National Prevalence Estimates of Problem Drug Use in the European Union, 1995-2000

EMCDDA project CT.00.RTX.23 - Final Report - Volume I - Results

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This project was financially supported by the European Monitoring Centre for Drugs and Drug Addiction, Lisbon.

Final Version 10.2.2003

Please use the following citation:

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). National Prevalence Estimates of Problem Drug Use in the European Union, 1995-2000. Final Report CT.00.RTX.23. Lisbon: EMCDDA, 2003.

Copy deadline: April 15th 2002.

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Acknowledgement
The report is a compilation of country reports prepared by experts, who were nominated by the respective National Focal Points of the European Monitoring Centre for Drugs and Drug Addiction. They have updated national prevalence estimates and given insight into the developments which took place in the member state in relation to this indicator during an expert meeting which took place in Lisbon in 2001. At this meeting valuable contributions were given on local prevalence estimation, incidence and geographic modelling of problem drug use, by participants in the 'EMCDDA/TSER European Drug Modelling Network', DG Research funded project SOE2-CT98-3075.

The authors at the IFT and the EMCDDA like to thank the National Focal Points for supporting this project.

Executive Summary

The estimation of prevalence and the description of patterns of problem drug use are crucial elements in the activities of the European Monitoring Centre for Drugs and Drug Addiction. While information on drug use in the population can show, how far drugs are part of “normal” life problematic drug use is the key term, when negative consequences of these substances in a society are discussed.

It is known that important numbers of problematic drug users are not known to service providers, and thus are ‘hidden’ for official statistics. For this reason, simple assessments of the size of the problem are not possible. Instead, methods are needed, which allow to estimate the total number of problematic cases on the basis of the available, often limited, sets of data.

Former projects built up an inventory of methods applied nationally for the estimation of problem drug use, tested them in a variety of countries and decided on the basis of the outcome of these tests, to use a set of methods as common standard (EMCDDA 1999a). Guidelines were developed in order to further increase the comparability of national figures and to support countries, who had less experience in the application of some of these methods (EMCDDA 1999b).

Considerable progress has been made since then as this report shows. Most countries are currently in the position to offer relatively reliable estimates on the number of, and some characteristics of, problem drug users. The methods applied have become more homogenous and a steady increase in the number of estimates per country occurred over the last years, as this project continued.

Some general conclusions can be drawn from the experiences in the application of the different methods. As availability of data and national conditions (size, legal possibilities) differ, no single method is yet available, which could become the common standard. Instead a small set of recommended methods seems more appropriate to increase the quality of estimates per country as well as the comparability of outcomes:

- multiplier methods based on data on drug treatments, police offences and drug deaths. Treated cases and offences registered by the police are used more often, as these data are available in most of the countries.
- a revised multiplier method based on HIV statistics (formerly based on back calculation)
- capture-recapture methods are applied mostly at a regional level, but are also started to be used at national level at least in countries of smaller size. The bigger the country in size and the more complex its administrative structure is, the more difficult the application of this method is (geographic heterogeneity).
- the multivariate indicator method integrates a variety of different sources. It requires a regional breakdown of sources and independent estimates for at least two of these regions.

Each of these methods also describes the relative situation of a country compared to others more or less in the same way. While rates can differ between the different methods used within a country, the rank order between countries remains rather stable. In most countries also there is a reasonable correspondence between most of the estimates produced. In this respect a cross validation of estimates resulting from different sources and methods will step by step produce more exact and reliable figures.

The following methodological recommendations can be made::

- More scientific rigour is needed in relation to the methods applied and to data reporting. It is important to exactly specify reference periods of estimates and not to confuse dates for data collection, production of parameters and publications.
- Instead of a single value confidence intervals should be presented, as they show more adequately the often large uncertainty of an estimate.
- Where possible empirically based parameters like multipliers, benchmarks etc. have to be used. Data taken from other countries and settings (e.g. as found in the international literature) may not be appropriate as a basis for estimations. For example mortality amongst drug users has shown to differ considerably in different periods of time and countries.
- As many parameters and sources are not available every year it might be more promising to use periods of e.g. 3 years for analysis of changes over time.
- The methods applied up to now are mainly centered around problematic use of heroin. The more cocaine and other drugs are in the centre of interest, the less parameters like drug related deaths or HIV can be used as instrument to mirror the problem. The methods have to be expanded. This is especially true for problematic use cocaine and cannabis outside of the heroin using population.
- Especially the multivariate indicator method could be applied more often, if independent regional estimates would be available. For this purpose as well as to obtain multipliers for the different methods small studies would be needed nationally. The limited data needed for estimations could also be incorporated in ongoing data collection systems.
- More methodological development is needed in order to reach more reliable measures, especially of change over time.

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1 Introduction

1.1 Aims of the project

The project CT.00.RTX.23 "Prevalence Estimates of Problem Drug Use" follows a row of former projects aiming at the development and implementation of a methodology for the estimation of problematic drug use in the EU member states. Former projects built up an inventory of methods applied nationally for the estimation of problem drug use, tested them in a variety of countries and decided on the basis of the outcome of these tests, to use a set of methods as common standard (EMCDDA 1999a). Guidelines were developed in order to further increase the comparability of national figures and to support countries, who had less experience in the application of some of these methods (EMCDDA 1999b).

Considerable progress has been made in several respects. Starting with a small developmental group of just 5 countries, now all EU member states are involved in this work. Most countries were able already to deliver at least one national estimation, many of delivered more. While it was not possible, to find one single method which could be applied in all Member States, a small set of methods was derived, which is now recommended to be used.

This project, which took place in 2001-02, had four main aims :

- collection of updated national estimates and methodological details from the MS
- scientific assessment of quality and comparability of the estimates
- assess the state of implementation of the EMCDDA key indicator and discuss gaps and obstacles
- give comments on instruments and mechanisms for reporting data to the EMCDDA

1.2 Activities in the framework of this project

National experts for this indicator were nominated by the National REITOX Focal Points. They were then contacted and asked for collaboration. In order to get the information for each country structured in the same way, they received a pre-structured draft with all information from the last year. This should then be updated and new information added. The country reports are included in this report in the annex. Table 1 gives an overview on the data delivered by the national project partners.

While the final deadline for the country report was 15th September 2001 - following the agenda laid down by the REITOX contracts - some countries only sent in their report by the end of October. Updates of national reports were produced until the end of 2001. The project report was postponed to include as much national reports as possible, but two reports have not been delivered until 15. April 2002 and could not be included. For these countries (Sweden, United Kingdom) prevalence estimations were taken from available scientific publications. Figures were compared with data delivered by the Member States within the REITOX standard tables and with data included in the 2001 national reports. Where differences were found for the same reference period, the national focal point was asked to explain these differences. On the basis of this feedback, the final decision was taken, which data would be included in this European report.

The reports delivered differ in the quantity of pages and in the quality of methods applied but in general they show a high degree of expertise and engagement in this specific field of epidemiology. Beside the country reports produced for this project some publications on this or similar projects have been prepared by the experts (e.g. Uhl & Seidler 2000, Frischer et al 2001, Kraus et al. [in press], Smit et al. [in press])

An expert meeting took place in Lisbon on 9.-10. July 2001. As until this date only a few country reports were available, they could not serve as a common basis for discussion. Instead specific methodological issues were discussed. The national experts participating in

this annual assembly are the key persons to link the work done at the EU level and the activities which take place nationally. National expert groups have been installed in most of the member States already for this indicator.

The national reports, the oral presentations of the country experts, the results of the common discussions and the evaluation of the material are part of this report. Corrections and additions from the national experts and the National REITOX Focal Points, which reached the authors before 15th April 2002 were included in the text.

1.3 Prevalence of problematic drug use and the EU Drugs strategy

As part of the EU drugs strategy the target has been formulated to “reduce significantly over 5 years the prevalence of illicit drug use…”. The EMDDA key indicator “prevalence and patterns of problem drug use” should help to monitor the outcome of the activities undertaken in this respect. This indicator is also useful for target 3 of the drugs strategy (‘to increase substantially the number of successfully treated addicts’) as the indicator will help monitoring coverage of treatment in out-of-treatment populations through the multipliers and estimates. (See EU drugs strategy: http://www.emcdda.eu.int/policy_law/eu/eu_actionplan.shtml#strat)

Only when changes can be measured in a reliable and valid way the outcome evaluation will be possible on the basis of this key indicator. This underlines the need for common definitions and a common methodology which should be followed closely by the member states. The development taken by this key indicator over the last 3 years is promising but standards are not yet functioning in every country. If this is improved it should however be possible to use the methods for a comparable baseline assessment prior to the introduction of a new EU strategy plan in 2005.

The reference year should be exactly the same for all countries to avoid misleading results. This refers not only to the basic statistic, for example the number of drug related deaths, but to all parameters needed to calculate the estimates. Research has shown that, for example the mortality of drug users has decreased - very likely through the increase of substitution treatment. Also in-treatment rates and other important parameters are changing over time. For a reliable estimate also these figures have to be updated regularly.

For assessing changes it is crucial to develop reliable data on the state and - comparing states over time - trends. In addition to national prevalence and incidence the assessment of local prevalence and incidence would be important tools to assess trends over time.

2 Input from national experts

During the expert meeting each participant gave a short overview on the situation and especially on all relevant aspects of prevalence estimation in his or her country. The country reports were sent in by all but two countries. In most cases the requested structure was respected. In the case of Norway a simplified structure was useful, as the country has only recently reached full membership in the EMCDDA and started to work on this indicator.

2.1 General overview

The first draft report was based on the national input from former years and projects. This report was revised by the national experts, in some cases a second revision took place after the expert meeting. The complete national reports can be found in the annex of this report while the main points of the oral presentations given at the expert meeting are included in this chapter.

