

COMMENTS ON THE REPORTED STATISTICS ON PSYCHOTROPIC SUBSTANCES

1. The purpose of these comments is to facilitate the study of the statistical information on licitly manufactured psychotropic substances that is presented in the tables of reported statistics (see pages 105-248 below). The tables contain information submitted by Governments to the International Narcotics Control Board (INCB) pursuant to the provisions of article 16 of the Convention on Psychotropic Substances of 1971.

2. There are currently 116 substances listed in the four schedules of the 1971 Convention. Comments are provided on substances reported to have been used for medical and scientific purposes. Since only a few Governments have re-

ported manufacture of substances in Schedule I and since international trade in those substances has been very limited, a table summarizing the movement of substances listed in Schedule I in 2003 is included in the section containing tables of reported statistics. With respect to substances in Schedules II and III of the 1971 Convention, the information on the five-year period 1999-2003 is presented in the statistical tables. With respect to substances in Schedule IV, information on the three-year period 2001-2003 is included in the statistical tables. Statistics relating to a few substances, namely, mecloqualone and phencyclidine, both included in Schedule II, and lefetamine, included in Schedule IV, are not included in the statistical tables but are reflected in the comments.

Substances listed in Schedule I

3. There are currently 28 substances listed in Schedule I. Pursuant to the provisions of article 7 of the 1971 Convention, the use of those substances should be prohibited except for scientific and very limited medical purposes by duly authorized persons in medical or scientific establishments that are directly under the control of or specifically approved by their Governments. This restriction results from the fact that all substances in Schedule I are hallucinogens and/or central nervous system stimulants with very limited or no medical use. The manufacture and stocks of and trade in those substances have, therefore, been very limited. Exceptions are noted below.

4. The 1971 Convention does not envisage any use of psychotropic substances in Schedule I in industry for the manufacture of non-psychotropic substances or products. The substance 2,5-dimethoxyamphetamine (DMA), however, has been used for that purpose in the United States of America, where it is utilized in the manufacture of special photographic films. The manufacture of DMA in that country was stable, averaging 8 tons annually until 2001, when manufacture decreased by around 50 per cent. While no manufacture was reported in 2002, the manufacture of over 1 ton (1.153 kg) was reported to have been manufactured in 2003. Additional quantities needed for the manufacture of the above films were covered using available stocks and resulted in an overall decline in the DMA stocks held at the end of 2003 in the United States from 948.138 kg to 455.663 kg. There is reportedly no substitute for DMA in the above-mentioned manufacturing process. The use of DMA in the United States for that purpose is therefore expected to continue.¹

5. In the period 1999-2003, Australia, Israel, Poland and Switzerland reported the manufacture of a few grams of *p*-methoxyamphetamine (PMA). The United States reported in 1999 the manufacture of 31 kg of PMA for the manufacture of a non-psychotropic substance to be used for medical and scientific purposes and has not reported any further manufacture of the substance.

6. Parties to the 1971 Convention may authorize limited use of substances listed in Schedule I for the manufacture of

psychotropic substances in other schedules. The isomers of tetrahydrocannabinol (THC) included in Schedule I, mainly *delta*-8-tetrahydrocannabinol, have been manufactured in the United States and used in the manufacture of *delta*-9-tetrahydrocannabinol (*delta*-9-THC), a psychotropic substance listed in Schedule II since 1991. The United States is the only manufacturer of the isomers of THC included in Schedule I. After 1992, the manufacture of those isomers of THC increased to a level of about 38 kg annually in 1995 and 1996. While no manufacture of those isomers was reported in 1997, a marked increase was reported between 1998 and 1999 (138 per cent). The manufacture of isomers of THC in the past five years shows an increasing trend (11 per cent average). Stocks held in the United States at the end of 2003 amounted to 344 kg.

7. Three other substances listed in Schedule I were manufactured in the United States in small quantities for scientific purposes in 2003. Those substances were (+)-lysergide, *N*-ethyl-tenamfetamine (*N*-ethyl MDA), 3,4-methylenedioxy-metamfetamine (MDMA), tenamfetamine and psilocine. The manufacture of a few grams of substances in Schedule I in the period 1999-2003 was reported by other countries, namely, Australia, Denmark, Hungary, Ireland, Israel, the Netherlands, Poland, Switzerland and the United Kingdom of Great Britain and Northern Ireland.

8. Quantities of substances in Schedule I, ranging from a few grams to several hundred grams, were held in stocks at the end of 2003, mainly in the United States. Stocks of most of those substances have been relatively stable in recent years. Stocks of DMA and THC are referred to in paragraphs 4-6 above.

9. Other countries reporting stocks of a few grams of substances in Schedule I at the end of 2003 were Australia, Israel, Italy, Poland, Sweden, Switzerland and the United Kingdom.

10. International trade in substances in Schedule I has always been restricted to occasional transactions of no more than a few grams. In the period 1999-2003, small imports or exports of some of those substances were reported by Australia, Denmark, Ireland, Israel, the Netherlands, Switzerland, the United Kingdom and the United States.

¹ See *Report of the International Narcotics Control Board for 1994* (United Nations publication, Sales No. E.95.XI.4), para. 75.

Substances listed in Schedule II

11. Seventeen substances are listed in Schedule II whose liability to abuse constitutes a substantial risk to public health and which have little to moderate therapeutic usefulness. The substances belong to the following groups: central nervous system stimulants; anti-emetics; hallucinogens; sedative-hypnotics; antitussives and antidepressants. In addition to their various applications in human and/or veterinary medicine, some of these substances are used in industry for the manufacture of other psychotropic substances or for conversion into non-psychotropic substances.

Central nervous system stimulants

Amphetamines

12. Both optical isomers of amphetamine (levamphetamine and dexamphetamine) and their racemic mixture (amphetamine), as well as both optical isomers of metamphetamine (levomethamphetamine and metamphetamine) and their racemic mixture (metamphetamine racemate), are listed in Schedule II. Statistical reports on amphetamine, dexamphetamine and metamphetamine have been received by INCB from Governments since the 1970s. Statistics for levamphetamine and levomethamphetamine have been available since 1986 and statistics for metamphetamine racemate since 1988, owing to the different dates on which those substances were brought under the control of the 1971 Convention.

13. Amphetamines in Schedule II are used not only directly for medical purposes but also in industry as intermediary products for the manufacture of other substances. Those new substances may be divided into two groups: other psychotropic substances, including those which are optical isomers of the original substance; and substances not controlled under the 1971 Convention.

Direct medical use

14. Amphetamines listed in Schedule II are used mainly for the treatment of attention-deficit disorder (ADD) and narcolepsy. The widespread use of those substances as anorectics for the treatment of obesity has been discontinued or considerably reduced in most countries. In 2003, the quantity of amphetamines listed in Schedule II that were manufactured worldwide for direct medical use totalled around 7.8 tons (approximately 505 million defined daily doses for statistical purposes (S-DDD)), almost all of which was manufactured in the United States. The level of manufacture in 2003 was about 1 ton lower than the levels in 2002.

15. The substantial increase in the manufacture of amphetamines can be attributed almost exclusively to the rapid increase in the medical use of amphetamine and dexamphetamine in the United States since 1998, when products combining both amphetamine and dexamphetamine started to be used mostly for the treatment of ADD (called attention-deficit/hyperactivity disorder (ADHD) in the United States). In 2003, about 3.5 tons of amphetamine were manufactured for such use in the United States, while only about 20 kg of the substance were needed for direct medical use in 1996. At present, such significant use of amphetamine for medical purposes has been reported only in the United States. The amphetamine consumed in the United States is obtained almost exclusively from domestic manufacture.

16. In 2003, the main importers of amphetamine were Chile (11 kg) and Sweden (8 kg), while the total imports of Germany fell sharply, from an average of 30 kg yearly during the period 1999-2002 to just about 2 kg in 2003, all of which was for industrial purposes.

17. The United States is also the main user of dexamphetamine, where it is prescribed for the treatment of ADHD, obesity and narcolepsy, but significant medical use of that substance has also been reported in a number of other countries, including Australia and Canada. In the United States, the medical needs for dexamphetamine are covered by domestic manufacture. While the manufacture of dexamphetamine during the 1980s was stable at a level of approximately 350 kg annually, it began to rise sharply after 1991 and amounted to almost 1.7 tons in 1995. The manufacture of that substance remained at that level in 1996 and 1997 and increased in 2000 to a record level of 12.3 tons; however, only 3.5 tons were manufactured in 2003. Out of this total quantity, approximately 3 tons of dexamphetamine were used for medical purposes in 2003. Exports of dexamphetamine from the United States in 2003 remained small (123 kg). Thus, stocks of the substance rose from only 365 kg in 1998 to an annual average of 4.5 tons during the period 1999-2003.

18. Dexamphetamine imports by Australia rose from only 6 kg in 1991 to 61 kg in 1995 and then continued to increase sharply to an average of 155 kg annually in the five-year period 1999-2003. Dexamphetamine imports reported by Canada rose from 7 kg in 1991 to 100 kg in 2003. Dexamphetamine is also imported into the United Kingdom. Those imports averaged about 50 kg annually in the period 1999-2003.

19. Metamphetamine consumed in the United States is obtained almost exclusively from domestic manufacture. In 2003, 834 kg of methamphetamine were used for the manufacture of 875 kg of benzphetamine, prescribed for obesity. All other countries using metamphetamine for medical purposes cover their needs mostly through imports. The main importer of metamphetamine until 2001 was Chile, with an average import of 7.2 kg for the period 1999-2003. In 2002, the United Kingdom imported, for the first and only time during the five-year period 1999-2003, about 100 kg of metamphetamine.

20. In recent years, about 400 kg of levomethamphetamine have been used annually in the United States for the manufacture of over-the-counter nasal inhalants for domestic use, which are exempted in that country from certain control measures in accordance with article 3 of the 1971 Convention. In 2003, 606 kg were used for that purpose.

21. The countries with the highest levels of medical use of amphetamines, calculated on the basis of statistics provided for the years 1999, 2001 and 2003² and expressed in S-DDD per 1,000 inhabitants per day,³ are listed in table 1 according to their level of consumption for the year 2003.

¹ The method of calculating levels of consumption of psychotropic substances is explained in the explanatory note to table IV of the present publication.

² The list of defined daily doses for statistical purposes (S-DDD) used in these calculations is presented in table III of the present publication.

Table 1. Calculated medical consumption of amphetamines, 1999, 2001 and 2003

Country ^a	<i>S-DDD per 1,000 inhabitants per day</i>		
	1999	2001	2003
United States of America	4.93	4.26	6.23
Australia	1.49	1.54	1.76
Canada	0.45	0.45	0.80
Iceland	0.00	0.78	0.71
Sweden	0.14	0.20	0.22
Chile	0.36	0.28	0.18
New Zealand	0.11	0.14	0.14
United Kingdom	0.20	0.11	0.14
Norway	0.14	0.07	0.13
Belgium	0.21	0.08	0.02

^a Countries are listed according to their level of consumption of amphetamines in 2003.

Use as intermediate substances

22. Most of the amphetamines manufactured worldwide are used in industry as intermediate substances for the manufacture of other substances. In recent years, amphetamines have mainly been converted to substances used as anorectics (benzfetamine, clobenzorex, fenproporex and levopropylhexedrine) and antiparkinsonian drugs (selegiline). Occasionally, small quantities of amphetamines are also converted into other substances, such as famprofazone (an analgesic) and amfetaminil (a psychostimulant). Benzfetamine and fenproporex are included in Schedule IV of the 1971 Convention, whereas amfetaminil, clobenzorex, famprofazone, levopropylhexedrine and selegiline are not under international control.

23. In the 1990s, bulk manufacture of amphetamines mainly occurred in five countries: France, Germany, Hungary, Switzerland and United States. The conversion of amphetamines into other substances has taken place in all five of those countries, as well as in Ireland and Israel, which have imported large quantities of amphetamines for that purpose.

24. In France, the manufacture of amfetamine averaged about 12 tons annually in the period 1991-1995. The manufacture of that substance dropped to less than 3.5 tons in 1996 and increased again to more than 12 tons annually in 1997 and 1998, before declining to an average of 7.7 tons annually in the five-year period 1999-2003. Amfetamine has been used in France for conversion into either dexamfetamine or fenproporex. Dexamfetamine has been converted further into clobenzorex or has been exported. Levamfetamine obtained during the process of separating dexamfetamine from amfetamine has been used again for the manufacture of amfetamine by racemization.

25. The quantity of amfetamine used in France for the manufacture of fenproporex declined from around 3 tons annually in the period 1991-1994 to about 1.3 tons annually in the period 1995-1999. In 2001, however, as the use of anorectics diminished in France, no amfetamine was used for that purpose. In 2002, only about 494 kg were used for the manufacture of fenproporex. In 2003, however, more than 1.4 tons have been used for that purpose.

26. The quantity of amfetamine used in France for the manufacture of dexamfetamine averaged about 9 tons annually in the period 1991-1995. The quantity of dexamfetamine obtained through that process averaged about 2.5 tons annually. In 2003, 2.6 tons of dexamfetamine were manufactured. Until 1995, approximately 2 tons of dexamfetamine had been used annually in France for conversion into clobenzorex. In the period 1999-2002, the quantity of dexamfetamine used for that purpose averaged around 1.3 tons annually. In 2003, about 1.5 tons of dexamfetamine were used for that purpose. Exports of dexamfetamine from France declined from an annual average of 875 kg in the period 1991-1993 to an annual average of about 212 kg in the period 1999-2003.

27. A total of 12.5 tons of metamfetamine racemate was manufactured in France in the period 1999-2003. The manufacture of that substance has been very irregular, reaching a record level of more than 6 tons in 1996, dropping to zero in 1997, then rising again to 3.6 tons in 2003. The substance has mainly been exported (a total of more than 11 tons since 1999) or converted into levomethamphetamine and metamfetamine. In 2003, about 1.18 tons of metamfetamine racemate were converted into 716 kg of metamfetamine and 820 kg of levomethamphetamine. The latter has mainly been used for export (about 1.5 tons in the period 1999-2003). Metamfetamine obtained during the process of separating levomethamphetamine has been added to stocks, which averaged 3 tons annually in the period 1996-1999 and reached 3.8 tons in 2000, 4.5 tons in 2002 and nearly 6 tons in 2003.

28. The level of import of amfetamine averaged 63 kg annually in the five-year period 1999-2003; 41 countries reported imports of the substance at least once during that period. Chile was the main importer of amfetamine in 2003 (11 kg). In Germany, all the manufactured 2.5 tons of amfetamine were utilized for the manufacture of more than 3 tons of fenproporex. The manufacture of levomethamphetamine started in 1993 (377 kg). The substance has been used in that country almost entirely for conversion into selegiline. The total quantity manufactured in the period 1997-1998 was 7.7 tons, of which 4.3 tons were converted into selegiline and the rest was added to stocks. No manufacture of levomethamphetamine or selegiline was reported in the period 1999-2001. In 2002, a total of 2.8 tons of the substance was manufactured and no manufacture of the substance took place in 2003. In 1995 and 1996, Germany reported the manufacture of substantial amounts of metamfetamine (a total of 6.6 tons). All of the metamfetamine manufactured was converted into levopropylhexedrine. No manufacture of metamfetamine took place in 1997, whereas a total of almost 6 tons of the substance was manufactured in the period 1998-2000. While no manufacture of metamfetamine was reported for 2001 and 2003, 5.1 tons were manufactured in 2002. All of the metamfetamine manufactured was converted into levopropylhexedrine.

29. Between 1991 and 1998, the annual manufacture of amfetamine in Switzerland fluctuated between 1.4 tons (in 1993) and nearly 2.5 tons (in 1996). No manufacture of that substance took place in 1997. Manufacture rose sharply in 1999 to a record level of 8.3 tons. However, since 2000, no manufacture of amfetamine in Switzerland has been reported. Amfetamine was used almost entirely for conversion into fenproporex. Until 1994, fenproporex was also manufactured from dexamfetamine imported from France (400 kg in 1994).

Occasionally, metamfetamine was used for conversion into fenproporex. In 1995, 1.2 tons of metamfetamine were manufactured and converted into fenproporex. Also in 1995, 200 kg of metamfetamine racemate were imported and used for the manufacture of famprofazone.

30. In the 1990s, the trend in the manufacture of amfetamine in the United States mostly reflected changes in the demand for dexamfetamine, into which it was converted. The manufacture of amfetamine, which during the 1980s was stable at a level below 50 kg annually, began to increase sharply after 1994, amounting to around 6.8 tons annually during the period 1995-1997. After reaching a record level of nearly 19 tons in 2000, the manufacture of amfetamine dropped to 7.4 tons in 2002 and fell further in 2003 (3.5 tons). Since 1992, metamfetamine racemate has been imported by the United States from France in large quantities (an annual average of 1.4 tons in the period 1995-1999 and 2.2 tons annually in the five-year period 1999-2003). The substance has been divided into levomethamphetamine and metamfetamine. Before 1998, about 700 kg of metamfetamine had been converted into benzfetamine each year. In 2003, of the 1.1 tons manufactured, 834 kg of metamfetamine were utilized for the manufacture of benzfetamine (875 kg).

31. Hungary reported for the first time the manufacture of metamfetamine (2.3 tons) in 1997 and used the substance for conversion into selegiline. In 1999, almost 6 tons of metamfetamine were manufactured in Hungary. Since that year no manufacture of the substance has been reported. The quantity of the substance converted into selegiline totalled 3.5 tons in 1998 and 5.2 tons in 1999. Metamfetamine racemate was manufactured in Hungary in 1998 (4 tons), in 2002 (2.2 tons) and in 2003 (1.8 tons), all of which was used for conversion into selegiline. Ireland imported a total of 1.4 tons of levomethamphetamine in the period 1995-1997 and 400 kg in both 2002 and 2003. Israel last reported a significant import of levomethamphetamine in 1996 (200 kg). Ireland last reported imports of 100 kg of amfetamine in 1997, which was used for conversion into amfetaminil.

