



MINDFUL - Mental health information and determinants for the European level

Final technical report

Annex 5: Establishing a System to Monitor Service Utilisation Data

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A. Background

Service use data are an important complement to epidemiological data on mental health and mental disorders. Service use depends on many factors, including the incidence and prevalence of mental disorders, the availability and accessibility of services in a specific area, and also on illness behaviour of persons affected by mental disorders.

In conjunction with epidemiological data about the incidence and prevalence of mental disorders and about the needs for treatment, and together with data about actually existing services, service use data can be used to estimate whether there is underprovision, overprovision or even inappropriate provision of services and whether there is underuse, overuse or inappropriate use of services. In addition, time series of routinely collected service use data can also facilitate health economic analyses.

With this usefulness of service use data in mind, the aim of the Vienna MINDFUL project was to identify, describe, analyse and compare existing monitoring systems for mental health service utilisation at the national and international level in Europe; to identify sources of error in these systems; to suggest improvements in these monitoring systems and to elaborate recommendations how the field should develop, thereby taking into account findings and suggestions of other EU activities, such as the European Community Health Indicators (ECHI) project.

B. Procedures

Six EU countries, three “old” ones (Austria, Greece and Spain) and three “new” ones (the Czech Republic, Latvia and Slovakia), representing a wide range of mental health service systems, have participated in this project. Each of these countries was represented by a “country expert”. For each country the data flow of mental health service use data from the service level over several intermediate steps to the national and to the international level was to be described and analysed. In addition, data on psychiatric beds and on self-reports from population surveys on service use were included in the analyses.

The working method consisted in jointly elaborating structured questionnaires, schemas and procedures and in applying these questionnaires and procedures locally in each of the participating countries, with reports back to the whole group. Six two day meetings were held in Vienna, in which all country experts participated (3/4 April 2004, 9/10 July 2004, 27/28 November 2004, 11/12 February 2005, 2/3 September 2005 and 3/4 December 2005) and where – following an iterative work method – interim results were reported and discussed, which led to new questions and activities in each of the participating countries, the results of which were reported back, etc.

Both a bottom-up and a top-down approach were applied. In the bottom-up approach the data flow was analysed in each country from the service level to the national agencies (such as the ministries of health and the national statistical offices) responsible for reporting data to international agencies, such as EUROSTAT and the World Health Organization. It was found that even between only six countries these pathways are very different and difficult to compare, since data are often collected for specific purposes (e.g. for financing purposes, and the financing systems are very different from country to country). In the top-down approach internationally available databases and publications (such as the WHO-HFA database, the EUROSTAT publication ‘Health Statistics – Key Data on Health’ and the EUROSTAT Newcronos data base) were analysed in respect to their content of mental health service use data. The reports were checked for validity on the one hand and inconsistencies on the other, by combining the bottom-up with the top-down approach.

C. Results

(1) General considerations

Currently a large amount of data on the use of health services (including mental health services) is routinely collected and reported year by year in EU member states. Collecting and reporting data can occur on five levels: a) on the institutional level, i.e. on the level of an individual service, b) on the organizational level of health service providers and financiers, c) on the sub-national/regional level within one country, d) on the national level, and e) on the international level (e.g. EUROSTAT collects and publishes health service use data on a regular basis; see figure 1).

The question arises, however, how well the collected and reported data represent the actual situation of mental health service use, i.e. how valid they are. There are at least three issues which have to be considered when answering this question.

(a) Level of data aggregation, validity and reliability of data

Depending on the legal constitution of a country (federal state, centralised state) and on the financing and organisational systems of health services (tax funded, insurance system), not all five levels shown in figure 1 are involved in service use data reporting in all countries.

