months. 65 completed the Griffiths assessment at 12 months and 63 completed all three assessments.

Source: A O'Connor et al., 'Developmental outcomes following prenatal exposure to methamphetamine: A Western Australian perspective', *Journal of Paediatrics and Child Health*, Paediatrics and Child Health Division (The Royal Australasian College of Physicians), 2019; A O'Connor et al., 'Methamphetamine Use during Pregnancy, and Early Infant Development Using the Ages and Stages Questionnaire (ASQ-3) Assessment', *Journal of Addiction Research and Therapy*, vol. 10, no. 5, 2019.

As part of the study, developmental attainment at four months and at one year was documented using a standardised questionnaire completed by the parent or caregiver. The Ages and Stages Questionnaire (ASQ) assesses the five domains of communication, gross motor, fine motor, problem-solving and personal-social skills with a series of questions, to which parents/caregivers can answer 'yes', 'sometimes' or 'not yet'. Of the 89 infants assessed at four months, 30 (34%) were identified as having a potential developmental delay and of the 75 infants assessed at 12 months, 29 (39%) were identified as at risk.⁵⁶

Also at 12 months, the development of 64 of the infants was formally assessed using the Griffiths Mental Development Scales.⁵⁷ The Griffiths Scales (birth to 2 years) are a standardised tool that assess the five developmental areas of locomotor, personal-social, hearing and language, eye-hand coordination, and performance (problem solving). The sum of the scores from each of these areas generates a general quotient, which provides an overall assessment of the child's functioning.

Results were compared to a historical cohort of 443 healthy West Australian one to two-year-olds. The developmental attainment of both the pre-term and full-term infants was statistically significantly lower than for the historical control group across all domains. The language scores were the lowest on average. The mean general quotient of the meth-exposed infants was 92.7, compared to 113 for the historical cohort.

There was no correlation between the Griffiths general quotient scores and the 4-month ASQ scores, leading the authors to conclude that the ASQ was not helpful in screening for infants at risk of a developmental delay at 12 months.

56 A O'Connor et al., 'Methamphetamine Use during Pregnancy, and Early Infant Development Using the Ages and Stages Questionnaire (ASQ-3) Assessment', *Journal of Addiction Research and Therapy*, vol. 10, no. 5, 2019.

57 The assessments were performed by paediatricians who were blinded to the mother's drug history. Any result greater than two standard deviations below the test means prompted referral for further assessment.

The researchers note that as the number of infants in the study was small, only tentative conclusions can be drawn regarding their developmental profile. However, the areas of concern identified mostly correlated with the available literature regarding motor skills and language development.

4.3.3 Adversity in the early years is a strong determinant of behaviour

One of the difficulties of drawing conclusions about the relationship between methamphetamine exposure and developmental issues is the inability to separate the effects of the drug from the impact of early adversity on the baby/young child.

Information about the home environment was collected throughout the IDEAL study and some spin-off studies have used this data to attempt to account for social context. One of these claimed that regardless of the quality of home life, prenatally exposed children experienced increased cognitive problems.⁵⁸

Another study specifically considered the effect of early adversity on behaviour at the age of 7.5. Adversity included extreme poverty, maternal postnatal substance abuse, depression, caregiver abuse, changes to the primary caregiver, social position, home environment, and community/neighbourhood violence. It was found that while PME is associated with behavioural problems, adversity in the early years is also a strong determinant of behavioural outcomes.⁵⁹

The IDEAL study found that where home environments/caregivers were more responsive to developmental and emotional needs, there was less risk of internalising behaviour (anxiety, depression) and externalising behaviour (aggression, anti-social behaviour). Psychological symptoms and parenting stress experienced by the primary caregivers were also associated with increased child behavioural problems.⁶⁰

Lead researcher of the New Zealand branch of the study Dr Trecia Wouldes confirmed that the main concern of methamphetamine exposure was behavioural problems that interfere with learning, rather than irreversible brain damage, and that the behavioural problems might be a combination of exposure to drugs and the home environment.⁶¹

The WANDAS study also acknowledges that the mother's personal, environmental and social situation affects her child's development. Factors such as pregnancy complications, a low level of education, unemployment, homelessness, family and domestic violence, mental health disorders and intergenerational trauma can lead to poorer infant outcomes.⁶²

Results of the qualitative phase of the study, in which 20 of the participants were interviewed to understand the complex relationship between methamphetamine and their lived experiences, will be discussed further in the next section.

58 S Diaz et al., 2014, pp. 1333–1338.

59 N Eze et al., 2016, pp. 34–38.

60 L Smith et al., 2015, pp. 35–44.

61 Chris Reed, 'Fighting the Demon: The children of the meth epidemic', *NZ Herald*.

62 A O'Connor et al., 'The experiences of pregnant women attending a specialist service and using Methamphetamine', *Women and Birth*, 2020 (in press).

5 Many women use methamphetamine as a way to cope or escape

Methamphetamine is used by people across all sectors of society and parts of Australia. As the report of the Federal inquiry into crystal methamphetamine notes, both blue-collar and white-collar workers engage in problematic alcohol and drug use, with ice use specifically identified in the hospitality, transport, agriculture, construction and mining industries as well as corporate environments, possibly to increase productivity and alertness.⁶³

However, survey data shows higher rates of use among Australians who are unemployed, and also among those who live outside the metropolitan area, are Indigenous or are experiencing mental illness. According to the National Drug Strategy Household Survey, unemployed people were 3.1 times as likely to have used methamphetamine as employed people, but only 1.5 times more likely to have used cannabis. People in remote and very remote areas were 2.5 times more likely to use methamphetamine than those in major cities, and Aboriginal and Torres Strait Islander people were 2.2 times more likely to use methamphetamine than non-Indigenous Australians.⁶⁴

The proportion of recent methamphetamine users experiencing high or very high levels of psychological distress increased from 21% to 37% between 2013 and 2016. This was higher than for any other drug, and three times higher than for people who had not used methamphetamine. Forty-two per cent of methamphetamine users reported being diagnosed with, or treated for, a mental health illness – a rate three times that of non-illicit drug users (14%) and higher than other drug users.⁶⁵

While methamphetamine is reported as being equally attractive to men and women under the age of 25, women often initiate use and continue use for different reasons. A 2004 study of 350 former clients of a treatment system in California found females were significantly more likely to report early sexual abuse than males. More than one-third of the women reported that they initiated methamphetamine use to lose weight – five times the rate of men. Use by women for energy and weight loss was also reported in a 2012 qualitative study of women incarcerated in Missouri.⁶⁶

Methamphetamine is reported to enhance sexual intercourse and has been linked to increased risk taking among female sex workers, with sex ‘a common currency for women to obtain these drugs and to engage in more risk taking behaviours’.⁶⁷

Social, biological and psychological factors combine to place women at greater risk of using and becoming dependent on stimulants, resulting in greater vulnerability to sexually

63 Parliamentary Joint Committee on Law Enforcement, *‘Inquiry into crystal amphetamine (ice)’,* Senate Printing Unit, Parliament House, Canberra, March 2018, p. 70.

64 Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2016: detailed findings*, 2017, pp. 96, 108.

65 Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2016: detailed findings*, 2017, p. 111.

66 T Wouldes & B Lester, 019, pp. 155–160.

67 *ibid.*

transmitted diseases, sexual violence, unplanned pregnancies and mental health problems, according to Wouldes and Lester (2019).⁶⁸

This is evident in the cohorts of pregnant women who participated in PME studies in the US, New Zealand and WA. According to Ms O'Connor, women who present for help with methamphetamine use in pregnancy tend to be dealing with multiple interconnected psychosocial issues.⁶⁹

The women attending WANDAS who were part of Ms O'Connor's study had low levels of employment and educational attainment (only 7% were employed). Just over half (55%) lived in an area of low socioeconomic status with 24% reporting homelessness and 18% a prison sentence.

Approximately 35% of the women who attend WANDAS are Aboriginal, when only 4.3% of women giving birth in Australia are Aboriginal. Aboriginal women accounted for just over half of the women in the study. Another 2.7% were of an ethnic background (Maori, Fijian and Polynesian) while the remainder identified as Caucasian.

The average age for initiating methamphetamine use was 13, with polysubstance use being quite common from the age of 16. Twenty-seven per cent of the women drank more than two standard drinks per day during pregnancy.

Women in the study said they used methamphetamine to block pain (47%) or reduce stress (39%) from early childhood trauma, including psychological, sexual and physical abuse. Many reported that they lived day to day (39%) and made no plans for their future. For 43%, methamphetamine was described as being the most important thing in their lives.⁷⁰

Almost half had depression, a quarter suffered from anxiety and one-fifth had post-traumatic stress disorder. Most described feeling stigmatised and more than half felt guilty about their drug use and worried about their children if they were not around. Only 16% of the cohort were pregnant for the first time; most already had several children.⁷¹

There are very few qualitative studies which have sought to explore the lives of methamphetamine users in depth. To better understand the lives of WANDAS women and what influences their substance use, Ms O'Connor and colleagues recruited 20 women from the larger study to take part in in-depth interviews. Ten of the women were Aboriginal, nine were Caucasian and one was Maori, with an average age of 29.6 years.⁷²

Growing up in foster care or dysfunctional families was common and most had episodes of homelessness or precarious housing. None described her partner as supportive, and most

68 T Wouldes & B Lester, 019, pp. 155–160.

69 A O'Connor et al., 'The experiences of pregnant women attending a specialist service and using Methamphetamine', *Women and Birth*, 2020 (in press).

70 A O'Connor et al., 'Methamphetamine Use during Pregnancy, and Early Infant Development Using the Ages and Stages Questionnaire (ASQ-3) Assessment', *Journal of Addiction Research and Therapy*, vol. 10, no. 5, 2019.

71 *ibid.*

72 A O'Connor et al., 'The experiences of pregnant women attending a specialist service and using Methamphetamine', *Women and Birth*, 2020 (in press).

experienced exploitation and repeated physical, sexual, financial and/or emotional abuse. Methamphetamine reduced feelings of despair and of not belonging.

Underlying social determinants of health have been identified as barriers to antenatal care for all women with alcohol and drug use, but are compounded in Aboriginal communities coping with intergenerational trauma, family and domestic violence, mental health issues and infant removal.⁷³

In 2010, the state's Children and Community Services Act 2004 was amended to enable maternity health providers to exchange information with child protection authorities and to work with pregnant women whose circumstances were seen to pose a risk to the unborn child. One of the intentions was to make the most of this period as an opportunity for early and supportive interventions.

