Control of addictive drugs in Iceland 1976–78

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SUMMARY During the years 1972–76 drug prescriptions and sales of drugs were surveyed in Iceland. Compared with the other Nordic countries, except Denmark, sales of the psychotropic drugs which may lead to addiction were highest in Iceland, as previously reported. Here we explain the efforts of the Icelandic health authorities to reduce the legitimate consumption of psychotropic drugs. These efforts are mainly directed towards doctors' prescriptions to outpatients. A survey of prescriptions and sales of drugs in Iceland in 1976–78 revealed that (1) the number of individuals receiving drugs subject to reporting in Iceland decreased by 40% between 1976 and 1978; (2) the prescribed amount of hypnotics and sedatives subject to reporting decreased by 45% in the same period; (3) the prescribed amount of narcotic analgesics decreased by 20%; (4) the prescribed amount of amphetamines and related drugs decreased by 40%; and (5) the amount sold of diazepam and related drugs decreased by 20%. The available data suggest that EDB-registration of prescriptions subject to recording and feedback to doctors about their prescribing habits contributes to a reduction in the use of the drugs recorded.

In this paper we survey the efforts of the Icelandic health authorities to reduce the legitimate consumption of those psychotropic drugs which may lead to addiction. We also present a summary of the changes in prescriptions for drugs subject to recording and sales of benzodiazepines in Iceland in the last three years.

Previously, we have reported on legitimate prescriptions and sales of hypnotics, sedatives, tranquillisers and central nervous systems (CNS) stimulants in Iceland during 1971–76.^{1–5} It was shown that relatively large quantities of these drugs were prescribed. For example, in 1972 the total number of daily doses of tranquillisers and hypnotics was of the order of 100 per 1000 inhabitants a day. In comparison with the other Nordic countries, Iceland came second only to Denmark, which had the highest number of prescriptions. The benzodiazepines diazepam and nitrazepam accounted for the greatest number of prescriptions. Sales of amphetamines in Iceland were several times larger than in the other Nordic countries, where more severe restrictions had been placed on the use of these agents.^{1,3,6}

EFFORTS TO LIMIT THE LEGITIMATE USE OF ADDICTIVE DRUGS

In order to reduce the improper use of drugs it is necessary continually to furnish the medical profession and the public with information on drugs, their actions, and the dangers of improper use. It is

also important to maintain a mutual flow of information between health authorities, doctors, and scientific institutions on the indications and contraindications of drugs, as well as a feedback to doctors on the prescribed amounts and on abuse by individual patients.

The Director General of Public Health in Iceland supervises the prescribing of drugs by doctors, with the assistance of the State Drug Inspectorate.

The following summary shows the major efforts initiated in Iceland in order to combat the overuse and misuse of addictive drugs.

In 1940 prescriptions for analgesics of the morphine group (narcotics) and, later, amphetamines and related agents were made subject to reporting.

In 1967 an EDB-system for the control of all prescriptions subject to reporting was brought into use on a year-round basis (data bank).

During 1973–74 prescriptions for barbiturates, meprobamate, glutethimide (Doriden) and CNS-stimulants such as phentermine (Mirapront) and pemoline (Hyton) were made subject to recording.

Doctors were required to use a standardised prescription sheet by regulations issued in 1973.

Instructions on maximum monthly doses of several hypnotics and sedatives were issued to doctors in 1975 (Table 1).

Table 1 *Recommended monthly maximum prescribed amounts of some hypnotics and sedatives (1975)*

Mebumal	6 g
Diazepam	1 g
Nitrazepam	0.5 g
Meprobamate	40 g
Chlordiazepoxide	2 g
Medazepam	1 g

INTENSIFIED CONTROL EFFORTS

- (1) According to regulations issued in 1976, certain CNS stimulants may be prescribed only by special permission from the Director General of Public Health and then only for certain definite indications. Phentermine, however, remains exempt from these regulations. In the same year amfepramone was removed from the Icelandic Drug Register.
- (2) Tablets containing 10 mg of diazepam were removed from the Drug Register in 1977, as drug surveys had shown that this tablet strength was particularly sought after by a substantial number of patients. This was interpreted as a sign of the danger of diazepam addiction.
- (3) Since 1977 doctors have regularly received an EDB-journal of data on drugs subject to recording for which they have issued prescriptions.⁷

In cases where the prescription of psychotropic drugs, which may lead to addiction, appears unsuitable from the health point of view, special measures are called for by the Director General of Public Health. If formal warnings do not result in a satisfactory reduction of prescriptions, the doctor is usually asked voluntarily to give up the right to prescribe the actual drugs. In exceptional cases stricter measures are called for.

PRESCRIPTIONS OF DRUGS SUBJECT TO REPORTING 1976-78

The following is a summary of prescriptions of drugs subject to reporting in Iceland in 1976, 1977, and 1978. To facilitate comparison the data are given in DDD/1000 inhabitants/day. The defined daily dose (DDD) for a drug is a unit of comparison laid down by a working group of the World Health Organisation on the use of drugs, that is, an estimated average daily dose of the drug when used for its intended main indication.

Table 2 shows the defined daily doses of most of the drugs mentioned in this paper.

Table 3 shows that the number of people receiving prescriptions for barbiturates and glutethimide was almost halved during the period and that the number of daily doses per 1000 inhabitants a day was reduced by 48.8%.

The reduction in meprobamate prescribed was 32.7% and there was a 20% decrease in prescriptions for strong analgesics.

No additional restrictions were introduced with respect to narcotic analgesics during 1976-78, but as was mentioned earlier doctors began in 1977 to receive journals of data on their prescriptions for these and other agents.

