Soc Psychiatry Psychiatr Epidemiol (2002) 37: 465–474 DOI 10.1007/s00127-002-0591-2

ORIGINAL PAPER

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Provision of services for people with schizophrenia in five European regions

Accepted: 17 July 2002

Abstract *Background* An increasing diversity of public, voluntary sector and private providers offer services for the mentally ill in the ongoing process of psychiatric reform. Good service description is one important prerequisite for mental health service research. *Aims* 1) To describe service provision for the mentally ill in five European centres using the European Service Mapping Schedule (ESMS); and 2) to discuss the use of the instrument in describing service provision. *Methods* All services providing care for people with severe mental illness in five European catchment areas (in Amsterdam, the Netherlands; Copenhagen, Denmark; London, UK; Santander, Spain; Verona, Italy) were identified through various sources. The identified services were classified, and service provision was quantified in accordance with the ESMS manual. Descriptive information was obtained. *Results* We identified from 10 to 45 different services for catchment areas of between 50,000 (Copenhagen) and 560,000 (Santander) population run by three to 16 providers. They varied in aims, staffing and functioning. Hospital and non-hospital residential services, community-based services, and social support agencies were available in all sites. There was substantial variation across centres in the range, number and activities of services. Collecting comparable data sets on all service types, particularly for day and structured activity services and outpatient and community services required substantial effort. *Conclusion* Operationalised description of mental health services across Europe is possible but requires further refinement.

Key words mental health services – service description – service comparison – research instruments – schizophrenia – EPSILON

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Introduction

In the process of deinstitutionalisation of psychiatric care, psychiatric service provision has changed from a system based on large and remote institutions towards an increasing diversity of community-based services run by public, voluntary and private sector organisations (Becker and Vázquez-Barquero 2001, Thornicroft and Tansella 1999). There has also been a trend of internationalisation of psychiatric research which includes mental health service research (Sedvall 2002). In this context, good-quality description of mental health service provision is important to ensure that researchers and service planners, in different regions and countries, compare 'like with like' and to allow adequate use of the data from different service systems. Further reasons for doing comparative service studies are:

SPPE 591

- To complement the summary descriptions offered by the WHO Atlas (WHO 2001);
- To meet the needs of bodies such as the European Commission and WHO who seek to promote both greater consistency in health systems (or at least in population access to services) across the world and want to facilitate learning from country to country; and
- To give decision-makers within countries – who seek to learn from successful health systems elsewhere – more detailed accounts of services.

There have been attempts to standardise the description of services (de Jong et al. 1995, de Jong 2000) which is a difficult task in complex mental health care systems (Johnson et al. 1998). The European Psychiatric Care Assessment Team (EPCAT) developed the European Service Mapping Schedule (ESMS) to describe mental health services for the population of a catchment area provided by public sector health and social service agencies, voluntary sector and private sector providers (Johnson et al. 2000). The instrument classifies provision in a "service mapping tree" on the basis of operationalised definitions of mental health services, and it documents the associated levels of provision. It allows the comparison of service provision both at a national and international level.

Within the context of the EPSILON study (Becker et al. 1999) the objectives of this paper are:

- To describe service provision for mentally ill people in five catchment areas in European cities (Amsterdam, Copenhagen, London, Santander, Verona) using the European Service Mapping Schedule (ESMS); and
- To report the experience of ESMS use to describe service provision.

Subjects and methods

The ESMS was developed by a European research group (EPACT) including researchers from Italy, the United Kingdom, Spain, the Netherlands, Germany, and Sweden (Johnson et al. 2000). The instrument allows a structured compilation of the mental health services for adults with severe mental illness which are provided by the health service, social services, voluntary sector and private sector providers within a catchment area. The ESMS allows comparisons between catchment areas regarding the structure, range and level of provision of services.

The schedule has four major sections. Introductory questions (in section A) relate to the catchment area and the population. Service mapping trees (section B) help to categorise services for the population of a catchment area based on major service functions (residential services, day and structured activity services, outpatient and community services, and self-help and non-professional services). Service counting trees (section C) provide a method of measuring levels of service provision (per 100,000 population) in each of the major service categories on the basis of information from service providers or data bases. The service inventory (section D) gives a detailed account of the characteristics of particular services and provides a structure for compiling a full inventory of local services. A detailed manual with rules and operational definitions (available upon request from the authors) has been developed and must be followed carefully (Johnson et al. 2000).

