MISM: Clinical and epidemiological data of a new Italian Public Mental Health Care Model in development

"MISM" Modulo Integrato Sperimentale per la Salute Mentale: i dati clinici ed epidemiologici di una prospettiva assistenziale istituzionale in evoluzione

E. Rosini, D. Pucci, G. Calabrò, P. Girardi
Dipartimento NESMOS Facoltà di "Medicina e Psicologia", Sapienza Università di Roma, Italia

Summary

An overview is provided of the characteristics and critical aspects of a psychiatric community model that forms the basis for psychiatric assistance in Italy. In particular, the MISM (Modulo Integrato Sperimentale per la Salute Mentale; integrated experimental module for mental health) project in the Lazio region is described, which integrates assistance, research, training and teaching between a psychiatric clinic and a community health unit in Rome inspired by the guidelines of the World Psychiatry Association Action Plan (2008-2011). The indicators of success of the project (reduction in total number of hospitalisations in the catchment area) required by the Lazio region were fully achieved. In addition, the overall efficacy and efficiency of the assistance offered, along with the pilot experience of the partnership between the university and local health services considering training, research activities and teaching, were obtained without an increase in regional healthcare expenses and in accordance with local regulations. The number and types of hospitalisations over time were compared before and after the implementation of the MISM in May 2010. From a clinical standpoint, the prevalence of hospitalised patients [including those already under care (generally for recurrent acute psychotic and mood disorders) and those experiencing first contact with psychiatric services] increased in recent years, because of the second ones, with shorter hospitalisation times.

Objectives

The aim of this study is to describe the psychiatric health care management of a territorial catchment area through the partnership between a University Hospital agency for acute patients together with public psychiatric network agencies, sharing common clinical guidelines.
The goal of the research is to evaluate quality of this partnership through a specific goal, consisting in assessing the amount of hospitalizations per year, from 2010 onward, confronting these results with those of preceding years.

Key words

Community psychiatry • Outpatient center • School of medicine • Catchment area

Introduction

Psychiatric assistance in Italy is based on a community model [1]. Community mental healthcare is founded on deinstitutionalisation; the need to reduce the level of dependence on assistance required; better utilisation of non-professional resources; greater level of patient participation in decision-making processes [2]. In Italy, over time, there has been sporadic reorganisation of psychiatric services, one example of which is the experience of the South Verona Community Mental Health Service [3]. The South Verona CMHS, provides a comprehensive and well-integrated spectrum of services to a population of about 100,000 inhabitants who live within a defined geographical area in the south of Verona. These services include: in-patient, day patient and out-patient care, rehabilitation, community care (including home visits), a 24-hour emergency service and residential facilities for long-term patients. The clinical model, a public health one, is characterised by continuity of care – both longitudinal continuity (through the different phases of treatment) and cross-sectional continuity (through the different components of the service) [4].

A particularly important aspect of the system in Verona is "the single staff model", where each patient is assigned to a particular psychiatric team and is followed by a member of the staff (the "case manager"). Case managers may be doctors, psychologists or senior nurses. All staff work both inside and outside the hospital setting, and retain responsibility for the same patients across different components of the service and through all phases of treatment. This system was designed to ensure continuity of care, both longitudinal continuity and cross-sectional continuity.

Correspondence
Enrico Rosini Dipartimento NESMOS U.O.C. Psichiatria Ospedale Sant'Andrea, via di Grottarossa 1035-9, 00189 Roma, Italia •
Tel. +39 06 33775668 • Fax 06 33775399 • E-mail: enrico.rosini@ uniroma1.it

