Which community care for patients with schizophrenic disorders? Packages of Care provided by Departments of Mental Health in Lombardy (Italy)

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SUMMARY. **Aims** – The treatment of schizophrenic disorders is the most important challenge for community care. The analysis focuses on packages of care provided to 23.602 patients with a ICD-10 diagnosis of schizophrenic disorder and treated in 2001 by the Departments of Mental Health in Lombardy, Italy. **Methods** – Packages of care refer to a mix of treatments provided to each patient during the year by different settings. Direct costs of the packages were calculated. Linear Discriminant Analysis has been used to link socio-demographic and diagnostic sub-groups of the patients to packages of care. **Results** – People with schizophrenic disorders received relatively few care packages: only four packages involved more than 5%. Two thirds of the patients received only care provided by Community Mental Health Centres. In the other two packages with a percentage over 5%, the activity was provided by CMHCs, jointly with General Hospitals or Day Care Facilities. Complex care packages were rare (only 6%). As well as the intensity, also the variety of care provided by CMHCs increased with the complexity of care packages. In Lombardy more than half of the resources were spent for schizophrenia. The range of the costs per package was very wide. LDA failed to link characteristics of the patients to packages of care. **Conclusions** – Care packages are useful tools to understand better how mental health system works, how resources have been spent and to point out problems in the quality of care.
Declaration of Interest: None.

KEY WORDS: schizophrenic disorders, pattern of care, community care, direct costs.

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INTRODUCTION

The treatment of schizophrenic disorders is the most important challenge for community care. As Leff (1997) asserted, the success or failure of this pattern of care is tested by the results achieved with these patients and their families.

In Italy the psychiatric reform legislation ("Act 180" of 1978) has strongly encouraged community care, but the epidemiological monitoring and evaluation of this process have often been incomplete (Piccinelli *et al.*, 2002). People with schizophrenic disorders are a high priority group in Lombardy, the most densely populated region in Italy, characterised by a well developed network of psychiatric facilities. In 2001, half of the community contacts and days spent in psychiatric wards in a General Hospital, and two thirds of day care attendances and days spent in community residential facilities were provided to these patients, that were one fourth of the one year treated prevalence. Therefore it was decided to evaluate community care, starting from these patients.

The first step in evaluating community care is the analysis of patterns of care. The rough number of patients treated in CMHCs or admitted in General Hospitals is not sufficient, because it does not analyse the integration of care between CMHCs, hospitals, day care and residential facilities and the percentage of patients treated jointly by these facilities.

Package of care is an interesting model of analysis, because it goes beyond artificial separations in analysing mental health activities, and because it focuses on the complexity of the mental health system. Following the NHS definition (NHS Executive, 1997), package of care is "a cluster of services provided to an individual based on carefully constructed components". Inside the package we find the characteristics of the patient, the type of treatment and the intensity of the care provided. Packages of care represent the mix of treatments provided to each

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patient in a specific time by different settings (CMHCs, day care facilities, general hospital wards, community residential facilities) (Lora *et al.*, 2002).

The aim of the paper is to analyse care packages delivered to people with schizophrenic disorders by psychiatric facilities in Lombardy. Packages are linked to the patients' socio-demographic and diagnostic characteristics as well as to treatment direct costs.

METHODS

In 2001, the psychiatric network in Lombardy was composed of 63 public Departments of Mental Health, 16 officially licensed private community residential facilities, 4 officially licensed private Day Centres and 3 private psychiatric clinics. In each public Department of Mental Health there were on the average 1 Psychiatric Ward in a General Hospital with 15 beds, 2 Community Mental Health Centres, 2 Community Residential Facilities and 1 Day Care Centre. As a whole, the network of psychiatric facilities consisted of 96 Community Mental Health Centres, 68 Day Care Centres (1.3 attendances per day per 10,000 population more than 15 years old), 58 Psychiatric Wards in General Hospital (1 bed per 10,000 population more than 15 years old) and 176 Community Residential Facilities (2.3 beds per 10,000 population more than 15 years old). Three private Psychiatric Clinics (0.2 bed per 10,000 population more than 15 years old) were active. Mental Hospitals did not work: the last mental hospital wards, in which long term patients lived during the '80s and '90s, were definitively closed in 1999. In Lombardy 7.926.581 inhabitants were more than 15 years old.