Catchment areas

Detailed catchment area descriptions are given elsewhere (Becker et al. 2000), and the catchment areas included in the study are listed below. Table 1 presents some simple catchment area descriptors.

Amsterdam. Data were collected in Amsterdam South-East (lower and middle class population of about 110,000) of which about 50 % are from minority ethnic groups (Schene et al. 1998).

Copenhagen is divided into 14 boroughs. The study was performed in two neighbouring boroughs, Vesterbro and Kongens Enghave, with a total population of about 50,000 (Kastrup 1998).

London (Croydon) is a borough in south London with a mixed, deprived to more affluent population. Patients were recruited from Central East and West Croydon (population about 67,000; Thornicroft and Goldberg 1998).

Santander is the capital of Cantabria (Autonomic Community in North Spain, population about 560,000), a university town with a population of about 194,000, predominantly middle class (Becker et al. 2000, Salvador-Carulla et al. 2000).

Verona. Verona is a city in North-East Italy. Data were collected in South-Verona (mainly urban middle class, about 75,000 population) and two neighbouring small towns (Castel d'Azzano and Buttapietra; Tansella et al. 1998).

Identification of services and ESMS use

All mental health services providing care for the population of each catchment area were included. Services could be located inside or outside the catchment area but had to provide care for the catchment area population. Services were included if they had had contact with at least five mentally ill members of the catchment area population over the past year (ESMS manual; see Johnson et al. 2000). Services could be provided by public sector health or social care agencies, voluntary sector or private sector providers. Each service identified was entered in a service inventory (section D). All services were allocated a branch number in the ESMS tree structure. Version 3 of the ESMS was used (Johnson et al. 2000).

Table 1 Socio-demographic characteristics in five European study sites (Becker et al. 1999)

	Amsterdam	Copenhagen	London	Cantabria (Santander)	Verona
Area population (18–65)	73,454	36,581	41,636	323,851	50,455
Female[a] (%)	50	48	52	49	51
Married[b] (%)	28	21	22	47	55
Unemployed[a] (%)	16	14	7	8	9
Single-parent families[b] (%)	15	3	2	10	10

[a] denominator: population aged 18–65
[b] denominator: population 0–99 years

Procedure

The data collection procedure was as follows:

- A list of all services providing care for the mentally ill aged 18 to 65 (aged 18 + in some instances) living in the catchment area was prepared. Services were listed only if they had as a specific aim some aspect of the management of mental illness and the clinical and social difficulties related to it.
- The listed services were allocated to one of four categories: a) residential services (R); b) day and structured activity services (D); c) outpatient and community services (O); or d) self-help and non-professional services (S). Each category is defined in the ESMS (Johnson et al. 2000).
- Some services may qualify for more than one category, e. g. a psychiatric department of a general hospital. Services were included on all branches for which operationalised descriptions resulted in a reasonable fit, i. e. allocation of more than one branch number was possible.
- Numbers of beds and places (residential services) or numbers of contacts/users (day and structured activity, outpatient and community services) were counted for each service included (section C).
- For each identified category of service a separate form was completed in section D (service inventory) of the ESMS. These forms include: structure and places; goals; patient profiles; main work sites; opening hours; staffing; links between services; and system management. For each of the five study sites, this information was synthesised verbally by the authors into an overall service profile.
- Presentation of the ESMS data in graphical/table format adapted the style proposed by Salvador-Carulla et al. (2000).

Results

Data regarding numbers of services available in the various service categories and quantitative service provision (from ESMS sections B and C) are presented in Table 2 and Figs. 1–3.

Amsterdam

Structure and places: In Amsterdam 22 different services were identified and allocated to 10 different branch numbers, and there were three self-help and non-professional services (Table 2, Figs. 1–3). There were more residential care places in hospitals than in non-hospital institutions (116 vs 78 places).

Goals of services comprised: inpatient admission, partial hospitalisation, housing support, day care, sheltered living, shelter for the homeless mentally ill, residential care, voluntary and sheltered work, outpatient care, crisis intervention and support for difficult-to-engage patients.

Patient profiles were dominated by long-term patients with major mental health problems. Target groups also included: older people with psychiatric disorders, including dementia, homeless mentally ill people, patients in crisis, and people with minor mental health problems/family problems.

Main work site: Most services provided their services on site. There were some services offering help at patients' homes or other sites, e. g. police stations or hospital accident and emergency departments.

Opening hours: Service opening hours were mostly 9 a. m.–5 p. m. on weekdays. For some activities community mental health centres were also open in the evenings. Inpatient units operated 24 hours a day on seven days a week.

