

Adequacy in Drug Abuse Treatment and Care in Europe (ADAT)

Part IV: Evaluations of Effectiveness and Economic Evaluations

Country Reports, Basic Principles, In-
struments

Jürgen Rehm, Lisa Guggenbühl,
Ambros Uchtenhagen

A project of the WHO European Office funded by
the Swiss Federal Office of Public Health and the
European Commission

Research Report from the Addiction Research Institute
Zurich 2000

Editors:

Ambros Uchtenhagen, Lisa Guggenbühl

With the collaboration of:

Prof. Anders Bergmark, Stockholm; Prof. Wim van den Brink, Amsterdam; Prof. Jørgen Jepsen, Aarhus; Dr. Jacek Moskalewicz, Warsaw; Ms. Monique Nieuwenhuijs, Amsterdam; Ms. Valeria Pomini, Athens; Mr. Josef Radimecky, Prague; Mr Ulrich Simmel, Berne; Mr. Josep M. Suelves, Barcelona.

Addiction Research Institute, Zurich

December 2000

Contents

1. Introduction	5
2. Country Reports	7
2.1. The Czech Republic	7
2.1.1. Assessment of Service Costs	7
2.1.2. Assessment of client data to measure change	8
2.2. Denmark	9
2.2.1. Prices of treatment - a preliminary and limited set of elements for a cost-benefit calculation	9
2.2.2. Public expenditure on drug treatment	12
2.2.3. Previous studies attempting a cost-benefit calculation in relation to treatment	15
2.3. Greece	18
2.3.1. Costs and Financing of treatment and care	18
2.3.2. Research on costs and cost-effectiveness	18
2.4. The Netherlands	19
2.4.1. Studies on the effectiveness of treatment and care: Commented References	19
2.4.2. Studies on costs, benefits and financing of treatment and care	27
2.4.3. Instruments for the assessment of effectiveness, costs, and cost-effectiveness	27
2.5. Poland	30
2.6. Spain	32
2.7. Sweden	33
2.7.1. Studies on treatment effectiveness	33
2.7.2. Studies on treatment costs	35
2.8. Switzerland	36
2.8.1. Standard service description and performance-related financing of in-patient drug treatments	36
2.8.2. Socio-economic Evaluation of Experiments for the Medical Prescription of Narcotic Substances	38
2.9. Summary	39
2.9.1. Effectiveness of Treatment and Care	39
2.9.2. Financing and Costs of Treatment and Care	41

3. Assessment of Effectiveness, Cost, and Economic Evaluations	44
3.1. Assessment of Effectiveness _____	44
3.2. Assessment of Costs and Economic Evaluations_____	45
 4. Instruments for Effectiveness Evaluations in Substance Abuse Treatment and Care _____	 48
 References _____	 52

1. Introduction

Limited or scarce financial resources are probably the most important reason for introducing economic evaluations into general assessments of adequacy of treatment. Economic evaluations intend to establish a relation between costs and outcome and thus guide the decision-maker to the best outcomes for the available means (Drummond et al., 1997).

Within this context we would like to introduce several key concepts:

Effectiveness

Effectiveness addresses the question as to whether a procedure, service or programme does more good than harm to those people to whom it is offered. It is a form of health care evaluation that considers both the efficacy of a service and its acceptance by those to whom it is offered.

To measure effectiveness, objectives have to be set. Such objectives for the treatment of substance abuse may involve different dimensions such as abstinence, "controlled drug use", criminal behaviour, social integration. Effectiveness can be assessed by examining and recording whether such objectives have been achieved by treatment for each individual case. Then, by aggregating data the overall effectiveness of an intervention can be assessed. This can be problematic where no individual goals have been set (e.g. injection rooms).

Economic evaluations or efficiency evaluations

Economic evaluations or efficiency evaluations (Drummond et al., 1997) generally try to respond two main questions:

- Is this health service procedure, service or programme worth doing compared with other things we could do with the same resources?
- Are we satisfied that the health care resources (required to make the procedure, service, or programme available to those who could benefit from it) should be spent in this way rather than in some other way?

Four main types of economic evaluations can be distinguished:

- **Cost-minimisation** analysis tries to find out ways to achieve the same results with less resources.
- **Cost-effectiveness** analysis tries to relate the costs to the effectiveness of two or more alternatives (programmes, treatment options, etc) with respect to a single effect, common to all alternatives, but achieved to different degrees. Costs are measured in monetary units, and effects are measured in natural units (e.g. abstinence, drug-free days, etc.).
- **Cost-utility** analysis tries to relate the costs to the utility of two or more alternatives (programmes, treatment options, etc.) with respect to single or multiple effects, not necessarily common to all alternatives. Costs are measured in monetary units, and effects are measured in utility measures such as QALY¹, DALY² or Healthy Years of Life (e.g. Murray & Lopez, 1996).
- **Cost-benefit** analysis tries to relate the costs to the benefits of one alternative or between several alternatives (programmes, treatment options, etc) with respect to single or multiple effects not necessarily common to all alternatives. Costs are measured in the same monetary units as outcomes.

Economic evaluation can differ in many aspects. Most importantly are

- *time frame used* (e.g. effectiveness as measured between admission and discharge vs. effectiveness as measured in a one year follow-up)
- *perspective* (e.g. social costs, that is costs borne by society at large vs. costs borne by an insurance company or by the treatment provider)
- *level of analysis* (e.g. comparing cost-effectiveness of different treatment options vs. comparing cost-effectiveness of different treatment systems).

ADAT has tried to collect instruments and models used in the effectiveness and economic evaluation of different treatments both at the individual treatment and the treatment system level. Within the framework of the country reports (Ch. 2), respective studies and projects from the participating countries are described.

The country reports are followed by an overview (Ch. 3) of the most frequent stumbling blocks and shortcomings in effectiveness and economic evaluations.

The last chapter (Ch. 4) includes a listing of instruments for effectiveness evaluations recommended by the ADAT working group, supplemented with hints on where the instruments can be obtained.

¹ Quality adjusted life years.

² Disability adjusted life years.

2. Country Reports

2.1. The Czech Republic³

2.1.1. Assessment of Service Costs

The *costs of treatment and care* is a very important question in The Czech Republic and is being discussed nation-wide. This issue is being dealt with within provider groups (e.g. low-threshold centres, outreach programmes, therapeutic communities) in co-operation with the National Drug Commission and the association of NGOs (see report on Professional Standards). Each group is preparing the budgets for different kinds of services that will serve as a basis for the funding of these institutions in the future. In preparation is the analysis of costs related to 1 client per day (residential services), or 1 client per hour (out-patient services).

Furthermore, a *Cost and Benefit Analysis of the Czech drug policy* is in preparation and planned for 1999 - 2001 within the framework of a project called New Legislation Consequences (PAD).

At present, there are two possibilities to collect information on costs and the number of clients treated per calendar year:

- A central instrument for the assessment of the general financial situation of treatment and care facilities is the *Standard Form "Grant requested from the State Budget"*. The form is filled out once a year by all organisations requesting a state grant⁴ and contains information on the total number of clients during the last year, on the current capacity of the programme (number of clients which can be served) as well as details on the costs. However, information on the total duration of treatment per client is missing. The funding situation in previous years as well as the budget for the coming year (for which grants are requested) must be accounted for in detail.

³ Based on text prepared by Josef Radimecky, Executive Secretary of the National Drug Commission, Prague, The Czech Republic, 2000.

⁴ From the Ministry of Health, Ministry of Social Affairs, Ministry of Education, or from the National Drug Commission.

-
- Another source of information on costs and number of clients are the *annual reports* provided only by non-governmental organisations⁵. Most of NGOs provide their own statistics to get their "grant money" from the state budget.

Within the framework of the project "*Development of Social Services in the City of Ústí nad Labem*" (see report on treatment and support needs), a questionnaire was developed that is now distributed once a year to all social services to assess various information. This is used by the local authority for the planning of treatment and care in the city and includes items such as capacity of services, number of clients in the last year (according to target groups, age, diagnosis, etc.), costs per client, and duration of treatment/ care per client.

2.1.2. Assessment of client data to measure change

There are various methods for the assessment of client data used by treatment facilities (in order to apply for state grants facilities must describe how they are evaluating their outcome and effectiveness; see above). The two most commonly used methods are the *individual treatment plan* (client contract) and the *programme effectiveness evaluation protocol*:

Individual treatment plan (client contract)

Most facilities work with "individual treatment plans". These plans are a kind of contract that is concluded when a client is admitted to the programme and are regularly up-dated in consultation with the client. The contract or treatment plan includes the client's main problems together with the steps defined to change the situation that is unsatisfying to the client. The problem areas, as well as the steps to be taken, are defined by the client himself/herself supported by his/her personal counsellor (staff member). Such contracts include the following items:

- client data (name, birth, address, education/profession, brief drug career)
- relevant persons (basic information, contacts)
- definition of client's main problem
- the main (long-term) aim the client wants to attain
- partial (short-term) aims the client wants to attain
- steps - how to get to the targets set
- date of the next contract revision (up-date)
- signature of client, "personal" counsellor, supervisor of contract

⁵ Since 2000 there is a standard questionnaire for annual as well as for half-yearly reports.

Programme effectiveness evaluation protocol

The *programme effectiveness evaluation protocol* is completed by the client, a staff member and/or by a client's relative (mostly parents). It is completed on admission of the client to the programme, periodically while in treatment/ care (e.g. monthly, once every two months, or in the middle of the treatment programme), on completion of the programme (at orderly completion, or when dropping out), and approx. one year after completion of the programme (or after dropping out). Effectiveness is evaluated according to the client's life satisfaction, abstinence, relation to the family (parents, significant persons), contacts with other users, and education and/or working position (for details see ADAT Part II, Treatment and Support Needs, Chapter 4.3.3.3.).

2.2. Denmark⁶

2.2.1. Prices of treatment - a preliminary and limited set of elements for a cost-benefit calculation

Prices of in-patient treatment - and related gains

The great majority of the specialised in-patient treatment of drug addicts in Denmark (not including treatment in psychiatric or somatic hospitals) takes place in private or semi-private institutions (based upon ownership). These institutions are practically all financed by payments for the stay of addicts by counties and municipalities (with most counties being formally responsible for referrals, but sharing the costs 50/50 with the municipalities).

A current project attempting to establish a treatment registration system ("DANRIS", under development at the Centre for Alcohol & Drug Research, University of Aarhus - "CRF") is in contact with a total of some 40 institutions which have approximately 600 treatment slots in total. Most of these institutions are small, but a few can house 100-150 clients. The price charged per slot occupied according to referrals ranges from around 15,000 DKr (approx. 1,860 Euro)/month up to 30,000/month or more. Not all of these slots are actually filled by clients and not all of the year. It is therefore difficult to calculate the total treatment costs per year.

⁶ Based on text prepared by Jørgen Jepsen, Centre for Alcohol and Drug Research, University of Aarhus, Denmark, 2000.

A recently reported study CRF (Pedersen, 2000; Pedersen et al., 1999) has examined the results of seven treatment institutions. There has been follow-up of the client 1 year and 2 years after release/termination of the in-patient treatment; the results (measured by number of drug-free months and a number of other variables) have been related to various variables characterising the institutions, including price per month, duration of treatment, type of clientele and modality of treatment ("12-step", Phoenix House-model, gestalt-therapeutic model, social-pedagogical, etc).

The overall results show that the best results are achieved by institutions characterised by relatively long (and therefore expensive) durations of treatment at a relatively high price per month (and also therefore expensive). These institutions are also characterised by insight-giving types of treatment and cater to a clientele with a relatively high intellectual level of functioning. The report contains a number of correlations between price per month, treatment duration and outcome variables as well as client background variables. It thus establishes a sort of microscopic cost-benefit analysis at the (in-patient) institutional level.