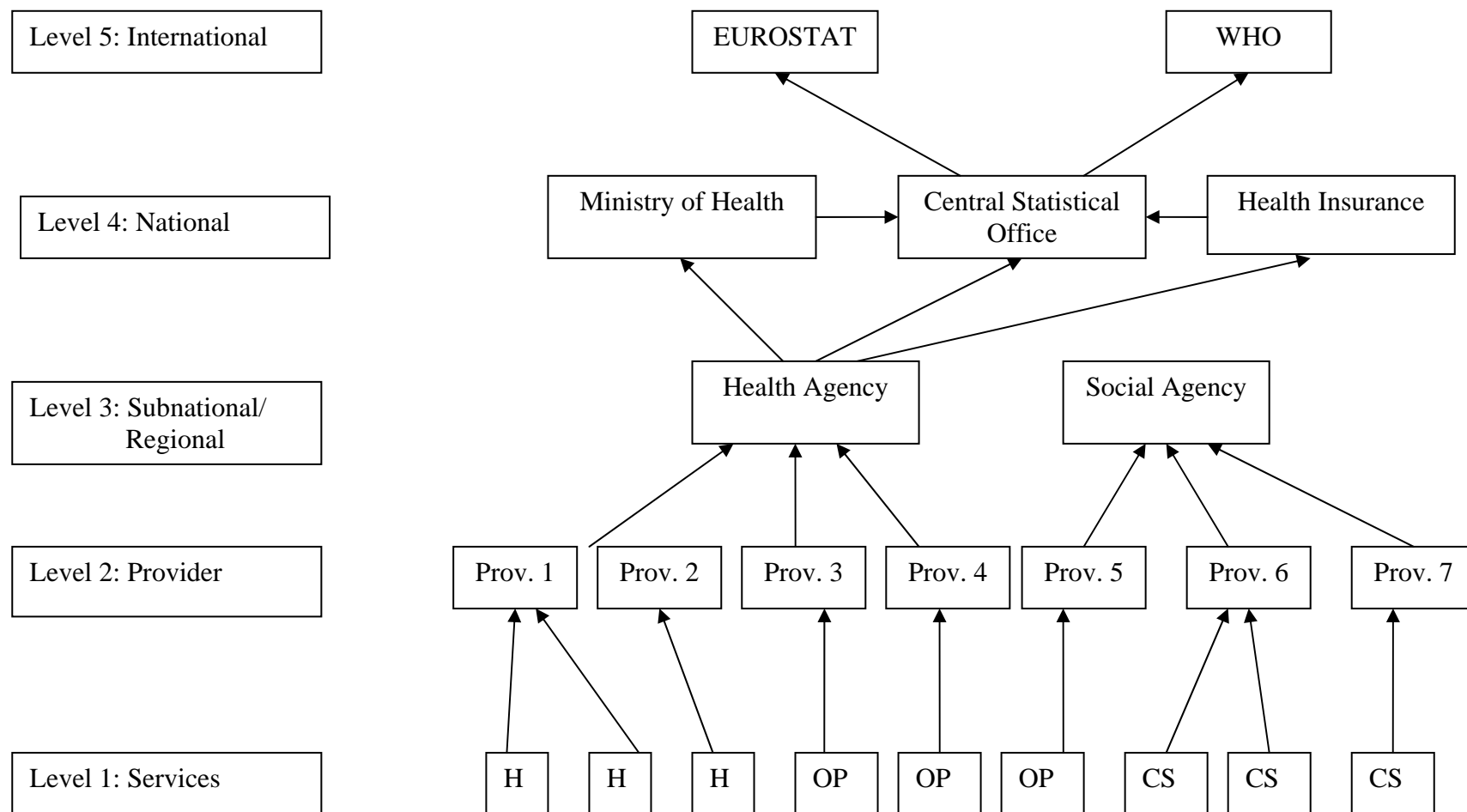
Experience shows that the more aggregate or the “higher” the level is, the fewer data are available and the less valid and reliable they are. Reasons for this include differences in the definitions of services and an ensuing lack of comparability, the high costs of data collection, and omissions in reporting due to flawed monitoring systems.

(b) Types of services covered/not covered by the reporting systems

The appropriateness of the currently collected data for monitoring the total mental health service use is questionable. On the one hand, data are often reported for a specific type of service, because they are easily available (or they are collected because it has always been done in that way, e.g. the number of psychiatric hospital beds), on the other hand, nearly no routinely collected data is available for other types of services which provide a larger amount of mental health care (e.g. general practitioners).



Figure 1: A General Model of a Reporting System of Mental Health Service Utilization Data



Prov. = Provider

H = Hospitals

OP = Outpatient Services

CS = Complementary Services

(c) Inclusion of the health sector vs. social, educational and other societal sectors

In the medical sector, data on inpatient services are more often routinely reported than on other services – this is unfortunate since today the majority of health services are provided on an outpatient basis. The situation is even less satisfying for mental health services, since many services are not provided and/or financed by the health care system, but by other sectors, such as the social and educational sectors (e.g. residential facilities, day centres, counselling services). In these other sectors routine data reporting is less established and of a minor quality than in the health sector. One possible reason is that responsibility for help is usually more decentralized in the social than in the health care sector and that in these sectors data are less often available on an aggregate level.