The quantity of CNS stimulants prescribed decreased by 60% in terms of kilograms while the reduction in the number of daily doses was 40%. As was mentioned earlier, tighter restrictions on the medical use of these drugs were introduced in 1976 (excluding phentermine) and amfepramone was removed from the drug register.

The total number of persons in Iceland receiving prescriptions subject to reporting from doctors was 7250 in 1976 and 4164 in 1978—a reduction of 42.6%.

On the whole, the quantity of drugs received in accordance with prescriptions subject to recording decreased by a little over 40% in the period 1976-78.

SALES OF BENZODIAZEPINES

Table 4 shows the total sales of tranquillisers, sedatives, and hypnotics in Iceland (inpatients and

Table 2 *Defined daily doses of some hypnotics, sedatives, narcotic analgesics, and central nervous system stimulants*

Drugs	Dose (mg)
Barbiturates	100
Glutethimide	250
Meprobamate	1200
Opium	300
Morphine	30
Methadone	25
Pethidine	240
Pentazocine	200
Codeine	40
Dextropropoxyphene	195
Amphetamine	15
Methylphenidate	30
Phentermine	15
Pemoline	60
Amfepramone	75
Diazepam	10
Chlordiazepoxide	30
Medazepam	20
Oxazepam	50
Flurazepam	30
Nitrazepam	5

Table 3 Prescriptions of drugs subject to recording to outpatients in Iceland: DDD/1000 inhabitants/day. (Number of recipients/year in brackets)

	1976	1977	1978	Reduction 1976-1978
Hypnotics: barbiturates and glutethimide	4.80 (1622)	3.20 (1126)	2.46 (858)	48.8%
Meprobamate	0.98 (919)	0.85 (652)	0.66 (468)	32.7%
Narcotic analgesics	1.16 (2499)	1.17 (2119)	0.93 (1846)	19.8%
CNS-stimulants (all)	3.45 (2799)	2.37 (1599)	2.03 (1212)	41.1%
Phentermine (Mirapront)	1.57 (2189)	1.28 (1466)	1.24 (1109)	21.2%
Other than phentermine	1.88	1.09	0.79	58.0%

outpatients) in 1970-78. This Table shows that the difference in the sales of these groups of drugs in 1976 compared with 1978 was 21.6 daily doses a 1000 inhabitants a day—a decrease of 21.8%. Sales of diazepam decreased by 29% and of nitrazepam by 12%. The decrease in diazepam sales in 1977 is connected with the removal of the 10 mg tablets from the market in that year. Nitrazepam has to a large extent replaced the barbiturates as a hypnotic.

Discussion

The data presented above suggest that EDB-registration of prescriptions subject to reporting and an organised flow of information back to doctors about their own prescribing habits contribute to a reduction in the use of the drugs prescribed.

The control system encompasses the following: (1) Some 20 000 prescriptions a year; (2) about 450 doctors; (3) a little over 225 000 inhabitants; (4) 38 pharmacies; and (5) 30 addictive drugs in 50-60 pharmaceutical preparations.

A data journal of a doctor's prescriptions in each month, together with a list of patients who have received noticeably large amounts of these drugs, perhaps from more than one doctor, is issued only two or three times a year. In addition, the Director General of Public Health gets in touch with doctors when there is a suspicion of unjustifiable prescribing practices.

In the last three years the number of individual recipients of drugs subject to reporting in Iceland has decreased by 40%. What has replaced the kg amounts of drugs which have disappeared from the market can only be guessed. There is no evidence to show that these drugs are being replaced by other

habit-forming drugs prescribed by doctors. In this connection it should also be kept in mind that sales of benzodiazepine have decreased by 20% in the last three years.

Relatively little is known about the circulation and use of illegal intoxicants in Iceland. There is a well-substantiated suspicion that brewing of home-made wine and beer has increased considerably in recent years. Thus a number of persons may be using the sedative and hypnotic actions of alcohol. According to the State Alcohol Monopoly in Reykjavík, the legal sales of alcohol showed a relatively small increase during the period, from 2.85 litres of pure ethyl alcohol for each inhabitant in 1976 to 2.96 litres in 1978.

Many people consider that benzodiazepines continue to be prescribed in unnecessarily large quantities in Iceland, and that often their use is not medically sound. These drugs are far less toxic than barbiturates and it should be noted that barbiturate poisoning, which was the most common reason for hospitalisation due to poisoning before 1970, now occurs infrequently.⁸ However, it is an established fact that these drugs carry severe dangers of addiction, and the Director General of Public Health has therefore proposed that prescriptions of benzodiazepines should be made subject to reporting in order to bring them under continuous control.

Conclusion

The available data seem to indicate that the introduction of a comprehensive EDB-control system for prescriptions for addictive drugs fulfils a need felt by doctors for feedback in this field. With the aid of such a control system, sufficient and complete information can be acquired on doctors'

Table 4 Sales of tranquillisers, sedatives, and hypnotics in Iceland 1970-78 DDD/1000 inhabitants/day

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Benzodiazepine derivatives	65.48	65.82	69.88	72.71	75.46	80.40	91.21	72.49	71.77
Meprobamate	3.68	3.81	3.50	2.89	1.95	1.88	0.98	0.85	0.66
Barbiturates	27.29	28.94	27.92	22.22	15.12	10.81	6.05	5.40	4.15
Other hypnotics and sedatives	0.87	0.92	0.86	0.90	0.90	0.85	0.78	0.88	0.80
TOTAL	97.32	99.49	101.36	98.72	93.43	93.94	99.02	79.62	77.38

prescriptions, on patients' use of drugs, and on the pattern of consultations. This affords improved opportunities for discovering abuse and taking action more rapidly.

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