This study is currently being followed up by a study of ambulatory (out-patient) treatment that is primarily methadone-assisted. Some of the referring counties/municipalities have wanted to examine whether they can achieve equally good results with the less expensive out-patient treatment as with the more expensive in-patient institutions, applying 12-step modalities as well as other treatment modalities.

Prices of methadone (-assisted) treatment⁷

In May 2000 the editorial staff of the magazine "STOF" of the Danish Narcotics Council collected information on methadone-assisted treatment in most of the counties and municipalities (communes) in Denmark - although the coverage is not complete. The counties/communes indicated how many clients were in methadone treatment for over 3 months as of 1st January 2000, how many drug addicts were estimated to be residing within the catchment area as of 1st January 2000, and how many abstinent drug abusers were estimated to reside within the same area. Only 7 of the responding 16 entities answered the last question. The extent to which addicts were actually estimated to be in methadone treatment (among those not known as abstinent) might be seen as an indicator of the "effectiveness" of the system in relation to admitting addicts into (methadone) treatment (regardless of the outcome).

The counties/communes also reported other aspects of their methadone/treatment systems, including the annual cost of a methadone treatment slot. The approximate costs ranged from about 9,000 DKr/yr. (1,100 Euro) to 90,000

⁷ No indications of prices of other ambulatory treatment ("drug-free") are available at county/communal level.

Kr./yr. (11,000 Euro) (3 entities gave no information). Some of the cost estimates included both the cost of the methadone dispensing itself (at clinics or other ambulatory entities) and the costs of "social follow-up" (welfare measures). (See fig. 1 for details of the information.)

Fig.1. Costs of methadone treatment (Source: Narkotikarådet, STOF, 11, May 2000)

Counties (A) and Communes (K)	How much does a methadone treatment slot cost per year?
North Jutland A	not calculated
Viborg A	approx. 35,000 DKr./yr. (+ staff etc.)
Aarhus A	approx. 19,000 DKr./yr.
Ringkøbing A	approx. 27,735 DKr./yr. - does not cover real operational costs
Ribe A	approx. 8,760 DKr./yr.
Vejle A	approx. 35,000 DKr./yr.
South Jutland A	not calculated
Fyn A (Fünen)	approx. 40,296 (gross)
Vestsjælland A (West Zealand)	approx. 51,000 (incl. psycho-social follow-up)
Roskilde A	not calculated
Storstrøm A	approx. 51,100 DKr./yr.
Frederiksborg A	approx. 18,249 DKr./yr.
Bornholm A	approx. 13,870 DKr./yr.
Copenhagen County (A)	treatment: approx. 83,585, social follow-up approx. 12,045 DKr./yr.
Copenhagen City (K)	10,000- 90,000 DKr./yr.
Frederiksberg (K)	approx. 53,400 DKr./yr.

It should be noted that, in general, the costs of this type of treatment for drug abusers consist of a total of three elements: 1) the costs of the operation of the methadone dispensing, 2) the costs of the psycho-social treatment attached to the dispensing unit or more or less separate addiction treatment facilities, and 3) the costs of the general municipal welfare system, where clients may obtain assistance without necessarily being known to be also clients of the drug treatment system.

An additional part of the information provided by the counties/communes lists, for each entity, various types of "psycho-social follow-up measures" to the medical (methadone) treatment, including group and individual therapy, social training, sports, educational activities and various forms of activity groups. Only occasionally, however, is a separate indication of these costs given.

Finally, the entities reported on their priorities (relative preference) for methadone treatment vs. in-patient treatment, and commented on various aspects of their attitudes and practices, including their evaluation of the recent changes in the sys-

tem. In particular, the increased supply of funds from the central (state) level to the counties/municipalities for the drug field was praised. The actual effects of the methadone treatment system in its various forms in different counties/communes are not known at present, but are - as mentioned above - presently being studied by CRF.

2.2.2. Public expenditure on drug treatment

At the national level, some information on costs borne by the state (subsidies to counties and communes) has been published in connection with the work of the "Agerschou-Committee" following up upon the activities of counties and communes in response to the central state support grants. From this work⁸, the following information is available:

In connection with the counties taking over (from 1995) the referral responsibility for services for drug abusers - including the obligation to finance 50% of the service provision (with the municipalities taking over the remaining 50%) - the counties received a sum of some DKr. 18 m for the financing of private services which had until then been paid by the municipalities with a 50% refund from the state. For accepting responsibility for the dispensing of methadone, the counties additionally received compensation from the state of around 36 m DKr. These amounts - and the counties' expenditure in connection with methadone programmes (the "medical" side) - are *not* included in the figures below. The following statement concerns:

1. the funds distributed by the state to counties and communes as supplementary support for social services (including for psycho-social treatment) for drug abusers that were formally distributed via a special grant "pool", whereby a separate section was allocated for drug abuse treatment, etc. ("drug pool")
2. those expenses in the category actually reported by counties and municipalities for the years 1995-98 (account or budget figures).

According to the Agerschou II Report of 1998, Section 3.2.2, the drug pool was first introduced in the state budget in 1995 with a total grant of 43.7 m DKr. (approx. 5.44 m ECU, supposing 1 Ecu= approx. DKr. 8.-). Part of the subsidy was granted specifically to the municipality of Copenhagen, some for central initiatives (experiments and research), while 22 m DKr. was distributed among coun-

⁸ Statement of the Narcotics follow-up committee on the measures of support for drug abusers and recommendations to the parties of the Folketing (Parliament) on the distribution of special grants for improvement of social services for drug abusers - the Agerschou II-report) (June 1998). It should be noted that the report - according to the mandate of the group - should not deal with the situation in relation to methadone dispensing programmes, but only in relation to social services and treatment measures.

ties and municipalities according to standard fiscal criteria. The drug pool grants were increased in 1996 and 1997 in order to increase the support and to secure expansion of services. The parties behind the grants referred to the following aims with the increased grants:

- implementation of the goal that methadone dispensing should not stand alone but must be accompanied by the provision of social services as part of individual social plans of action,
- implementation of the expectation of increased outreach work in relation to drug abusers not currently in contact with the existing treatment system,
- increased collection and monitoring of experiences, studies of treatment effects, information and reporting as well as continued education for drug abuse treatment personnel.

The grants for the drug abuse field during the years 1995-98 were allocated as follows:

Fig. 2.

	1995	1996	1997	1998 ⁹
Total (m DKr.)	43.7	64.5	97.5	131.5
including				
1. General subsidies for the counties and for the municipalities of Copenhagen and Frederiksberg	22.4	30.2	44.2	60.2
2. Separate grant for Copenhagen	2.5	4.2	7.3	10.9
3. General subsidies for municipalities	-	7.8	21.8	37.8
Total (1-3) distributed to communes	24.9	42.2	73.3	108.9
4. Central projects, experiments and adm.:	18.8	22.3	24.2	22.6

The follow-up report Agerschou II checked the net expenses (excluding methadone dispensing) for the same years sustained by counties and municipalities to evaluate the extent to which the conditions of the grants had been fulfilled, i.e. the extent to which services for drug abusers had actually been implemented. The following figures emerged:

⁹ For the years 1999 and 2000 the state subsidy grants for counties and municipalities (1-3) have been set at 91 m DKr. - excluding central initiatives (4.)

Fig.3

	1995	1996	1997*	1998*	Growth rate 95-98
Net expenses (m DKr)					
Copenhg, Fredriksbg	75.5	91.2	98.9	109.3	44.8%
Other municipalities	41.4	68.4	69.5	132.8	220.8%
Counties	53.4	107.6	163.2	203,7	281.5%
Total	170.3	267.2	331.6	445.8	161.8%

* budget figures

The conclusion of the report was that, in general, the figures indicated increased activities. At the same time, however, there were indications that the number of abusers in need of services had increased. In addition, the counties and communes had revised their estimates of the numbers of abusers in need of treatment upwards. A few counties had unacceptably long waiting lists, but using this as a general measure was not justified. There had been a considerable increase in the use of private treatment facilities, primarily for in-patient treatment, while public facilities had reduced considerably. The extent of the coverage in relation to the total number of abusers in need of services was not clear. Many abusers in out-patient treatment were getting long-term methadone maintenance, and in some counties there were no adjunct social-therapeutic services. The committee did not examine the quality (development in quality) of the services, as this was outside its mandate.

The above information is the closest possible estimate of the costs at the national and regional/municipal level of the drug treatment system - with the reservations that were indicated initially. There are no comparable figures available at the national or regional (county) level to illuminate the *effects or benefits* of this expenditure on the drug problem or on the number of addicts "cured" or turning to a drug-free life after having been treated. The closest estimate is the micro-level study of the outcomes of the treatment in 7 in-patient institutions mentioned above.

2.2.3. Previous studies attempting a cost-benefit calculation in relation to treatment¹⁰

The AKF Report

According to the calculations of expenditure in the social sector conducted by the Ministry of Social Affairs (MoSA) that were based on information from counties and municipalities (1996), the total expenditure in counties and communes in 1995 amounted to at least 278.5 m DKr (it is not clear whether this includes reimbursements). This corresponds roughly to the amount indicated by the counties in the AKF survey in 1997, indicating a total treatment expenditure of some 268 m DKr (not considering reimbursements to the counties from the communes). Approximately one half of the amount was used for in-patient treatment, the other half for ambulatory treatment. The calculations¹¹ of the MoSA (1996) indicate that out of the total expenditure of 278.5 m DKr., some 186 m DKr. were applied in treatment institutions under Section 96 of the Social Assistance Act. The communes indicated that they had spent 117 m DKr. and the counties 51 m DKr. on the latter type of institutions.

A total analysis of the expenses in all sectors¹²

"Another example of a total societal economic analysis based upon the abusers' utilisation of public assistance, crime, etc., is an older analysis carried out around 10 years ago in Stortröm county (Green, 1991). This study also attempts to include the expenses in other sectors. The county emphasises that the calculations of costs must be treated with considerable reservations, because it has been difficult to collect reliable figures and some of the calculations are very hypothetical.

The analysis, in which the expenses for the abusers of the said county has been extrapolated to provide national estimates, gives a gross estimate of 2.000 m DKr., whereby the expenses related to the crimes of the addicts (expenses of insurance companies, victims etc., but excluding expenses for police, courts etc.) made up by far the largest item with approx. one fourth of the total expenditure. Another major item was the economic support of drug addicts (transfer assistance) that made up approx. one fifth of the total. The smallest item was the expenditure for treatment institutions which made up approx. one tenth of the total costs"¹³.

¹⁰ Excerpts from: Jill Mehlbye: De samfundsmæssige konsekvenser af stofmisbrug (The societal consequences of drug abuse). AKF Rapport, Cph. 1997, Chapter 9: Indsatsen over for stofmisbrug set i et økonomisk perspektiv. Sect. 9.2. Simple udgiftsanalyser på samfundsniveau. (The measures against drug abuse seen in an economic perspective. Simple analyses on societal level).

¹¹ The methods of calculations are rather uncertain, as parts of the expenses for treatment and support to drug abusers are not separately registered.

¹² Mehlbye (1997) p. 206-207

¹³ JJ: At that time in-patient institutions were used much less than after 1994.

Expenditure analysis at the individual level

A question that interests many politicians is whether ambulatory treatment is cheaper and maybe even better than in-patient treatment.