Despite this, Aboriginal pregnant women have higher rates of Child Protection and Family Support (CPFS) involvement, with reports suggesting Aboriginal infants are 11 times more likely to be removed from maternal care in WA.⁷⁴ Ms O'Connor says too many Aboriginal infants are going in to care from WANDAS,⁷⁵ mostly because of methamphetamine use rather than alcohol or other drug abuse. She stated that many soon became pregnant again to replace the child they had lost.⁷⁶ Further, women who have lost custody of an infant are more likely to have personality disorders and a history of health problems.⁷⁷

Methamphetamine use during pregnancy has typically been associated with social disadvantage, multiple drug use, domestic violence and significant health and mental health problems in other parts of the nation and the world too.⁷⁸

The Women's Alcohol and Drug Service (WADS) run from the Royal Women's Hospital in Melbourne reports that the women using amphetamines who used the service have backgrounds characterised by multiple disadvantage and trauma.⁷⁹

In New Zealand and the United States, methamphetamine-using mothers were twice as likely to have a psychiatric disorder as non-using mothers. They were more likely to be from a lower socio-economic status area, to have used alcohol and marijuana during pregnancy, and to have had a child protection services referral.⁸⁰

73 J Harwin et al., 'Tensions and contradictions in family court innovation with high risk parents: the place of family drug treatment courts in contemporary family justice', *Int. J. Drug Policy*, 2018.

74 A O'Connor et al., 'The experiences of pregnant women attending a specialist service and using Methamphetamine', *Women and Birth*, 2020 (in press).

75 In 2019, 25 infants born at WANDAS (around 10%) were taken into care by CPFS.

76 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

77 A O'Connor et al., 'Methamphetamine use in pregnancy, child protection, and removal of infants: Tertiary centre experience from Western Australia', *Midwifery*, vol. 83, 2020.

78 T Wouldes & B Lester, 2019, pp. 155–160.

79 Women's Alcohol and Drug Service, Royal Women's Hospital, *Submission to the Inquiry into the Supply and Use of Methamphetamines, particularly ice, in Victoria*, 27 February 2014.

80 L Smith et al., 2015, pp. 35–44.

6 Little is being done to address prenatal methamphetamine exposure

Screening, diagnosis, treatment and prevention are interconnected. Without a method of screening for babies who may have been affected by methamphetamine, the chances of accurately diagnosing developmental problems and receiving appropriate treatment are lessened. Reducing damaging methamphetamine exposure in the first place is, of course, the best way to mitigate the risk of adverse child health and developmental outcomes. This means encouraging women not to consume methamphetamine while pregnant, which could involve a range of strategies from pre-pregnancy education to antenatal management, drug supply control measures, and tackling the social factors associated with drug use. In the short term, prevention may be best achieved by drug withdrawal support for the mother-to-be. These aspects will now be discussed in more detail.

6.1 Screening and diagnosis measures are lacking

There are two aspects to screening: a) screening of the mother-to-be for drug use; and b) screening of newborns for signs of exposure.

6.1.1 Antenatal screening

Screening pregnant women for drug use requires consideration of the type of screening and whether it should be universal or risk-based.

Universal screening, whereby every pregnant woman or newborn is screened for signs of substance use, means less chance that someone may be missed. However, particularly in the case of biological sample-based screening, considerable resources would be required for processing and the likely higher number of positive results could result in women who are low risk being unnecessarily targeted for follow-up.⁸¹

Risk-based screening is designed to avoid wasting resources by only testing those with a history or signs of drug use and perhaps other social risk factors. There are obvious ethical problems with this approach, not least that it could be construed as unfairly profiling certain groups. There is also the chance a baby that has been exposed is missed, which could result in litigation.⁸²

According to Price et al (2018), there are few validated and standardised tests for drug screening in pregnant women and there is a lack of cooperation between the scientists who develop them and the clinicians who use and interpret them. Given the prohibitive expense of the 'gold standard' drug test (using mass spectrometry), the only standardised drug screening tools used in clinical practice are the urine drug screens commonly used by employers. However, they only detect recent drug exposure and women may wait until they know the drug cannot be detected. Urine samples are also easily adulterated.⁸³

81 J Colby & S Cotten, 'Facing Challenges in Neonatal Drug Testing', *Clinical Laboratory News*, March 2018.

82 *ibid.*

83 H Price, A Collier & T Wright, 'Screening Pregnant Women and Their Neonates for Illicit Drug Use: Consideration of the Integrated Technical, Medical, Ethical, Legal, and Social Issues', *Front. Pharmacol.* vol. 9, 961, 2018.

Australia's guidelines state that 'pregnant women should have urine screens for substance use at the same frequency as non-pregnant women in similar circumstances (e.g. when in an opioid treatment program)'. They note that the effectiveness of urine testing is unclear and that self-disclosure of substance use may be more reliable.⁸⁴

WANDAS does not perform urine drug screening, noting fear of this taking place could discourage the woman from engaging in antenatal care, when appropriate care is the highest consideration.⁸⁵

As Price et al (2018) note, decisions regarding screening need to take into account scientific, medical, public health, legal and ethical considerations. Screening should not create marginalised groups. While drug use and misuse crossed all educational, socio-economic and geographic boundaries, those from lower socio-economic or educational backgrounds were often more stigmatised by diagnosis. In Canada this tended to be Indigenous peoples and in the US low socio-economic groups.

A positive drug screen can have a negative impact on the woman's relationships with her family and friends, who may not have been aware of her use. Support networks important to a new mother may disappear. A woman who misuses substances with her partner may also be reluctant to disclose for fear of retribution and/or losing the relationship.⁸⁶

Despite the known reluctance to disclose use, and evidence for universal screening being limited,⁸⁷ routine screening by way of patient questionnaires and/or interviews is the most widely accepted approach. The American College of Obstetricians and Gynecologists (ACOG) recommends routine screening for all individuals, as does the World Health Organisation (WHO). Likewise, Australian guidelines developed nationally (revised by NSW Health in 2014) recommend screening for substance use early in pregnancy and at subsequent visits, since some women may only report sensitive information after a trusting relationship has been established.

The importance of respect and non-judgemental attitudes is emphasised, hopefully encouraging the woman to engage in sustained antenatal care. The guidelines note that the health professional should explain that the enquiry about substance use is a routine part of antenatal care and aims to identify women who would like assistance. Evidence of substance use is documented, with limited information included in the records held by the woman and more detailed records kept at the health service.⁸⁸

While a simple three-question test has been developed to determine the level of risk posed by a woman's alcohol intake during pregnancy, there is no equivalent tool for drug

84 NSW Health, *Clinical Guidelines: Substance Use During Pregnancy, Birth and the Postnatal Period*, p. 18.

85 A O'Connor et al., 'Neonatal Abstinence Syndrome (NAS) and Methamphetamine Use: A Review of Finnegan's as an Assessment Tool in The Women and Newborn Drug and Alcohol Service', *International Journal of Nursing and Health Care Research*, (online), 9 Jul 2019, <www.gavinpublishers.com>

86 H Price, A Collier & T Wright, 2018.

87 C Breen, *Supporting pregnant women who use alcohol and other drugs*, Drug and Alcohol Research Connections, National Drug and Alcohol Research Centre, UNSW Australia, June 2015.

88 Australian Government, Department of Health, *Pregnancy Care Guidelines – Substance use*, last updated 16 May 2019, accessed 11 May 2020, <<https://www.health.gov.au/resources>>.

consumption. The AUDIT-C (Alcohol Use Disorders Identification Test – Consumption) can be administered by health professionals providing antenatal care or by midwives at the time of birth (see section 7.4 for further discussion).

While Telethon Kids Institute FASD researcher Carol Bower believes a tool such as the AUDIT-C could be adapted to include questions about drug use, drug screening of this kind would be very much dependent on the skills of the health professional administering it. Use of the alcohol screening tool had shown that health professionals were not well-versed in how to ask about use, and they did not necessarily know what to do with the information. Asking about illicit drug use would require even more training.⁸⁹

According to WANDAS midwife Angela O'Connor, health professionals with experience in dealing with alcohol and other drug issues know what signs to look for and can often tell in the absence of self-disclosure. She said women may present with medical conditions associated with methamphetamine use, such as hypertension, endocarditis (an infection of the inner lining of the heart chambers) and Hepatitis C. Other physical signs include poor weight gain, evidence of intravenous injection, malnutrition, severe dental decay, and skin abscesses.⁹⁰

6.1.2 At birth

The first opportunity to screen for methamphetamine exposure might be when the baby is born, given that women using methamphetamine often seek prenatal care late in pregnancy, if at all.

While an obvious indication of a mother's drug use may be neonatal abstinence syndrome (NAS), the scoring tool used to determine NAS has been labelled unsuitable for detecting meth-affected babies. According to Dr Oei and Ms O'Connor, the Finnegan scoring chart for NAS is based on symptoms consistent with opiate withdrawal, which are different from methamphetamine withdrawal symptoms. Dr Oei wrote in 2012:

Using opiate-centric scores may lead to misdiagnosis and under-treatment, especially when health providers are focused on identifying symptoms and signs that are similar to opiate withdrawal.⁹¹

Eight years later, maternity hospitals are still waiting for guidelines on how to detect and manage methamphetamine withdrawal in newborns.

89 Prof Carol Bower, Senior Principal Research Fellow, Alcohol and Pregnancy & FASD Research, Telethon Kids Institute, *Briefing*, 18 March 2020.

90 Committee on Health Care for Underserved Women, 'Committee Opinion No. 479 (Methamphetamine Abuse in Women of Reproductive Age)', American College of Obstetricians and Gynecologists, *Obstet Gynecol*, vol. 117, 2011, pp. 751–5.

