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A multi-city study of drug misuse in Europe

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ABSTRACT

This paper presents a report of the results of a comparative epidemiological study of indicators of drug misuse in seven European cities. The study was carried out between 1982 and 1986 under the auspices of the Pompidou Group of the Council of Europe. The members of the expert group summarize the drug situation in the seven cities and critically examine a range of indicators that are sometimes assumed to reflect trends in the prevalence of drug misuse. They conclude that a valuable assessment of drug misuse problems can be provided by drawing together data from several indicators. It is essential that these agency-based data are complemented by surveys and other studies of drug misuse in the populations concerned. The members of the expert group suggest that a single organizational unit is needed to integrate and analyse data and epidemiological studies and discuss different models of how this can be achieved. Improvement in the consistency and quality of the data is essential if policies are to be based on a sound understanding of trends in drug misuse.

Introduction

In 1982, at a meeting of epidemiology experts from member countries of the Pompidou Group, it was decided that the methodological question of how

to assess and compare drug problems could usefully be approached by trying to compare the drug situation in certain large cities. It was decided that a comparative study of drug misuse would be carried out in seven cities: Amsterdam, Dublin, Hamburg, London, Paris, Rome and Stockholm. A city-based approach was thought more feasible than one comprising whole countries since it was possible, at the city level, to take into account various factors (socio-cultural, political, historical etc.) needed to interpret the data. At the national level, the situation was more complex and not so readily interpretable. A separate subgroup was concerned with carrying out comparative pilot surveys.

The aim of the multi-city study was to clarify indicators of drug misuse in the different cities in order to identify and compare the nature and extent of the problem while taking into account different cultural and policy-related contexts, thereby improving understanding and interpretation of such data within Europe.

The study employed the following design:

(a)   Review and summary of the available data on drug misuse in the seven cities;

(b)   Critical examination of the degree to which commonly used indicators, such as drug-related deaths or police arrests, were consistent and comparable between cities;

(c)   Assessment of the benefits and drawbacks of using such indicators to measure and interpret the extent and changing patterns of drug misuse;

(d)   Comparison of trends and prevalence between cities, to the extent that this was found feasible from the previous stages;

(e)   Consideration of what recommendations could be made in order to improve comparability or elaboration of the indicators.

A natural starting-point was to collect data from surveys and indicators of drug misuse and to compare the results. It soon became clear, however, that this was not as simple as it first appeared, because indicators, even when they seemed to reflect comparable entities, were created in social systems based on substantial differences in perspective and practice regarding drug misuse.

Thus, comparison of indicators was combined with a case-study approach, the individual cities being the "cases" in question. It was felt that the best way to understand the situation in another culture was for experts to provide a picture within their own frames of reference and using their own information systems. This had the advantage of taking all information from each city into consideration with the benefit of each expert's knowledge regarding the relevance and validity of the data. By itself, however, this was insufficient. It was difficult for an outsider to understand data and compare them. Thus, a second stage was needed.

· Taking the description of the local situation as a starting-point, experts from other countries posed questions about the more specific meaning of

elements of the preliminary descriptions. These questions had a double function. First, the descriptions were rendered more accurate as the respondent understood that there were other, sometimes more relevant, ways of looking at a description. Second, the questions made explicit the differences in perspective and policy that determined how the data should be interpreted.

By allowing for description to be followed by questions and re-description in several steps, it was possible to reach a situation where the cities could be compared regarding their drug problem and its development. The comparison was not, however, made just in tables where data from the cities' indicators were placed together. Instead, the cities were compared as "cases" or entities with certain profiles of drug use and drug-related problems. The term "framework of communication" was used to express this process.

The group of experts met nine times between 1982 and 1986. In the first stage, each member of the group wrote a description of the drug situation in his or her city, using standard headings. These reports were then discussed to clarify the meaning of the data in each city. On the basis of this, the indicators were critically evaluated (see section VI below) and guidelines drawn up as to how each indicator could be made more useful and comparable. The group members then rewrote their city reports adhering, where possible, to the guidelines. Finally, the city reports were reviewed and synthesized, the guidelines were revised and a final report, which included recommendations on how monitoring could be improved, was written. Some of the data were updated in June 1988.

Approach taken in the multi-city study

The main focus of the multi-city study was on more harmful, problematic drug-taking rather than on the wider pattern of all drug-taking in the population. This meant regular narcotic use, injecting and heavy multiple drug use. Thus, most attention was devoted to indicators that reflected the medical, social and legal consequences of drug misuse. Improvement of the quality of these indicators was considered important because they related to the graver aspects of drug misuse for which effective responses were most urgently required, and they were already used by many countries as a basis for deciding whether, and in what ways, intervention was needed. This approach can be usefully complemented by other methods such as school and population surveys, case-finding studies or ethnographic (social-anthropological) studies. These methods, however, were not considered to be the most appropriate for routinely monitoring trends in serious and problematic drug misuse.

Surveys, whether of the general population or of specific populations, such as schoolchildren, were included in the descriptions provided by each city, but were not examined in detail in the technical review. This was partly to avoid duplicating the school survey subgroup and partly for methodological reasons in relation to the focus of the study on heavy, problematic drug use. Thus, surveys are useful for assessing the use, in the population studied, of more

common drugs such as alcohol, tobacco, cannabis or medicines [1]. They are less useful, however, for rarer or more "deviant" use, since large samples are required, drug use may be more likely to be concealed and random samples are particularly likely to miss truants from school or important groups living in marginal social settings. Surveys of conscripts, especially when supported by urine analysis, can provide prevalence data on, for example, heroin use by males in a limited age range [2].

Intensive case-finding studies, such as those that have been carried out in Ireland, Sweden and the United Kingdom of Great Britain and Northern Ireland [3-5], are more useful than population surveys for assessing the prevalence of, for example, drug injecting. But they also are expensive and time-consuming and do not offer a convenient way of regularly monitoring changing patterns of drug misuse. They are useful for establishing a baseline from which to monitor subsequent trends and for validating indirect indicators.

Ethnographic studies can be most valuable for providing hard-to-obtain data on the human dimensions of drug misuse, for understanding some of the processes involved in drug use patterns and for interpreting treatment and law enforcement indicators; but they, too, do not offer an easy means of routinely monitoring trends or estimating prevalence.

Comparability

Comparability was understood in a narrower sense and in a broader sense: comparability of the epidemiological criteria used and comparability in terms of what the data signified with regard to the relative situations of the cities. The former included the definition of *(a)* who or what was counted as a case or event (e.g. addicts, drug-related deaths); *(b)* the population base to which the data referred (e.g. per 1,000 population in given age ranges); and *(c)* the time period involved.