An analysis by *Hansen & Toftgaard (1996)* in Odense deals with this question from an economic point of view. Their economic analysis is based upon the expenditure calculations of the course of treatment for two groups of clients, one of which received ambulatory treatment, the other in-patient treatment. The study showed that the courses of ambulatory treatment were almost six times cheaper than in-patient courses of treatment. The expense for the in-patient treatment proper was 115,000 DKr. per person and - for the group as a whole - 4 m DKr. for 39 clients. There were additional expenses for moving expenses, storage of furniture, supervision during in-patient treatment, etc. The total expenses for current ambulatory treatment for each addict was 21,000 DKr. and for the group as a whole (77 clients) 1.7 m DKr., i.e. much cheaper than in-patient treatment. The research underlines, however, that the two types of treatment courses are not comparable. The two groups of abusers and their treatment have differed widely. The treatment outcomes have been extremely uncertain and no definite conclusions can be drawn, i.e. very few addicts in both groups became abstinent and very few became economically self-sufficient.

Mehlbye (1997) goes on to quote at length a study by two Norwegian researchers (*Andersen & Berg, 1989*) who have attempted a cost-effectiveness analysis. Their starting point is an analysis of 10 known, rehabilitated clients, whose data were used to form the basis of a 15-year investment analysis, including the costs to society owing to the abuse-related behaviour of one person per year. It was then calculated how much the fact that 9 out of the 10 rehabilitated addicts got salaried employment made savings in money when compared to the continuing costs of abuse-related behaviour. The calculations showed savings of 4.4. m NKr. over 15 years for each of the clients or a total of 44 m NKr. for all ten of them.

Andersen & Berg further attempt to establish an economic comparison of two scenarios that are based respectively upon the assumption that no rehabilitation measures are established for 30 drug abusers over the 15 year period, so that they continue their abuse and related behaviour, and alternatively that rehabilitation measures are undertaken which actually make 10 of them wage-earning, non-abusing subjects. The relative costs/gains are then calculated, showing a difference of 11.1 m NKr. between scenario 1 and scenario 2. The calculations include a number of questionable assumptions, e.g. as to the calculation of interest rates and other measures. Also the basic assumption that 1/3 of the group becomes totally abstinent and wage earning is questioned by Mehlbye¹⁴

¹⁴ Mehlbye (1997) p. 210-211

Finally, *Mehlbye*¹⁵ offers some rather general suggestions for a societal economic analysis of the consequences of drug abuse.

References:

- Andersen, S. & J. Berg (1989) Samfunnsøkonomiske beregninger av 10 rehabiliterte rusmiddel-misbrukere ved SRS. Pilotundersøkelse (Socio-economic calculations of 10 rehabilitated in-toxicant abusers at SRS. A Pilot Study). Stenlökka Ressurscenter, Oslo.
- Berg, Jon .E. (1994): Ressursorientert (re)habilitering av rusmiddelbrukere (Resource-oriented (re)habilitation of drug abusers). (Universitetsforlaget, Oslo)
- Everingham, S.S. & Rydell, P.C: (1994): Modeling the Demand for Cocaine (MR-332-ONDCP/A/DPRC, RAND Corp Santa Monica, CA.).
- Green, Jörgen (1991): Stofmisbrug - en faktabog for undervisere og elever (Drug Abuse - a book of facts for teachers and students. (Forlaget Grifo)
- Hansen, H. & B. Toftgaard (1996): Opfølgning af misbrugere fra Odense Kommune - en op-følgningsundersøgelse af misbrugere, der i 1994 enten var tilknyttet Fyns Amts Behandling-scenter eller en døgninstitution (A follow-up study of abusers from Odense Municipality who in 1994 were attached either to the Drug Treatment Unit of Fyn County or to an in-patient institu-tion). (Odense Kommune, Socialmedicinsk Afsnit)
- Mehlbye, Jill (1997): De samfundsmæssige konsekvenser af stofmisbrug (Societal costs of drug abuse) (AKF Forlag, Copenhagen)
- Jepsen, Gunnar Thorlund (1996): Narkotikamisbrug og 'Narkomarkedet (Drug Abuse and the Drug Market) in: Markeder i Opbrud (Aarhus Universitetsforlag, 1996, p.31-50)
- Jepsen, Gunnar Thorlund & Peter Skott: On the Effects of Drug Policy (manus, 12. June 1996)
- Johnsson, A. (1991): 100 miljarder kostar supen ("Booze costs 100 bio skr"). Sober Förlag, Stock-holm.
- Kopp, P. & Palle, C.(1996): Le coût de la politique publique de la drogue. Essai de mesure de dé-penses des administration d'État. (Office Francais de la Drogue et des Toxicomanies, Paris)
- NIDA (1992): The Economic Costs of Alcohol and Drug Abuse in the United States - 1992.
- NIDA, National Institute on Alcohol Abuse and Alcoholism (tab.1.1. , Analysis by The Lewin Group (from Harwood et al., 1998)
- Rajkumar, Andrew S & Michael T. French: Drug Abuse, Crime Costs, and the Economic Benefits of Treatment. Journal of Quantitative Criminology, Vol, 13, no.3, 1997, p. 291-323
- Reuter, Peter (1999): Are calculations of the economic costs of drug abuse either possible or use-ful? (p. 635-638 in Addiction 94 (5): A report and commentaries: Cost estimates for alcohol and drug abuse.
- Robson, Lynda & Single, Eric: Literature Review of Studies on the Economic Costs of Substance Abuse. (The Canadian Centre on Substance Abuse, March 1995)
- Rydell, PC & Everingham, S.S. (1994): Controlling Cocaine: Supply vs. Demand Programs. (MR-331-ONDCP/A/DPRC, RANDCorp., Santa Monica, CA),
- Single, www.ccsa.ca.econtab4.htm: The costs of alcohol, tobacco and illicit drugs in Canada, 1992 (CCSA)
- Socialministeriet (1996): Status over sociale tilbud på narkoområdet 1995/96. Notat, Socialminis-teriets Analysekontor (intern publikation)

¹⁵ Mehlbye (1997) p. 211-213

2.3. Greece¹⁶

2.3.1. Costs and Financing of treatment and care

In recent years the costs of treatment and care programmes have been annually published in the annual report of the Greek Reitox Focal Point, concerning OKANA's services, and in the annual report of KETHEA, concerning its services. The calculation of the costs of all treatment facilities is complicated by the fact that more than one ministry is involved in funding treatment programmes.

The proportion of the Greek Annual National Budget devoted to drug abuse treatment and care is quite small compared with other European Countries. The Commission for Drugs of the Greek Parliament recently proposed the implementation of governmental funds for the drug treatment policy.

As reported by the Greek Reitox Focal Point, 63.3% of the costs of treatment facilities for the year 1999 were covered by public funds, 13.3% was covered by European Union funds and 23.3% was covered by other kind of contributions, i.e. donations.

2.3.2. Research on costs and cost-effectiveness

Although the interest of institutions, services and professionals regarding the effectiveness of the treatment programmes is increasing, there has been no specific study on this issue up until now.

The development of **research on cost / effectiveness** is a need which has been considered a priority in the field: a desire for more funds devoted to this purpose has been expressed by the local scientific community (Greek Reitox Focal Point, Annual Report 1999).

The culture of evaluation is slowly increasing in Greece among the professionals in the field, the administrators and policy makers. In this respect, the contribution of the workshop on "Evaluation of Psychoactive Substance Use Disorder Treatment" based on the EMCDDA/WHO/UNDCP manual was important. The work-

¹⁶ Based on report by Valeria Pomini, Psychologist - Psychotherapist at Athens University Medical School, Department of Psychiatry, "Eginition" Hospital - "ATHENA" Programme, Greece, 2000.

shop took place in Athens in March 2000, and more than 30 people were trained to use the Working Books.

The systematic assessment of ***clients' changes*** during and after treatment has been practised by most of the treatment facilities. However, these findings have not been evaluated in terms of treatment costs. Greece is participating in the pilot phase of an instrument monitoring the client's discharge from a treatment programme within the framework of the Group Pompidou. Fifteen cities from six European Countries are participating in the project, two treatment services for each city. The instrument is filled in by the therapist and collects information regarding the client's discharge from the programme at the end of treatment, as well as in the case of dropouts.

Other information necessary for the evaluation of costs / effectiveness regards the ***structure and organisation of the treatment service***. The Treatment Unit Form has been utilised by some facilities, while the EDDRA questionnaire has been completed by all treatment services.

2.4. The Netherlands¹⁷

2.4.1. Studies on the effectiveness of treatment and care: Commented References¹⁸

2.4.1.1. Effectiveness of Medical Treatment

Dextromoramid prescription to chronic heroin users

Goal: to investigate the possibilities and limitations of dextromoramid prescription to chronic heroin users (Brussel van & Buster 1996).

Population: a group of chronic heroin users (average duration of addiction was 22 years) participating in methadone maintenance with additional social or medical problems.

Method: evaluation. The groups of drug users who had received or were still receiving dextromoramid were interviewed in October 1996. They were asked for their experiences with dextromoramid, the effect on the use of illegal drugs and

¹⁷ Based on text prepared by Monique Nieuwenhuijs and Wim van den Brink, The Amsterdam Institute for Addiction Research, The Netherlands, 2000.

¹⁸ Studies mentioned here are partly taken from Buro Beta 95, 97, 99.

their social and medical situation. Urine checks were analysed and compared to the period before dextromoramide prescription.

Results: during the period March 1995 - October 1996, 53 people had received dextromoramide and it was still prescribed to 30 drug users. The average daily dose of dextromoramide was 30mg and was combined with methadone. Dextromoramide is perceived as less intense than heroin and it made less stunned and lasted shorter. However, there was a large individual variation of perception of its effects. Both the interviews and the urine analyses showed a decrease of heroin use, cocaine and benzodiazepine use did not change. No serious incidents were reported.

Detoxification under anaesthesia and naltrexone maintenance

Goal: to gain a first understanding of some psychological effects of detoxification under anaesthesia and naltrexone maintenance in a clinical setting (Goedegebuure 1996).

Population: addicts, six in the experimental group and six in the control group, who have been using heroin and/or methadone for at least six years and who have relapsed at least three times after treatment.

Method: addicts on the waiting list of Treatment Centre 'de Hoop' in Dordrecht, were approached to participate in the experiment or to take part in the control group (no random assignment). After detoxification the addict was admitted to the somewhat shortened, standard treatment programme; the addict took naltrexone during six to nine months. Before detoxification and during clinical treatment the addict is evaluated by several psychological tests, i.e. craving test to assess craving, NVM to assess personality development during treatment, SCL-90 to assess psychological well-being during treatment, Bourdon-Vos to assess concentration/attention capacity during treatment. The control group undergoes the same procedure and treatment, but is detoxified cold turkey or with clonidine.

Results: the (former) addicts that detoxified under anaesthesia report a drastically reduced level of craving, contrary to the (former) addicts in the control group.

2.4.1.2. Effectiveness of Treatment in Penal Institutions/ Compulsory Treatment

Effects of drug-free detention: successful treatment and care for addicted inmates

Goal: to establish the effects of drug-free detention (i.e. drug-free units in penitentiaries) on the behaviour and experiences of drug abusers and on the deten-

tion climate, and to make an organisational description of two different forms of drug-free detention (Hurk van den, Schippers & Breteler).

Population: 178 consecutive drug abusing detainees in the Rotterdam detention centre and the Kruitberg prison in Doetinchem.