While respecting the basic assumptions of community care, which direct the organisation of services, some of these changes have been maintained [5 6].
The goal of local mental health services, as reinforced by national objectives defined during 1998-2000, consists in understanding the needs of and caring for patients with severe mental health issues. This priority thus defines the major aims and justifies several basic premises: their public nature (not necessarily to provide service but to take responsibility); deliver services to the entire territory; the organisational model adopted (such as the facilities used and standards of care); a multidisciplinary approach and centralisation of the management team; a proactive approach to care that neither questions nor refuses treatment; development of high-risk, targeted interventions (e.g. in prison settings); the assumption of active protection against highly impaired clients (which are complex from both technical and ethical viewpoints); the extension of intervention to social insertion of severely compromised patients in employment and support networks; defend against social stigma; involve family members in treatment as an essential component of care in interventions aimed at overcoming social isolation [7 8].
Such a guiding philosophy is becoming increasingly widespread in economically advanced countries [9], but it still unclear how this is being applied in Italy. In this regard, the process initiated in the 1980s (1978) appears to have slowed down, with the risk that this may lead to marginalisation within the international psychiatric community [10].
The reasons behind such anomalies in Italy also involve a reduction in economic resources over the last decade (from 2000 to 2007 per capita health expenditure grew less than the OECD average). Moreover, some of the most resistant obstacles to change include: residual ideologies, not necessarily political, which even if well-intentioned, have created a hierarchy in which individual professionals govern clinical processes; a progressive lack of interest in scientific publications that can provide guidance for patient management, except for the use of diagnostic categories from recognised classification systems [11].
In this regard, and considering the increasing need for 'accountability' [12], it would appear that greater focus should be placed on the quality of intervention (including user satisfaction and quality perceived by family members) [13], overall expenses and competitiveness between care facilities. Ideally, this could lead to closure of less efficient facilities [14] and redistribution of resources. It is also necessary to review the organisation of services, where each facility is autonomous and free of specific geographic constraints, and able to function without considering other facilities within the same territory. On the basis of this hypothesis, community psychiatric services should be accurately evaluated on the basis of proven efficacy, and those based on evidence rather than political requisites should be privileged. This prospect is still not possible in Italy, which has given less attention to planning and establishing goals, with the creation of services oriented only towards 'needs' [15]. Another negative consequence is the lack of attention given to user participation in treatment choices and in reducing their dependency on services, and not considering the patient as a valid participant in the therapeutic partnership [16 17].
In some European countries, the emergence of new social and youth problems and increased demand has been met with greater determination than in Italy, where the percentage of spending on mental health has reached 9% of healthcare resources [18 19].
Franco Basaglia believed that scientific research carried out in a university setting could produce knowledge that is separate from the harsh reality of a psychiatric hospital, and assumed that academic and scientific research had little connection with practical issues. The professionalism advocated by Dr. Basaglia was more pragmatic than scientific. Indeed, the Italian law on deinstitutionalisation and psychiatric reform (Law 180) makes no mention of the role of the university and psychiatric clinics, and limited their activity to voluntary admissions within the framework of the National Health System.
In fact, Law 180 abolishes hospital psychiatric clinics, and limits their objectives to training and teaching within the university. Due to this law, which no longer allowed university-based psychiatric assistance, universities were forced for decades to train healthcare professionals in hospitals and ambulatory clinics independently of the university, and participated in daily clinical activities that had little to do with training, teaching or research. Only recently have universities become reinserted in patient management with the opening of clinics in community hospitals, even if their overall contribution is still modest and only a small proportion of university psychiatric clinics are directly involved in management of community metal health.
On the other hand, management, which relies on costly organisation of complex healthcare resources such as those in community psychiatric services, should concentrate on selected key parameters: objective evaluation of efficacy and efficiency of care, health status of clients, quality and efficiency of therapeutic processes, innovation and development of the skills needed to overcome potentially negative processes where operators tend to assume neutral roles in order to become interchangeable operators that can 'do everything' [20-22].
As reiterated in the National Project Objective (1998-2000), the mission of psychiatric services is to take care of individuals affected with severe mental health disorders. The largest proportion of human and economic resources are utilised in the treatment of severe psychiatric

disorders in adults, although it is increasingly evident that emerging disorders are also having substantial impact: recurrent episodes in adolescents and young adults, over time, can lead to severe psychotic disorders; personality disorders; dual diagnoses; eating disorders; comorbidities with somatic disorders or in older individuals; youth unrest. Such disorders have the potential to become epidemic, with subthreshold aspects that can lead to their underestimation [23].

Over the last 15 years, two mental health projects have been undertaken that have contributed to the development and organisation of current mental health services, even though the role of the university has been minimal. In reality, universities have been largely excluded from projects aimed at reforming psychiatric services in Italy.

