RP12/95-96

Methadone Treatment Programmes in Hong Kong and Selected Countries

Research and Library Services Division
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Background

At a Legislative Council meeting with the Tsuen Wan District Board on 1 June 1995, some District Board members expressed dissatisfaction over the nuisance caused by patients of the Lady Trench Methadone Clinic to nearby residents and shops. They also questioned the effectiveness of current methadone treatment programme offered to drug abusers.

2. The Research and Library Services Division of the Legislative Council Secretariat, upon the request of the LegCo Panel of Health Services, has undertaken a study to evaluate the usefulness and cost-effectiveness of the methadone treatment programme in Hong Kong and the alternative treatment methods available.

3. This report presents findings of the study and is divided into the following parts:

I. Number and characteristics of drug abusers in Hong Kong
II. Drug treatment and rehabilitation programmes in Hong Kong
III. Methadone treatment programme in Hong Kong
IV. Analysis of the usefulness and effectiveness of methadone treatment programme in Hong Kong
V. Methadone treatment programmes in other countries
VI. Substitutes for methadone

Part I - Number and characteristics of drug abusers in Hong Kong

4. The Central Registry of Drug Abuse (CRDA) of the Narcotics Division, Security Branch collects information from various drug treatment agencies on the number and characteristics of drug abusers. Paragraphs 5 to 17 below describe the characteristics of drug abusers[1] who undertook treatment in the past decade.

Number of drug abusers

5. The number of drug abusers was 17,598 in 1986. It decreased to 15,216 in 1992, but such trend had reversed in 1993. In 1994, CRDA recorded 20,326 drug abusers, representing the highest number in the past ten years. The rate per 100,000 population was 335 in 1994. (Appendix 1)

[1] According to the Report on Treatment and Rehabilitation Services, Hong Kong, 1-9 November 1992 by the UK Drug Demand Reduction Task Force, only one-third of the drug abusers have contact with treatment agencies. The total number of drug abusers is therefore much larger.

Number of newly reported persons

6. Among the total number of drug abusers reported to CRDA are newly reported persons who come to CRDA's notice for the first time. In 1989, there were only 2,228 new cases but the number had increased drastically in the following years to reach 5,024 in 1994. (Appendix 2)

Major drug abuse

7. Heroin was the most commonly abused opiate drug[2] in the past ten years. More than 90% of drug abusers took heroin although the proportion had decreased from 98% in 1986 to just over 90% in the mid 1990s. (Appendix 1)

8. For newly reported drug abusers, the proportion of abusing heroin had maintained at 60% in the late 1980s. However, such proportion increased significantly in the 1990s and was 78% in 1994. Cannabis, a non-opiate drug, was abused by 27% of the new cases in 1989, but the proportion had dropped to 17% in 1994. (Appendix 2)

Method of taking heroin

9. There are three common methods of administering heroin. They are injection, smoking and fume inhaling, among which injection is the most popular method, accounting for 60% of the drug abuser population. (Appendix 1)

10. As for the newly reported drug abusers, the proportion of taking heroin by injection is much lower, fluctuating from 12% to 33% in the past ten years. (Appendix 2)

Sex and age distribution

11. Drug abusers are predominantly male, but the male:female ratio had decreased from 13:1 in the late 1980s to 8:1 in recent years (Appendix 1). The sex ratio of new cases remained at about 5:1 throughout the past ten years (Appendix 2).

12. In 1980s, 60% of drug abusers were aged 21-40 while less than 10% were aged under 21. However, the proportion of the latter had doubled in the mid 1990s. The mean age had also reduced from 37 in the 1980s to 33 in recent years (Appendix 1).

Employment status

13. Around 60% of the drug abusers and new cases are employed although the employment rate for both groups had decreased steadily commencing mid 1980s.

[2] Including opium, morphine, heroin and codeine.

The proportion of students was 2% and 8% in Jan-Sep 1995 for all drug abusers and new cases respectively. (Appendices 1 and 2)

Previous convictions

14. Over 80% of all drug abusers and some 40% of the new cases had previous convictions. (Appendices 1 and 2)

Geographic distribution

15. The number of drug abusers in all districts had increased significantly in recent years. On Hong Kong Island, Southern district had overtaken Wanchai as the district with the highest concentration of drug abusers since 1989, having a rate of 384 drug abusers per 100,000 population in 1994. In Kowloon, Yau Tsim Mong had the highest rate of 496 abusers per 100,000 population, followed by Wong Tai Sin (473) and Sham Shui Po (447). In the New Territories, Yuen Long, North District and Tuen Mun had the highest concentration of drug abusers. The rate per 100,000 population for the three districts in 1994 were 497, 441 and 425 respectively.

Juvenile drug abuse situation

16. The number of young drug abusers had increased drastically in the past five years. In 1994, over 4,000 juvenile drug abusers were recorded which was three times the size of that in 1990. The rate of drug abusers per 100,000 population for this age group had correspondingly rocketed from below 100 in the 1980s to 250 in 1994. (Appendix 3)

17. Heroin was the dominant drug among young drug abusers with the proportion increased substantially from less than 50% in the late 1980s to 80% in 1994. Other non-opiate drugs such as cannabis and cough medicine were also popular among juveniles. (Appendix 3)

Part II - Drug treatment and rehabilitation programmes in Hong Kong

Drug treatment programmes in Hong Kong

18. There are three major treatment programmes available to drug abusers. Appendix 4 gives the number of admissions to different treatment programmes from 1986 to Jan-Sep 1995.

I Methadone treatment programme

19. This is an unrestricted, non-residential treatment programme provided by the Department of Health. Supplemented by regular medical and counselling services, this programme aims at assisting drug abusers to abstain from opiate drugs by intaking reasonable dose of methadone at methadone clinics. There is no time limit for methadone treatment.