Fenetylline

32. Fenetylline was brought under international control in 1986. The manufacture of the substance was last reported in 1987. Worldwide stocks of fenetylline, which amounted to nearly 4 tons in 1987, were significantly reduced as a result of the voluntary destruction of all stocks of the substance in Switzerland in 1991 and 50 per cent of the stocks in Germany in 1992. Those stocks were destroyed in order to put an end to attempts by drug traffickers to divert fenetylline into illicit channels by using falsified import authorizations.⁴ By 2000, the remaining half of Germany's stocks had gradually been exported to the Netherlands. The Netherlands remains the only country holding important stocks of fenetylline (317 kg at the end of 2003) and is the main exporter of the substance, accounting for nearly 95 per cent of global exports. The main importer in 2003 was Belgium (90 kg), re-exporting a small part of its imports (4.7 kg) to Germany and France (372 g). No other country reported the use of fenetylline for medical purposes in 2003. The substance is prescribed for the treatment of ADD and narcolepsy and as a

psychostimulant. Attempts to divert fenetylline occurred sporadically in the past but are almost always prevented due to strict national control measures and a well-functioning international control system. In the very rare cases of successful diversion, traffickers were rapidly detected due to the stringent international control measures established for substances in Schedule II of the 1971 Convention.

Methylphenidate

33. The use of methylphenidate for medical purposes increased significantly in the 1990s. That large increase was mainly a result of developments in the United States, where the substance is heavily advertised, including direct advertisement to potential consumers. It is frequently prescribed for the treatment of ADD, primarily in children. However, since the late 1990s the use of methylphenidate for the treatment of ADD has also risen sharply in many other countries. From 2002 to 2003, almost all the main consumer countries other than the United States reported a considerable expansion in consumption. Methylphenidate is primarily used for the treatment of ADD, but the substance is also prescribed for the treatment of narcolepsy.

34. The global manufacture of methylphenidate rose very rapidly in the first half of the 1990s, from 2.8 tons in 1990 to 19.1 tons in 1999. Due to the increasing use of amphetamines for the treatment of ADD, methylphenidate manufacture dropped to 16 tons in 2000 (see figure 1), a short-lived trend, as manufacturing levels then immediately again rose to a peak of 27.5 tons in 2002. In 2003, global manufacture of 23 tons was reported. The United States has been the leading manufacturer of methylphenidate, increasing its output from 1.8 tons in 1990 to a record level of 21 tons in 2002. From 2002 to 2003, manufactures slowed slightly, with 19 tons reported in 2003. While before 2003 almost all of the methylphenidate manufactured in the United States had been for domestic use, in 2003 exports accounted for 1.3 tons, making the United States the third largest exporter of methylphenidate after the United Kingdom (5.2 tons) and Switzerland (4.5 tons). Stocks of methylphenidate in the United States increased significantly, from 500 kg in 1992 to 16.2 tons in 2003.

35. The medical requirements for methylphenidate outside the United States are mainly covered by imports from the United States, Switzerland, Spain, the United Kingdom and Canada, which are the main countries supplying that substance on the world market. In the 1980s, methylphenidate exports from Switzerland stagnated at a level of less than 400 kg annually. After 1991, Swiss exports of methylphenidate gradually increased to 1.4 tons in 1996 and reached an average of 3.5 tons in the period 2001-2003. Until 1996, exports of the substance from Switzerland were drawn from local manufacture of the raw material. Since 1997, imports of methylphenidate, mainly from the United Kingdom, have supplied the raw material for the manufacture of preparations. In 2003, the methylphenidate raw material imported by Switzerland from the United Kingdom amounted to 4.7 tons.

36. The number of countries and territories importing methylphenidate for domestic consumption has been growing. Since 1995, 118 Governments have reported such imports. Consumption of methylphenidate in the United States, by far

⁴ See *Report of the International Narcotics Control Board for 1999* (United Nations publication, Sales No. E.00.XI.1), para. 85.

Figure 1. Manufacture of methylphenidate, 1994-2003

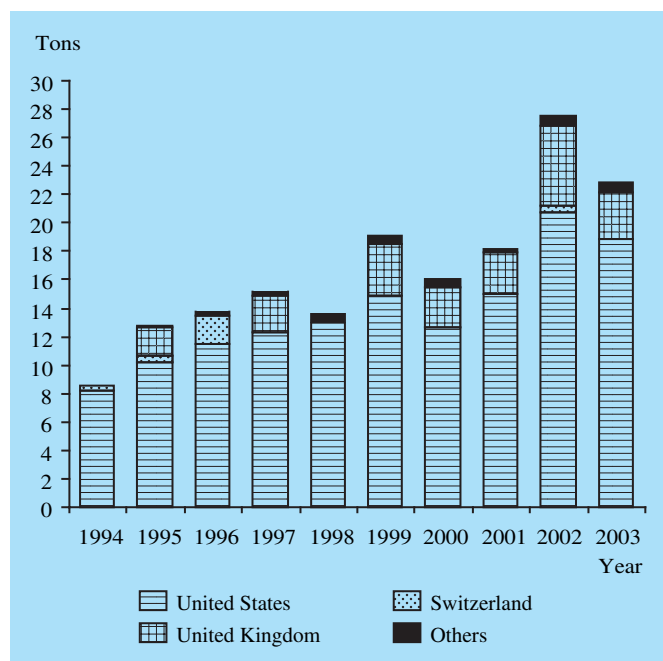
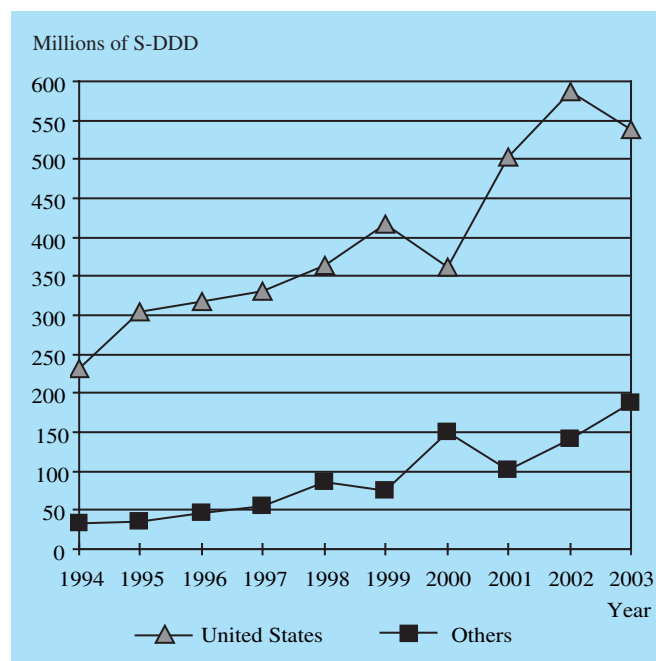


Figure 2. Calculated medical consumption of methylphenidate, 1994-2003



the largest consumer of the substance, accounting in 2003 for 70 per cent worldwide use of the substance, has been characterized by a strong and steady increase since the beginning of the 1990s. While the use of the substance has further increased in the last five years, by nearly 30 per cent, from 418 million to 538 million S-DDD in 2003, the momentum has slowed, even showing even a slight decline in consumption from 2002 to 2003 (see figure 2). This, however, must be considered in relation to increased consumption of amphetamines (see paras. 15-17). Serious concerns have been raised in the United States about the possible over-diagnosing of ADD and over-prescribing of methylphenidate. Cases involving diversion of the substance for illicit use have been identified.⁵

37. Canada, which for many years has been the second-biggest consumer of the substance, reported consumption of 48 million S-DDD in 2003. The United Kingdom reported consumption of 20 million S-DDD in 2003 and Switzerland increased its internal use of the substance from 1 million S-DDD in 1997 to 5 million S-DDD in 2003. Between 1990 and 2003, methylphenidate imports rose in Australia from 0.4 million S-DDD to 9 million S-DDD and in Germany from 0.6 million to 39 million S-DDD, imports into the Netherlands from 0.2 million to 10 million S-DDD, imports into South Africa from 0.6 million to 4.3 million S-DDD, imports into Mexico from nil to 4.2 million S-DDD and imports into Iceland increased remarkably, from 0.006 million to 0.5 million S-DDD. In Japan, where methylphenidate is used almost exclusively for the treatment of narcolepsy, imports of that substance increased from 2 million S-DDD in 1990 to 13.3 million S-DDD in 2003. In addition to the

Table 2. Calculated medical consumption of methylphenidate, 1999, 2001 and 2003

Country ^a	S-DDD per 1,000 inhabitants per day		
	1999	2001	2003
Iceland	1.21	2.35	5.27
United States of America	4.32	5.11	5.21
Canada	2.73	0.29	4.24
United Kingdom	0.55	1.04	3.83
Switzerland	0.76	2.82	2.23
Norway	0.31	0.78	2.13
Netherlands	0.91	1.11	1.36
New Zealand	1.27	1.29	1.35
Australia	0.79	0.89	1.34
Belgium	0.40	0.51	1.12
Germany	0.27	0.67	0.99
Spain	0.13	0.15	0.78
Denmark	0.14	0.22	0.40
Ireland	0.26	0.06	0.36
Sweden	0.06	0.16	0.35
Chile	0.14	0.24	0.35
Finland	0.14	0.07	0.29
Japan	0.14	0.19	0.29
Israel	0.46	0.72	0.28
South Africa	0.08	0.16	0.27

^a Countries are listed according to their level of consumption of methylphenidate in 2003.

above-mentioned countries, 19 other countries imported more than 10 kg (that is, 0.3 million S-DDD) of methylphenidate in 2003.

38. The countries with the highest level of medical use of methylphenidate, calculated on the basis of statistics provided for the years 1999, 2001 and 2003² and expressed in S-DDD per 1,000 inhabitants per day,³ are listed in table 2 according to their level of consumption in the year 2003.

⁵ See *Report of the International Narcotics Control Board for 1996* (United Nations publication, Sales No. E.97.XI.3), paras. 90-95; *Report of the International Narcotics Control Board for 1997* (United Nations publication, Sales No. E.98.XI.1), paras. 151-154; and *Report of the International Narcotics Control Board for 1998* (United Nations publication, Sales No. E.99.XI.1), paras. 148-151.

Phenmetrazine

Sedative-hypnotics

Mecloqualone

39. The medical use of phenmetrazine has been discontinued in all countries. Small stocks of the substance held in the Czech Republic and Germany were exhausted in 1996. International trade in phenmetrazine is limited to rare transactions of a few grams.

42. Mecloqualone has not been manufactured since 1980, although some stocks are being maintained. The United States reported 35 g of that substance in stock in 2003.

Methaqualone

Anti-emetics

Delta-9-tetrahydrocannabinol and its stereochemical variants

40. The substance *delta*-9-THC was originally included in Schedule I but was transferred to Schedule II in 1991 in view of the use of one of its stereochemical variants (dronabinol) for the relief of nausea associated with cancer chemotherapy. The substance is also used to stimulate appetite in patients with acquired immunodeficiency syndrome (AIDS). The United States is the only country that has reported the manufacture of *delta*-9-THC in significant quantities. The manufacture of *delta*-9-THC in that country was relatively stable, averaging 66 kg in the period 1995-1999. However, the quantity manufactured has increased considerably since 2000, with an average of 177 kg for the last three years (109.716 kg in 2003). The other two countries that reported manufacture of the substance in the past five years but in much smaller quantities are Germany (10.170 kg in 2003) and the United Kingdom (54 g in 2003). Almost all of the *delta*-9-THC manufactured in the United States and in Germany was used domestically. The United Kingdom reported less use of the substance but increased its exports. Exports of the substance in 2003 from the United Kingdom reached 5.8 kg, followed by Germany with 2.5 kg and the United States with 1.7 kg. Germany also covered its needs by means of importing more than 5 kg in 2003. In addition to Germany, 11 countries reported imports of the substance, the most significant quantities being reported by Canada (1,316 g), followed by Belgium (528 g), the Netherlands (105 g) and Austria (88 g). The United States reported stocks of *delta*-9-THC amounting to 147.6 kg and the United Kingdom reported 53.450 kg at the end of 2003.

43. In recent years, the manufacture of methaqualone has decreased dramatically from its peak level of over 50 tons annually in the 1980s. The last significant manufacture of the substance was reported in 1997 by Switzerland (340 kg) and the Czech Republic (43 kg). Since then, smaller quantities (2 g in 1998, 11 g in 2000) were manufactured only in the United States. Over the period 1998-2003, the global stocks of methaqualone, almost entirely held by Switzerland, have decreased from 2.4 tons in 1997 to 1.3 tons in 2000, to a little over 500 kg in 2003, as a result of the continued global medical use of methaqualone. In recent years, global use of the substance fluctuated significantly, falling from an average of 1.1 million S-DDD in 1999-2000 to 250,000 S-DDD in 2001, increasing to an average of 2 million S-DDD in 2002-2003. In the period 2001-2003, use of methaqualone was only reported by Germany, Switzerland, the United Kingdom and the United States. Switzerland is by far the main consumer, accounting for almost the entire global use of 1.5 million S-DDD in 2003. In Belgium, the use of methaqualone has decreased from over 800 kg in 1992 to 10.5 kg in 1998 and no consumption has been reported since then. Consumption in the Czech Republic became insignificant after 1997, when 49 kg of methaqualone was used for medical purposes. The volumes of trade in methaqualone decreased from over 40 kg in 1997 to a little over 1 kg in 2003, Germany and the United Kingdom being the only importers and Switzerland the main exporter in 2003.

Secobarbital

Hallucinogens

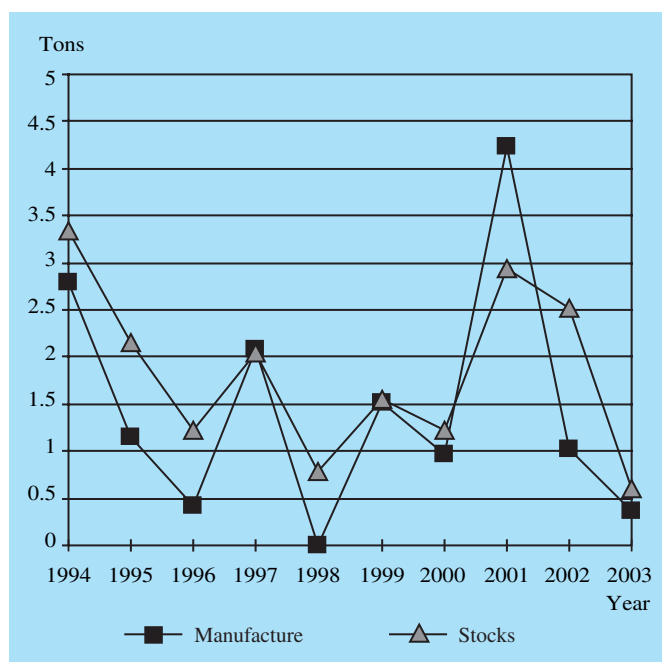
Phencyclidine

41. Phencyclidine is primarily used as an anaesthetic agent in veterinary medicine. The manufacture of small quantities of the substance has been reported in the past by Australia, France, Israel, the United Kingdom and the United States (a total of 1,229 g in the period 1995-2003). The United States was the country reporting the biggest manufacture in 2003 (888 g), accounting for 98 per cent of worldwide manufacture. The United States is also the biggest global stockholder of the substance (1.3 kg), accounting for 83 per cent of global stocks. Other countries holding stocks of phencyclidine are France (210 g), followed by (in decreasing order of stock levels) Denmark, Switzerland, Australia, Canada and Finland. International trade in phencyclidine has been limited to occasional transactions of only a few grams.

44. The manufacture of secobarbital, a substance that in the past was frequently diverted from licit manufacture and trade into the illicit traffic, has declined substantially since its transfer from Schedule III to Schedule II in 1988. More than 11 tons were reported as manufactured worldwide in 1988. The total dropped to 2.6 tons in 1990 and declined further to an annual average of 1.8 tons in the period 1997-2001. In 2001, the manufacture of secobarbital reached its highest level since 1989, amounting to 4.2 tons; it was accounted for by only two countries: Germany (2.2 tons) and the United States (1.9 tons). However, in 2003, given that no manufacture of this substance was reported by the United States, the total amount of secobarbital manufactured by Germany and Japan fell to about 363 kg (see figure 3). Global stocks of secobarbital have decreased from an average of 2.7 tons in 2001-2002 to about 600 kg in 2003.

45. During the period 1999-2003, five countries reported the manufacture of secobarbital at least once, namely, in decreasing order of amounts manufactured, Germany (for domestic use and export), the United States (mainly for domestic use), Denmark (almost exclusively for export), Japan and China (for domestic use). In the 1990s, only two countries, Japan and the United States, manufactured secobarbital regularly, almost exclusively for domestic use. In 2003, Germany manufactured about 98 per cent of world

Figure 3. Secobarbital: total reported manufacture and stocks, 1994-2003



total manufacture of secobarbital. There has been a marked decrease in the stocks of the United States since 2001. Global average imports of secobarbital were 860 kg for the period 1999-2003, with a peak of 1.7 tons in 2001. The main traders of the substance in recent years were Germany, Ireland, Switzerland and the United Kingdom. Major importers include Belgium, Canada, the Netherlands, and Sweden and the United Kingdom.

Antitussives

Zipeprol

46. Zipeprol, an antitussive with bronchospasmolytic and mucolytic activities was brought under international control in 1995. Statistics on the substance have been available only since that year. No manufacture of the substance was reported in 2003. The manufacture of zipeprol in recent years has been reported only by France (1.9 tons in the period 1996-2001) and the Republic of Korea (almost 1.3 tons in the period 1996-1998). Stocks of zipeprol in 2003 were held only by Mexico (26,646 kg) and Chile (33 kg). France exhausted all its stocks in 2003 (166 kg). In 2003, imports of the substance were reported by the Republic of Korea (84 kg) and Mexico (50 kg).