91 Ju Lee Oei et al., 2012, pp. 739-740.

The Women and Newborn Health Service clinical guidelines for NAS note that there is no significant withdrawal syndrome with amphetamines and Finnegan scoring is not necessarily routinely used.⁹²

While babies suffering withdrawal from alcohol and other drugs such as opioids and cocaine may exhibit irritability, hyperalertness, high-pitched crying, exaggerated startle response and tachycardia, newborns withdrawing from methamphetamine are listed as exhibiting decreased arousal, increased stress and poor quality of movement.⁹³

While samples of neonatal urine and meconium (the first neonatal faecal material) can be used for drug testing, questions remain as to their usefulness. It is difficult to collect a sufficient amount of urine in the first days of a baby's life, and samples do not detect drug exposure early in the pregnancy. While meconium forms at around 12 weeks' gestation, offering a longer window for detection, proper collection can be 'an onerous task'. Nevertheless, it is considered 'the gold standard specimen for assessing long-term drug exposure in newborns'.⁹⁴

More recently, umbilical cord tissue has also been used and is easier to collect; however, the drug concentration is not as high as in meconium. Other biological samples which have been considered for diagnostic purposes are hair, nails, amniotic fluid and the placenta but each comes with its own set of technical and practical complications, including the need for specialised expertise and equipment.⁹⁵

Dr Oei has called for a 'more robust and pragmatic screening tool', whether from detailed maternal history or biological material, and is adamant that newborn infants who have been exposed only to amphetamines should not be evaluated against opiate-centric assessment tools. Similarly, Ms O'Connor asserts that Finnegan's assessment 'has no value' in assessing methamphetamine-exposed infants. She describes the lack of a validated abstinence scoring tool for infants with prenatal methamphetamine exposure as a 'major challenge' for WANDAS.⁹⁶

6.1.3 Implications for diagnosis

Health professionals and researchers agree that early intervention for meth-affected babies is critical; hence, it is necessary to learn how to identify features in babies known to have been exposed to help predict which ones might be at risk of developmental problems.

92 Women and Newborn Health Service, Neonatal Directorate, *Clinical Practice Guideline – Neonatal Abstinence Syndrome*, North Metropolitan Health Service, Government of Western Australia, 24 March 2020, p. 3.

93 Women and Newborn Health Service, Neonatal Directorate, *Clinical Practice Guideline – Maternal Medication/Substance Use*, North Metropolitan Health Service, Government of Western Australia, 24 December 2016.

94 J Colby & S Cotten, 2018.

95 Ju Lee Oei et al., 2012, pp. 739-740.

96 A O'Connor et al., 'Neonatal Abstinence Syndrome (NAS) and Methamphetamine Use: A Review of Finnegan's as an Assessment Tool in The Women and Newborn Drug and Alcohol Service', *International Journal of Nursing and Health Care Research*, (online), 9 Jul 2019, <www.gavinpublishers.com>

As reported earlier, in Ms O'Connor's study of meth-exposed babies, around a third of the 89 babies tested at four months were identified as having a potential developmental delay. At 12 months it was around two in every five of the 75 tested. Six babies had been referred for developmental monitoring, but the majority of the babies from the study had not been tracked beyond 12 months and it was unlikely this would happen.

Ms O'Connor suggests routine screening of infants would provide a window of opportunity to identify early concerns and formulate developmental care plans.⁹⁷ If babies are not formally identified as being at risk and do not outwardly exhibit signs that anything is amiss, parents and carers may struggle to get an accurate diagnosis if the child experiences learning or behavioural problems after starting kindergarten, pre-primary or primary school.

Dr Stacy Blythe said the perceived change in behaviour could be confusing for carers if they did not understand that it was a neurologic disability. Without this understanding, unsuitable disciplinary methods might make the situation worse.⁹⁸ The importance of identifying exposed babies so that ongoing developmental surveillance and targeted intervention can be provided is also highlighted elsewhere.⁹⁹

According to Brinker (2017), an understanding of the cognitive profile and timeframe for potential challenges can help clinicians, caregivers and educators to develop interventions to help the children develop compensatory strategies prior to experiencing academic and behavioural difficulties. Adoptive and foster families would likely benefit from this information also.¹⁰⁰

6.2 Treatment policies and services are not advanced

6.2.1 Babies are monitored

As discussed, affected newborns are usually quiet and well-behaved and are unlikely to be admitted to the special care nursery for withdrawal symptoms. However, if babies are identified as experiencing withdrawal and do not respond to supportive measures (such as ventilator support and tube feeding) they may be treated with the anti-epileptic medication phenobarbitone.¹⁰¹

Otherwise, the most important thing is to make sure the baby is well fed and sleeps well, and, as Dr Blythe points out, regularly stimulated. She said that because the babies are well-behaved, parents and carers may not interact with them as much. But given the brain is only

97 A O'Connor et al., 'Methamphetamine Use during Pregnancy, and Early Infant Development Using the Ages and Stages Questionnaire (ASQ-3) Assessment', *Journal of Addiction Research and Therapy*, vol. 10, no. 5, 2019.

98 Dr Stacy Blythe, 'What impact does meth use during pregnancy have on babies?', *Focus with Jessica Strutt, ABC Radio*, 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.

99 See Diaz et al., 2014; Oei et al., 2012; American Academy of Pediatrics, 2011.

100 M Brinker et al., 'Neurocognitive and neurodevelopmental impact of prenatal methamphetamine exposure: A comparison study of prenatally exposed children with non-exposed ADHD peers', *Applied Neuropsychology: Child*, vol. 8, no. 2, 2017, pp. 132-139.

101 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020; Ju Lee Oei et al., 2012.

25% developed and at this stage and is 90% developed by the age of three, it was important to interact regularly with the baby to stimulate the brain.¹⁰²

Babies born under the care of WANDAS remain in hospital with their mothers for five days, unless complications require them to remain longer. The post-birth program over those days includes several paediatric reviews, monitoring for NAS and treatment if required, postnatal education, a review by members of the social work and psychiatry team, and breastfeeding and mothercraft assistance. The mother and baby are then followed up for three months at the postnatal clinic where possible.

WANDAS encourages women to breastfeed, noting that while 'drugs can be transferred to the baby via breast milk ... the benefits of breastfeeding can outweigh the impact of the drug'.¹⁰³ In the case of one -off drug use, mothers are advised to express and dispose of breast milk for 24 hours before breastfeeding again.

The advice from Victoria's Royal Women's Hospital is that breastfeeding is not recommended for women who have recently used or are currently using amphetamines.¹⁰⁴ However Victoria's government-funded Methamphetamine Treatment Guidelines are less prescriptive, advising that women should be supported to breastfeed if it is safe to do so, taking into consideration the frequency and pattern of methamphetamine use and the mother's engagement with support services.¹⁰⁵

6.2.2 Children can be supported if accurately diagnosed

In a news interview in January, Dr Blythe said many children affected by methamphetamine were unable to access therapies and educational services because they did not fit a known diagnosis. Some might be labelled as having autism, ADHD, reactive attachment or oppositional defiance disorders – but ironically it was this mislabelling that might get them assistance.¹⁰⁶

Without a diagnosis or an assessment of a child's strengths and weaknesses, it is unlikely the child will receive the most appropriate intervention. In a more recent interview, Dr Blythe said people needed to understand that these children had a neurologic development issue and should be supported, not punished. She pointed out that allowances were made for children with other conditions caused by neurologic deficits, such as paralysis.¹⁰⁷

The president of New Zealand's largest education union, NZEI, said that educators were better equipped to support children with autism and ADHD because they knew more about

102 Dr Stacy Blythe, "What impact does meth use during pregnancy have on babies?", *Focus with Jessica Strutt, ABC Radio*, 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.

103 Women and Newborn Drug and Alcohol Service, *Information Booklet for Mum and Baby*, Women and Newborn Health Service, KEMH, 2004, revised 2016, p. 11.

104 The Royal Women's Hospital, *Guideline – Drug and Alcohol – Management of Methamphetamine Dependence in Pregnancy*, Victoria, 16 May 2017, p. 6.

105 J Grigg et al., 2018.

106 Elicia Kennedy, 'Babies born to meth-affected mothers seem well behaved, but their passive nature masks a serious problem', *ABC News* (web-based), 3 January 2020, accessed 10 January 2020, <www.abc.net.au/news>.

107 Dr Stacy Blythe, "What impact does meth use during pregnancy have on babies?", *Focus with Jessica Strutt, ABC Radio*, 23 January 2020, accessed 23 April 2020, <www.abc.net.au/radio/perth>.

these conditions, but there was not the same depth of knowledge around methamphetamine.¹⁰⁸

In New Zealand, where methamphetamine addiction is at least as big a problem as in Australia, some schools with badly affected children have dedicated support units. The principal of one unidentified school said one of his seven-year-old students would have been expelled had he not had support from specialist staff (in addition to an ADHD-type medication). He was able to return to mainstream learning, along with some other pupils.¹⁰⁹

But schools and early childhood centres needed more specialists to manage meth-exposed kids and help them learn how to handle their behaviour themselves, according to NZEI president Lynda Stuart. Although there was no concrete evidence of the number of women using methamphetamine, Ms Stuart said ‘there are obviously a lot because all these organisations are desperate for information about what to do with these children’.¹¹⁰

Learning support coordinators, introduced to schools by the Ministry of Education at the start of the year, were expected to identify barriers to learning for children and young people with disability and additional learning needs, and ensure they had access to the services they needed.¹¹¹

NZ IDEAL study researcher Trecia Wouldes said children whose behavioural problems were entrenched at the age of five or six would be at risk of aggressive behaviour or conduct problems ‘that go on to be associated with criminal behaviour’. But she believed it could be remedied by receiving appropriate support at school.¹¹²

Support at home is also necessary, according to Smith et al. (2015). Given the clear link between child behavioural problems and caregiver stress and psychological symptoms, interventions should address both the child and parental or primary caregiver needs.¹¹³

Caregivers should also be educated about what to expect as the child gets older so that they are aware of what services they might need to access, according to Diaz et al. (2014). The authors say they should be taught how to advocate for individualised educational programs at a young age if they fear the child in their care is exhibiting cognitive problems.¹¹⁴

6.3 Prevention policies and services focus on drug rehabilitation

Prevention of prenatal methamphetamine exposure (PME) is obviously dependent upon supporting a woman to cease or reduce use for the duration of the pregnancy. While some women may be supported to stop using before they become pregnant (for example, if the pregnancy is planned), others are likely to be consuming methamphetamine in the period

108 Chris Reed, 'Fighting the Demon: The children of the meth epidemic', *NZ Herald*.

109 *ibid*.

110 *ibid*.

111 Ministry of Education, 'Learning Support Coordinator – Role description', 26 July 2019, accessed 21 May 2020, from Conversation: Learning Support Action Plan < <https://conversation.education.govt.nz>>.

112 Chris Reed, 'Fighting the Demon: The children of the meth epidemic', *NZ Herald*.

113 L Smith et al., 2015, pp. 35-44.

114 S Diaz et al., 2014, pp. 1333–1338.

when they become pregnant.¹¹⁵ It is the women in the latter category that may be referred to WANDAS, and the specialist team likes them to engage in antenatal care as early as possible to improve outcomes. As WANDAS lead Angela O'Connor said: 'We know that methamphetamine may impact the longer term outcomes for the infant, however with early engagement and follow-up we aim to reduce the risks.'¹¹⁶

As Dr Oei notes, repeated studies have shown that known amphetamine users are less likely to engage in antenatal care and are at higher risk of complications as a result. Many illicit amphetamine users were disadvantaged when seeking antenatal care because of their adverse psychosocial circumstances. Engaging the women in psychiatric services may increase the rate of antenatal engagement, she writes, and that is the approach of centres like WANDAS.

