Follow-up after Involuntary Mental Healthcare: Who Cares?

Emergency Compulsory Admission and Continuity of Care in Rotterdam, the Netherlands

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Follow-up after Involuntary Mental Healthcare: Who Cares?

Emergency Compulsory Admission and Continuity of Care in Rotterdam, the Netherlands

Nazorg bij gedwongen psychiatrische opname: wie zorgt?

Opname krachtens inbewaringstelling en continuïteit van zorg in Rotterdam

Proefschrift

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PART I: BACKGROUND

1

Introduction

Case Presentation and Study Outline

‘Chronic mental patients are frequently barred from access to care by the very nature of their disabilities. In this situation, continuity, ideally, implies the availability of an enabler who will assist the patient in gaining access to the system.’

Bachrach (1981)

Compulsory admission and continuity of care: a case presentation

In 2000 Dutch television broadcasted a documentary, filmed by Hans Polak, about people who neglect themselves and their social environment. The film shows public mental health workers visiting people who fall outside of the regular healthcare system. These people live on the frayed fringes of society, such as a man from a wealthy family who lives in a faeces-stained apartment, an old organ-grinder sharing living and working space with a heroin prostitute, a mentally disordered woman who keeps hundreds of mice as pets, an old and lonely opera singer who rarely leaves home, and an addicted couple who have lost parental rights. This opening chapter follows up on the case of the (formerly) addicted couple – names have been omitted to ensure privacy; the couple has given written permission to publish their story. Our study showed that in the period 2000 – 2006 no fewer than 81 social workers or nurses, spread over about 25 health and social services, have been involved in the case.

> *The addicted woman and her partner, living together as an unmarried couple, have German and Italian nationality respectively. They have been living in the Netherlands since the eighties. In this case presentation, the woman is referred to as the patient. At the time the documentary was filmed, her son was about eleven years old and had been living with a foster family for some years. Immediately after she was born, the daughter, in the documentary just over one year, was placed in foster care by a juvenile court on request of the Council for Child Protection. Because of staggering debts, the couple moved house repeatedly; through the alcohol and drugs clinic they rented a badly maintained and sparsely furnished apartment in the private sector. There, everything went wrong when the woman suffered a heart attack, most likely because of cocaine abuse. Her partner called for help, but because of language problems, the local ambulance service did not respond immediately. By the time ambulance nurses arrived,*

alerted by a neighbour, the partner's resuscitation efforts were misinterpreted as domestic violence. He was taken to the police station but was allowed to return home soon afterwards. In a comatose state, the patient was taken to a general hospital, where a specialist diagnosed that she had an anterior wall myocardial infarct. After ten days of artificial respiration in the intensive care unit, the patient woke up from her coma and recovered well physically. However, her mental condition did not improve (possibly differential diagnosis post-anoxic encephalopathy: brain damage because of lack of oxygen after cardiac arrest). This was the starting point for a long march through health and social services. Based on medical records, we identified some of the problems and processes that stood in the way of more effective continuity of mental healthcare.

No comprehensive approach

One of the obstacles to continuity of care is that services start from their primary tasks instead of from a comprehensive, objective and independent assessment of a patient's needs. Consequently, health and social services can transfer patients to other service sectors without deciding on a healthcare plan in consultation with other appropriate stakeholders.

At the beginning of November 1999, the general hospital asked the Municipal Health Service for an assessment for a follow-up admission to a nursing home accommodation for the homeless. The patient was stealing from other patients, and because of her behaviour, she could no longer stay on the cardiology ward. According to the Municipal Health Service, however, referral to services for the homeless was not the most obvious route to take, because the patient had a home. Moreover, it became clear that alternatives, such as admission to a psychiatric hospital, had not been considered. Next, the patient was examined by a psychiatrist allied to the hospital, who made a provisional diagnosis of personality disorder, intensified by substance abuse, and paranoid features. The patient

> *showed impaired judgement/disordered thinking, lack of insight and lack of illness awareness. There was loss of memory to the extent that the patient had forgotten that she had given birth to a daughter and formerly had used drugs (presently no craving). The psychiatrist concluded that there was no primary psychiatric disorder and also no ground for compulsory admission. The patient was incontinent, and dependent on social support, but was discharged from the general hospital without adequate care being in place to support her.*

Polak's documentary shows how, at the beginning of 2000, medical and social support was being offered by Municipal Health Service nurses in the context of the responsibilities of local government for public mental healthcare. In cooperation with the municipal social service, the patient's health insurance was safeguarded and a social-security benefit was arranged supplementary to her partner's wages for working part time in a pizzeria. Additional household goods were provided, so that the patient no longer had to sleep on a mattress on the floor. With help from the local service for alcohol and drug users, contraceptive injections were arranged and treatment for her teeth was started. By the end of 2000 / beginning of 2001, the patient was accompanied to a rehabilitation centre for weekly treatment of her claw-hand deformity, caused by nerve damage through injecting intravenously. However, therapy had no effect because of her limited learning abilities. In order to take better care of the fully infected hand, a surgical correction was carried out in January 2002.

Lack of engagement

A second difficulty in continuity of mental healthcare is lack of engagement by psychiatric and social services. In some cases, compulsory admission becomes inevitable because of escalating problems.