Substances listed in Schedule III

47. Nine substances are listed in Schedule III. According to the scheduling criteria adopted by the World Health Organization (WHO) Expert Committee on Drug Dependence, substances under Schedule III are those whose liability to abuse constitutes a substantial risk to public health and which have moderate to great therapeutic usefulness. One substance, cathine, belongs to the group of central nervous system stimulants; six substances belong to the group of sedative-hypnotics, four barbiturates (amobarbital, butalbital, cyclobarbital and pentobarbital), glutethimide and flunitrazepam; and the two remaining substances, buprenorphine and pentazocine, belong to the group of analgesics.

Central nervous system stimulants

Cathine

48. In the period 1999-2003, the total quantity of cathine manufactured fluctuated strongly reflecting the manufacturing levels of the only manufacturer of the substance, Germany. Manufacturing levels fluctuated between 6 tons and 211 kg and averaged 3 tons per year in the five-year period.

49. Total imports of cathine averaged 4 tons per year during the five-year period 1999-2003. The biggest regular importers of the substance in the period 1999-2003 were South Africa, Italy, Mexico and France. Imports of cathine by South Africa increased from an annual average of 1.6 tons per year during the period 1996-1998 to 1.7 tons during the period 1999-2003. Mexico increased its imports from zero in 1996 to 1.2 tons in 2001, followed by 405 kg in 2003. Italy

imported an average of 1 ton of cathine annually during the period 1999-2003, most of which was for re-export. Cathine imports by Switzerland, which had averaged 415 kg annually in the previous four years, fell sharply to 81 kg in 2003. Germany, the world's biggest exporter of cathine, supplemented its domestic manufacture of the substance by importing an average of almost 510 kg annually during the period 1997-2001. No import of the substance was reported in either 2002 or 2003. Germany's exports of the substance averaged 2.8 tons annually during the period 1999-2003. Italy, a traditional exporter of the substance, reported an export of 1 ton during the period 1999-2003. Switzerland, for the second consecutive year, did not export cathine in 2003.

Sedative-hypnotics

50. Barbiturates are a group of central nervous system depressants that are closely related in their chemical structure. Classified as sedative-hypnotics, they used to be prescribed for the treatment of insomnia, anxiety, stress and epilepsy. Some barbiturates were also used as anaesthetics for short surgery interventions (ultra-short-acting substances) while others have selective anticonvulsant activity. Individual barbiturates differ in speed of onset, duration of action and potency. A low dose of 50 mg can relieve anxiety and tension, while a higher dose of 100-200 mg usually leads to sleep. Similarly to benzodiazepines, barbiturates encountered on the illicit market have usually been diverted from licit circuits rather than synthesized in clandestine laboratories. The potential for abuse is great and the long-term effects show the development of tolerance and strong physical and psychological dependence.

Figure 4. Barbiturates listed in Schedule III: total reported manufacture, 1994-2003

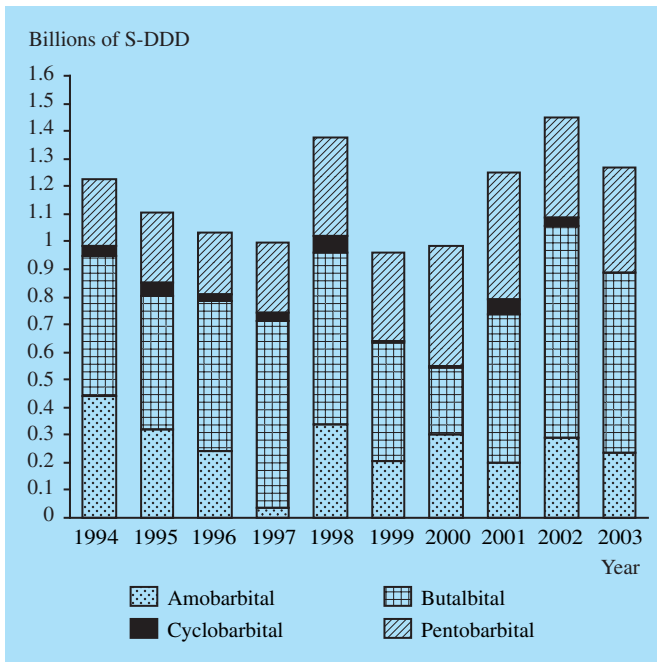
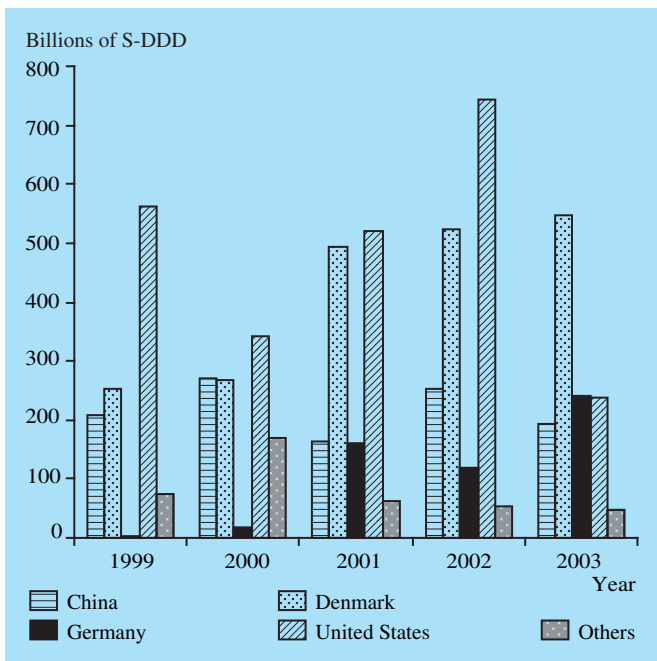


Figure 5. Barbiturates listed in Schedule III: total reported manufacture, by country, 1999-2003



Amobarbital, butalbital, cyclobarbital and pentobarbital

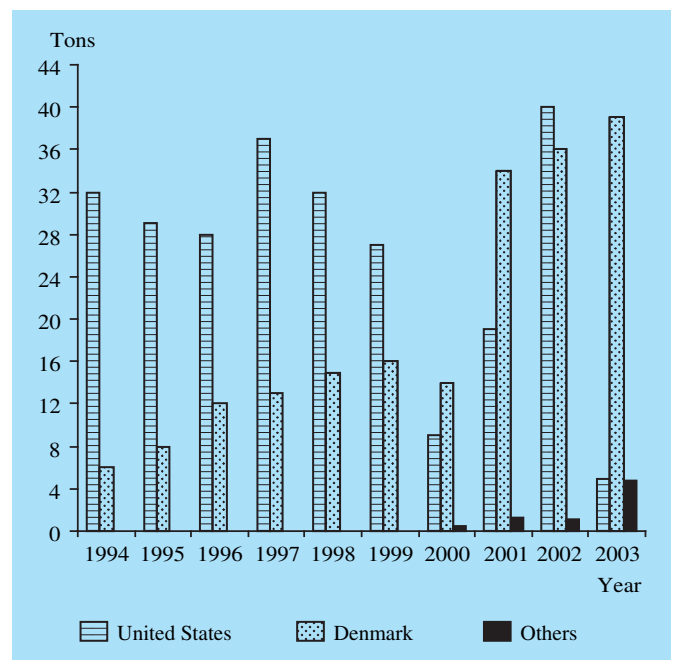
51. The substances amobarbital, cyclobarbital and pentobarbital were scheduled in 1971 when the 1971 Convention was adopted, while butalbital was added in 1987 to Schedule III of the 1971 Convention. Three of these barbiturates, amobarbital, butalbital and cyclobarbital, are mainly used as hypnotics (to induce sleep) and therefore have a

place today in the treatment of intractable insomnia. Pentobarbital, a short-acting barbiturate, has also been used for pre-medication in anaesthesia. In per capita terms, during the period 1999-2003, the United States, Canada, Italy, Denmark and Australia had the highest calculated usage of these four substances, the average figures ranging from 3.1 to 6.5 S-DDD per 1,000 inhabitants per day. Total reported manufacture of those substances fluctuated around its five-year average of 1.12 billion S-DDD (see figure 4). In figure 5, the distribution of shares of total output in 2003 among the manufacturing countries is presented.

52. Global manufacture of butalbital averaged about 49.2 tons per year during the period 1999-2003, although there were significant fluctuations (see figure 6). The only regular manufacturers of butalbital in the last decade were Denmark, Germany and the United States. Traditionally, the United States was the main manufacturer of the substance, accounting for up to three quarters of the total output. Butalbital has been used for the manufacture of a number of preparations exempted in the United States from certain control measures in accordance with article 3 of the 1971 Convention. In recent years, the manufacture of butalbital in the United States has been fluctuating, falling sharply from 40 tons in 2002 to 5.4 tons in 2003 and accounting for a little over half of total output in the past two years. The quantities manufactured in Denmark have increased steadily, from 14.5 tons in 2000 to 38.8 tons in 2003, accounting for 80 per cent of the world's output. In recent years, the United States, Italy, Canada and Denmark were the countries with the highest rates of use of the substance.

53. Among the 12 countries that reported exports of butalbital during the five-year period 1999-2003, Denmark accounted for as much as 98 per cent of global exports of the substance in 1999 and remained the biggest exporter in 2003, supplying 85 per cent of the 38 tons exported globally.

Figure 6. Butalbital: total reported manufacture, 1994-2003



The exports of butalbital by the United States were highly irregular, as the volume of exports almost doubled from 1996 (1.1 tons) to 1997 (2 tons) before collapsing to an average of 87 kg during the period 1998-1999; no exports of that substance were reported by the United States for 2000 and 2001, while an average of 813 kg of exports were reported in 2002-2003. Italy and Switzerland were among the smaller exporters of butalbital during the period 1999-2003, when their combined annual average was 190 kg.

54. The United States, Italy and Canada remain the main importers of butalbital. The imports of the substance by the United States were subject to significant fluctuations during the period 1999-2003. Most recently, import volumes to the United States increased from 4.3 tons in 2000 to 40 tons (87 per cent of the total) in 2003. The Italian share of total imports of the substance fell from 72 per cent in 1997 to 8 per cent in 2003, while the imports of butalbital by Canada were relatively stable and averaged 1.4 tons per year during the period 1999-2003. During the same period, Denmark and Switzerland imported small quantities of the substance.

55. The total reported manufacture of pentobarbital increased steadily from 32.4 tons in 1999 to an average of 44.7 tons during 2000-2001, then gradually fell back to 37.9 tons in 2003 (see figure 7). The United States, Germany, Denmark and Switzerland were the leading manufacturers of the substance in recent years, Germany and the United States supplying 47 and 44 per cent of global output respectively in 2003. In the last five years, on average, Australia, Denmark, New Zealand and Ireland have had the highest relative use of the substance, ranging from 2.2 to 3 S-DDD per 1,000 inhabitants per day.

56. About 26 tons of pentobarbital were internationally traded annually in the five-year period 1999-2003. The biggest exporters of the substance during that period were, in de-

creasing order of export volumes, Germany, Switzerland, Canada, the United States and Denmark. Together, they accounted for over 91 per cent of global exports of the substance in that period. In 2003, Germany was the leading exporter: the 10.4 tons of pentobarbital supplied by that country accounted for about 43 per cent of global exports of the substance. The remaining countries listed above, on average, exported 4 to 5 tons of pentobarbital annually in the period 1999-2003. According to the reported statistics, 66 countries imported pentobarbital during the period 1999-2003. Canada (5.8 tons), France (3.7 tons), the United States (2.8 tons) and Australia (1.8 tons) were the biggest importers of the substance in 2003, accounting for 76 per cent of the total flows. They were followed by Switzerland, Sweden, South Africa and Egypt.

57. The main countries manufacturing amobarbital in recent years were China, Japan and Denmark (see figure 8). China is by far the dominant manufacturer of the substance, supplying an average of 21.8 tons or 88 per cent of the world's output during the period 1999-2003, and was also the main exporter of the substance. China's exports of amobarbital have been decreasing in recent years: from an average of 5.5 tons during 1999-2000 to an average of 2.6 tons during 2001-2002, falling sharply to 240 kg in 2003. The Netherlands is the main importer of the substance, all for re-export, supplying an average of 3.3 tons annually. Denmark, Ireland and Germany were the other main exporters of the substance in recent years.

58. Global annual imports of amobarbital averaged 6.2 tons for the period 1999-2003, while the global calculated use of the substance fluctuated around its five-year average of 24.2 tons. Besides the Netherlands, Romania, Ireland and Hungary were the world's biggest importers of amobarbital in recent years. In the Netherlands, imports of amobarbital showed a notable decrease during 1999-2003, falling

Figure 7. Pentobarbital: total reported manufacture, 1994-2003

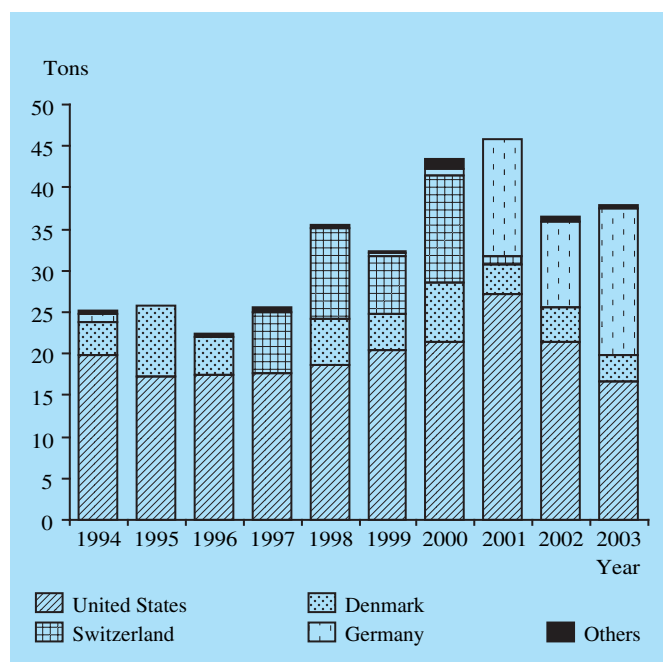


Figure 8. Amobarbital: total reported manufacture, 1994-2003

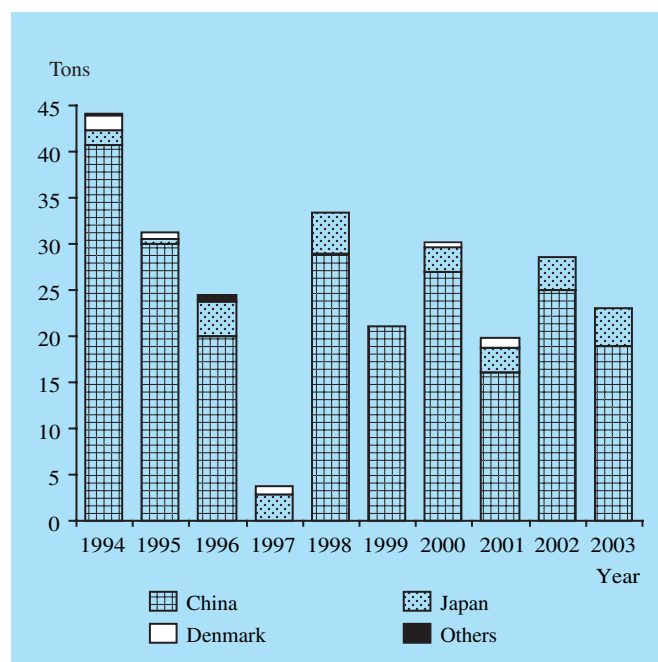
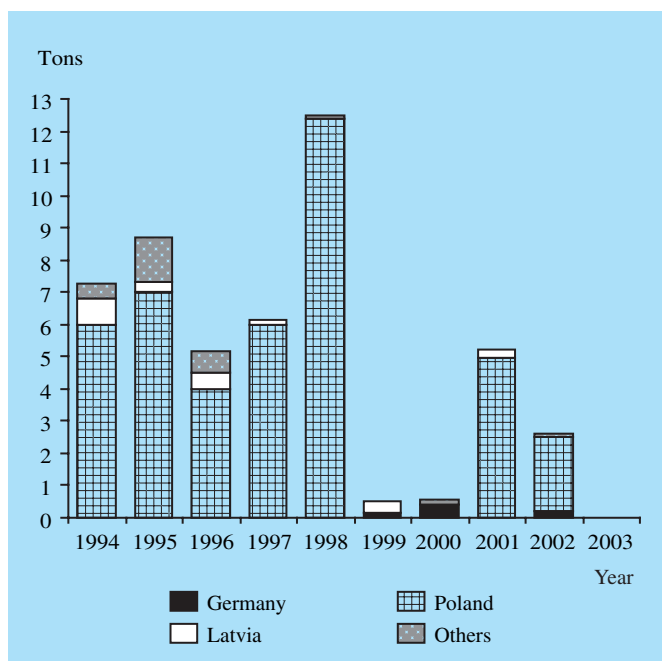


Figure 9. Cyclobarbital: total reported manufacture, 1994-2003



from an average of 4.8 tons per year during 1999-2000 to an average of 1.8 tons during the next two years, while no imports were reported for 2003. Romania imported 7.1 tons of amobarbital in 2002, accounting for over 67 per cent of the total reported imports. Although its imports fell in 2003 to 2.4 tons, in percentage terms Romania became a relatively bigger importer, with 84 per cent of global reported imports.

59. Cyclobarbital is mainly used in some Central European and Eastern European countries, Poland and Latvia having the highest per capita usage rates during 1999-2003, with 0.9 and 0.6 S-DDD per 1,000 inhabitants per day, respectively. In recent years, Poland was the leading manufacturer of cyclobarbital, accounting for up to 99 per cent of the world total (see figure 9). During the period 1999-2000, when no manufacture was reported by Poland, world total manufacture of cyclobarbital averaged only 540 kg, while during 2001-2002 Poland accounted for 3.6 tons or 92.5 per cent of the total world manufacture. Latvia and Germany each averaged less than 200 kg of annual cyclobarbital manufacture during the period 1999-2003. No manufacture of cyclobarbital was reported in 2003.