Ms O'Connor said that while antenatal visits normally do not begin until 20 weeks, WANDAS starts seeing women as soon as the centre has been notified of the pregnancy, usually at eight or nine weeks. The appointments continue every two weeks – a much higher frequency than for standard pregnancies.

Women are mostly referred to WANDAS by GPs, but there can also be referrals from within King Edward Memorial Hospital and from organisations such as the charity group Homeless Healthcare. Women can also refer themselves. Still, there is an unknown number of pregnant women using methamphetamine who are not seen by WANDAS.

While a midwife is the first point of contact, there is a multidisciplinary team at WANDAS offering access to psychiatry, social work and obstetrics professionals as well as an addiction specialist, drug and alcohol counselling and parenting education. Women are generally discharged five days after the birth, but postnatal care is offered for another three months with transport to appointments provided if required.

Given that there is no pharmacotherapy treatment for methamphetamine dependence, detoxification is currently the best treatment option. If women at WANDAS wish to undergo detox, they are referred to the Inpatient Withdrawal Unit at the government-funded AOD treatment service Next Step, where they are prioritised. WANDAS continues to provide midwifery care.

While medications such as Diazepam are often used to manage some of the acute symptoms of withdrawal for pregnant women (which may last for a couple of weeks), these are not considered long-term options for managing dependence. Rather, psychosocial counselling and support are recommended. This might include cognitive behavioural therapy, coping strategies for cravings, sleep and relaxation techniques and strategies for motivation and exercising patience.¹¹⁷

115 For example, see Erin Parke, 'Australian women want to access drug rehabilitation for meth addiction, but there aren't enough beds', *ABC Kimberley*, 8 March 2020.

116 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

117 The Royal Women's Hospital, *Guideline – Drug and Alcohol – Management of Methamphetamine Dependence in Pregnancy*, Victoria, 16 May 2017.

However, methamphetamine detox can take months in some cases (longer than for other drugs), and is associated with prolonged depression and fatigue.¹¹⁸ Also, according to Oei et al (2012), amphetamine users often do not begin or remain in treatment programs because they do not perceive their drug use as problematic or the detox programs as relevant. Instead they may 'self-detoxify with both licit and illicit substances'.¹¹⁹

Relapse to methamphetamine use after treatment is also common. In a United States study, a third of clients relapsed in the first month following treatment and 61% relapsed within the first year following treatment. Only 13% achieved continuing abstinence after five years. The long-term abstinence rate is similar in Australia, with just 14% continuing abstinence after three years.¹²⁰

WADS, the Women's Alcohol and Drug Service in Melbourne, seeks to link women with supportive services beyond the postnatal period for this reason, noting the strong possibility that women will relapse six to eight months after the birth if services are withdrawn.¹²¹

However, there are not enough services. WADS is the only Department of Health funded drug and alcohol service in a maternity hospital in Victoria (the equivalent of WANDAS in Western Australia). In its submission to the Victorian inquiry into the use and supply of ice, WADS mentions the shortage of detoxification services for pregnant women, as well as suitable residential rehabilitation services.¹²²

The problem is widespread. Ms O'Connor says WANDAS has tried to involve other hospitals in caring for pregnant women with alcohol and other drug issues, with the support of WANDAS's expertise, but services were reluctant because it is perceived as 'quite challenging and costly' to deliver this multidisciplinary care.¹²³

While DAWN (Drug and Alcohol Withdrawal Network) will help with detox, Ms O'Connor said they would not generally treat pregnant women because of the complexity of care.¹²⁴ There are a couple of AOD treatment services which provide non-residential programs aimed at pregnant women or women with young families – for example, Women's Health & Family Services has the free Nurturing Families program for pregnant women or women with children up to four years of age living north of the river. Based on the award-winning Parent-Child Assistance Program developed by the University of Washington, it offers 12 to 18 months of emotional and practical support to help women build confidence to address AOD issues.

The Committee is aware of only two residential AOD services in the state that will accommodate women and their children: Saranna Women and Children's Program, part of

118 B Winslow, K Voorhees & K Pehl, 'Methamphetamine Abuse', *American Family Physician*, vol. 76, no. 8, October 2007; Ju Lee Oei et al., 2012.

119 Ju Lee Oei et al., 2012.

120 J Grigg et al., 2018.

121 *ibid.*

122 Women's Alcohol and Drug Service, Royal Women's Hospital, *Submission to the Inquiry into the Supply and Use of Methamphetamines, particularly ice, in Victoria*, 27 February 2014.

123 Ms Angela O'Connor, Women and Newborn Drug and Alcohol Service, *Briefing*, 18 March 2020.

124 *ibid.*

the non-government AOD treatment service Cyrenian House; and the Milliya Rumurra Drug and Alcohol Rehabilitation Centre in Broome (also part of Cyrenian).

In a news feature presentation earlier this year, Milliya Rumurra chief executive Andrew Amor said helping pregnant women to beat their addiction was a crucial opportunity to create intergenerational change. He said they had made the centre more accessible to pregnant women because they could see the long-term benefits to the community as well as the children and their families.¹²⁵

The news item reported that there were a growing number of women with children seeking help for methamphetamine addiction, but a shortage of drug rehabilitation beds nationwide and even fewer facilities that accepted children.

Nicole Lee, from Curtin University's National Drug Research Institute, said that women often had a much higher prevalence of common mental health problems like anxiety and depression, and were more likely to experience economic barriers for treatment. Women-only services tended to cater better to that group.¹²⁶

In evidence to the Federal parliamentary inquiry into crystal methamphetamine, Mr Craig Cumming from the Centre for Health Services Research at the University of Western Australia explained that parents, primarily women, often had privacy concerns when accessing AOD treatment services, and feared losing custody of their children. The Joint Committee on Law Enforcement recommended Australian governments ensure specialised alcohol and other drug treatment services are available to people with young children in all jurisdictions.¹²⁷

The Broome centre is particularly valuable, considering that limited peer group options in rural and remote areas may make it more difficult to move away from people using methamphetamine.¹²⁸ Milliya Rumurra addresses this by helping women secure post-release accommodation so they can have space from relatives who still use drugs and alcohol.

Other challenges for people seeking treatment in remote and smaller communities include: maintaining anonymity when accessing specialist AOD services, limited access to specialist services, limited ability to link to other services, long wait times, poor accessibility (long distances to travel), negative staff attitudes, and CALD language barriers.¹²⁹

The Federal inquiry into crystal methamphetamine noted that while there was investment in culturally appropriate and co-designed AOD treatment services, evidence from the Australian Health Council of Western Australia (AHCWA) indicated that demand for those services had not been met.

125 Erin Parke, 'Australian women want to access drug rehabilitation for meth addiction, but there aren't enough beds', *ABC Kimberley*, 8 March 2020.

126 *ibid.*

127 Parliamentary Joint Committee on Law Enforcement, *'Inquiry into crystal amphetamine (ice)*, Senate Printing Unit, Parliament House, Canberra, March 2018.

128 J Grigg et al., 2018.

129 *ibid.*

AHCWA said that the primary focus of government responses was on investment in law and other mechanisms, which did little to address the causal factors of alcohol and drug use. There also needed to be better and more innovative ways of delivering services to rural and remote areas.¹³⁰

The inquiry into crystal methamphetamine report recommended Australian governments continue to develop culturally and linguistically appropriate AOD treatment services, in partnership with Indigenous communities and Indigenous health experts.

Pregnancy is known to be a prime motivator for behavioural change, providing a window of opportunity when women feel more optimistic and are more likely to work with professionals to address their drug issues and other risk factors.¹³¹ Half of the women in Ms O'Connor's study attended drug and alcohol counselling and many reported a reduction in methamphetamine use in the second and third trimester of the pregnancy.¹³²

This points to the necessity for specialist antenatal care services such as WANDAS, but also the supporting services. As Woules and Lester (2019) note, health professionals may not inquire about illicit stimulant use if they do not feel the health care system can provide a clear pathway to treat the complex needs of these women.¹³³ Telethon Kids Institute FASD researcher Professor Carol Bower echoed this sentiment when commenting on screening pregnant women for both alcohol and drug use: if women were going to be referred, the services needed to be available.¹³⁴

7 FASD is better understood, but there is still more to know

Alcohol has been long recognised as a teratogen – a substance capable of interfering with and damaging the development of a fetus, resulting in a range of birth defects. The impact of alcohol consumption during pregnancy is unique for each person, depending on the circumstances of the pregnancy. Fetal Alcohol Spectrum Disorder (FASD) is an umbrella term for the range of possible birth defects and/or developmental disabilities that can occur, and includes Fetal Alcohol Syndrome, partial Fetal Alcohol Syndrome and Alcohol Related Neurodevelopmental Disorder. These disorders reflect different combinations of physical and neurobehavioural outcomes, depending on how alcohol exposure affects the developing fetus.¹³⁵

130 J Grigg et al., 2018, p. 25

131 M Tsantefski, C Humphreys and A Jackson, 'Infant risk and safety in the context of maternal substance use, *Children and Youth Services Review*, 2013; A O'Connor et al. 'Methamphetamine Use in Pregnancy: Maternal and Neonatal Outcomes from A Specialist Drug and Alcohol Service (Western Australia),' *EC Gynaecology*, vol. 8.9, 2019, pp. 763-773.

132 A O'Connor et al. 'Methamphetamine Use in Pregnancy: Maternal and Neonatal Outcomes from A Specialist Drug and Alcohol Service (Western Australia),' *EC Gynaecology*, vol. 8.9, 2019, pp. 763-773.

