

# Developing a global perspective on drug consumption patterns and trends—the challenge for drug epidemiology

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## **ABSTRACT**

*The purpose of the present paper is to review progress made towards improving drug consumption information at a global level. The paper reviews methodological developments achieved through the collaboration of international experts and organizations in the field of drug use epidemiology at two global meetings. The first was held in January 2000 to develop a consensus on the principles, structures and indicators underpinning drug information systems, and the second in December 2001 to review methods used by regional epidemiological networks and identify opportunities for methodological development, future collaboration and improved working practices. Discussions at these meetings were successful in developing a framework for improved data collection practices at the global level, and showed considerable progress had been made in the coverage and quality of data collected. The use of drug information networks has played a key role in this developmental process by fostering the systematic collection and interpretation of data and providing a forum for the sharing of information and experiences across disciplines and geographic regions. Remaining challenges for data collection at the global level centre on the development of robust low-cost methods of collection that can be adapted to all regions of the world, as well as on the need for ongoing interregional collaboration to foster this process.*

*Keywords:* drug information systems; drug trends; drug abuse; epidemiology; methods; data collection; networks; global.

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## **Introduction**

Although there are countries that can claim successes in controlling the demand for illicit drugs, abuse throughout the world continues to grow. In particular, illicit drug abuse in some developing countries has increased dramatically. However, knowledge of the scale of illicit drug use is still inadequate, and understanding of the patterns and trends is limited. To provide effective policies to reduce drug abuse, Governments need data about when, where and why people use illicit drugs. Patterns of drug use transcend national borders, as users in all regions of the world obtain access to a greater variety of drugs, and as social trends, particularly

among young people, spread more rapidly than before through better communications. The globalization of drug use means that policies for the reduction of demand must also be global, as must the information system on which they rely.

It is not easy to obtain a comprehensive picture of the global patterns and trends in illicit drug consumption. At the global level, one mechanism exists that is designed to assemble an overview of the world drug use situation, namely, part II, entitled "Extent, patterns and trends of drug use" of the annual reports questionnaire [1]. The questionnaire is used by Member States of the United Nations to meet their obligations under the drug control treaties to report on various aspects of the illicit drug problem to the Commission on Narcotic Drugs. The questionnaire provides for global data collection on an agreed set of core drug consumption indicators using three levels of reporting: summary expert opinion, unstandardized or partial quantitative data and standardized quantitative data. While the questionnaire is only intended as a summary data set, it does provide a useful vehicle for encouraging the adoption of multi-source data collection methods and harmonized core indicators, and can provide a basic structure for data collection efforts. Countries that adopt the core measures found in the form also ensure that data collection exercises result in information that is compatible with international standards. The current picture of the global drug situation is built upon questionnaire data in conjunction with other published material on drug consumption, and relies heavily on data provided by national and regional drug information systems [2]. Even so, information on the global drug situation is sketchy, with poor quality data in many regions and lack of comparable reporting standards. Harmonization of global data collection methods and activities, the adoption of sound methods of data collection and development of capacity for data collection are key to improving the global drug information base. This paper reviews the progress made to date in achieving these aims.

### **Guiding principles of data collection**

Integral to efforts to improve international data on drug consumption is harmonization of data collection methods and activities. An important first step towards achieving harmonization was taken in January 2000 with a joint meeting of representatives of international bodies, and regional drug information networks, as well as other technical experts, to discuss the principles, structures and indicators necessary for effective drug information systems [3]. The meeting was hosted by the European Monitoring Centre on Drugs and Drug Addiction in Lisbon and was supported by the United Nations International Drug Control Programme under the Global Assessment Programme on Drug Abuse. Particular consideration was given by the international expert panel to the development of a set of core epidemiological demand indicators for assessing drug consumption at a global level. Consensus on the following core indicators of drug demand was obtained:

- (a) Drug consumption among the general population;
- (b) Drug consumption among youth;

- (c) High-risk drug abuse;
- (d) Utilization of services for drug problems;
- (e) Drug-related morbidity;
- (f) Drug-related mortality.

The indicators were chosen as they address areas in which routine data collection was considered possible, at least for some countries, and are not intended to represent a comprehensive information base required to address all information needs at a regional or national level.