Table 1: Country reports delivered

Country	Draft Report delivered	Final version of the country report delivered	End of reference period	Other studies on similar topics
Austria	2.7.01		2000	Uhl & Seidler 2000
Belgium		11.9.01	1997	
Denmark		20.9.01	1999	
Finland		26.3.02	1999	
France		20.03.02	1999	
Germany	27.4.01	30.01.02	2000	Kraus et al. (in press)
Greece	27.4.01	3.04.02	1999	
Ireland	27.4.01	4.04.02	2000	
Italy	27.4.01		1996	
Luxembourg	27.4.01	13.6.01	2000	
Netherlands	27.4.01	01.10.01	1999	Smit et al. (in press)
Norway	30.4.01	15.03.02	2000	
Portugal	26.4.01	20.03.02	2000	
Spain	26.4.01	11.03.02	1999	
Sweden	---	---	1998	Olsson, Wahren, Bygvist, 2001
United Kingdom	---	---	1996	Frischer et al. 2001

Table 2: Reference period of estimates

Last Year covered by any source	1996	1997	1998	1999	2000
Number of countries	2	1	1	6	6

14 out of 16 countries delivered a country report, 12 of them updated this report after the expert meeting to be more in-line with requirements formulated there. The reference year was between 1996 and 2000. While countries were requested to make an estimation for the

year 1999, about half of the countries did not provide more recent estimates than in the year before. The main reason for that is a lack of new data sources. Either the basic information source used by the different methods are not updated every year or a specific parameter needed to apply a certain method was not available in a more recent version.

2.2 Feedback per country

The following chapters give an overview on recent developments in the member states. The statements were made by the national experts during the expert meeting in Lisbon and refer to the national situation in July 2001. The country reports (see volume II) have been updated for several countries after that date. While chapter 2.2 reflects the national contributions during the expert meeting, chapters 3-8 are based on the most recent national data available.

2.2.1 Austria

One part of the “monitoring project” - a project to analyse several drug related data sources in Austria – which started 2001 is a CR on the basis of data from substitution treatment, opiate related offences (police statistics) and drug related deaths. The years 1998-2000 are covered. Results of this study will be available in spring 2002. It is planned to check possibilities to use other methods (e.g. multiplier method, multiple indicator method) within the “monitoring project” too.

2.2.2 Belgium

In the preceding report, the BC method was applied by C. Rossi on the 1995 data. It has been demonstrated that the reconstruction of the infection curve by the Back Calculation HIV/AIDS multiplier does not work in the case of Belgium (Venables W.N. and Ripley B.D. Modern Applied Statistics with S-PLUS. Second Edition, 1997, 294-5, John Wiley & Sons; Walckiers D., Sartor F., Sasse A., Bils L. Country Report : Belgium. In : Study to obtain comparable national estimates of problem drug use prevalence for all EU member states. EMCDDA, Final Report of project CT.97.EP.04. European Monitoring Centre for Drugs and Drug Addiction. Lisbon, October 1999). Nonetheless, the estimation of the prevalence of injecting drug users (IDUs), from the number of HIV infected patients being IDU, can be carried out in Belgium since an HIV/AIDS database exists which is thought to be exhaustive**.**

Beside the recommended methods Belgium has used an estimation based on methadone sales. The number of people undergoing a substitution treatment with methadone was estimated from the quantities of methadone sold by wholesalers to pharmacists divided by the mean daily dose used per patient. Assuming that all patients have been under treatment during the whole year, for 1996, this number was estimated to amount to 6,511 patients, i.e. 6.5 per 10,000 inhabitants. The validity of this estimate depends on the accuracy of drug sales data, on the estimate of the average dose used, and on quantities of methadone used outside the frame of a substitution treatment. Owing to these uncertainties, this estimate is not very reliable. For an estimation of the rate of HIV amongst IDU only very small samples are available, which makes the resulting rates not very reliable. Instead it is proposed to use modelling procedures.

2.2.3 Denmark

Denmark will use the CR method. Other estimates are still unclear. The staff and time available for this work is rather limited and some data are lacking. For the treatment multiplier method the in-treatment-rate causes problems. This is true for many other countries as well. A police multiplier estimate might be possible, but there is no distinction made by the police between opiate users and dealers for first offences. Death multiplier methods should take into account, that the death rate amongst treated drug addicts in treatment (usually reported

1-2%) includes all causes of deaths, while the drug related deaths only cover about 50% of these cases. This might result in considerable underestimations. The multivariate indicator method cannot be applied as appropriate anchor points are lacking. Also Back Calculation HIV/AIDS multiplier will not be used, as sources are not available.

2.2.4 Finland

While there is no ongoing system of registration for drug treatment a census has been done several times, last time in 1999. A pilot study has taken place in 113 treatment facilities for substances abusers. It is still unclear, if on this basis estimates can be produced. The police multiplier method is applied on the basis of user offences (use, possession, purchase) and the "rule of thumb" that 10% of all drug related offences are detected by the police. Also data for the death multiplier method would be available. A CR study which has been done in Helsinki before, is now extended towards several cities. It could be a better solution. It is based on hospital admission registers, the police register on persons suspected of drug related offences, registers of drunken driving offences and hepatitis C. The estimates are all in the range 2,4-6/1000 population. The CR approach produces the highest estimate but at the same time is referring to the broadest definition of target group.

2.2.5 France

The old estimates for France were produced 1998/99 on the basis of 1995 data. Treatment data are based on the so called "November survey", a census of treatments conducted during the month of November. An in-treatment-rate of 0,32 is used based on a qualitative study from 1995. Costes, however, points out, that over the last 10 years the number of persons in substitution treatment with buprenorphin has increased dramatically from 5.000 to 85.000 cases. This also should change the multiplier. CR methods are used on city level in the framework of the national monitoring project. As regions are needed as anchor points for the multivariate indicator method independent estimates have to be prepared on this basis.

Beside the recommended methods the demographic multiplier is still used, which has been applied in France for quite some time. While it has been criticized before now it might be more adequate to apply as the population of opiate users is more stationary than it used to be during the last years. Over all methods a rate of 3.9-4.8/1000 is derived. As the upper limit also is bound to a somewhat broader definition of target group than the lower one the small range underlines the validity of the results.

2.2.6 Germany

In Germany the multiplier methods will be updated. For treatment multiplier some local studies are available, which could offer more valid in-treatment-rates than those used until now. CR is still impossible outside of regional studies. It has been applied, by Ludwig Kraus in a research project in an area with a population of about 350.000 . A reanalysis of the multiple indicator method is discussed at the moment, but there is still a lack of anchor points. The Federal Länder Berlin and Hamburg, can offer independent estimates. But both cities are rather peculiar given size and drug situation what makes them problematic as anchor points. This could result in a strong bias calculating the multiple regression.

2.2.7 Greece

Due to a lack of sources Greece will most likely not be able to deliver most of the estimates.

2.2.8 Italy

As Italy is organised in regions, the data collection and analyses is very often done at this level and results are than drawn together for the national level. Local models are seen as

problematic as the size of these areas is very small and estimates vary considerably. A big variety of methods has been applied or will be applied in due time for the 2001 report.

2.2.9 Ireland

A National Advisory Committee on Drugs has been set up in Ireland, which also co-ordinates research. A 3-year plan in relation to prevalence prevention, treatment und consequences of problem drug use has been adopted, which is in the implementation phase now. While a broad variety of estimates will be available in spring 2002, for the deadline of this project only part of the estimates will be available. Given the final date for the report to the EMCDDA, however, this deadline has to be respected. The national expert has changed for Ireland and there is high interest in several fields, e.g. geo spacial models and Markov models, application of Bayesian methods.

2.2.10 Luxembourg

Luxembourg has conducted a quite ambitious national project starting form the work done in the EU work group on prevalence estimation and with the support of some experts from the EMCDDA and the TSER groups. On the basis of an extensive database (RELIS) covering all different fields of institutional contacts with drug users the “multi-methods drug prevalence study” took place 1997-2000. The results published in 2001 do not show any contradictory results. Also trends point to the same direction. As routine instruments for the future CR, truncated Poisson model on the basis of treatment intake will be used.

2.2.11 Netherlands

For the Netherlands several methods have been applied already. The treatment multiplier method uses an in-treatment-rate of .70 on the basis of former experiences. The Multivariate indicator method has been applied on the basis of 6 different social indicators. The data from the national treatment monitoring could not be used for this purpose broken down by region due to privacy regulations. The multivariate indicator ends up with two predictors: housing density and population density. Social (or demographic) indicators were chosen as no drug related indicators were available for this method..

2.2.12 Norway

Police, prison or conviction data in Norway are not accessible in a form, which make them applicable estimating the number of drug users. A national system monitoring individuals going in and out of treatment institutions was established in 1996. However, the licence for establishing this monitoring system was based on the condition that information about type of drug should only be available on the aggregate level of treatment institutions. Nor treatment data is therefore so far suitable for such purpose.

The best data-source, for the purpose of estimating the number of IDU is, for time being, numbers of drug deaths.

2.2.13 Portugal

For the treatment multiplier method an estimation was made on the basis of an in-treatment rate of .30-.40 which was derived from interviews in one city (Matosinhos) with professionals working in the field. Besides the difficulties to get an valid in-treatment rate it is also mentioned that not all agencies are covered, which leads to an underestimation of cases. A estimation following the death multiplier method is based on the assumption of an annual death rate of 1-2%. A CR study was done for a part of Porto on the basis of data form prison, harm reduction services and treatment services. The results is for males - no females were found in the study - 1 / 1000 population.

An estimate was presented departing from existing national estimates of persons living with HIV/AIDS, of which 50% would be drug related. This number was used as a benchmark in combination with a multiplier of 14% HIV prevalence, resulting in very high figures of IDUs. Overall these first estimates for Portugal give a very wide range of results.[1]

2.2.14 Spain

A new report has been delivered by Spain already, followed by the extension of the age range to 15-64. The estimates are based mostly on opiate cases, but cocaine plays an increasing role in Spain. However, a simple categorisation of users is difficult, given the variability of patterns of use.

As an additional method the demographic multiplier was used. Police multiplier and deaths multiplier methods were not applied, as the sources were judged to be too poor covering only an unclear portion of all cases. For the treatment multiplier method the 1996 national survey on drug users found that 26.2% of them had been in contact with treatment facilities within the last 12 months. Regional or local CR estimates resulted in rates of 4.21, 5.31 and 13.75 per 1000 population. The multiple indicator method was tried, but results in a weak primary factor and negative data. Antonia Domingo-Salvany raises the question if the treatment multiplier holds valid also for cocaine related cases, which are known to have often only little contact to the standard treatment system.

Trends cannot be verified statistically, but there is a general impression that opiate admissions and total admissions decrease, while cocaine admissions increased between 1999 and 2000.