In general, the degree of comparability in definitions varied considerably, depending on the indicator, but was not high in terms of exact comparability. There was sufficient similarity, however, to allow rough comparisons to be drawn between some cities on some measures. Where possible, all data were reported in terms of 12-month prevalence rates per 1,000 resident population aged 15-39 years. In some cases, the number of non-resident drug users reported in the data seriously distorted the rates. For example, in 1984, the number of drug-related deaths per 1,000 residents of Amsterdam was much higher than that of any other city. But over half of the deaths that year were visitors from other countries. When these were excluded, the death rate for residents of Amsterdam was similar to that of other cities.

While comparability of criteria was important, it was not, in itself, sufficient to achieve the objective of the exercise, which was to establish greater comparability in terms of what the data signified regarding the relative situations in the cities. Even with identical definitions, it would still have been necessary to interpret the data in the light of the cultures, policies, institutions etc. of the cities concerned. It was to convey this broader sense of comparability that the term "framework of communication" was coined.

The question of which aspects of the situation in the cities could be compared was largely determined by practical constraints. The main goal of the group of experts was a careful but straightforward descriptive comparison. The value of this type of comparison should not be underestimated. Subsequently, the members of the group were able to make tentative comparisons in terms of known or treated prevalence, subject to the proviso that the criteria that determined what was "known" varied between cities. It was not possible to compare "true" prevalence, since reliable estimates often were not available. It was, however, possible to use the indicator data, together with contextual information about the cities, to compare broad trends in drug misuse, as well as the basic characteristics of the drug misusers concerned. Further aspects of comparison that were explored were the profiles of agency contacts by drug misusers in different cities and the prices of illicit drugs.

Final report

The final report of the multi-city study published by the Council of Europe in 1987 [6] includes two sections, plus a brief synthesis.[1] Section 1 of the report contains papers on the drug situation in each city presented in a standard format, together with an overview and synthesis; in addition, it provides a description of the legal, social and medical policies and facilities found in the cities. Section 2 provides a technical critique of various indicators used to assess and monitor drug misuse; a discussion of the extent to which it is possible to develop a more integrated "framework of communication" that would allow for improved and more comparable assessment within Europe; and recommendations on how monitoring of drug misuse might be improved in the future. Section 2 also contains an appendix with reference data from the seven cities.

An overview of drug misuse in seven cities

A summary of drug misuse patterns in the seven cities is presented below.

Amsterdam

Experimental use of many different drugs emerged at Amsterdam in the 1960s. A heroin market developed in 1972. Since then, the problem has increased considerably and in the 1980s cocaine misuse has also become significant. Heroin use, however, appears to have stabilized in the mid-1980s.

The monitoring system in 1985 included approximately 13,000 persons, of whom 6,657 were provided with methadone during that year. The Central Registration System recorded 6,657 opiate addicts at some point in 1985. Thus,

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[1]The final report of the study, including detailed recommendations on how comparability between European cities might be achieved, may be obtained by contacting the Pompidou Group at Strasbourg.

"registered" prevalence (over 12 months) was 22.5 per 1,000 population aged 15-39. The total number of addicts at Amsterdam in 1985 was not known, though it would have been greater than the registered figure; perhaps 30 per 1,000 residents. It was likely, however, that a majority of addicts registered at some point, since the Central Registration System covers a large range of methadone-dispensing facilities that are widely distributed and easily accessible. It must be emphasized that these crude rates overstate prevalence among Amsterdam residents on account of the significant number of addicts registered in the city who are from other countries or from outside the city.

Dublin

The first wave of drug misuse occurred in the city of Dublin in the period 1969-1970 and involved mainly amphetamines, barbiturates and cannabis. Heroin was introduced late in the 1970s and an approximate fivefold increase was observed between 1979 and 1983. In 1983, the problem peaked and has since stabilized at a lower level. The evidence suggested that Dublin was the main city in Ireland to experience a severe opiate problem.

Surveys of secondary-school children (aged 12-18 years) in 1971 and 1981 showed an increase from 2.3 per cent to 11 per cent among those who had "ever experimented" with drugs. Heroin use was very rare in that age group, but had also increased.

The Dublin treatment centre treated 798 opiate addicts in 1985. Thus, "treated" prevalence (over 12 months) was 2.2 per 1,000 population aged 15-39. This figure excluded addicts treated by general practitioners and by hospitals and in prison and included a few who lived outside Dublin. The total number of opiate addicts was not known, but one estimate suggested that in 1985 there may have been about 1,700 opiate misusers in the city. This would imply a "true" prevalence rate of about 4.5 per 1,000 population aged 15-39.

Hamburg

Around 1970, a drug culture comprising users of cannabis and lysergic acid diethylamide (LSD) with a middle-class social background emerged at Hamburg. A minority went on to use opiates. In 1974, a heroin market was established. This market has continued, with interruptions, until today. The number of injecting opiate users at Hamburg continued to be stable into the 1980s. Then, in 1987, many indicators pointed to a sharp rise. Survey data suggested a decline from 27 to 14 per cent in the number of persons who had "ever used illegal drugs" (mainly cannabis) at the beginning of the 1980s.

According to the Central Registration System, 1,764 injecting opiate addicts were known by December 1985. Thus, the "known" prevalence rate was 3 per 1,000 aged 15-39. By December 1987, this had increased to 4.6 per 1,000. The increase continued into 1988. There has been no comparable rise in "known" cocaine users. Cases were largely identified through the legal system (police and courts). The number of addicts treated in a year was about 250,

giving a "treated" prevalence (over 12 months) of 0.1 per 1,000 population. Total prevalence has not been assessed precisely, but it is believed that most addicts are "known".

London

The first increase in opiate addiction in London took place in the 1960s. The most commonly used drugs were cannabis (among students and middle-class groups) and amphetamines (among working-class groups). At the end of the 1970s, a second opiate epidemic developed, although since then the situation seems to have stabilized. Opiate misuse has spread from socially marginalized groups to a wider range of the population, including both working-class and middle-class communities. The use of opiates often started in the form of heroin sniffing or smoking. Sometimes this developed into use by injection. The use of amphetamines and, to a lesser extent, of cocaine, has increased in recent years; though relatively widespread, such use was less visible from agency data. In 1984, 5,637 addicts (mostly opiate users) were officially "notified". Thus, 12-month "notified" prevalence was 2.0 per 1,000 population aged 15-39. By 1987, the rate had risen slightly to 2.3 per 1,000, though the incidence of new cases has continued to fall since 1984. The total number of opiate addicts in London was unknown, but it was suggested that perhaps 25,000-30,000 people used opiates on a daily basis at some stage in 1985. This would imply a "true" period prevalence rate for 1985 of 8-10 per 1,000 population aged 15-39.