133 T Woules & B Lester, 2019, pp. 155–160.

134 Prof Carol Bower, Telethon Kids Institute, *Briefing*, 18 March 2020.

135 S McLean & S McDougall, 'Fetal alcohol spectrum disorders: Current issues in awareness, prevention and intervention', *Child Family Community Australia*, Paper No. 29, p. 11. A full description of FAS and related disorders is available at: <https://aifs.gov.au/cfca/publications/fetal-alcohol-spectrum-disorders-current-issues-awareness-prevention-and/what-are-fetal>

The term FASD emphasises the fact that prenatal alcohol exposure can lead to a spectrum of physical, cognitive and developmental outcomes. It can result in learning difficulties, a reduced capacity to remember tasks from day to day, anger management and behavioural issues, impaired speech and muscle coordination, and physical abnormalities in the heart, lung and other organs. FASD is also associated with sight and hearing problems, sleeping difficulties, sensory stimulation and global developmental delay. The effects can range from mild impairment to serious disability. It is the leading preventable cause of non-genetic, intellectual disability in Australia.¹³⁶

FASD is a lifelong condition with no cure. The central nervous system damage with which the child is born is irreversible and permanent. Disabilities may result which require lifelong support and can prevent independent living. Resultant behavioural problems can also pose risks to individuals and the community due to an inability of the FASD individual to understand and learn.¹³⁷

FASD is regarded as being under-recognised in Australia. It is often described as a 'hidden' disability because physical changes resulting from prenatal alcohol exposure can be subtle and not easily recognised. FASD is a notifiable birth defect only in South Australia and Western Australia, resulting in limited data on prevalence.¹³⁸ In Western Australia that data is reported to the Western Australian Register of Developmental Anomalies (WARDA). A study published in 2014 reported an increase in prevalence from 0.26 per 1000 births in the period 1980–2010 to 0.41 per 1000 births from 2000 to 2010.¹³⁹ More recently the National FASD Action Plan has estimated that figure to be 0.01 to 0.68 per 1,000 births, and notes that the figures are likely to underestimate the rates of FASD and that as many as 2% of all Australian babies may be born with some form of FASD.¹⁴⁰

7.1 Affected newborns often have distinctive facial features

There are a range of effects FASD can have on an infant. Babies can be small and underweight. Some have difficulty nursing and eating and their growth continues to lag, resulting in a failure to thrive. Some infants with FASD may also have tremors, seizures, excessive irritability and sleep problems. In addition, other physical effects of FASD may include heart defects, such as a hole in the wall, and skeletal defects such as fused bones in the arms, fingers, hands and toes.¹⁴¹

136 House of Representatives Standing Committee on Social Policy and Legal Affairs, *FASD: The Hidden Harm*, November 2012, p. 1.

137 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 2, Northern Territory Government, pp. 8-9.

138 C Bower, EJ Elliott, on behalf of the Steering Group, *Australian Guide to the Diagnosis of FASD*, Australian Government, Department of Health, 2016, p. 39.

139 RC Mutch, R Watkins & C Bower, 'Fetal alcohol spectrum disorders: Notifications to the Western Australian Register of Developmental Anomalies', *Journal of Paediatrics and Child Health*, vol. 51, 2015, p. 434.

140 Commonwealth Department of Health, *National Fetal Alcohol Spectrum Disorder Strategic Action Plan 2018-2028*, p.10.

141 Substance Abuse and Mental Health Services Administration, FASD Center for Excellence, *The Physical Effects of Fetal Alcohol Spectrum Disorders*, , US Department of Health, 2007, accessed 20 May 2020, <<https://www.drugfree.org.au>>.

Exposure to alcohol within the first trimester is said to affect the development of facial features. Although these facial features may also occur as normal variations in the general population (unrelated to prenatal alcohol exposure), when seen in combination, these features are highly specific to prenatal alcohol exposure and are termed the 'sentinel' facial features of FASD:

- small palpebral fissures (small horizontal length of the eye opening)
- smooth philtrum (diminished or absent ridges between the upper lip and nose)
- thin upper lip with small volume¹⁴²

Abrupt removal of the newborn from an alcohol-altered intrauterine environment may result in alcohol abstinence syndrome, which manifests as irritability, hyperexcitability, hypersensitivity, hypotonia, tremors, muscle tension, altered sleep patterns, frequent states of alert, sweating, apnoea, tachypnoea, refusal of food, and bonding difficulties. Infants born with this condition may need pharmacological treatment depending on severity.¹⁴³

7.2 Developmental impacts may not be apparent until school age

Prenatal alcohol exposure affects all organs in the body, not merely brain development. As such, children and adults with FASD are also at higher risk of other health conditions including underlying congenital malformations, recurrent infections, and chronic inflammatory conditions.¹⁴⁴

Some functional manifestations of FASD may not become apparent until later in childhood. For example, problems with academic achievement or developmentally inappropriate behaviours becoming progressively problematic in the school setting.¹⁴⁵ Cognitive vulnerabilities associated with FASD, including impaired self-regulation and poor decision-making, mean children with FASD are more open to negative peer pressure and antisocial behaviour.¹⁴⁶

In the longer term, the cognitive deficits, behavioral problems, psychopathology and other secondary disabilities associated with FASD can impact everyday functioning or adaptive behavior, and hinder achievement of adult independence. Adults with FASD have high rates of psychiatric and personality disorders, problems with drugs and alcohol, and difficulties

142 C Bower, EJ Elliott, on behalf of the Steering Group, *Australian Guide to the Diagnosis of FASD*, Australian Government, Department of Health, 2016, p. 33.

143 The Royal Women's Hospital, *Drug and Alcohol, Neonatal Abstinence Syndrome Guideline*, Victoria, pp. 3-11.

144 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 35, Gold Coast Hospital and Health Service, Child Development Service, p. 8.

145 C Bower, EJ Elliott, on behalf of the Steering Group, *Australian Guide to the Diagnosis of FASD*, Australian Government, Department of Health, 2016, p.19.

146 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 14, Queensland Family and Child Commission, p. 4.

with the law. They are also less likely to obtain a degree, have stable employment, and live independently.¹⁴⁷

7.3 Fewer women are drinking in pregnancy

Historically, estimates of prevalence of alcohol consumption during pregnancy have relied on self-reporting through surveys such as the National Drug Strategy Household Survey. The latest published survey (2016) indicates that the proportion of women abstaining from alcohol during pregnancy has increased from 40% in 2007 to 56% in 2016.¹⁴⁸

The NHMRC has determined that ‘maternal alcohol consumption can harm the developing fetus or breastfeeding baby,’ and as such ‘not drinking is the safest option’ for women who are pregnant, breastfeeding or planning a pregnancy.¹⁴⁹ This recommendation, contained in the *Australian Guidelines to Reduce Health Risks from Drinking Alcohol*, is supported by the Australian Medical Association.¹⁵⁰

Nevertheless, the Public Health Association Australia has said that the level of community awareness of the effects of alcohol consumption during pregnancy appears to be low, with various campaigns promoting the message of limiting alcohol during pregnancy not gaining traction.¹⁵¹

The Foundation for Alcohol Research and Education’s Annual Alcohol Poll 2019 indicates 22% of Australians could not correctly identify that a pregnant woman should not consume any alcohol to avoid harm to the foetus. Of these, 13% believed a pregnant woman can have 1-2 drinks a day, 5% believed they can have 3-4 drinks a day, and 4% were unsure. Failure to correctly identify current recommendations was greatest for the two youngest age groups polled – 18-24-year-olds and 25-34 year olds. The foundation said this was particularly concerning given that the average aged of women giving birth in Australia is 30.3 years.¹⁵²

Research by the National Drug and Research Institute has broadly characterised Australian women who continue to drink alcohol through pregnancy as being older; as having a higher

147 EM Moore & EP Riley, 'What Happens When Children with Fetal Alcohol Spectrum Disorders Become Adults?' *Current developmental disorders reports*, vol. 2 no. 3, 2015, pp. 219–227.

148 Australian Institute of Health and Welfare, *National Drug Strategy Household Survey 2016: detailed findings*, Drug Statistics series no. 31, Cat. no. PHE 214, AIHW, Canberra, 2017, p. 115.

149 National Health and Medical Research Council, *Australian Guidelines to reduce health risks from drinking alcohol*, Commonwealth of Australia, 2009, p. 70.

150 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 5, Australian Medical Association, p. 1.

151 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 33, Public Health Association of Australia, p. 4.

152 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 44, Australian Health Promotion Association, p. 1.

income, education and socio-economic status; as drinking prior to pregnancy and in previous pregnancies; as using other drugs; and as living in rural and remote areas.¹⁵³

A WA study on alcohol consumption during pregnancy interviewed 142 participants and categorised them as risky (21%), low-risk (46%) or no-risk drinkers (33%). Risky consumption was defined as more than two drinks per week, low-risk as one or two drinks per week and no risk as non-drinkers. Women in the risky group were more likely to be single (or have a less supportive partner), to have a government Health Care Card, to have experienced a negative comment about their drinking from their partner, and to use other drugs, in particular tobacco and cannabis.¹⁵⁴

Women in both the low-risk and risky groups were more likely to work full-time, were up to four times more likely to have consumed alcohol in previous pregnancies and were more likely to have consumed alcohol during preconception.¹⁵⁵

A later study examining trends in alcohol consumption during pregnancy from 2001–2016 found that women with a high level of education were more likely than women with less education to drink while pregnant, but those with less education were more likely to maintain or increase their consumption when they became pregnant.¹⁵⁶

Given that the estimated proportion of pregnant women who consumed alcohol while pregnant decreased between 2001 and 2016, the authors concluded that women's attitudes, perceptions and behaviours related to drinking during pregnancy may have shifted in tandem with tightening of the drinking guidelines and public health awareness campaigning.

The Australian Medical Association says that the reasons that women continue to drink when pregnant are likely to be varied and complex. Identified risk factors include having a partner who continues to drink and stressful living circumstances. It was thought to be due to an underlying mental illness or addiction in a minority of cases.¹⁵⁷

7.4 Strategies for addressing FASD are more advanced

Western Australia has had a FASD strategy since 2010, known as the *FASD Model of Care*. It makes recommendations in regard to prevention, screening, diagnosis and treatment but in terms of implementation prevention has been prioritised.

A comprehensive parliamentary inquiry into FASD conducted in 2012 by a previous iteration of the Education and Health Standing Committee commended the model of care, but noted it was not well funded. A House of Representatives committee conducted an inquiry around

153 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 1, National Drug Research Institute, Curtin University, p.3.

154 N McBride, S Carruthers & D Hutchinson, 'Reducing alcohol use during pregnancy: listening to women who drink as an intervention starting point', *Glob. Health Promotion*, vol. 19, no. 2, 2012, pp. 6-18.

155 *ibid.*

156 O Stanesby, M Cook & S Callinan, *Examining trends in alcohol consumption during pregnancy in Australia, 2001 to 2016*, Foundation for Alcohol Research and Education, 2018, p. 4.

157 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 5, Australian Medical Association, p.5.

the same time, tabling its report, *FASD: The Hidden Harm*, in November 2012. As we write, a Senate committee inquiry into FASD is underway, due to report in December 2020. Among its 15 terms of reference is to report on progress on the outstanding recommendations of the 2012 House of Representatives inquiry, and to consider the effectiveness of the *National FASD Action Plan 2018-2028*.