Staffing: Variety of staff, including psychiatrists, psy-

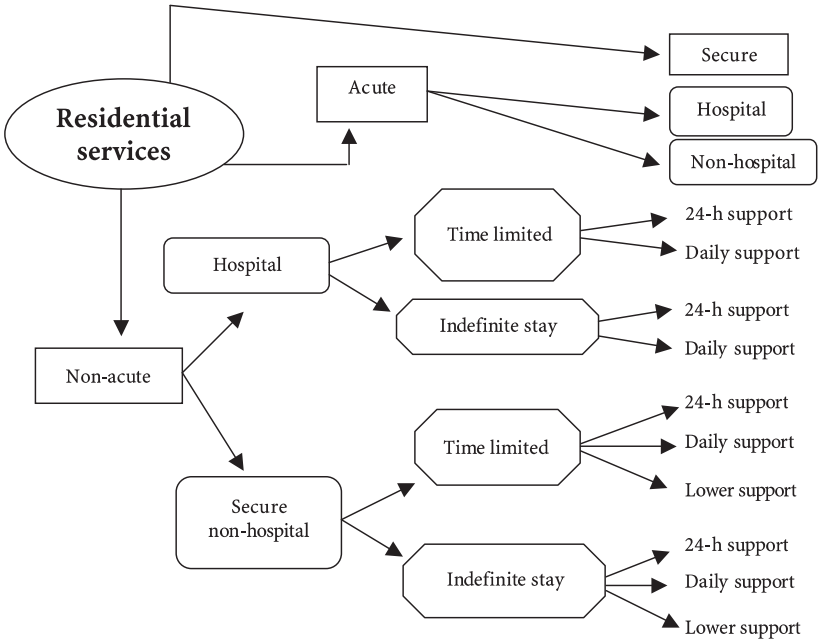
Table 2 Number of services coded on each branch of the ESMS in five European catchment areas

ESMS Branch code[1]	Amsterdam	Copenhagen	London	Santander	Verona
R1		1	1	1	
R2	2	4	5	1	3
R3			1		1
R4		2			
R5					
R6	3	1	2	2	1
R7					
R8			1		1
R9		2			
R10					1
R11		3	2	2	1
R12	3	3	1		
R13					
D1	1				2
D2		2			
D3	2	1	2		1[a]
D4	2	4	4		
D5					
D6					
D7					
D8		6			
D9		3			
O1	1	1			
O2			1		
O3		1		1	1
O4		1			1
O5	1	4			
O6	1				1[b]
O7					
O8		3	1	3	
O9	3	1			1
O10					
S branches	3	4	8		1
	22	47	29	10	16

[1] Codes for branch numbers: *R* residential services (*R1* secure, *R2* generic acute hospital, *R3* generic acute non-hospital, *R4* non-acute hospital time-limited 24 hour support, *R5* … daily support, *R6* non-acute hospital indefinite stay 24-hour support, *R7* …-daily support, *R8* non-acute non-hospital time-limited 24-hour support, *R9* …-daily support, *R10* …-lower support, *R11* non-acute non-hospital indefinite stay 24-hour support, *R12* …-daily support, *R13* …-lower support); D day and structured activity services (*D1* acute, *D2* non-acute high intensity work, *D3* …-work-related activity, *D4* …-other structured activity, *D5* …-social contact, *D6* non-acute low intensity work, *D7* …-work-related activity, *D8* …-other structured activity, *D9* …-social contact); *O* outpatient and community services (*O1* emergency care mobile 24 hours, *O2* …-limited hours, *O3* emergency care non-mobile 24 hours, *O4* …-limited hours, *O5* continuing care mobile high intensity, *O6* …-moderate intensity, *O7* …-low intensity, *O8* continuing care non-mobile high intensity, *O9* …-moderate intensity, *O10* …-low intensity); *S* self-help and non-professional services