Paris

The use of illicit drugs started in Paris at the end of the 1960s and increased considerably during the second half of the 1970s and the beginning of the 1980s. Although it was difficult to make an accurate evaluation of incidence and prevalence in Paris, the use of at least one type of illicit drug, heroin, has tended to stabilize. The number of heroin addicts was undoubtedly high, but this was mainly the result of the epidemic growth in the period 1977-1982. Addicts were older than in the 1970s, averaging around 25, whereas 10 years ago the average age was closer to 21-22. This apparent aging of users was attributed to two factors: the natural aging of existing users and a wider age range of initiation.

The most important recent change in drug use was the marked increase in the use of cocaine, as evidenced by the fact that it was being used by all social classes, and some of it was being distributed at the street level.

Rome

There was a sharp increase in heroin use at Rome from 1974 to 1975, coinciding with a shortage of other drugs. Also, cocaine misuse emerged during the 1980s. The rise in heroin has apparently ceased, though the misuse of pharmaceutical products has increased.

Public health facilities treated 2,168 addicts in 1985. This figure rose slightly to 2,342 in 1987. Thus, "treated" prevalence was 1.7 per 1,000 population aged 15-39. A 1982 survey, based on urine analysis of young men at their first interview for military conscription, gave a prevalence rate for Rome of 14.1 regular opiate users per 1,000 males aged 17-25 (equivalent to 4,200 male opiate users in that age range). A tentative projection, taking into account females and users over 25, gave a figure of around 10,000 regular opiate users. This implied a prevalence rate of about 7 per 1,000 population aged 15-39.

Stockholm

At Stockholm, widespread injection of amphetamines since the middle of the 1960s complemented cannabis use in other groups. The problem culminated at the beginning of the 1970s. Heroin was introduced in the mid-1970s, but was concentrated at Stockholm (and at Malmø, close to Copenhagen). In 1984, the number of injectors at Stockholm was estimated at 3,000-4,000. Heroin use has never exceeded one third of this population, and in the period 1985-1986, the drug situation seemed to stabilize at a lower level. The rate for regular injectors for Stockholm was about 7 per 1,000 inhabitants aged 15-39. As the estimate was based on case-finding and the use of capture-recapture techniques, it should include all cases. In 1987, however, the indicators pointed to a sudden rise in the use of heroin.

Comments

There were many similarities between the cities. They all first experienced illicit drug use as a more widely spread social phenomenon in the 1960s. Cannabis and, to a more limited extent, amphetamines and LSD were the main drugs. Drug use by injection was relatively rare. The exceptions were Stockholm, which experienced an early epidemic of stimulant use by injection, and London, which experienced a limited epidemic of opiate use by injection.

The exceptions of London and Stockholm had little in common. While the British problem was primarily among middle-class groups using leakage of supply from general practitioners, the Swedish epidemic was primarily among marginalized groups, such as ex-convicts, institutionalized youth and prostitutes. Some other cities reported early experience of the more harmful drugs, under various circumstances. Paris has, for a long time, had a prominent subculture of artists using hard drugs. Certain minority groups at Amsterdam had brought drug habits with them during the decolonization period.

Looking at the more recent situation, only Stockholm can be said to have kept its drug pattern largely intact over the 1970s and 1980s, while fairly dramatic changes have taken place in the other cities. Thus, the dominant problem at Stockholm has remained stimulant injection, even if there has also been a minority of heroin users; the 1987 increase in heroin use, however, may presage a change. The current injection population seems to be about the same size and found in the same segments of the population as a decade earlier.

All other cities in the study reported marked and sometimes dramatic changes in drug use during the 1970s and 1980s. Specific mention should be made of observations of cocaine use at the street level at Amsterdam, in Paris and at Rome. Although the emergence of drug misuse in those cities started during the same period of time, the development has varied substantially. The cities of Hamburg and Stockholm can look back at a rather long period characterized by a stable (and, in the case of Stockholm, probably even declining) drug problem, but the 1987 increase in heroin use in both cities seems to imply that the situation is not likely to remain stable in the future.

Drug use in the cities varied in terms of the social and cultural groups involved. For example, at Stockholm, amphetamine injectors were concentrated in a subculture that was already heavily criminalized. This contrasted with the situation in London, where heroin use could be found in different subgroups across all social classes, though there were marked differences between areas of the city. In the city of Dublin, heroin was found mainly among indigenous Irish youth in the more deprived, working-class communities. In Paris, there was also an association with low social status, but it involved ethnic minorities from North Africa. At Amsterdam, though heroin use occurred across all social classes, minorities from former Dutch colonies were disproportionately represented. In contrast to this, heroin use among ethnic minorities in London appeared to be relatively low. In all cities, drug problems were more concentrated in the inner city, though experts from several cities noted a tendency for the problems to diffuse to more suburban areas.

In terms of age, at Stockholm, there were strong indications of a stabilization or even a decrease in youthful incidence, with a subsequent pattern of an aging cohort of injectors. At Dublin, the heroin epidemic of the late 1970s involved more youthful groups. In Paris and London, there was a broadening in the age range for the onset of drug misuse; older as well as younger persons started to use drugs.

In some cities, illegal drug use showed signs of a "cohort effect", meaning that those who had been in certain age groups at a certain period of time adopted specific habits and life-styles that they then maintained, though a longitudinal study of addicts on the Hamburg register gave support to the "maturing out" hypothesis [7]. In other cities, such as London and perhaps Paris and Amsterdam, cohort effects were interwoven with micro-epidemic patterns involving various groups. The data, however, were insufficient to form firm conclusions. An analysis of age distributions, and of the flow into and out of drug-using populations, is important for future epidemiological work.

Females accounted for a significant proportion of drug users. The sex ratio varied from 1:1.5 to 1:4, depending on the source. The rates for females, although generally lower than for males, were higher in surveys, treatment populations and death figures than in control system data.

The city reports included information pointing to the important role of the "supply side" of the drug problem alongside the above-mentioned "demand (user) side". For example, in Italy in the period 1973-1974, cannabis suddenly disappeared from the market and was rapidly replaced by heroin. A similar situation emerged at Stockholm in 1973 and 1974, when the supply of

stimulants ceased for a long period as a result of the police having captured a dealer who had held a monopoly. Heroin was then introduced into the city for the first time.