Given it is early in its life, commentary on the effectiveness of the national FASD action plan may be difficult to provide. As it is, the strategy is really a comprehensive list of suggestions for dealing with FASD, rather than a list of activities that are taking place or will definitely be implemented. Nevertheless, the final report of the Senate committee will provide a useful update to previous inquiries and highlight where there has been progress and where more action is needed. Some of the submissions made to the inquiry, particularly from WA government departments, have been instructive in helping us understand the status of FASD strategies in this state.

In terms of strategies that have actually been implemented and shown to be successful, we can look to the Marulu Strategy in the Kimberley, supported by the Telethon Kids Institute and a pricing initiative in the Northern Territory.

As with PME, ways of dealing with FASD can be considered in terms of screening, diagnosis, support and prevention.

7.4.1 Screening, diagnosis and support

The *National FASD Strategic Action Plan 2018–2028* acknowledges that there are many gaps for people living with FASD, particularly in terms of accessing diagnostic, early intervention and support services.

The plan says it is vital that universal screening for all pregnant women is implemented as routine practice. This would support GPs, nurses and midwives to overcome the discomfort of asking women about their alcohol use during pregnancy. One study¹⁵⁸ found that only 45% of doctors routinely asked about alcohol consumption in pregnancy and only 25% routinely provided information about the consequences of alcohol use during pregnancy. Only 13% of doctors provided advice consistent with the current Australian guidelines.

The WA Department of Health's submission to the Senate FASD inquiry expressed concern that universal screening leads to increased stigma and greater discrimination and demand on health and support services, despite the *FASD Model of Care* recommending universal screening for pregnant women.

In July 2018, it became mandatory to record alcohol risk into the Health Midwives Notification Form completed for every birth in Western Australia. To help with the change, WA Health provided open access to the AUDIT-C Learning Guide to all health professionals likely to care for pregnant women. The AUDIT-C (Alcohol Use Disorders Identification Test – Consumption) comprises three questions that score a woman's alcohol intake in pregnancy as either low, medium or high risk for both herself and for her baby. This information could

158 J Payne et al., 'Health Professionals' Knowledge, Practice and Opinions about Fetal Alcohol Syndrome and Alcohol Consumption in Pregnancy', *Aust NZ J. Public Health*, vol. 29, no. 6, 2005, pp. 558-64.

prove valuable in future cases where a child's developmental problems are being investigated.¹⁵⁹

Screening of the expectant mother is focussed on prevention (i.e. encouraging and supporting the mother-to-be to abstain from drinking alcohol), but where excessive alcohol use during pregnancy has not been prevented, there are – or should be – opportunities for screening of the child.

Both the *FASD Model of Care* and the *National FASD Strategic Action Plan 2018–2028* recommend screening for children as newborns, during early childhood or upon enrolment at school. However, there is no existing standardised screening test for FASD in Australia. This is partly because of the wide variety of presenting symptoms, due to the range of possible neurodevelopmental impairments attributed to FASD. There are some non-validated tools, such as the National Screening Tool Kit for Children and Youth Identified and Potentially Affected by FASD and the Youth Probation Officers' guide to FASD screening and referral.¹⁶⁰ As the model of care notes:

Screening tests do exist for detecting developmental delay in childhood and for detecting behavioural and social/emotional difficulties in children, which may be markers for FASD but do not alert for the possibility of FASD.¹⁶¹

The model of care's first step in screening is to identify children at risk, including:
newborns and children of women with alcohol-related dependency or women who report alcohol use in pregnancy
newborns with abnormal growth parameters, including small for gestational age and/or microcephaly

FASD is a notifiable birth defect in WA and South Australia. Reporting to the Western Australian Register of Developmental Anomalies (WARDA) has been compulsory in WA since 2011. WARDA maintains a record of babies and children diagnosed with developmental anomalies before the age of six. It collects information to keep track of where and when developmental anomalies are occurring in WA, which guides research and helps to investigate causes, prevention, screening, treatment and management.

In the model of care's second step, infants identified in the first stage as being at risk would be invited to attend a child health clinic for developmental screening at a specified age, and those with developmental concerns would be referred for further assessment.

The model of care and the national FASD plan suggest targeted screening for more at-risk groups, including:

- children in the care of child protection services or in adoptive care

159 Telethon Kids Institute, *Alcohol screening tool transforming maternity practice*, 10 July 2019, accessed 21 May 2020, < <https://www.telethonkids.org.au> >.

160 C Bower, EJ Elliott, on behalf of the Steering Group, *Australian Guide to the Diagnosis of FASD*, Australian Government, Department of Health, 2016, p. 71.

161 Department of Health, Western Australia, *Fetal Alcohol Spectrum Disorder Model of Care*, Health Networks Branch, Department of Health, Perth, 2010, p. 24.

- children in child development or mental health services, especially where there are problems with attention, behaviour or social/emotional development
- children with a diagnosis of intellectual disability who do not have an established genetic aetiology
- siblings of children identified as having FASD
- children of mothers attending alcohol treatment services
- youth in juvenile justice/correctional settings
- children from regional areas and communities identified as having high levels of alcohol consumption
- children referred to school psychology services for behavioural and learning difficulties¹⁶²

The screening method would vary according to the characteristics of the target population and the health care setting. The national plan suggests developing a FASD screening tool and response system for youth entering correctional settings. A study by Telethon Kids Institute researchers found that in Banksia Hill youth detention facility, 89% of inmates had at least one form of severe brain impairment (severe neurodevelopmental impairment) and 36% had a diagnosis of FASD.¹⁶³

In its submission to the Senate FASD inquiry, WA's Department of Communities writes that appropriate screening for disability would ideally occur at all points of intersection with the justice system: police, courts and prisons.¹⁶⁴

As the national FASD plan notes, screening may identify a child at risk of FASD, but many will need a follow-up assessment and diagnosis. There are no agreed upon international best practice guidelines regarding the diagnostic criteria for FASD, but most health professionals consult the *Australian Guide to the Diagnosis of FASD*, developed in 2016 to standardise and streamline FASD diagnoses. It should be noted that a number of limitations of the diagnosis guide have been raised, which critics believe may lead to misdiagnosis.¹⁶⁵

According to Telethon Kids Institute researcher Professor Carol Bower, the 'big gap' in the *FASD Model of Care* (which has not been updated since 2010) is in regard to diagnosis and support for diagnosis.¹⁶⁶ The model of care recommends development of a multi-disciplinary FASD diagnostic service for children within WA Health's child development services. But according to the Department of Health submission to the Senate inquiry, there is 'no public health service that is delivering holistic and multidisciplinary FASD diagnostic [services] and

162 Department of Health, Western Australia, *Fetal Alcohol Spectrum Disorder Model of Care*, p. 26; Commonwealth Department of Health, *National Fetal Alcohol Spectrum Disorder Strategic Action Plan 2018-2028*, p. 21.

163 C Bower et al., 'Fetal Alcohol Spectrum Disorder and Youth Justice: A Prevalence Study Among Young People Sentenced to Detention in Western Australia', *BMJ Open*, 2018.

164 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 65, WA Government Department of Communities, January 2020, p. 9.

165 *ibid.*

166 Prof Carol Bower, Telethon Kids Institute, *Briefing*, 18 March 2020.

management'.¹⁶⁷ At present, diagnostic services are largely provided through private services such as PATCHES Therapy Services and FASD C.A.R.E at St John of God Hospital in Mount Lawley. There are 10 domains of neurodevelopmental impairment which need to be assessed to make a diagnosis, requiring a paediatrician, clinical psychologist, neuropsychologist, speech pathologist and occupational therapist. This makes a diagnosis unaffordable to many.¹⁶⁸

The Committee was told that the model of care was deliberately silent about diagnosing FASD because of the stigma attached to it.¹⁶⁹ But Professor Bower said it was better to manage the stigma than to avoid making the diagnosis, since diagnosis was often a relief to the parents as it meant the child's difficulties may be addressed.

Nevertheless, many children were not being assessed because the parents could not pay and the government would not pay, the Committee was told. An example was given of a family with several children considered at risk. Child Protection and Family Services paid for two to be assessed but not for the others.¹⁷⁰

There were also doubts as to whether a diagnosis would result in support. According to the Department of Health submission to the Senate inquiry, hospital and community paediatricians provide limited and fragmented services without appropriate or specific funding. There was a need for coordinated multidisciplinary assessment and management services as well as specific funding.

Support for people with FASD is available via the National Disability Insurance Scheme (NDIS), but it is not linked to a FASD diagnosis but rather to the specific disabilities or impairments of the child (or adult). A good assessment which is able to identify where the impairments are (even if it does not lead to an official diagnosis) could result support from the NDIS.

Support at school is similarly linked to the specific impairment. Under the Department's student-centered funding model, schools are provided with disability-specific funding in addition to the per-student allocation. While FASD is not an eligibility category for the Individual Disability Allocation, students presenting with neurodevelopmental impairments which align with one or more of the eight eligibility groups (for example, global developmental delay or intellectual disability) are eligible.¹⁷¹

The Department of Education is also building the capacity of school staff to understand and address the learning and support needs of students with FASD and has developed a web-based hub to provide professional learning and resources to these students. The

167 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 65, WA Government, January 2020, p. 25.

168 Prof Carol Bower and Ms Heather Jones, Telethon Kids Institute, *Briefing*, 18 March 2020.

169 Ms Megan Burley, A/Director Health Networks, Department of Health, *Briefing*, 18 March 2020.

170 Prof Carol Bower, Telethon Kids Institute, *Briefing*, 18 March 2020.

171 Senate Standing Committee on Community Affairs, Inquiry into Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder, Submission 65, Department of Education, January 2020, pp. 21-22.

Department of Education's submission to the Senate inquiry says that the resources build on the success of previous initiatives such as the Marulu Strategy (discussed in more detail below) and will be accessible to teachers in public and non-government schools.

7.4.2 Prevention strategies

There is now a substantial body of literature and research establishing which FASD prevention strategies are likely to be the most effective – for example, measures related to accessibility, price, product promotion restrictions and health promotion. These have made their way into a number of more recent strategy documents, such as the *National FASD Strategic Action Plan 2018–2028* and the *National Alcohol Strategy 2019–2028*. Some measures are already being implemented but others have not progressed beyond the policy stage.