> *The alcohol and drug clinic stopped treatment because the patient no longer belonged to the target group and her partner failed to keep his appointments. Efforts to find care arrangements elsewhere failed because, for instance, homecare service*

> *considered the task not feasible. However, the patient's need for care did not decrease. During 2002, her physical and mental condition deteriorated: she lost weight and withdrew into herself, alternated by aggressive moods. The patient showed wandering behaviour, and several times she was found on the streets in a state of catatonia and was brought to an emergency service. She experienced catatonic states more and more frequently. At the end of 2002, the patient ran away from home, and through the ambulance service the Municipal Health Service found that she was in the city park in a state of catatonia and that an emergency compulsory admission had been issued. At first, she was admitted to a psychiatric hospital anonymously because no conversation was possible. Because of aggressive behaviour, she had been isolated for some days and was subsequently transferred to a nursing department. Her hospital stay became problematic as it proved difficult to take corrective measures, and her behaviour did not seem to be affected by medication (chloorprotixeen).*

Lack of consultation

A third difficulty is the lack of consultation between local public services involved, with the result in this case being that, during the compulsory admission, the patient's home was cleared. Because of vermin, drug misuse and dealing, the house was put on the 'nuisance premises list', and a so-called Mayor's closure was executed. The local authority failed to provide accommodation elsewhere.

> *Her partner passed the night in his car, and for a time the patient too was in danger of being turned out into the street. An application for sheltered living was submitted, but could not be completed. No follow-up compulsory measure had been applied for, so that after expiration of the emergency compulsory admission, her stay was on a voluntary basis, and she could leave the hospital at any time. At the urgent request of the Municipal Health Service, neuropsychological tests were admi-*

nistered to gain an insight into the patient's physical and cognitive decline. Meanwhile, in a neighbouring municipality new accommodation was arranged through the community-care network (a collaboration of primary care services).

Lack of follow-up

A fourth problem in the continuity of mental healthcare is that there are few quality criteria for discharge after emergency compulsory admission. Therefore, aftercare is not guaranteed, and it is difficult to call individual health and social services to account for their performance.

Without consulting the partner, the patient was discharged from the psychiatric hospital and was taken by taxi to her new address. However, she ended up looking at a closed front door with only a rubbish bag for a raincoat. The hospital discharge letter was addressed to her former general practitioner, although it should have been clear from the information available that there had been no contact for several years. According to the discharge letter, the patient was diagnosed with psychosis in remission, personality problems, behavioural disorder, and multiple drugs abuse, although current drugs abuse was not proven. The letter mistakenly designated the Municipal Health Service as the follow-up institution. De facto, no general practitioner, and no transfer to outpatient mental healthcare had been organized.

In mid-2003 a local platform that investigates problems of coordination in public mental healthcare discussed this matter under the title of 'Mrs Murphy'. On behalf of this platform, the head of the Municipal Health Service called all parties involved to account for the events. The psychiatric hospital replied that the usual procedures had been followed and suggested that the patient could take the matter up with the hospital's committee of complaints.

Many rules; lack of coordination

A fifth obstacle to better continuity of care is the complexity of rules and regulations, and the lack of efficient coordination. Sometimes legal matters and specific social care arrangements contradict one another, and there is no professional panel to call all parties to account for their actions.

> *In their new hometown, the couple's problems piled up faster than quick fixes could be thought up. Rotterdam ended the supplementary benefit, and initially the municipal social service did not adopt the same regulation owing to suspicion of illegal employment and an unclear immigration status. Living expenses were not paid for several months, as a result of which there was a constant threat of water and gas shut-off, an eviction order, and even imprisonment. The national office to collect parental contributions was quick to send in the bailiffs for a claim of several thousand euros, almost immediately followed by someone from the judicial collection agency with unpaid fines for drunk driving and for illegal use of public transport. Because of several changes of personnel due to ill health or career moves, it took months before the local debt help service got into stride.*
>
> *In a meeting of all parties concerned, including the city councillors responsible, mental health services were pressed to start treatment and psychiatric homecare. The response, however, was hesitant because aftercare and financing were uncertain. A request for specialized homecare had been approved, but the difficulty was that the patient did not let the social workers in when she was home alone. It proved hard to find a general practitioner accepting new patients. The nearby GP's office reluctantly agreed to make a house call only when the patient fell down and had to be taken to hospital with a severe eye injury. Again, the patient's physical and mental condition deteriorated. In a temporary psychotic state and undernourished, she was admitted voluntarily to a psychiatric hospital mid-2004 for a period of about four weeks, but only after her*

partner could be convinced that she would stay in another hospital to the one in which she stayed at the time of the emergency compulsory admission.

At the end of 2004, an assessment procedure for sheltered living was started, but that procedure had to wait for the patient's residence permit. It turned out that even after eight months the matter had not yet been taken under consideration by the national immigration office.

Because of the lack of coordination in public mental healthcare, the couple continued to have personal liberties that did not create a more stable household. During the patient's voluntary admission, the son ran away from his foster home and moved in with his parents. The father considered the son an extra caretaker, but it soon transpired that the patient was being maltreated by her son. Childcare was fully informed but did not intervene, and at the beginning of 2007, the case was closed as the boy turned eighteen. It was difficult for the patient to understand that she could press charges, and her partner trivialized the abuse to avoid taking sides.

At the beginning of 2005, the application for sheltered living came through, but the couple rejected nearby accommodation and chose instead to wait for a place to become available from another project. Repeatedly, social workers noticed that there was hardly any food or drink in the house. But only as late as 2005, a financial governance procedure was started to get complete control over the couple's spending.