20. Methadone treatment programme is the most popular treatment programme in Hong Kong. More than 60% of drug abusers seek methadone treatment in the past ten years.

II Voluntary in-patient treatment programme

21. This programme is run by the Society for the Aid and Rehabilitation of Drug Abusers (SARDA) and is for drug abusers who voluntarily seek in-patient detoxification and rehabilitation treatment. It offers medication, counselling service, psychotherapy and social education for drug abusers through their treatment centres, half way houses and regional social service centres. The detoxification and convalescence treatment lasts from twelve to sixteen weeks while the aftercare service provided to dischargees may last for two years.

22. In 1993, 2,572 drug abusers voluntarily sought SARDA treatment. It was the highest number recorded since SARDA's operation. However, the number of patients decreased to 2,257 in 1994, against the upward trend of the total drug abuser population.

III Compulsory placement programme

23. This programme is designed to help drug abusers who have been sentenced to imprisonment in a Drug Addiction Treatment Centre (DATC). Operated by the Correctional Services Department, the programme requires patients to undergo medication, counselling and work therapy treatment aiming at total detoxification. The length of stay in DATCs varies from two to twelve months depending on the inmates progress. The average length of stay is six months. DATCs also require the dischargees to participate in a one year aftercare supervision programme.

24. Admissions to DATCs had increased from below 2,000 a year in the early 1990s to 2,451 in 1994, accounting for less than 15% of total drug abusers undertaking different types of treatment.

IV Other voluntary agencies

25. In addition to the above programmes, there are other smaller scale voluntary agencies which also provide detoxification and rehabilitation services to drug abusers by counselling, psychotherapy, vocational training and Christian faith. In general, these programmes last from three months to several years.

26. Among all the treatment programmes, drug abusers admitted to other voluntary agencies are relatively low. In 1994, there were only 743 cases reported to these voluntary agencies, representing only 4% of total admitted patients undertaking drug treatments.

Treatment for drug abusers aged under 21

27. Admission to methadone treatment was also common among young drug abusers. According to the 1994 CRDA statistics, 45% of drug abusers aged under 21 were admitted to methadone treatment programme, 29% to DATCs, 17% to treatment programmes run by other voluntary agencies and 9% to SARDA.

Part III - Methadone treatment programme in Hong Kong

Nature of methadone

28. Methadone is an opiate agonist which produces a heroin-like effect. It minimizes the withdrawal symptoms of heroin addicts and induces cross-tolerance to other opiates. Methadone can be used for maintenance and detoxification treatment for heroin addicts. Maintenance treatment aims to block drug addicts from recurrent opiate craving and at the same time stabilize their daily life by regular medication. Detoxification is to wean drug addicts off opiates completely by medical and/or psychotherapy interventions. Methadone can be taken orally and its action lasts for twenty-four to thirty-six hours. However, this drug is addictive and illicit use will result in overdose death.

History of Methadone treatment programme

29. Methadone was first introduced to Hong Kong in 1972 as two 3-year pilot studies to test its efficacy in maintenance treatment for drug addicts.

30. In 1974/75, there was a sudden heroin shortage and the price increased sharply. In order to cope with the increasing demand for heroin substitutes and to prevent drug addicts from committing crime, the government launched the out-patient methadone maintenance programme and four methadone clinics were opened.

31. In 1976, detoxification programme was introduced to the existing methadone clinics and a further fifteen methadone clinics were opened specifically for detoxification purpose.

32. In 1979, methadone maintenance and detoxification treatment programmes were combined and the total number of clinics offering these services increased to twenty-one, many of them are still in operation.

Programme operation

a) Number of methadone clinics

33. As at the end of 1995, there was a total of twenty-one methadone clinics - four on Hong Kong Island, ten in Kowloon, six in the New Territories and one on Cheung Chau. Among all the clinics, six open daily from 7:00 am to 10:00 pm, fourteen from 6:00 pm to 10:00 pm. The one on Cheung Chau opens from 1:00 pm to 8:00 pm. All clinics operate seven days a week. During typhoons, special arrangements will be made and twelve clinics will remain opened to serve the patients.

b) Staffing

34. Methadone clinics are mainly maintained by Auxiliary Medical Services (AMS) members, part-time medical officers and social workers.

35. According to the information provided by the Department of Health, there are sixty-seven AMS members working at 8-hour shifts and seventy-four members working at 5-hour shifts at the methadone clinics. Altogether, a total of 906 man-hours are spent each day on methadone treatment programme.

36. Apart from the AMS members, there are fifty part-time medical officers working on roster basis to provide admission and medical services to patients at all methadone clinics.

37. As regards the counselling service, the Department of Health previously deployed seven full-time and seventeen part-time social workers from SARDA who worked two sessions per week. However, due to the increase of juvenile drug abusers, the Department had increased the deployment to nineteen full-time staff commencing October 1995.

c) Admission criteria

38. Except for those suffering from serious illness, there is no age limit and specific admission criteria for joining the methadone treatment programme. For children aged under 18, parental consent is preferable but not mandatory. New patients aged under 25, or with less than two years addiction history or wish to undergo methadone detoxification treatment are first encouraged to go for in-patient detoxification treatment at SARDA or other voluntary agencies.

39. If they consider in-patient treatment as disruptive to their work or schooling, they can choose either the out-patient methadone detoxification or maintenance programme. If out-patient detoxification fails, the patient will be encouraged to join the in-patient treatment programmes before being put on the methadone maintenance programme.

d) Admission process

40. Methadone patients are admitted only when a medical officer is on duty. If no medical officer is on duty, the patient will be referred to the nearest methadone clinic with medical officer on duty or to the nearest Accident and Emergency (A&E) Department seeking referral from the A&E medical officer to prescribe methadone in a methadone clinic. However, the patient still needs to go through the formal admission process at a time when the medical officer in that methadone clinic is on duty.

