

# Executive Summary

- Attention deficit hyperactivity disorder (ADHD) is a chronic condition, characterised by the symptoms of inattention, hyperactivity, and impulsivity. It has recently been estimated to affect as many as 11 per cent of children in Australia aged six to 17 years of age.
- Children with ADHD commonly experience a broad range of difficulties, including social problems and difficulties at school. They have an increased risk of serious long-term consequences such as slow academic achievement, peer rejection, and antisocial behaviour. The disorder also has a profound affect on parents, siblings, and teachers of children with ADHD.
- The causes of ADHD are unknown. Evidence to date suggests that ADHD is a disorder of the central nervous system, and is influenced by both familial and genetic factors.
- Stimulant medication is a common and accepted form of treatment for ADHD. Up to 90 per cent of children with ADHD who are treated with stimulant medication experience a reduction in their symptoms.
- According to research conducted overseas, the prescribing of stimulant medication for children with ADHD has significantly increased in the last decade. This increase is likely to be due to a number of factors, including an increase in public and clinician awareness and acceptance of ADHD as a disorder; a broadening of the diagnostic criteria for ADHD; a greater knowledge of the course of the disorder; an increase in the availability of ADHD-specific services, particularly paediatric and child psychiatric services; an increase in knowledge about the use and effectiveness of stimulant medication; lengthier periods of treatment; and an increase in the use of stimulant medication for the treatment of adults.
- In NSW the prescribing of stimulant medication for the treatment of ADHD in children and adolescents is restricted to specialist prescribers, and is monitored by the Pharmaceutical Services Branch of the NSW Department of Health.
- This study presents recent trends in the prescribing of stimulant medication for the treatment of ADHD in children and adolescents in NSW.
- Over the period 1990 to 2000 there was a marked increase in the number of children and adolescents with ADHD who were commenced on stimulant medication for the first time, with most of this increase occurring in the first half of the 1990s. The number of children commenced on stimulants in 2000 was five times the number commenced in 1990.
- There was also a marked increase in the rate of children and adolescents (that is, number per 1,000 people aged 2–17 years) treated with stimulant medication over this period, particularly during the first half of the 1990s. The rate in 2000 was about nine times the rate in 1990.
- At the end of 2000 there were almost 16,000 children and adolescents in NSW on stimulant medication for the treatment of ADHD, representing a rate of 11.3 per 1,000 (or 1.1 per cent) of people aged 2–17 years. Based on the estimated prevalence of ADHD, this means that as few as one in every 10 children with ADHD was undergoing treatment with stimulant medication.
- Children aged seven to 15 years had a rate of treatment greater than the average. It is often the case that soon after children commence formal schooling the impairments they experience as a result of the disorder become noticeable. The rate of treatment was highest for children aged 10 years (19.9 per 1,000 people aged 10 years).
- The majority of children treated with stimulant medication are male. The overall ratio

of boys to girls on medication at the end of 2000 was about 4:1. This was consistent through all age groups other than children aged less than four years, where the male to female ratio was 7:1. Although the prevalence of ADHD among boys is higher than it is among girls, the disparity in stimulant treatment rates is thought to be largely due to referral rates. Boys, who tend to display higher rates of disruptive behaviour, are more likely to be referred for treatment than girls.

- Over the period 1990 to 2000, however, there was a slight upward trend in the proportion of children and adolescents commenced on stimulant medication for the first time who were female. Also, the increase in the rate of girls on stimulant medication was slightly greater than the increase in the rate of boys on medication. This proportional increase in the number of girls being treated with stimulant medication is consistent with findings from overseas.
- Since 1993 more children and adolescents have been commenced on dexamphetamine than have been commenced on methylphenidate, probably because dexamphetamine is the least expensive of the two medications. However, the rate of children treated with dexamphetamine over the period 1990 to 2000 was roughly the same as the rate of children treated with methylphenidate over the same period. It is common for a child to find one stimulant drug more effective than the other, but it is difficult to predict which drug will produce the better outcome prior to the commencement of treatment.
- Among children and adolescents treated at the end of 2000, the average daily dose was the same for children and adolescents on dexamphetamine as it was for those on methylphenidate (2.9 tablets per day).
- There was a positive association found between age and dose: the greater the age, the higher the average daily dose (in tablets).
- Marked differences were found in rates of treatment according to health area. The Hunter area had the highest rate (18.4 per 1,000 people aged 2–17 years) while the Far West area had the lowest rate (1.2 per 1,000 people aged 2–17 years). Treatment rates for the other health areas were less variable, ranging from 4.5 to 15.1 (per 1,000 people aged 2–17 years). Regional differences in prescribing may have been due to a number of reasons, including the prevalence of ADHD symptoms and variations in the use of diagnostic criteria and methods; the availability of ADHD-specific services; the clinician's approach to the treatment of ADHD; socioeconomic factors; and parental and familial attitudes toward health services and treatment strategies.
- Long-term use of medication was found to be common. At the end of 2000, about one quarter of children and adolescents undergoing treatment had been on medication for more than three years. This is not surprising given the chronic nature of ADHD.
- Early attrition from treatment was also found to be common. Almost one fifth of children and adolescents aged 3–15 years commenced on stimulant medication did not continue treatment after their first prescription. This is consistent with the fact that stimulant medication is not effective for at least 10 per cent of children with ADHD.
- Stimulant medication has been shown to be a very effective form of treatment of ADHD. This study demonstrates that the NSW Department of Health supports and encourages stimulant prescribing that accords with modern, appropriate, and effective management of ADHD.