2.2.15 Sweden

In Sweden the Focal Point is under reconstruction and the expert has changed. This has caused some delay in the work also for this indicator. A main method to be applied and reported will be the multiple indicator method.

2.2.16 United Kingdom

The UK follows the EMCDDA definition for the target group quite closely. For the treatment multiplier an in-treatment rate of 25% is applied. As not all centres are covered, a treatment coverage rate is used as well. In addition the mortality multiplier method has been applied. For the multivariate indicator method England is used on the basis of 8 sub-regions, Wales and Scotland are additional 2 regions for the calculation. In addition to the recommended methods the British Crime Survey from 1996 is used. It is underlined, that high risk sub-populations (homeless, prisoners) are not included in this survey by definition and that heavier forms of drug use is only found in very few cases reducing the statistical value of the findings. The multivariate indicator method is applied on the basis of convictions, seizures, treatment demand, HIV/IDU cases and drug related deaths Problematic drug use is estimated per region resulting in 2-8 /1000 cases. 4 anchor points have been used. This shows, that one of them has a rather extreme position which could have changed the regression line considerably without the other 2 points. The method has been used also to produce quite a lot or regional estimates, which have been very welcome for local planning. Alain Kelly points out, that it might be useful to do an age standardisation for the estimates in order to correct differences in the age distribution within the population.

[1] In the final version of the Portuguese report more recent local research data were used. On this basis HIV prevalence amongst lifetime i.v. drug users was estimated to be over 64%, resulting in considerably lower total estimates.

3 Prevalence estimations

3.1 Availability of estimates

Table 3: Availability and quality for different estimates reported in 2001 compared to 1999 (EMCDDA 1999a)

Country / reporting year		Treat-ment multi-plier	Police multi-plier	Mortality multiplier	Capture recapture	Multi-variate Indicator	Back cal-culation/ HIV/AIDS multiplier	Other methods	max level	Chan0 ges
Austria	**1999**	0	0	0	1	0	1	0	1	
	2001	0	0	1	3	0	1	.	3	+
Belgium	**1999**	0	0	0		0	3	1	3	
	2001	0	0	0	0	0	2	0	2	-
Denmark	**1999**	1	0	3	0	0	3	2	3	
	2001	1	1	3	3	--	--	0	3	0
Finland	**1999**	0	--	0	2	0	--.	1	2	
	2001	1	1	2	3	--	--	0	3	+
France	**1999**	3	2	--	--	0	3	3	3	
	2001	3	3	--	--	3	3	2	3	0
Germany	**1999**	3	2	--	0	0	1	2	3	
	2001	3	3	3	0	2	3	2	3	0
Greece	**1999**	0	0	--	--	--	0	0	0	
	2001	1	0	1	0	0	0	1	1	+
Ireland	**1999**	1	1	3	3	0	3	1	3	
	2001	1	1	3	3	0	3	1	3	0
Italy	**1999**	3	2	3	3	3	3	3	3	
	2001	3	3	--	2	3	2	1	3	0
Luxemb.	**1999**	3	3	1	--	0	1	2	3	
	2001	1	3	3	3	0	3	0	3	0
Netherl.	**1999**	--	2	--	--	--	--	1	2	
	2001	3	2	0	0	2	0	1	3	+
Norway	**1999**	--	--	2	--	--	--	1	2	
	2001	--	--	3	--	--	--	0	3	+
Portugal	**1999**	0	0	--	--	0	1	0	1	
	2001	3	3	2	0	--	2	0	3	+
Spain	**1999**	--	--	--	--	--	--	--	0	
	2001	3	0	0	0	1	0	1	3	+
Sweden	**1999**	--	0	--	--	0	1	0	1	
	2001	--	--	--	3	--	--	0	3	+
UK	**1999**	--	2	3	--	3	1	3	3	
	2001	3	--	3	0	3	3	2	3	0

0: no/limited data available 1: adequate data available, but no multiplier or other heavy methodological problems
2: data and multiplier available, methodology acceptable 3: data and multiplier available and methodologically sound

Frames indicate delivery of estimates through country reports or publications

The country reports, produced by the experts nominated by the National REITOX Focal Points, are the basis for this evaluation. In table 3 an overview is given on the estimates produced in the participating countries. The situation described in the reporting year 2001 is contrasted with information from former projects (Kraus, Augustin, Kümmler 2000b). The rating was done on the basis of the following criteria:

0: no adequate data sources available

1: necessary data sources available and of at least reduced quality

2: sources available AND multipliers/ benchmarks etc. of at least reduced reliability available AND no heavy methodological problems

3: sources available AND multipliers/benchmarks etc. of good quality available AND methodologically sound

The changes between the 1999 and the 2001 report are not the same for different countries:

- in some countries exactly the same estimates have been reported as before. This may be due to the fact, that no new or updated sources or multiplier were available
- in other countries parameter or benchmarks were updated or - quite often through research projects - made available in the meanwhile on a empirical basis instead of expert ratings. In this way the quality of the estimates increased and the estimation could also change considerably without relevant changes in the population.
- In some cases new statistical data became available and an update was made reflecting directly changes in the treated population or for example in persons in contact with the police.
- In some cases it is not possible, to clearly link an estimation to a certain year. Frequently the basic information comes from one year, while multipliers etc. have been produced for another year. For this reason at the moment changes should be interpreted only with caution as they might only in parts reflect changes in the population of problematic drug users.

If the highest category reached by each country is taken is an simple indicator of the quality of estimates. 8 countries showed an increase from 1999 to 2000, one a decline in quality. The rest of the Member States kept stable in this respect. Also the number of estimates produced increased in a considerable number of countries offering a better chance to cross validate results from different methodological approaches.

3.1.1 The situation in 2001

For the reporting year 2001, in total three more countries showed availability of data of at least reduced quality, in combination with reliable multipliers/ benchmarks, at least for one of the methods. Only four of the countries do not fulfil this criterion, one of which is Norway, which has only recently joined the REITOX network. Three other countries (Greece, Sweden, United Kingdom) show an unclear situation. As the two latter have not produced a national report in 2001 details on their situation are not quite clear. Answers given by the national representatives to the EMCDDA as part of a survey in September 2001 in relation to this indicator underline, that data could be delivered but institutional problems, political commitment and/or funding caused problems.

3.1.2 Standards for estimation procedures within the project

For the following chapters and analysis the focus has been the standard methods agreed upon between the national experts and the EMCDDA. Therefore for demographic multiplier and other methods information are included only to a limited extent. All estimates are

included as reported by the countries within the expert report, the National REITOX report or within scientific publications (Sweden, UK).

The countries were asked to produce the estimates on the basis of the following definitions and standards as laid down in the guidelines :

- target group: intravenous or long-duration/ regular users of opiates, cocaine or amphetamines
- estimation period: minimal one year
- age group: 15-64
- reference year 1999 or later

The denominator for the calculation of rates is the age group 15 - 64 years. This is in agreement with the general standards of the EMCDDA. As this standards have been changed recently and in the first phase of the project also reference was made to the old age-group (15-54) there might have been misunderstandings. In fact have even some of those countries, which have updated their reports after the expert meeting not explicitly made reference to the requested age-group. In these cases the population size was taken from the EMCDDA annual report, which was based on statistics from 1996-98. In addition countries differ in their ability to deliver up-to-date data on their own population. In some cases the relevant source goes back to early 90s, which can produce considerable biases.

Table 4: Population size reported by national experts (age 15-64)

Country	Population size	Year	age group reported by national expert	EMCDDA Report 2001 (1996-98 / 15-64 years old)
Austria	4,570,377	1999	15-54	5,416,545
Belgium	6,706,152	1997	15-64	6,703,822
Denmark	3,558,379	2000	15-64	3,540,427
Finland	2,918,000	1999	15-54	3,433,400
France	32,835,000	1999	15-54	38,370,900
Germany	55,915,209	1999	15-64	55,968,100
Greece	5,580,553	1996	15-54	7,126,200
Ireland	2,061,028	1996	15-54	2,387,200
Italy	32,315,499	1997	15-54	39,066,490
Luxembourg	249,840	2000	15-54	287,096
The Netherlands	10,713,380	1999	15-64	9,845,595
Norway	2,462,300	1)		2,852,900
Portugal	6,790,140	2000	15-64	6,790,140
Spain	27,131,400	1998	15-64	26,878,900
Sweden	4,765,656	1)		5,650,800
UK	32,481,100	1)		38,275,400

1)not reported in 2001

3.2 Methodological aspects of estimates

The tables on the following pages give an overview on the methods applied by the member states as reported in the **most recent estimate and description** delivered. The details can be found in the annex of this report. The resulting estimates are reported in tables 21 (absolute numbers) and 22 (rates), the criteria for the quality rating are described on page 9.