(2) Types of services

Mental health services are extremely manifold, both in their nature regarding place of intervention (hospital beds, residential facilities, ambulatory and mobile services, etc.) and in their financing mechanisms (tax funded, medical insurance, social budget, etc.). A tentative broad classification of mental health services for the purpose of this project is presented in table 1. Non-medical services are called “complementary” here, although this terminology might not be understood in the same way everywhere.

Table 1: Classification of mental health services according to place of intervention and responsible societal sectors

	Responsible societal sectors		
Mental health services according to place of intervention	Medical	“Social”	Others (Educational, NGOs, self-help, etc.)
Inpatient services	Hospitals	Nursing homes, etc.	Residential facilities
Day care services	Day hospitals, day clinics	Day centres, sheltered workshops	Vocational training, etc.
Outpatient services	Ambulatory services in hospitals, health centres, psychiatrists in own office, etc.	Counselling services, etc.	Counselling services, etc.
Mobile services	Emergency services, etc.	Outreach teams, etc.	Home visiting services, etc.
Telecommunication	Telephone hotlines, etc.	Telephone services, etc.	Telephone services, etc.

Grey shade = “Complementary” services

The project set out to scrutinize all types of service use data, i.e. inpatient, day patient, outpatient complementary and other service use data in the same thorough way. It turned out, though, that for other than hospital service use data regularly reported data don't exist at the international level, and – depending on the country – many also not on the national level.

This is unfortunate, since the developments of modern community psychiatry over the last few decades are not well reflected by hospital data alone. In fact, a much larger proportion of mental health care is today provided outside the hospital sector. Just publishing hospital data will therefore give a very restricted and distorted picture of the situation concerning mental health care.

In the following two sections results are reported for two types of data sources: Data generated and reported by services (3), and self-report data about mental health service use from population surveys (4).

(3) Data source 1: Data generated and reported by services

(a) Inpatient services

i) Inpatient episodes with a main psychiatric diagnosis

Usually absolute yearly numbers and/or rates per 100,000 inhabitants of hospital discharges with a main psychiatric diagnosis are reported in EUROSTAT reports (EUROSTAT Yearbook, EUROSTAT Health statistics – Key data on health and in the EUROSTAT Newcronos database). Data about hospital discharges are recorded at the time of discharge, since at that point in time also a diagnosis is available.

In addition to the numbers of discharges, in some countries related variables, such as average length of stay, numbers of one-day cases and numbers of hospital days are provided. Problems discussed below for the indicator “hospital discharges with a main psychiatric diagnosis” are also relevant for these derived indicators.

One important finding is that hospital discharge figures differ largely between EU countries, with, for instance, in the year 2000 in the WHO-HFA database 65 discharges with a main psychiatric

diagnosis per 100,000 inhabitants in Poland and 2,291 discharges per 100,000 inhabitants in Hungary. In addition, a comparison of the data on hospital discharges with a main psychiatric diagnosis shows considerable differences on the same country in the same year between different international reports, even within the different EUROSTAT data sources. For instance, data on hospital discharges with a psychiatric diagnosis per 100,000 inhabitants are more or less identical for five of those thirteen EU-15 countries for which data are available in the three EUROSTAT reports for 1999, but different for eight countries. Similarly the absolute numbers of hospital discharges with a main psychiatric diagnosis in EUROSTAT Newcronos and in WHO-HFA for the year 1999, when examined in detail for the six MINDFUL countries, were identical for four but different for two countries. The rates per 100,000 inhabitants are different for all six MINDFUL countries if the EUROSTAT Newcronos data is compared with WHO-HFA.

The project tried to identify possible reasons for these differences and discrepancies, some of which are listed below.

One possible reason is the inclusion of different types of hospitals and types of beds in different countries and in different reports. In most countries these indicators usually refer to patients treated in any type of hospital, not only in psychiatric hospitals and/or departments of general hospitals, but in some countries, e.g. in Greece, this is not the case. In most countries – but not in all - the reported resources concerning psychiatric hospital beds do not refer automatically to data on hospital discharges with a psychiatric diagnosis. Examples are:

In Austria, for instance, of 107,120 discharges with a main psychiatric diagnosis (2002) from hospitals during a one year period, only 54 percent were discharges from psychiatric hospitals and psychiatric departments in general hospitals, i.e. from officially defined psychiatric beds, while 46 percent were discharged from non-psychiatric hospitals and non-psychiatric departments in general hospitals.