At the end of 2005, the couple moved back to sheltered living in Rotterdam, and again someone at the municipal social service found it necessary to end the supplementary benefit. The son was placed in a boarding school, but in early 2006 he ran away and again moved in with his parents. The patient's physical and psychological abuse continued.

Towards more transparency

After the patient's first hospital admission for heart failure, it was evident that it would be very difficult, if not impossible, for her to live on her own. However, it took about three years to effectuate intensive tenancy support, and even then, living conditions were far from ideal. This case study has pointed out a number of factors that show the negative impact of lack of continuity of mental healthcare. It is not the intention here to point the finger at one specific part in the chain of services, because there are no simple solutions for complex problems. For 'Patients Non Grata' effective support comes down to the intensive cooperation of health and social services and the creative handling of existing rules and regulations.

A recurrent problem in this case history is the transfer between different links in the chain of public mental healthcare. Dutch law does not explicitly include an aftercare arrangement that meets the 'Care Programme Approach', the framework for discharge planning and aftercare in the UK. This approach involves assessing the patient's healthcare and social care needs, developing a care plan agreed by all stakeholders, identifying a key worker or case manager, and monitoring the delivery of the care plan in view of the patient's progress (Bindman and Glover 2001). The third committee on the evaluation of the Dutch Act on Special Admissions in Psychiatric Hospitals, however, has given an initial impetus to allow the Netherlands to come to an approach following the British example. In the general report, the Evaluation Committee is in favour of regional psychiatric care committees, concerning the full trajectory of compulsory admissions, from preliminary work for the court's decision to psychiatric follow-up after the patient's hospital discharge. Given the far-reaching nature of compulsory admission, the committee argues that the principle of reciprocity obliges society to provide the necessary aftercare as well as housing accommodation, means of livelihood, meaningful day-activities and social support. The aforementioned regional committees should be authorized to call all parties in public mental healthcare to account for their actions, including psychiatrists involved in aftercare and social services and housing corporations, which have to provide supportive arrangements for a group of patients difficult to facilitate (Evaluatiecommissie Bopz 2007).

In anticipation of a revision of the Act on Special Admissions in line with the Evaluation Committee's proposals, the physician directors of psychiatric hospitals in the Rotterdam region have agreed on closer supervision of follow-up after compulsory admission. The 'Rotterdam Standard' involves, among other things, that the intended follow-up professional is consulted in the development of the care plan. In addition, transfer of patients should be arranged like 'tiled windows', meaning that the first aftercare contact takes place in the clinic, and follow-up starts within two weeks after discharge. Participating mental healthcare services will explore opportunities for introducing regional electronic patient records to improve information continuity. In the national 'Plan of action on social loss and public nuisance', the Dutch government has already indicated their support of initiatives to evaluate the surplus value of an 'Aftercare under Supervision' register (Tweede Kamerstuk 2004-2005, 29325, no. 2).

Although formal procedures are important, high-quality follow-up after compulsory admission is in part a matter of professional principle to make problems in the chain of services a subject of discussion. Therefore, case presentation in psychiatric journals should not only concern creative diagnosis and treatment combinations but also give systematic attention to sources of error in mental healthcare. In 2002 the American journal *Annals of Internal Medicine* started a new series of case presentations to highlight errors and near accidents and general quality issues. The series editors evaluated individual cases, based on the exploration of medical documents and interviews, and in some cases were invited by the hospital concerned to investigate internal quality procedures. In a case conference model, results were discussed with national experts on patient safety and quality control in order to focus on the general issues underlying the specific case presentations (Wachter et al. 2002). This kind of transparency merits copying by journals covering public mental healthcare.

Study Outline

The above case of Murphy's Law in public mental healthcare brought about the onset of this thesis, which aims to evaluate the quality of mental healthcare after emergency compulsory admission. This general objective is translated into research questions that cover basic types of evaluation studies:

- Normative: If follow-up on voluntary admission is considered the norm, does aftercare following emergency compulsory admission meet the same standard?
- Impact studies: Do differences in psychiatric service delivery affect patterns of care and use of compulsory admission?

This thesis is divided into four parts: background, method, results, and conclusions and discussion.

Part One (Background) is concerned with key concepts: continuity of mental healthcare, and emergency compulsory admission. Continuity of care has been linked to diagnostic accuracy, medication adherence and reduced hospitalization (Haggerty et al. 2003; Reid et al. 2002). According to the Health Council of the Netherlands (2004), continuity of care is one of the basic principles of mental healthcare for severely ill patients in acute need, who often avoid contact with health services. Continuity of contact, as operationalized in the following studies, implies sustaining long-term connected care for severely ill patients in a coherent way, by creating an accessible and flexible service continuum and documenting the process of rehabilitation. Regular contact is a prerequisite for building a strong personal relationship, ensuring that treatment goals are adapted and met following patients' changing needs over time, and for monitoring the acuteness of patients' problems and changes in social circumstances. In the first part of Chapter 1, a case report described the use of compulsory admission in the context of a lack of continuity of care. The number of emergency compulsory admissions of psychiatric patients has more than doubled in the Netherlands in the past 25 years. Chapter 2 outlines

the increase in the number of emergency compulsory admissions in the Rotterdam area from 1929 to 2005. Continuity of care is identified as one of the contributing factors to fluctuating patterns over a period of more than 75 years and is considered a valuable mechanism for the prevention of emergency compulsory admissions.