41. Upon admission, the patient will be asked to take a urine test. Then the medical officer will assess the patient's health condition and addiction history for dose prescription. The patient also needs to see the social worker before methadone is dispensed.

e) Transfer from one methadone clinic to another

42. All patients are allowed to register with only one methadone clinic. If transfer to other clinic is required, the patient needs to seek approval from the medical officer and undergo the transfer-out process before readmission to another clinic. Therefore there is no double record for an individual patient in the programme.

43. For the transfer-in cases, patients are not required to see the medical officer because the same dose of methadone will be prescribed. However, they have to see the social worker for future counselling.

f) Dose prescription

44. The prescribed dose for each patient is different. The medical officer assesses the patient's addiction history upon registration and prescribes a 30-40 mg of methadone which will be automatically increased to 70 mg over two to five weeks depending on the patients' attendance. The optimum maintenance dose is one that

can retain the patient in the programme. Such dose will remain unchanged except at the request of the patient. Besides, any patients absent for seven or more days will be referred to the on duty medical officer for dose review.

g) Administering method

45. Methadone is administered under very strict control. All patients are required to take their medication in the presence of the dispensing staff. No methadone can be taken away from the clinics.

h) Urine testing

46. Urine analysis is the tool for testing drug addicts relapse for opiates and is taken without the patients' prior knowledge. According to the Department of Health, urine samples are collected from all new and readmitted patients before dispensing methadone. Afterwards, tests are conducted once every two weeks in the first three months and then once every three months. For patients undergoing detoxification process or are being maintained on a low dose of methadone, monthly urine tests are conducted.

47. If a urine test indicates that a drug addict has relapsed for opiates, the medical officer will interview the patient and assess the need for increasing dose and arranging further counselling service.

I) Counselling

48. SARDA took over the counselling service from the Social Welfare Department in 1993 and provides social workers to all methadone clinics two to three times a week.

49. All new and readmitted patients aged under 25 are specially looked after and counselling service is conducted once every two weeks in the first year of admission. Then, the patients are put on a less frequent counselling schedule depending on their needs and progress in the treatment.

50. For patients aged 25 or above, new cases are counselled once every four weeks in the first year of admission. Those readmitted patients aged 25-39 are counselled once every three months. As regards readmitted patients aged 40 or above, counselling service is only offered once every six months.

51. Starting from October 1995, SARDA has extended their counselling services for another eighteen months to patients who have completed their first year of treatment.

Number of registered methadone patients

52. In the past five years, the number of registered methadone patients as at the end of each year maintained at about 9,000-11,000. Almost all of them received maintenance instead of detoxification treatment. (Appendix 5)

New admissions and readmissions

53. Patients who fail to attend the programme for twenty-eight consecutive days are considered as drop out. If they choose to join the programme again, they have to undergo the readmission process. In each of the past five years, about 9,000 drug addicts dropped out and over 80% of the registered patients were readmitted drug addicts, indicating large mobility of patients. (Appendix 5)

Number of attendance

54. Each registered patient is allowed to receive methadone treatment once per day. The average daily attendance had decreased from 8,035 in 1991 to 6,401 in 1994. However, such figure bounced back to 7,002 in 1995, representing 71% of the average effective registered patients in that year. (Appendix 5)

55. Among all the methadone clinics, Robert Black Clinic in Wong Tai Sin had the highest average daily attendance. In the past three years, there were over 800 attendance per day. In contrast, the Cheung Chau Clinic had only 30 attendance per day, the lowest daily attendance among all clinics.

Age and sex distribution

56. Methadone patients are predominantly male, but the male:female ratio had decreased from 18:1 in 1991 to 13:1 in 1995. About 50% of methadone patients were aged 31-50. (Appendix 5)

Employment status

57. Over 50% of methadone patients were employed, but the proportion had declined from 65% in 1991 to 54% in 1994 (Appendix 5).

Cost of methadone treatment programme

58. In 1995/96, a HK$29 million is allocated to the Department of Health for the methadone treatment programme. The breakdown is as follows:

Items	Cost (HK$m)
Staff salaries	24.6
Methadone	0.9
Supportive and administrative expenses	3.5
Total expenses	**29.0**

Source : Department of Health

59. In addition, a sum of about HK$4 million is subvented to SARDA for providing counselling services to methadone patients. It should be noted that the accommodation cost is excluded because most of the methadone clinics are attached to the district polyclinics. According to the information provided by the Department of Health, the cost of each attendance is estimated to be HK$15 including staff salaries and pensions, overhead, drug and accommodation cost. The fee charged for each visit is HK$1.

60. Since there is no information on the duration of a methadone patient staying in the programme, it is difficult to estimate the total cost spent on each methadone patient in order to keep them away from drugs. As the average attendance is about 70%, the cost to maintain each patient in the programme is estimated to be HK$4,000 per year. As methadone programme in Hong Kong is chiefly for maintenance purpose, the number of patients successfully detoxified since the introduction of the programme was only 227.

61. Comparing the cost among major drug treatment programmes, methadone treatment programme ranks the lowest. The costs of other programmes are given in Appendix 6.

62. According to the Correctional Services Department, the total operating cost for DATCs was about HK$50 million per year. However, such amount had increased to HK$94 million in 1994/95 due to the construction of an annex to Hei Ling Chau Addiction Treatment Centre which is used for accommodating the male young inmates under the age of 21. Each year, about 1,600-2,200 inmates are detoxified and admitted to the mandatory one-year supervision programme. Among the released detoxified inmates, over 60% had successfully completed the supervision programme without reconviction or relapsing to drugs.