60. Global exports of cyclobarbital have decreased in recent years, from an annual average of 2.5 tons during 1999-2001 to an average of 1.4 tons during 2002-2003. Poland was the main exporter of the substance, averaging 1.4 tons during the period 1999-2003, which represented about 70 per cent of total exports of cyclobarbital during that period. The other main exporters of cyclobarbital were Switzerland, Germany and Latvia, their exports of the substance fluctuating around their combined annual average of 194 kg per year during the period 1999-2003. The Russian Federation, having no domestic manufacture of cyclobarbital, has been the biggest importer of cyclobarbital, its imports of the substance averaging 1.2 tons per year during the period 1999-2003. Latvia, Romania and Switzerland were the other significant importers of cyclobarbital in the last three years.

Glutethimide

61. Total reported manufacture of glutethimide fluctuated considerably during the 20-year period 1984-2003. After peaking at over 90 tons annually in the early 1980s, global manufacture of the substance fell sharply to 3.5 tons in 1994, only to increase to an annual average of 21 tons during the period 1995-1997. Since then, manufacture of glutethimide has been reported only by Hungary (7.6 tons in 1998 and 732 kg in 2001), which has been the sole manufacturer of the substance since 1997.

62. Just as manufacture of glutethimide has dropped, so has the volume of international trade in the substance, decreasing tenfold, from an annual average of 14.6 tons during the period 1995-1998 to an annual average of 1.4 tons during the period 1999-2001, and decreasing further in 2003 to 300 kg. Hungary was the only exporter of glutethimide in 2003.

63. The two main importers of glutethimide in former years, Switzerland and Bulgaria, did not report any imports in 2002 and 2003. In Switzerland before 2002, a significant share of imports of glutethimide was re-exported and large quantities of the substance were converted into aminoglutethimide, a non-psychotropic substance used as an antineoplastic agent. Bulgaria imported 650 kg of the substance between 1998 and 2001. In 2003, only Romania (300 kg) reported imports.

Flunitrazepam

64. Flunitrazepam continues to be one of the most frequently abused benzodiazepines. The illicit market for flunitrazepam appears to be supplied mainly through diversion of the substance from domestic distribution channels and not through diversion from international trade. Preparations of flunitrazepam are frequently smuggled out of countries where the diversion has taken place and into other countries where there is an illicit market for such preparations. Several countries, including major manufacturers and importers of the substance, have adopted strict control policies for flunitrazepam, in close cooperation with the pharmaceutical industry.

65. Due to frequent diversions and abuse, flunitrazepam was transferred from Schedule IV to Schedule III in 1995. In licit medical use, like diazepam it is used for the short-term management of insomnia and, in some countries, for pre-medication and for induction of general anaesthesia. Since 1997, only Italy and Switzerland have reported manufacture of the substance. In 2003, Italy reported about one third and Switzerland nearly two thirds of the total global manufacture of 1,292 kg. This is a little less than the former peak year level of 2000, when these two countries accounted for a global total of nearly 1.4 tons, making it the most manufactured benzodiazepine-type sedative-hypnotic in 2000 as well as in 2003. Argentina, Brazil, the Czech Republic and Denmark were the only other countries reporting the manufacture of flunitrazepam in the 10-year period 1994-2003.

66. International trade in flunitrazepam was relatively stable during the period 1992-2003, fluctuating around a 10-year average of 1.1 tons. Italy, Ireland, the United Kingdom, the Czech Republic and Germany have traditionally been the

main exporters of flunitrazepam, supplying an average of 90 per cent of global exports during the period 1992-1996. Although those countries still accounted in 2003 for 22 per cent of global exports of flunitrazepam, in recent years Switzerland has become the leading exporter of the substance, accounting for three quarters of total exports in 2003. The annual average of global imports of the substance during the period 1998-2003 was 15 per cent lower than the average during the period 1992-1996, most probably due to strict national control measures and the transfer of the substance to Schedule III of the 1971 Convention. Japan remained the leading importer of flunitrazepam, with more than half of the global exports (981 kg) in 2003. The other main importers of flunitrazepam in the period 1999-2003 were, in decreasing order of import volumes, Germany, Switzerland, France, the Czech Republic, Brazil, the Republic of Korea and the Netherlands, which reported importing quantities well below 100 kg per year. Thirty-two other countries in all regions of the world imported flunitrazepam in 2003 in quantities exceeding 1 kg.

Analgesics

Buprenorphine

67. Buprenorphine, listed in Schedule III since 1989, belongs to the family of opioids used mainly as an analgesic. In several countries, buprenorphine is also used in the detoxification and substitution treatment of heroin addiction. Total reported manufacture of the substance increased steadily from 1993 onwards, with marked increases in 1999 (978 kg) and 2000 (1,056 kg), when the substance was used in higher doses for substitution treatment of heroin addicts. In 2003, the total manufacture of the substance continued to increase, reaching a level of 1,678 kg. The United Kingdom continued to be the main manufacturer of buprenorphine, accounting for 84 per cent of the world total, on average, during the period 1999-2003; its manufacture of the substance increased, with fluctuations from 274 kg in 1996 to 1,347 kg in 2003. The second largest manufacturer of buprenorphine was Australia, with an increasing trend, from 34 kg in 1999, the year for which manufacture of the substance was first reported, to 329 kg in 2003, mainly destined for export. India has also been a manufacturer of buprenorphine, with annual average manufacture of 17 kg during the period 1999-2002, but no data has yet been received on manufacture for 2003. The other manufacturers of buprenorphine in recent years included the Netherlands, with 41 kg reported in 2000, the Czech Republic, with 10 kg reported in 2002 and China with 2 kg reported in 2002 and 2003. Total stocks of the substance increased steadily from 115 kg in 1996 to 877 kg in 2003. In 2003, significant quantities were held in stock by the United Kingdom (431 kg), Germany (157 kg), France (137 kg) and Australia (97 kg).

68. Total exports of buprenorphine rose gradually from 100 kg in 1996 to 403 kg in 2001, with a marked increase in 2002 (702 kg) and in 2003 (821 kg). That trend was driven by the rise in buprenorphine exports from Australia, Germany and the United Kingdom, the main exporters of the substance. Other countries that have reported exports of buprenorphine in recent years are Argentina, France, India and the Netherlands.

69. France was the dominant importer among the 35 countries that reported annual imports of more than 1 kg of buprenorphine in the period 1999-2003. France's imports of the substance grew steadily from 68 kg in 1996 to 293 kg in 2003; almost all those imports were destined for domestic use. In 2003, Germany continued to increase its imports of buprenorphine (265 kg), to reach levels similar to those of France. Other major importers of buprenorphine in 2003 were the United States (75 kg), Spain (42 kg), Italy (38 kg), the Republic of Korea (19 kg), New Zealand (17 kg), Belgium (15 kg) and Austria (14 kg). Two countries, namely, Australia and the United Kingdom, also imported non-trivial quantities of buprenorphine (26 kg and 23 kg respectively) in 2003. Increased use of the substance is reflected in statistical reports from Australia, France, Germany, Italy and the United Kingdom, while small-scale use for substitution treatment of heroin addiction has also been reported by China, the Czech Republic, Denmark, Finland, India, Norway, Portugal, Sweden and Switzerland.

Pentazocine

70. Pentazocine is an opioid analgesic with actions and uses similar to those of morphine. It was included in Schedule III in 1984. While total reported manufacture of pentazocine rose steadily from 1.3 tons in 1996 to 6.6 tons in 2002, in 2003 total manufacture fell considerably (2.7 tons), reaching similar levels to those of the mid-1990s. Total stocks of pentazocine continued to increase, from an average of 814 kg held in stock during the period 1996-1997 to an average of 3.64 tons held in stock during the last five years. Italy was the sole manufacturer of pentazocine in 2003, manufacturing 2.675 tons, with an average of 2.68 tons in the past five years. India, the United Kingdom and the United States were also main manufacturers of the substance in recent years. The manufacture of pentazocine in the United Kingdom has been irregular, averaging 1.3 tons per year in the past and 258 kg in 2002, with no manufacture reported in 1999, 2001 or 2003. India, which had not reported pentazocine manufacture during the period 1996-1998, became one of the leading manufacturers of the substance, manufacturing an average of 1.7 tons in the period 1999-2002, mainly for domestic use. No data has yet been received from India on manufacture for 2001 and 2003. The other manufacturer of the substance was the United States, which manufactured a total of 693 kg in the period 1999-2002, with no manufacture in 2003. Other countries that have reported manufacture of pentazocine in recent years are Hungary (136 kg in 2001) and Slovenia (103 kg in 1998). Large stocks of the substance held at the end of 2003 were reported by the United States (1,389 kg), the United Kingdom (1,338 kg) and Italy (1,144 kg).

71. Of the 21 countries that reported exports of pentazocine in recent years, Italy was the leader, accounting for about 68 per cent of global exports in 2003. The major importers of the substance in 2003 were the United States (1,122 kg), Japan (405 kg), Canada (197 kg) and Romania (152 kg). Over 40 countries reported imports of pentazocine in quantities higher than 1 kg in recent years. Significant quantities were also imported by Switzerland (405 kg), Portugal (285 kg), the United Kingdom (198 kg), and Slovenia (190 kg), but those were used mainly for re-export.

Substances listed in Schedule IV

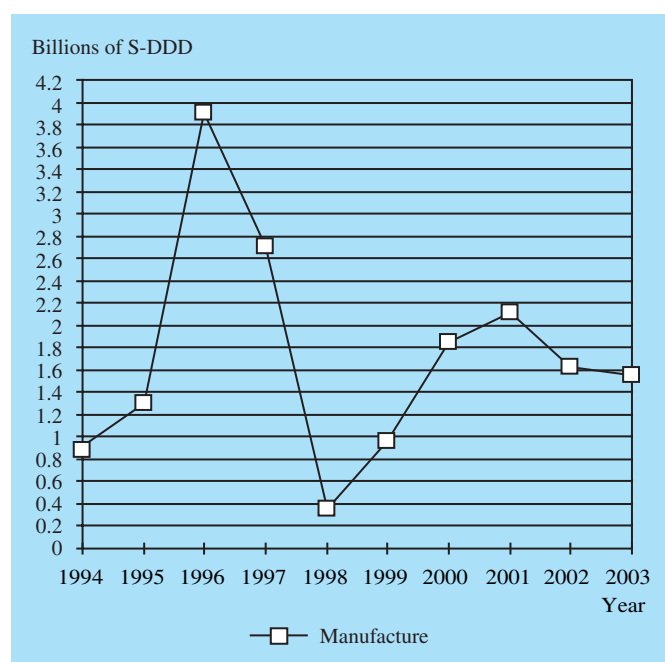
72. According to the WHO scheduling criteria for the inclusion of substances in Schedule IV of the 1971 Convention, substances for inclusion in that Schedule are those “whose liability to abuse constitutes a smaller but still significant risk to public health than substances included in Schedule III and which have a therapeutic usefulness from little to great”. Sixty-two substances with various applications in medicine are listed in Schedule IV. Substances included in that Schedule belong to the following groups: central nervous system stimulants (14 substances); benzodiazepine-type anxiolytics (22 substances); other anxiolytics (1 substance); benzodiazepine-type sedative-hypnotics (11 substances); benzodiazepine-type anti-epileptics (1 substance); barbiturate-type sedative-hypnotics and anti-epileptics (7 substances); other sedative-hypnotics (5 substances); and analgesics (1 substance).

Central nervous system stimulants

73. Fourteen stimulants are listed in Schedule IV: amfepramone, aminorex, benzfetamine, etilamfetamine, fencamfamin, fenproporex, mazindol, mefenorex, mesocarb, pemoline, phendimetrazine, phentermine, pipradrol and pyrovalerone. Both amfepramone and pipradrol were originally included in Schedule IV, while all the other stimulants were added at later stages. The stimulants in Schedule IV are essentially used as anorectics or for the treatment of ADD.

74. Total reported manufacture of central nervous system stimulants listed in Schedule IV showed extreme fluctuations during the period 1994-2003 (see figure 10). The level of manufacture was quite stable, with an annual average of

Figure 10. Central nervous system stimulants listed in Schedule IV: total reported manufacture, 1994-2002

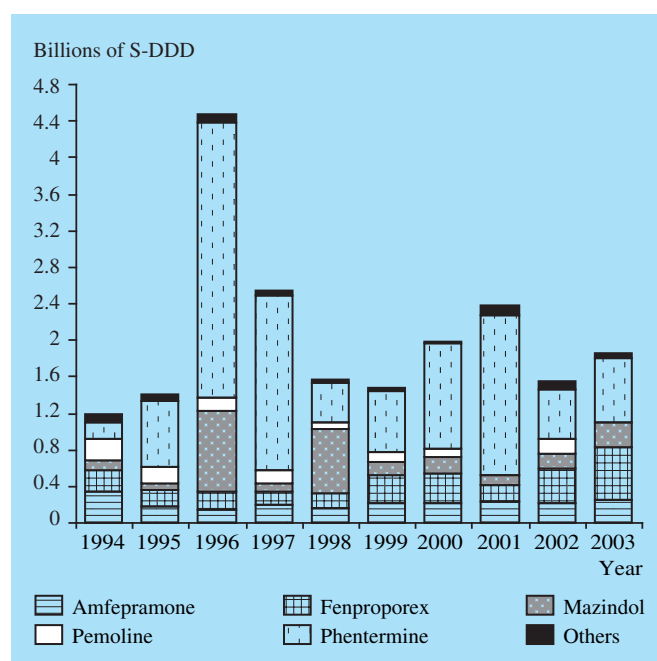


1.2 billion S-DDD for total reported manufacture in the period 1991-1995. In 1996, a record high of 3.9 billion S-DDD was reached as a result of the increasing use of stimulants as anorectics. As a consequence of differing medical views on the use of those substances for the treatment of obesity, some pharmaceutical preparations were withdrawn from the market and total manufacture started to decrease in 1997, reaching a record low level in 1998 (356 million S-DDD). After 1998, manufacture increased once more and reached a total reported manufacture of 2.2 billion S-DDD in 2001. Since that year, global manufacture has decreased slightly to 1.4 billion S-DDD in 2003, equal to the level recorded about 10 years earlier.

75. The fluctuations in total world reported manufacture and use of central nervous system stimulants listed in Schedule IV are mainly a reflection of developments in the use of phentermine in the United States (see figure 11). The sharp increase in the consumption of phentermine in the United States in 1996 and 1997 was due to its prescription for the treatment of obesity in combination with another anorectic (fenfluramine). After the withdrawal in September 1997 of fenfluramine from the United States market due to serious adverse effects of that substance, the use of phentermine also dropped noticeably. During the period 2001-2003, manufacture and consumption picked up again and phentermine became once again the most used anorectic in the United States.

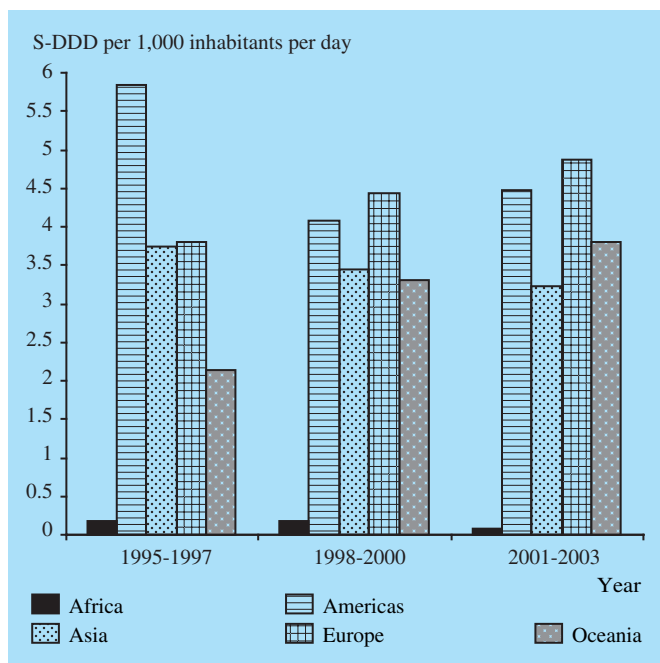
76. The highest per capita consumption of stimulants in Schedule IV during the 1990s has been in the Americas. The temporary decline in the use of phentermine in the United States and the measures against the inappropriate use of

Figure 11. Central nervous system stimulants listed in Schedule IV: calculated global consumption,* 1994-2003



*Statistical data submitted by Governments are used to calculate the approximate global consumption in a given year.

Figure 12. Central nervous system stimulants listed in Schedule IV: average national consumption in selected countries, by region,* 1995-2003



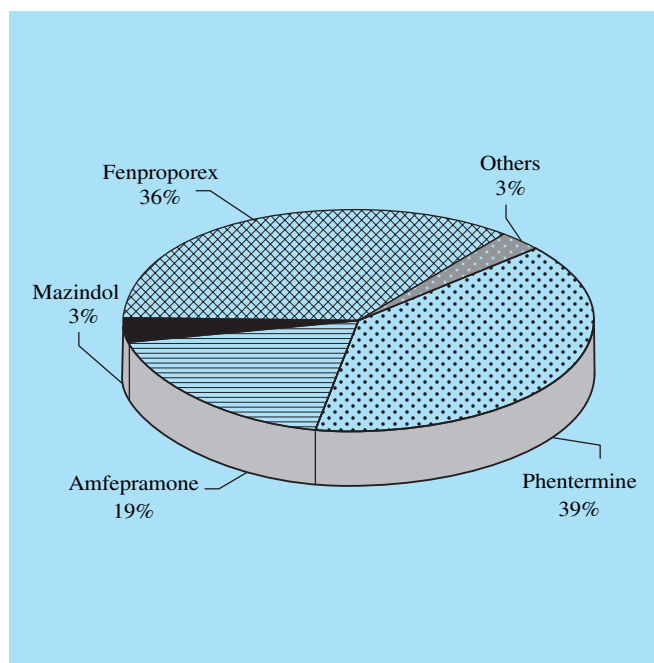
* Statistical data submitted by Governments are used to calculate the average annual consumption for a three-year period. Data from the five countries with the highest consumption were included in the calculation for each region.

some stimulants in a number of countries in South America (for example, Argentina and Chile) has led to a decrease in consumption levels. However, since 2001, consumption of phentermine in the United States has again been rising. At the same time, the consumption of anorectics has increased significantly in some countries in Asia and Europe (see figure 12), which is where the highest regional per capita consumption has been recently recorded. Very divergent trends in per capita consumption have been recorded in European countries. While the consumption of anorectics has decreased significantly in some European countries, others have recorded remarkable increases. Worldwide, Brazil (7.4 S-DDD per 1,000 inhabitants per day), Singapore (6.3 S-DDD) and the United States (6.2 S-DDD) reported the highest calculated per capita use of stimulants in Schedule IV in the period 2001-2003. In recent years, reports of diversion and abuse of anorectics have been received from several countries in all regions of the world.