Table 5: Overview on estimation methods applied in Austria

Austria	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1999	1999	2000	1994/95	--	1999
Target group	problematic opiate users	drug users	IDU	IDU	--	IDU lifetime
Sub-groups	No	no	no	no	--	no
Multiplier	not available	not available	gross estimate from literature 1-2%			not available
Benchmark/ Data	clients in oral substitution treatment	all persons in contact with police because of drugs (users/ dealers)	all drug related death, death through psycho-active medicine excluded	3 samples: substitution treatment / drug related deaths/ police reports	--	AIDS-Cases
Anchor points					--	
Confidence intervals given	--	--	no	yes	--	--
Time series available	Yes	yes	yes	estimations for 1998-2000 planned	--	yes
Publications	No	no	no	Uhl & Seidler 2000	--	no
Evaluation per method	0	0	1	3	0	1
Results	--	--	12,000-23,000	15,980-18,672 (17,276)	--	--
Additional Comments	--	--	--	--	not applicable at national level	--

Table 6: Overview on estimation methods applied in Belgium

Belgium	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	--	--	--	--	--	1997
Target group	--	--	--	--	--	IDU
Sub-groups	--	--	--	--	--	no
Multiplier	not available	--	--		--	based on several independent studies with moderate group size 8% HIV/IDU 2.2-2.7% IDU/HIV
Benchmark/ Data	no data available	no data available	no data available	--	--	cases in HIV/AIDS register
Anchor points					No	
Confidence intervals given	--	--	--	--	--	yes
Time series available	--	--	--	--	--	no
Publications	--	--	--			Sartor et al. 2001
Evaluation per method	0	0	0	0	0	2
Results	--	--	--	--	--	23,200-28,400
Additional Comments	--	--	--	no common identifier available	sources only partly available	--

Table 7: Overview on estimation methods applied in Denmark

Denmark	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	not reported	not reported	1996	1996	--	--
Target group	PDU	drug users	PDU	PDU	--	--
Sub-groups	no	no	no	no	--	--
Multiplier	not available	not available	based on treated cohort 2,4%		**--**	**--**
Benchmark/ Data	treated drug users	all persons in contact with police because of drugs (users/ dealers)	drug related deaths	treated cases hospital discharge	--	**--**
Anchor points					--	
Confidence intervals given	--	--	no	yes	--	--
Time series available	no	yes	no	No	--	--
Publications	--	--	--	--	--	--
Evaluation per method	1	1	3	3	**--**	**--**
Results	--	--	12,372-18,460	12,752-15,248 (14,007)	--	--
Additional Comments	--	--	--	--	no information given	no information given

Table 8: Overview on estimation methods applied in Finland

Finland	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1996/97	2000	1999	1999	--	--
Target group	PDU	drug users	PDU	opiate or amphetamine users	--	--
Sub-groups	no	no	no	gender / age-groups/ substances	--	--
Multiplier	not available	not available	gross rate from literature 1-2%			--
Benchmark/ Data	Hospital admissions	all persons in contact with police because of drugs (users/ dealers)	drug related deaths in post mortem reports	3 samples: hospital admissions, police register, register of drunken driving	--	--
Anchor points					--	
Confidence intervals given	--	--	--	yes	--	--
Time series available	no	yes	no	yes	--	--
Publications	--	--	--	Partanen et al 1999, 2000	--	--
Evaluation per method	1	1	2	3	--	--
Results	1,600-2,400	--	7,000-14,000	10,579-13,967	--	--
Additional Comments	no monitoring system, census	--	over inclusive	solutions with 3 and 4 registers applied	no information given	no information given

Table 9: Overview on estimation methods applied in France

France	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1999	1999	--	--	1999	1999[2]
Target group	Problematic users of opiates or cocaine	drug users	--	--	PDU	IDU
Sub-groups	no	no	--	--	no	no
Multiplier	local studies on in treatment ratio 31%	regional studies comparing police contacts with CR estimates: 5.8%	--			based on several independent studies with moderate group size 4.4-5.4%
Benchmark/ Data	Problematic users of opiates or cocaine in treatment	all persons in contact with police because of drugs (users/ dealers)	--	--	uses: November survey, offences, sales statistics for syringes and subst. substance	persons in substitution treatment or users of safe syringes
Anchor points					5 departments on the basis of cities	
Confidence intervals given	no	no	--	--	no	yes
Time series available	no	yes	--	--	no	no
Publications	--	--	--	--	Chevalier 2001	
Evaluation per method	3	3	--	--	3	3
Results	180,000	147,900-182,600	--	--	178,000	122,000
Additional Comments	--	--	no information given	no information given	--	--

[2] Very specific type of HIV/BC multiplier not using the standard methodology

Table 10: Overview on estimation methods applied in Germany

Germany	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	2000	2000	2000	--	2000	2000
Target group	Problematic opiate users	drug users	drug users	--	PDU	IDU
Sub-groups	no	no	no	--	no	no
Multiplier	local DRD studies assessed in-treatment rates 23.6%	proportion drug deaths known to police before (1991-2000) 42.9%-65.8%	local DRD studies assessed mortality rates 1.2%			based on sample from treatment monitoring system 3.2-4.2%
Benchmark/ Data	Problem opiate users, who start treatment in in- and outpatient units	first time registered heroin users	drug related deaths	--	--	drug users amongst known AIDS cases
Anchor points					3 Land/ city anchor points, estimates from 1996-99	
Confidence intervals given	no	no	no	--	no	yes
Time series available	yes	yes	yes	--	no	no
Publications	Frischer 2001, Kraus (in press)					
Evaluation per method	3	3	3	0	2	3
Results	166,345-197,534	152,529-189,954	126,875-169,167	--	157,482	91,428-157,500
Additional Comments	--	--	--	not applicable at national level	Anchor points of limited quality	--

Table 11: Overview on estimation methods applied in Greece

Greece	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1997	1997	1997	--	2000	2000
Target group	PDU	drug users	PDU	--	PDU	IDU
Sub-groups	no	no	No	--	no	no
Multiplier	not available	not available	not available			not available
Benchmark/ Data	problem drug users in treatment	drug users in contact with police	drug related deaths	-	offences, clients in treatment, drug related deaths, AIDS cases, addicts in prison	drug users amongst known AIDS cases
Anchor points					no anchor points available	
Confidence intervals given	--	--	--	--	no	yes
Time series available	--	--	--	--	no	no
Publications						
Evaluation per method	1	0	1	0	0	0
Results	--	--	--	--	--	no
Additional Comments	--	no data available centrally	--	sources are lacking, data protection	no regional breakdown possible	verly low HIV prevalence amongst drug users

Table 12: Overview on estimation methods applied in Ireland

Ireland	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1996	1995/96	1995/96	1996	1996	1993
Target group	Problematic opiate users	drug users in Dublin	Problematic opiate Users	(Problematic) Drug users	Problematic opiate use	IDU
Sub-groups	no	no	No	no	no	no
Multiplier	not available	not available	estimate on the basis of literature and local study: 0.5%			based on moderate sample
Benchmark/ Data	opiate users in treatment	drug users in contact with police	drug related deaths	3 samples	Offences, drug related death, treatment, AIDS, hospital discharges	
Anchor points					only one anchor point available	
Confidence intervals given	--	--	--	yes	no	yes
Time series available	--	--	--	no	no	no
Publications	Comisky 1998a, 1998b					
Evaluation per method	1	1	3	3	0	3
Results	[3,837-5,780][3]	--	4.694-7.884	6,308-13,735[4]	--	8.600
Additional Comments	only treated cases	only Dublin area	National, extrapolated from Dublin area	only Dublin area	regional breakdown only for 2 indicators	partly local estimation

[3] The final version of the expert country report makes no longer use of this estimate due to methodological shortcomings
[4] 6.308: problematic opiate users; 13.735: opiate users. As these groups are not separated in this report a range is given here

Table 13: Overview on estimation methods applied in Italy

Italy	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1996	1996	--	1996	1996	1996
Target group	Problematic opiate users	Opiate users	--	Problematic opiate users	heroin IDUs	heroin IDUs
Sub-groups	no	no	--	no	no	no
Multiplier	empirically based, no details reported in contact rate: 54%	ratio of persons known to the police amongst DRD; no details reported	--			based on moderate sample
Benchmark/ Data	heroin users in treatment	first time registered opiate users	--	clients in private and public treatment centres	Offences, drug related death, treatment, AIDS cases, addicts in prison	AIDS cases amongst IDUs
Anchor points					four anchor points (regions) available	
Confidence intervals given	no	no	--	no	no	yes
Time series available	no	no	--	no	no	no
Publications	--	--	--	--	--	--
Evaluation per method	3	3	--	2	3	2
Results [5]	298,989	171,531	--	274,000	248,672	326,000
Additional Comments	--	--	no information given	only two sources, not independent	estimates for regions based on CR with partly dependent sources	--

[5] The expert report for Italy available by end March 2002 refers to the reference years 1996. More recent data have been reported by the National Focal Point to the EMCDDA. They are included in tables 20 and 21. The methods applied later should, however, be very similar to those described in the expert report.

Table 14: Overview on estimation methods applied in Luxembourg

Luxembourg	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	2000	1999	1999	2000	--	2000
Target group	Problem users of High risk drugs (opiates, cocain, amphetamines, sed/ hypnotics, hallocinogenics, volantile substances)	Users of High risk drugs	PDU	PDU of high risk drugs	--	IDUs of high risk drugs
Sub-groups	no	no	No	no	--	no
Multiplier	not available	based on known/ unknown drug related deaths (1) proportion of users indexed by police (2) (1) 85.3-88.0% / (2) 21%	mortality rate assessed through cohort study with inpatient treatment demanders: 2.36-2.48%			based on treated cases p(IDU/HIV): 16.0% p(HIV/IDU): 3,57%
Benchmark	drug users in treatment	drug users indexed by law enforcement agencies	drug related deaths	samples: in treatment, offenders, in substitution, inpatient treatment	--	total number of HIV positive HRD iv users
Anchor points					--	
Confidence intervals given	--	yes	yes	yes	--	no
Time series available	--	yes	yes	yes	--	yes
Publications	Origer 2001					
Evaluation per method	1	3	3	3	0	3
Results	--	2,209-2,483	2,087-2,155	1,801 - 3,578	-	1,715
Additional Comments	--	--	--	--	no reg. subunits	--

Table 15: Overview on estimation methods applied in Netherlands

Netherlands	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1999	1998	--	--	1999	--
Target group	Problem opiate users	drug users	--	--	PDU	--
Sub-groups	no	no	--	--	no	--
Multiplier	based on 2 regional studies in treatment rate: 60-70%	gross arrest rates based on multiple regional studies 30-40%	--			**--**
Benchmark/ Data	opiate users in treatment	drug users in contact with police	--	--	"social indicators" + problematic drug users	--
Anchor points					7 regions, 1995-1999	
Confidence intervals given	no	no	--	--	no	--
Time series available	yes	yes	--	----	no	--
Publications	--	--	--		--	Smit et al [in press]
Evaluation per method	3	2	0	0	2	0
Results	25,970-30,298	--	--	--	27,970-29,256	-
Additional Comments	--		as iv use is not very frequent, drug related deaths is rare amongst drug users	no two or more adequate sources available nation-wide	Different mathematical models applied	iv use not standard mode of application in the Netherlands

Table 16: Overview on estimation methods applied in Norway

Norway	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	--	--	2000	--	--	--
Target group	--	--	IDU	--	--	--
Sub-groups	--	--	no	--	--	--
Multiplier	--	--	based on several Scandinavian studies 3-4% (1996)			--
Benchmark/ Data	--	--	drug related deaths	--	--	--
Anchor points						
Confidence intervals given	--	--	no	--	--	--
Time series available	--	--	no	--	--	--
Publications	--	--	no	--	--	--
Evaluation per method	--	--	3	--	--	--
Results	--	--	10,500-14,000	--	--	--
Additional Comments	no information given	no information given	--	no information given	no information given	no information given