In addition to gaining consensus on the core indicators of drug consumption, there was agreement on the principles that should underpin data-collection activities. The collection of meaningful data on drug consumption should be guided by the following broad principles:

(a) Data should be timely and relevant to the needs of policy makers and service providers;

(b) While not sufficient in themselves for a comprehensive understanding of patterns of drug consumption, efforts to improve the comparability and quality of data at the international level should focus on a limited number of indicators and a manageable priority core data set;

(c) Simple indicators of drug consumption must be subject to appropriate analysis before strategic conclusions can be drawn. Analysis and interpretation of basic statistical data is greatly enhanced when combined with research, both qualitative and quantitative, and with broader information on context;

(d) Multi-method and multi-source approaches are of particular benefit in the collection and analysis of data on drug consumption and its consequences;

(e) Data should be collected in accordance with sound scientific methodological principles to ensure reliability and validity;

(f) Methods need to be adaptable and sensitive to the different cultures and contexts in which they are to be employed;

(g) Data collection, analysis and reporting should be as consistent and comparable as possible in order to facilitate meaningful discussions of changes, similarities and differences in the drug phenomenon;

(h) Methods and sources of information should be clearly stated and open to review;

(i) Data collection and reporting should be in accordance with recognized standards of research ethics;

(j) Data collection should be feasible and cost-effective in terms of the national context where it occurs.

It was recognized that the identification of good methods alone is not sufficient for improving data collection capacity. It is also necessary to develop appropriate networks and organizational structures to provide the infrastructure

necessary to support data collection. There is therefore a need for improved capacity to analyse and interpret information on drug consumption, and this depends on a combination of good methods, human expertise and the availability of appropriate resources. It also requires training and technical support, ongoing political support and investment to ensure sustainability and success of data-collection systems. While expenditure on data collection must be cost-effective in terms of the resources available within a country, it should also be accepted that investment in data collection activities is both necessary and resource-efficient, in that it improves the development, targeting and evaluation of other investments in demand reduction.

### **Global situation on drug information**

Principles for collecting data on drug consumption identified during the Lisbon meeting were forwarded to the Global Workshop on Drug Information Systems: Activities, Methods and Future Opportunities, a workshop of technical experts representing drug information systems and relevant international bodies, held in Vienna from 3 to 5 December 2001. The workshop provided a collaborative forum for updating important developments in drug consumption trends; reviewing the range of methods used by regional epidemiological networks; and identifying opportunities for methodological developments, future collaboration and improved working practices [4]. The following assessment of the data collection situation is based on the outcome of that meeting, combined with a review of other relevant recent reports.

In recent years, considerable progress has been made in developing drug information systems and networks. Governments in both developed and developing countries have become more convinced of the value of this type of work and their investment in activities have correspondingly increased. New regional networks have been established and existing networks have expanded their activities. Furthermore, there has been a move towards adopting broadly similar approaches, often incorporating multi-indicator methods. To some extent, the similarity of the approaches adopted simply reflects a growing consensus on what constitutes good practice in this area. In addition, there has been a move towards adopting common reporting categories, allowing data to be more internationally comparable. These activities have improved both the quality and quantity of drug consumption information gathered.

One feature common in the development of most regional networks is the use of technical expert groups and focal points for information collection, combined with the use of standardized indicators. Regional networks have brought together countries with similar experiences and problems, which has facilitated the sharing of knowledge and development of methods sensitive to local cultures and conditions. Improvements in regional data collection capacity have been achieved through a developmental process that recognizes the need to configure data collection approaches to suit national circumstances, while appreciating the benefits of adopting harmonized measures and proven methodological principles.

Considerable opportunity remains for further collaboration between regions to share technical resources and experiences, improve the coordination of work in areas of joint interest and further support the progress made in developing common approaches and standardized measures. The development of networks also facilitates dialogue between scientists and policy makers that can help ensure that data collection meets the needs of policy formation. In many countries we now find recognition by policy makers of the value of sound information, as well as an appreciation of the infrastructure needed to provide this information.

While progress is evident, considerable challenges remain. In particular, developing low-cost surveillance methods for developing countries remains a pressing need. Although general population surveys are often used to measure the extent of drug use, these types of large-scale surveys are not viable options for many developing countries owing to the cost and logistics involved in conducting them. Moreover, such techniques do not provide accurate estimates of the low-prevalence problematic drug use more common among marginalized groups, such as injecting drug users. Other statistical estimation techniques are increasingly being utilized to estimate prevalence among marginalized populations, such as heroin users or drug injectors. These techniques are also likely to be more appropriate in countries where a mistrust of taking part in public attitude surveys may result in under-reporting of drug use. There is a need to share the experiences of countries that have used indirect statistical measures for estimating prevalence and to develop guidelines for the application of these techniques in developing regions.