University psychiatry, which is responsible for training over 95% of psychiatric healthcare personnel, must have an increasing role in hospitals and in territorial services. At the same time, in specialised training centres, 30-60% of teaching is carried out by those involved in local psychiatric services. The university now has the opportunity to play a more active role in training healthcare operators and to be a driving force between the evolution of scientific psychiatry and economic-organizational services with the framework of public assistance.

Organisation of the m.i.s.m. project

The present study describes the clinico-epidemiological results, the organisational aspects and the specific objectives, established Lazio Region, of the MISM pilot project (*Modulo Integrato Sperimentale per la Salute Mentale*; integrated model for mental health), based on a partnership between the university and community psychiatric services in terms of client assistance and a network of local hospital and territorial facilities. We have tried to adopt the guidelines of the WPA Action Plan 2008-2011, Community Mental Health Care [24].

The protection of mental health in a defined geographic area was thus entrusted to a Department of Mental Health in which a University Psychiatric Clinic has been inserted.

The MISM began its activities in May 2010 based on decrees from the Lazio region, and a protocol was agreed the Department of Mental Health, university and Sant'Andrea Hospital regarding exchange of personnel.

The objectives of MISM, established as 'indicators' by the Lazio region, were reduction in admittances to the emergency department and hospitalisations in the geographic areas covered by the project. The catchment area, facilities and operators primarily affected by MISM include:

- Regional healthcare system ASL RMA IV (population 130,000);
- Mental Health Centre (C.S.M.), via Lablache, 4;
- Ambulatory Facility (C.D.), via Pasquariello, 4;
- Sant'Andrea Hospital Psychiatry Department (Sapienza University of Rome).

Interns at the Department of Psychiatry divided their time between the hospital and satellite facilities, consisting of: regular shifts, following patients and tutoring by senior psychiatrists; regular emergency department shifts; home visits; individual and group psychotherapy (recent techniques introduced by the regional mental health care centre) [25]; participation in regular organisational and training meetings.

Starting November 2012, weekly multifamily group psychotherapy sessions were held in the ward, that involved healthcare operators, in-patients and families and at outpatient facilities at later dates: preliminary reports show an increased compliance to treatment, in the next six months from dehospitalisation, for those patients and their families involved.

The in-hospital management schemes and collaboration between caregivers tended to follow the overall characteristics of the multidisciplinary team at local facilities [26].

Moreover, the degree programme for technicians in psychiatric rehabilitation at Sant'Andrea hospital, which is a joint collaboration with the university and Mental Health Care, allowed for mobility of personnel during training [27] [28] [29].

Statistical analysis

Descriptive statistics were used in studying the catchment area data, with quantifiable data expressed as mean ± standard deviation, and socio-demographic and clinic factors as frequency and percentage. Statistical analyses were performed using the Chi square (χ^2) and Kruskal-Wallis test.

Results

Figure 1 shows the number of hospitalisations from 2008 to 2014: total number of hospitalisations, total number of hospitalisations in the catchment area and number of 'first' hospitalisations at the Department of Mental Health. As can be seen, there is an increase in the number of hospitalisations from 2010 onwards when MISM was instituted.

Figure 2 shows the trend of the number of hospitalisations since 2008 to 2014. It shows the total amount of hospitalisations, the total number of in-patients, the number of previously-hospitalised (known patients) and first hospitalisations patients (unknown patients) at the Mental Health Centre. It can be seen that the number of hospitalisations of already-known patients decreased after implementation of the MISM, while those for first hospitalisations increased. There was a statistically significant difference between the two groups, known *vs*. unknown patients ($p < 0.001$).