A further dimension was the interconnection between the different markets and cities. For example, although most heroin coming to Paris in the late 1960s and early 1970s passed through Marseille, both Paris and Hamburg reported that Amsterdam had become a transit centre for their heroin in the period 1973-1974. At about the same time, the availability of heroin at Amsterdam increased. In London, increased importation of south-west Asian heroin was followed by a sharp fall in prices and a rise in heroin use in the late 1970s. At Dublin, links with Liverpool were associated with heroin supply. Although some work has been carried out regarding the international drug market, little has been done in Europe at the national and local levels or on the link between those levels.

Evaluation of indicators of drug misuse

Limitations of indicators

The indicators covered in this study were considered to have an association with drug misuse, but the exact nature of that association was usually unknown. Furthermore, any single indicator reflected only one (possibly atypical) facet of the whole picture. It was, therefore, essential *(a)* to use several indicators that drew on a range of different sources of information; and *(b)* to take into account extraneous factors that might distort the data.

Factors influencing the indicators included attitudes and policies on drug misuse in the cities concerned, the type and availability of facilities, the priorities of the bodies from which data were derived, the criteria and recording practices that they used, and the mechanisms through which data from agencies were aggregated prior to being made available. It was, therefore, essential to supplement statistical data with an understanding both of the context in which they were collected and of the process by which they were generated.

Criteria for evaluating indicators

The indicators were evaluated according to the following criteria:

(a) Comparability. Did clear definitions exist, were they consistently applied and how comparable were they?

(b) Availability, accessibility and rapidity. Were the data collected at all; how easily, quickly and frequently did they become available?

(c) Reliability. Could the data be taken as an accurate record of the events they were supposed to record?

(d) Validity. To what extent did an indicator reflect changes in drug misuse rather than other, extraneous factors?

(e) Relevance. In what ways could an indicator be useful for assessing and monitoring drug misuse?

These criteria facilitated analysis of the benefits and drawbacks of the indicators, and of the levels at which comparisons could be made. This, in turn, highlighted areas where improvements could be recommended.

Critical review of individual indicators

Eight indicators were selected for study: first-treatment demand; police arrests; drug-related deaths; viral hepatitis; seizures of illicit drugs; price and purity of illicit drugs; hospital admissions; and imprisonment. Non-fatal drug-related emergencies were not considered in detail because routine data were not available in most cities, although surveys had been conducted at Dublin [8] and in London [9]. At the time, few data were available concerning acquired immunodeficiency syndrome (AIDS) and drug use. Other indicators included injection marks among persons arrested at Stockholm.

The value of the data and the levels at which they could be compared depended on the indicator concerned and on the cities considered. In general, there was much room for improvement *(a)* in the consistency and comparability of the criteria; *(b)* in the accessibility of the data and the rapidity with which they could be obtained; and *(c)* in the quality of the data in terms of reliability and validity. Detailed recommendations regarding individual indicators can be found in the final report.

Several members of the expert group considered it essential to complement data derived from the agency-based indicators listed above with qualitative, first-hand information from ethnographic (anthropological) studies of drug misuse in the community and with data from other surveys such as case-finding studies or population or school surveys.

Indicators that were considered to be of particular value in most cities were *(a)* the demand for treatment from medical and social facilities, especially first requests for treatment by previously unknown drug misusers; and *(b)* police arrests for offences involving illegal drugs. Other indicators that were considered important and that would, if improved, add to the range and quality of epidemiological information were drug-related deaths, illicit market indicators (drug seizures and price) and viral hepatitis. Data on hospital admissions and imprisonment were thought to be of less epidemiological value. The major conclusions regarding those indicators are outlined below.

First-treatment demand

Treatment demand referred to people requesting treatment for drug problems by treatment centres, therapeutic communities and other treatment facilities. Of particular interest was first-treatment demand, requests for treatment by people who had not been treated before.

There was little exact comparability in case definition. Furthermore, there were large differences between treatment systems, so the significance of the data varied between cities. Thus, at Amsterdam, first-treatment demand referred to addicts registered for the first time (ever) by the Central Registration System, following provision of methadone at any of a wide range of facilities, including public health services, clinics, hospitals, prisons and police stations; at Hamburg, it referred to the approximate number of drug addicts requesting aid from drug-counselling centres who had not visited such centres in the previous year; at London, it referred to the number of new narcotic addicts notified to the Home Office Index; at Stockholm, where no distinction was made between new and old cases, it referred to drug misusers treated by therapeutic communities and other drug-free social and medical facilities. In some cities, the data referred to "first requests for treatment"; in others, they referred to those "taken on for treatment". The distinction was important, since the numbers actually taken on for treatment might reflect the capacity of services, whereas the numbers requesting help were more likely to reflect the demand for treatment.

The data from most cities except Stockholm and Hamburg, where the information was very limited, were obtained largely from medical centres. Hamburg and Rome included data on therapeutic communities, though these were second-line facilities to which addicts were referred. Only Amsterdam and London included data from general practitioners. Thus, there was a marked lack of data on demand for treatment from non-medical agencies or from primary care facilities. It was clear that such services existed in most cities, often on a voluntary, non-statutory or private basis. It was considered important that efforts be made to obtain data from such agencies. Where treatment centres concentrated on opiate addicts, other patterns of drug misuse might be missed. Community-based, first-line agencies, whether medical or non-medical, might also be closer and more sensitive to changes in the pattern of drug misuse.

In general, the data from specialized treatment centres were thought to be relatively reliable measures of the demand for those services. Reporting from non-specialized agencies was more unreliable. First-treatment demand was considered a valid indicator of trends in drug misuse in London, Dublin and possibly Paris. The data for Amsterdam and Rome reflected the expansion of the monitoring systems. Once stabilized, it was thought that they would generate valid measures. The data for Hamburg and Stockholm were considered to reflect service availability rather than trends in drug misuse.

Thus, first-treatment demand was considered useful in most cities. Its usefulness, however, depended on the type and availability of services and on which services were monitored. Furthermore, it was a "lagged" indicator, since there was an interval of up to several years between initial drug use and the act of seeking help. Data on this latency period have been found to be of epidemiological value at Dublin and in London and Paris [10-12]. In the United States and at Berlin (West) [13, 14] they have been used to generate prevalence estimates. They can also provide information regarding the point in their drug careers at which drug misusers seek treatment.