In the Czech Republic the exclusion of discharges with a main psychiatric diagnosis from psychiatric hospitals is a source of error in the data published for 2000 and 2001. The discrepancy in the reported figures for hospital discharges with a main psychiatric diagnosis in EUROSTAT Newcronos and WHO-HFA 2000 and 2001 is due to the fact that the data reported to EUROSTAT Newcronos included discharges from psychiatric hospitals while in the data of WHO-HFA discharges from psychiatric hospitals are not included.

Another possible source of error is the inclusion or exclusion of day hospitals. In Austria discharges from day hospitals are included in the reported data to the international level (to EUROSTAT as well as to the WHO) and in the data published at the national level. In the other five MINDFUL countries they are not included.

A further possible source of error concerns the inclusion of non-national residents.

The differences in the reported data on hospital discharges with a main psychiatric diagnosis for Austria in EUROSTAT Newcronos and WHO-HFA are due to the fact that the data sent to EUROSTAT Newcronos contains only patients who are resident in Austria (e.g. 2001: 120,904 discharges), while the data sent to WHO-HFA contains all patients discharged (e.g. 2001: 123,154 discharges).

If a patient is transferred from one department to another department within one and the same hospital (e.g. from a psychiatric department to a department of internal medicine), this is counted as only one episode in some countries, and only the diagnosis given at the department, from which the patient is discharged, is reported (e.g. in Greece). In other countries two episodes and two diagnoses are reported under the same circumstances. An example for this is:

The differences in the reported data on hospital discharges with a main psychiatric diagnosis in EUROSTAT Newcronos and WHO-HFA concerning Slovakia are partially due to the fact that a transfer to another department followed by a “retransfer” and final discharge of a patient is counted as two discharges in the data sent to EUROSTAT Newcronos, while in the data sent to WHO-HFA such a discharge is calculated only once.

Different rates per 100,000 inhabitants in EUROSTAT Newcronos and WHO-HFA data are partly due to different population figures used for the calculation of the rates. This must be concluded from the fact that the absolute numbers of hospital discharges with a psychiatric diagnosis are identical for four MINDFUL countries and different for two countries in the two sources for the year 1999, but the rates per 100,000 inhabitants are different for all six countries in these two sources.

Other differences may be due to the fact that discharges from private/substance abuse/military beds are included in one country and in the other they are excluded.

Concerning reporting of specific psychiatric diagnoses, in the EUROSTAT Newcronos database hospital discharge data (hospital discharges with a psychiatric diagnosis, average length of stay, etc.) is distinguished according to nine groups of psychiatric diagnoses. These diagnostic groups are constructed in a way that countries which use ICD-9 as well as countries which use ICD-10 can deliver diagnostic data. This grouping is problematical in several aspects: the diagnostic groups used by EUROSTAT are different from the groups used in most countries at the national level and therefore a comparability of the data published at the international and national level is

not given. Also countries make errors in the calculation of the groups used in EUROSTAT Newcronos (e.g. one country has sent to EUROSTAT for the year 2000 not the ICD-9 groups 291 plus 303 but 291 until 303).

Another diagnostic problem relates to countries where DRG systems are used for reimbursement: in case of several diagnoses the specific diagnosis having the highest economic value tends to be reported as the main diagnosis.

One more general issue has to be added here: The indicator "hospital discharges with a main psychiatric diagnosis" does not represent psychiatric comorbidity in patients suffering primarily from physical disorders in non-psychiatric hospital beds, as the following example shows.

In Austria of approximately 234,000 discharges with a psychiatric diagnosis in 2002 107,000 had a main psychiatric diagnosis (and are therefore counted), and 127,000 had a secondary psychiatric diagnosis (with a main physical diagnosis).

One further reason for lack of comparability of hospital discharges with a psychiatric diagnosis are the different routines of whether day care episodes are included in hospital discharge data or not (see section (2) below).

As far as "one-day cases" are concerned definitions and calculation methods of one-day cases differ slightly in different countries. In Austria, the Czech Republic and Latvia one-day cases are included in the inpatient hospital statistics, in Slovakia they are included in outpatient data (duration of stay is less than 24 hours). In Greece and Spain they are included neither in the inpatient statistical data nor in the outpatient data (because outpatient data is not published).

ii) Psychiatric hospital beds

The indicator "psychiatric hospital beds" is problematic in several aspects, since many of the problems discussed above are also relevant. The calculation of the number of beds at the national level (and reported to the international level) depends on the one hand, on the official status of a hospital bed defined in the specific country ("planned" beds, "really existing" beds, "grey" beds, "actually used" beds), on the other hand on whether specialised psychiatric beds are included or not. Such specialised psychiatric beds can be beds for alcohol, drugs, children and adolescents, elderly, eating disorders, forensic, etc.