77. In 2003, of the total reported manufacture of the 14 stimulants in Schedule IV, the reported manufacture of phentermine (538 million S-DDD) accounted for 39 per cent, that of fenproporex (503 million S-DDD) accounted for 36 per cent and that of amfepramone (262.5 million S-DDD) accounted for 19 per cent (see figure 13); other substances such as mazindol (44 million S-DDD) and phendimetrazine (31 million S-DDD) accounted for 3 and 2 per cent respectively, while pemoline (0.15 million S-DDD) and benzphetamine (12 million S-DDD) accounted for 1 per cent. No manufacture was reported for any of the other central nervous system stimulants included in Schedule IV.

78. Phentermine has been the major substance in the group of stimulants in Schedule IV, its share of total stimulant manufacture fluctuating widely between 25 per cent and

Figure 13. Central nervous system stimulants listed in Schedule IV: substances' shares of total reported manufacture, 2003



76 per cent in recent years. In the period 1991-1995, the average annual manufacture of phentermine was about 9.5 tons; and in 1996, its total manufacture amounted to 50 tons, the highest level ever reported. In 1997, that figure decreased to 30 tons and no manufacture of phentermine took place in 1998. Total reported manufacture of phentermine increased steadily from 2.6 tons in 1999 to 16 tons in 2000 and peaked markedly in 2001 at 23.8 tons. Manufacture then dropped to 12 tons in 2002 and to 8 tons in 2003. The main manufacturers during the period 1998-2003 were the United States (21.6 tons in 2001, 12.4 tons in 2002 and 5 tons in 2003) and Germany (1.7 tons in 2001 and 2.4 tons in 2003); smaller quantities were manufactured by Italy in 2001 and 2003.

79. Eleven countries reported the export of at least 100 kg of phentermine at least once during the period 1998-2003. The United Kingdom has been the main exporter of phentermine in recent years (averaging 1.6 tons per year during the period 1999-2003), followed, in decreasing order of export volumes, by the Netherlands, Germany, Switzerland, Australia and the United States. Forty-three countries reported the import of phentermine at least once during the five-year period 1999-2003. The United States was the main importer of the substance in 2003 (accounting for about 32 per cent of global imports) and re-exported a significant share of it. Thailand's imports of the substance in 2002 fell by more than 50 per cent and decreased further in 2003.

80. In 2003, total reported manufacture of amfepramone, a substance mainly used as an anorectic, amounted to about 20 tons. Three countries reported having manufactured amfepramone in 2003: Brazil (15 tons), Italy (798 kg) and Switzerland (4 tons). Switzerland is the main exporter of amfepramone, having reported exports of nearly 6 tons of the substance annually on average in the period 1999-2003. While Italy exported practically all of the amfepramone that it manufactured until 2002, no export of the substance was reported in 2003. The amfepramone manufactured in Brazil

is almost exclusively for domestic use. In 2003, the largest imports of amfepramone were reported by Mexico (935 kg), the United States (867 kg) and Germany (825 kg). Fourteen other countries reported imports of amfepramone in quantities greater than 1 kg in 2003, with only three countries reporting imports of over 200 kg: Brazil (255 kg), Chile (382 kg) and Indonesia (204 kg). Attempts to divert amfepramone from licit distribution channels and cases involving illicit trafficking in the substance have been reported in several countries in Asia and Europe in recent years.

81. Fenproporex, brought under international control in 1986, is mainly used as an appetite suppressant. Since 1986, only Brazil, France, Switzerland and recently Germany and India have reported its manufacture. In 2003, the global manufacture of fenproporex increased to 10 tons, of which 3.3 tons were manufactured in Germany (mainly for export), 4 tons in Brazil and 2.6 tons in France. In the period 1995-1999, the manufacture of fenproporex in France varied greatly, averaging around 1.3 tons annually, a significant drop from the annual average of nearly 3 tons of that substance manufactured in that country in the period 1992-1994. No manufacture of fenproporex was reported by France during the period 2000-2001. In 2002, the manufacture reported by France was about 1.1 tons and amounted to double that in 2003. Switzerland, which had reported steadily increasing manufacture of fenproporex since 1997, reaching 4.9 tons in 2000, exported all the fenproporex that it manufactured and did not report any manufacture after that year. The fenproporex manufactured in Brazil is for domestic consumption and that country was also the leading importer of the substance in 2003 (3.8 tons), followed by Switzerland (966 kg). During the five-year period 1999-2003, 14 other countries, mainly in Latin America, reported having imported the substance in quantities of more than 1 kg.

82. Mazindol is manufactured almost exclusively in Brazil (an average of 75 kg in the period 1999-2003), about half of which was for domestic consumption and the rest for export. Two other countries have reported the manufacture of mazindol: Poland in 1998 (25 kg) and 1999 (1 kg) and Argentina in 2002 (22 kg). Global use of the substance fell sharply, from 702 kg in 1998 to an annual average of 127 kg during the period 1999-2003. During the period 1999-2003, 17 countries reported having imported mazindol in quantities of at least 1 kg.

83. Italy is the main manufacturer of phendimetrazine; its manufacture of that substance reached a record level of 5.1 tons in 2001. In 2003, Italy manufactured nearly 60 per cent less and reported 2.2 tons. The United States reported the manufacture of phendimetrazine only in 1999 and 2001; in both years, it manufactured a relatively small quantity of that substance (560 kg in 1999 and 274 kg in 2001). The phendimetrazine manufactured in Italy is mainly destined for export (1.5 tons in 2003). Traditionally, the United States has been the main importer of the substance (an average of 1.7 tons annually in the five-year period 1999-2003). Since 1999, five other countries have reported imports of phendimetrazine in quantities of more than 1 kg, with the most important one being the Republic of Korea (728 kg imported in 2003).

84. The manufacture of benzfetamine has only been reported by the United States, with an average of 1.3 tons manufactured yearly in the period 2000-2001. Its manufacture

fell sharply to an average of 648 kg during 2002-2003. The benzfetamine manufactured in 2003 was all used for domestic consumption. In 2003, only Peru reported international trade in benzafetamine (import of 31 kg).

85. The manufacture of pemoline, a substance under international control since 1989, amounted to 8.7 tons in 1995, then declined sharply to 4.6 tons in 1997 and no manufacture of the substance was reported in 1998. In 2001, only the United States reported manufacture of the substance (35 kg). In 2002, both the United States and Switzerland reported the manufacture of pemoline, with the combined total amount reaching 1.4 tons. In 2003, the total manufacture of pemoline declined again sharply to 6 kg, manufactured by China. Switzerland (549 kg), China (17 kg) and the United States (9 kg) were the only exporters of the substance in 2003. The main importers of pemoline in 2003 were the United States (592 kg), Spain (54 kg) and Germany (40 kg), all three countries importing the substance mainly for domestic consumption. In 2003, six other countries reported imports of pemoline in quantities of more than 10 kg. Besides being used as a stimulant, pemoline is also used for the treatment of ADD.

86. In the 1980s and early 1990s, some of the international trade in pemoline was attributed to attempts by drug traffickers to divert that substance from licit manufacture and trade into illicit channels. Since 1993, most of those attempts have been thwarted by Governments working in close collaboration with INCB.

87. Reports on the manufacture of and trade in the other stimulants included in Schedule IV have been sporadic. In 1999, the manufacture of pipradrol was reported by France (20 kg). In 1999 and 2002, Australia reported the import of 2 kg of pipradrol and the manufacture of 3 kg of etilamfetamine (for domestic use) in 2002. In the period 1999-2003, no manufacture of aminorex, femcamfamin, mefenorex, mesocarb or pyrovalerone was reported. Sporadic trade transactions were reported for benzfetamine, fencamfamine, mefenorex and pipradrol, while no international trade was reported for aminorex, etilamfetamine, mesocarb and pyrovalerone.

Benzodiazepines

88. Thirty-three benzodiazepines were included in Schedule IV in 1984. Midazolam was added to Schedule IV in 1990 and brotizolam was added to it in 1995. Flunitrazepam was transferred in 1995 from Schedule IV to Schedule III. The number of countries and territories reporting benzodiazepine manufacture and/or trade has increased considerably. Since 1990, 184 countries and territories have reported at least once the manufacture of or trade in benzodiazepines in quantities of more than 1 kg. Global reporting on manufacture and trade in benzodiazepines was not complete until recently, when a number of important manufacturing and trading countries established national control measures for those groups of substances. Data on benzodiazepines have been made available by Switzerland only since 1997, by Austria since 1998, by Belgium in 1999 and by Canada in 2001. However, while in principle this has improved data collection and analysis of manufacture over the last years, the occasional non-submission or delayed submission of annual statistical reports by important manufacturing countries distorts calculated world manufacturing totals for the year concerned. In addition, non-submission of information

to be provided voluntarily impacts on the calculation of the world manufacturing totals. A number of countries do not include any data on end of year stocks held by manufacturers for substances in Schedules III and IV. Other countries do not report on the use of psychotropic substances for the manufacture of other psychotropic substances. When such missing information relates to significant quantities, as in the case of certain benzodiazepines, calculated consumption may appear higher than reported manufacture. While this difference is relatively small in the case of benzodiazepine-type anxiolytics, it is more significant in the case of benzodiazepine-type sedative-hypnotics.

Benzodiazepine-type anxiolytics

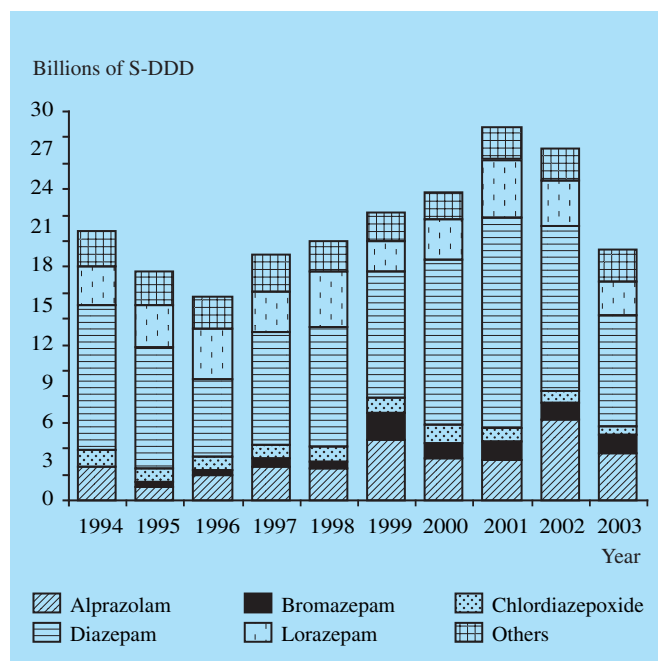
89. Twenty-two benzodiazepines are generally classified as anxiolytics. The total reported manufacture of this group of substances, expressed in S-DDD, rose steadily between 1996 and 2001/2002, when it reached a peak of around 28 billion S-DDD. In 2003, manufacturing levels fell to 19.4 billion S-DDD (see figure 14). Fluctuations in the level of manufacture of benzodiazepine-type anxiolytics are usually a reflection of fluctuations in the manufacture of diazepam, the main substance of this group, which accounted for 44 per cent (or 8.62 billion S-DDD) of the total in 2003. In 2003, the share of alprazolam (3.6 billion S-DDD) decreased to 18 per cent, while the manufacture of lorazepam (2.6 billion S-DDD) accounted for 13 per cent of total output. Bromazepam, chlordiazepoxide, clobazam, clorazepate, oxazepam and tetrazepam each accounted for between 1 and 8 per cent of the total reported manufacture of benzodiazepine-type anxiolytics in 2003 (see figure 15). The remaining eight substances in that group (clotiazepam, cloxazolam, delorazepam, ethyl loflazepate, ketazolam, medazepam, nordazepam and prazepam) each accounted for less than 1 per cent of the total reported manufacture calculated in S-DDD. No manufacture of camazepam, fludiazepam, halazepam, oxazolam or pinazepam was reported in 2003. As shown in figures 16 and 17, China and Italy were the leading manufacturers of benzodiazepine-type anxiolytics in the 10-year period 1994-2003 and together accounted in 2003 for more than two thirds of world manufacture.

90. Approximate consumption levels, calculated by INCB, follow the trend in manufacture (see figure 18). In 2003, total consumption of this group of substances reached 20.3 billion S-DDD. The calculated average national consumption of benzodiazepine-type anxiolytics is higher in Europe than in the other regions (see figure 19). The average use in the five leading European consumer countries (Belgium, Ireland, Portugal, Switzerland and France, in descending order) for that group of substances reached more than 90 S-DDD per 1,000 inhabitants per day in 2003 (see also table IV.3).

91. Attempts have frequently been made in the past to divert some benzodiazepine-type anxiolytics, especially diazepam and chlordiazepoxide, from international trade into the illicit drug traffic, mainly in countries in Africa and South-East Asia.⁶ Nowadays, such diversions mostly occur from domestic distribution channels.

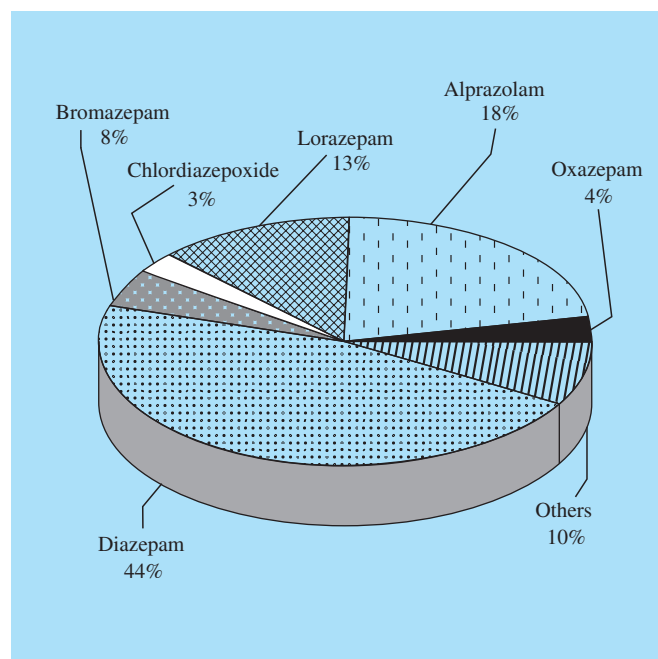
⁶ See *Report of the International Narcotics Control Board for 1997* (United Nations publication, Sales No. E.98.XI.1), para. 180; and *Report of the International Narcotics Control Board for 1998* (United Nations publication, Sales No. E.99.XI.1), para. 114.

Figure 14. Benzodiazepine-type anxiolytics: total reported manufacture, by substance, 1994-2003



Note: Total global manufacture for 2003 is likely to be higher than indicated in the figure as several statistical reports had not yet been received by the Board at the time of preparation of the present report.

