Appendix 1. The range of symptoms that are included under the umbrella of FASD

Scientists have attempted to categorise the effects of prenatal alcohol exposure in different ways. This has resulted in several different diagnostic categories that fall under the umbrella term Fetal Alcohol Spectrum Disorders (FASD). It is useful to consider these as attempts to impose order on diverse clusters of symptoms.

There is ongoing debate about the best approach to diagnosing and categorising the symptomatology of FASD. The classifications and diagnostic labels that fall under this umbrella are likely to evolve over time as our scientific understanding of the nature of FASD evolves.

The various diagnostic categories that have been applied to FASD all attempt to highlight the core diagnostic features related to alcohol's impact on the developing fetus. There is not yet consensus about which diagnostic approach best reflects the reality of FASD; nor which approach is most useful in terms of directing intervention or predicting life outcomes for young people that are affected. Essentially, the debate about proposed diagnostic categories revolves around:

1) whether or not prenatal alcohol exposure is confirmed or unknown; and whether this is necessary to make a diagnosis of FASD. There is increasing recognition that obtaining an accurate history of alcohol consumption during pregnancy is not always possible, especially in vulnerable populations of children such as those being raised in foster care; adopted children; or where the complexity a family is facing might make it difficult for them to give a full account of the experiences and events surrounding the child's early years.

2) whether or not the typical (diagnostic or 'sentinel') facial features associated with fetal alcohol exposure are present, and if so, how many of these are evident. There is increasing recognition that FASD is a 'whole body' condition, related to a range of malformations in body structure and function. These abnormalities may include the sentinel facial features, depending on the timing and duration of alcohol exposure. Therefore, while the presence of sentinel facial features indicates prenatal alcohol exposure, the absence of sentinel facial features does not rule it out.

3) the range and impact of damage to the developing brain and subsequent neuropsychological and neuroanatomical structure and functioning. This is probably the most difficult and complex area to assess and for scientists to agree on.

The Institute of Medicine of the National Academies (IOM) diagnostic categories are the most well-known and long-standing diagnostic categories:

Fetal Alcohol Spectrum Disorder	
Fetal Alcohol Syndrome (FAS)	• Specific sentinel facial abnormalities • Reduced size of the newborn and/or poor growth after birth • Problems of behaviour and cognition due to structural and/or functional abnormalities of the central nervous system (CNS). FAS is most commonly seen in children born to mothers who consumed significant quantities of alcohol during early pregnancy.
Partial FAS (pFAS)	• Most, but not all growth/sentinel facial features. • Significant structural, neurological and/or functional abnormalities of the central nervous system (CNS). Diagnosis requires a confirmed history of prenatal alcohol exposure.
Alcohol-Related Neurodevelopmental Disorder (ARND)	The diagnostic category of alcohol related neurodevelopmental disorder (ARND) reflects severe CNS dysfunction in the absence of facial anomalies.
Alcohol-related birth defects	Birth defects including malformations and dysplasia (abnormal growths or missing body parts, e.g. fingers or toes) associated with prenatal alcohol exposure. These may include cardiac (heart), skeletal, renal (kidneys), ocular (eyes), auditory (hearing) and other malformations. Alcohol-Related Birth Defects (ARBD) is rarely seen alone but rather as a secondary disorder accompanying other FASD conditions.

Source: adapted from McLean & McDougall, 2014; NIAAA (2015).

In addition to the IOM diagnostic criteria (summarised above), the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM–5, APA 2013) also includes a description of Neurobehavioral Disorder Associated with Prenatal Alcohol Exposure (ND-PAE), based on research on the neuropsychological difficulties experienced by children living with FASD. For a more complete description of this condition and the associated symptoms, see Hagan, Balachova, & Bertrand, 2016. People who meet the criteria for a FASD diagnosis according to the IOM may also meet criteria for ND-PAE.

There is considerable debate about the relative accuracy and utility of the different diagnostic approaches. A complete discussion of these issues is outside the scope of this resource; and for simplicity only the Australian guidelines are presented in detail. For a more complete discussion regarding diagnostic criteria, please see Hoyme, Kahlberg, Elliott et al., 2016.