Method: quasi-experimental, naturalistic study and evaluation study. All incoming abusing prisoners are interviewed. Inmates of drug-free units (experimental group) were compared with those of other units (control group). Each respondent was interviewed three times: at intake (during detention), at discharge (on/two months after release/removal), and in a follow-up (one/two years after release/removal). Main instruments: Diagnostic Interview Scheme (DIS), Addiction Severity Index (ASI), urine controls, motivation list, self-efficacy list (SELD), social skills list, social support list, social-demographic and biographic characteristics, programme satisfaction.

Results: *The penitentiaries:* in order to realise the different objectives of the penal system an organisational change is needed in respect to the professionalisation of correctional officers or increasing the external expertise (special drug care workers). *The correctional officers (CO):* in two penitentiaries COs did not experience high levels of stress. Prison drug policy should take account of the negative effects of both soft and hard drugs on the working conditions of COs. *Drug-free units (DFU):* DFUs are effective in realising continuity of treatment on release. This means that inmates of the DFU continue treatment on release significantly more often than inmates of non-DFU units. DFUs have not been proven to be effective in rehabilitating prisoners with drug problems: after two years there are no demonstrable differences in terms of drug use, recidivism and psycho-social functioning. No social demographic and biographic characteristics could be found that might provide better indications for allocation to a drug-free unit.

This PhD thesis resulted from the EDID project (Hurk van den, 1998). Based on the evaluation study on the effects of drug-free units in two penitentiaries and a literature study, possibilities for successful interventions for addicts on the one hand and delinquents on the other are described. The final chapter describes conclusions and implications for the possibilities of successful care for addicted detainees and policy developments in the following years.

Compulsory drug-free treatment

Goal: to investigate the feasibility and the effects of a compulsory drug-free (treatment) unit in prison (Jongerius & Koeter 1999).

Population studied: criminal chronic drug addicts with at least five arrests in the year prior to admission.

Methods: a naturalistic follow-up (cohort) study with three control groups: 1) addicts detained in a regular prison unit, 2) criminal drug addicts admitted to a diversion programme and 3) drug addicts detained in a voluntary drug-free prison unit. Instruments: structured interviews: EuropASI and CIDI, Composite International Diagnostic Interview; self-report questionnaires: PDQ-R (personality), CMRS (motivation), SELD (self-efficacy), satisfaction and self esteem; police records.

Results: Results from the first phase indicate that prisoners admitted to compulsory drug-free treatment units have a relative long addiction history, a substantial criminal history, low intelligence and a history of uncompleted treatment. Furthermore, a compulsory drug-free prison unit is reasonably manageable. 30% of the prisoners admitted to the compulsory drug-free treatment unit enter the special treatment programme.

Effectiveness of a drug-free detention treatment programme in prison

Objectives: to study the effects of the drug-free detention approach in the post-release situation (Schippers, Hurk van den, Breteler, Meerkkerk, 1998).

Methods: a follow-up study in the Noordsingel detention centre in Rotterdam; information was gathered from 86 male inmates who volunteered to enter the programme, and 42 from other wings.

Results: after 1 year the drug-free detention group more actively searched for and accepted treatment. No differences were found in drug use, recidivism, or physical, social, and psychological problems.

2.4.1.3. Diverse Studies

Development and evaluation of matching models

Goal: to develop and validate matching models in three Addiction Treatment Centres (Kersten, Schippers, Broekman, van Rijswijck, Joosten, 1995).

Population: staff members of Addiction Treatment Centres, clients with addiction problems.

Method: literature study and field investigation - observation of the process of assignment and matching, development and introduction of instruments, criteria and procedures for assigning and matching clients to treatment with the help of a task group. Developing instruments to evaluate the matching models: decision trees, and an instrument to reach an objective and reliable assessment of client variables.

Results: the matching and referral practices in addiction treatment and care in the Netherlands can, with some effort, be made explicit using relatively simple decision-tree models. The nature of the decision tree corresponds reasonably well to empirical knowledge.

Effects of intensive residential treatment

Goal: evaluation of Dutch and foreign studies on the effect of therapeutic communities, i.e. intensive residential treatments of one or two years (Kooyman 1992).

Results: Three Dutch studies are reviewed. Conclusions on the effect of treatment can be drawn from the study of Kooyman (1992): the therapeutic community results in less drug and alcohol use, less criminality and more satisfaction one year after finishing treatment, with growing relapse in following years and 20% using no drugs at all after five years.

Methadone maintenance clients in Amsterdam after five years

Aim: to describe the regulation of two random samples of clients who entered the Amsterdam Methadone Maintenance system (MM) 5 years earlier (Reijneveld & Nico Plomp 1993).

Methods: 17 clients who left the MM within 5 years are compared with 21 clients who stayed.

Results: The study indicates that clients who leave use less hard drugs and methadone, take better care of themselves and have more often established a drug-free social network.

2.4.1.4. Running Projects

Dialectical behaviour therapy for substance-abusing patients with a borderline personality disorder

Goal: to assess the effect of Dialectical Behaviour Therapy for patients with substance abuse disorders (alcohol and drugs) and a Borderline Personality Disorder (DSM-IV) (Bosch LMC van den, Verheul R, 1998).

Population: the population consists of drug and/or alcohol abusing females who are considered extremely problematic and in a way "untreatable" because of the combination of problems. In diagnostic terms these patients are characterised by a simultaneous diagnosis of substance abuse and borderline personality disorder.

Method: a randomised clinical trial was carried out. The used instruments are ASI, BPDSI, SCID-I, SCID-II, BDI, PDQ-4, RAND-36, SCL-90, WAV, BDHI, SBL, LPC, RFL, PHI, and BGI.

Quality in addiction treatment services

Goal: to find an empirical basis for quality of addiction treatment services by way of concept mapping (Nabiz U, Brink W van den).

Population: a mix of clients, health care workers, and financial and governmental parties.

Design & instruments: selection of respondents, brainstorming meeting, deduction of statements, Q-sort of the statements, statistical analysis and interpretation.

Investigating the medical prescription of heroin

Goal: to evaluate the effectiveness of medically co-prescribed heroin and oral methadone, compared with oral methadone alone, in chronic, treatment-refractory heroin addicts (Brink W van den, Hendriks VM, Blanken P, Huijsman IA, Ree J van).

Population: severely heroin-dependent patients who have responded insufficiently to the currently available medical interventions.

Method: a randomised clinical trial with two protocols: one on the effectiveness of co-prescribed inhalable heroin and one on the effectiveness of co-prescribed injectable heroin. Potential participants first enter a qualification period of 4-8 weeks, in which they are screened with regard to the in- and exclusion criteria. In the protocol on inhalable heroin, subjects who meet the selection criteria are subsequently randomised to one of three treatment arms. Group A consists of 12 months methadone-alone treatment. Group B consists of 12 months co-prescription of heroin and methadone. Group C consists of 6 months of methadone-alone treatment, followed by 6 months co-prescribed heroin and methadone. After the 12 months experimental period, patients in groups B and C will receive the most appropriate treatment, excluding heroin, with the exception of medical indication and on individual basis. After the 12-month experimental period, patients in group A will have the opportunity to receive co-prescribed heroin for 6 months. In the protocol on injectable heroin, patients are randomised to one of two treatment arms: 12 months of methadone-alone treatment or 12 months of combined heroin plus methadone treatment.

Assessments are conducted, including the ASI, SCL-90, Maudsley Addiction Profile-Health Symptoms Scale, and medical screening, the Composite International Diagnostic Interview (CIDI), EuroQol, Global Assessment of Functioning

(DSM-IV), laboratory investigation, urine analysis, and verification by police records.

Results: A first phase of the study started on a limited scale in the cities of Amsterdam and Rotterdam that involved a maximum of 50 patients who received the experimental treatment with heroin to evaluate whether insurmountable side-effects of the experimental treatment with heroin would occur. No such side effects occurred during the first phase. Based on these conclusions, the Minister of HWS and the Dutch parliament decided in February 1999 that the study could be continued and extended to the other participating cities.

Effects of high doses of methadone in Dutch low-threshold methadone maintenance programmes

Goal: to establish the effects of high doses of methadone in the Dutch addiction care system (Driessen F, Lelij B van der, Smeets H).

Population: problematic and/or heavy drug users above the age of 20, who are opiate addicts for at least 4 years and have received methadone for at least one year.

Method: experimental design, multi-centre randomised trial. Interviews by interviewers and nurses, medical examinations by physicians, urine-tests, and analysis of police reports.

Evaluation of an experiment with home care for addicted psychiatric patients

Goal: to determine the possibilities for home care for patients with a double diagnosis of addiction and psychiatric problems. (Hofman K 1999)

Population: 20-25 patients.

Method: participating observation, SCL-90 and DSM-IV diagnosis.

The effect of interpersonal therapy on interpersonal behaviour in inpatient addicts

Goal: to determine the specific effect of interpersonal (group) therapy (IPT) on interpersonal behaviour in inpatient addicts who are treated in an intensive therapeutic setting (Jong CAJ de, Breteler MHM, Bercx).

Population: inpatient addicts (alcohol, drugs, gambling).

Method: experimental design in which one group is treated with a structured IPT regime and the other group is treated in the usual way. The instruments that are used are the Interpersonal Check-List Revised (ICL-R), the Symptom Checklist-90 (SCL-90) and the Readiness to Change Questionnaire.

Evaluation of the street-junkie project

Goal: to study the effects of a diversion programme (detention replacing treatment) (Koeter M, Jongerius JAHM)

Population: criminal chronic drug addicts with at least five arrests in the year prior to admission.

Method: naturalistic follow-up (cohort) study with three control groups: 1) addicts detained in a regular prison unit, 2) drug addicts detained in a compulsory drug-free prison unit, 3) drug addicts detained in a voluntary drug-free prison unit. Instruments: structured interviews: EuropAsi and CIDI, Composite International Diagnostic Interview; self report questionnaires: PDQ-R (personality), CMRS (motivation), SELD (self-efficacy), satisfaction and self-esteem; police records.

Evaluation of compulsory treatment

Goal: to evaluate the effects of a compulsory drug-free (treatment) unit in prison. (Koeter M, Jongerius JAHM)

Population studied: criminal, chronic drug addicts with at least five arrests in the year prior to admission.

Methods: a longitudinal follow-up study with three control groups: 1) addicts detained in a regular prison unit, 2) criminal drug addicts admitted to detention replacing treatment (street-junkie project) and 3) drug addicts detained in a voluntary drug-free prison unit. Instruments: structured interviews: EuropAsi and CIDI, Composite International Diagnostic Interview; self report questionnaires: PDQ-R (personality), CMRS (motivation), SELD (self-efficacy), satisfaction and self-esteem; police records.

Effectiveness of Detoxification of Opiates followed by Community Reinforcement Approach

Goal: to measure effectiveness of detoxification with and without anaesthesia. (EDOCRA)

Population: Opiate-dependent clients of four addiction institutions.

Method: randomised clinical trial, multi-centre study. In the experimental group clients receive a high dose of naltrexon under anaesthetic, in the control group clients receive oral naltrexon for a period of 18 months. During this period of time both groups receive CRA therapy.

Planned project: "Cocaine experiment"

Rotterdam addiction care is starting an easily accessible service for problematic crack users (hidden population) in the year 2000. The goal is to measure the ef-

fectiveness of the assistance with quantitative and qualitative methods (GGD Rotterdam 99).

2.4.2. Studies on costs, benefits and financing of treatment and care

Costs and benefits of the Jellinek Centre

The Jellinek Centre conducted cost-benefit research in 1995. Researchers from an external management-consulting group compared costs and benefits for the care and treatment of addicted persons. This comparison was difficult because little research had been carried out concerning the cost effectiveness of addiction care, and there was no adequate methodology available.