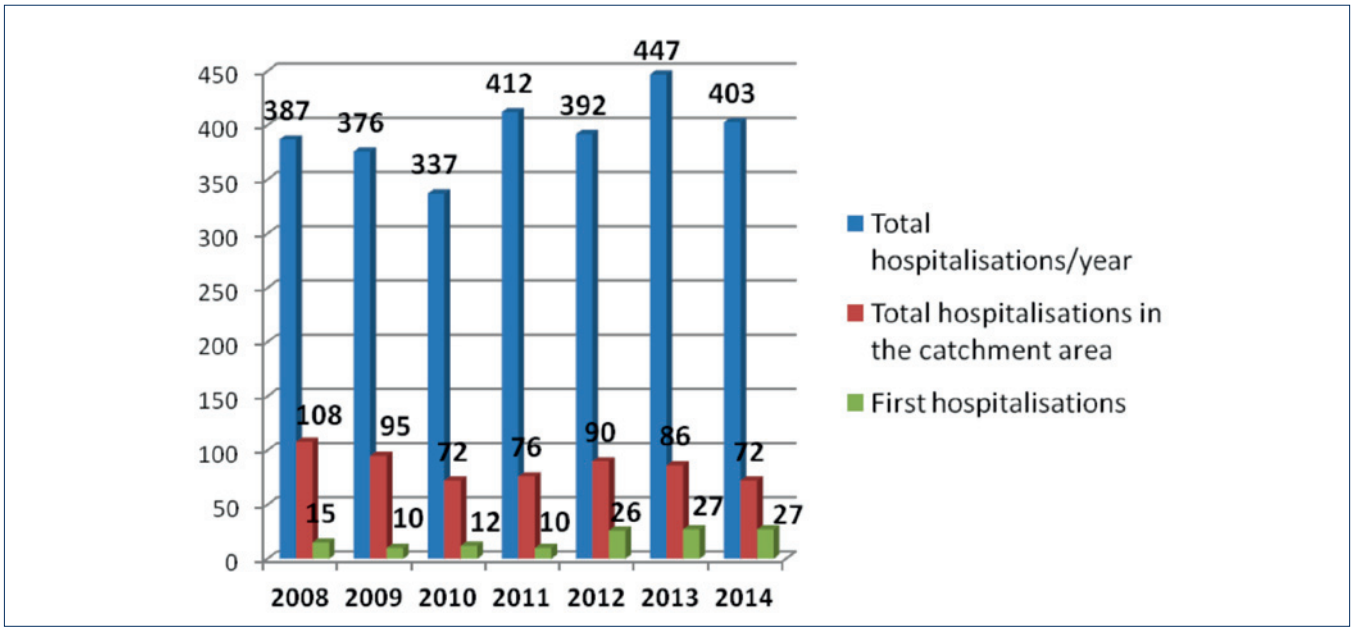

FIGURE 1.
Hospitalisations during the period from 2008 to 2014. *Ricoverati totali in S.P.D.C. dal 2008 al 2014.*