Inconsistencies in the reported data are also due to the fact that in some countries only beds in psychiatric hospitals are reported while in other countries psychiatric beds in general hospitals are included too (e.g. the number of psychiatric beds in the Czech Republic in EUROSTAT Newcronos contains only beds in psychiatric hospitals while the data published by WHO-HFA contains also beds in general hospitals).

Finally, the mathematical model of calculating the “prevalence” of the number of psychiatric beds may vary: In Austria, the Czech Republic and Spain it is calculated as an average for the year, in Greece and Slovakia it is calculated as a point prevalence as of December 31, and in Latvia both reporting methods are in use: the numbers of beds sent to EUROSTAT are calculated as an average for the year, but in the Statistical Yearbook for Mental Health Care in Latvia the numbers of beds are calculated as of the 31st of December.

(b) Day care services

Day care services (also referred to as “part-time hospitalisation”) are intermediate types of care – something between inpatient and outpatient treatment. On the one hand patients don’t stay overnight, but on the other hand they do not only show up for a short consultation with a professional (outpatient services), but stay for several hours in the service. In all six MINDFUL countries day care services (called “day hospitals” or “day clinics”) exist.

While day care is a very important component of a modern community oriented system of psychiatric care, the very flexibility of these services constitutes a difficult problem for documenting their use in a comparable way. Usually patients attend such services several or all working days of the week, but stay at home on weekends. The logical possibilities of documenting service use include: counting the days on which such services are attended (like the attendance of out patient services), defining an episode during which patients attend the service (similar to an inpatient episode), or even counting the weeks during which patients attend a day care facility (because they are “discharged” on Friday and “readmitted” on Monday). All these possibilities have been or are being used, often depending on the specific reimbursement system in a country. Comparability of day care service use is therefore less reliable than inpatient service use, while practically all reasons for lack of comparability of data, listed above, also apply to day care facilities.

No explicit data on day care are published at the international level. At the national level annually published data on service use in day hospitals is available in Latvia and Spain; in the four other MINDFUL countries (Austria, the Czech Republic, Greece and Slovakia) no data on service use in day hospitals is regularly published.

In these four countries, several ways of handling day care data could be identified. In Austria discharges from day hospitals are included in the data of inpatient hospital discharges. In the Czech Republic three possibilities exist for recording attendance at day care facilities: (1) they are reported as outpatient contacts, if the service occurs in day centres that are part of psychiatric bed facilities, (2) in some instances they are recorded like inpatient episodes, and finally (3) they are not reported at all. In Slovakia day hospital attendance is neither included in the data on inpatient services, nor in outpatient data. In Greece attendance of day hospitals is counted as an outpatient visit. In Spain three types of day hospitals exist: a) psychiatric day hospitals that belong to a hospital, b) day hospitals that belong to a mental health centre and c) independent day hospitals. In the published figures only day hospitals that belong to a hospital are included.

(c) Outpatient, mobile, telecommunication, residential and other services

These services are the backbone of modern community psychiatry with its main aim of treating and assisting patients at the place where they live or work and of providing alternatives to inpatient treatment. These services exist in many different forms in terms of place of intervention, financing mechanisms and specific purposes, and their specific patterns can often only be understood from a local historical perspective. They can basically be divided into medical and non-medical services, but this gives only a very superficial classification (see table 1).

Unfortunately not only across different countries but also within a single country variations in settings, providers and purpose are so manifold that nearly no meaningful routinely collected and reported data exist.

Concerning out-patient data the technical issue of whether visits or patients are counted complicates the field. On the national level, outpatient service use data are regularly reported in Spain, Latvia, Slovakia and the Czech Republic, but not in Greece and Austria (in Austria non-annual reports exist).

Data about particular types of services collected in specific country surveys are sporadically available, but they usually reflect an enormous amount of work over several years which cannot easily be repeated (like a recently published survey about residential facilities in Italy).

(d) Patterns of service use across services

With the increasing community orientation of mental health services both exclusively reporting about in-patient services and about single episodes (or contacts) of service use are of doubtful value. Documenting and analysing the trajectories of patients through services (the same again and again or different types one after the other) is of much more relevance, both in terms of monitoring the quality of care of the entire system of mental health services and from a health economics perspective. The latter is especially relevant since it is well known from specific studies that services are used by a small proportion of patients very frequently (the “heavy users”), while only once or rarely by others (in one specific study in Austria 10% of patients were responsible for 50% of patients days in psychiatric hospitals).