Data were collected from the regional psychiatric information system. As a psychiatric case register, the system collects information concerning patients (gender, age, marital status, living situation, employment, education level, date of the first psychiatric contact, date of the first contact with the Department, ICD 10 diagnosis (World Health Organization, 1992) and their contacts with facilities). The regional psychiatric information system collects data from all public Departments of Mental Health and from private day care and residential facilities. Information concerning admissions in private psychiatric clinics and outpatient contacts in private outpatient settings are not recorded in this system. In 2001, admissions in private psychiatric wards were about 6% of the total amount of admissions of patients with schizophrenic disorders in psychiatric wards.

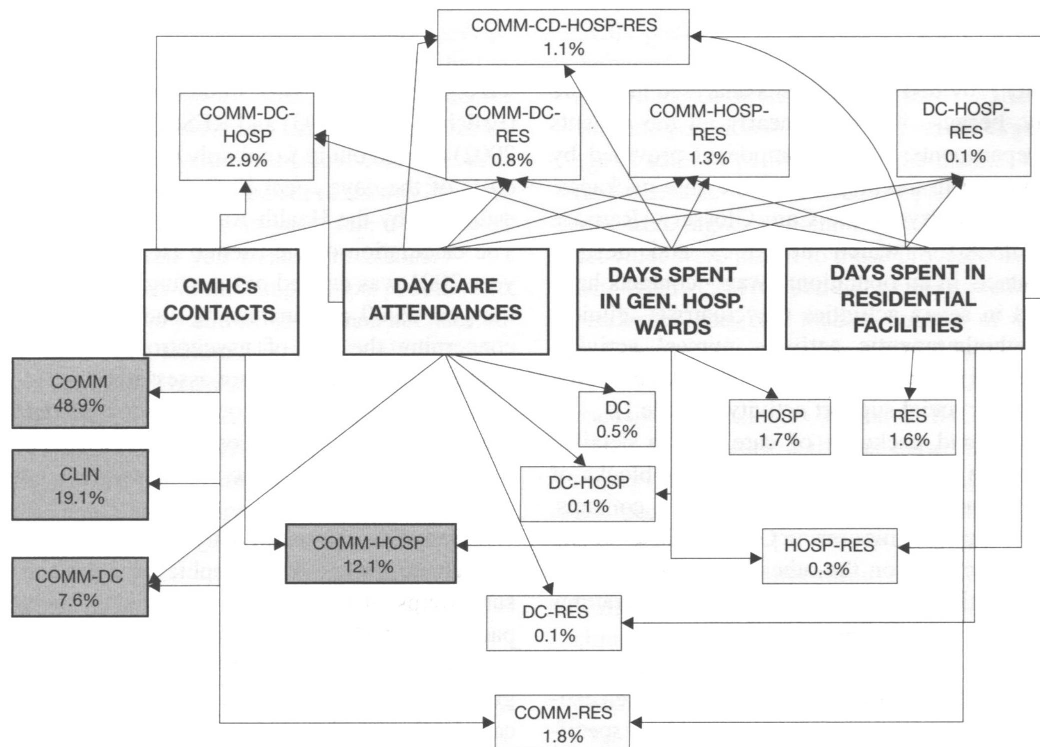

Figure 1. – *Packages of care (in grey frequencies >5%).*

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Packages of care were arranged in two steps:

- CMHCs contacts, day care attendances, days spent in psychiatric wards in General Hospitals and in Community Residential Facilities in the period between 1/1/2001 – 31/12/2001 were linked to each patient.
- 16 packages of care were identified (Fig.1), following the same scheme presented in a previous analysis (Lora *et al.*, 2002). Packages of care derive from the possible combination of four different settings (CMHCs, day care facilities, psychiatric wards in General Hospitals, Community Residential Facilities). When the care is provided only by CMHCs, the package is split in two sub-packages, clinical (CLIN) and community (COMM) packages. In CLIN packages, treatments are provided only by psychiatrists or psychologists, while in COMM packages interventions are provided also by other professionals (like nurses, social workers, rehabilitation therapists).