A model was developed to estimate the direct costs, indirect cost, and the costs to society. Next, the researchers calculated the costs of successful treatment. The general conclusion was that the Jellinek Centre is cost effective. Although such research is based on a simplification of reality, it does contribute to the discussion about the results of care and treatment (Jellinek 98).

Studies on the general financing of private and public facilities of treatment and care

Within the background study (RVZ/RMO 1999, Chapter 6) a clear view on the diversity in planning and financing in addiction care in the Netherlands is given. Financing drug addiction care is not separately described. The study is briefly described in *'Facts opinions and scenarios'* of the Foundations for Future Health Scenarios (1998).

2.4.3. Instruments for the assessment of effectiveness, costs, and cost-effectiveness

Quality monitoring in addiction treatment services

Goal: to develop a method for monitoring and improving the efficiency and effectiveness of treatment programmes (Brink W van den, Nabitz U.).

Population: treatment services in the Jellinek Centre.

Method: a field investigation based on the existing data infrastructure. Selection of critical indicators for the improvement of treatment programmes using monitoring.

Results: from a set of 240 indicators, 5 have been selected. For several treatment services, the trend information over several years has been reported. (Bureau Beta 99).

Quality in addiction treatment services (concept mapping)

(see running study by Nabiz U, Brink W van den)

Instruments used in effectiveness studies:

- Addiction Severity Index
- Symptom Check List (SCL-90)
- Maudsley Addiction Profile-Health Symptoms Scale
- Composite International Diagnostic Interview (CIDI)
- Global Assessment of Functioning (DSM-IV)
- Interpersonal Checklist Revised (ICL-R)
- SELD
- PDQ-R
- EuroQol, Health related Quality of Life
- medical screening
- laboratory investigation
- urine analysis
- police records

References:

- Brink W van den, Hendriks VM en Ree J van (1999) Medical co-prescription of heroin to chronic, treatment resistant methadone patients in the Netherlands. *Journal of Drug Issues* 29(3): 587-608.
- Brink W van den & Nabiz U (1999). Quality monitoring in addiction treatment services.
- Brussel GHA van, Buster MCA (1996). Dextromoramide prescription to heroin users.
- Goedegebuure ML (1996). Small-scale preliminary experimental study of detoxification under anaesthesia and naltrexone maintenance in a clinical setting.
- Hurk A van den, Schippers G, Breteler M. (year?). Evaluation drug users in detention (EDID).
- Hurk, A. van den. (1998). Between a helping and a firm hand. A study of possibilities of successful treatment and care for addicted inmates. PhD.Thesis.
- Jongerius, J. and M. Koeter (1999). Evaluation of a compulsory drug-free treatment unit of an Amsterdam prison. AIAR, Amsterdam.
- Kersten GCM, Schippers GM, Broekman TG, van Rijswijk, Joosten JPA (1995). Development and evaluation of matching models in the treatment of addiction. Nijmegen, Bureau Beta.
- Kooyman M (1992). The therapeutic community for addicts: intimacy, parents' involvement and treatment outcome. Rotterdam, Erasmus University, PhD Thesis.

-
- Nabitz U, Walburg J (1998) The Jellinek Centre Application Report for the Dutch Quality Award, Public Sector, 1996. Jellinek, Amsterdam.
- Reijneveld SA, H. Nico Plomp. (1993). Methadone maintenance clients in Amsterdam after five years. *The International Journal of the Addictions*, 28 (1), 63-72.
- RVZ/RMO (1999). Dossierverslaving en verslavingszorg. (a) Verslavingszorg herijkt. Advies over een besturingsmodel voor verslavingszorg en verslavingsbeleid.(b) Achtergrondstudie bij het advies. Verslavingszorg herijkt. Zoetermeer.
- Schippers GM, Hurk AA van den, Breteler MHM, Meerkerk G (1998). Effectiveness of a drug-free detention treatment programme in a Dutch prison. *Substance Use and Misuse*, 33(4), 1027-1046.

2.5. Poland¹⁹

In the last 15 years there has been ***no study in Poland on the costs and cost-effectiveness*** of drug treatment and care. Two previous follow-up studies, which included all in-patient clients of drug services, covered those who were treated between 1974-78 and 1980-84, and were completed before 1985 (Godwod-Sikorska, Moskalewicz, Sieroslawski, Zamecki 1991). Their findings are now out of date as both drug use patterns and treatment approaches have undergone substantial changes.

For more than four decades medical treatment in Poland was available free of charge to all employed citizens, pensioners, to children under 18 and to students under 24. Since unemployment was non-existent, medical treatment was practically free to everyone. In addition, the law on drug abuse prevention of 1985 explicitly stated that drug treatment is offered free without any exceptions. Like all medical services, drug treatment was paid from the State's budget. No detailed calculations were made to utilise available resources in a cost-effective way. Therapeutic communities offering long-term residential rehabilitation and run by both NGOs and the public sector constituted the major response to the drug question (Swiatkiewicz, Moskalewicz, Sieroslawski 1998). Other services including out-patient treatment were underdeveloped and out-patient or home detoxification did not exist at all.

The transition period witnessed severe cuts in funding of drug treatment. Nevertheless, efforts to re-structure the system and to introduce cheaper approaches were met with resistance. Numerous rehabilitation centres survived partially thanks to assistance from sister organisations from abroad and charity support. The new law for counteracting drug abuse of 1997 confirmed the ***principle of free access to drug treatment*** regardless of the employment or insurance status. This was particularly important since the vast majority of addicts have neither employment nor resources to pay for treatment. Treatment of other health complications associated with drug use, however, was not included. This could lead, and in fact has led, to serious medical and ethical dilemmas.

Drug treatment was once again affected by the fundamental reform of the health system in Poland in 1999. The introduction of the public health insurance system did not omit drug treatment. Health insurance companies, however, do not pay for addicts who are not insured and are therefore reluctant to pay for what they consider to be non-medical treatment, which includes group

¹⁹ Based on text prepared by Katarzyna Przymuszevska, Bogusław Habrat and Jacek Moskalewicz, Institute of Psychiatry and Neurology, Warsaw, Poland, 2000.

therapy, social re-adaptation, etc. As a result, the majority of rehabilitation centres have been in a state of crisis and staff have often agreed not to be paid in order to "save" both the work place and the shelter for clients (Gazeta Olsztynska, 3.03.99, *Slowo Polskie*, 12.03.99, *Zycie Warszawy*, 30.03.99). Officially, the treatment of those who are not insured is supposed to be paid directly by the Ministry of Health. Unfortunately, addicts are not considered to be a priority and the re-determination of the cost of treatment is, owing to large organisational differences between the ministry and individual treatment centres, long overdue.

According to the Director of the Bureau for Drug Addiction, the **cost of long-term residential rehabilitation** varies from 10 to 25 EURO per day. In general, the cost of rehabilitation offered by the NGOs tends to be lower than public health residential units (Jablonski, 2000). Owing to the lengthy rehabilitation programmes, however, this modest daily cost increases considerably when calculated in terms of the treatment of an individual client who is supposed to spend one-two years in the rehabilitation centre.

According to existing evidence, the new economic circumstances are leading to a **re-orientation of services**. Rehabilitation programmes are becoming shortened and more attention is being paid to developing out-patient services. This trend is reinforced by dramatic changes in drug use patterns and in drug-using populations. "Old" addicts, whose major drug of choice was home-made "kompot" and who constituted the majority of clients, have ceased to dominate the Polish drug scene. Instead, teenage users of smokable heroin have appeared who do not like to even think of longer rehabilitation outside their place of residence. In addition a new generation of amphetamine users has emerged that includes young executives, free-lance professionals and media personnel. None of them are likely to accept the old treatment model.

No national or regional studies have been undertaken so far that are concerned with the fascinating area of the economic aspects of drug treatment in transition.

References:

- Godwod-Sikorska, Celina; Moskalewicz, Jacek; Sieroslawski, Janusz & Zamecki, Kszysztof (1991). Trendy epidemiologiczne zjawiska uzaleznien lekowych w Polsce w latach 80-tych na tle zmian legislacyjnych, *Alkoholizm i Narkomania*, 5, pp. 24-35.
- Grazyna Swiatkiewicz, Jacek Moskalewicz, Janusz Sieroslawski (1998). Therapeutic Communities as a Major Response to Drug Abuse in Poland, in: Harald Klingemann, Geoffrey Hunt (Eds.) *Drug Treatment Systems in an International Perspective. Drugs, Demons and Delinquents*, Sage Publications, Thousand Oaks, London, New Delhi, pp. 124- 132.
- Jablonski, Piotr (2000). Personal Communication.

2.6. Spain²⁰

The Spanish National Plan on Drugs (1998) and the 17 Autonomous Communities (regional governments) reported on the activities in prevention, treatment and social rehabilitation in the field of illicit drug use in 1997. National and Regional administrations spent more than 87,636,144 Euro in treatment and social rehabilitation of drug abuse in the fiscal year. Only direct costs owing to prevention, treatment and rehabilitation, research and co-ordination are considered to be "non-specific" care (i.e. hospitalisation owing to medical conditions associated with drug use). Financing at local or provincial level are not included in this estimation. Despite this considerable expenditure, there are **no studies available on the evaluation of cost-effectiveness or cost-benefit** in Spain.

It was not until the late 1980s that a few teams reporting on results from follow-up studies focused on the **evaluation of the effectiveness of drug-free treatment programmes** of heroin users conducted in Spain. Marina (1999) gives a brief review and discusses the impact of the results on drug (treatment) policies.

Only one of these reports (Sánchez-Carbonell J, Camí J, Brigos B, 1988) included a prospective design and a sample of treatment centres from different locations with relatively different characteristics that could be considered representative of specialised professional drug-treatment centres in Spain:

This was a descriptive 1-year multi-centric follow-up study of a sample of 311 heroin users who began treatment between March-July 1985 in 16 out-patient drug-free treatment centres in Spain.

Indicators of effectiveness evaluated included: last month substance use (heroin, cocaine, tranquillisers, cannabis, alcohol and tobacco), psychological status (problems related to drug use, suicide attempts, and a psychological composite from the Addiction Severity Index, ASI); employment in the previous 3 months. Evaluation data was derived from structured interviews 6 and 12 months after admission for treatment. The questionnaire was based on the material of the TOPS, and a psychological composite of the ASI.

Main findings: At 12 months, 51% of patients had discontinued heroin use; 10% of patients remained in treatment for 1 year or more; treatment decreased heroin use and improved psychological status. Predictive factors of the patient's status at 12-month follow-up were duration of therapy, pretreatment criminal history, and results obtained at 6-month follow-up. Despite the small sample investigated (both in terms of the number of subjects and the number of participant centres), results were able to be generalised to other heroin users treated in specialised

²⁰ Based on text prepared by Josep M. Suelves, Departament de Sanitat i Seguretat Social (Department of Health and Social Security), Barcelona, Spain, 2000.

professional centres during the mid-1980s. Treated heroin users were probably not representative of the population of heroin users at that time, since in practice treatment was only available to highly motivated patients.

Until now, no results from studies on the general financing of private and public facilities for treatment and care of drug addicts have been reported

References:

Marina P (1999). ¿Qué nos han enseñado los estudios de seguimiento de toxicómanos? Adicciones. 11(3):237-241. [What have we learnt from follow-up studies of drug addicts?]

Plan Nacional sobre Drogas. Memoria 1997. Madrid: Ministerio del Interior, 1998 [National Plan on Drugs. Report 1997]

Sánchez-Carbonell J, Camí J, Brigos B (1988). Follow-up of heroin addicts in Spain (EMETYST Project): results 1 year after treatment admission. British Journal of Addiction. 83:1439-1448.