Police arrests

Police arrests are often used as a direct indicator of trends in illicit drug misuse. They also reflect police activity. Two types of data were reported. The first referred to arrests for offences against drug laws; the second, to addicts identified through arrest, regardless of the offence.

Data on offences against the drug laws in different cities referred to different points in the legal process. Thus, Hamburg and Stockholm reported the number of detected violations of the drug laws and the number of persons suspected, regardless of whether this was followed by formal arrest and subsequent criminal charges. The data for Amsterdam, London and Paris referred to arrests; and the data for Dublin and Rome referred to the number of people charged. This made a considerable difference in attempts to compare cities. For example, at Amsterdam in 1985, only 20 per cent of those arrested were charged, whereas in London most drug arrests were followed by formal charges. A further difficulty was that some cities reported only the number of persons and others only the number of events. At Hamburg, the number of suspected persons and the number of known violations were about equal. At Stockholm, there were two known violations per person.

The validity of arrests as an indicator of trends in drug misuse was thought to vary between cities. They were considered valid at Hamburg and, more cautiously, at Dublin and in London. At Amsterdam, they showed a parallel with other information. In Paris and at Stockholm, they were thought to reflect police activity as much as trends in drug misuse, though in Paris the trend for heroin reflected other indicators. It was suggested that arrests could be a more useful indicator if a distinction were to be made in the data between people arrested for the first time and others.

Thus, police arrests could be a useful indicator, but only if police practices and priorities were taken into account. Furthermore, arrest data reflected the differential vulnerability of various classes of drug users to arrest. They were, however, a more direct measure than later stages in the judicial process, which, in addition, reflected prosecution and sentencing policies. In general, it was likely that large changes in the number of arrests and the profile of drugs involved did indeed reflect real changes, especially if there were no major changes in police activities and policies. The members of the expert group found that there was comparability between some cities, but further work would be needed before firm conclusions could be drawn. Despite the above-mentioned difficulties, police arrests were considered an important indicator because they complemented treatment indicators, but they needed to be interpreted in the context of other information.

Only three cities reported data on addicts who were arrested. At Amsterdam, this was done by the police on the basis of uncertain criteria. Data were also available on arrested addicts provided with medical assistance at police stations. The data for Hamburg and Stockholm were based on evidence of injection marks and, in the case of Hamburg, also on the statement of the arrested person.

Drug-related deaths

Drug-related deaths were seen as an important indicator, both because they concerned dramatic and serious events and because the number of deaths was often taken as a valid indicator, especially by the media.

There was considerable variation between cities in terms of how drug-related deaths were defined and recorded. Deaths where drug addiction was diagnosed as the underlying cause on the basis of the nine codes of the International Classification of Diseases were not considered satisfactory in any city. This was because of uncertainties regarding the basis on which the death certificates were completed and evidence that such deaths represented only an unknown fraction of the drug-related deaths.

Deaths of addicts known to the police were not adequate, since the criteria were uncertain and likely to vary and deaths indirectly arising from drug use were likely to be missed. Deaths of addicts registered or notified by treatment systems omitted drug users who were not in contact with the treatment system and included deaths that might have occurred for reasons unrelated to drug use. Overdose deaths excluded drug-related deaths occurring for other reasons and included suicides by individuals who were not otherwise drug misusers. In any case, an overdose was not a clearly defined event.

Thus, the reliability of the data varied and was affected by *(a)* the extent to which unnatural or suspicious deaths were investigated (in terms of medical, toxicological, circumstantial and other evidence on the known drug-using status of the deceased) and *(b)* whether drug-related deaths were specially recorded using explicit criteria. The most reliable system for identification appeared to be that used at Hamburg, where any death in which drugs were suspected or the cause was unclear (youthful death) was referred for a biochemical investigation of hair roots, which could demonstrate recent morphine intake. The results were considered together with other information and nationally agreed criteria before a drug-related death was recorded.

Even if data on drug-related deaths were reliable, it would still be misleading to draw a direct relationship between the number of deaths and the prevalence of drug misuse. Although large changes in the number and profile of drug-related deaths might indicate changes in drug misuse, many other factors could be involved, including variations in the potency of the drug, the type of adulterants, the characteristics of the drug users and whether the drugs were injected.

In conclusion, no single criterion was adequate for defining a drug-related death. Data were not comparable between all cities, though there were similarities between some. The members of the expert group were unanimous in urging caution over the use of crude death statistics to indicate the prevalence of drug misuse, especially in making an international comparison. Further work and, above all, better data were deemed essential.

Viral hepatitis

Hepatitis is sometimes used as an indicator of the incidence of drug injecting because sharing syringes is one of the prime ways of transmitting the virus. It has no significance for other methods of drug taking such as smoking and sniffing. It is only hepatitis types B and non-A/non-B, however, which are relevant. The more common hepatitis type A virus is not specifically related to drug misuse. Moreover, the role of other risk factors, such as homosexual contact, must be excluded.

Apart from Paris, all cities reported data that distinguished hepatitis type B (and sometimes type non-A/non-B) virus. The routine data, however, were very basic and often incomplete. Notifications of hepatitis B virus to public health facilities were not a reliable indicator of the extent of drug-related hepatitis in the cities, since the degree of underreporting was unknown and data on the source of infection were often missing. Even at Amsterdam and in London, where drug misuse was distinguished from other risk factors, much of the data was missing. Serological screening at Dublin and Rome was a reliable indicator of the extent of hepatitis B virus among addicts in hospitals. At Rome, it was also a reliable indicator of the proportion of addicts among patients hospitalized for hepatitis.

In most cases, it was not clear whether the incidence of hepatitis B (and non-A/non-B) virus could be used as a valid indicator of the incidence of intravenous drug use. At Hamburg, Rome and Stockholm, where notifications did not distinguish drug-taking from other risk factors, it could not be assumed that variations in the incidence of hepatitis B virus reflected changes in drug use. At Hamburg and Stockholm, however, there was a correlation with other indicators, suggesting that it might have been a valid indicator. In the data for Amsterdam and London, where a distinction was made between drug-related cases and others, missing data made it hard to draw conclusions; in the data for London, however, there was some correlation with other indicators.

At Dublin, serological screening of hospitalized addicts was seen as a valid indicator that pointed to increased drug misuse earlier than other indicators. The data for Rome pointed to an increasing number and proportion of addicts among patients hospitalized for hepatitis over the period when intravenous drug use was increasing.

Thus, hepatitis data may be a useful indicator of drug use by injection. In most cities, however, the quality of the data must be improved before its epidemiological value can be fully assessed.