Table 17: Overview on estimation methods applied in Portugal

Portugal	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	2000	1999	1999	1999	--	1999
Target group	PDU	drug users	PDU	PDU	--	IDU
Sub-groups	no	no	no	no	--	no
Multiplier	in treatment rate based on small study in only one city (Matosinhos): 60-70%	rate based on two small studies in treatment facilities and street: 20-25%	gross rate based on literature 1-2%			taken from samples in Porto
Benchmark/ Data	drug users treated in specialised centres	persons in contact with police in one city, drug user offences	drug related deaths	Treatment, prison, harm reduction centre, social services	--	HIV infection rate based on interviews with small samples of drug users
Anchor points					--	
Confidence intervals given	no	no	no	yes	--	yes
Time series available	yes	yes	no	no	--	no
Publications	--	--	--	--	--	--
Evaluation per method	3	3	2	0	--	2
Results[6]	41,720-48,673	49,920-56,150	18,450-36,900	--	--	22,656-33,593
Additional Comments	--	--	only Lisbon, Porto, Coimbra regions covered	Only local estimate in Matosinhos	no information given	WHO estimate of AIDS/ HIV cases is used as basis for calculation

[6] The expert report for Portugal available by end March 2002 refers to the reference year 1999. More recent data have been reported by the National Focal Point to the EMCDDA. They are included I tables 20 and 21. The methods applied later should, however, be very similar to those described in the expert report.

Table 18: Overview on estimation methods applied in Spain

Spain	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1999	--	1998	1998	1998	--
Target group	Problematic 0piate users	--	Problem opiate users	Problem opiate users	Problem opiate users	--
Sub-groups	no	--	No	No	no	--
Multiplier	rate of first treatment demands among treatments in SEIT 1996 26,2%	--	Rate based on Spanish cohort study (overdose, dependence) 1-2%			**--**
Benchmark/ Data	treated opiate users	--	drug related deaths	treatment, emergency, police referrals	treatment data, injection-related cumulative AIDS cases, estimated deaths	--
Anchor points						
Confidence intervals given	no	--	no	yes	no	--
Time series available	yes	--	no	no	no	--
Publications	--	--	--	--	--	--
Evaluation per method	3	0	1	0	1	0
Results	148,763	--	--	--	--	--
Additional Comments	--	no data available, not multiplier available	weak sources, only regional data	applied in some regions	indicators did not load sufficiently on a common factor	expertise not available

Table 19: Overview on estimation methods applied in Sweden

Sweden[1)]	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	--	--	--	1998	--	--
Target group	--	--	--	PDU	--	--
Sub-groups	--	--	--	--	--	--
Multiplier	--	--	--			--
Benchmark/ Data	--	--	--	Persons in contact with different institutions	--	--
Anchor points						
Confidence intervals given	--	--	--	yes	--	--
Time series available	--	--	--	no	--	--
Publications	Olson et al. 2001					
Evaluation per method	--	--	--	3	--	--
Results	--	--	--	22,404-30,492 (26,500)	--	--
Additional Comments	no information given	no information given	no information given	Estimate reduced by 8% to exclude cannabis related cases	no information given	no information given

[1)] As no country report was delivered for Sweden, a published report (Olson et al 2001) was used as source

Table 20: Overview on estimation methods applied in United Kingdom

United Kingdom [1)]	Treatment multiplier	Police multiplier	Mortality multiplier	Capture/ recapture	Multivariate Indicator	HIV/AIDS Multiplier
Reference year	1996	--	1996	--	1996	1996
Target group	--	--	--	--	PDU	--
Sub-groups	--	--	--	--	no	--
Multiplier	regional studies, 25%	--	several studies amongst known drug users: 1-2%			several regional studies: 0.9-3.3%
Benchmark/ Data	Problem opiate users in treatment	--	opiate related overdose deaths	--	Convictions, seizures, treatment, HIV, Drug related deaths	--
Anchor points					4 regions	
Confidence intervals given	no	--	no	--	no	no
Time series available	yes	--	yes	--	no	no
Publications	Frischer et al 2001					
Evaluation per method	3	--	3	0	3	3
Results	243,820	--	161,133	--	268,253	161,200
Additional Comments	--	no information given	--	not applicable at national level	--	--

[1)] As no country report was delivered for the United Kingdom, a published report (Frischer et al 2001) was used as source

3.3 Estimates of problem drug use in Europe

.Prevalence estimations show only slight increases in some countries. As the methodology still is under development in the member states and especially critical parameters like multipliers are still not very stable, in most countries changes in figures should not be interpreted as trends. This will be possible in two or three years time, if progress continues at the same space as it did until now for this indicator. It is especially important, to compare and match information from regional or local studies and data collection systems. A cross-validation of trends, which might be visible in these sources with changes in national prevalence estimates can help to get some first insight in trends even before changes can be proven statistically. The expert country reports (see volume II of this report) refer to the most recent reference year indicated in table 21/22 for all countries except Italy (reference year1996) and Portugal (reference year 1999).

Table 21: Estimated number of problem drug users for reference years 1995-2000

Country / Reference year	Multiplier Treatment data	Multiplier Police data	Multiplier Mortality data	Capture-recapture	Multivariate Indicator	(Back calculation)/ HIV AIDS mult.	Other Methods
Austria 1994/95				15,980-18,672 (17,276)			
2000			12,000-23,000				
Belgium 1995						10,300-46,300 (20,200)	
1997						23,200-28,400	
Denmark 1996			12,372-18,460[1)]	12,752-15,248 (14,007)[2)]			
1999							
Finland[3)] 96/97	1,600-2,400		4,000-8,500	9,400-14,700			
1998				10,100-16,400[4)]			
1999			7,000-14,000	10,597-13,967[4)]			7,000-21,000[5)]
France 1995	156,000	164,000				141,000-177,000[1)]	176,000[6)]
1999	180,000	147,900-182,600			178,000	122,000[17)]	146,400[6)]
Germany 1996	94,350-140,600[1)]	140,843-165,424	80,000-112,000				
2000	166,345-197,534	152,529-189,954	126,875-169,167		157,482	91,428-157,500	127,800-160,000[6)]
Greece 1995/96							
1999							
Ireland 1995/96			4.694-7.884	6,308-13,735[18)]		8.600[7)]	
1999							

Table 21 continued

Country / Reference year	Multiplier Treatment data	Multiplier Police data	Multiplier Mortality data	Capture-recapture	Multivariate Indicator	(Back calculation)/ HIV AIDS mult.	Other Methods
Italy 1996	298.989	171,531		274,000	248,672	326.000	239.987[6)]
1999[8)]	276,746	281,273		297,711	302,829		
2000[8)]	292,196			309,850	319,447		
Luxemburg 1996		1,800[10)]					1,900[11)]
1998[8)]	1,900-2,200[10)]	2,020-2,220[10)]					
1999		2,209-2,624[10)]	2,087-2,155			1,780	
2000				1,801-3,578		1,715	
Netherlands 1996	25,145-29,104				27,000[11)]		
1998		25,800-34,300					
1999	25,970-30,298				27,970-29,256		
Norway 1997			7,200-10,300[12)]				12,000[13)]
1998[9)]			9,000-13,000				
2000			10,500-14,000[14)]				
Portugal 1995/96							
1999		49,920-56,150	18,450-36,900			22,656-33,593	
2000	41,720-48,673						
Spain 1998[11)]	177,756		83,972				
1999[11)]	148,763						116,298[6)]
Sweden[15)] **1992**				10,600-15,800			
1998				22,404 - 30,492 (26,500)			
UK 1995/96	268,258-341,423		88,900-177,800		273,923-288,675		262,633-341,423
1996[16)]	243,820		161,133		268,253	161,200	162,544-251,000

Footnotes see page 31

3.4 Prevalence Rates in Europe

On the basis of the population sizes reported in table 4 the rates or problematic drug users for the age group 15-64 years were calculated for in each country (Table 22). Where no more recent statistical data were delivered for this age group, the population size from the EMCDDA report 2001 was used (Table 4).

Table 22: Estimated number of problem drug users for reference years 1995-2000

Country / Reference year	Multiplier Treatment data	Multiplier Police data	Multiplier Mortality data	Capture-recapture	Multivariate Indicator	(Back calculation)/ HIV AIDS mult.	Other Methods
Austria 1994/95				3.0-3.4			
2000			2.2-4.2				
Belgium 1995						1.5-6.9	
1997						3.5-4.2	
Denmark 1996			3.5-5.2[1)]	3.6-4.3			
1999							
Finland[3)] 96/97	0.5-0.7		1.2-2.5	2.7-4.3			
1998				2.9-4.8[4)]			
1999			2.0-4.1	3.1-4.1[4)]			2.0-6.1[5)]
France 1995	4.1	4.3				3.7-4.6[1)]	4.6[6)]
1999	4.7	3.9-4.8			4.6	3.2[17)]	3.8[6)]
Germany 1996	1.7-2.5[1)]	2.5-3.0	1.4-2.0				
2000	3.0-3.5	2.7-3.4	2.3-3.0		2.8	1.6-2.8	2.3-2.9[6)]
Greece 1995/96							
1999							
Ireland 1995/96			2.0-3.3	2.6-5.8[1) 18)]		3.6[7)]	
1999							

Table 22 continued

Country / Reference year	Multiplier Treatment data	Multiplier Police data	Multiplier Mortality data	Capture-recapture	Multivariate Indicator	(Back calculation)/ HIV AIDS mult.	Other Methods
Italy 1996	7.7	4.4		7.0	6.4	8.3	6.1[6)]
1999[8)]	7.1	7.2		7.6	7.8		
2000[8)]	7.5			7.9	8.2		
Luxemburg 1996		6.3[10)]					6.6[11)]
1998[8)]	6.6-7.7[10)]	7.0-7.7[10)]					
1999		7.7-9.1[10)]	7.3-7.5			6.2	
2000				6.3-12.5		6.0	
Netherlands 1996	2.6-3.0				2.7[11)]		
1998		2.4-3.2					
1999	2.4-2.8				2.6-2.7		
Norway 1997			2.5-3.6[12)]				4.2[13)]
1998[9)]			3.2-4.6				
2000			3.7-4.9[14)]				
Portugal 1995/96							
1999		7.4-8.3	2.7-5.4			3.3-4.9	
2000	6.1-7.2						
Spain 1998[11)]	6.6		3.1				
1999[11)]	5.5						4,3[6)]
Sweden[15)] **1992**				1.9-2.8			
1998				4.0-5.4			
UK 1995/96	7.0-8.9		2.3-4.6		7.2-7.5		6.9-8.9
1996[16)]	6.4		4.2		7.0	4.2	4.2-6.6

Footnotes see page 31

Footnotes for tables 21 and 22:

In Table 21 and 22 all available estimates also for former reference periods are included. The country tables only show the most recent application and its methodological description per estimate.