Policy options for pricing and taxation reforms in the *National Alcohol Strategy 2019–2028* include a minimum floor price for alcohol, as introduced in the Northern Territory in October 2018. Since then it has been illegal to sell alcohol for less than \$1.30 per standard drink. A report commissioned by the Northern Territory government to investigate the impact of the minimum floor price found that there had been a decline in alcohol-related harm in 2018-19 compared to the same period in 2017-18:¹⁷²

- alcohol-related assaults decreased by 23%
- alcohol-related emergency department presentations decreased by 17.3%
- there were fewer child protection notifications, protection orders and out-of-home care cases
- there were fewer alcohol-related road traffic crashes resulting in injury or fatality
- there were fewer alcohol-related ambulance attendances

The positive outcome was said to be the result of not only the minimum unit price, but also the use of the banned drinkers register and Police Auxiliary Liquor Inspectors.¹⁷³

Data collected by Alice Springs Hospital researchers showed even more dramatic results, with presentations associated with acute alcohol misuse 54% lower in the six months following the introduction of the minimum pricing legislation.¹⁷⁴ The per capita alcohol consumption by central Australians had been in excess of the Northern Territory average, with as many as a quarter of admissions to the Alice Springs Hospital intensive care unit linked to alcohol misuse.¹⁷⁵

172 K Coomber, P Miller & N Taylor, *Investigating the introduction of the alcohol minimum unit price in the Northern Territory*, prepared for the Northern Territory Department of Health, February 2020.

173 Northern Territory Government Newsroom, *Tough Alcohol Measures Showing Reforms Are Working*, media release, 29 April 2020.

174 Almost all patients admitted to the ICU live in the region affected by floor price legislation; Nicole Mackee, 'Immediate positive impact of alcohol floor price', *Insight* (web-based), 9 December 2019, accessed 28 May 2018, <<https://insightplus.mja.com.au>>.

175 P Secombe et al., 'The impact of an alcohol floor price on critical care admissions in Central Australia', *Med J Aust* 2020, vol. 212, no. 5, pp. 229-230.

Earlier this year, in line with one of the national alcohol strategy's policy options, Food Standards Australia New Zealand approved an amendment to the Australia New Zealand Food Standards Code to require a pregnancy warning label on packaged alcoholic beverages sold in Australia and New Zealand. However this is now under review on the grounds that it places an unreasonable cost burden on the industry.¹⁷⁶

Independently of any national strategies or models of care, a group of West Australian Aboriginal women, supported by research institutions, has run a successful program to tackle FASD. Known as the Marulu Strategy, the program began with a group of Aboriginal leaders in the Fitzroy Valley who were concerned at the high rate of FASD in the community. Following the community's successful campaign to restrict the sale of full-strength take-away alcohol,¹⁷⁷ they formed a partnership with the Telethon Kids Institute, the University of Sydney and the George Institute to work on a strategy to address FASD.

A broad community strategy was developed in 2008, with targets for preventing and diagnosing FASD, managing affected individuals, and supporting families. The key to its success is widely acknowledged as being because it is community driven. The Marulu FASD Unit at Marninwarntikura employs a pool of local staff and local cultural health service Nindilingarri delivers prevention programs in communities and schools. A regular multidisciplinary paediatric and allied health process was established by WA Country Health Services, the Kimberley Population Health Unit, Nindilingarri Cultural Health Services and Paediatric Child Health and Education Services (PATCHES Paediatrics). Paediatrician James Fitzpatrick lived in the community to build trust and rapport.¹⁷⁸

Another aspect of the strategy, funded by the NHMRC from 2015 to 2018, is a behavioural management program rolled out to school-aged children in the Fitzroy Valley who have been (or may have been) affected by FASD. Dubbed Alert, it teaches students five ways to change their level of alertness through listening, moving, touching, looking or putting something in their mouth.

Building on the success of the Marulu Strategy, a FASD prevention strategy, Making FASD History, has since commenced in the Pilbara, led by the Telethon Kids Institute. Making FASD History incorporates broad awareness raising and health promotion activities that are culturally appropriate, and is aiming to build the capacity of health professionals working with women in the region.¹⁷⁹

Telethon Kids Institute senior manager of FASD projects Heather Jones said that the incidence of women drinking in pregnancy in the Kimberley had decreased from 60% to 16% since 2010. She said that evidence from programs in the Kimberley and Pilbara was that the

176 Food Standards Australia New Zealand, *P1050 – Pregnancy warning labels on alcoholic beverages*, May 2020, accessed 27 May 2020, <<https://www.foodstandards.gov.au>>.

177 The WA Director of Liquor Licensing made a determination that 'the sale of packaged liquor, exceeding a concentration of ethanol in liquor of 2.7 per cent, is prohibited to any person, other than a lodger'; J Fitzpatrick et al. 'The Marulu Strategy 2008-2012: overcoming Fetal Alcohol Spectrum Disorder (FASD) in the Fitzroy Valley', *Australian and New Zealand Journal of Public Health*, vol. 41, no. 5, 2017, pp. 467-473.

178 J Fitzpatrick et al., 2017.

179 *ibid*.

messaging needed to be tailored. Public messages were also embedded through more contact with families.

While the national alcohol and FASD strategies have identified which preventative measures are likely to be effective, it is vital that evidence of effectiveness is collected and reported, as it has been with the initiatives in the Northern Territory and the Kimberley.

8 The approach to FASD offers some useful insights

8.1 There are commonalities

Alcohol use in pregnancy and FASD has much in common with methamphetamine use in pregnancy and the effects of prenatal exposure. In both cases, affected children often experience developmental and learning disorders, with behavioural difficulties becoming more problematic in the school years. Impairments associated with both conditions are often not easily recognised and diagnosis is complex.

Partly because of the reliance on self-reporting, prevalence data on use in pregnancy for both substances is unreliable and the prevalence of both FASD and PME is unknown.

Many pregnant women have used both substances together, and/or with other damaging substances, so it is difficult to separate the impact of alcohol/methamphetamine from each other and from other possible causes (including social circumstances).

Whilst not exclusively so in either case, children affected by PME and FASD are often from disadvantaged backgrounds and violence and trauma may be common. Both substances are hard to give up, particularly if addiction has taken hold or use is to block pain in areas of the women's lives over which they feel they have no control.

There is a stigma attached to a diagnosis of impairment resulting from use of both alcohol and methamphetamine while pregnant, and a sense of shame and self-blame.

In both cases, the developing fetus is often exposed before the mother knows she is pregnant. Even once aware of the pregnancy, women using methamphetamine and women consuming risky levels of alcohol may be reluctant to divulge their use for fear of their child or other children being taken into state care.

8.2 There are differences

The obvious difference between alcohol and methamphetamine is that one is an illicit substance. Since methamphetamine cannot be purchased legally, all users are immediately at risk of becoming engaged in criminal behaviour in a way that alcohol users are not.

There is no type or level of methamphetamine use that is socially sanctioned, whereas moderate alcohol use is common and heavy use is often encouraged (e.g. celebrating milestones and victories, or even drowning one's sorrows). Perhaps because of this association with illegality and perceptions of violence associated with the drug, methamphetamine use is more stigmatised than problem drinking. This is despite alcohol-

related violence being a bigger problem than methamphetamine-related violence.¹⁸⁰ Studies have shown the link with violence, criminal activity and uninhibited sexual behaviour can act as a barrier for treatment and increase isolation among methamphetamine users.¹⁸¹

Another key difference between the effects of alcohol and the effects of methamphetamine is that there is no umbrella term for the developmental disorders caused by prenatal methamphetamine exposure. There is no label, and there are no strategies. There is no coordinated service to diagnose children and no standardised screening for potentially affected babies. This is where some of the tools developed for tackling FASD may prove useful.

8.3 What can we learn?

As Sydney neonatologist Dr Ju Lee Oei stated earlier this year in reference to tackling the effects of methamphetamine on children:

It needs to be as big as or even bigger than FASD. Everyone knows FASD, it's been around forever, but methamphetamine is a new epidemic.¹⁸²

In view of the Senate committee's ongoing inquiry into effective approaches to prevention, diagnosis and support for FASD, we will be somewhat circumspect in our suggestions of what aspects of the approach to FASD may be useful. However, some policy options and some actions appear to lend themselves to being extended or adapted to PME. The lack of progress in some areas might also be instructive.

While Australian guidelines for substance use during pregnancy recommend routine screening, there is currently no equivalent to the AUDIT-C tool – the simple questionnaire used to rate alcohol use. The AUDIT-C could be adapted to include questions about drug use, with appropriate training of health professionals in how to introduce such a sensitive topic. Telethon Kids Institute developed a language guide to help health professionals talk about FASD, emphasising that the damage is caused by alcohol, not bad women or bad mothers.¹⁸³ A similar guide could be developed for talking about methamphetamine use.

The FASD Model of Care outlines steps for identifying babies and children who might be at risk of FASD. It involves identifying newborns at risk and then following them up for further assessment. A method such as the Ages and Stages Questionnaire used in Ms O'Connor's study of meth-affected babies could act as an initial screening tool, in the year after birth. Then, as suggested in the FASD strategies, children could be followed up for further assessment at specific ages.

180 The Noffs Team, *Does drug use cause violence?*, 18 September 2017, accessed 3 June 2020, <<https://noffs.org.au>>.

181 C Douglass et al., "'Just not all ice users do that': investigating perceptions and potential harms of Australia's Ice Destroys Lives campaign in two studies", *Harm Reduction Journal*, vol. 14, no. 45, 2017.

182 Elicia Kennedy, 'Babies born to meth-affected mothers seem well behaved, but their passive nature masks a serious problem', *ABC News* (web-based), 3 January 2020, accessed 10 January 2020, <www.abc.net.au/news>.

183 Ms Heather Jones, Telethon Kids Institute, *Briefing*, 18 March 2020.

Children with obvious FASD disabilities before the age of six are recorded in the Western Australian Register of Developmental Anomalies. While this information helps track anomaly trends in WA, we are not sure what use is made of this information at the individual level. Nevertheless, if PME-related anomalies were also recorded on the register, authorities may have a better sense of the scale of the problem in WA.

In addition to routine screening at particular points, the model of care and the national FASD plan suggest targeting screening towards more at-risk groups, such as children in correctional facilities or siblings of affected children. Similar screening for issues caused by PME could be valuable, and may even be done concurrently. The Telethon Kids Institute's study of children at the Banksia Hill juvenile detention centre revealed the value of screening in such a facility when it diagnosed more than a third of the young people participating in the study with FASD.¹⁸⁴ Had symptoms been diagnosed and addressed sooner, they may not have been in the facility.

Unfortunately, we know that this screening was part of a one-off study, and we also heard that, despite recommendations, siblings of affected children are not automatically tested. Seeing the negative impact of not acting early enough or in a way that may prevent serious adverse social outcomes for children should act as a warning for failing to act on PME.