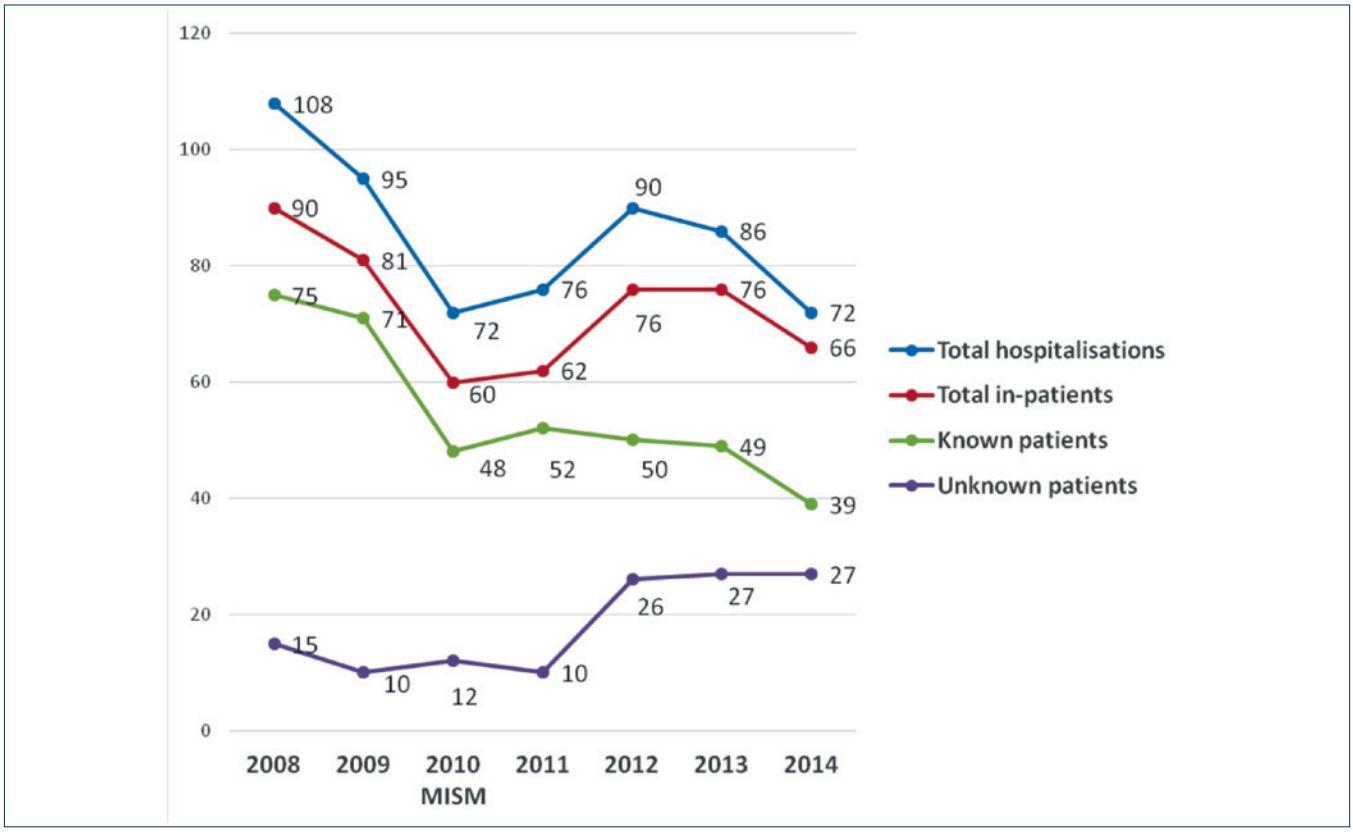

FIGURE 2.
2008-2014 trend of hospitalisations. Chi square test between known *vs* unknown patients ($p < 0.001$; $\chi^2 = 30.61$; 6 d.f.). *Andamento delle tipologie di ricovero dal 2008 al 2014.*

TABLE I.
Clinical and epidemiological characteristics of first hospitalisations during 2012-2014. Details first hospitalisations over the last three years. *Caratteristiche clinico-epidemiologiche dei ricoveri di pazienti sconosciuti ai Servizi dal 2012 al 2014.*

Year	Patients	Mean age* (±SD)	Mean age males§ (±SD)	Mean age females† (±SD)	Reactions %	Psychoses %	Affective disorders %	Non-voluntary hospitalisation %	Non-Italian %	Substance abuse %
2012	26	39,5 (±15.2)	42,1 (±16.1)	38,4 (±15.1)	23	38	39	46	23	18
2013	27	40,3 (±13.8)	36,0 (±12.7)	47,7 (±12.9)	41	22	37	22	26	33
2014	27	39,7 (±13.5)	36,4 (±9.7)	43,2 (±16.3)	22	44	33	41	19	30

* § † Kruskal-Wallis test ($p > 0.05$).

Discussion

The MISM project was initiated in May 2010. During the first 6 months of this innovative network of psychiatric facilities, a decrease in the number of hospitalisations by about 15% at the Department of Mental Health was observed in the catchment area over the previous reference year. Figure 1 shows the number of in-patient recoveries at Sant'Andrea hospital from 2008 to 2014: the total number of yearly hospitalisations can be compared for known and previously-unknown patients, both from the catchment area. Considering this, there was a decrease in the number of overall hospitalisations after the project was initiated, from 108 in 2008 (29% of total), to 72 in 2014 (18% of total).