2.7. Sweden²¹

2.7.1. Studies on treatment effectiveness

In a review article, Bergmark and Oscarsson (1993) conclude that the number of Swedish studies on the effects of drug abuse treatment is very limited, especially if only studies with a reasonable level of methodological accuracy are considered. By and large, it is still uncontroversial to agree with this conclusion. In the following, only studies published during the 1990s will be considered, a selection that boils down the number of studies to merely two. But it has to be stressed that only the first of these studies can be regarded as a reasonable basis for a more serious discussion of the effectiveness of the studied treatment interventions:

As in the international arena, **methadone treatment** represents an obvious exception to other types of treatment interventions in terms of the scientific support for its effectiveness. The early studies from the group around Gunne and Grönbladh (1980) have recently been followed by a new study from Stenbacka and Romelsjö (1997). In this study 655 patients that have received methadone treatment in Uppsala/Stockholm or Lund /Malmö are assessed with respect to the family situation, employment, social network, physical and mental health, and drug abuse. When judged against the results from a comparison group (selected

²¹ Based on text prepared by Anders Bergmark, University of Stockholm, Department of Social Work, Sweden, 2000.

on the basis of at least four years of heroin injecting and no methadone treatment), there is a clear and significant advantage for the methadone group. Although this is not a randomised study and there is a possibility that the selection process of the treatment group might have influenced the results, nevertheless it seems reasonable to judge the study as valid and capable of being generalised from.

One fairly broad multi-centre study, the **Swedate Study** (Bergmark et al., 1994), might also be mentioned here, although it does not have a design which makes it legitimate to talk about treatment effects. With its broad comparative approach, the Swedate project can be characterised as attempting not to overcome the problems connected with creating control groups and controlling for placebo effects but instead compensating for some of these difficulties (for a discussion of some of these problems see Bergmark & Oscarsson, 1991). The simple fact that the Swedate project involved 31 different treatment units and over 2000 clients provided a sufficient basis for the construction of standardised instruments for data collection with regard to both client and treatment variables - the basic prerequisite for research that intends to provide a valid evaluative judgement²².

The results from the Swedate study did not, however, provide any support for the effectiveness of any specific treatment approach. Although a significant difference in the treatment outcome between two groups of treatment units was found, it was difficult to establish a reasonable conclusion. This is due to the fact that, according to their own statements, they all (i.e. both the successful and the unsuccessful group of units) worked with the same treatment method. A possible explanation to this somewhat puzzling finding might be found in fact that certain aspects of treatment interventions are not articulated, and this is probably especially valid for treatment programmes that entail a strong ideological element. In the Swedate study, we found that the group with a more negative outcome apparently only practised the "methodological part" of the original programme and did not reproduce its ideological basis and legitimacy. Either the treatment unit which had developed the programme had not understood (or recognised) the importance of the programme's ideological basis, and thus not emphasised it enough when "exporting" it to other units; or the other units - the epigones - had not understood (or recognised) its importance.

²² The Swedate population is now being studied in a 13-year follow-up in the research programme of the Addiction Research Group at Stockholm University.

2.7.2. Studies on treatment costs

During the 1990s the question of treatment costs for drug abuse treatment has been addressed in three publications, two from the National Board of Health and Welfare, and one from the National Audit Bureau:

The report from the National Audit Bureau (1993) sets out to establish some basic estimates concerning the costs for the Swedish drug abuse treatment. This is done by extrapolation and combination of some known factors such as, for example, the median value of the daily fee for inpatient drug abuse treatment and the number of days in such treatment within each treatment episode, and the total number of treatment episodes each year. In other calculations, less empirically rooted ideas, such as the life-cycle of addiction (Alksne et. al. 1967), provide the basis for estimations of the Swedish society's total costs for different types of individual careers within the drug subculture. Although many of the figures that are presented can be regarded as highly uncertain, there are nevertheless some observations that seem to be reasonably valid. To this category belongs the observation that the major economic burden of drug abuse treatment falls on the local communities and the social service agencies.

In the two reports from the National Board of Health and Welfare (1996 and 1998), the overall costs for substance abuse interventions are estimated. It is stated that the major part of the resources, 52 percent, are spent for in-patient treatment, whereas out-patient treatment and costs for shelters and other type of interventions connected with housing problems each consume 17% of the resources. The total costs for substance abuse treatment in Sweden (this does not include costs for detoxification within hospitals) is estimated to be about 2,500,000,000 SEK (1996). The figure seems to have been stable for a number of years. Although these figures are estimates - and rather shaky ones - for substance abuse treatment, nevertheless they might also have some validity for drug abuse treatment. A rough estimate could be that about a third of the treatment costs described above concerns individuals that might be possible to describe as drug abusers.

There are no Swedish studies concerned with the question of the financing pattern of private and public facilities. Although about two thirds of the in-patient beds are non-public (half of these are private and the other half is mainly provided by non-profit foundations), almost all in-patient treatment for drug abuse is paid for by public money, primarily by the social service agencies within the local communities.

References:

- Alskne, H., Lieberman, L. & Brill, L. (1967) A conceptual model for the life cycle on addiction. *International Journal of Addictions* 2:221-240.
- Bergmark, A., Björling, B., Grönbladh, L., Olsson, B., Oscarsson, L., & Segraeus, V. (1994) Klienter i institutionell narkomanvård (Clients in residential drug treatment) Institutionen för socialt arbete (Dept. of social work), Stockholms universitet
- Bergmark, A. & Oscarsson, L. (1991) Does anybody really know what they are doing? Some comments related to the methodology of treatment service research. *British Journal of Addiction*, Vol 86, pp 139-142.
- Bergmark, A., & Oscarsson, L. (1993) Behandlingseffekter inom narkoman vården (Treatment effects within drug abuse care). In: Socialstyrelsen (national Board of Health and Welfare (1993) *Effekter av offensiv narkomanvård* (Effects of offensive drug treatment). Gotab, Stockholm.
- Gunne, L-M., & Grönbladh, L. (1980) Metadonunderhållsbehandlings effektivitet. En kontrollerad studie i narkomanvård. *Läkartidningen* (77):227-230.
- National Audit Bureau (1993). Narkomanvården – om kostnader, resursutnyttjande, samordning och statlig styrning (Drug abuse treatment – on costs, resource utilization, cooperation and governmental control), Riksrevisionsverket, Stockholm
- National Board of Health and Welfare (Socialstyrelsen) (1996). *Kursändring i missbrukarvården* (New directions for substance abuse treatment), Stockholm.
- National Board of Health and Welfare (Socialstyrelsen) (1998). *Balans i missbrukarvården* (A balanced treatment for substance abuse?), Stockholm.
- Stenbacka, M., & Romelsjö, (1997) Metadonbehandling i Sverige. Beskrivning och utvärdering (Methadone treatment in Sweden. Description and evaluation) Socialstyrelsen, Stockholm

2.8. Switzerland

There is no comprehensive report from Switzerland. Instead, two interesting projects will be briefly described:

2.8.1. Standard service description and performance-related financing of in-patient drug treatments²³

The type of financing via welfare aid is applicable for practically all in-patient addiction treatment facilities in Switzerland, and has proven to be highly unstable in recent times. In order not to endanger these withdrawal-oriented therapy serv-

²³ Based on text prepared by Ulrich Simmel, Schweizerische Koordinationsstelle für stationäre Therapieangebote im Drogenbereich (KOSTE), Bern, Switzerland, 2000.

ices, the Social Minister has commissioned the drawing up of a fundamentally new financial model.

In order to be able to regulate the financing in terms of performance, the services provided by the various institutions must first of all be described in accordance with a standard model. It has now been suggested by a working group that the description of the in-patient treatment services should be in accordance with the institution profile, the target group orientation and in accordance with the individual client problems.

The starting point is the decision that in-patient establishments will artificially replace the socialisation fields of the control culture (primary groups, education and age-specific leisure activities); the socialisation fields will therefore become potential working fields for the establishments (not every facility must replace all the fields). The therapy costs of a person will be established by a so-called working field flat rate whose amount has been determined in a pilot project. The extent of the services to be provided is described in three categories for each working field: individual performance, service standard and service area, whereby the service area means that a socialisation field will be completely artificially replaced.

This definition process provides a substantial increase in the transparency of the therapy services for the persons seeking therapy (for which clientele with which priorities is the facility suitable), but is also helpful for the authorities responsible for referrals in terms of providing an indication aid.

Moreover, it has been suggested that the last instalment of the treatment costs (which are determined in the form of a working field flat rate) should be paid only after a certain period of time following the discharge of the person, and thus make the entire cost of the course of treatment dependent upon the assessment of the results within the framework of quality assurance and control procedures. This mechanism is intended to create the necessary incentive to ensure that the establishments take care to admit only the clientele whom they can also competently treat and care.

The services that a facility can or should provide are to be negotiated within the framework of service agreements with the responsible authorities, which in this way are able to influence needs-led service planning.

In order to achieve a standardised basis for the rating of the services provided, a pilot experiment is currently being conducted with around 15 establishments.

2.8.2. Socio-economic Evaluation of Experiments for the Medical Prescription of Narcotic Substances

In the Swiss experiments for the medical prescription of narcotic substances, the cost efficiency of the experiments was also examined within the framework of comprehensive evaluation research. In view of the general efforts to reduce costs, the measures are supposed to be not just effective in health terms but also be economically efficient, which is why a cost / benefit analysis was conducted (Health Econ, 1997).

The costs per experimentee were differentiated according to the direct costs (medicines, narcotics), personnel costs (research, i.e. non-experimental activities such as data capture, social care, medical care, provision of narcotics, administration) as well as other operational expenditure (general expenditure incl. imputed costs and deductions). For the various life areas, the following aims and hypotheses have been formulated:

- *Accommodation*: in-patient residential stays and homelessness (use of emergency shelters) should be avoided; forms of out-patient supervised accommodation should increase; hypothesis: costs will decrease.
- *Work*: hypothesis: opportunities for work will increase, experimentees will be reintegrated.
- *Criminal behaviour*: pressure to procure drugs will decrease; hypothesis: it can be expected that there will be a drastic reduction in drug-related crime; associated costs areas (costs to victims, police, jurisdiction, penal measures) will decrease.
- *Health*: the health situation shall be stabilised and the hygiene improved; hypothesis: resultant illness will decrease, and the medical costs will correspondingly sink.

For the controls, baseline comparisons were made (measurement time: t_0 baseline; t_1 6 months; t_2 12 months). The costs were determined using the account figures (Sept. until Dec. 1995) as well as by recording the working hours over 4 weeks. In addition, diverse additional costs were taken into consideration (see p. 107). The criminal behaviour was examined using two separate external control surveys conducted by the Institute for Police Science and Criminology (using crimes registered by the police and in the central criminal records). Moneys from the clients from social security, public spending, illegal income as well as private money transfers were considered separately since the savings made may not be added to the national economic benefits (see p.100ff.).

The *total costs* per experimentee amount to SFr. 51.17, whereby the pure methadone project PROMI is slightly cheaper in all areas. The personnel costs make up the largest proportion each time (approx. 71%). With the research expenditure

deducted, this leaves a day's total cost per experimentee of Sfr. 49.43. The *total benefit* per experimentee is Sfr. 95.50, whereby 75% is in the field 'criminal behaviour'. The health situation improves (in terms of the total economy) by around 18%. Thus the experiments satisfy the economic efficiency postulate (benefit Sfr. 95.50 / costs Sfr. 51.17 per person). The findings cannot be generalised since such calculations require a large degree of differentiation. On the other hand, the methodology can certainly be generalised.