Table I. – *Activities and interventions provided in CMHCS.*

ACTIVITIES	INTERVENTIONS
CLINICAL PSYCHIATRISTS' ACTIVITY	outpatient clinical contact with psychiatrist, standardized psychiatric evaluation, forensic psychiatric assessment
PSYCHOTHERAPEUTIC ACTIVITY	Psychological assessment, outpatient clinical contact with psychologist, psychotherapy
NURSES' ACTIVITY	outpatient contact with nurse, nurse's home visit, administering psychotropic drugs
ACTIVITY ADDRESSED TO FAMILIES	Meeting with relatives and carers (without the presence of the patient), psycho-educational intervention, families group
CARE COORDINATION ACTIVITY	Staff meeting in the Department, meeting with other health and non-health services, meeting with social network
REHABILITATIVE AND SOCIALIZING ACTIVITY	intervention aimed to basic, interpersonal and social skills training, occupational activities or vocational training, sheltered employment activities, leisure and socializing activities, psycho-motor and creative activities, outpatient contact with rehabilitation therapist
SOCIAL SUPPORT ACTIVITY	Outpatient contact with social worker, social support

The activity provided in CMHCs is analysed in a more detailed way, because it regards nearly all the patients treated in Departments: a care component provided by CHMCs is present in the majority of the care packages. Using the regional Psychiatric Care Glossary (Regione Lombardia, 1996) - which describes and defines CMHC's contacts in an operational way - contacts have been grouped in seven activities (psychiatrists' clinical activity, psychotherapeutic activity, nurses' activity, activity addressed to families, coordination activity, rehabilitation activity, social support activity) (Table I).

On the one hand packages of care give a detailed description of the links between the building blocks of the community mental health care (outpatient contacts, day care attendances, admissions in General Hospital and in Residential Facility), on the other hand classification of CMHCs activities analyzes more in depth the features of the care provided by CMHCs.

Cost evaluation regards only direct costs related to psychiatric interventions. Individual costs have been estimated multiplying the interventions provided by a specific unit cost. The unit costs of CMHCs interventions, day care attendances and days spent in residential facilities were assessed by two multisided surveys HoNOS 2 (Erlicher *et al.*, 2003) and RESPIL (Regione Lombardia, 2002) carried out in Lombardy in the year 2000. The unit costs of the days spent in General Hospital wards were estimated by the Health Authority of Lombardy Region. The calculation of the Mental Health Care costs for the year 2001 was carried out starting from the unit costs in the year 2000 and increasing such costs by 3%. Costs concerning the use of psychotropic drugs by patients treated in CMHCs were not assessed.

Data on outpatient contacts, day attendances, day spent in facilities and costs were analyzed using the median, because all these variables were not normally distributed.

Linear Discriminant Analysis (LDA) was carried out to evaluate if socio-demographic variables and diagnostic sub-groups of the patients were linked to the different packages of care. Discarding cases presenting missing values, the data set for LDA consisted of 18.768 patients grouped into 5 classes, depending on the packages of care, and described by 8 binary-coded multistate variables. Each patient was described in terms of sub-diagnostic groups (schizophrenia, schizo-affective disorders,

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paranoid disorders, acute psychotic disorders, schizotypic disorders and other psychotic disorders, non specified psychotic disorders) and of six socio-demographic variables (gender, age, marital status, education level, living situation, paid employment). Moreover, the year of first contact with mental health services was included. Thus, we dealt with eight multistate qualitative descriptors. The multistate qualitative descriptors were binary-coded as dummy variables: each variable presenting n states was decomposed in (*n*-1) dummy variables.

For performing LDA, the 16 packages of care were grouped into five packages of care. COMM and CLIN packages were unchanged, while three new packages were defined: the first one including all patients who received residential care; the second one, including all those who received hospital care but not residential care; the third one, including all patients who received day care, but not residential or hospital.

RESULTS

Sociodemographic and diagnostic characteristics of the patients

In 2001, 23.602 persons, resident in Lombardy, with schizophrenic disorders (ICD 10 F2 diagnostic group: schizophrenia, schizotypal and delusional disorders) had at least one contact with public Departments of Mental Health and the officially authorized licensed private community residential and day-care facilities. The one year treated prevalence for schizophrenic disorders was 29 cases per 10.000 residents, more than 15 years old; it amounted to 25.3% of the overall one year treated prevalence.