[a] D3 + D4; [b] O5 + O6 + O7

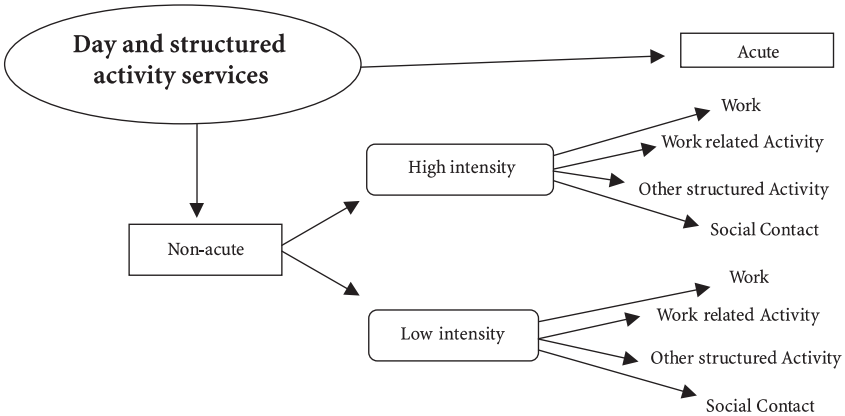
Fig. 1 Residential service provision in five European catchment areas[1] (number of beds-places/100,000).



	Number of beds-places / 100,000 in catchment areas				
ESMS code	AMS	COP	LON	SAN	VER
R1		17.5	9.4	0.5	
R2	59.0	99.2	36.7	13.3	29.2
R3			2.8		1.6
R4		95.1			
R5					
R6	57.7	66.6	14.1	75.1	22.5
R7					
R8			4.7		9.8
R9		12.9			
R10					6.5
R11		146.5	32.9	3.5	36.0
R12	78.5	90.6	5.6		
R13					
Total beds-places/100,000	195.2	528.4	106.2	92.4	105.6

[1] *AMS* Amsterdam; *COP* Copenhagen; *LON* London; *SAN* Santander; *VER* Verona

Fig. 2 Day and structured activity services in five European catchment areas[1] (number of users/100,000 per working day).



	Number of users / 100,000 per working day in catchment areas				
ESMS code	AMS	COP	LON	SAN	VER
D1	16.7				40.7
D2		11.4			
D3	14.0	29.6	28.9		48.8
D4	190.0	49.8	396.6		
D5					
D6					
D7					
D8		136.5			
D9		147.6			
Total of users/100,000	220.7	374.9	425.5	-	89.5

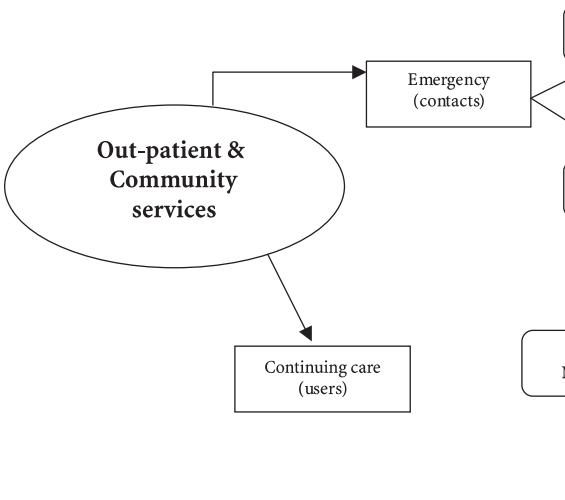
[1] *AMS* Amsterdam; *COP* Copenhagen; *LON* London; *SAN* Santander; *VER* Verona

chotherapists, psychologists, community psychiatric nurses, vocational workers, occupational therapists, social workers, family therapists etc. (Schene and Faber 2001).

■ **Links between services:** 12 of 22 services named one or several services they cooperate with.

■ **Management of the service system:** The four main agencies included the psychiatric hospital (6 services), academic medical center (3), the community mental health centre (2) and the regional institute for sheltered living (4). The other seven services were run by independent agencies.

Fig. 3 Outpatient and community services in five European catchment areas[1] (number of contacts – users/100,000 per month).



		Number of contacts – users / 100,000 per month in catchment areas				
	ESMS code	AMS	COP	LON	SAN	VER
Mobile – 24 Hours	O1	45.8	0.6			
Emergency (contacts) – Limited hours	O2			18.9		
Non-mobile – 24 Hours	O3		270		42.0	26.0
Non-mobile – Limited hours	O4					30.9
Total contacts/100,000		45.8	270.6	18.9	42.0	56.9
Mobile Non-mobile* – High intensity	O5 O8	736	1247.6	1104.6	2716.0	558.0
Mobile Non-mobile* – Medium intensity	O6 O9		10.7			
Mobile Non-mobile* – Low intensity	O7 O10					
Total users/100,000		736	1258.3	1104.6	2716.0	558.0

*data on mobilization not disaggregated in the databases

[1] *AMS* Amsterdam; *COP* Copenhagen; *LON* London; *SAN* Santander; *VER* Verona

Copenhagen

Structure and places: 47 different branch numbers were assigned to the catchment area services: 16 residential, 16 day and structured activity services, 11 outpatient and community services, and four self-help and non-professional services (Table 2, Figs. 1–3). There were slightly more beds in non-hospital institutions with indefinite stays than in hospitals (240 vs. 221 beds). These were located in psychiatric nursing homes. Day and structured activity services were dominated by drop-in centres, and the community mental health centre predominated among outpatient and community services. Only a minority of these services provided a mobile/home service. Self-help and non-professional services were scarce.