References:

- Gutzwiler, F. & Steffen, T. (2000). Cost-Benefit Analysis of Heroin Maintenance Treatment. Basel: Karger.
- Health Econ (1997). Sozioökonomische Bewertung der Versuche zur ärztlichen Verschreibung von Betäubungsmitteln. Schlussbericht. Basel.

2.9. Summary

The following is a summary of the contents discussed in the country reports as well as their importance for the adequacy of treatment and care:

2.9.1. Effectiveness of Treatment and Care

In order to *assess the attainment of individual targets*, in the Czech Republic the Effectiveness Evaluation Protocol programme is implemented. The evaluation as to whether the targets are achieved is carried out by the client, the staff and a relative at the start of the treatment, during the course of the treatment, at the completion as well as around a year after completion. The criteria for the assessment are the client's life satisfaction, abstinence, relation to the family, contacts with other users, as well as education and/or working position (the instrument is described in the Materials part of the chapter "Treatment and Support Needs"). Such a protocol enables an assessment of the effectiveness of a treatment from the point of view of those involved with regard to various aims.

In the Dutch report a whole series of *studies on the effectiveness of various treatment modalities* are described. Studies described in the other reports are compared with each other in the list below:

	Denmark (Pedersen et al., 1999 and 2000)	Sweden (Bergmark et al. 1994; Swedate study)	Spain (Sánchez-Carbonell et al. 1988).	Sweden (Stenbacka and Romelsjö 1997)
Treatment modality	In-patient treatment	In-patient treatment	Out-patient drug-free treatment	Out-patient methadone treatment
Sample	7 institutions	Over 2000 clients from 31 different treatment units	311 heroin users in 16 out-patient treatment centres	655 patients receiving methadone treatment in Uppsala/Stockholm or Lund /Malmö
Indicators of effectiveness	Number of drug-free months; Institutional characteristics: price per month; duration and modality of treatment; type of clientele	Client and treatment variables were considered	Last month substance use (heroin, cocaine, tranquillisers, cannabis, alcohol, tobacco); psychological status; employment in previous 3 months	Assessed with respect to family situation, employment, social network, physical and mental health, and drug abuse.
Design and Assessment instruments	Follow-up 1 and 2 years after release	Multi-centre study; broad comparative approach; construction of standardised instruments	Structured interviews at 6 and 12-month of treatment admission; instruments based on TOPS and ASI	Comparison group selected on the basis of at least four years of heroin injecting and no methadone treatment; no randomised study
Results	Best results by institutions with relative long duration of treatment and high price per month; insight giving type of treatment; for clients with relative high intellectual level of functioning	The results did not provide support for the effectiveness of any specific treatment approach. Treatment units with a more negative outcome only practised the "methodological part" of the original treatment programme and did not reproduce its ideological basis and legitimacy.	Heroin use decreased; psychological status improved Predictive factors of the patient's status at 12 month follow-up: duration of therapy, pretreatment criminal history, results obtained at 6 month follow-up	There is a clear and significant advantage for the methadone group
Problems		No conclusions on effectiveness can be made; it is assumed that certain aspects of treatment (e.g. ideological elements), which might have an influence on effectiveness, are not articulated in the assessment.	Study of 1985 Sample not representative for the heroin users by that time since treatment was only available to highly motivated patients	There is a possibility that the selection process of the treatment group might have influenced the results; nevertheless the study can be judged as valid and possible to generalise from

The studies can be characterised as follows:

- Effectiveness evaluation of a definite facility
- Effectiveness evaluation of a specific treatment modality
- Comparison between various facilities with the same treatment modalities in terms of their effectiveness
- Comparison between various treatment modalities in terms of the effectiveness and costs for various groups of clients
- Follow-up vs. control group design

Depending upon the treatment modality, the measurement of the effectiveness is based on changes in the following (life) areas:

- substance use (number of drug-free months; substances used during the last month)
- physical health
- mental health
- employment/ professional education
- family situation
- social network

Since an aim of methadone treatment is to bring drug abusers into the care system, in Denmark the scope of this programme has been defined to provide an indicator of its effectiveness (relation of the number of clients in methadone treatment for more than three months to the total number of drug abusers in a region).

Instruments that are implemented in order to measure changes with the clients, and thus the effectiveness, are described briefly under Section 4. Additionally, programme satisfaction questionnaires, medical screening, laboratory investigations, urine analysis and the analysis of police records are used for effectiveness evaluations.

2.9.2. Financing and Costs of Treatment and Care

Financing of addiction care facilities

The financing of addiction care is carried out in the countries according to different models. In addition, there are also differences within the individual countries

between the funding bodies and the intervention fields. Studies on the respective financing systems as well as on possible effects on the availability of the services (see, for example, Poland), and thus on the adequacy of the treatment systems, are unfortunately not available.

In the Czech Republic provider groups are currently reaching agreement on **standard budgets** as a basis for the future standard financing of addiction care facilities. Here, the costing is differentiated according to the expected costs per client per day in in-patient establishments as well as per client per hour in out-patient facilities.

In Switzerland, a project is currently being conducted on standard service descriptions and **service-related financing** in in-patient drug treatment. The concept is based on the decision that the socialisation fields of the control culture²⁴ in in-patient facilities are to be artificially replaced, and thus become potential working fields for the facilities. The costs of therapy per person are determined per working field by a working field flat rate, whereby the degree of services to be provided for each working field are described in three categories (ranging from supplements to replacements).

Public expenses and the costs of drug treatment and care

Estimates of the public expenditure for drug abusers vary considerably. With most estimates of this kind, however, the basic data is somewhat uncertain. This is aggravated on the one hand by the mixed financing (e.g., several responsible ministries and levels of administration) as well as on the other hand by the question as to which costs should be included. The following fields are mentioned:

- Costs for addiction-specific treatment and care
- Costs for non-addiction-specific treatment and care (e.g., hospital admission; these costs are often difficult to identify)
- Costs for the financial support of drug abusers (social welfare)
- Costs caused by crime (victim support, insurance, etc.)
- Costs within the framework of the justice system

If only the expenditure for the specific treatment and care of drug abusers is to be considered, then of particular interest is how much is spent on which treatment modalities. In none of these studies, however, is the relation to effectiveness determined.

²⁴ Primary group, education, work and age-specific leisure activities.

Comparison of costs and effectiveness

Various studies have attempted to compare the costs and benefits at different levels:

- For an overall *drug policy strategy* (e.g., in the Czech Republic)
- for a *treatment modality* (e.g., prescription of heroin in Switzerland)
- for an *institution* (e.g., the Jellinek Centre, the Netherlands)
- for the *rehabilitation of a drug addicted person* (see Danish report)

All these studies reached a positive conclusion, i.e., in all studies the economic benefits exceeded the expended means.

All reports refer to the need to intensify the economic evaluations.

3. Assessment of Effectiveness, Cost, and Economic Evaluations

3.1. Assessment of Effectiveness

The country reports give some indication on the *assessment of effectiveness*, although they do not fully reflect the measurement of effectiveness currently going on in Europe. However, the Dutch examples can be considered to be typical with regard to the potential outcomes. Often, effectiveness in treatment of substance abuse, especially drug abuse and dependence, is measured on several dimensions:

- continuation of illegal substance use and abuse
- improvement of medical condition (somatic and mental)
- social integration (criminal behaviour, work, housing, personal relations).

A widespread instrument to measure these dimensions is the *EuropASI*, which covers all of these dimensions to a certain degree.

With regard to design, effectiveness evaluation often falls short of the usual standards set for the obvious reason that double-blind randomised controlled clinical trials (RCT) are not possible. It is, for example, not possible to conduct a double blind RCT between methadone and heroin substitution therapy since the pharmacological characteristics of the drugs do not allow blinding of either subjects or care takers.

However, several design characteristics are often possible in effectiveness trials in the field of substance abuse and should be applied wherever possible:

Randomisation to conditions

Randomisation is a powerful tool that enables comparisons across groups because it levels out potentially confounding variables. Clearly, in certain situations it is hard to randomise (e.g., when trying to evaluate the effectiveness of abstinence-oriented treatment vs. substitution treatment with methadone), but wherever possible, randomisation should be used, e.g., with the help of waiting lists. Randomisation requires a minimum of two groups. The use of control groups is advisable, even if randomisation is not possible, for several reasons (e.g. Cook & Campbell, 1979).

Intent to treat analysis

In the field of substance abuse, dropout rates are usually high, no matter what form of treatment is applied. This has led to a situation where the dropout rate or its counterpart, the retention rate, has been used as the main outcome criterion in several studies. Given the importance of this variable, it is inexcusable to ignore dropouts in the final analysis as is often done (e.g., Fischer et al., in press). It is not only important to know what happened to those who stayed in treatment but is often more important to know what happened to dropouts. Different statistical techniques and sensitivity analyses are possible to adjust the lack of information during the follow-up time for dropouts. There is no reason why the field of substance abuse should carry on with using sub-optimal standards for conducting and reporting effectiveness (see Good Clinical Practice Guidelines). This has led to situations where standardised summaries of the literature, such as the Cochrane review, exclude more than 95% of the studies in the field of substance abuse owing to poor methodological quality.

3.2. Assessment of Costs and Economic Evaluations

In the **assessment of costs**, in the studies of the country report different perspectives have been chosen with different results.

From a *societal perspective*, social costs of drug abuse include direct costs and indirect costs (e.g. Single et al., 1995). One position within the category of direct costs is treatment which would include the costs for personnel (medical doctors, nurses, social workers, psychologists, etc.), medication, and administrative costs including rent or other overhead costs. Other direct costs of drug abuse would include costs for legal activities (e.g. police and court costs for criminal behaviour caused by persons with substance abuse problems), prevention including research, etc. Indirect costs refer to losses of productivity, e.g. because of substance abuse related morbidity or premature mortality.

From the *perspective of the health care provider*, often only direct costs for treatment are assessed. However, big differences exist in the inclusion of overhead costs. Standardised procedures should be used in future to come up with clear definitions as the basis for comparative studies.

In the country reports, there is no mention of **cost-effectiveness**, **cost-utility** or **cost-minimisation** studies or any models or tools for conducting such studies. The lack of economic studies in this domain gives a clear indication that the substance abuse field is behind other fields in the establishment of evidence-

based procedures to treat people with substance abuse problems. The lack of cost-effectiveness or cost-utility information in particular may be due to several reasons:

- Cost-effectiveness requires one common outcome and the field of substance abuse often uses multiple outcomes in different dimensions (see above). This could be changed by establishing a hierarchy between outcomes (e.g. defining main outcome and other outcomes) or by developing summary scores across different sub-dimensions of outcome. Another way to change this lack would be to use utility measures as outcomes of treatment studies in drug abuse, for instance the DALYs²⁵ gained.
- Treatment of substance abuse is often provided by the government, even in health care systems which are otherwise private (e.g. Switzerland), in ideologically disputed settings (see, for example, the controversies on substitution treatment in many societies) where cost and effectiveness considerations do not seem to matter much.
- There is a lack of expertise to conduct such studies routinely.

The most prevalent economic evaluation in the country report concerns **cost-benefit** studies. In these kind of studies, as mentioned above, direct costs of treatment are compared with reductions in the costs related to untreated substance abuse. These reductions in costs usually comprise (Frei et al., 2000):

- reductions in the costs for criminality
- reductions in the costs for social assistance (e.g. housing, unemployment payments) and
- reduction in the costs for other treatment (e.g. GP, emergency room).