During 2012, an increase (n = 90) in the total number of hospitalisations was observed in the catchment area compared to 2011 (n = 76), although there was a deep increase in hospitalisation for first episodes (26 in 2012 and 10 in 2011). These were generally attributed to acute psychotic episodes in young patients, and recurrent episodes in middle-age patients: thus these were individuals who had not been in previous contact with psychiatric services, or who had had first contact within two weeks prior to hospitalisation. The tendency towards a net increase in previously-unknown patients was also seen in 2013 and confirmed in 2014, although a decrease in total hospitalisations was also observed. The large number of hospitalisations compared to the previous year could be attributed to a shift in economic resources in Rome and surrounding areas in which some facilities were closed due to structural reorganisation, with a corresponding increase in the patient load at Sant'Andrea hospital.

There was, therefore, an increase in hospitalisations for first episodes during the last years. On one hand, this can be attributed to the ability of psychiatric services to meet increased demands, while on the other it also represents the expression of a phenomenon of diffuse social and economic malaise as some clients may no longer be able to afford private care, in contrast with past years.

These patients, previously unknown to psychiatric services, had a higher mean age than analogous patients in previous years (Table II). Thus, these are not young patients with a first symptomatic psychotic episode, but older patients with prevailing affective symptoms. In 2012, 11 of these hospitalisations, or 46% of the first 26 hospitalisations, were non-voluntary. Moreover, non-voluntary hospitalisations were distributed homogeneously in terms of age (an index of severity of symptoms and independent of age). Thus, these recoveries did not involve only young patients with a first symptomatic episode and poor compliance to therapy, as was generally observed in previous years.

During 2013, and confirmed in 2014, a slight increase was observed in the number of first hospitalisations as seen in Figure 2. In addition, there was an increase in the frequency of substance abuse, largely cannabinoids, and an increase in the proportion of males hospitalised, with a mean age that was greater than that of hospitalised females; the proportion of non-Italian patients remained unchanged. The changes in diagnostic categories observed, along with the percentage of non-voluntary hospitalisations compared to the previous year, are worthy of note. In 2013, the mean length of hospital stay for patients with first hospitalisations was 7.8, while it was 12.9 days for those who had been hospitalised before 2013.

During 2013, the presence of significant symptomatology, even if of uncertain diagnosis upon admission, was sometimes referred to as "Brief Reactive Psychosis", nonetheless required hospitalisation and demonstrates that there was a reactive component at the basis of the disorder.

In our patient cohort, we often observed manifestations of life events that were frequently related to the economic crisis, especially in low income families, where there was a deterioration of relationships both within families and

TABLE II.
Socio-demographic and clinical characteristics of patients in the catchment area. Summarises the socio-demographic and clinical characteristics of patients in the Catchment Area from 2008 to 2014. *Caratteristiche cliniche e socio-demografiche dei pazienti provenienti dalla Catchment Area dal 2008 al 2014.*

Year	Total hospitalisations	Hospitalisations in catchment area (N)	Hospitalisations in catchment area (%)	Patients with first hospitalisation (%)	Non-voluntary admissions with first hospitalisation (%)	Mean age at first hospitalisation (±SD)
2008	387	108 (90)	28%	15 (14%)	9 (60%)	25,3 (±3.5)
2009	376	95 (81)	25%	10 (11%)	6 (60%)	27,2 (±5.3)
2010 May MISM	337	72 (60)	21%	12 (17%)	4 (33%)	27,6 (±7.4)
2011	412	76 (62)	18%	10 (13%)	5 (50%)	28,3 (±7.5)
2012	392	90 (76)	22%	26 (34%)	11 (46%)	38,3 (±14.1)
2013	447	86 (76)	19%	27 (35%)	4 (22%)	40,4 (±13.2)
2014	403	72 (66)	18%	27 (56%)	15 (56%)	39,7 (±13.5)