As to the characteristics of the sample, most people were male (51%), more than 45 years old (57%) and not married (60%). They had a low-medium education level (77% secondary schools or less), lived with their parents (43%) and were not employed (76%). The prevalent diagnostic subgroup was schizophrenia (50%) and persistent delusional disorder (13%), while most patients (63%) had had their first contact with psychiatric services before 1995.

Care packages

In 2001 about three quarters (72%) of the people with schizophrenic disorders were treated in one setting only (mainly CMHCs), about a fifth (22%) in two settings (e.g. CHMCs and psychiatric wards in General hospitals), only 6% in three or four different settings.

Five care packages covered more than 90% of the patients (table II): packages involving only CMHCs were the most frequent (COMM package 48.9% and CLIN package 19.1%), followed by COMM-HOSP package (12.1%), COMM-DC package (7.6%) and COMM-DC-HOSP package (2.9%).

The LDA was not able to model the different classes of patients, grouped on the basis of the packages of care, by means of socio-demographic and diagnostic variables. Comparing the error rate value (0.489), that is the percent of objects misclassified by LDA, with the same value (0.485) calculated assigning all the objects to the most populated class (the so called no-model *error rate*), it results LDA error rate greater then the *no-model error rate*. The results of classification model is worst then the lack of a model. Thus, we can conclude that LDA fails to model classification of this data set.

Composition and intensity of care

1. The role of the **activity delivered by CMHCs** has been more analysed in-depth, because 96% of the patients had at least one contact with these facilities (Table II). The activity delivered by CMHCs during the year could represent the only care, as in the case of COMM and CLIN packages, or it could be joined to the activities delivered by other facilities in complex packages. Regarding the **intensity**, the median number of CMHCs contacts per patient was 13 and varied largely by package of care: in CLIN package the median was 4 outpatient contacts, while in COMM package 16. These figures were higher in complex packages, where CMHCs activities were joined to those provided by other facilities. Where CMHCs activities were joined to hospital or residential ones, the median number of CMHCs contacts per patient was 17 in COMM-HOSP package, 10 in COMM-RES package and 25 in COMM-HOSP-RES package. In packages where CMHCs activities were joined to day-care activities these figures were even higher (28 in COMM-DC-RES package, 29 in COMM-DC package, 38 in COMM-DC-RES-HOSP package and 42 in COMM-DC-HOSP package).
   Regarding the **composition** of the care provided by CMHCs (Table III), in CLIN package we find only clinical activity performed by psychiatrists. In COMM package the care was composed of clinical activity supplied by psychiatrists and nurses' activity; the same in COMM-HOSP package where the median number of outpatient contacts provided by psychiatrists was higher and some care coordination activity was present. In

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Table II. – *INTENSITY OF CARE (packages according to frequency; composition of packages, median of CMHCs contacts, day care attendences, days spent in general hospital wards and residential facilities by packages.*

Abbreviation	Composition of packages	Patient S (%)	Median of CMHCs contact S	Median of day care attendanc ES	Median of day spent in general hospital wards	Median of day spent in residentia l facilites
COMM	only community care in CMHCs	48.9%	16			
CLIN	only clinical care in CMHCs	19.2%	4			
COMM-HOSP	community - hospital care	12.1%	17		14	
COMM-DC	community - day care	7.6%	30	38		
COMM-DC-HOSP	community - hospital - day care	2.9%	42	16	16	
RES	only residential care	1.8%				364
COMM-RES	community - residential care	1.8%	10			354
HOSP	only hospital care	1.7%			8	
COMM-HOSP-RES	community - hospital - residential care	1.3%	25		24	134
COMM-DC-RES-HOSP	community - residential - hospital - day-care	1.1%	38	17	27	88
COMM-DC-RES	community - residential - day care	0.8%	28	39		80
DC	only day care	0.5%		82		
HOSP-RES	hospital - residential care	0.3%			17	328
DC-RES	residential - day care	0.1%		32		270
DC-HOSP-RES	residential - hospital - day care	0.0%		4	6	294
DC-HOSP	hospital - day care	0.0%		19	7	

the COMM-DC package the care was more diversified: beside clinical and nurses' activity, the patients received interventions addressed to the family, care coordination and rehabilitation activity. As well as intensity, also the variety of care provided by CMHCs increased with the complexity of care packages: in more complex packages the median number of interventions related to families, to coordination of care, to social support and to rehabilitation was higher, as well as the number of clinical and nurses' interventions.