63. As regards SARDA, the operating cost increased from HK$38 million in 1992/93 to HK$41.5 million in 1994/95. SARDA has different programme combinations to facilitate different needs of drug addicts. In 1994, 1,154 out of 2,257 patients completed the three weeks detoxification programme, 493 patients completed the following nine to thirteen weeks residential rehabilitation programme after the completion of the three weeks detoxification programme, 302 patients

completed the halfway house programme and 1,447 dischargees were taken over by the social service centres.

Part IV - Analysis of the usefulness and effectiveness of methadone treatment programme in Hong Kong

64. The following paragraphs analyse to what extent the objectives of current methadone treatment programme as stated by the Department of Health have been achieved.

Objective (i) : To help drug addicts to reduce opiate craving, block the effect of heroin withdrawal so that they can live a normal and productive lifestyle.

65. As methadone treatment programme is not a residential programme, patients can stay with their family, work or attend school as usual and continue to perform other daily activities. Among all the treatment programmes, it allows the greatest freedom for drug addicts. Besides, the efficacy of methadone lasts twenty-four to thirty-six hours so that one clinic attendance per day is sufficient. This programme is therefore the most popular drug treatment programme with over 60% participation by drug abusers.

66. However, as about 40% of the drug abusers are unemployed and only 2% are students, the programme may not be adequate to help them lead a normal and productive lifestyle. Indeed, as shown in the following table, there is no improvement in the employment status after drug abusers join various treatment programmes.

Activity status of drug abusers Jan-Sep 1995

Activity status	New Cases (%)	Old Cases (%)
Employed[1]	58.0	56.1
Unemployed	31.2	40.4
Student	8.6	0.7
Others[2]	2.2	3.0
Total	**100.0**	**100.0**

Remarks : 1. Including full-time worker, casual/part-time worker and worker in illicit trade.
2. Including home-maker and retired person.

Source : Central Registry of Drug Abuse, Narcotics Division

67. According to the information provided by the Department of Health, the employment status of methadone patients are similar to that of all drug abusers under various programmes taken together. Assuming that the above pattern of total drug abusers also applies to methadone patients[3], it can be inferred that methadone treatment programme cannot ease unemployment among drug abusers.

Objective (ii) : To reduce the rate of intravenous drug administering and needle sharing so as to prevent the spread of HIV/AIDs and hepatitis.

68. The following table shows a higher proportion of old drug abusers taking heroin by injection.

Percentage of drug abusers taking heroin by injection 1991 - Jan-Sep 1995

	1991	**1992**	**1993**	**1994**	**Jan-Sep 1995**
	%	%	%	%	%
New cases	21.6	18.4	16.4	12.0	18.8
Old cases	68.4	67.2	65.0	61.5	62.6

Source : Central Registry of Drug Abuse, Narcotics Division

69. Assuming the methadone patients have similar drug taking behaviour as all drug abusers undergoing treatment, methadone treatment programme would not help in reducing the use of needles.

Objective (iii) : To reduce the rate of criminal offences and antisocial behaviour by providing a readily accessible, legal and medically safe alternative to continued illicit opiate self-administration.

70. A comparison of conviction rate between the new and old drug abusers indicates that the proportion involved in criminal offences is much higher among the latter.

[3] Statistics on methadone patients broken down by old and new cases not available.

Percentage of drug abusers having previous convictions 1991 - Jan-Sep 1995

	1991	1992	1993	1994	Jan-Sep 1995
	%	%	%	%	%
New cases	43.6	46.2	47.4	45.3	44.2
Old cases	92.2	91.4	90.9	90.6	90.9

Source : Central Registry of Drug Abuse, Narcotics Division

71. Again, if the above pattern also applies to methadone patients who account for over 60% of all abusers covered in the above table, it can be inferred that methadone treatment programme does not help to reduce crime rate.

Objective (iv) : To assist drug addicts to detoxify and to achieve a drug-free state.

72. According to the information provided by the Narcotics Division, only 227 methadone patients had been successfully detoxified since the implementation of the programme. A one-day survey conducted in July 1995 by the Department of Health also indicates that almost 50% of methadone patients had stayed in the programme for more than fifteen years. While it is noted that the present programme is basically for maintenance instead of detoxification purpose, the large number of drop-out cases and readmissions suggests that the patients are not maintained in the programme in a stable manner.

Number of drop-out cases and readmissions 1991-1995

	1991	1992	1993	1994	1995
Drop-out cases	9061	9544	8805	8454	9583
Readmissions	8673	7576	8235	9509	8611

Source : Department of Health

73. With a fairly large proportion of methadone patients without employment and in view of the fact that drug addicts have to spend about $267 on drugs per day, there appears a strong reliance on methadone as a convenient substitute by drug abusers. The following table shows a positive correlation between the price of heroin and the demand for methadone treatment and suggests that methadone is used as a substitute for heroin.

Average retail price of heroin vs average daily attendance to methadone programme 1991-1995

Year	Price of heroin	Average daily attendance
1991	547	8035
1992	425	7361
1993	357	6478
1994	348	6401
1995	363	7002

Source : Central Registry of Drug Abuse, Narcotics Division
Department of Health

74. The present methadone treatment programme cannot help drug addicts to achieve a drug-free state. It is also not known to what extent opiate dependence is reduced through participation in this programme. To evaluate the effectiveness of the programme in this respect, results of the urine tests taken on methadone patients by the Department of Health would be extremely useful. It is regrettable that such data are not published nor provided to the researcher.

Usefulness and effectiveness of methadone treatment programme

75. It can be noted from the analysis in paragraphs 64-74 that methadone treatment programme is not particularly helpful to drug addicts themselves in improving their employment status, reducing the use of needles and abstaining from drugs. However, as there is a strong correlation between the price of heroin and programme attendance, there appears to be a need for the availability of an easily accessible means of substitute in case of an upsurge in heroin price.