social surroundings, involving Italians as well as the outsized immigrant population.
Moreover, it was apparent that there is widespread substance abuse due to the easy availability of illegal drugs [30]. Even if there is a recognisable cause, intervention is not made easier, given that it requires economic, pharmacological and psychotherapeutic interventions that are rendered difficult by the lack of trained personnel and resources.
In Figure 2 an interesting trend can be observed over time between the proportion of known patients and those with first recovery. During the present project, a decrease in hospitalisations of previously-known patients was noted, which can be interpreted as an indicator of the quality of service provided. This is in consideration that there was less need for in-patient hospitalisation among those followed by Community Mental Health Services, generally involving chronic schizophrenic and affective disorders.
Figure 2 shows the number of hospitalisations of patients who were already known to psychiatric services, which relative to previous years before the institution of the MISM, was around 50 per year. This would seem reasonable based on the population base of 130,000. It is possible to believe that this number could be further reduced, as it happened in 2014, if additional resources were available. It is, nonetheless, a valid indicator of the authenticity and quality of the project in that it describes stable but improved efficiency of the organisation of care provided.
Table II details the characteristics of the population in the catchment area over time, including the number of overall first hospitalisations and proportion of non-voluntary in-patient recoveries. In the most recent years, this was about 20% of total hospitalisations, which is in agreement with decrease seen after the initiation of the MISM project.
If one considers that characteristics of the study population in the catchment area (Table I), it can be seen that in 2013 there was an increase in the mean age of female patients, while that of males remained stable compared to 2012, with a consequent slight decrease in female mean age in 2014.
In recent years, the 'revolving door' problem has been somewhat reduced, even if numerically very limited, through better integration between various facilities and insertion of patients in community therapies.
Figure 3 summarises the diagnostic categories at discharge in the catchment area during the period of study. The high percentage of 'other' is related to the increase seen in recent years of dual diagnoses, comorbid symptomatology and personality disorders. Schizophrenic disturbances are more frequent than mood disorders, which confirms observations in previous time periods.

Conclusions

1) In our opinion, for decades there has been outdated management of Mental Health Departments that has created intractable fractures in satellite and hospital services, with little communication, which has led to deficits in knowledge and the quality of care. Such a situation is undoubtedly far removed from a clinical approach based on efficacy and accountability, and can bring about reciprocal distrust and tensions among healthcare operators. It is our belief that our study favoured integration between the university and the Department of Mental Health, as well as innovative organisation and guidelines, which led to benefits in terms of therapeutic continuity.
2) After about five years, many of the objectives of the MISM have been achieved – at no additional cost –

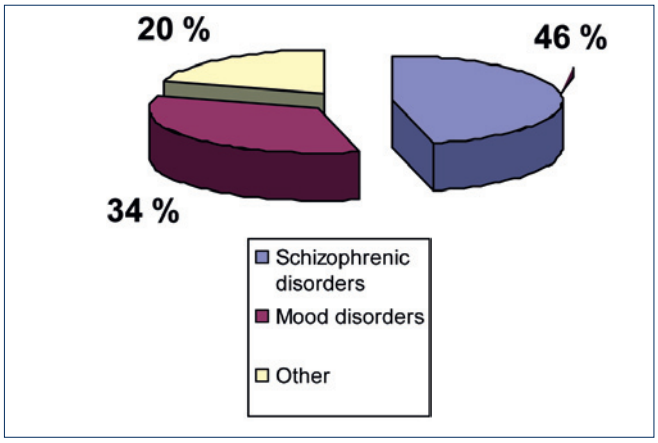

FIGURE 3.
Overall percentage of diagnoses at discharge from 2010 to 2014. *Diagnosi alla dimissione dal 2010 al 2014.*

and further provide evidence of its value. One important objective, in addition to respecting already Lazio Region established indicators: reduction in the number of emergency admissions and hospitalisations in the catchment area. These proportions would be even smaller if the increase in first recoveries over the last three years was not considered.

3) This positive data can be attributed to the development of a clear statement of the overall philosophy and tangible objectives of the project, which will be the subject of future efforts. This positive data can be attributed to a greater presence of psychiatric services on a local level and better coordination with the hospital, thereby rapidly meeting the needs of the entire population through better utilisation of available personnel.

Conflict of interests
None.

References

1 Ferranini L, Peloso PF. *Il modello dipartimentale in psichiatria*. In: Ferranini L, ed. *Politiche sanitarie in psichiatria*. Milano: Masson 2003, pp. 31-8.