For instance, in many places the proportion of re-admissions to mental hospital beds is quite high in relation to the total number of admissions in a specific time period (the well known phenomenon of the revolving door psychiatry). While in some countries (e.g. Latvia) data on readmissions are routinely reported, there is no way of characterizing the “heavy users” of psychiatric in-patient care from such data. Besides, there is no way to find out who also used other mental hospitals or even other types of services.

Such important information about the pathways of patients through mental health services could only be obtained by personal record linkage. In some countries (e.g. Austria) data on medical in-patient and out patient care (both psychiatric and non-psychiatric) are principally available in a linkable form at Health Insurance Companies. One of the main obstacles against record-linkage so far are ethical considerations, which are especially salient in the case of psychiatry.

(4) Data resource 2: Data generated from general population self-report surveys on mental health service use

While sporadic general population surveys which report on mental health service use in the EU-countries exist, no regular reports are available. Two special Eurobarometer (EB) surveys, (EB 58.2, carried out in 2002, and EB 64.4, carried out in 2005) are relevant here (population aged 15 and above). Question 46 in EB 58.2 (corresponding more or less to question 7 in EB 64.4) is as follows:

“In the last 12 months, did you seek help from somebody in respect of a mental health problem?” If the answer is “yes”, the person is asked to indicate who of the following professionals was contacted (multiple answers are possible): General practitioner, chemist, psychiatrist, psychologist, nurse, social worker, other professional help, other (spontaneous), and don’t know.

This question does not allow the identification of the type of service where the contact was made, although it can be assumed that in most cases outpatient contacts were reported.

In EB 64.4 an additional question (Nr. 9) which is more relevant to mental health service use was asked:

“I want to ask you about your possible treatment for mental health problems during the last 12 months. Please indicate which ones of the following statements apply to your situation” (multiple answers were possible): a) been admitted to hospital due to mental health problems, b) taken drugs due to mental health problems and c) received psychotherapy due to mental health problems.

Answer b) is ambiguous, between having been prescribed drugs (i.e. having used a service) or having used over the counter drugs.

This ambiguity together with the small sample sizes and low response rates of the EB surveys (in 8 of 17 countries below 50%), makes the data obtained in this way not very useful.

D. Conclusions and recommendations

It can be concluded that data on mental health service use which are published or made accessible regularly on an international level (EUROSTAT and WHO-HFA)

- provide only a distorted picture of the actual pattern of mental health service use - because they concern exclusively hospital inpatient episodes, which in most European countries represent only a minor proportion of the total mental health service use – psychiatric beds are on the decline everywhere and outpatient, day-patient and complementary services increasingly dominate the mental health service system,
- are of low validity and limited comparability – because of the following inconsistencies
 - in defining a psychiatric bed,

- in including or excluding specific types of hospitals (e.g. substance abuse hospitals),
- in including or excluding episodes with a psychiatric diagnosis in non-psychiatric beds
- in the method of calculating indicators,
- in handling referrals within the same hospital,
- in handling diagnostic co-morbidity

and because of other reasons which have been described in detail above, and

- are of limited usefulness for epidemiological purposes and for health service planning because of the impossibility of linking service use episodes of individual patients, within the same service, let alone across different services (the problem of the “heavy users” cannot be addressed).

Based on this factual state and on ongoing developments in the field, the following recommendations for improving the present international monitoring systems for mental health service use are proposed here:

- the relevance and meaningfulness of the data, and not only their availability, should be the leading criterion for defining a monitoring system for mental health service use
- the existing hospital focused systems of monitoring mental health services utilization should be supplemented by reporting systems on day care, outpatient, residential and other types of care
- the definitions of the reported variables should be consolidated across EU member states
- reporting to the international data bases (e.g. EUROSTAT) should be made obligatory (including deadlines) with sanctions in case of non-compliance
- the development of e-health systems in terms of introducing e-cards and electronic patient records should be furthered (possibly also covering social care services) in order to provide the possibility of linking data on mental health service use for obtaining a realistic picture of what is going on in the field of mental health service use and identifying sections of the patient population who are “heavy users” - data protection aspects would have to be taken into account.

- General population self-report surveys might be a relevant source for information about mental health service use, if questions and answers are formulated in a less ambiguous way than they have been up until now