1) revised estimation

2) problematic drug users

3) problem opiate and amphetamine users

4) estimates based on 3 and 4 registers

5) multiplier method based on registered cases of hepatitis C infections

6) demographic multiplier method, results less reliable and not included in overall country range

7) reference year is 1993

8) source: drug report 2000

9) recent country report not available, data from nat. standard tables

10) 'High-risk consumption problem drug users'

11) problematic opiate users

12) mean of the years 1995,1996,1997 number of drug related deaths used to avoid the effect of random variations and outliers

13) method based on survey within police and public health services

14) mean of the years 1998,1999,2000 number of drug related deaths used to avoid the effect of random variations and outliers

15) mostly amphetamine users, estimated exclude cannabis addicts. 1992: 1,700-3,350 heroin addicts included; 1998: country report not available, data taken from Olson et al 2001 and adjusted downwards by 8% to exclude cannabis addicts

16) country report not available, data taken from Frischer et al 2001

17) method not based on HIV but on use of syringes and substitution substance

18) 18) 6,308: estimate for "problematic opiate users with medical problems", 13,735: estimate for "opiate users with both medical and social/legal problems" . The higher figure only is compatible with EMCDDA definition of problem drug use and is used for country comparisons.

Despite the differences in methodology the resulting estimates show in many cases a homogenous pattern. Countries, which are high in one estimate, tend to show also high values in others. Also ranges per country are in most cases not to big, which can be taken as a type of cross validation between different methods and data sources. As far as estimates are available, Germany, Luxembourg, Norway and Portugal show a global increase in all estimates which can be compared. For France there is a mixed picture and for the Netherlands and Spain there is a decrease. However, different methods might reflect different trends and sometimes only one source can be compared between years, which seems hardly reliable given the numerous possible biases (Table 23).

As the detailed information for the different countries shows, different methods are focusing on different groups of drug users. A gross distinction can be made between the larger group of Problem Drug Users (PDUs) and the sub-group of intravenous drug users (IDUs). As a rough indication mortality based estimation methods and HIV/AIDS based methods as the HIV/AIDS multiplier are targeting mainly the IDUs. The other methods are less exclusive and therefore are taken as a measure of the PDUs here. Multivariate indicator methods and CR methods are also included in this group here, as they are in practice mainly focussed on this larger group of drug users. In principle, however, the target group is defined by the sources and lists included in the estimation procedure. For more details on the specific focus of different estimation methods see Kraus et al. (Addiction, 2003).

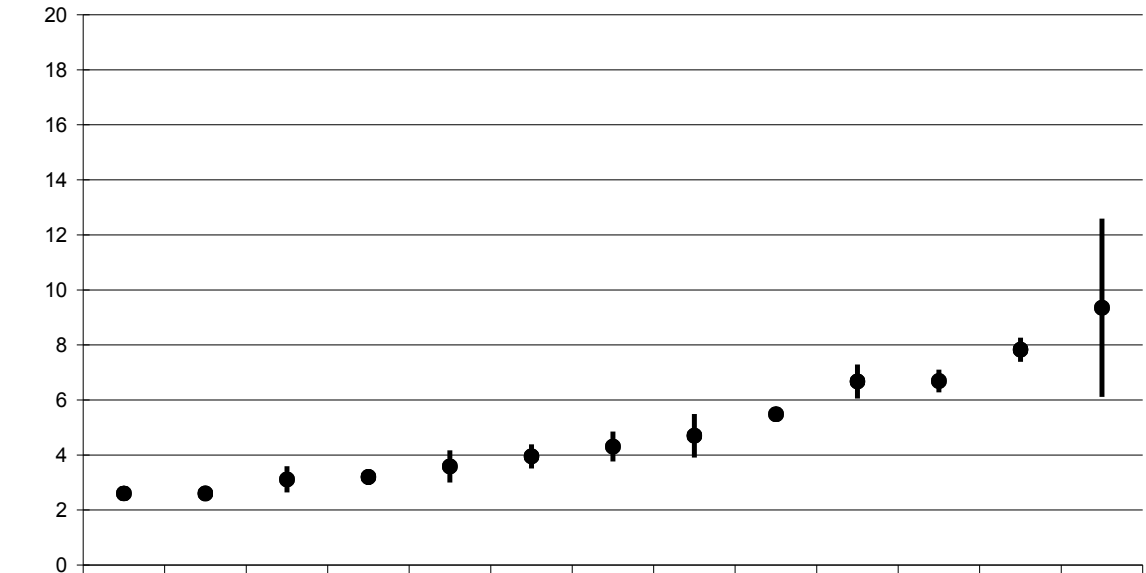
Table 23: Estimates for problem drug users and intravenous drug users in different countries

	Problem Drug Users			Intravenous Drug Users		
	Min	Max	Mean	Min	Max	Mean
Austria 1994/95	3,0	3,4	3,2	2,2	4,2	3,2
Belgium 1997				3,5	4,2	3,8
Denmark 1996	3,6	4,3	4,0	2,9	5,2	4,0
Finland 1999	3,1	4,1	3,6	2,0	4,1	3,1
France 1999	3,9	4,8	4,3	3,2	3,2	3,2
Germany 2000	2,7	3,5	3,1	1,6	3,0	2,3
Greece 1999						
Ireland 1995/96	2,6	2,6	2,6			
Italy 1999	7,5	8,2	7,8			
Luxembourg 1999/2000	6,3	12,5	9,4	6,0	7,5	6,7
Netherlands 1998/99	2,4	2,8	2,6			
Norway 2000				3,7	4,9	4,3
Portugal 2000	6,1	7,2	6,7	2,7	5,4	4,1
Spain 1999	5,5	5,5	5,5			
Sweden 1998	4,0	5,4	4,7			
UK 1996	6,4	7,0	6,7	4,2	4,2	4,2

Chart 1 shows, that the prevalence of problem drug use (per 1000 population aged 15-64) is between 2.6 and 4.8 in 7 of the reporting 13 countries. Another 5 countries are between 5.5 and 7.8 per 1000. The relatively high result for Luxembourg is difficult to interpret. On the one side size and structure of the member state is not comparable with other countries. On the other side, the big range between different estimates obtained also suggests, that methodological aspects might play a role here.

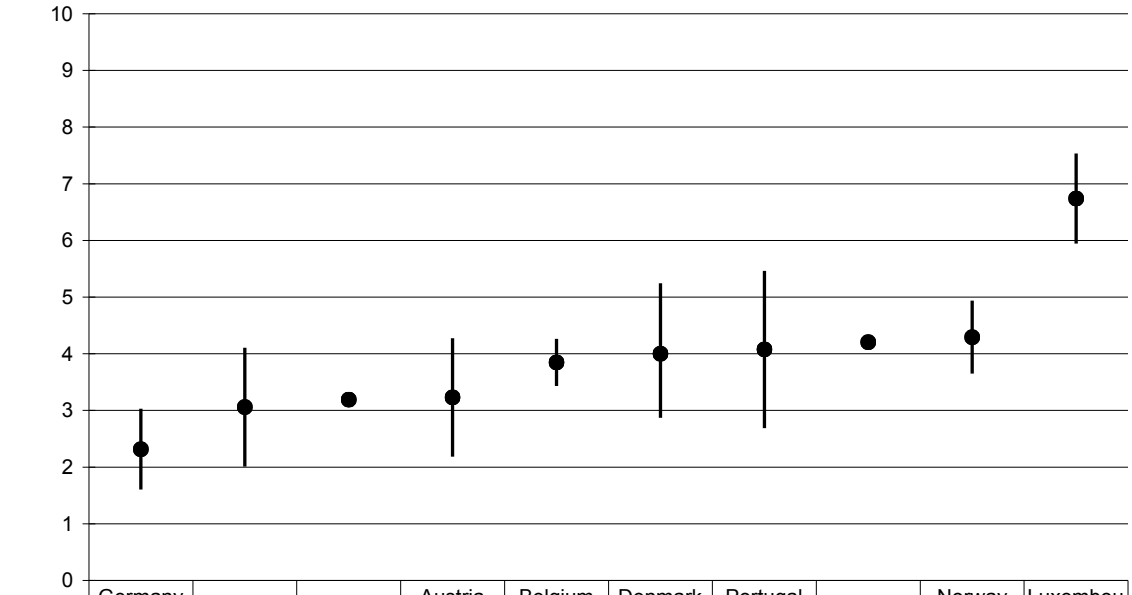
Prevalence of injecting drug use is described in chart 2. The two methods, which are used here, are reflecting lifetime injecting (HIV/AIDS related methods) and recent injecting (mortality based methods). The range of the estimates within countries based on these methods is considerably larger than for PDU. Between countries, however, results are more similar. In 8 out of 10 reporting countries the mean prevalence is between 3.1 and 4.4 per 1000. Germany is

Chart 1: Estimates of problematic drug use in different EU Member States (last year prevalence per 1000 inhabitants aged 15-64)



	Ireland 95/96	Nether-lands 98/99	Ger-many 00	Austria 94/95	Finland 99	Den-mark 96	France 99	Sweden 98	Spain 99	Portu-gal 00	UK 96	Italy 99	Luxem-bourg 99/00
Min	2,6	2,4	2,7	3,0	3,1	3,6	3,9	4,0	5,5	6,1	6,4	7,5	6,2
Max	2,6	2,8	3,5	3,4	4,1	4,3	4,8	5,4	5,5	7,2	7,0	8,2	12,5
● Mean	2,6	2,6	3,1	3,2	3,6	4,0	4,3	4,7	5,5	6,7	6,7	7,8	9,4

Chart 2: Estimates of intravenous drug use in different EU Member States (last year prevalence per 1000 inhabitants aged 15-64)



	Germany 00	Finland 99	France 99	Austria 94/95	Belgium 97	Denmark 96	Portugal 00	UK 96	Norway 00	Luxembourg 99/00
Min	1,6	2,0	3,2	2,2	3,5	2,9	2,7	4,2	3,7	6,0
Max	3,0	4,1	3,2	4,2	4,2	5,2	5,4	4,2	4,9	7,5
● Mean	2,3	3,1	3,2	3,2	3,8	4,0	4,1	4,2	4,3	6,7

4 Results concerning methodological aspects

The following methodological aspects are of central importance. On one side, frequently data available and used for estimation are mainly reflecting opiate or even heroin use, while problematic use of cocaine or amphetamines is not covered very well. On the other side the working definition used until now has also been questioned as not all potentially problematic drugs today are covered in the same way by the definition as well as by the methods applied.

