

## 3. Methods

### 3.1 Trends in the number of adults treated with stimulant medication for the first time

The number of adults with ADHD who were treated with stimulant medication for the first time was determined and analysed by various characteristics of the adult and the treatment for the period 1990 to 2002.

Data on authorities issued and prescriptions written for stimulant medication for the treatment of ADHD to 31 December 2002 were extracted from the NSW Department of Health *Pharmaceutical Drugs of Addiction System*. A person was considered to have been treated with stimulant medication if an authority had been issued or a prescription written.

Persons aged 18 years or over ('adults') treated with stimulant medication for ADHD for the first time were identified. The date on which treatment was deemed to have started was either the date on which the first relevant authority was issued or the date on which the first prescription was written. It should be noted that most of the data in the present study concerned individual patient authorities. A small number of records involved prescriptions notified in respect of children or young adults as part of Departmental requirements concerning the prescribing of stimulants for children with ADHD (see Part 2.5).

Some adults who may have undergone stimulant treatment previously (that is, prior to the 'first time'), namely those who were previously treated for a non-ADHD diagnosis (such as narcolepsy or brain damage), and those whose previous treatment was not recorded in the *Pharmaceutical Drugs of Addiction System* (such as persons from overseas or interstate), were included in the analysis.

For each year in the period 1990 to 2002 the number of adults commenced on stimulant medication for the first time was determined according to the following characteristics: sex, age at commencement of stimulant treatment, and drug used.

Adults residing outside NSW were excluded from analysis. Whether a person resided outside NSW was determined according to his or her address as at the time of data extraction (June 2003). It was necessary to use the address as at the time of the data extraction because historical information on address was not available.

### 3.2 Characteristics of adults who commenced treatment for the first time (November to December 2002)

Adults for whom an individual patient authority was issued for the first time for the treatment of ADHD in the two-month period 1 November 2002 to 31 December 2002 were identified using the NSW Department of Health *Pharmaceutical Drugs of Addiction System*. A total of 106 adults were identified and Departmental files containing individual patient details including application forms, clinical reports, and other supporting evidence, were examined. From this examination, eight adults were identified for whom it was likely stimulant medication had been

previously used to treat ADHD (e.g. persons treated outside NSW, persons treated as a child), leaving 98 adults for analysis.

Information was collated on these 98 adults based on the following variables: age, sex, experience of non-ADHD mental health problems, presence of familial ADHD, substance abuse, use of non-stimulant medication, use of non-medication treatments, assessments undergone (including use of rating scales and electrophysiological assessment), and effectiveness of stimulant medication.

### **3.3 Trends in the rate of adults treated with stimulant medication**

The prevalence of adults with ADHD who were treated with stimulant medication as at 30 June of each year in the period 1993 to 2003 was determined and analysed by various characteristics of the adult and the treatment.

Data concerning authorities issued and prescriptions written for stimulant medication for the treatment of ADHD were extracted from the NSW Department of Health *Pharmaceutical Drugs of Addiction System* for the period 1993 to 2003.

Authorities and prescriptions that were valid as at 30 June for each year in the period 1993 to 2003 were determined. An authority was deemed to be valid on 30 June of a given year if it was issued on or before this date and expired on or after this date. A prescription was deemed to be valid if it was written in the six-month period to 30 June of a given year. An adult, defined as a person aged 18 years or over as at 30 June of a given year, was considered to have been treated with stimulant medication if he or she had a valid authority or prescription.

As at 30 June each year in the period 1993 to 2003, the number of adults treated with stimulant medication per 10,000 resident population of NSW aged 18 years or over was calculated using population estimates (as at 30 June) from the Australian Bureau of Statistics.<sup>90</sup> Preliminary estimates were used for 2003. The rate of adults treated with stimulant medication was determined according to the following characteristics: sex, age, and drug used.

Adults residing outside NSW were excluded from analysis. Whether a person resided outside NSW was determined according to his or her address as at the time of data extraction (January 2004). It was necessary to use the address as at the time of the data extraction because historical information on address was not available.

### **3.4 Characteristics of adults treated with stimulant medication**

The prevalence of adults treated with stimulant medication as at 30 June 2003 was determined and analysed by various characteristics of the adult and the treatment.

Data concerning adults on stimulant medication for the treatment of ADHD as at 30 June 2003 were extracted using the method described in Part 3.3. These data were analysed according to the following characteristics: age and sex, drug used, area health service of residence, age status at initiation of treatment, and duration of treatment.

Age-specific rates per 10,000 resident population were calculated using preliminary population estimates as at 30 June 2003 from the Australian Bureau of Statistics.<sup>90</sup>

Rates per 10,000 resident population for individual area health services were calculated using Australian Bureau of Statistics population data as at 30 June 2001.<sup>91</sup>

Duration of treatment was calculated as the number of days an adult had continuously received stimulant treatment up until 30 June 2003. Where there was a break of no more than 182 days (six months) between consecutive valid authorities or prescriptions preceding 30 June 2003, an adult was deemed to be continuously receiving treatment. (As described earlier, a prescription was defined as being valid for a period of six months from the date it was written.) Treatment duration (in days) was calculated from the date of the first authority or prescription in the sequence of continuous treatment to 30 June 2003.

Adults residing outside NSW were excluded from analysis. Whether a person resided outside NSW was determined according to his or her address as at the time of data extraction (January 2004). It was necessary to use the address as at the time of the data extraction because historical information on address was not available.

### **3.5 Attrition from stimulant treatment**

Adults who were treated with stimulant medication for ADHD for the first time in the year 1998 were identified using the method described in Part 3.1. For each adult, the date of the last prescription or authority was determined by examining all records in the *Pharmaceutical Drugs of Addiction System*. All authorities issued and all prescriptions notified to the Department as recorded in the *Pharmaceutical Drugs of Addiction System* as at 9 January 2004 were considered. For administrative reasons, not all records from September 2003 onwards were available for analysis.

The time between the first authority or prescription and last authority or prescription for each adult was calculated to represent a measure of attrition from treatment.

### **3.6 Caveats**

For the purposes of this study, it is assumed that an adult is being treated with stimulant medication if an authority for stimulant medication has been issued with respect to the adult, or if a prescription for stimulant medication has been written for the adult. It is also assumed that an adult is on stimulant medication for the period over which an authority or prescription is valid. The extent to which these assumptions are valid is unknown.

An authority indicates a doctor's intention to prescribe stimulant medication for a particular adult. When a doctor is issued with an individual patient authority, however, he or she may not necessarily proceed with writing a prescription for stimulant medication.

When a prescription has been written for an adult, the prescription may not be filled. If the medication is dispensed, the adult may take the medication for only a short period of time, less than the period over which the authority or prescription is valid. For example, an adult may discontinue use following an unsuccessful short-term trial. Some adults may choose not to take the medication at all after it has been dispensed.

Thus, a number of adults may be counted as being on stimulant medication when in fact they are not. On the other hand, a number of adults may not be included in the figures when they should be. An example of this is the person who continues to take medication beyond the period over which the authority or prescription is valid. The person may have surplus supplies of medication because he or she spent some time off medication during the period over which the medication was prescribed.

The primary source of data for this study, the *Pharmaceutical Drugs of Addiction System*, was implemented during 1985. Details of approvals to prescribe stimulant medication for the treatment of ADHD prior to this time are not recorded and, therefore, are not included in this study.

These issues should be taken into consideration when interpreting the data presented in this report.