Part Two (Method section) deals in general terms with monitoring psychiatric services. Chapter 3 analyzes the rise and fall of psychiatric case registers in the UK, as an example for a national mental healthcare information strategy in the Netherlands and the strategic positioning of psychiatric case registers in mental healthcare research. Chapter 4 is a follow-up on reviews of case-register research in the eighties and nineties. Literature searches were conducted to determine whether case registers still have a role in mental healthcare research and service monitoring. In Chapter 5 the features of the Psychiatric Case Register for Rotterdam-Rijnmond are outlined. This includes a brief case-register history and illustrations of some methodological pitfalls encountered in Dutch studies using administrative data.

In Part Three (Results), complementary record linkage studies demonstrate the evaluation of continuity of care for emergency compulsory admission. Continuity of mental healthcare is operationalized in service-use indicators that link different types of care. Chapters 6 to 8 make use of panel data (probing the state of affairs at a number of time points) or dynamic data (determining the sequence of mental healthcare events during an observation period). These types of data are analyzed at patient level or in ecological research designs, which gives distinct types of case-register evaluation studies.

Chapter 6 deals with changes in the distribution of types of mental health care in a cohort of patients with an emergency compulsory admission. What are common patterns of care before and after the admission? If follow-up after voluntary admission is the norm, does aftercare following emergency compulsory admission meet the same standard?

Chapter 7 looks at regional differences in admission rates, case-mix, length of stay, and event sequence data. Is continuity of mental

healthcare associated with the level of integration of services? Do differences in deinstitutionalization and sectorization affect patterns of care after involuntary admission?

Chapter 8 uses panel data in an ecological intervention study. Is the rate of emergency compulsory admissions lower in neighbourhoods with coordinated care and assertive outreach as a result of community support systems and early involvement of emergency psychiatric services?

Part Four (Conclusions and Discussion) summarizes the results of the studies and looks into the implications for clinicians and policymakers. Chapter 9 summarizes the findings to answer the main research questions, and points out the strengths and weaknesses of the study, which indicate a multilevel perspective of continuity of care that can direct new interventions and additional research. The epilogue takes the discussion one step further by exploring the continuum of types of coercion and illustrating public mental health policies to decrease the number of compulsory admissions. These recommendations are linked to the preceding chapters but are not necessarily derived from study results reported in this thesis. The suggested policies are expressed in a ten-point action plan to meet the epidemic growth of the number of emergency compulsory admissions. From this perspective, key issues are found to be the exchange of information and feedback obtained through monitoring the use of coercion in psychiatry.

2

Mental Healthcare and the City

Emergency Compulsory Admissions in Rotterdam: A Historical View

Abstract

Background

Over the years, the number of emergency compulsory admissions has increased. This trend can be depicted as various combinations of factors that contribute to regional differences in the use of emergency compulsory admissions.

Method

Data on emergency compulsory admissions in Rotterdam make it possible to follow developments within the region over a period of almost eighty years.

Results

Upward and downward swings in Rotterdam, related to changes in general and local factors, make five periods stand out: 'custodial psychiatry' in the interbellum period, 'social psychiatry' in the years of post-war reconstruction, 'antipsychiatry' in the 1960s and 1970s, 'modern psychiatry' in the 1980s and 1990s, and 'public mental healthcare' at the turn of the millennium.

Conclusion

The overall, long term trend in the number of compulsory admissions resulted from a variety of general developments. Short term changes in the number of emergency compulsory admissions are determined by other influences, for example the quality of public mental health, which highlight points of action. Continuity of mental healthcare was one of the local factors and can be directed by local public mental healthcare policies.

Introduction

In 1919, 'organizing the admission of physically or mentally sick persons' became one of the responsibilities of Rotterdam's new public health service. In local political circles, there had previously been some discussion about the tasks of the first director of the Municipal Health Service, with the members of the hospital board feeling that the management of the municipal hospitals – including the municipal psychiatric asylum – should not be part of the package. Because 'ordering admission' was considered a public health task, however, the Department for the Admission and Examination of Lunatics ('Opneming en onderzoek van krankzinniagen') was established in 1924 (van Lieburg 1994). For many years after that, the annual reports released under the authority of the head of the health service reported the number of emergency compulsory admissions.

For a long time, the involvement of the City Council meant that the Municipal Health Service maintained an administrative role in emergency admission procedures. Overall, Dutch law distinguishes between two types of compulsory admission. The first type is the common procedure, whereby a judge determines whether legal conditions have been met. The second type involves emergencies, whereby compulsory admission is decided by the mayor or a member of the municipal council in the town or city in which the emergency takes place. This decision is based on a written medical report by a physician or psychiatrist who is not the therapist of the patient in question. Within a few days, a judge then decides whether the admission is to be continued.