Goals for services: home-based crisis intervention, inpatient acute care, long-stay hospital and non-hospital care, outreach work in the street, drop-in centres, sports, day-time activities, support in patients' house/flat, provisional housing, schools, work, telephone counselling, educational work, contact person systems etc.

Patient profile: dominated by people suffering from schizophrenia. Some services were not registered or thought of in terms of diagnostic categories, but all services said that they would co-operate with inpatient services if acute or compulsory admissions were considered necessary.

Main work site: The place of work for staff was almost entirely at the various service sites. Many services wanted to be more mobile and do outreach work.

Opening hours: Varied from 24 hours a day down to 15 hours a week. Many services, but not the community mental health centre, were open during evening hours.

Staffing included people with different backgrounds. There were many with little traditional psychiatric education. In many services a general knowledge of ways of life or practical psychosocial matters was considered important. Twenty-two of 45 services did not have any staff with training in mental health services. Some services could receive assistance from a psychiatrist.

Links between services were scarce. Few services had formalised meetings; there were informal channels of information.

Management of the service system was rather invisible because no single person or institution seemed to be in charge of the system as a whole. This was clear from the fact that no single forum for education and evaluation of the psychiatric services existed.

London

Structure and places: A total of 29 services were identified. These services were classified on 12 different ESMS branch numbers. Thirteen services were residential, six services provided day and structured activity, two were outpatient and community services (Table 2, Figs. 1–3). There were also eight projects in the self-help and non-professional sector as well as four "pop-in" services. Most places in residential services were in acute hospital and non-acute non-hospital institutions. Day

and structured activity services were dominated by non-acute, high intensity services which offered structured activity rather than formal employment. Community mental health teams provided outpatient and community care.

■ **Goals:** acute inpatient psychiatric care, offering alternatives to hospital admission, continuing care and rehabilitation, sheltered living arrangements, help with day structure and work, enabling people to live in the community and maintain their well-being.

■ **Patient profile:** The focus was clearly on people with severe mental illness. There was one women-only service for women in crises (who would otherwise need to be admitted to a traditional inpatient service). The secure service had two units, one for men and one for women.

■ **Work site:** Staff worked mostly at the service sites. Community mental health team staff also worked outside their team bases, e. g. when they performed domiciliary visits or liaised with other agencies.

■ **Opening hours:** Residential services were open 24 hours a day, seven days a week. Opening hours in the other services varied from 35 to 63 hours per week.

■ **Staffing:** Inpatient service staff included qualified nurses, psychiatrists, but only a few psychologists. There were also occupational therapists, social workers and day care workers, particularly in services providing structured day care. The community mental health teams followed a multidisciplinary team model.

■ **Links between services** varied. Most services had links with almost every other service. Hospital wards mentioned special links with CMHCs. The role of community mental health teams in care coordination was emphasised.

■ **Management of the service system:** The hospital wards and outpatient and community services were provided by the (then) Bethlem & Maudsley NHS Trust. Other residential services were managed by Croydon Social Services which also provided day centres. Several services in Croydon were run by MIND, a voluntary sector provider.

■ Santander

■ **Structure and places:** The ten services identified were classified on six different ESMS branch numbers. Six services were residential, and four were outpatient and community services. There were no services for day and structured activity (Table 2, Figs. 1–3). There were more places in hospital than in non-hospital settings. There was substantial continuing, non-mobile high intensity outpatient care (O8). There were no mobile services, and no self-help and non-professional services.

■ **Goals** included acute admission in situations of relapse, continuing care in long-stay wards, sheltered living, outpatient mental health care and emergency care.

■ **Patient profiles,** in the various services, included all types of mental disorders. There was one male-only service, and there were two women-only services. There was one service for dangerous people or those in prison.

■ **Main work site:** Staff worked at the work sites of the various services.

■ **Opening hours:** Seven of the 10 services were open 24 hours a day. There were three services open 35 hours a week.