Figure 15. Benzodiazepine-type anxiolytics: substances' shares of total reported manufacture, 2003



92. Diazepam, the most traded substance in the group of benzodiazepine-type anxiolytics, is consumed in all regions of the world. During the period 1997-2000, global manufacture of diazepam followed an increasing trend, averaging over 100 tons annually. After a peak of 163 tons in 2001, manufacture dropped to 86 tons in 2003. China has traditionally been the major manufacturer and exporter of the substance;

Figure 16. Benzodiazepine-type anxiolytics: countries' shares of total reported manufacture, 2003

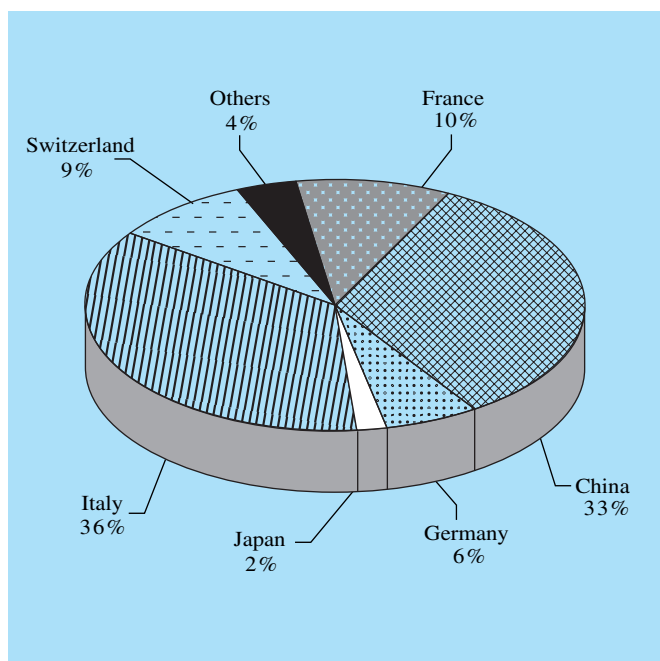
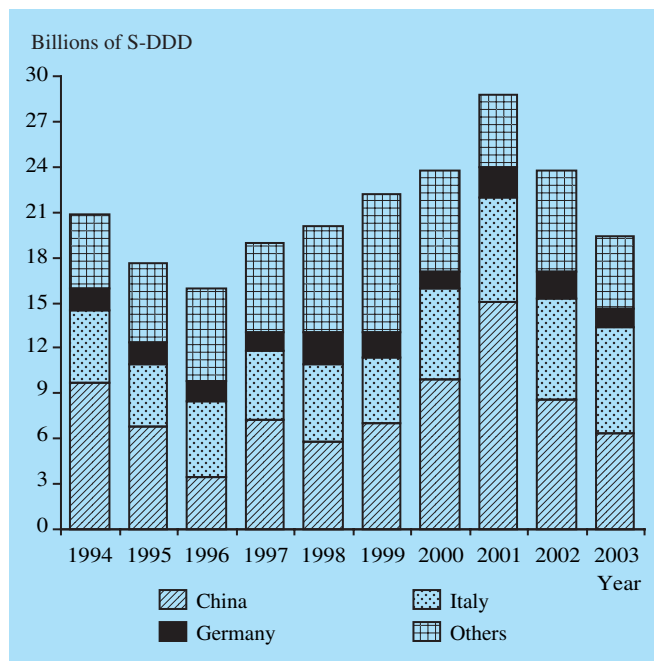
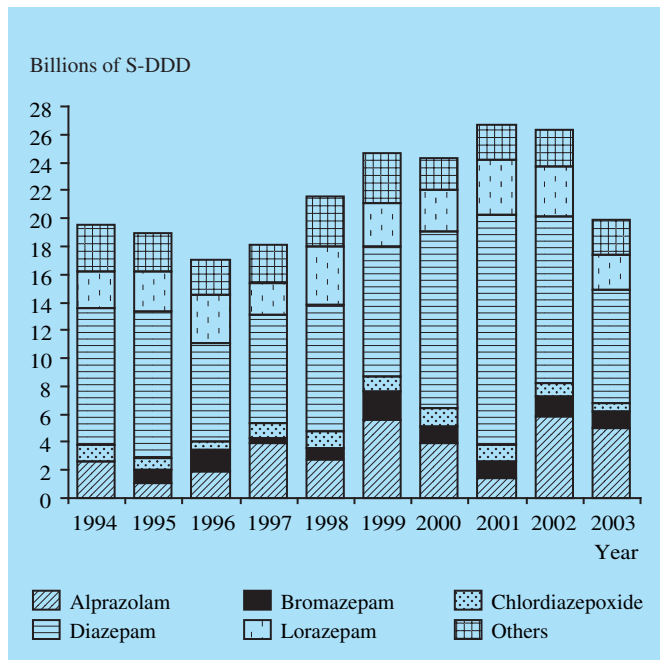


Figure 17. Benzodiazepine-type anxiolytics: reported manufacture, selected countries, 1994-2003



Note: Total global manufacture for 2003 is likely to be higher than indicated in the figure as several statistical reports had not yet been received by the Board at the time of preparation of the present report.

Figure 18. Benzodiazepine-type anxiolytics: calculated global consumption,* by substance, 1994-2003



Note: The figure presents consumption as calculated on the basis of submitted statistical reports. As some information is provided on a voluntary basis, data on, for example, information on manufacturers' end of year stocks, use of psychotropic substances for manufacture of other psychotropic substances, use of substances in Schedule IV for exempted preparations and losses in the manufacture of the pharmaceutical dosage forms are not available for all countries. Calculated consumption levels will, therefore, include quantities used for such purposes that have not been identified in the statistical reports. Actual consumption levels may therefore be lower than indicated by the figure.

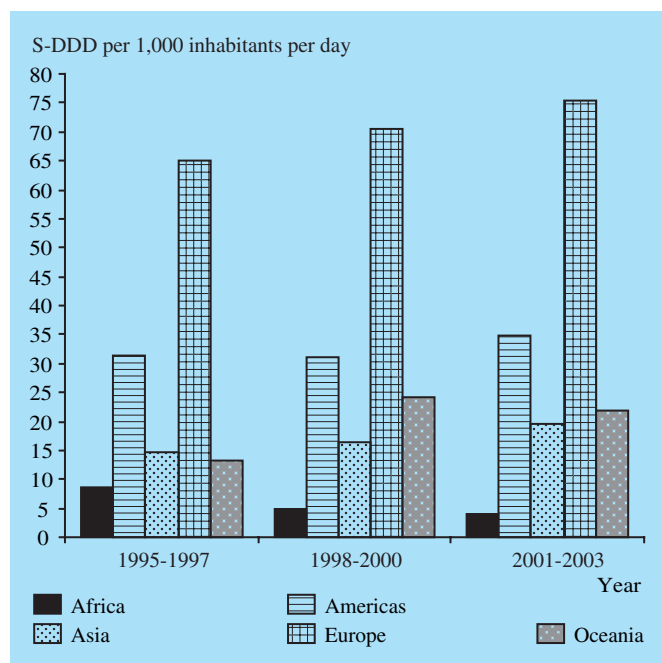
* Statistical data submitted by Governments are used to calculate the approximate global consumption in a given year.

it accounted for more than two thirds of global manufacture of that substance in 2003. The fluctuations in manufacturing levels therefore mostly reflect the fluctuations in manufacturing levels in China. The other main manufacturers and exporters of diazepam in recent years were Italy, India, Switzerland and Brazil.

93. The manufacture by China of over 58 tons of diazepam in 2003, 60 per cent less than in 2001, is comparable to the average volume of manufacture in the years prior to 2001. China supplied at least one third of global exports of diazepam, 20 tons on average, in the period 1999-2003, which was far below the levels reported by that country in the mid-1990s (for example, 67 tons in 1994).

94. The manufacture of diazepam in Italy, the second largest manufacturer and exporter of the substance, fell back from its peak in 2002 (27 tons) to the level reported in 2001 (17 tons). Export levels reached 16 tons in 2003. The manufacture of diazepam in India has declined in recent years, falling from an average of 11 tons during the period 1998-1999 to 7.6 tons in 2002. However, no data are available on manufacture in India in 2003. Despite the decreasing trend in the manufacture of diazepam, India increased its exports from an average of 1 ton of the substance annually during the period 1997-2001 to 2 tons in 2002. In the same period, diazepam manufacture in Brazil and Switzerland fluctuated around 3 tons annually. Switzerland manufactures mainly for export (7.6 tons in 2003), while 95 per cent of the diazepam manufactured in Brazil was for domestic use. The only other manufacturers of diazepam in 2003 were the Russian Federation (172 kg), Iraq (54 kg), the United States (20 kg) and the United Kingdom (2 kg).

Figure 19. Benzodiazepine-type anxiolytics: average national consumption in selected countries, by region,* 1995-2003



* Statistical data submitted by Governments are used to calculate the average annual consumption for a three-year period. Data from the five countries with the highest consumption were included in the calculation for each region.

95. For 2003, 118 countries and territories reported having imported diazepam in quantities of more than 1 kg. Denmark (6.2 tons), the United States (4.9 tons) and Germany (3.1 tons) were the biggest importers of the substance, accounting for a third of all global imports. Spain, formerly the main importer of diazepam, reduced its imports of the substance from 29 tons (used mainly for veterinary purposes) in 1989 to 10 tons in 1997 and 2 tons in 2003. Global consumption of diazepam reached 8 billion S-DDD in 2003. According to calculated consumption figures, China (4 billion S-DDD) is the main consumer worldwide.

96. Total reported manufacture of alprazolam has fluctuated in recent years, increasing from an average of 3.3 tons during the period 2000-2001 to a peak of 6.3 tons in 2002 and then falling in 2003 to 3.6 tons. Those fluctuations in the level of global manufacture reflected, to a large extent, manufacturing levels in India and the United States. India reported in 2002 the manufacture of 2 tons of alprazolam, the highest quantity ever reported. However, no statistical report was received from India for the year 2003. The United States, which accounted for 60 per cent of the world total manufacture of the substance prior to 1995, reported no manufacture of alprazolam in the period 2000-2001, manufacture of 1.2 tons for 2002 and then again no manufacture in 2003. Italy manufactured 2.3 tons of the substance and France 1.1 tons. Those countries accounted for more than 90 per cent of global manufacture of alprazolam. They were also the main exporters of the substance, together accounting for more than 60 per cent of total flows in 2003.

97. In 2003, 65 countries and territories in all regions of the world declared imports of alprazolam in quantities

exceeding 1 kg. The total flow of imports increased from 1.6 tons in 1997 to an average of 4.1 tons annually in the period 1999-2002 and reached 5.6 tons in 2003, mainly as a result of increasing import volumes reported by the United States. In 2003, the main importers of alprazolam were the United States (1.3 tons), Belgium (962 kg) and Slovenia (778 kg), which together accounted for more than half of the total import volume. Global consumption during the period 1999-2003 averaged 3.8 billion S-DDD, the United States being the highest consumer (0.9 billion S-DDD in 2003).

98. Total reported manufacture of lorazepam dropped from 11.1 tons in 2001 to 6.5 tons in 2003, a level comparable to the average level during the period 1998-2000. Such fluctuations are attributable to significant changes in the levels of manufacture of Germany and Italy, the two main manufacturers of lorazepam. Those two countries manufactured 2.7 tons and 3.4 tons respectively in 2003, accounting for about 95 per cent of total manufacture. The only other countries that reported having manufactured lorazepam in 2003 were Poland (170 kg), the United Kingdom (91 kg), Brazil (69 kg), Spain (8 kg) and Slovakia (2 kg).

99. Trade flows in lorazepam averaged 10 tons annually in the period 1999-2003. Italy, Germany and Ireland were the main exporters of the substance in recent years, together accounting for 88 per cent of total exports of the substance in 2003. Of the 104 countries that imported more than 1 kg of lorazepam at least once in the period 1999-2003, Ireland and the United States imported the most, together accounting for about 38 per cent of total imports of the substance in the period 1999-2003. The other main importers of lorazepam in 2003 included Spain (779 kg), France (647 kg) and the United Kingdom (506 kg). Global calculated consumption averaged 3.1 billion S-DDD in the period 1999-2003, the United States (375 million S-DDD) being the main consumer.

100. Total reported manufacture of bromazepam fluctuated significantly in the period 1999-2003. After increasing sharply from an annual average of 6 tons during the period 1997-1998, global output of the substance peaked at over 21 tons in 1999 and declined to an average of 13 tons in the years thereafter. Switzerland (7.6 tons) remained the major manufacturer of bromazepam, reporting more than half of global manufacture in 2003. The only other main manufacturers of the substance were Italy (averaging 4.5 tons annually in the period 1999-2003) and Brazil (averaging 1.5 tons per year during the same period).

101. Global exports of bromazepam reached 16 tons in 2003, the main exporters being Switzerland (8 tons) and Italy (6.1 tons), which together accounted for 87 per cent of total exports of the substance. Of the 87 countries that reported imports of bromazepam in quantities of more than 1 kg in 2003, four of them accounted for 57 per cent of global imports. During the period 1999-2003, all of the bromazepam imported by Switzerland and Italy was re-exported; during the same period, France and Germany imported bromazepam mainly for domestic use. Calculated global consumption of bromazepam fluctuated at about 1.1 billion S-DDD annually during the period 1999-2003.

102. In recent years, total reported manufacture of chlor-diazepoxide fluctuated widely around its annual average

for the period 1997-2002 (32 tons). In 2003, five countries reported having manufactured chlordiazepoxide and total reported manufacture of the substance decreased to 20 tons. Those fluctuations reflected changes in the quantities of chlordiazepoxide manufactured in China and Italy, the main manufacturing countries, which accounted for 95 per cent of global output in 2002 and the lack of data reported by India in 2003. While more than half of the 12 tons of chlordiazepoxide manufactured in China in 2003 was for domestic consumption, all of the 7.9 tons manufactured in Italy were destined for export. China, Italy and Switzerland, the other main exporter of chlordiazepoxide, together accounted for over 85 per cent of global exports in 2003.

103. International trade in chlordiazepoxide averaged over 24 tons during the period 1998-2002 and declined to 19 tons in 2003; since 1997, 108 countries have reported, at least once, imports of the substance in quantities exceeding 1 kg. In 2003, 14 tons of the substance were imported, a decrease of 34 per cent compared to 2002. The main importers of chlordiazepoxide in 2003 were Switzerland (3 tons, entirely for re-export), the United States (2.7 tons, for domestic use) and Denmark (1.1 tons, mostly for re-export). In the period 1999-2003, global consumption of the substance averaged about 1 billion S-DDD per year.

104. The world manufacture of oxazepam has been fairly stable in recent years: world manufacture averaged nearly 30 tons per year during the period 1998-2002. In 2003, it reached a peak of 34 tons. The main manufacturers of oxazepam in 2003 were Italy (22.3 tons) and France (9.7 tons), which together accounted for more than 92 per cent of global output. The volumes of trade in oxazepam averaged about 40 tons annually during the five-year period 1999-2003. Ireland and France were the main importers of oxazepam, both countries importing the substance mainly for re-export.

105. Total reported manufacture of clorazepate averaged 8.7 tons during the period 1999-2003. France (5.9 tons) and Italy (1.3 tons) accounted for more than 85 per cent of total output of clorazepate in 2003. Fifty-two countries imported 9.7 tons of clorazepate. The main importers of clorazepate were Spain (more than half for re-export) and France (all for re-export). Total reported manufacture of tetrazepam averaged 23 tons per year during the period 1999-2003, while international trade fluctuated between 30 and 40 tons. France was the main manufacturer, accounting for 80 per cent of global manufacture, and the main exporter, accounting for nearly half of all exports of the substance. Thirty-two countries reported imports of more than 1 kg of tetrazepam in 2003. Total reported manufacture of clobazam reached 4.4 tons in 2003, with the main manufacturers being Germany (2.2 tons) and France (1.4 tons). International trade reached a level of around 4 tons, with 49 countries reporting imports of more than 1 kg.

106. In 2003, total reported manufacture of cloxazolam, delorazepam, ethyl loflazepate, ketazolam, nordazepam and prazepam increased, as their combined total grew by one third, from 459 million to 592 million S-DDD. The combined manufacture of medazepam and clotiazepam, halazepam, ketazolam and prazepam (281 million S-DDD) declined by 18 per cent to 300 million S-DDD in 2003.

Other anxiolytics

Meprobamate

107. Due to its gradual replacement by benzodiazepines, the manufacture of meprobamate, the only non-benzodiazepine-type substance in Schedule IV used as an anxiolytic, decreased continuously, from a record level of nearly 1,000 tons in the late 1970s to an annual average of a little more than a quarter of that amount in the 10-year period 1993-2003. Apart from two instances of manufacture of small amounts of meprobamate, by Iraq in 1996 (110 kg) and by Switzerland in 1997 (56 kg), China and Denmark were the only manufacturers of the substance after 1998 (see figure 20). Most of the meprobamate manufactured by China and Denmark was exported, as those two countries accounted for 89.4 per cent of global exports during the period 1999-2003. Manufacturing levels in China fluctuated between 91 tons and 135 tons and averaged 121 tons per year in the period 1999-2003. In Denmark, the manufacture of meprobamate experienced similar fluctuations, averaging 141 tons per year during the same period. The highest level of stocks of meprobamate during that period were held by France, which averaged 51 tons, and Denmark, which averaged 36 tons. China did not report any stocks of meprobamate.

108. Imports of meprobamate averaged over 244 tons annually in the five-year period 1999-2003; 77 countries reported imports of the substance at least once during that period. France was the main importer of meprobamate, purchasing an average of 91 tons annually during the period 1999-2003, almost all of which was for domestic use. The other main importers of the substance in 2003 were South Africa (46 tons), Hungary (29 tons), Cuba (19 tons) and Denmark (9 tons). The United States did not report imports of meprobamate in 2001, but imported an average of 20 tons in the years prior to 2001; in 2003, its imports amounted to 6 tons.

Figure 20. Meprobamate: total reported manufacture, 1994-2003

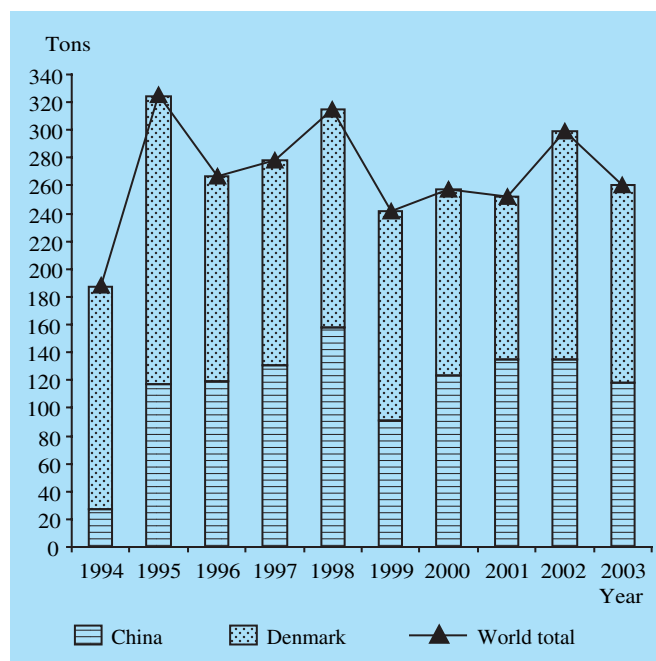
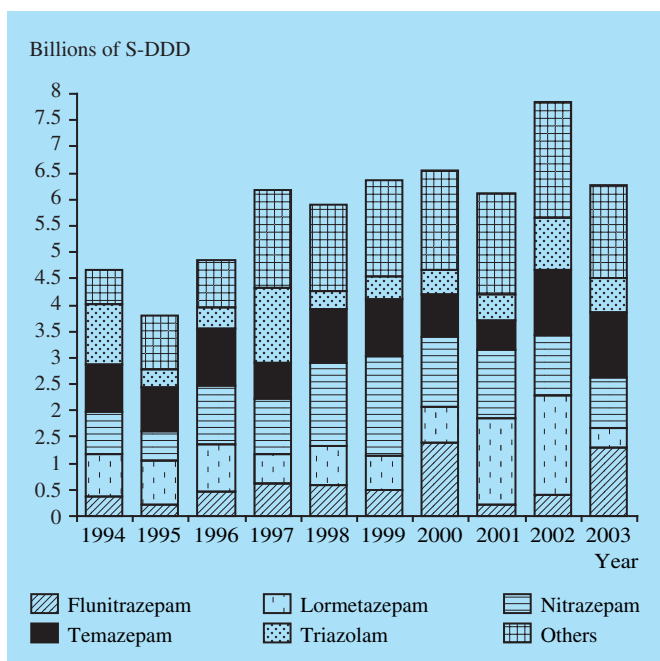


Figure 21. Benzodiazepine-type sedative-hypnotics: total reported manufacture, by substance, 1994-2003



Note: Total global manufacture for 2003 is likely to be higher than indicated in the figure as several statistical reports had not yet been received by the Board at the time of preparation of the present report.