2 Maj M. *Mistakes to avoid in the implementation of community mental health care*. World Psychiatry 2010;9:65-6.

3 Thornicroft G & Tansella M. *Per una migliore assistenza psichiatrica*. Roma: CIC 2010, pp. 31-46.

4 Thornicroft G, Tansella M. *The Mental Health Matrix. A Manual to Improve Services Health Matrix*. Cambridge University Press 1999.

5 Payne M. *La costruzione dei piani assistenziali nelle cure di comunità*. Erickson Trento 1998;27-32.

6 Priebe S, Slade M. *Evidenze scientifiche per la Salute Mentale*. Il Pensiero Scientifico Roma 2003;13-37.

7 Ferranini L, Commodari E. *Il DSM: modelli e strumenti della psichiatria di comunità*. In: Ferranini L, ed. *Politiche sanitarie in psichiatria*. Milano: Masson 2003, p. 53.

8 Thornicroft G, Tansella M, Law A. *Steps, challenges and lessons in developing community mental health care*. World Psychiatry 2007;7:87-92.

9 Asioli F, Berardi D. *Disturbi psichiatrici e cure primarie*. Roma: Il Pensiero scientifico 2007;72:96.

10 Grassi G. *Priorità limiti e confini del DSM*. Psichiatria di Comunità 2007;6:28-36.

11 Scorza G. *Il lavoro d'èquipe tra mito e realtà*. Psichiatria di Comunità 2007;6:55-61.

12 Mistura S. *Motivi di qualità in Psichiatria*. In: *Psichiatria e garanzia di qualità*. Bologna Editrice compositori 2002.

13 Montemagni C, Birindelli N, Giugiario M, et al. *Miglioramento clinico e soddisfazione del paziente come indici di qualità nel ricovero psichiatrico*. Giorn Ital Psicopat 2012;18:40-8.

14 Ducci G, a cura di. *Buone pratiche in SPDC*. Collana Psichiatria D'Urgenza. Roma: Aipes 2010, pp. 32-46.

15 Gabbard GO, Kay J. *The fate of integrated treatment: whatever happened to the bio-psychological psychiatrist?* Am J Psychiatry 2001;15:1956-63.

16 Prince JD. *Determinants of care satisfaction in inpatients with schizophrenia*. Comm Ment Health J 2006;42:189-96.

17 Tatarelli R, De Pisa E, Girardi P. *Curare col paziente*. Roma: Il Pensiero Scientifico 1998.

18 Dirigenza Medica 2007;3;12-15.

19 Dirigenza Medica 2009;6:1-4.

20 Tibali G, Govers L. *Evidence based hope. La proposta di una prospettiva comune*. Psichiatria di Comunità 2009;5:117-129.

21 Munizza C, Donna G, Nieddu S. *Finanziamento e management del Dipartimento di Salute Mentale*. Bologna: Il Mulino 1999, pp. 119-60.

22 Colozzi I, a cura di. *Sociologie e politiche sociali*. Milano: Franco Angeli 1998;2:6-69.

23 Mc Gorry P. *Is the early intervention in the major psychiatric disorders justified? Yes*. Br Med J 2008;337:695-702.

24 Maj M. *World Psychiatry Action Plan 2008-2011*. World Psychiatry 2009;8:65.

25 Badaracco JG, Narracci A. *La psicoanalisi multifamiliare in Italia*. Torino: Antigone 2011;17-31.

26 Bassi M, Maurizzi A. *Qualità e accreditamento nei DSM*. In: Ferranini L, ed. *Politiche sanitarie in psichiatria*. Milano: Masson 2003;191-5.

27 Liberman RP. *La riabilitazione psichiatrica*. Raffaello Cortina 1997, pp. 37-49.

28 Perone R, Bartolini L, Pecori D, et al. *Risultati del Social Skills training applicato a pazienti con sindromi psicotiche*. Giorn Ital Psicopat 2011;17:413-24.

29 Corrigan PW, Larson JE, Rusch N. *Self stigma and the "why try" effect: impact on life goals and evidence-based practices*. World Psychiatry 2009;8:75-81.

30 Rosini E, Calabrò G, Pucci D, et al. *La doppia diagnosi nel SPDC: uno studio clinico trasversale*. Dipendenze Patologiche 2013;1:15-20.