■ **Staffing:** In most of the services there were psychiatrists, psychologists and qualified nurses. Only a few social advisers worked in the residential services. There were no volunteers working in any of the services.

■ **Links between services:** Almost every service mentioned at least one other service with which there was cooperation. The university psychiatric department was frequently named as a collaborating service.

■ **Management of the service system:** For most of the services the managing agency was INSALUD (Spanish National Institute of Health).

■ Verona

■ **Structure and places:** There were 16 services available. Of these, eight were residential, and there were three day and structured activity services, four outpatient and community services as well as one self-help and non-professional group. Nineteen branch numbers were allocated (Table 2, Figs. 1–3). There were more residential places in hospital than in non-hospital settings.

■ **Goals,** in the residential facilities, included the provision of inpatient admission for acute patients, sheltered accommodation for severely mentally ill patients and for rehabilitation purposes. Goals, in the community mental health centre and outpatient service, comprised day care and help with daily living activities, rehabilitation groups, social support, psychotherapy, domiciliary visits and a rehabilitation programme.

■ **Patient profile:** Caseloads included acute and chronic patients with all types of psychiatric disorders. Parts of the community mental health centre activities are targeted to people in need of rehabilitation in daily living skills.

Main work site: Staff work mainly at the service sites. With the exception of hospital nurses, all staff work both inside and outside hospital. This ensures continuity of care through the different treatment phases and across the various components of care provision (Sytema et al. 1997).

Opening hours: Residential facilities were open 24 hours a day and 7 days a week. The community mental health centre was open 12 hours each day on working days and 8 hours on Saturday; other services were open from 30 to 79 hours a week.

Staffing: The service is based on a single staff model (the only other agencies being two private clinics and a self-help group with input from the psychiatrist responsible for the community mental health centre). In the inpatient service there is a ratio of one psychiatrist or psychologist per qualified nurse. In the other services there are about one doctor and one psychologist each working together with social workers, volunteers or nurses.

Links between services were close as the single staff model is applied for all the services within the Verona Community Psychiatric Service (CPS).

Management of the service system was in the hands of the (then) Institute of Psychiatry of the University of Verona; and the Verona Hospital Agency and the local level of the National Health Service are also involved. The self-help group is self-managed (user-led), and there are also two private clinics.

Tables 3 and 4 present further information in terms of (a) numerical indices (service location, opening hours, staffing, public/non-public sector divide; Table 3) and descriptive overall service profiles for each study site (Table 4).

Discussion

The mental health services in five European sites involved in a multi-site study of care for people with schizophrenia were described. The study centres all used the European Service Mapping Schedule (ESMS) to achieve this. We cannot comment on the success of the ESMS on the basis of this study, and its inherent complexity should be emphasised.

Feasibility of the ESMS

Data collection on day and structured activity services and outpatient and community services required more effort than was the case for hospital and other residential services. Effort was also required to eliminate inconsistencies in ESMS use across the centres. Further effort is required. Thus, outpatient and community contact rates in Santander were high (Fig. 3) which contrasted with the EPSILON study cost analyses where utilisation and cost of community-based care, in Santander, was relatively low (Knapp et al. 2002).

Much time was spent on comparing the data at study meetings, on counting and re-counting numbers of

Table 3 Some items describing aspects of service systems in five European catchment areas

	Proportion of services located in catchment area (%)	Opening hours/week (total opening hours per week/number of services)	Staff members per service (total staff divided by number of services)	Proportion of services within public sector health service (%)
Amsterdam	72	2288/22 = 104	13.4	68
Copenhagen	20	3506.5/44 = 79.7[b]	40.3[a]	26
London	48	2529.5/21 = 120.5	15.0[c]	62
Santander	100	1281/10 = 128.1	10.4	70
Verona	71	1698/14 = 121.3	10.4	79

[a] all staff categories including voluntary staff and others
[b] two services with no fixed working hours
[c] 7 services with no data concerning staff

Table 4 Overall descriptive service profile in five European catchment areas

Centre/catchment area	Overall service profile
Amsterdam/South-East	Diversified multi-function service with focus on severe mental illness, but including modules for other target groups
Copenhagen/Vesterbro and Kongens Enghave	Multi-component service combining psychiatric and other professional approaches with focus on schizophrenia, but limited coordination
London/Croydon Central East and West	Well-coordinated service with focus on severe mental illness and community mental health teams, some interest in self-help and non-professional sector
Santander	Clearly structured service with limited overall service number, with inter-agency collaboration and extended opening hours
Verona/South Verona, Castel d'Azzano and Buttapietra	Well-integrated community mental health service with focus on community mental health teams

places, users and contacts in the catchment areas. Data aggregation was not easy. It was necessary to discuss reference populations (to arrive at population rates), and there were differences between the services as to whether they admitted patients in the 18–65 or 18 + age range. In order to complete data collection and eliminate inconsistencies in the data some additional travelling by one of the authors (SH) was required. Changes in the presentation of results, formatting of figures and tables required correspondence with study partners to make sure no errors were introduced.