From what we have seen in this limited exploration of how FASD is dealt with in this state, so much hinges on accurate diagnosis, and yet access to affordable diagnostic services is severely limited. If this is the situation with FASD, which is a recognised condition, it could only be worse for meth-affected children.

New Zealand schools have shown us that recognition of a child's learning and behavioural issues as being the result of PME helps specialist teachers to assist the children appropriately. WA schools have programs in place for students and teachers to deal with FASD, and they should be developing the same for meth-affected children.

In terms of prevention, methamphetamine obviously does not lend itself to some of the strategies used with alcohol – such as pricing and promotion restrictions. Plenty of recent reports have already addressed drug supply and law enforcement issues, and it was not our intention to discuss these further in this paper. Obviously, if there is less methamphetamine available, there is less opportunity for women to consume methamphetamine in pregnancy. However, at this point methamphetamine is still a very popular drug in WA, particularly with young women.

Methamphetamine use in Indigenous communities is high; many of the women WANDAS sees are Aboriginal, and the staff recognise the need to have the support of other women in the community. It is difficult to see how methamphetamine could be banned from communities in the same way as full-strength take-away alcohol was banned in the Fitzroy Valley. However, the community-led approach of the Marulu Strategy might be usefully

¹⁸⁴ C Bower et al, 'Fetal Alcohol Spectrum Disorder and Youth Justice: A Prevalence Study Among Young People Sentenced to Detention in Western Australia', *BMJ Open*, 2018.

applied. A community-driven approach, with educational messages delivered by the community, might have more chance of success.

For affected women elsewhere, the Parent Child Assistance Program (PCAP), which is an intense social work program to support women with children for three years, has been shown to be very effective in the US and Canada. It has been rolled out in Perth but there are limited places. There are also programs in the UK which have shown promise and would be worth investigating should a future committee decide to explore this issue in more depth.

As Dr Barry Lester, one of the lead researchers on the IDEAL study acknowledged, prevention is hard to sell. However, he asserts:

The amount of money it takes to do the intervention compared to the amount of money spent later on for these kids for special education is pocket change.¹⁸⁵



MS J.M. FREEMAN, MLA
CHAIR

¹⁸⁵ American Academy of Pediatrics, 'Newborns exposed to methamphetamine before birth are hard to arouse, hard to calm down, study suggests,' *Science Daily* (web-based), 2 May 2011, accessed 29 April 2020, <www.sciencedaily.com/releases>.

Appendix One

Committee's functions and powers

The functions of the Committee are to review and report to the Assembly on:

- a) the outcomes and administration of the departments within the Committee's portfolio responsibilities;
- b) annual reports of government departments laid on the Table of the House;
- c) the adequacy of legislation and regulations within its jurisdiction; and
- d) any matters referred to it by the Assembly including a bill, motion, petition, vote or expenditure, other financial matter, report or paper.

At the commencement of each Parliament and as often thereafter as the Speaker considers necessary, the Speaker will determine and table a schedule showing the portfolio responsibilities for each committee. Annual reports of government departments and authorities tabled in the Assembly will stand referred to the relevant committee for any inquiry the committee may make.

Whenever a committee receives or determines for itself fresh or amended terms of reference, the committee will forward them to each standing and select committee of the Assembly and Joint Committee of the Assembly and Council. The Speaker will announce them to the Assembly at the next opportunity and arrange for them to be placed on the notice boards of the Assembly.

Appendix Two

Briefings

Date	Name	Position	Organisation
11 March 2020	Ms Jennifer McGrath	Acting Commissioner	Mental Health Commission
	Mr David Axworthy	Assistant Commissioner for Policy, Planning and Strategy	
	Mr Gary Kirby	Director of Prevention Services	
	Ms Carly Dolinski	Director of NGO Commissioning and Service Development	
18 March 2020	Ms Megan Burley	A/Director	Health Networks, Department of Health
	Ms Marie Deverell	Senior Development Officer	
	Prof Carol Bower	Senior Principal Research Fellow, Alcohol and Pregnancy & FASD Research	Telethon Kids Institute
	Ms Heather Jones	Senior Manager, FASD Projects	
18 March 2020	Ms Angela O'Connor	Clinical Midwifery Consultant	Women and Newborn Drug and Alcohol Service

Appendix Three

Recent parliamentary or government agency reports related to the methamphetamine epidemic

1. Methamphetamine Action Plan Taskforce Report

Western Australian Government Report 2018

The taskforce was appointed to provide advice to the Western Australian Government on how programs can be best delivered and targeted to the areas of greatest need. The work of the taskforce was to help inform the Government's Methamphetamine Action Plan.

2. Treatment Services for People with Methamphetamine Dependence

Western Australian Auditor General's Report 2018

This performance audit assessed the availability, accessibility and effectiveness of treatment services for people with meth dependency by considering whether:

- the Mental Health Commission ensures the right meth treatment services are in the right places
- all people who require treatments get them, and are they effective?

The audit focused on the implementation of the State Government's 2016 WA Methamphetamine Strategy. The Auditor General concluded that the Mental Health Commission had increased access to treatment in areas of need. This had resulted in a significant increase in the amount and proportion of alcohol and drug treatment undertaken by people with methamphetamine problems, however there was still evidence of unmet need for services.

3. Help, Not Handcuffs: Evidence-Based Approaches to Reducing Harm from Illicit Drug Use

Select Committee into Alternate Approaches to Reducing Illicit Drug Use and its Effects on the Community, Legislative Council Western Australia 2019

The Committee was interested in considering alternative approaches with proven results which WA could plausibly replicate. It found that a number of approaches used within Australia and internationally had successfully reduced drug-related harms by shifting policy priorities from prohibition towards health, prevention and harm reduction.

4. Inquiry into Crystal Methamphetamine (Ice)

Commonwealth Joint Committee on Law Enforcement (First Report 2017/ Final Report 2018)

The inquiry's first report primarily considered law enforcement responses and reporting systems to identify drug trends.

The second report considered harm reduction and initiatives to address meth use in at-risk communities and industries, such as hospitality and the fly-in fly-out sector. The report also considered the funding of treatment services as part of the National Ice Action Strategy and the decriminalisation of illicit drugs.

5. Final Report of the National Ice Task Force

Australian Government Report 2015

The National Ice Taskforce was established on 8 April 2015 to advise the Government on the development of a National Ice Action Strategy.

The report is divided into three parts:

- Part A looks at ice use in Australia – provision, demand, and impact
- Part B provides a comprehensive stocktake of efforts to tackle ice use in Australia – law enforcement, strategies in relation to prevention and cessation of use, activities to reduce supply and demand
- Part C examines gaps in Australia’s current response and identifies where additional action is necessary – in the areas of law enforcement, primary prevention, strategies in relation to prevention as well as other factors that underpin effective action.

6. The Special Commission of Inquiry into the Drug ‘Ice’

New South Wales Government Report 2020

The four-volume report presented 109 recommendations relating to greater coordination of alcohol and other drug policy; decriminalisation; reframing substance use as a health issue; a greater investment in treatment, diversion and workforce initiatives; education and prevention programs; better data, reporting and research; a clear focus on priority populations, especially Aboriginal people who experience disproportionate impacts, rural and regional people and people in contact with the criminal justice system.

Appendix Four

Senate Community Affairs Reference Committee inquiry into FASD

The inquiry into *Effective approaches to prevention, diagnosis and support for Fetal Alcohol Spectrum Disorder* is examining 'strategies for optimising life outcomes for people with FASD and supporting carers, and the prevalence and management of FASD, including in vulnerable populations, in the education system, and in the criminal justice system'. The committee is due to report its findings on 2 December 2020.

The Western Australian Government provided a submission to the inquiry which includes responses from seven government agencies: Department of Communities, Department of Education, Department of Health, Department of Justice, Department of Premier and Cabinet, Western Australian Mental Health Commission, Western Australia Police Force.

The terms of reference are as follows:

- (a) the level of community awareness of risks of alcohol consumption during pregnancy;
- (b) the adequacy of the health advice provided to women planning a pregnancy, pregnant women and women who are breastfeeding, about the risks of alcohol consumption;
- (c) barriers that may prevent women receiving accurate, timely and culturally/ethnically appropriate information and advice on alcohol and pregnancy;
- (d) provision of diagnostic services in Australia including capacity, training, integration and diagnostic models in current use;
- (e) the prevalence and nature of co-occurring conditions and of misdiagnosis of FASD;
- (f) international best practice in preventing, diagnosing and managing FASD;
- (g) awareness of FASD in schools, and the effectiveness of systems to identify and support affected students;
- (h) the prevalence of, and approaches to, FASD in vulnerable populations, including children in foster and state care, migrant communities and Indigenous communities;
- (i) the recognition of, and approaches to, FASD in the criminal justice system and adequacy of rehabilitation responses;
- (j) the social and economic costs of FASD in Australia, including health, education, welfare and criminal justice;
- (k) access, availability and adequacy of FASD support available through the National Disability Insurance Scheme, including access to effective and early intervention services for individuals diagnosed with FASD;
- (l) support for adults with FASD and for parents and carers of children with FASD;

(m) progress on outstanding recommendations of the House of Representatives Standing Committee on Social Policy and Legal Affairs report, FASD: The Hidden Harm, tabled on 29 November 2012;

(n) the effectiveness of the National FASD Action Plan 2018-2028, including gaps in ensuring a nationally co-ordinated response and adequacy of funding;

(o) the need for improved perinatal data collection and statistical reporting on FASD and maternal drinking; and

(p) any other related matters.

Appendix Five

Acronyms

ACOG	American College of Obstetricians and Gynecologists
ADHD	Attention deficit hyperactivity disorder
AHCWA	Australian Health Council of Western Australia
AOD	Alcohol and other drugs
ASQ	Ages and Stages Questionnaire
AUDIT-C	Alcohol Use Disorders Identification Test – Consumption
CALD	culturally and linguistically diverse
COVID-19	Coronavirus disease 2019
CPFS	Child Protection and Family Support
DAWN	Drug and Alcohol Withdrawal Network
FASD	fetal alcohol spectrum disorder
IDEAL study	US/NZ Infant Development, Environment, and Lifestyle study
MDMA	methylenedioxymethamphetamine
NAS	neonatal abstinence syndrome
NDIS	National Disability Insurance Scheme
PCAP	Parent Child Assistance Program
PME	prenatal methamphetamine exposure
WADS	Women’s Alcohol and Drug Service
WANDAS	Women and Newborn Drug and Alcohol Service
WARDA	Western Australian Register of Developmental Anomalies
WHO	World Health Organisation



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