Only few countries already offer data from different reference periods. Frequently the estimates reported between 1995 and 2000 relate to the same source and year or different methods have been used in different periods, which also makes comparison difficult.

4.1 Target Group

The EMCDDA guidelines define the target group of the estimation procedures until now as

- injecting drug users OR
- long-term/regular users of opiates, cocaine or amphetamines,
- during a one-year period
- in the age-group 15-64 (has been changed from 15-54 recently!!)

There are several aspects of this definition under discussion:

- separation of IDUs
- separation of opiate, cocaine and amphetamine users (problem opiate users vs. problematic non-opiate/stimulants users)
- estimates by age-group (15-24/25-34/35-64)
- estimates by gender
- the inclusion of problematic use of cannabis is discussed in several countries at the moment

When it is discussed to split the target group into several subgroups an increase in comparability and improved quality of estimates is clearly targeted. Differences in benchmarks used in different methods and countries, which sometimes cannot be avoided, can be balanced better in this way. This split, however, puts some additional request on the national partners which gives rise to a number of problems:

- a combined breakdown by gender and age-group as indicated above already means to increase the number of estimates from one to six. As the number of separate estimates grows, statistical power decreases. There is a certain contradiction between increasing quality of the estimates and breaking down target groups at the same time
- Where the breakdown of estimates is really offering additional information, more specific information is needed as input. If, for example, gender specific estimates should be produced with a treatment multiplier method, ideally specific coverage rates for males and females are needed.
- an extension of “problematic use” towards cannabis might be necessary, if this group turns out to be relevant by numbers, amount and quality of problems in a certain country. For this group surveys might be an important basis for estimations as it has been shown, that cannabis use is hidden to a much smaller extent than other substances
- a matrix “target group x method” will develop, as not all methods are useful to estimate all target groups in the same way

Some countries have made specific estimates for problematic use of

- cocaine or at least will try: France, Germany, Netherlands and Spain.
- For cannabis: Denmark, France, Italy, Germany, Greece (from survey data), Ireland (from survey data), Portugal, Spain, Sweden.
- For i.v. use: Ireland, Portugal, United Kingdom. ´

The discussion shows, that a breakdown by age and information on problematic use of cannabis are of special importance.

A breakdown by gender should be done where possible. Gender specific multipliers would further increase the improvement as for example it cannot be assumed that the rate of female drugs users in contact with police equals the figures for male drug users. Trends over time are assessed and discussed by Italy, Greece (from survey data) and Luxembourg.

4.2 Recommended methods

4.2.1 General overview

Table 24: Number of Member States with adequate estimates (classified as “3”) reporting year 2001 vs. 1999/2000

Reporting year	Multiplier			Capture recapture	Multivariate Indicator	HIV Multiplier	Other methods	Total number of estimates reported
	Treatment	Police	Mortality					
1999/2000	4	1	3	1	2	5	3	19
2001	7	5	5	6	3	5	2	33
Change	+3	+4	+2	+5	+1	0	-1	+14

The quality of estimations produced differs by country and by method. In some cases only regional studies where possible, in other countries there are still limitations concerning annual updates of basic information. Altogether, however, the number of estimates delivered as part of the country reports for this project has increased.

In 1999/2000 only 9 Member States could offer at least one estimate where data and multiplier or other necessary input was available and a certain degree of methodological requirements was met (classification as “3” in tables 5-20). In 2000 13 countries delivered such estimates. 7 used a prevalence estimation based on treatment multiplier methods. Capture-recapture and HIV multiplier methods were used in 6 member states. A number of other methods were applied by 5 countries. The multivariate indicator was used only by 2 countries.

Considerable improvements in quality can be found in relation to sources, benchmarks and multipliers in many countries. Frequently empirically based multipliers have been derived from local studies and applied instead of gross estimates taken from international literature. In other cases a multiplier was used, which was more in line with the regional conditions than other sources available.

4.2.2 Treatment multiplier

Belgium plans to use a snowball study to derive an multiplier for this method, Spain did this on the basis of a study with clients entering treatment. In France and Portugal a survey amongst street drug users was done for this purpose. In France eventually a CR study in 5 cities will offer in future a rather valid multiplier. In Germany regional studies from Augsburg and Hamburg are used as far as possible. The in-treatment-rate is calculated 0.2 - 0.4 in most countries. In the Netherlands 0.7 has been used. Small scale studies should be done in each country in several places in order to derive valid multipliers.

Compared to the last report 3 more countries have been able to apply this method properly. This is most likely due to the fact, that treatment monitoring data are available in most of the countries. At the same time methods are simple to apply and the result is quite useful. However, empirical studies to produce in-treatment rates are a necessary condition for this estimation.

4.2.3 Police data multiplier

The target group for this method is defined broader than for the treatment multiplier method as not all persons registered by the police because of a drug related offence can be assumed to be “problematic drug users”. Some of them might use drugs in a non problematic way, others might be drug dealers. The treatment multiplier method is more specific in this respect.

France found a big variation between regions using local estimates as benchmark, where the multiplier varied between 4 and 17%. Germany reports about regional differences in the application of rules for data collection presumably resulting in a different degree of under-estimation.

This multiplier method was used by 5 countries with adequate standards which means a big increase compared to the 1999 data collection. A combination of routine police information plus multipliers partly based on small scale studies is the strengths also of this method.

4.2.4 Drug related death multiplier

Also in this multiplier method the quality of the multiplier is crucial for the total quality of the estimate. A special problem arises from the fact, that the death rate among drug users is often applied as a multiplier. This rate, however, includes not only drug related cases of death, but also other causes of death (e.g. traffic accidents). Some national results indicate, that these cases could sum up to about 50% of the total mortality amongst drug users. This would result in an 50% under-estimation of the number of problematic drug users. A solution for this problem would be to base the mortality rate of drug users only on those death causes which are included as criteria for the official statistics on drug related deaths.

The third multiplier method has been applied by 5 countries - two more than in the previous year. Data on drug related deaths are collected in most countries and different sub-groups and specific research offers different ways to calculate the multiplier needed.

4.2.5 Capture–recapture

Capture-recapture methods have got much interest in the last years in many countries. Even more countries, who have not yet applied this method, are planning or at least discussing this option at the moment. In some countries, for example in Luxembourg, in-depth research took place and different approaches were used. Quite promising, the estimates produced through different approaches (2,3,4 lists, truncated Poisson model) showed rather similar results in several countries.

Austria plans to produce estimates for 1996-2000 on the basis of the same methodology which has successfully been applied to data from 1994/95. The Netherlands plan a capture-recapture study at the national level.

4.2.6 Multivariate indicator

While a regional breakdown of indicators is available in most countries, the anchor points are the main problem. France has applied the method, using regional independent estimates on the basis of local CR as anchor points. The Netherlands have applied the multivariate indicator method on the basis of social indicators, basically housing density and population density. UK has applied the method using 4 anchor points. As the points are heavily influencing the resulting multiple regression a bigger number of points produces more stable estimates. The UK plan to further experiment with up to more than 100 anchor points. Italy has applied the same method and found stable estimates for regions, but not for smaller geographic units.

The multivariate indicator has been in the focus of interest looking for “the” common instrument for all participating countries in 2001 but countries who want o make use of this instrument face a variety of problems. In many cases a regional breakdown of data is not available for all data of interest. In other countries a national coverage is difficult to gain. Special actions are needed to find a sufficient number of anchor points, which are necessary for estimation.

4.2.7 (Back Calculation/) HIV/AIDS multiplier

Progress in treatment methods applied to HIV patients have dramatically changed the natural course of this illness in an positive way. This has changed the statistical parameters for the length of time between HIV infection, AIDS outbreak and death in a way which does no longer allow to apply the BC/HIV-multiplier method as done before.

The HIV/’AIDS multiplier method as used by Belgium and others are an alternative: the benchmark is estimated as the number of drug users amongst known HIV infected persons. This method has been applied by 6 countries for the reference period.

4.2.8 Other methods

Apart from the recommended methods, the demographic multiplier method has been applied by France, Germany, Italy, and Spain. This method had been used in France before for quite some years. While it has been criticized before for methodological reasons now it might be more adequate to apply as the population of opiate users may be more stationary than before. As this method is used only by a small number of countries it should not be included in the list of recommended methods.

It is not clear, if only reporting of additionally used methods has changed or if prevalence estimation is really done more and more within the countries on the basis of a common set of methods. If this would be the case, this would be an important step forward towards harmonisation of the estimation of prevalence of problematic drug use in Europe.

For problematic use of cannabis also surveys should be taken into account for multiplier methods as there might be a acceptable coverage of cannabis users using this instrument. Again the main problem will be the calculation of an adequate multiplier.

4.3 Some results from the TSER project network

Within the TSER project, networks were set up between specialists from different fields of science and research to evaluate the possibilities to use methods and concepts developed in other fields of research also in the drugs field. Two of these six groups have worked on prevalence (national and local level), one on incidence and one on geographic spread. Some presentations coming from these workgroups can give additional ideas and input for prevalence estimation.