On the other hand, the ESMS exercise resulted in useful quantitative indices and some descriptive information such as the proportion of services located in the catchment area, weekly opening hours (accessibility), the proportion of services within the public sector and number of provider agencies involved (mixed economy of care). In addition, the brief semi-structured service descriptions integrating the information from service inventories helped to formulate patterns of service provision in the five regions.

Study limitations

In a previous paper the following limitations of the EPSILON study were discussed: i) the study is cross-sectional and does not allow outcome assessment; ii) wide differences in care delivery systems make data analysis difficult; and iii) administrative prevalence samples can limit the comparability between sites (Becker et al. 1999). These limitations did not affect the study component of service description reported in this paper. However, there was a limitation in the study design and implementation which was related to the description of mental health services: this was the limited a priori agreement on the detail of service description and the process of achieving this before the study began. It proved to be insufficient to have agreed on an instrument (ESMS) and the time frame which service data would refer to without having reached more detailed agreement on the process of data collection and aggregation.

Inter-site differences in service provision

On the basis of the ESMS data presented in this paper differences in mental health services across the five centres could be identified (cf. Tables 2–3, and Figs. 1–3).

- Copenhagen was found to have a well resourced and comprehensive system of mental health services with the exception of outpatient and community emergency care. There were more residential places in non-hospital than in hospital institutions which contrasted with all other sites. When ESMS data *and* information from section D were integrated the service was characterised by a wide range of services with limited coordination and a low level of system management.
- Amsterdam took an intermediate position in terms of most types of service provision. It was second lowest to Verona in terms of mobile continuing care use.
- Santander had the smallest number of mental health services identified, and it was found to have little acute hospital residential care, and day and structured activity services were not provided. There were also no self-help and non-professional services. On the other hand, community services, and outpatient services, in particular, provided care to the highest number of users (in comparison with other sites). There was one dominating provider agency (INSALUD), and the university department of psychiatry had multiple collaborative links (Vázquez-Barquero et al. 2001).
- London and Verona had a limited provision of long-stay hospital residential services, and this was in line with mental health care policy in these sites. In London and Verona the number of service providers was limited, and community mental health teams had a central position in the care system. This was facilitated by the single staff model within the Verona community psychiatric service (Tansella et al. 1998, Thornicroft and Goldberg 1998).
- There was some heterogeneity in outpatient and community services across the sites with a focus on community mental health teams in London and Verona and on outpatient care in Santander. Amsterdam took an intermediate position.
- However, in spite of substantial inter-site differences in service provision all the centres shared some elements of community mental health care.

Service provision, service cost and needs

Service mappings, service utilisation and costs are closely connected, and service cost analysis was one of the aims of the EPSILON study. Service cost data must be seen against the background of service provision. Costs of care were highest in Copenhagen where the level of provision of inpatient hospital and residential places was highest, and lowest direct costs were identified in Santander (Knapp et al. 2002). Inter-site differences in the residential segment of the care system closely mirrored differences in service costs. Thus, the data show that supply-side factors can heavily influence the utilisation and cost of care packages.

Looking at data on patient needs, in the EPSILON study, there were differences across sites (McCrone et al. 2001). Unmet needs were highest in Amsterdam and lowest in Copenhagen where the level of resource allocation to mental health services was highest. Considering specific domains of need, supply-side effects were generally moderate. As an exception, the data suggested a marked effect of differences in the provision of day care (scarce in Santander, with corresponding high need).