Seizures of illicit drugs

Seizures of illicit drugs, particularly the total amounts seized, are commonly used as an indicator of the dimensions of the illicit drug market. This, in turn, is assumed to reflect the level of use. As with deaths, the amounts seized tend to have a high political profile.

The validity of police seizures as an indicator of illicit drug availability varied between cities. In particular, it was affected by *(a)* whether the data

reflected the activities of enforcement agencies rather than the state of the illicit market and *(b)* whether the data referred to quantities seized or to the number of seizures.

The total quantities seized are sometimes taken as an indicator of illicit supply. It was not possible to know, however, by just looking at the total quantities seized whether the effectiveness (or luck) of the police or the market itself had changed. Thus, one exceptional seizure could seriously distort the data for a given year. Repeated seizures of large quantities might indicate that a substantial market existed, but variations in the total amount could not be assumed to be directly proportional to the size of the market. It was also necessary to exclude, where known, seizures of drugs that were in transit, headed for another destination. This was especially relevant to major cities that were transit points for other parts of the country or for other countries. Perhaps the amounts seized by the Customs authorities and the police should be examined as an indicator at the national level rather than at the city level.

If the quantities seized were taken in conjunction with other information, it became more conceivable to examine their validity as an indicator. For example, if the amounts seized increased markedly while prices were unchanged or falling and purity was rising, it was more likely that the data indicated an expanding supply rather than more effective interception. If other indicators pointed in the same direction, then this interpretation was further confirmed. Information on police priorities and resources allocated to drugs was also needed.

The only cities for which it was possible to set quantities seized against prices were Amsterdam, Hamburg and London. At Amsterdam, increases in the quantities of heroin seized coincided with falling prices (and increases in the number of people arrested). A similar pattern was found in London, for which it was concluded that large changes were a valid indicator, especially regarding heroin. As for Hamburg, however, it was suggested that the quantities seized were not necessarily a valid indicator, especially regarding cocaine. An increase in the quantities seized at Stockholm was considered a reflection of increased enforcement rather than an increase in use.

At the "user" level, the number of seizures were more significant than the quantities seized. The number of seizures of user amounts at Hamburg and in London, Paris and possibly Dublin were considered a rough indicator of availability. These data, however, were not routinely available.

Thus, substantial changes in the number of seizures at the street level might be an indicator of availability. The significance of quantities seized was questionable, especially at the city level. Such seizure data becomes more useful, however, when considered in conjunction with other market indicators and with information on enforcement policy and resources.

Price and purity of illicit drugs

Drug price and purity are sometimes used to indicate the availability of illicit drugs. A fall in price may indicate increased supply, especially if the purity is rising.

Some data on prices were available in all cities except Stockholm. The data were obtained from the narcotics police, except for the data for Paris and London, which were derived from ethnographic studies and from informal sources in touch with illicit drug users. Only Dublin, Hamburg and London reported purity data.

Reliability varied between cities. The data on prices for Hamburg, London and Paris, the only cities for which such data were available, were considered to be a reasonable guide. Reliability was affected by whether prices referred to money paid for a weighed quantity (e.g. one gram) or to an estimate of the "true" price per gram of drugs sold in small packets of unspecified weight. Thus, the price for heroin at Dublin was based on 1.0 gram divided into 30 packets selling at the equivalent of £10 each, whereas in London it was based on 0.25 gram selling at £20.

Another issue was how the data on prices were obtained. Experienced narcotics police with knowledge of how illicit markets work were likely to provide reliable information. Interviews with arrested users carried out by inexperienced police officers could give misleading information. Prices reported by the police might also be affected by other pressures. For example, a desire to emphasize the significance of major seizures could lead to inflated figures. Conversely, a desire to stress increasing availability could lead to selection of the lowest prices. In London and Paris, information on prices obtained from ethnographic studies and from informed sources close to the drug scene was valued. The reliability of such data could be high if the persons collecting the data were themselves experienced and reliable.

Data on prices for Hamburg, London and perhaps Paris were considered to be a valid and sensitive indicator of trends in availability. Thus, in London, the price of heroin fell sharply after 1978 (and continued to fall until 1984). Subsequently, during the early 1980s, all the other major heroin indicators increased. Since this indicator had not been closely examined in the other cities, it was hard to draw conclusions about them.

Thus, when considered together with other information, price and purity can be a useful indicator of the illicit market, at least in some cities. Such data, however, must be carefully and consistently assembled.

Hospital admissions

Hospital admission could be considered a subcategory of treatment demand in the case of admission to psychiatric hospitals because of drug dependence. It also included hospitalization for other drug-related conditions, however, such as drug psychosis and non-dependent drug abuse, and the range of medical conditions for which addicts entered non-psychiatric hospitals, such as infection and hepatitis.

The data could only be understood and compared in the light of the referral and admission policies and health-care delivery systems in each city. Furthermore, the reliability of the data, especially from routine hospital statistics, was questionable, and the validity of such data as an indicator of

trends in drug misuse was dubious. If more care had been taken in collecting the data, however, they could have been useful for non-epidemiological purposes such as estimating the cost of drug misuse to health-care systems or comparing the role of in-patient treatment between cities.

Imprisonment

Two types of data were considered: prison sentences for drug law offences (which might involve people who were not drug users); and the number of addicts in prison (who might be there for other offences).

Although some data were available on drug offenders sent to prison, they were more indicative of police and sentencing policies rather than trends in drug misuse. And although all cities except Hamburg reported some data on addicts in prison, these data were considered very unreliable, with the exception of the data for Stockholm. Thus, court data on sentences, though of limited use for monitoring prevalence, would be useful for comparing sentencing policies. Data on addicts in prison might, if improved, point to drug use trends in special populations.

An integrated framework

A study carried out for the Organisation for Economic Co-operation and Development on the comparability of data of drug misuse in European countries concluded that none of the indicators described above were suitable for Europe [15]. The members of the expert group also concluded that the indicators were not easily compared and that, when taken individually, must be viewed cautiously as measures of the prevalence of drug misuse. They went on, however, to examine whether the indicators, as a whole, together with other information on the context in which they were collected, would have greater validity than any single measure.

This section presents a description of a conceptual framework for examining indicators and dealing with the question of how to integrate information from diverse sources, an examination of some of the methods for combining indicators within a city, and a discussion of the administrative structures that are needed for integrating information within a city.