76. As the unemployment rate among drug abusers is high, and over $200 on drugs per day is spent by each drug addict, some addicts may be driven to committing crime if methadone is not available. There will be a marked deterioration in the crime situation even if a small proportion of methadone patients engage in crime, as indicated by the comparison of the number of quick-cash crime[4] and registered methadone patients below.

[4] Including robbery, burglary, snatching, pickpocketing and theft.

No. of quick-cash crime 1995	52,038
No. of registered methadone patients (as at end of 1995)	10,006

Source : Hong Kong Monthly Digest of Statistics February 1996
Department of Health

Part V - Methadone treatment programmes in other countries

77. The following paragraphs provide some information on the experience of other countries in the use of methadone as a drug treatment agent. A comparison of the contents of the programmes for these countries is given in Appendix 7.

US - Methadone for maintenance

78. The number of drug abusers and methadone patients in the US is estimated to be 500,000 and 115,000 respectively. Approved by the US Food and Drug Administration for maintenance treatment of opiate addiction, methadone has been in use for thirty years. Apart from methadone medication, patients are required to attend other medical and social services regularly. Most of the methadone treatment programmes are closely monitored ensuring that the services are in compliance with Federal regulations.

79. Research conducted on the US programmes indicates that the effectiveness of methadone treatment varies greatly with the dose prescribed and the competence of the counselling services. It is found that the longer the patients remain in treatment, the lower the use of heroin, HIV seroprevalence and criminal behaviour. There is also marked improvement in the general health and nutritional status of the patients. Since criminality and risk of HIV/AIDS exposure has reduced, methadone treatment effectively reduces economic and social burdens.

Australia - Methadone for maintenance

80. In Australia, it is estimated that 30,000-50,000 individuals regularly and 60,000 individuals occasionally abuse heroin. The number of methadone patients was about 1,000 in the early 1980s, but had increased to over 7,000 in 1990. The increase is due to the fact that methadone is now perceived as an effective intervention to prevent the spread of HIV infection among drug abusers. As a result, there has been a remarkable increase in methadone maintenance services and additional funding has been allocated to improve staff training for methadone programmes. Although methadone is the main drug approved for the management of heroin dependence, on occasions, other drugs such as codeine, dextramoramide, buprenorphine or oxycodone may also be prescribed.

81. However, the use of methadone for detoxification had decreased in the last decade. Instead, clonidine and other non-medical detoxification options are used.

Canada - Methadone occasionally for maintenance and detoxification

82. The number of drug abusers in Canada was estimated to be 10,000-20,000 in the 1980s. Despite the fact that some clinics use methadone as a detoxification agent in response to the HIV epidemics, methadone medication is only regarded as one of the available but not the most effective treatment options. The extent to which methadone is used is declining and many methadone clinics in British Columbia, where 70% of Canadian drug abusers are found, had closed.

France - Methadone solely for maintenance

83. Methadone was least-favourably regarded in France. In the 1980s, although there were approximately 80,000 drug abusers in France, the number of methadone patients were less than 100. Only two out of the four authorized methadone treatment hospitals used methadone for maintenance purpose.

84. The use of methadone for detoxification has been abandoned since 1976 in favour of alpha adronergic agonists such as clonidine, minor analgesics, benzodiazepines and buprenorphine. Despite the negative attitude towards methadone maintenance and the various available drug treatment options, there is a significant increase in the use of methadone to prevent HIV infection in recent years.

85. As methadone patients are closely monitored in the methadone treatment programmes in France, the heavy staff involvement in the supplementary medical and counselling services is a main obstacle for programme expansion.

Netherlands - Methadone for maintenance

86. Between 1980-1990, there were 15,000-20,000 drug abusers in the Netherlands, of whom 5,000-10,000 received methadone maintenance treatment.

87. When methadone programmes first implemented in the Netherlands, the primary goal was to help drug abusers with two years of drug abuse experience to abstain from drugs. Thus, daily urine analyses, regular medical examination and counselling were conducted. In 1976, there was a substantial increase in the number of heroin abusers and the associated social problems, a more extensive, accessible low-threshold programme was developed to provide a substitute for drug abusers. Such programme was further reinforced by the emergence of hepatitis B and HIV infection.

88. At present, methadone maintenance is firmly established as a major preventive and treatment option in the Netherlands, and it has been accepted as an effective means of reducing illicit drug use. In addition to the clinic and general practitioners prescriptions, the lowest threshold methadone programme in

Amsterdam offers "methadone by bus". Every day, two buses are driving through the city and dispense methadone to heroin abusers.

Thailand - Methadone for short-term detoxification

89. Thailand has the greatest opium dependence problem. In 1987, there were about 100,000 drug abusers and 50% of them were in treatment. Although methadone had introduced to the country in 1960 followed a heroin epidemic, the lack of interest and negative attitudes of the professional therapists and policy makers, less than 1,000 drug abusers received methadone treatment.

90. Among all the countries studied, Thailand prescribes the highest dose of 100-150 mg of methadone to patients per day. However, the length of treatment limits to 45 days only since methadone is regarded as a detoxification agent. Other detoxification agent commonly used in Thailand is tincture of opium which is used in conjunction with other medications.

91. Since the identification of HIV epidemic among drug abusers in Bangkok in early 1988, the Ministry of Public Health had proceeded with a national clinical trial of methadone maintenance as a preventive measure for HIV transmission in 1989. Its effectiveness is under study.

UK - Methadone for detoxification

92. In the late 1960s and early 1970s, methadone maintenance prescribing was a major drug treatment option in the UK. However, in the middle and late 1970s, the clinics became increasingly reluctant to prescribe injectable methadone and further developed into a reluctance to offer methadone on a long-term basis. In 1980, due to the increased availability of south-west Asian heroin in Britain and the HIV infection among injecting drug abusers, the UK reconsidered methadone maintenance treatment in the late 1980s. Although methadone is now perceived as an effective substitute for the reduction of HIV infection, its effectiveness in maintenance treatment is still under study.