Benzodiazepine-type sedative-hypnotics

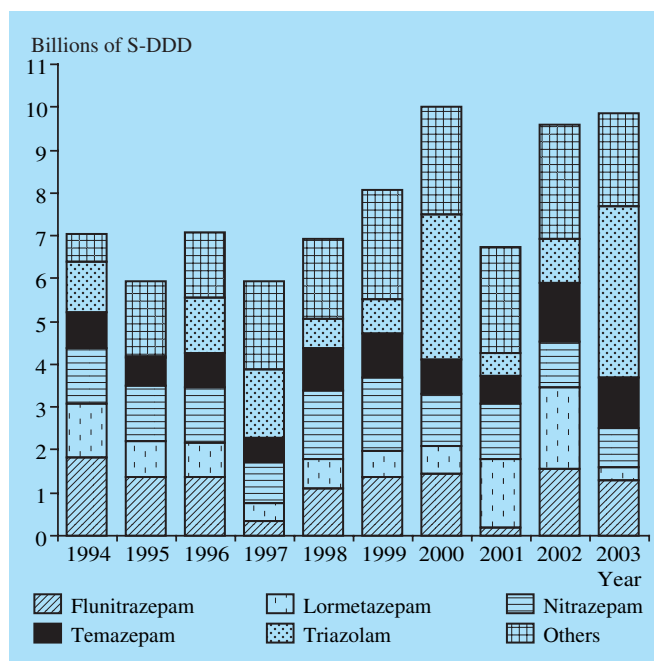
109. Twelve benzodiazepines are generally used as sedative-hypnotics: brotizolam, estazolam, flunitrazepam (the only benzodiazepine included in Schedule III), flurazepam, haloxazolam, loprazolam, lormetazepam, midazolam, nimetazepam, nitrazepam, temazepam and triazolam.

110. After an increase of total reported manufacture of the 12 substances in the group from an average of 6.3 billion S-DDD per year during the period 1997-2001 to 7.8 billion S-DDD in 2002, manufacturing levels reverted to their former level in 2003. During the period 1998-2002, Belgium, Canada and Switzerland started reporting to INCB on their manufacture of benzodiazepines, which has brought the calculated levels of annual consumption closer to the levels of total manufacture (see figures 21 and 22).

111. The calculated average national consumption of benzodiazepine-type sedative-hypnotics, expressed in defined daily doses per 1,000 inhabitants per day, is higher in Europe than in the other regions (see figure 23).

112. Manufacture of flunitrazepam, which had declined steadily in the period 2000-2002, from 21 per cent (1.4 billion S-DDD) to 5 per cent (409 million S-DDD) of the total, rose again in 2003 and reached the highest share in this group, with 1.3 billion S-DDD. Flunitrazepam and temazepam (1.2 billion S-DDD) together account for more than 40 per cent of total manufacture in this group. The levels of manufacture of nitrazepam (966 million S-DDD), estazolam (749 million S-DDD), triazolam (636 million S-DDD), brotizolam (604 million S-DDD), and lormetazepam (380 million S-DDD), accounted for 53 per cent of the total manufacture of benzodiazepine-type sedative-hypnotics (see figure 24).

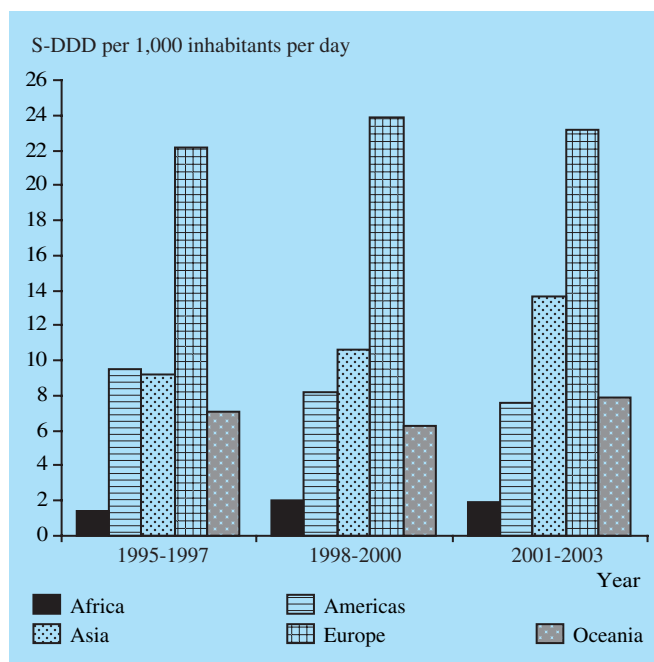
Figure 22. Benzodiazepine-type sedative-hypnotics: calculated global consumption,* 1994-2003



Note: The figure presents consumption as calculated on the basis of submitted statistical reports. As some information is provided on a voluntary basis, data on, for example, information on manufacturers' end of year stocks, use of psychotropic substances for manufacture of other psychotropic substances, use of substances in Schedule IV for exempted preparations and losses in the manufacture of the pharmaceutical dosage forms are not available for all countries. Calculated consumption levels will, therefore, include quantities used for such purposes that have not been identified in the statistical reports. Actual consumption levels may therefore be lower than indicated by the figure.

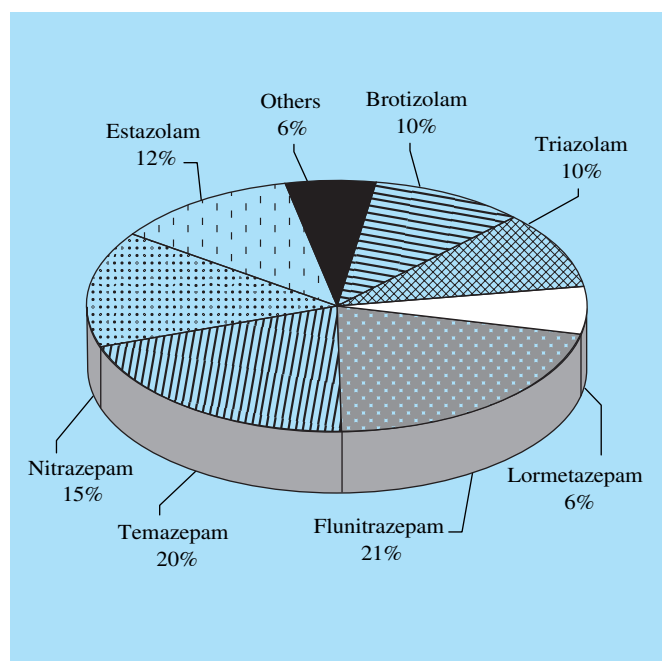
* Statistical data submitted by Governments are used to calculate approximate global consumption in a given year.

Figure 23. Benzodiazepine-type sedative-hypnotics: average national consumption,* by region, 1995-2003



* Statistical data submitted by Governments are used to calculate the average annual consumption for a three-year period. Data from the five countries with the highest consumption were included in the calculation for each region.

Figure 24. Benzodiazepine-type sedative-hypnotics: substances' shares of total reported manufacture, 2003



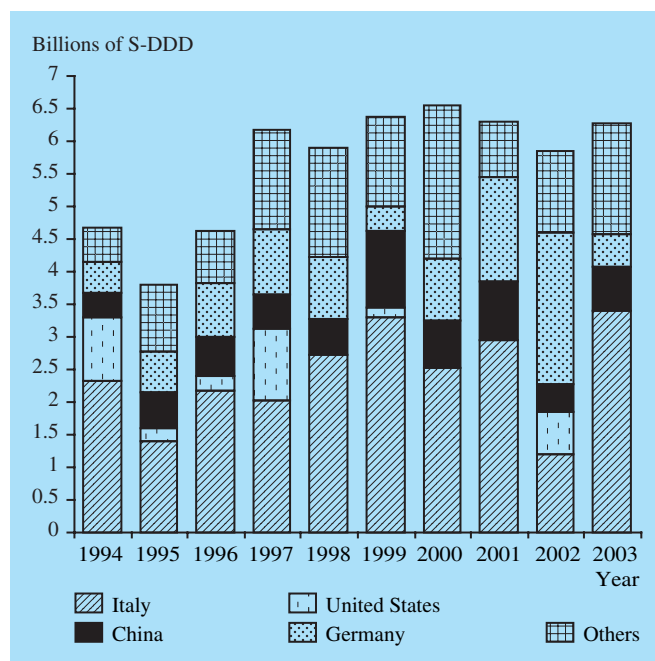
Midazolam (263 million S-DDD), flurazepam (128 million S-DDD) and loprazolam (86 million S-DDD) together accounted for less than 6 per cent of the total. Manufacture of haloxazolam was below 1 per cent of total manufacture in the group of benzodiazepine-type sedative-hypnotics. No manufacture of nimetazepam was reported in 2003. Figure 25 shows the main manufacturers during the last 10 years. In 2003, Italy continued to be the main manufacturer of that group of substances (see figure 26).

113. Comments on flunitrazepam, a substance that was transferred from Schedule IV to Schedule III in 1995, are included in paragraphs 64-66 above.

114. In the period 1993-2001, reported manufacture of temazepam fluctuated between 13.4 tons (in 1997) and 23 tons (in 1992). In 2002 and 2003, it reached a new peak of 25 tons. Italy, with a reported manufacture of 23.4 tons in 2003, was the main manufacturer throughout that period, accounting for over 90 per cent of total output, on average. Poland, the only other manufacturer during the period 1999-2003, reported an average of over 700 kg of output annually in the years 1999-2002 and reached a new peak in 2003 with 1,150 kg.

115. The level of international trade in temazepam averaged about 21 tons per year during the period 1999-2003. Italy was by far the biggest exporter of the substance, accounting for nearly 80 per cent of total exports in 2003. Other large exporters in 2003 were Ireland (1.8 tons), Germany (742 kg), Finland (247 kg) and France (221 kg). Thirty-five countries reported imports of temazepam at least once in the period 1999-2003. The United States (7.8 tons), the United Kingdom (2.7 tons), Ireland (2.4 tons), Canada (1.8 tons), Germany (1.4 tons), Australia (1.3 tons), the Netherlands (1.3 tons) and Hungary (1.1 tons) were the main importers of the substance in 2003, accounting for 94 per cent of global imports. While Germany, Hungary and Ireland re-exported most of their imports in recent years, Australia, Canada, the Netherlands, the United Kingdom and

Figure 25. Benzodiazepine-type sedative-hypnotics: reported manufacture, selected countries, 1994-2003



Note: Total global manufacture for 2003 is likely to be higher than indicated in the figure as several statistical reports had not yet been received by the Board at the time of preparation of the present report.

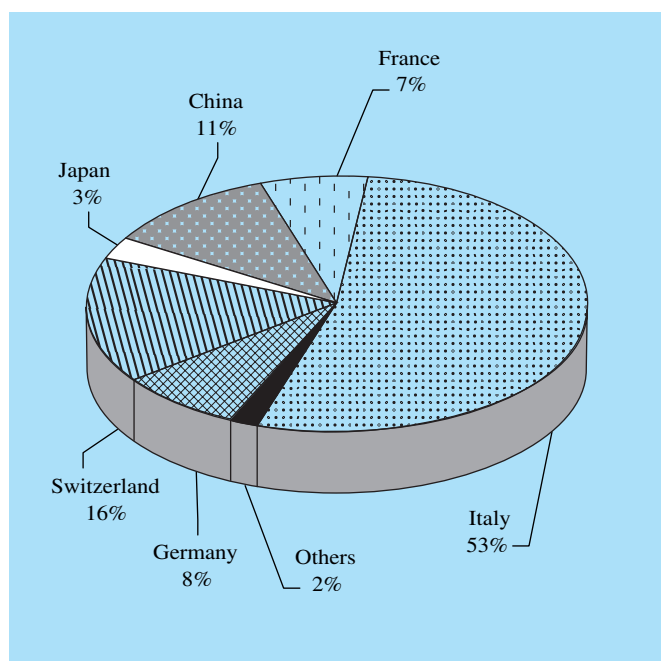
the United States used temazepam for domestic consumption or to supplement their existing stocks. In 1995, the control measures for temazepam were strengthened in the United Kingdom to counter the increasing diversion of the substance into the illicit market in that country.⁷ As a result, imports of temazepam decreased considerably, from a peak level of 6.3 tons in 1994 to 1.3 tons in 1996. After that, the level of imports into the United Kingdom fluctuated, reaching a new peak of 7.3 tons in 1998 and gradually decreasing in subsequent years. Global consumption averaged about 650 million S-DDD during the period 1999-2003, with the United States calculated as main consumer.

116. After substantial fluctuations in the early 1990s, nitrazepam manufacture increased gradually from 2.7 tons in 1995 to 9.4 tons in 1999. Since then, that trend has been reversed, global output falling by 30 per cent to an average of 6.3 tons during the period 2000-2002 and then to 4.8 tons in 2003. That volatility in the manufacture of nitrazepam was a result of changing levels of manufacture of the substance in India, Italy and Switzerland. Italy manufactured 4.7 tons of nitrazepam in 2003, which was 23 per cent less than in 2001. Switzerland reported the manufacture of 1.5 tons in 1999, but no manufacture for the subsequent three years. India submitted no statistical report for 2003. The only other manufacturer of the substance in 2003 was China (87 kg).

117. Annual international trade flows in nitrazepam averaged about 6 tons annually during the period 1998-2002. In 2003, trade declined to around 3.8 tons. Italy was the main exporter of the substance (2.7 tons), accounting for 69 per cent of total exports in 2003. Since 1998, 72 countries have reported, at least once, nitrazepam imports in excess of 1 kg.

⁷ See *Report of the International Narcotics Control Board for 1995* (United Nations publication, Sales No. E.96.XI.1), para. 113.

Figure 26. Benzodiazepine-type sedative-hypnotics: countries' shares of total reported manufacture, 2003



In 2003, Japan was the main importer of the substance, reporting imports of 830 kg, followed by Cuba (450 kg), the United Kingdom (409 kg) and Denmark (208 kg).

118. In 2003, total manufacture of estazolam was in line with the average level of 2.2 tons manufactured during the period 1999-2003. The main manufacturer is China, contributing 1.5 tons (entirely for domestic consumption), 69 per cent of the world total. In 2003, the only other countries that manufactured estazolam were Japan (498 kg), Poland (178 kg) and Italy (25 kg). The main exporters of estazolam in recent years were Japan, Italy, Poland and the Netherlands. Of nine countries importing the substance, Italy, Portugal and the United States accounted for 68 per cent of total imports in 2003.

119. Triazolam is a potent hypnotic, having, together with brotizolam, the lowest S-DDD of all psychotropic substances (0.25 mg). Total reported manufacture of triazolam reached a record level of 539 kg (2.2 billion S-DDD) in 1988. Discussions at the beginning of the 1990s on the medical use of triazolam had major repercussions on the market for the substance, as the manufacture of triazolam decreased considerably (by 90 per cent) to 55 kg in 1992. Since then, total reported manufacture of triazolam has been steadily increasing, reaching 233 kg in 2002. In 2003, manufacture declined again to 159 kg. The above-mentioned fluctuations in the early and mid-1990s, as well as between 2002-2003, mainly reflected the fluctuations in manufacture and stocks in the United States.

120. Until 2002, the United States had not reported any manufacture of triazolam since 1997, when 271 kg of the substance were manufactured. It once again became the leading manufacturer in 2002 (136 kg), but reported no manufacture of the substance in 2003. The only other countries to report manufacture of triazolam were France (82 kg), Italy (45 kg) and China (32 kg). France became the main exporter in 2003 (82 kg), before the United States (77 kg), which had previously accounted for the largest share of exports.

Belgium, Italy and Switzerland were the other main exporters of the substance. The imports of Colombia (645 kg), Malaysia (149 kg) and Japan (104 kg), all of them for domestic consumption, accounted for 73 per cent of total imports in 2003. Due to these high imports, the level of global calculated consumption of triazolam increased from an average 1.4 billion S-DDD during the period 1999-2002 to 4 billion in 2003.

121. In 1995, brotizolam, a potent hypnotic with the same S-DDD as triazolam (S-DDD of 0.25 mg), was included in Schedule IV of the 1971 Convention. The manufacture of that substance was reported for the first time in 1997. In 2003, 126 kg of brotizolam were manufactured by Germany and 25 kg were manufactured by Italy, the only countries to report manufacture of the substance for that year. International trade in brotizolam involved 14 countries and import volumes averaged 180 kg annually during the period 1998-2002. In 2003, 12 countries reported imports of a total of 490 kg. Germany and Switzerland were the main exporters of the substance, accounting for around 90 per cent of global exports in 2003 (387 kg). The main importers in 2003 were Switzerland (120 kg), Japan (119 kg) and Germany (117 kg), Germany and Switzerland, mainly for re-export. Global calculated consumption hovered around 900 million S-DDD, with Japan (476 million S-DDD) and Malaysia (252 million S-DDD) accounting for 74 per cent of the global consumption of the substance in 2003.

122. The manufacture of lormetazepam increased steadily after 1991, reaching a peak of 899 kg in 1996; after averaging 670 kg during the period 1997-2000, it peaked at 1.9 tons in 2002 and fell to a record low of 380 kg in 2003. The significant increase in 2002, as well as the slump in 2003, are due to changes in manufacturing levels in Germany, the former main manufacturer of lormetazepam, which reported no manufacture of the substance in 2003. The only manufacturer of lormetazepam in 2003 was Italy (380 kg). Germany and Italy were also the main exporters of lormetazepam, accounting together for 60 per cent of global exports (1.4 tons). Imports of lormetazepam increased from 664 kg in 1997 to 1.3 tons in 2003. Spain, France, Italy, Ireland, Belgium and Germany were the main importers of the substance in recent years, most of their imports being destined for re-export.