Known drug users are persons with drug problems who are in contact with one or more agencies. The known population may often be larger than is suggested by the indicators, since it is unlikely that all agencies report all cases with which they are in contact. Drug-using population refers to those who use drugs in the time period concerned. This includes drug misusers who have no contact with agencies, as well as those who are known to agencies. The status of individuals can vary over time.

This broad framework for examining indicators was not intended as a rigid "iceberg" model. As was emphasized earlier, it cannot be assumed that changes in the visible indicator are directly proportional to changes in drug misuse. There were three reasons for using this framework. First, it emphasizes that

data arise from a filtering process: not all drug misusers contact agencies; of those who do, only some are recognized as misusers; and only some of those who are recognized are recorded and reported in the final statistics. Second, it emphasizes that different indicators are selective; that is, they reflect different aspects of the phenomenon. Third, the framework suggests that there is overlapping between different indicators. Thus, an important question is the way in which different indicators are related to each other and collectively related to the overall situation. The framework has three important implications:

(a) It is important to include sources that are as close as possible to the drug-using population (e.g. data that have passed through less filtering);

(b) A range of different indicators must be used and interpreted together as a package, rather than separately. This, in turn, requires a centre that can facilitate the use of consistent protocols for collecting data and then collate and integrate the information obtained from different sources;

(c) Since the validity of each indicator as a measure of drug misuse cannot be assumed and may vary over time, it is vital to evaluate the indicators from time to time. Both statistical data and qualitative information are needed if the meaning of the data is to be elicited.

Integrating indicators in a city

Methods for combining information from different sources include concomitant indicator analysis, multi-agency monitoring (e.g. registers) and statistical projections from indicators. Methods that are valuable for placing the statistical data in a wider context and for evaluating the indicators include case-finding studies, ethnographic studies and school or population surveys.

Concomitant indicator analysis

An example of concomitant indicator analysis is the discussion of the validity of seizures as an indicator of supply (see the previous subsection). It was suggested that when seizures were examined together with price, they were more valid than when taken alone. This principle was applied to a wider range of indicators. Two general points emerged from the city reports. First, many indicators showed short-term fluctuations. Variations from one year to the next cannot be taken as a reliable sign of change. Consistent trends over several years were much more significant. Second, the significance of trends observed in a package of indicators still had to be interpreted taking into account independent information about the agencies and about the drug scene itself.

Multi-agency monitoring

There were elements of multi-agency monitoring in several of the cities, though none was considered sufficient. At Amsterdam, the Central Registration System collated data on methadone provision from a wide range of treatment

settings, including addicts in police stations, prisons etc. This made it possible to avoid double-counting individuals and to monitor the number of new cases coming into contact with almost any (methadone) facility in the city. In addition to providing a more accurate picture of trends in opiate addiction, this indicated which sort of facility addicts were most likely to approach first. It also showed, for example, that half of arrested addicts had never been notified as receiving methadone. The system thus provided a valuable empirical basis for planning services. Two shortcomings were that *(a)* since it monitored the supply of methadone, it did not provide information on other types of drug misuse, and *(b)* other data (regarding hospitals, street projects, hepatitis, drug-free agencies and especially law enforcement) were not covered.

At Hamburg, in contrast to Amsterdam, the monitoring system was administered by the drug commissioner, in collaboration with the narcotics division of the police. Studies based on the cumulative register of injecting opiate addicts illustrated how different indicators could be used to evaluate each other. A retrospective study of addict deaths showed no correlation between length of (known) addiction and the likelihood of dying in any given year. This, in turn, suggested that drug-related deaths were not an indicator of the incidence of new addicts. Conversely, a study of drug-related deaths identified by screening death records showed that 80 per cent of the addicts who died were already known. This suggested that the register was relatively comprehensive. Of particular interest was a long-term study of opiate addicts notified in the early and middle part of the 1970s that suggested that although 20 per cent had died by the mid-1980s, 50 per cent had "matured out" of their addiction. But while the collection of data on addicts coming to the attention of the police and on other aspects of law enforcement was co-ordinated, a similarly comprehensive collection of treatment data was difficult.

At Rome, monitoring was part of a three-tiered system co-ordinated nationally by the Ministry of the Interior that collated basic (aggregated) data from local health units. It also collated data on deaths and seizures. The regional health authorities collated more detailed data from local health units and produced regularly appearing reports. Both the national and the regional reports provided data that referred to Rome. But there was no structure at Rome for relating those data to other local information about the situation in the city.

In London, the Home Office notification system brought together data on narcotic addicts from treatment centres, hospitals, general practitioners and prison medical officers as part of a national reporting system. These data have proved valuable in, for example, indicating the increasing (but unplanned) involvement of general practitioners in the treatment of addicts and in showing changes in the age distribution of addicts notified for the first time. As at Rome, however, there was no city structure for integrating this with other indicators or for relating it to the extensive amount of local information from districts within London. Furthermore, drugs other than opiates and cocaine were not covered and, apart from the specialized treatment centres, compliance with the law requiring all doctors to notify was poor.

The Swedish Council for Information on Alcohol and Other Drugs has developed a regional reporting system to co-ordinate the collection of

information from key persons, together with the various statistics and surveys. It is not intended to develop a register of known users, for ethical reasons and because such a register is not considered necessary.

At Dublin and in Paris, there were no reporting systems, nor were there structures for bringing data from different indicators together with other relevant information.

Thus, depending on the agencies included, multi-agency monitoring can provide information on trends in "known" prevalence and incidence, changes in the profiles of users, overlaps between different agencies and patterns of service utilization. Apart from monitoring trends, such a data base is of enormous value as a starting-point for more thorough epidemiological evaluation of questions such as the long-term consequences of drug misuse.

Statistical projections from indicators

A number of statistical techniques are available that allow projections from existing indicators or data sets to the "hidden" population of drug misusers. These include the capture-recapture technique, the nomination technique and small-area synthetic estimates.

The capture-recapture technique has been applied in London and at Stockholm [16]. It is based on the overlapping of cases recorded by two or more different sorts of agency or indicator. It operates on the principle that the smaller the overlapping, the larger the total number of addicts. There are a variety of statistical applications of this principle that allow total prevalence and incidence to be estimated.

Another technique used in London was nomination, which is aimed at ascertaining, through interviews with addicts, what proportion of their addicted friends have attended specific agencies. If a sufficiently broad sample are interviewed, it is possible to arrive at an approximate ratio of the number attending agencies to the "hidden" population. If the number at the agencies is known, it is possible to estimate total prevalence.

Although these and other more sophisticated statistical techniques allow projections to be made beyond existing indicators, they all depend on the foundation of a good data base.