For the final report of this network see:
http://www.emcdda.eu.int/situation/methods_tools/modelling_network.shtml

National and regional/ local prevalence estimation methods are complementary in many respects. So at least in smaller countries capture-recapture methods can be applied also at national level. Where multivariate indicator methods are used, the anchor points can be built up with the help of local methodology which can offer the independent estimates required for this method.

4.3.1 Incidence, prevalence and CR methods

On the basis of treatment intake and information on the duration of drug use the Back Calculation method is used to model incidence of drug use in Amsterdam and in Italy. In Amsterdam it was based on the central methadone registry in the years 1995-1998 while in Italy data from 8 regions were used. The target group is restricted to the treated population. Through changes in treatment provision (low threshold, substitution) the target group might have changed over the years. The estimated incidence, however, is restricted to incidence of those problem users who will eventually show up in treatment (‘relative incidence’). A second method was presented (Reporting Delay Adjustment; RDA), which corrects for latency time more directly, on basis of individual records. This method is more data demanding and sensitive to bias from missing data on year of first use. Guidelines for both methods have been sent to the whole group for comments in 2001. A request was made to contact EMCDDA or Lucilla Ravà for collaboration to estimate incidence from local treatment data.

4.3.2 Capture-Recapture Methods

The CR method is described, its assumptions, strengths and weaknesses. As an alternative to the models on the basis of 3 or more linked lists a 1-sample capture- recapture-model is discussed (the truncated Poisson method). Data basis is the count of visits in treatment, covariates could be age, sex and other basic variables. Estimators on the basis of Zelterman (1988) and Chao (1987) are used.

4.3.3 Using GIS for the analysis and estimation of drug misuse

Experiences in the US show, that geographic spread for at least some substances go from border to the centre of a country and from metropolitan to rural areas. The model has been applied in Northampton/ UK on the basis of “electoral wards” - units covering around 2000 people. Other models have been applied on city level showing the spread from city to rural areas. As parameter “drug life” and duration of “drug cycle” play an important role in this model. It is discussed, if such regional models can help to assess situation, need for action and outcome of drug related prevention, law enforcement and treatment activities.

4.3.4 Local estimation study

A pilot study has been done in several European cities including Dublin, Helsinki and Setubal. A 3-sample CR estimate was made for opiate users in the age group 15-54. In 1998 a scientific review was done and the methodological guidelines for the project were developed. In 1999 two meetings took place and local studies in Luxembourg and Matoshinhos (Portugal) were supported through an help desk. A question after these experiences still is, if CR could be applied for a whole country.

For Scotland this has been tried within a study for the two target group of opiate misuser and iv drug users. The costs of the study were around 300.000 €. As sources the Scottish Drug Misuse Database including GP and social services treatment data, police data, social reports from probation and HIV/ hepatitis C data were available. The resulting estimate was to be about 8/1.000 population. The next steps in this study will be specific estimates for rural drug users, ethnic minorities and amphetamine as well as cocaine users.

The same method as in Scotland has also been applied in Luxembourg. For details see Origer 2001.

5 State of development: latest update

The most recent information on the implementation of this key indicators is based on the 2002 EMCDDA annual report and on data submitted in 2002. It shows a high quality of the data delivered by the member states already for 9 countries, another 5 show medium quality. In two cases quality is still low, but in these cases data are available but have not been reported or will be available soon.

Table 25: Key Indicator Prevalence and Patterns of Problem Drug Use: State of implementation as of end of 2002

	Data available	Recentness: estimate for 1999/2000 ?	Nr of agreed methods applied	Time series from agreed methods?	IDU/ PDU breakdown?	Local estimates	Incidence	Overall score
Austria	Yes	Yes	2	0	yes	yes	0	HIGH
Belgium	Yes	No	1	1	no only IDU	yes	1 local	MEDIUM
Denmark	Yes	No	3	2	yes	yes	0	HIGH
Finland	Yes	Yes	3	3	yes	yes	0	HIGH
France	Yes	Yes	4	3	yes	yes	0	HIGH
Germany	Yes	Yes	5	3	yes	yes	0	HIGH
Greece[7]*	No	No	0	0	no	no	0	LOW
Ireland	Yes	No	4	0	no	yes	0	MEDIUM
Italy	Yes	Yes	5	4	not anymore	yes	1 national	HIGH
Luxembourg	Yes	Yes	5	1	yes	yes	0	HIGH
The Netherlands	Yes	Yes	2	2	no	yes	1 local	HIGH
Norway	Yes	Yes	1	1	no only IDU	?	0	MEDIUM
Portugal	Yes	Yes	4	3	yes	yes	1 local	HIGH
Spain	Yes	Yes	2	1	not anymore	yes	0	MEDIUM
Sweden	No8	No6	0 (1)	0 (1)	no6	yes	0	LOW
U. Kingdom	Yes	No	4	0	yes	yes	1 local	MEDIUM

Source: EMCDDA

[7] Greece has provided estimates in 2002, these have not yet been included in the above analysis.

[8] yes but not reported

6 Recommendations

6.1 Methodology

The improvements in the methodology applied as well as in the national implementation of this indicator are promising. On the other side not all countries are part of this process at the same speed and in the same way. If the number of estimates delivered are used as a basis, 6 countries are in their 2002 report in the same position as the year before while 4 have improved and another 4 cover less estimates in 2002. In addition there are two countries, which did not deliver their report before the end of October. Their situation is not reflected in this report.

There are some general consequences, which can be drawn from the experiences from the application of the different methods.

As availability of data and national conditions (size, legal possibilities) differ, no single method is yet available, which could become the common standard. Instead a small set of recommended methods seems more appropriate to increase the quality of estimates per country as well as the comparability of outcomes:

- multiplier methods based on data on drug treatments, police offences and drug deaths. Treated cases and offences registered by the police are used more often, as these data are available in most of the countries.
- a revised multiplier method based on HIV statistics (formerly based on back calculation)
- capture-recapture methods are applied mostly at a regional level, but are also started to be used at national level at least in countries of smaller size. The bigger the country in size and the more complex its administrative structure is, the more difficult the application of this method is (geographic heterogeneity)
- the multivariate indicator method integrates a variety of different sources. It requires a regional breakdown of sources and independent estimates for at least two of these regions.

Each of these methods also describes the relative situation of a country compared to others more or less in the same way. While rates can differ between the different methods used within a country, the rank order between countries remains stable. In most countries also there is a reasonable correspondence between most of the estimates produced. In this respect a cross validation of estimates resulting from different sources and methods will step by step produce more exact and reliable figures.

The following methodological recommendations can be made: More scientific rigour is needed in relation to the methods applied and to data reporting. It is important to exactly specify reference periods of estimates and not to confuse dates for data collection, production of parameters and publications.

- Instead of a single value confidence intervals should be presented, as they show more adequately the often large uncertainty of an estimate.
- Where possible empirically based parameters like multipliers, benchmarks etc. have to be used. Data taken from other countries and settings (e.g. as found in the international literature) may not be appropriate as a basis for estimations. For example mortality amongst drug users has shown to differ considerably in different periods of time and countries.
- As many parameters and sources are not available every year it might be more promising to use periods of e.g. 3 years for analysis of changes over time.

- The methods applied up to now are mainly centred around problematic use of heroin. The more cocaine and other drugs are in the centre of interest, the less parameters like drug related deaths or HIV can be used as instrument to mirror the problem. The methods have to be expanded. This is especially true for problematic use cocaine and cannabis outside of the heroin using population.
- Especially the multivariate indicator method could be applied more often, if independent regional estimates would be available. For this purpose as well as to obtain multipliers for the different methods small studies would be needed nationally. The limited data needed for estimations should also be incorporated in ongoing data collection systems.
- More methodological development is needed in order to reach more reliable measures, especially of change over time.

6.2 Data collection procedures

During the last years there were several parallel information flows in relation to national estimates. As part of the normal Focal Point obligations each Member State delivered the national report, which included a section on problem drug use. While the main aim of this textual information is to give qualitative information on trends, patterns and new developments, summary technical information on the estimations is usually presented. In addition to that the so-called standard tables asked for more or less the same numbers in a different, more technical format. Finally, during the developmental stage of this indicator, national experts nominated by the National Focal Points were asked to give a number of details including the most recent estimate as part of a country report within this project.

This exercise brought forward a big amount of information and helped to clarify a lot of details concerning the methods applied within the countries. Especially the active participation of the experts helped to further develop the methodology and to increase homogeneity between countries. However, as cooperation between experts and National Focal Point not always worked smoothly, not all estimates delivered were really in line. Given a variety of parameters, which could vary (reference period, time of delivery of a report, methodological judgements) it was difficult to choose the most adequate and recent estimates from those different reports. In future this problems should be avoided through the following measures:

- Standard tables and country report should become one document, which is delivered by the NFP as part of their annual obligation (the standard table should become the first section and main summary of the numerical results). This document should include the figures as basis in the standard table format, but additional detailed textual information is needed to allow a clear understanding of the developments and methods.
- Where neither sources nor parameters have been updated during a year, this should only be indicated in the country report, while it should be avoided that the same estimates are repeatedly reported.
- A summary of this report should be integrated into the national drugs report exactly as it is. The national report and the standard tables should always mirror the same reference period to avoid misunderstanding at the EMCDDA and for the reader of the reports produced on the basis of this material.

6.3 Next steps

It has shown in several countries, that only limited funds are necessary to reach considerable progress in this indicator. Small scale studies - done in a reasonable sample of regions or units - help to produce basic parameters which are needed as multipliers. Regional and local studies on incidence and prevalence can help to produce more reliable parameters at multipliers etc. At the same time they help to draw a more complete picture of the national situation and trends in problem drug use.

Support through the EMCDDA or EU specialists in the application of more developed methods - like capture-recapture - can also help countries to apply such methods. Annual meetings at the EMCDDA and other ways of collaboration and networking between the experts involved in this indicator have been the most important tools to support and foster development and implementation of this set of methods. The EMCDDA and its scientific and management board should reflect on this experience when annual plans are made for the coming years. This indicator is especially promising also as a tool to assess the outcome of EU actions on drugs, if there will be sufficient time and support to secure a certain quality

As “problematic drug use” is not only injecting use of heroin, a further extension in methodology is needed to cover also the other sub-groups of problematic drug users in more detail and more complete.

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