One area where considerable progress has been made is in the development and implementation of school surveys. Improved global coverage and comparability of school survey methods means that this data source is already providing considerable insight into global drug use patterns. For example, the Inter-American Drug Abuse Control Commission has made school surveys one of its priority data collection areas for the Americas and expects to have data collected using a common format from all participating countries [5]. The European School Survey Project on Alcohol and Other Drugs involved 30 European countries in their last data collection round [6]. The Caribbean Drug Information Network is planning to coordinate school surveys in at least 10 countries during 2002-2003 [7], and school survey data is also available from a number of countries in Asia [8]. There is considerable potential for increasing the coverage and comparability of school survey data in the medium term, and this data source is therefore likely to play an increasingly important role as an indicator of population exposure for the purposes of international comparisons and trend analysis. It should be noted, however, that school survey data perform poorly with respect to problematic and chronic drug use (for example, heroin injecting), as these patterns of drug use are often not initiated until after children leave school and are also more likely to occur among out-of-school youth (for example, street children or persistent truants). A further challenge to improving coverage of school survey data is that in many developing countries school attendance is not universal or may end at an early age. A need therefore exists to develop strategies to improve the coverage and performance of school and youth surveys in developing countries, where the

organization of educational services places particular demands on the methodological approach.

The reporting of attendance at drug treatment remains a core element of most drug information systems. The comparability and coverage of this data is complicated by the heterogeneous nature of drug treatment provision among countries. Opportunistic inclusion of medical/psychiatric services in data collection has improved coverage in many regions, and data quality and comparability have been enhanced by the routine collection of this data and use of standard diagnostic criteria. Considerable potential exists for the development of treatment data collection through consensus on common definitions and methodological good practice, together with the adaptation of collection methods to non-specialized treatment settings providing treatment for drug-dependent individuals. Another area of potential development is the integration of epidemiological surveillance methods with clinical case management tools. Many countries are improving their information collection in both these areas. In terms of resources, it may therefore be efficient, for developing countries in particular, to look at models that provide summary data for surveillance purposes and also serve the information needs of clinicians for monitoring patients within services.

With the exception of registers of specialist drug treatment attendance, very few regions have comprehensive data on drug-related morbidity and mortality. Particular attention is being paid to the monitoring of human immunodeficiency virus (HIV) and other viral infections among injecting drug users; however, data coverage is varied and there is a critical need to improve data collection capacity in developing regions. Robust low-cost methods for estimating the prevalence of drug injecting must be further developed and adapted to developing regions. This process would facilitate estimation of the potential and achieved coverage of interventions targeting injecting drug use. In addition, mechanisms should be developed to improve the sensitivity of drug information systems to the emergence of new injecting populations. Risk-taking behaviour for the transmission of HIV should also be monitored.

The inclusion of the results of drug testing of arrestees into drug information systems is another development. This represents a relatively new indicator, but it is in an area important to policy, namely, the relationship between drug use patterns and criminal behaviour. Developments in the European Union also suggest that considerable benefit could accrue from combining epidemiological data with forensic data on the nature and composition of substances available on the illicit market. To date, this area has been poorly developed and where this information is collected it is not usually placed in the context of the epidemiological surveillance information. However, some progress is being made in using this type of information to monitor trends in new synthetic drugs across Europe. An overarching priority area in the development of data collection activities is the establishment of ethical standards in the field, in particular with regard to the use of drug registers and biological testing and in regions where procedures for ensuring ethical standards are not institutionalized. This process needs to be supported by the development of ethical guidelines for collecting information on illicit drug use.

Several measures have been identified to meet the outstanding challenges facing global data collection and to further progress already made in the field. These centre on improved interregional collaboration, in particular the sharing of methods and resources among regions in order to improve consensus on sound drug use epidemiology practices. The sharing of experiences in dealing with ethical issues in drug use epidemiology would also assist in the establishment of ethical standards for collecting data on drug use, in particular in developing regions, where such standards are not institutionalized. Generally speaking, systems should incorporate a broader range of information sources, notably information from non-institutional populations and supply-side information, to improve their sensitivity to emerging drug trends. Finally, data collection activities should be linked to policy and the implementation of demand reduction activities through an ongoing dialogue between policy makers and drug use epidemiologists.

## **Summary**

There has been much progress made recently towards improving data collection, not only in terms of the coverage of data collection activities, but also in terms of the quality of data collected and its utility in formulating policy. The use of drug information networks has played a key role in this developmental process, providing an opportunity for dialogue among different sectors of the community and among different countries and regions. Progress towards improving coverage of specific core indicators of drug use has been achieved in developing regions through the adaptation of cost-effective data collection methods, in particular school surveys and indirect procedures for estimating the extent of problematic drug use. In this regard, networks have been crucial in encouraging the systematic collection and interpretation of data from drug treatment services, as well as other data on drug-related events. Challenges remain to further improve coverage of the data collection activities and expand drug information systems to foster the development of drug-related data collection activities. Improved interregional collaboration and related sharing of technical resources will facilitate the harmonization of data collection efforts and development of methods that will allow the cost-effective monitoring of drug trends in all regions of the world.

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