93. There are 75,000 drug abusers and 2,000-5,000 methadone patients in the UK. As methadone is regarded as one option for detoxification but not the core treatment agent for drug abusers, other drugs including heroin, dipipanone/cyclizine, dextramoramide, buprenorphine and dihydrocodeine are also prescribed.

Part VI - Substitutes for methadone

94. There is a large variety of medications for drug treatment. The following are some substitutes which are commonly used by the US, UK, France and Australia.

Levo-a-acetylmethadol (LAAM)

95. Recently approved by the US Food and Drug Administration, LAAM is an opiate agonist which produces a heroin-like feeling but reduces the euphorigenic response to other opiates. It is regarded as a good maintenance agent for drug abusers. LAAM is a derivative of methadone but with a longer lasting effect. As a single oral dose of 60 mg of LAAM can suppress withdrawal symptoms for up to seventy-two hours, only three medications per week are sufficient.

96. Due to LAAM's long acting characteristics, less clinical visits are envisaged which enable the patients to save more time for other activities. Besides, lower weekly attendance provides greater capacity for clinics to serve more patients. This certainly improves the efficiency and better utilization of resources.

97. Studies have reviewed that there are no significant differences in terms of patient acceptance, attendance rate, illicit drug use, employment, criminal activities and medical safety between methadone and LAAM.

98. However, the problems with LAAM are that it takes longer for the dose to stabilize and the risk of overdose is greater. Besides, although the drug allows lower clinic attendance, counselling frequency should remain unchanged due to the complex psychosocial situation of drug abusers.

99. Occasionally, the Netherlands use LAAM as a maintenance agent and two studies on the effectiveness of this drug had been conducted. Both suggested that LAAM is a safe and acceptable alternative to methadone, and a trend of longer stay in LAAM treatment was found. The US is currently developing systems for efficient and practical use of LAAM in its drug treatment programmes. Portugal is also experimenting with this drug.

Naltrexone

100. Naltrexone was approved by the US Food and Drug Administration in 1985 and is a pure narcotic antagonist which blocks the subjective and physiological effects of morphine and heroin. A 30-50 mg oral dose can last for twenty-four to forty-eight hours. Due to the antagonist component, naltrexone treatment can be abruptly discontinued with minimal discomfort among drug abusers and is considered as a good detoxification agent.

101. However, if naltrexone is used in patients who have recently used opioids, it can create acute withdrawal symptoms. Other concerns are that the patients must be highly motivated since the drug does not induce physical dependence or

euphoria. Besides, naltrexone is comparatively expensive than other substitutes, therefore it is not particularly popular among most of the countries under study.

Buprenorphine

102. Buprenorphine is a mixed opiate agonist-antagonist. The agonist component produces the morphine-like effects whereas the antagonist element blocks opiate craving. Therefore it is regarded as an efficacious maintenance and detoxification agent. Buprenorphine is long acting and induces limited withdrawal symptoms even with low dose. In fact, 8 mg of buprenorphine per day can produce the same effect equivalent to 12 mg of morphine or 40-60 mg of methadone per day.

103. The low dose administered buprenorphine precludes overdose by drug abusers. Chronic buprenorphine treatment is less toxic than chronically administered morphine or methadone. In addition, termination of buprenorphine treatment will not result in severe and protracted withdrawal symptoms which may occur when methadone treatment stops.

104. As buprenorphine produces a feeling of contentment, it is well accepted by patients and their intention to stay in treatment is higher. Buprenorphine also helps to reduce illicit drug use because of its agonist effects. However, this drug is considerably more expensive than methadone and precipitate withdrawal symptoms if given to patients who have recently used opioids.

105. Injectable buprenorphine is very popular in Northern England and Scotland. Occasionally, Australia, France and the UK also prescribe buprenorphine for maintenance treatment despite the fact that the use of the drug is in an experimental stage. Other countries which have shown interest in developing buprenorphine maintenance include Belgium, France and Spain.

Methadone and its substitutes

106. Although a large variety of substitutes are available, none at present can replace methadone as a major agent for maintenance and detoxification treatment because of its cost and effectiveness. Among the three substitutes described in paragraphs 95-105, LAAM and buprenorphine draw the most attention. As LAAM is regarded as a good maintenance agent with a longer lasting effect than methadone, countries interested in developing maintenance programmes such as the US and the Netherlands are researching on the possibility of using this drug. As buprenorphine contains the agonist-antagonist elements which can retain patients in the programme and induce limited withdrawal symptoms when treatment stops, countries which promote total detoxification treatment such as France and the UK are interested in exploring this drug.

Conclusions

107. There are about 20,000 drug abusers undergoing various treatment programmes, of which some 60% are in methadone treatment programme. Almost all methadone patients choose maintenance instead of detoxification treatment. As methadone maintenance is a voluntary low-threshold treatment programme, patients' mobility is extremely high. In fact, there are about 9,000 drop-out cases and 7,500-9,500 readmissions each year.

108. Methadone treatment cannot help addicts abstain from drugs. It is only regarded as an alternative especially when there is an upsurge in the price of heroin. Moreover, methadone treatment programme cannot help to improve employment situation and reduce crime rate. It only prevents aggravation of the crime situation.

109. There are other types of treatment programmes available in Hong Kong, but they are less popular than methadone treatment. These drug treatment programmes have 40-60% detoxification rate during the programme period. The methadone programme, chiefly as a maintenance programme, has much lower detoxification rate when compared with these programmes. However, the costs incurred for non-methadone programmes are higher than that of the methadone programme.

110. There are great differences in the perceptions and attitudes towards the use of methadone among some countries studied. Countries such as the US and Australia are in favour of using methadone as a maintenance agent and place great emphasis on counselling services. Countries such as Canada, Thailand and France have reservations in using methadone for drug treatment. Among all the countries studied, the practice in the Netherlands resembles Hong Kong's most. The country also adopts low-threshold admission criteria and provides minimum counselling services.