Use of the ESMS in national and international studies

The ESMS was developed as part of a European multicentre study (Beecham and Munizza 2000, Johnson et al. 2000). Salvador-Carulla et al. (2000) used the instrument in Spanish catchment areas. They found that the branch structure facilitated documentation, and content and discriminant validity of the instrument was adequate. The completion of the section on service use required expert help. Substantial regional differences in service provision and service use were found across the areas. Munizza et al. (2000) used the ESMS to describe mental health services in Piedmont. Both their data and the Spanish results (Salvador-Carulla et al. 2000) can be compared with the results in the present study. Total hospital places varied between about 11 and 25 per 100,000 population in Spain, their numbers ranged from 9 to 28 per 100,000 in Piedmont, and hospital provision in the EPSILON study varied from about 53–63 (Verona and London) to numbers of 89 (Santander) and 117 (Amsterdam) to a maximum of 278 (Copenhagen) per 100,000 population. In day and structured activity services total numbers of users were between about 4 and 27 per 100,000 in Spain; they ranged from 42 to 92 in Piedmont, and from about 90 to 425 in the present study. There was variation also with regard to outpatient and community services, with the number of contacts ranging from about 19 to 57 per 100,000 in the present study, while they were reported to be from 4 to 116 per 100,000 in Spain, and ranged from 35 to 55 per 100,000 in the three catchment areas in Piedmont. Böcker et al. (2001) used the ESMS to describe psychiatric service provision in 21 rural districts and 3 cities of Sachsen-Anhalt, one of the federal states of eastern Germany. Inter-rater reliability was satisfactory, and data validity was supported by official statistics. Seventy-one hospital and 13 day hospital places per 100,000 population were available. Non-acute non-hospital residential places amounted to 240 places per 100,000, with regional provision varying from less than 100 to more than 1000. Thus, use of the ESMS to describe mental health care in European catchment areas has resulted in very substantial differences in service provision.

Conclusion

Various studies have used the ESMS in European countries. Documenting day care, outpatient and community care is more difficult than recording the utilisation of inpatient care. It is useful to collect simple performance and work style indicators to supplement the quantitative indices of beds, places and contact rates.

Using the ESMS substantial completer *and* service staff time are required, and research staff using the ESMS must be well trained. In performing multi-centre trials there is a case for ESMS completion by *one* (or a few) research workers doing the work *across* the sites. This will enhance reliability in the use of the instrument. Simplifying data collection procedures could improve feasibility.

The information presented in this paper does not as yet provide a fully comprehensive picture of services for people with schizophrenia. The discussions in the research consortium throughout the three-year study and writing-up period bear witness to this fact. Therefore, the EPSILON Study Group advises that to ensure valid service description in multi-site mental health services research a variety of strategies should be combined:

- An operationalised instrument, e. g. the ESMS, should be used.
- Different levels of data aggregation should be combined to provide a comprehensive picture.
- Semi-structured, narrative service description could add relevant information; and
- Mutual site visits should complement the patchwork of data with first-person experience and discussion.

Acknowledgements The following colleagues contributed to the EPSILON Study: *Amsterdam:* Dr Maarten Koeter, Dr Karin Meijer, Dr Marcel Monden, Professor Aart Schene, Dr Madelon Sijsenaar, Dr Bob van Wijngaarden. *Copenhagen:* Dr Helle Charlotte Knudsen, Dr Anni Larsen, Dr Klaus Martiny, Dr Carsten Schou, Dr Birgitte Welcher. *London:* Professor Thomas Becker, Dr Jennifer Beecham, Liz Brooks, Daniel Chisholm, Gwyn Griffiths, Julie Grove, Professor Martin Knapp, Dr Morven Leese, Paul McCrone, Sarah Padfield, Professor Graham Thornicroft, Ian R White. *Santander:* Andres Arriaga Arrizabalaga, Dr Luis Gaite, Dr. Andres Herran, Modesto Perez Retuerto, Professor José Luis Vázqez-Barquero, Elena Vázquez Bourgon. *Verona:* Dr Francesco Amaddeo, Dr Giulia Bisoffi, Dr Doriana Cristofalo, Dr Rosa Dall'Agnola, Dr Antonio Lasalvia, Professor Mirella Ruggeri, Professor Michele Tansella.

We would also like to acknowledge the sustained and valuable assistance of the users, carers and the clinical staff of the services in the five study sites.

In Amsterdam, the EPSILON study was partly supported by a grant from the Nationaal Fonds Geestelijke Volksgezondheid and a grant from the Netherlands Organization for Scientific Research [940–32–007]. In Santander the EPSILON Study was partially supported by the Spanish Institute of Health -FIS- (FIS Exp. Nº 97/1240). In Verona additional funding for studying patterns of care and costs of a cohort of patients with schizophrenia was provided by the Regione del Veneto, Giunta Regionale, Ricerca Sanitaria Finalizzata, Venezia, Italia (Grant No 723/01/96 to Professor M. Tansella).

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