While national data on emergency compulsory admissions in the Netherlands are incomplete, those in Rotterdam make it possible to follow developments over a period of almost eighty years. Figure 2.1 shows that, over the period from 1929 to 2005, the number of emergency compulsory admissions in Rotterdam increased.[i] This trend can be depicted as various combinations of factors that, according to a panel of psychiatrists and public officials involved in the compulsory admission procedure, contribute to regional differences (van Vree et al. 2002). These factors concern not only general social developments (such as new legislation,

Figure 2.1. Emergency compulsory admissions in Rotterdam, 1929 – 2005

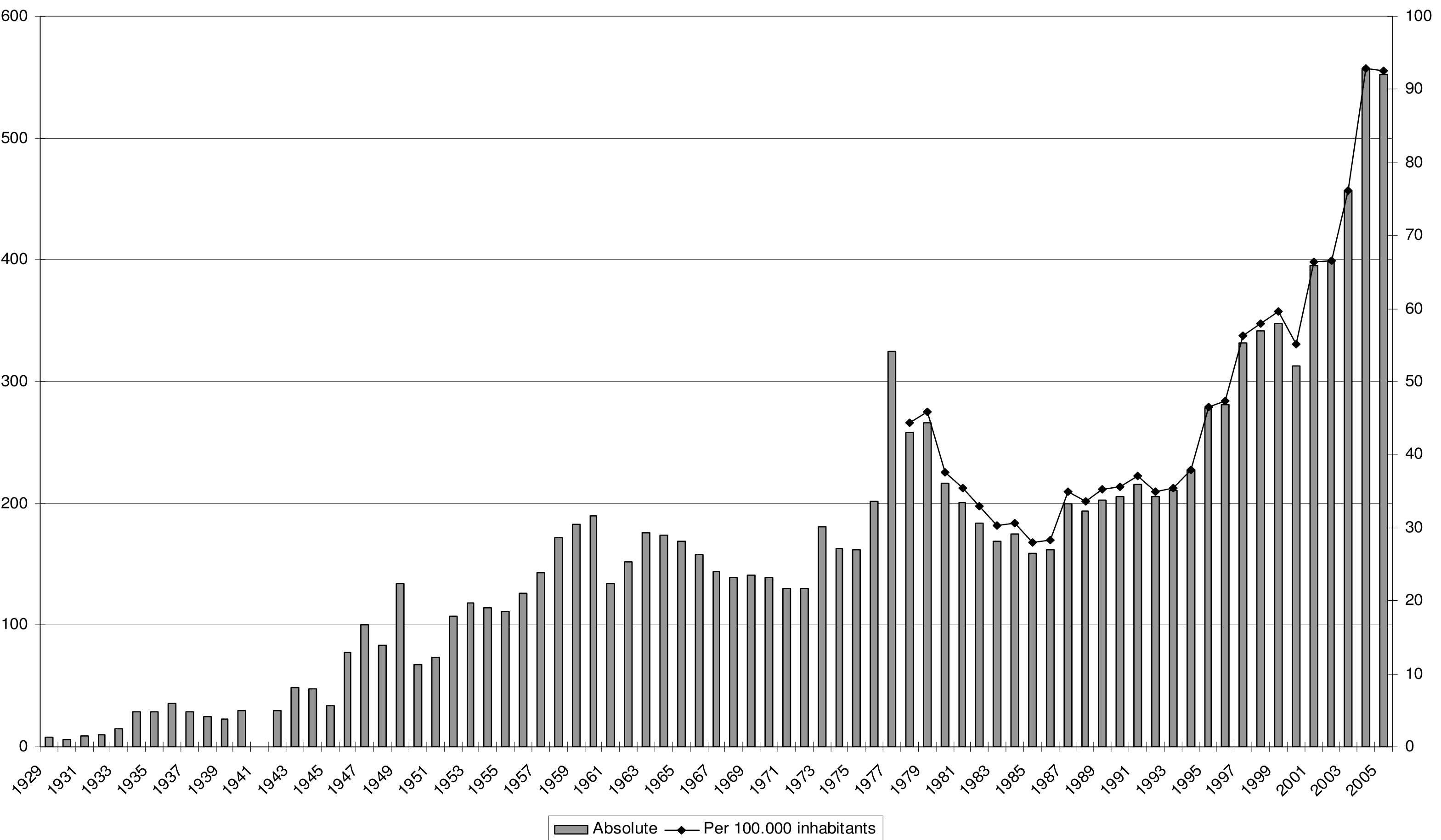
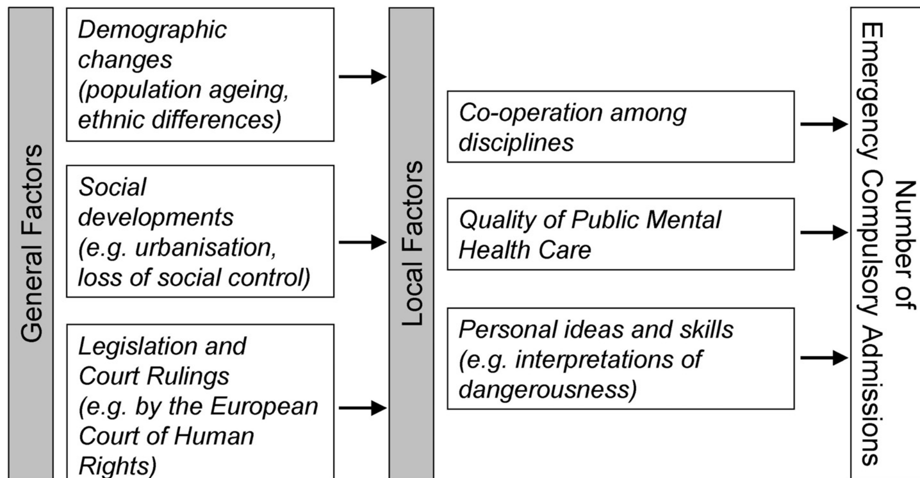


Figure 2.2. General and local factors as predictors of the rate of emergency involuntary admissions



demographic changes and the loss of social control in urban areas), but also specific local factors such as the political 'couleur locale', the mix and volume of inpatient services in the region, and continuity of care. The impact of the factors shown in figure 2.2 is reflected in the annual numbers of emergency compulsory admissions in Rotterdam.[ii] Upward and downward swings over the years, related to changes in general and local factors, make five periods stand out:

- Custodial psychiatry' in the interbellum period,
- 'Social psychiatry' in the years of post-war reconstruction,
- 'Antipsychiatry' in the 1960s and 1970s,
- 'Modern psychiatry' in the 1980s and 1990s, and
- 'Public mental healthcare' at the turn of the millennium.