111. Although there are substitutes for methadone such as LAAM, naltrexone and buprenorphine, they are still under trial and will not replace methadone in the near future.

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List of Appendices

Appendix 1

Profile of Reported Drug Abusers

	1986	1987	1988	1989	1990	1991	1992	1993	1994	Jan-Sep 1995
No. of reported persons	17598	17064	17246	15382	15239	15263	15216	17692	20326	16043
Rate per 100,000 population	319	306	306	271	267	265	262	299	335	259
Major drug abuse (%)										
- Heroin	97.5	96.9	95.2	92.3	92.8	93.1	91.8	92.2	92.7	90.1
- Cannabis	0.4	0.6	1.9	4.2	3.3	3.3	4.2	5.5	5.8	7.0
- Cough medicine	NA	NA	0.3	1.0	1.3	2.0	3.6	2.8	2.9	2.5
- Others	4.5	6.3	6.8	9.0	11.5	9.0	7.7	9.1	8.9	5.8
Taking heroin by injection (%)	55	62	64	62	65	64	61	57	52	57
Sex ratio (M : F)	13 : 1	12 : 1	13 : 1	12 : 1	11 : 1	11 : 1	11 : 1	10 : 1	8 : 1	8 : 1
Age distribution (%)										
under 16	0.7	1.0	1.1	1.5	1.5	2.0	2.6	3.3	4.4	3.4
16 - 20	8.3	6.9	5.9	6.7	6.4	7.2	10.3	14.4	16.7	16.9
21 - 30	30.6	29.4	26.7	27.5	27.3	28.0	27.6	27.2	25.7	26.5
31 - 40	29.2	31.8	31.2	32.9	32.8	31.5	29.8	26.5	24.2	24.7
41 - 50	11.7	11.9	12.4	13.6	15.1	16.0	16.4	16.5	16.9	18.9
51 & over	19.5	19.0	22.6	17.8	16.8	15.3	13.3	12.1	12.2	9.5
Mean age	36.6	36.9	38.5	37.0	37.0	36.3	35.3	34.2	33.7	33.2
In employment (%)	69	70	72	70	67	66	64	62	60	57
Students (%)	NA	NA	NA	NA	NA	NA	NA	NA	NA	2
Previous convictions (%)	85	86	87	88	86	83	82	80	80	82

Source : Central Registry of Drug Abuse, Narcotics Division

Appendix 2

Profile of Newly Reported Drug Abusers

	1986	1987	1988	1989	1990	1991	1992	1993	1994	Jan-Sep 1995
No. of reported persons	2747	2408	2250	2228	2360	2702	2973	4283	5024	3206
Rate per 100,000 population	50	43	40	39	41	47	51	72	83	52
Major drug abuse (%)										
- Heroin	84.7	76.5	60.9	60.8	66.5	69.6	67.4	75.8	77.5	64.8
- Cannabis	2.5	4.8	20.3	26.9	19.5	16.2	18.7	18.2	17.2	26.8
- Cough medicine	NA	NA	3.1	5.8	7.0	10.2	15.0	8.3	9.0	7.6
- Others	17.8	27.0	29.1	22.0	24.5	12.1	10.4	11.3	12.1	8.5
Taking heroin by injection (%)	26	32	33	23	21	22	18	16	12	19
Sex ratio (M : F)	4 : 1	4 : 1	4 : 1	5 : 1	5 : 1	5 : 1	6 : 1	5 : 1	4 : 1	4 : 1
Age distribution (%)										
under 16	4.1	6.4	8.2	9.2	8.6	10.0	11.6	11.5	15.2	11.5
16 - 20	24.6	23.6	26.0	30.1	28.9	28.3	36.7	41.1	41.5	38.7
21 - 30	36.3	35.7	35.0	36.8	39.4	40.1	33.8	31.8	30.7	34.6
31 - 40	13.4	14.1	13.9	11.4	13.2	13.5	11.4	10.1	7.9	10.1
41 - 50	6.4	6.2	6.0	4.7	3.6	3.6	3.4	2.6	2.1	2.9
51 & over	15.2	14.0	10.9	7.7	6.4	4.5	3.0	2.9	2.5	2.1
Mean age	30.8	30.4	28.8	26.7	26.3	25.5	23.8	23.2	22.3	23.1
In employment (%)	69	70	67	68	66	63	63	61	60	59
Students (%)	NA	NA	NA	NA	NA	NA	NA	NA	NA	8
Previous convictions (%)	51	48	49	49	45	44	46	47	45	44

Source : Central Registry of Drug Abuse, Narcotics Division

Appendix 3

Profile of Reported Drug Abusers Aged Below 21

	1986	1987	1988	1989	1990	1991	1992	1993	1994	Jan-Sep 1995
No. of reported persons	1577	1348	1211	1269	1207	1405	1958	3131	4172	3262
Rate per 100,000 population	86	75	68	72	69	82	115	186	250	196
Major drug abuse (%)										
- Heroin	86.2	78.3	59.1	48.4	48.2	54.7	58.0	73.3	79.5	74.5
- Cannabis	3.1	5.7	24.7	37.3	29.5	23.5	22.9	19.6	17.9	18.6
- Cough medicine	NA	NA	3.0	12.3	15.7	21.9	25.3	13.6	11.0	9.2
- Others	19.5	29.2	34.9	32.0	47.5	17.5	12.9	13.8	14.3	8.9