2. **The day care activity** involved 13% of the patients and the median of day care attendances per patient was 30. In DC package the median was 82, while in other complex packages these figures were lower (16 in COMM-DC-HOSP package, 17 in COMM-DC-HOSP-RES package and 38 in COMM-DC package).

3. About 19% of the patients were admitted in **general hospital wards** and the median number of day spent per patient was 14 days. The median was 8 in HOSP

Table III. – *COMPOSITION OF CHIMICS' CARE (median of CMHCs contacts per patient by activities and by packages.*

	Clinical psychiatrists' activity	Psycho therapeutic activity	Nurses' activity	Activity addressed to families	Rehabilitative activity	Social support activity	Care coordination activity
COMM	5.0	–	4.0	–	–	–	–
COMM-DC-RES-HOSP	8.0	–	8.0	2.0	2.0	2.0	4.0
COMM-DC	8.0	–	5.0	1.0	1.0	–	2.0
CLIN	4.0	–	–	–	–	–	–
COMM-HOSP	7.0	–	2.0	–	–	–	1.0
COMM-RES	1.0	–	–	–	–	–	2.0
COMM-DC-RES	5.0	–	2.5	1.0	2.0	1.0	3.0
COMM-HOSP-RES	4.0	–	1.5	1.0	1.0	1.0	4.0
COMM-DC-HOSP	11.0	–	10.0	2.0	1.0	1.0	3.0

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package, 14 in COMM-HOSP package, 23 in COMM-HOSP-RES package and 27 in COMM-DC-HOSP-RES package.

4. **Residential care** involved only 7% of the patients, with a median number of 265 days spent per patient in these facilities The median was higher in RES package (364 days) and COMM-RES package (354 days), while it was lower in complex packages, like COMM-HOSP-RES (134 days) and COMM-DC-HOSP-RES package (88 days).

Direct costs and care packages

Direct treatment costs for schizophrenic disorders amounted to 115.605.030 euros (54% of the total cost of psychiatric care): about 25% concerning CMHCs' interventions, 10% day care activities, 42% residential care and 23% general hospital care.

The average cost per patient was 4.898 euros, while the median cost was 890 euros, showing an asymmetric distribution of costs (70% of the costs were taken up by 12% of the patients).

Table IV. – *DIRECT COSTS (packages according to frequency; percentage of the total costs and median cost per patient by packages.*

Packages	Patients	% of total cost	Median cost per patient (in €)
COMM	11.538	14.1%	689
CLIN	4.519	4.5%	212
COMM-HOSP	2.854	21.8%	4.723
COMM-DC	1.803	8.0%	4.733
COMM-DC-HOSP	676	6.8%	9.246
RES	424	9.7%	47.838
COMM-RES	419	9.4%	40.695
HOSP	397	4.0%	1.952
COMM-HOSP-RES	312	8.9%	34.589
COMM-DC-RES-HOSP	253	5.8%	29.082
COMM-DC-RES	186	3.5%	22.772
DC	113	0.5%	3.822
HOSP-RES	70	1.9%	49.754
DC-RES	22	0.6%	33.664
DC-HOSP-RES	8	0.2%	46.934
DC-HOSP	8	0.1%	4.676

The package costs had a wider distribution than the frequency of packages (table IV). The packages, that globally adsorbed more resources, were COMM-HOSP (21.8%), COMM (14.1%), RES (9.7%) and COMM-RES (9.4%). More complex packages, with three or more types of facilities, represented 25% of the total amount.

Analysing the median package cost per patient, we find a different order because of the different number of patients treated. The CLIN and COMM packages were the cheapest ones, while the packages with residential care amounted to over 20.000 euros per patient. The range was very wide: the ratio between the lowest cost (CLIN package) and the highest one (HOSP-RES package) was 1: 234.