'Custodial psychiatry' in the interbellum period

Until about 1900, voluntary admission to a psychiatric hospital was almost impossible to arrange. Patients from well-to-do families could be nursed in a sanatorium for nervous ailments, and mental healthcare for 'ordinary' depressive or anxious patients was a concern of the family. Before 1900, asylums were for troublemakers and the poor. Behind a splendid façade, and well-furnished rooms for the board of governors and the administrators, the accommodation for patients was much less fine:

> *'The wooden doors of the cages were solidly barred and the paving of each cage sloped slightly to the middle, for the promotion of cleanliness; through a hole in the lowest level of the floor, the substances to be transported were collected in a tank placed underneath.'*

In their desire to obtain additional funding, the board of governors showed little consideration towards their patients:

> *'Caged like this, patients were on show during carnival, on payment of a small sum.'*

It is thus probably no exaggeration to say that about 1900 'custodial psychiatry', as Schnabel (1995) has termed it, brought about important reforms in mental health care. In the textbook *The Insane, Neurotics, and their nursing* (Schim van der Loeff and Barnhoorn 1930), which ran into several editions in the 1930s, the nursing of 'restless lunatics' was divided into a work-therapy programme, bed-rest, and sedation or sleeping pills. There was also separation and isolation, and the use of hydrotherapeutic treatment methods such as 'hydropathic wrapping', 'cold effusion', or the 'prolonged and permanent bath'. Co-author of the textbook was J.A.J. Barnhoorn, who was medical director of St. Willibrordus General and Forensic Psychiatric Hospital in the province of Noord-Holland until shortly after World War II. He was then appointed as the

first head of Rotterdam Municipal Health Service's new department for outpatient mental healthcare.

In those days, public mental health was almost a synonym for moral standards. In 1939, on the eve of World War II, Barnhoorn stated at a meeting of the Catholic Physicians' Association, 'that of all corruptive influences that gnaw like many greedy monsters through the moral public health of our time, homosexuality in its present development is to be considered one of the most dangerous and most malign' (Barnhoorn 1941).

Even if 'custodial psychiatry' did not give patients much hope of recovery, this social psychiatry of the interbellum period brought a new personal approach and greater continuity of care. After 1900, mental healthcare for chronic psychiatric patients broadened to include the social environment. 'Housing, working, and living' were adapted to improve patients' social functioning as much as possible (Schnabel 1995). Local mental healthcare initiatives, indicated in figure 2.2, were at the frontline of professional developments. In 1909, Rotterdam City Council founded the Maasoord lunatic asylum near the river in Poortugaal, then a village outside Rotterdam. In 1958, the asylum was renamed Delta Hospital; its current name is Delta Psychiatric Centre. Maasoord's medical director J.H. Pameijer organized the Pre- and Aftercare Service ('Voor- en Nazorgdienst') of the municipal psychiatric hospital, which aimed to prevent psychiatric hospitalization through a mix of outpatient mental healthcare and social support, and which also aimed to improve the flow of patients from the clinic into alternative arrangements. In 1926, Pameijer started the Rotterdam Association for the Protection of Social Interests of Insane and Neurotic People ('Vereniging ter Behartiging van de Maatschappelijke Belangen voor Zenuw- en Zielszieken'). This organization, which later continued as the Pameijer Foundation, managed its own sheltered homes, or otherwise helped people obtain housing. The association organized unemployment relief work, or focused on employment-finding and financial support. The branch of the organization in Rotterdam was the local branch of the Central Association, an organization founded in 1924 that started consultation-clinics, usually housed by the Municipal Health Services, in most Dutch towns except Rotterdam (Heinrich 1996). In 1938, various duties undertaken by the Rotterdam Municipal Health

Service were centralized within the new Mental Department ('Mentele afdeling'). However, because of the success of Pameijer's initiatives, the Municipal Health Service's involvement in mental healthcare remained limited (van Lieburg 1994).

In about 1930 there was a sharp increase in the number of psychiatric patients hospitalized at the expense of Rotterdam City Council. The threshold for compulsory admission was nonetheless high. In the 1920s and 1930s, the number of emergency compulsory admissions increased from less than ten to about thirty a year. The judicial framework for compulsory admission was the Dutch Lunacy-Act of 1884, which later was criticised for its underlying 'need for treatment' criterion. However, an extract from a Rotterdam biography about pre-war homelessness, illustrates that in the 1930s another criterion – dangerousness – may have been applied:

> *'The police informed me that there were no grounds to admit such an anti-social and deviant type of person to an institution, as long as he did not give cause by aggressive or otherwise punishable acts.'*

'Social psychiatry' after World War II

After World War II, mental healthcare became more focused on the treatment of and recovery from mental disorders, and ultimately on the advance of public mental health. Mental healthcare outside psychiatric hospitals gained ground. The post-war staff shortages in Rotterdam also contributed to a change of climate whereby Maasoord was no longer seen as an exemplary service (van Lieburg 1994).