123. In 2003, total reported manufacture of midazolam amounted to 5.3 tons, which was little more than half of the peak level of 10 tons that it had reached in 1999. The sharp drop in reported manufacture of midazolam was caused, for the most part, by the steep decline in manufacture of the substance in China, which fell from 6.9 tons in 1999 to an average of 21 kg during the period 2000-2003. Since 2000, Switzerland has been the main manufacturer of midazolam, reporting the manufacture of 3.2 tons in 2003. The level of international trade in midazolam was, with 4.9 tons in 2003, in line with the average for the period 1999-2002. Switzerland is the main exporter of the substance.

124. After fluctuating between 6 and 11 tons during the period 1998-2000, total reported manufacture of flurazepam fell to 3.8 tons in 2003. That steep decline resulted from discontinuation of the manufacture of the substance in Brazil and Switzerland and its reduced manufacture in Italy. In 2003, manufacture in Italy of 3.8 tons accounted for more than 99 per cent of total manufacture for that year. The only other manufacturer of flurazepam in 2003 was China

(38 kg). Similar fluctuations were observed in the volume of exports and imports. Italy, Spain, Switzerland and the United States were the main importers of flurazepam in the period 1998-2003, together accounting for 58 per cent of global imports in 2003.

125. Total reported manufacture of loprazolam amounted to 86 kg in 2003, with France the only manufacturer and the leading exporter of the substance. The United Kingdom (25 kg in 2000) was the only other manufacturer of lopraxolam in recent years. The main importers of lopraxolam in 2003 were Spain (12 kg) and the United Kingdom (33 kg), which together accounted for 57 per cent of total imports.

Benzodiazepine-type anti-epileptics

Clonazepam

126. Clonazepam is the only benzodiazepine generally used as an anti-epileptic. Total reported manufacture of clonazepam fluctuated around its annual average of 3.8 tons during the period 1998-2003. Those fluctuations are explained by the changing volumes of annual manufacture of the substance by the leading manufacturers, Italy and Switzerland. In 2003, Italy reported manufacture of 1.6 tons and Switzerland 1.7 tons, together accounting for 85 per cent of global manufacture. India, which had manufactured 691 kg of the substance in 2002, did not submit manufacturing data for 2003. The only other manufacturers of clonazepam in the period 1999-2003 were Brazil, China, Israel, Poland and the United States. The levels of global trade in clonazepam gradually increased, from 1.5 tons in 1997 to an average of about 4.6 tons in the period 2001-2003. Since 1998, 97 countries have reported imports of the substance at least once. The United States (973 kg), Brazil (641 kg), Canada (426 kg), Switzerland (395 kg), France (386 kg), Italy (270 kg), Mexico (216 kg), Japan (121 kg), the United Kingdom (118 kg) and Spain (106 kg) imported more than 100 kg in 2003, their combined imports accounting for 81 per cent of global imports. Global calculated consumption averaged more than 400 million S-DDD during the period 1999-2003, the United States being the main consumer.

Barbiturate-type sedative-hypnotics and anti-epileptics

Allobarbitol, barbital, butobarbitol, methylphenobarbitol, phenobarbitol, secbutabarbitol and vinylbital

127. The seven barbiturates listed in Schedule IV are pharmacologically related to those included in Schedule III. Five of those substances, namely, allobarbitol, barbital, butobarbitol, secbutabarbitol and vinylbital, are intermediate-acting barbiturates and are mainly used as hypnotics (to induce sleep) in the treatment of intractable insomnia. They are no longer used as daytime sedatives. The two other substances, methylphenobarbitol and phenobarbitol, have additional properties and are also used as anti-epileptics (long-acting barbiturates). Barbital, methylphenobarbitol and phenobarbitol were listed under Schedule IV at the time the 1971 Convention was adopted, while the other four were included in that Schedule in 1987. The most widely used substance in the group of barbiturates is phenobarbitol, which has been described as a drug of choice for the treatment of epilepsy.

The substance is also included in the WHO Model List of Essential Medicines.

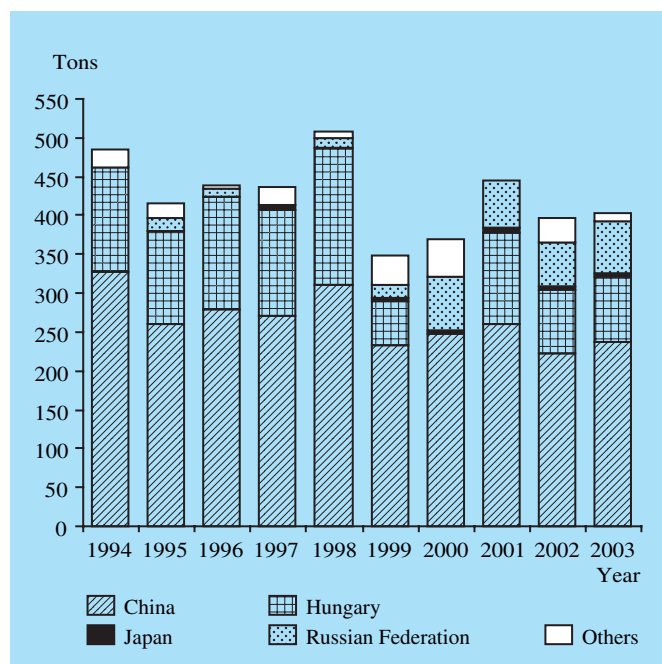
128. Total reported manufacture of those barbiturates (for both direct medical use and the manufacture of non-psychotropic substances) has been gradually increasing, reaching 653 tons in 1998 (5.4 billion S-DDD); since then, total manufacture has stabilized at a lower level of about 4.2 billion S-DDD per year. In the five years since 1998, in decreasing order, Hungary, Poland, Jordan, Japan and China had the highest calculated rates of use for the barbiturate-type sedative-hypnotics, averaging between 0.4 and 3.1 S-DDD per 1,000 inhabitants per day. With respect to the barbiturate-type anti-epileptics listed in Schedule IV, Hungary, Malta and Bulgaria were the countries with the highest rates of phenobarbitol use during 1999-2003, consuming an average of 34, 18 and 17 S-DDD per 1,000 inhabitants per day respectively. During the period 1999-2003, on average, phenobarbitol accounted for over 93 per cent of total manufacture of the barbiturates included in Schedule IV (in S-DDD). Barbital was second, accounting for 4.8 per cent of total manufacture, followed by methylphenobarbitol and allobarbitol. No manufacture of vinylbital has been reported since 1996 and no manufacture of butobarbitol has been reported since 1999.

129. Total reported manufacture of phenobarbitol averaged 394 tons annually in the period 1999-2003, having declined from its peak of 508 tons in 1998. China, Hungary and the Russian Federation were the major manufacturers of the substance, accounting for up to 97 per cent of total output in recent years (see figure 27). During the period 1999-2003, China contributed an average of 240 tons per year to total manufacture and accounted for 59.1 per cent of phenobarbitol manufacture in 2003. In the last five years, Hungary has manufactured an average of 67.2 tons per year (most of it for export), while the Russian Federation output averaged 54.5 tons annually during 1999-2003. Other main countries that have manufactured phenobarbitol since 1999 include Brazil, Germany, India, Iraq, Japan, Kazakhstan, Switzerland and the United States.

130. Fifty-one countries have reported exports of phenobarbitol since 1999 and total exports have fluctuated between 264 and 357 tons, with up to 71 per cent of export flows accounted for by China and Hungary during 1999-2003. Hungary, the main exporter of phenobarbitol since the 1970s, supplied the market with a relatively stable volume, averaging 103 tons annually during the period 1999-2003, with a peak of 116 tons in 2001 and a decrease to an average of 84 tons during 2002-2003. Phenobarbitol exports from China fluctuated between 76 and 121 tons during that period. China supplied 97.8 tons of the substance (35 per cent of the total) to the world markets in 2003. Other important exporters of the substance in 2003 were Switzerland, Denmark, Germany and the United Kingdom.

131. Phenobarbitol continues to be one of the most widely traded psychotropic substances. During the period 1999-2003, 168 countries and territories reported having imported the substance at least once. Total reported imports amounted to 260 tons in 2003, the main importers being Switzerland (35 tons), Brazil (23 tons), Germany (20 tons, mostly for re-export), Ukraine (20 tons) and Denmark (19 tons). In recent years, France, Japan, the Netherlands, the Russian Federa-

Figure 27. Phenobarbital: total reported manufacture, 1994-2003



tion, the United Kingdom and the United States have also reported notable imports of phenobarbital.

132. In addition to its medical use as a sedative-hypnotic, barbital is also used in industry for the manufacture of non-psychoactive substances or products. The calculated global use of barbital, including medical and industrial use, decreased from 133 tons in 1999 to 80 tons in 2001, and rose again to 101 tons in 2003, with Denmark, Bulgaria, China and Japan being the countries with the highest per capita rates of usage of that substance in the last three years. Total reported manufacture of barbital declined steeply in the period 1993-2001, the 106 tons reported for 2003 representing just 41 per cent of total output in 1992. Despite lower outputs, China remained the main manufacturer of the substance, accounting for 98 per cent of total manufacture in 2003. Japan was the other main manufacturer, averaging 2.4 tons of output in the period 1999-2003. Other manufacturers were Denmark, the United Kingdom and the United States.

133. Similar to manufacture, after 1997 trade volumes of barbital gradually fell, from 72 tons in 1998 to 12 tons in 2002, with 18 tons exported in 2003. In 2003, three countries reported exports of the substance in quantities of more than 100 kg, the largest exporters being China and Germany. Fifty-three countries imported barbital at least once during the period 1999-2003. Germany was the leading importer of the substance during that period, with almost all of its imports destined for re-export.

134. Almost 8 tons of methylphenobarbital were manufactured in Germany in 1990. Since then, Switzerland has been the main manufacturer of the substance; its output fluctuated around its four-year average of 2.7 tons per year during 1999-2002, while it reported no manufacture in 2003. In 2003, the only manufacturer of methylphenobarbital was the United States, which reported having manufactured 792 kg of the substance. Croatia, Italy, Slovenia and the United States were the main users of methylphenobarbital in recent years.

135. Similar to manufacture, international trade in methylphenobarbital also fluctuated, averaging 3.2 tons annually during the period 1999-2003. Of the nine countries that reported exports of methylphenobarbital in the five-year period 1999-2003, Switzerland was by far the largest exporter, accounting for about 92 per cent of total exports of the substance during 1999-2001. However, Germany and India have increased their exports in the last two years, supplying 28 per cent each in 2002, while 54 per cent of global export flows originated in Germany in 2003. Twenty-one countries imported the substance at least once during 1999-2003. Croatia, Germany and Italy were the main regular importers of methylphenobarbital, about 38 per cent of total imports going to Croatia during 2000-2003. Argentina, Australia, the Netherlands and Slovenia were among the other importers of the substance in recent years.

136. Germany has been the only country reporting the manufacture of allobarbital in recent years, since Denmark discontinued manufacture of that substance in 1994 and Poland did so in 1995. Manufacture by Germany of allobarbital increased significantly, from 393 kg in 1998, when the country resumed its manufacture of that substance, to about 4 tons in 2000. Since then, German manufacture of allobarbital has been gradually falling, to about 1.6 tons in 2002, while no manufacture was reported in 2003. Total manufacture of the substance (by Germany) averaged 2.7 tons during 1999-2002. Total exports of the substance fluctuated around a five-year annual average of 3.1 tons during the period 1999-2003. Germany was the largest exporter, accounting for about 70 per cent of the world total during that period. Switzerland, Denmark and Slovakia were the other main exporters of allobarbital in recent years. Fifteen countries imported the substance at least once during the period 1999-2003. In 2003, the major importers of the substance were Poland, Hungary, Turkey and Switzerland (for re-export). Global consumption of allobarbital was calculated at 1.4 tons in 2003, which was 56 per cent lower than the level of 2000. The reduction is explained by reduced use of the substance in Hungary, Poland, the Czech Republic and Turkey, the countries that have had the highest rates of per capita use in recent years.

137. Total manufacture of secbutobarbital has decreased sharply, from 750 kg in 1999 to 22 kg in 2001, in part due to some build-up of global stocks. Since 1991, only Germany has reported having manufactured secbutobarbital, averaging 136 kg during 2002-2003. The United States, for the first time since 1989, reported 509 kg of secbutobarbital manufactured in 2002, which accounted for about 78 per cent of the global total. Germany, Lebanon, Switzerland, the United Kingdom and the United States are the only countries that have reported trade in the substance in recent years. In 2003, Germany reported about 98 per cent of the global imports of secbutobarbital (85 kg). In recent years, Lebanon has had the highest calculated usage rates, averaging 0.2 S-DDD per 1,000 inhabitants in 2002-2003.

138. Only two countries, Denmark and Germany, have reported manufacture of butobarbital in recent years, although no manufacture of the substance was reported during 1999-2003. Denmark last reported the manufacture of 1.3 tons of butobarbital in 1998. The volume of international trade in butobarbital decreased by some 97 per cent between 1999 and 2003. In 2003, only a small total of 25 kg was imported by the Czech Republic, Jordan and Slovakia. The

downward trend could also be observed in the calculated usage rates, as the per capita use in the Czech Republic fell from 0.8 S-DDD during the period 1997-1999 to 0.06 S-DDD during the period 2001-2003.

139. Of the 12 barbiturates listed in Schedules II, III and IV of the 1971 Convention, four substances, namely, phenobarbital (73 per cent), butalbital (10.9 per cent), pentobarbital (7 per cent) and amobarbital (4.1 per cent) accounted for 95 per cent of the total reported manufacture, on average, during 1999-2003. The distribution of the barbiturates manufactured in 2003 is presented in figure 28. In 2003, in decreasing order of volume of manufacture, China, Hungary, and the Russian Federation and Denmark accounted for most of the manufacture of the entire group of barbiturates (87 per cent) (see figure 29).

Other sedative-hypnotics

140. Three substances from the group of sedative-hypnotics in Schedule IV, ethchlorvynol, ethinamate and methyprylon, are neither barbiturates nor benzodiazepines. All three substances have been listed in Schedule IV since the adoption of the 1971 Convention.

141. The manufacture and export of ethchlorvynol have been reported, sporadically, only by the United States, which manufactured 857 kg of the substance in 1991, a total of 9 tons (18 million S-DDD) in the period 1994-1996, and 1.3 tons in 1999. Most of the ethchlorvynol manufactured in the United States was for domestic use. The calculated global consumption (solely in the United States) has been declining rapidly, from a recent peak of 2.2 million S-DDD in 1998 to zero since 2001. The manufacture of ethinamate was last reported by Germany in 1988 (500 kg), and the manu-

facture of methyprylon was last reported by the United States in 1990 (2.1 tons). There have been no reports on international trade in either ethinamate or methyprylon since 1991.

142. In 2001, two more substances were added to the group of sedative-hypnotics in Schedule IV: *gamma*-hydroxybutyric acid (GHB) and zolpidem. With regard to GHB, very limited data are available for the year 2001. With the introduction of national control measures, the number of countries being able to report on manufacture and trade of GHB has increased. In 2003, the United States manufactured 10.3 tons of GHB, which is exactly half of global manufacture. The other main manufacturers were Germany (4.3 tons), Ukraine (3.5 tons) and Latvia (1.7 tons). The main exporter in 2003 was Germany, with 4.1 tons, and the main importer was Italy, with 3.9 tons. During the last three years, 18 countries reported, at least once, the import of more than 1 kg of GHB.

143. Data on zolpidem are available for 2001, 2002 and 2003 for a number of countries. The main manufacturer is France, which accounts for 92 per cent of global output (33 tons). Other countries reporting manufacture of zolpidem are Argentina, China, the Czech Republic, Germany, Hungary, Slovakia and the United States. The main exporter of zolpidem is also France, which accounts for 84 per cent of global output (34 tons). During the last three years, 72 countries reported, at least once, the import of more than 1 kg of zolpidem.

Analgesics

144. Lefetamine is the only analgesic included in Schedule IV. No manufacture of and no trade in the substance have been reported since 1996. One kilogram of the substance is currently held in stock by Italy.

Figure 28. Barbiturates listed in Schedules II, III and IV: total reported manufacture (aggregated in terms of S-DDD), by substance, 2003

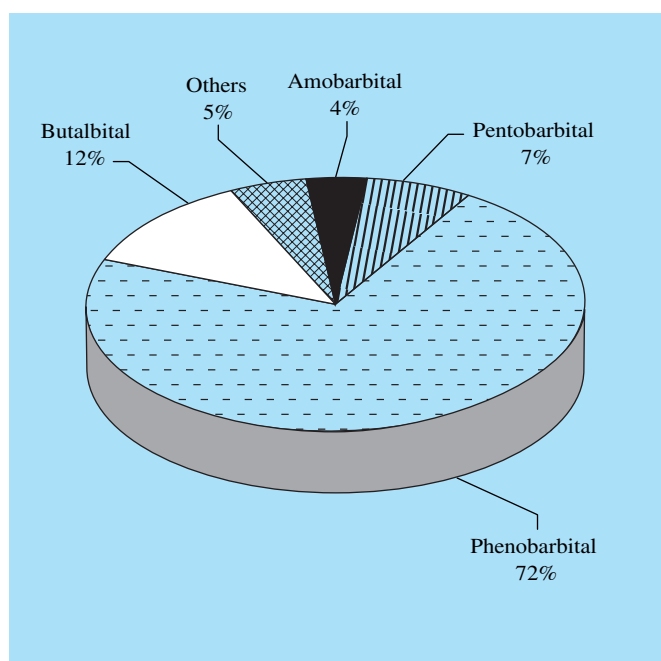


Figure 29. Barbiturates listed in Schedules II, III and IV: total reported manufacture (aggregated in terms of S-DDD), by country, 2003