Source : Central Registry of Drug Abuse, Narcotics Division

Appendix 4

Admissions to Major Drug Treatment Programmes in Hong Kong

Year	Methadone clinics		SARDA		DATCs		Other voluntary drug treatment programmes		Total admiss-ions
	No.	% of total	No.	% of total	No.	% of total	No.	% of total	No.
1986	10891	70.9	1530	10.0	2547	16.6	388	2.5	15356
1987	11795	74.6	1508	9.5	2036	12.9	476	3.0	15815
1988	8866	67.2	1516	11.5	2318	17.6	496	3.8	13196
1989	8912	67.7	1607	12.2	2128	16.2	510	3.9	13157
1990	10317	71.7	1744	12.1	1635	11.4	691	4.8	14387
1991	9806	70.0	1837	13.1	1631	11.6	743	5.3	14017
1992	8651	66.4	1882	14.4	1718	13.2	784	6.0	13035
1993	9433	62.4	2572	17.0	2083	13.8	1021	6.8	15109
1994	11391	67.6	2257	13.4	2451	14.6	743	4.4	16842
Jan-Sep 1995	7689	NA	1686	NA	1888	NA	*	NA	NA

Remarks : * indicates admissions to other voluntary agencies amounted to 364 in Jan-Jun 1995.

Source : Central Registry of Drug Abuse, Narcotics Division

Appendix 5

Profile of Methadone Patients

	1991	1992	1993	1994	1995
No. of registered Methadone patients (as at end of year)	10985	9418	8976	10401	10006
- Maintenance	10791	9266	8794	10240	9834
- Detoxification	194	152	182	161	172
No. of admissions	9806	8651	9433	11391	10280
- New cases	1133	1075	1198	1882	1669
- Readmissions	8673	7576	8235	9509	8611
No. of drop-outs	9061	9544	8805	8454	9583
Total attendance	2932679	2694027	2364330	2336371	2555812
Average daily attendance	8035	7361	6478	6401	7002
Average no. of patients registered	10789	10141	9217	9201	9863
Average attendance rate (%)	74.4	72.2	70.2	69.5	71.0
Sex ratio of effective registration (M : F) (as at end of year)	18 : 1	18 : 1	17 : 1	15 : 1	13 : 1
Age distribution of effective Registration (%) (as at end of year)					
under 21	NA	NA	3	4	5
21 - 30			16	16	16
31 - 40			25	24	22
41 - 50			23	25	26
51 - 60			14	13	12
Over 60			21	19	18
Proportion of heroin abuse upon admission (%)	97.7	98.6	99.3	97.9	99.2*
Employment status upon admission (%)	65	61	57	54	NA

Remarks : * provisional figure, pending tabulations from Narcotics Division
Source : Department of Health

Appendix 6

Cost-effectiveness of Major Drug Treatment Programmes in Hong Kong

Year	Methadone treatment programme			Compulsory placement programme			Voluntary in-patient treatment programme		
	Financial provision to Dept of Health (HK$m)	Subvention to SARDA for counselling services (HK$m)	Average daily attendance	Financial provision to DATCs (HK$m)	Released inmates detoxified and admitted to supervision programme	% of successful case during supervision[1]	Financial provision to SARDA[2] (HK$m)	No. of admissions	No. of patients successfully detoxified[3]
1991	20.3 (91/92)	NA	8035	31.2 (91/92)	1587	66.9	NA	NA	NA
1992	23.3 (92/93)	NA	7361	50.1 (92/93)	1642	64.5	37.8 (92/93)	NA	NA
1993	24.1 (93/94)	2.3 (93/94)	6478	55.3 (93/94)	1947	63.8	39.7 (93/94)	2572	1054
1994	26.4 (94/95)	4.0 (94/95)	6401	93.8 (94/95)[4]	2195	59.5	41.5 (94/95)	2257	1154
1995	29.0 (95/96)	NA	7002	NA	NA	NA	NA	NA	NA

Remarks:

1. Implies those who completed the one-year supervision without reconviction or relapsing to drugs.
2. Excluding subvention received for providing counselling services to methadone patients.
3. Implies the transfer of opiate-addicted patients onto a methadone programme under which methadone is given in decreasing dosage to help the patients to achieve a drug-free state and is ascertained by urine tests.
4. Including establishment cost of an annex to Hei Ling Chau Addiction Treatment Centre.

Source: Department of Health
Correctional Services Department
Society for the Aid and Rehabilitation of Drug Abuse

Appendix 7

Comparison of National Methadone Treatment Programmes in Selected Countries

	US	Australia	Canada	France	Netherlands	Thailand	UK
Purpose	mainly maintenance	mainly maintenance	occasionally maintenance & detoxification	solely maintenance	mainly maintenance	solely short-term detoxification	mainly detoxification
Drug type	oral	oral & ampoules	oral	oral	oral	oral	oral & ampoules
Dispensed	clinics	clinics & pharmacies	clinics & pharmacies	clinics	clinics	clinics	pharmacies
Entry criteria	Strict	Low-threshold	Low-threshold	Strict	Low-threshold	Strict	Strict
Time limits	no upper limit	no upper limit	no upper limit	6-12 months	no upper limit	max 45 days	no upper limit
Dose limits (mg/day)	50-80	55-60	60-100	30-60	60-100	100-150	30-100
Frequency attendance	daily	daily	1 per week or 1 per 2 weeks	daily	daily	daily	1 per week or 1 per 2 weeks
Urine testing	all clinics	most clinics	some clinics	all clinics	most clinics	some clinics	most clinics
Other treatment & counselling service	regular	often	often	regular	sometimes	often	often
Staffing	nurses, physicians, social workers	nurses, physicians, psychiatrists, psychologists, social workers	nurses, physicians, psychiatrists, psychologists, social workers	nurses, psychiatrists, psychologists, social workers	nurses, physicians, psychiatrists, psychologists, social workers	nurses, physicians, psychologists, social workers	nurses, psychiatrists, social workers

Source: Programme on Substance Abuse, The Content and Structure of Methadone Treatment Programmes: A Study in Six Countries, World Health Organization
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