> *'As a result of a shortage of staff, opportunities for admission to the Maasoord Psychiatric Institution were greatly reduced, so that most of the psychoses had to be admitted elsewhere,*

> *often in distant institutions' (1946 Annual Report, Rotterdam Municipal Health Service).*

For some time there was also a special arrangement:

> *'If immediate admission to Maasoord was not possible and the patients involved nonetheless had to be admitted at once, the opportunity was created as of April to isolate these patients for one night -- in the care of a nurse from the Department -- in one of the cells at the Municipal Home for the Elderly.' (1949 Annual Report, Rotterdam Municipal Health Service).*

The optimism of the years of post-war reconstruction coincided with the development of a view of mental health that looked beyond the absence of psychiatric disorders (Schnabel 1995). This broadly based perspective on health also meant that the role of government became more visible.

In his thesis *Healthcare and Local Government*, written in 1951, the well-known Dutch psychiatrist A. Querido defined public healthcare as 'social action for medical purposes'. In the 1930s, Querido had reformed outpatient care for psychiatric patients in Amsterdam into the Department of Mental Hygiene. He was a friend and inspiration to S. Spijer, who was appointed Director of the Rotterdam Municipal Health Service on 21 March 1946. After the example of Amsterdam, the Mental Department was reorganized and merged with Maasoord's Pre- and Aftercare Service in November 1951. This meant that Maasoord, previously an institution in which inpatient and outpatient services were integrated, was split up into separate sections. As the Delta Hospital, the psychiatric clinic continued as a municipal clinic until mid-1990s. The new outpatient service, the Department of Social Psychiatry and Mental Hygiene, was to last until the early 1980s.

In the mid-1950s, psychopharmacology was more widely used, reinforcing the growing confidence in psychiatric capabilities, and supporting the growth of the mental healthcare sector. This therapeutic optimism – the belief that psychiatric problems could be treated – reached an unprecedented height in about 1960 (van Lieshout 1985).

One of the ways in which this optimism expressed itself was in the debate on the potential and scope of social psychiatry. As head of the new social psychiatric department in Rotterdam, Barnhoorn joined the debate in a lengthy article. Public mental healthcare was broadly interpreted as a complex of measures which 'society takes to optimise the state of mental health for the well-being of the human individuals who make up a community' (Barnhoorn 1955). Barnhoorn remained head of the Department of Social Psychiatry and Mental Hygiene in Rotterdam until his retirement in 1965 (van Lieburg 1994).

However, changing perspectives on psychiatric care were but one of the factors underlying the overall fluctuations in the number of compulsory admissions in the years after World War II, the commonest references in the annual report of the Rotterdam Municipal Health Service being to repatriation and emigration. As the 1946 annual report stated:

> *'The number of emergency compulsory admissions was 77 (against 34 last year), 42 of which were of patients repatriated from Indonesia, and 5 of which were of deportees from America' (1946 Annual Report, Rotterdam Municipal Health Service).*

Between 1946 and 1949, over 110,000 military conscripts boarded ship, most of them in Rotterdam, bound for Indonesia, at that time a rebellious Dutch colony. The first military action, the so-called police action, in Indonesia started mid-1947; that year half the number of emergency compulsory admissions in Rotterdam involved repatriated military and civilians. After the transfer of sovereignty in 1949, the number of compulsory admissions increased to 134, only to halve (to 68) the following year.

After World War II, there was also a substantial surplus of emigrants. Except for the years with waves of repatriation from Indonesia, the Netherlands remained a country of emigration into the early 1960s. In the 1950s, encouraged by the Dutch government's 'new resettlement' policy, emigrants sought destinations in Canada, the United States of America, Australia, New Zealand, and South Africa. However, whenever

anything went seriously wrong with an immigrant to one of these countries, he or she was put on a ship and intercepted in Rotterdam. In 1960, the number of patients admitted involuntarily reached a record at almost 200 admissions.

‘Antipsychiatry’ in the 1960s and 1970s

In the 1960s there was a reverse in the increasing number of emergency compulsory admissions that had followed World War II. According to Wennink (1998), the success of psychopharmacology painfully revealed the isolation of long-stay patients in the old pavilions of psychiatric hospitals. Psychiatry encountered growing criticism, which was supported by the anti-authoritarian climate of the 1960s and the new mental health consumer movement. The critical slogan of the Antipsychiatry movement, ‘It’s not the patient that’s ill, but society’, met considerable approval. *Who is made of wood?,* a book published in 1971 by the controversial Dutch psychiatrist J. Foudraine, sold over 220,000 copies in the Netherlands alone. It reached a broad audience outside the mental healthcare domain, much like the famous movie *One Flew over the Cuckoo’s Nest*, which came out in 1975, and was based on the novel by Ken Kesey published in 1962.

Inspired by changes abroad, criticism of compulsory admission, electroshock therapy, and the use of isolation cells increased in the Netherlands. The Antipsychiatry movement militated for the closure of psychiatric hospitals and for changes to the Lunacy Act, which supposedly facilitated the use of compulsory measures. Banners urged the Rotterdam City Council to stop electroshock therapy and to close the Delta Hospital. Against the background of such widespread criticism, the importance of outpatient care grew. The Rotterdam Department of Social Psychiatry and Mental Hygiene developed into a 24 x 7 service.