Administrative structures for monitoring

A major problem encountered by all participants in the study was the time and trouble that was required to collate information from different sources that were not already covered by a city-based routine reporting system. In some cases, the information requested had to be specially extracted from existing routine sources. In others, it took months before even the most basic data were supplied. Often information was obtained only because of personal contacts within particular authorities. If the contact person changed jobs, the information became more difficult to get. Where data came from different agencies, it

was usually difficult to compare, even between similar agencies with similar
clients. Thus, a fundamental requirement of improved monitoring within the
cities was an administrative structure for co-ordinating the collection and
collation of data.

The collection of consistent, standard information from different sour es,
at whatever level, requires:

(a) A centre with sufficient resources to routinely collate information,
both statistical data and the more qualitative information and "intelligence"
needed to make sense of the data;

(b) Standard guidelines and protocols for collecting and reporting data to
the collating centre;

(c) A consistent format for producing reports of the results and a
mechanism for disseminating them to planners and others on a regular basis.

It was clear that even between just seven cities, there were major
differences in terms of what sort of administrative monitoring systems were
feasible. It was not possible to present a single blueprint. The important
element of any system is that data from all the different indicators should be
routinely brought together in one place. Preferably no centre should be too
closely identified with any particular set of interests.

The two basic models proposed were a reporting system to which different
agencies would notify individuals or events and an "intelligence"-collating
forum that would bring together statistical data and other information from all
sources.

Examples of case-reporting systems have been described above. From an
epidemiological point of view, they can be most valuable. From a purely
epidemiological point of view, the "ideal" system would be a comprehensive
case register of all drug misusers known to all agencies (treatment, police, social
services etc.). In most cities, however, such a system would be impossible, not
just for reasons of confidentiality and for reasons of cost, but also because of
lack of co-operation from agencies and the fact that it would deter drug users
from seeking help.

An alternative form of reporting system is one in which anonymity is
preserved. It is not individuals who are reported, but events (requests for
treatment etc.). This avoids the problem of confidentiality, but not that of the
size of the administrative task or the cost. In addition, it is not possible to study
the overlapping between agencies or to follow cohorts of drug users through
the various services. In some cities, the problem of double-counting is reduced
to a minimum by using anonymous identifiers, such as date of birth, sex and
initials.

Whether individual data were anonymous or not, it is, in any case, unlikely
that one comprehensive reporting system would work across all medical, social
and enforcement services. This is partly because of the sheer complexity of
administering such a system and partly because different services and
administrations require different data for different purposes. It would be
counter-productive to attempt to develop a system that was all things to all

people. There are also important sorts of information that do not refer to individuals at all (seizures, price and purity, ethnographic studies and other qualitative "intelligence").

In addition to the various separate reporting systems (where they exist), there remains a need for an "intelligence"-collating centre or forum. It is also important that continuing attempts are made to improve the quality of the individual indicators and that the information from the monitoring system is supplemented by epidemiological research (ethnographic studies, surveys, follow-up studies). The formulation of such a monitoring system would involve a developmental phase before it became functional.

National information systems

National data gathering was strictly outside the objectives of this study. Every country, however, is interested in developing a nation-wide picture of drug misuse, while at the same time having information on variations within the country. A short comment is thus in order concerning the balance between national and local monitoring.

An example of an extensive national monitoring system can be found in the United States of America [17]. The National Institute on Drug Abuse is responsible for developing protocols for data reporting and for collating and analysing data from different parts of the country. It also conducts and supports epidemiological research on particular issues. The results are made available through a series of publications that are issued regularly. The advantage of such a system is that it is standardized nationally for a range of indicators and provides comparable information about areas within the country.

For many European countries, the disadvantages of a comprehensive data system of this sort is that it is expensive and cumbersome to administer, owing to the decentralization that occurs in many countries. Substantial, long-term government funding was a prerequisite in the United States. In addition, national systems can be insensitive to local circumstances unless there is also a structure for collating and interpreting locally relevant information. This can result in poor compliance with reporting unless local agencies are motivated to participate.

In this context, one model from the United States that is of particular interest is the Community Epidemiology Work Group. This consists of experts from major cities who meet every six months to report local indicators in standard format and to discuss the similarities and dissimilarities between different parts of the country. An executive summary provides a national picture with regional variations. These meetings also provide a forum for presenting reports on particular issues of current epidemiological concern (e.g. cocaine or AIDS).

In European countries, a national network of local centres, such as those recommended for the cities in this report, could fulfil the same function. Some central administrative support would be necessary, but not on the scale

required by national data-gathering systems. The development of regional reporting systems in Sweden appears to be a move in this direction. The balance between national and local monitoring would, of course, depend on the size and political structure of the country concerned.

European co-operation and comparability

Improved comparability and integration of data in Europe require an appropriate structure for ensuring that progress is made. As with the requirements for monitoring within a city or country, any attempt to monitor and compare the situation across Europe needs agreed guidelines on data gathering and a continuing mechanism or forum for receiving, synthesizing, interpreting and disseminating information.

If the reservations expressed earlier about large, national monitoring systems are valid, the possibilities of developing a pan-European monitoring system on the scale of the National Institute on Drug Abuse model are even more distant, not least because of substantial differences in the whole organization and function of the various participating institutions.

Another model for monitoring in Europe is the Community Epidemiology Work Group described in the previous subsection. One possibility might be for such a working group to operate in a fashion similar to the Pompidou Group Epidemiology Working Group, in which the experts meet every six months _(a)_ to present, in a standard format, an update on national trends and _(b)_ to produce, with the other experts, a brief report summarizing the major trends and differences across Europe. Such a forum would also facilitate the continuing exchange of information on epidemiological methods and results of new studies.

Alternatively, the possibility might be examined of setting up a European epidemiological centre:

_(a)_   To act as liaison with national centres;

_(b)_   To define, in consultation with national centres, basic protocols for reporting data (as comparable as possible);

_(c)_   To synthesize the gathered information on a regular basis;

_(d)_   To hold regular meetings to discuss the significance of the information and to identify future needs in the field;

_(e)_   To disseminate briefings on the European situation to national centres and other relevant national/European bodies.

This, effectively, would be similar to the model proposed for monitoring in a city, but adapted to a European context. It would, of course, need sufficient resources.

Any move towards European co-ordination and comparability must take place with full consultation with all relevant European bodies, notably the Regional Office for Europe of the World Health Organization, the European Economic Council and the Pompidou Group of the Council of Europe.

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