DISCUSSION

This is the first epidemiological analysis in Italy, assessing at system level and in a whole region, the model of community care provided to people with schizophrenic disorders. Other analyses at regional level focussed only on a specific component of the mental health systems , like Gaddini *et al.* (2006). In accordance with the Italian psychiatric reform legislation, people with severe mental illness should be treated in the community after the closing of Mental Hospitals. However "care in the community" means mainly the supply of diversified treatments and it does not mean only that people are not treated in Mental Hospitals.

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This paper presents some limitations. First, the lack of data concerning the private officially licensed hospital providers; however, since only 1 admission out of 20 of patients with schizophrenic disorder has been made in these facilities, this limit doesn't substantially modify the figures. A second limitation , probably more relevant, is the lack of the cost of psychotropic drugs (particularly new antipsychotic ones): in this way the cost of CMHCs packages could result lower than they are.

Is the usual care intensive and diversified?

People with schizophrenic disorders received relatively few care packages: only four packages involved more than 5%. Two thirds of the patients received only care provided by CMHCs (CLIN and COMM packages), without recurring to day-care, hospital and residential facilities. In the other two packages with a percentage over 5%, the activity was provided by CMHCs, jointly with General Hospital care or day care. Care packages, with activities provided by three or more facilities, were rare (only 6%). In Lombardy Region, the most complex care packages were seldom used, even if the mental disorders are severe.

The COMM package involved about half of the patients with a moderate intensity of care and it was focused on psychiatrists' and nurses' activities. The CLIN package involved a fifth of the patients, it focused on the clinical activity held by psychiatrists and it had the lowest intensity of care. It could be assumed that this is the elective package, when mild – moderate clinical problems can be managed in an outpatient setting. The COMM-HOSP package, third in frequency, was delivered to a small group of patients (about one out of ten), whose clinical problems were so severe to request psychiatric hospitalization during the year. The intensity of care was intermediate both in Hospital Wards and in CMHCs, where the psychiatrists' activity was more frequent than other patterns of treatments. The fourth (COMM-DC package) involved less than one tenth of patients with intensive and diversified care, provided jointly by CMHCs and by DC facilities.

In regards to intensity of care, when CMHC activity is the only care delivered (such as in CLIN and COMM packages) the intensity is lower; the care becomes more intensive when it is joined with day care, hospital and residential facilities' activities. CMHCs, which deal with patients with severe disorders, increase their activity only if associated with other facilities. As well as the intensity, also the diversification of CMHC care, increased with the complexity of care packages: it is lower in CLIN and COMM packages, intermediate in COMM-HOSP and COMM-DC packages, higher in the other complex and less frequent packages.

It could be interesting to evaluate whether in other countries, which allocate more resources in CMHCs, these facilities are able to intensify and to diversify outpatient care towards the more problematic patients and, thus, replace other facilities (e.g. reducing the use of general hospital admissions). In the UK and in the US, intensive models of community care have been implemented (e.g. Intensive Case Management, Assertive Community Treatment) to help "difficult to treat" patients through an intensive community support. In Lombardy, Departments of Mental Health do not use these treatment models and, because of lower resources in CMHCs or/and different cultures among professionals, they prefer to meet these patients' needs "adding" other facilities.

Multivariate analyses and particularly cluster analysis could be used to identify care packages from mental health activities (as in Grigoletti *et al.*, 2006). In this paper the purpose of the Linear Discriminant Analysis was different, i.e. modelling the different classes of patients, grouped on the basis of the packages of care by means of socio-demographic and diagnostic variables.

This analysis should help to identify what services are supplied to whom, but unfortunately LDA was not able to classify the patients, linking socio-demographic variables and diagnostic sub-groups to packages of care. This failure doesn't enable us to understand who were the recipients of the care packages and to achieve a full picture of the mental health care in schizophrenia.

Care packages and quality of care

Care packages point out some problems in the quality of care, i.e. integration or intensity of care.