Cost-benefit analyses for treatment of opiate addiction usually come to the conclusion that the treatment of addicts is cost-beneficial, e.g., that the costs for supplying such treatment are outweighed by the reductions in other costs for society (e.g., Harwood et al., 1988; see Rehm & Fischer, 2000, for an overview). Unfortunately, there are several problems that limit the interpretation and practical usefulness of such studies. Firstly, they are conceptually unclear in comparing different categories of costs. Secondly, they may be meaningless as no real money is saved. For instance, if the Swiss PROVE study "saved" costs in policing and other legal activities related to illicit drug use, this did not mean that the Confederation or the cantons actually saved this money, e.g. by employing less police officers. The costs for the legal system tend to be fixed by other considerations, and fluctuations in criminal behaviour by a subgroup do not at all influence the real costs. Thus, whereas the costs for treatment are real, as they have to be budgeted by

²⁵ Disability adjusted life years.

government, the savings are on paper. Correspondingly, the political decision-makers do not really take such numbers seriously and make their decisions accordingly.

To sum up, the area of economic evaluations in the field of substance abuse treatment in Europe is not very advanced. The ADAT group also strongly encourages the use of economic models and analyses in this field as economic evaluations. These:

- will allow a more rational allocation of resources
- help to eliminate too costly and less effective treatments, thus enabling more availability of treatment as well as in the long run improving the quality of treatment for people with substance abuse.

Models for the conduct of such evaluations exist (see WHO - UNDCP - EMCDDA 1999b; WHO - UNDCP - EMCDDA 1999c; WHO - UNDCP - EMCDDA 1999d; NIDA 1999) and there is no reason why these studies should not be undertaken in the near future in many European countries.

4. Instruments for Effectiveness Evaluations in Substance Abuse Treatment and Care

The following instruments, which are all available in English, are recommended by the ADAT working group for the evaluation of treatment and care of drug dependence:

European Addiction Severity Index (EuropASI)

The EuropASI is a documentation system based on the US document standard, the Addiction Severity Index (ASI), developed by McLellan. Its objective is a simplification of the documentation in the field of addiction and drugs at European level (in particular in terms of research). A working group produced an English version a few years ago of which translations now exist in the most important European languages. For more information see ADAT Part II, Treatment and Support Needs, Section 4.2.4.2.

The EuropASI can be downloaded in English from the homepage of the Addiction Research Institute, Zurich: <http://www.suchtforschung.ch>.

The European Addiction Training Institute is offering training seminars for the use of EuropASI (see: <http://www.eati.org/easi.htm>).

Treatment Demand Indicator Protocol (TDI)

The Treatment Demand Indicator Protocol²⁶ is the result of joint efforts by the EMCDDA and the Pompidou Group to provide comparable, reliable and anonymous information on the number and characteristics of people in treatment for drug abuse in Europe. The protocol defines a minimum data set which national treatment-monitoring systems should provide on each individual admitted to treatment. The TDI items represent the smallest common denominator in terms of required information and the national systems are free to collect any additional information they deem relevant (also see ADAT Part II, Treatment and Support Needs, Section 4.2.4.1). The instrument can be obtained at the following address: http://www.emcdda.org/activities/epidem_comparability_treatment.shtml.

²⁶European Monitoring Centre for Drugs and Drug Addiction & Council of Europe (EMCDDA). EMCDDA Scientific Report, Treatment demand indicator, Standard protocol 2.0. Lisbon, EMCDDA, 2000.

Maudsley Addiction Profile-Health Symptoms Scale (MAP)

MAP is a brief structured interview for treatment outcome research. It is designed as a core research instrument and to be a resource for treatment services wishing to undertake outcome studies. The following domains can be assessed: substance use, health risk behaviour, physical and psychological health, personal/social functioning. MAP is available in English, French, German, Italian, and Spanish. For further information see:

http://eib.emcdda.org/eib/databases_eib.shtml.

Opiate Treatment Index (OTI)

The Opiate Treatment Index (OTI) is a multidimensional scale measuring illicit drug use, HIV risk behaviour, criminal activity, social functioning, physical and psychological health. The instrument has been validated in both Australia and the UK²⁷. It has a high correlation with doctors' and nurses' reports and with urine results at opiate treatment settings²⁸.

OTI is the product of Shane Darke et al. at the National Drug and Alcohol Research Centre (NDARC), Sydney, Australia (University of New South Wales). For further information see: <http://www.med.unsw.edu.au/ndarc/>.

Circumstances, Motivation, and Readiness Scales for Substance Abuse Treatment (CMRST)

CMR is designed to measure motivation and readiness for treatment and to predict retention in treatment among abusers of illicit drugs. The instrument consists of four factor-derived scales: External influence to enter treatment; Internal influences to leave treatment; Internal recognition of the need to change; Readiness for treatment. The Instrument can be downloaded together with additional information from: http://eib.emcdda.org/eib/databases_eib.shtml.

SCL-90-R® (Symptom Checklist-90-Revised)

The Symptom Checklist-90-Revised (SCL-90-R) is a brief, multidimensional self-report inventory designed to screen for a broad range of psychological problems and symptoms of psychopathology. The instrument is used by clinical psychologists, psychiatrists and counselling professionals in mental health, medical, and educational settings, as well as for research purposes. It can be useful in the initial evaluation of patients, for measuring patient progress during treatment, and

²⁷ Adelekan M, Green A, DasGupta N, et al. Reliability and validity of the Opiate Treatment Index among a sample of opioid users in the United Kingdom. *Drug Alcohol Rev* 1996; 15: 261-270.

²⁸ Darke S, Hall W, Wodak A, et al. Development and validation of a multi-dimensional instrument for assessing outcome of treatment among opioid users: the Opiate Treatment Index. *Br J Addict* 1992; 87: 733-742.

for outcome measurement. The SCL-90-R instrument is a well-researched instrument with more than 940 research studies demonstrating its reliability, validity, and utility. For more information see:

<http://assessments.ncs.com/assessments/tests/scl90r.htm>.

Composite International Diagnostic Interview (CIDI)

The Composite International Diagnostic Interview is a comprehensive, standardised instrument for the assessment of mental disorders according to the definitions and criteria of ICD-10 and DSM-IV. It is intended for use in epidemiological and cross-cultural studies as well as for clinical and research purposes. For further information and downloading of CIDI see: <http://www.who.int/msa/cidi/>.

Global Assessment of Functioning (GAF, DSM-IV²⁹)

The Global Assessment of Functioning Scale serves as a basis for reporting the clinician's judgement of the individual's overall level of functioning. This information is useful in planning treatment and measuring its impact, and in predicting outcome. For a description of codes see:

<http://www.technica-software.com/gafcodes.htm>

WHOQOL Instruments (Quality of Life)

The WHOQOL instruments place primary importance on the perception of the individual. By focusing on the individuals' own views of their well being, the instruments inquire not only about the functioning of people with certain diseases / disorders but also how satisfied the patients are with their functioning and with the effects of treatment. Full and abridged versions can be downloaded at:

http://www.who.int/mental_health/Publication_Pages/Pubs_General.htm.

SF-36 Health Survey Physical & Mental Health Summary Scales

The SF-36®³⁰ was constructed to satisfy minimum psychometric standards necessary for group comparisons involving generic health concepts - that is, concepts that are not specific to any age, disease or treatment group. The selected eight health concepts represent multiple operational definitions of health, including: function and dysfunction, distress and well-being, objective reports and subjective ratings, and both favourable and unfavourable self-evaluations of general health status. The scoring of the eight SF-36® scales and two summary measures and detailed interpretation guidelines (content-based, norm-based,

²⁹ American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC, American Psychiatric Association, 1994.

³⁰ The SF-36 items are based on the General Psychological Well-Being Inventory, various physical and role functioning measures, the Health Perceptions Questionnaire, and other measures.

and criterion-based) are documented in two users' manuals. For further information see: www.sf-36.com.

EQ-5D, EuroQol Group (Quality of Life)

EQ-5D is a measure of health status for use in evaluating health and healthcare. It provides a simple descriptive profile and generates a single index value for health status on which full health is assigned a value of 1 and death a value of 0. EQ-5D has been specially designed to complement other quality of life measures (such as the SF-36, NHP, SIP) or disease-specific measures. The EQ-5D self-classifier describes health status according to 5 dimensions: mobility, self-care, usual activities (e.g. work, study, housework, family or leisure activities), pain/discomfort, and anxiety/depression. For further information see: <http://www.euroqol.org/>

Other Sources

For instruments for the assessment of *clients' needs* and *client satisfaction* see ADAT Part II, Treatment and Support Needs, Chapter 4.3.

For *service description instruments* see ADAT part II, Treatment and Support Needs, Chapter 4.5.

For instruments for the assessment of *Quality of Life in Medicine* see <http://www.qlmed.org/>.

For further instruments for the *evaluation of costs, needs, outcome, process and satisfaction of substance abuse treatment* consult the EMCDDA Instrument bank at: http://eib.emcdda.org/eib/databases_eib.shtml.

References

- Cook TD & Campbell DT (1979). Quasi-Experimentation. Design & Analysis Issues for Field Settings. Boston: Houghton Mifflin Company.
- Drummond M.F., O'Brien B., Stoddart G.L., & Torrance G.W. (1997). The economic evaluation of health care programmes. New York: Oxford University Press, 2nd Edition.
- Fischer, B., Kirst, M., Rehm, J., Marsh, D., Bondy, S., & Tyndall, M. (im Druck). The phenomenon of so-called 'other drug use' among opiate addicts in the North American context: Evidence, consequences, questions. In: B. Westermann, C. Jellinek, & G.-U. Bellman (Hrsg.), Beigebruch: Offene Grenzen der Substitution. Beltz: Deutscher Studienverlag.
- Frei, A., Greiner, R.-A., Mehnert, A., & Dinkel, R. R. (2000). Socio-economic evaluation of heroin maintenance treatment. In: Gutzwiller, F. & Steffen, T. (Eds.), Cost-benefit analysis of heroin maintenance treatment. Basel: Karger, S. 37-130.
- Harwood, H.J., Hubbard, R.L., Collins, J.J., & Rachal, J.V. (1988). The costs of crime and the benefits of drug abuse treatment: A cost-benefit analysis using TOPS data. In C.G. Leukefeld & F.M. Time (eds.) Compulsory treatment of drug abuse: research and clinical practice. NIDA Research Monograph Series 86. Rockville, MD: NIDA.
- Murray, C.J.L. & Lopez, A. (1996). The global burden of disease. Boston: Harvard School of Public Health.
- NIDA (1999). Measuring and Improving Cost, Cost-Effectiveness, and Cost-Benefit for Substance Abuse Treatment Programmes. A Manual.
- Rehm, J. & Fischer, B. (2000). Kosten, Nutzen und Effizienz der Opiatsubstitution. In: J. Zerdick (Hrsg.), Suchtmedizin im Dialog. 9. Suchtmedizinischen Kongress der DGS (pp. 71-78). Berlin: Verlag für Wissenschaft und Bildung.
- Single, E., Easton, B., Collins, D., Harwood, H., Lapsley, H., & Maynard, A. (1995). International Guidelines for Estimating the Costs of Substance Abuse. Ottawa: Canadian Centre on Substance Abuse.
- WHO - UNDCP - EMCDDA (1999b). Workbook 5. Cost Evaluations. Evaluation of Psychoactive Substance Use Disorder Treatment. (World Health Organization; United Nations International Drug Control Programme; European Monitoring Center on Drugs and Drug Addiction).
- WHO - UNDCP - EMCDDA (1999c). Workbook 7. Outcome Evaluations. Evaluation of Psychoactive Substance Use Disorder Treatment.
- WHO - UNDCP - EMCDDA (1999d). Workbook 8. Economic Evaluations. Evaluation of Psychoactive Substance Use Disorder Treatment.