For example, continuity of care between CMHCs and other facilities should be guaranteed to patients (Thornicroft & Tansella, 1999), avoiding their "disappearance" after a discharge from hospital and residential admissions. We know from this analysis that the percentage of patients treated only by means of hospital and residential admissions in a year was low (respectively 1.7% and 1.8%). Also if this figure is only a "proxy" of continuity of care, it can be used as a broad, and in this case positive, indicator of continuity and coordination of care.

On the other hand, one third (35%) of patients treated only in CMHCs through CLIN packages received less than three contacts during the year. These data show that

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for some patients community care seems roughly insufficient, because it does not allow an appropriate assessment of the patient's needs and it jeopardizes continuity of care and therapeutic alliance. It is crucial to evaluate the complexity and intensity of care provided in CMHCs packages (particularly where these facilities are the only providers), because CHMCs treat the vast majority of patients with schizophrenia and they are at risk to provide a care not appropriate to the complex needs of these patients.

From a viewpoint of clinical governance (James *et al.*, 2005), packages of care are useful tool for evaluating more in depth clinical care and for addressing improving actions to specific group of patients (Lora, 2006). For instance, although it is generally recognized that working with families of people with severe mental illness is an indispensable task of community psychiatric services (Magliano *et al.*, 2006) , the usual care does not usually meet fully this need. In this sample about 55% of the patients, young (less than 35 years old) and living with their parents, receiving CLIN and COMM packages, did not receive any intervention specifically addressed to families (i.e. meetings with the family members without the presence of the patient; psycho educational interventions; families' groups).

More resources, but for which care?

Schizophrenic disorders are the most expensive disorders treated in Departments of Mental Health, absorbing more than half of the total amount of the resources. At facility level, residential facilities absorb more than 40% of the resources, CMHCs and general hospital wards absorb 20% each, day care facilities about 10%. The care provided by CMHCs should be the "core" of community care, because 96% of the patients with schizophrenic disorders are in contact with these facilities. However, only one fourth of the system resources are devoted to CMHCs care. Residential activity, following the massive development of community residential facilities in the last five years, absorbed more than 40% of the resources, treating 7% of the patients.

This gap, resources versus treated patients, could be acceptable only if patients with more severe disorders were treated by residential packages and less severe ones were involved in outpatient packages. But some analyses don't support this assumption. Data from RESPIL survey (Regione Lombardia, 2002), a survey assessing through HoNOS (Wing *et al.*, 1998) the severity of 1.792 patients staying in residential facilities in Lombardy, indicate that about a quarter of the patients staying in 24 hour staff-assisted residential facilities was not severe. These patients probably received inappropriate care, absorbing more resources than they needed. Other results are more optimistic: HoNOS 2 data concerning patients with schizophrenia showed that the clinical choices done by Departments of Mental Health in Lombardy were appropriate (Lora, 2006). The HoNOS scores and the severity of patients grew proportionally to the cost of the care and to complexity of packages of care: residential care was the more expensive package (about 33.000 per patient), but treated the more severe patients (average total HoNOS score: 13,5).

We have to evaluate carefully if residential packages are appropriate also in view of moving resources from inappropriate residential admissions to CMHCs care. The development of a network of residential facilities in the community should not hamper, in terms of resources, the provision of intensive and innovative community care by CMHCs. Further and more in depth analyses are needed to tackle this important issue, that it is crucial for the development of community care in Europe (Priebe *et al.*, 2005).

The way forward

W. Leginski (Leginski *et al.*, 1989) synthesized the questions a mental health information system should reply to: "Who receives what services from whom, at what cost and with what effect?" Today in Lombardy the mental health information system replies to the first 4 questions ("*Who receives, what services from whom, at what cost...*"), while routine outcome data are not yet available ("*...and with what effect?*").

Although we were not able to achieve a model for linking characteristics of the patients and care packages, nevertheless we consider care packages useful indicators to describe community care as a whole. Joining information from information system, packages of care allow at system level to describe in a comprehensive way the mental health care and at service level to direct clinicians' efforts towards clinical governance.

The way forward for future researches is twofold: on the one hand, analysing a cohort from the first contact with services, in order to evaluate changes in packages of care delivery for some years; on the other hand linking care packages to severity and outcome, in order to evaluate appropriateness and effectiveness. A better knowledge on care packages could be a useful tool to improve efficiency and innovation in psychiatric care delivery.

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