As well as the widespread criticism of compulsory measures and the reinforcement of outpatient services, changes in legislation also contributed to a declining number of compulsory admissions. In 1972, in

line with the public debate, the Dutch government decided on interim changes to the Lunacy Act. This amendment introduced stronger barriers to compulsory admission in the procedure, and acknowledged the specific position of patients admitted involuntarily. The following key issues were also incorporated into the subsequent legislation:

- The mayor was obliged to call in a psychiatrist to examine the patient's mental condition. Before that, it was entirely at the mayor's discretion to consult a psychiatrist.
- The mayor was also obliged to inform the public prosecutor about each emergency compulsory admission within 24 hours, and to submit the medical certificate required.
- The amendment obliged the public prosecutor to inform the president of the bench.
- To assess whether a patient's involuntary admission should be extended, a magistrate actually needed to see the patient to be personally informed of his or her mental condition.

'Modern psychiatry' in the 1980s and 1990s

Despite such critical views of coercion in psychiatry, and the increasing complexity of the admission procedure, the number of emergency compulsory admissions increased rapidly after 1975. A record high was reached in Rotterdam in 1977 with a total of 325 admissions. By the late 1970s, the city had the highest number of compulsory admissions per 10,000 inhabitants of all the larger cities in the Netherlands. Then, contrary to the national trend, which showed an increase of almost 20% in the early 1980s, the number dropped (Klein Ikkink et al. 1991). Two factors, indicated in figure 2.2, contributed to this swing: (1) modernization, which brought about more and better mental healthcare, and (2) judicial changes and a local vision debate, which strengthened the legal position of psychiatric patients.

The modernization of mental healthcare

'Going mad in Rotterdam is life-threatening' was the headline in a local newspaper in September 1977. It headed an interview with the head of the Department of Social Psychiatry and Mental Hygiene of Rotterdam's Municipal Health Service (*Rotterdamsch Nieuwsblad*, 20 September 1977). At that time, the department was working on a report on the state of the local psychiatric services; the policy document published by the Rotterdam City Council in 1978 declared mental health care in the city to be a 'disaster area'.

The alarming condition of the psychiatric services was also summarised two years later, in the report of a conference of the Rotterdam mental healthcare general managers. 'Mental Health Planning for Rotterdam' was the subject of the meeting held in August 1980 in Copenhagen (Denmark) – under the auspices of the World Health Organization (WHO) in an effort to overcome the differences between all parties involved. The conference was organized on the initiative of the Dutch Ministry of Public Health and Environmental Hygiene, and with financial support of the Rotterdam City Council. The WHO-conference report indicated that clinical facilities were outdated, over-centralized, and conceived on too large a scale; clinics were also located too far outside the main city area. There were no sheltered housing and day-care services for psychiatric patients, and outpatient follow-up and facilities for emergency psychiatry were not functioning properly. In addition, patient-organizations were not contributing sufficiently to the professional development of mental healthcare. Finally, in the absence of effective structures for consultation, communication between service providers and services co-ordinators left a lot to be desired (WHO 1982).

After 1980, there were major improvements on all issues. Mental healthcare policies laid down by Rotterdam City Council in the 1978 policy document were never implemented because of political differences, organization al difficulties, personal differences within the Department of Social Psychiatry, and radical national-level changes that were launched with the intention of sectorizing and privatizing mental healthcare (van Lieburg 1994). However, the general managers present in Copenhagen had agreed to bring about better regional co-operation in the Rotterdam area. The so-called 'forum for managers consultation' developed into the

regional cooperative mental health body (Dutch acronym SOGG), which offered a platform for discussions and collaborative projects between psychiatric services in the Rijnmond area (i.e. the greater Rotterdam area). Furthermore, many small outpatient services merged with Rotterdam Municipal Health Service's Department of Social Psychiatry and Mental Hygiene, thereby forming three independent, private Regional Institutions for Ambulatory Mental Healthcare (Dutch acronym RIAGG). The number of sheltered homes and other living arrangements for present and former psychiatric patients was increased. To achieve an even regional spread of psychiatric hospitals, preparations were made to move a psychiatric hospital from outside the region into Rotterdam. However, the actual move was long in coming, because a national moratorium was declared on the construction of new general psychiatric hospitals in 1982. One of the people involved in the so-called moratorium-action was the well-known psychiatrist C.J.B.J. Trimbos, then Professor in preventive and social psychiatry at Erasmus University Rotterdam. The Dutch knowledge institute for mental health care, addiction care and social work is named after him. The moratorium-action was supported both by psychiatrists and mental healthcare consumers in favour of small-scale services, following the American example of community mental health centres. In the 1980s, the protection of consumer interests embarked on a new, more profess-sionnal course. In January 1981, the front-page of *The Lunatics Newspaper*, the mouthpiece of the Dutch Antipsychiatry movement, read 'Goodbye Lunatics in the Netherlands – this is the final edition'. In the same year, psychiatric patients and critical professionals, with local council subsidy, founded a new association in Rotterdam, which developed into a project organization for consumer-run initiatives in mental healthcare.

Judicial changes and a local debate on criteria for compulsory admission

A second factor apparent around 1980 with regard to the downward swing in emergency compulsory admissions was judicial change and its effect on the emergency admissions procedure. At the end of 1979, the European Court of Human Rights delivered judgment in the case of Winterwerp versus the Netherlands. Frits Winterwerp had been admitted

involuntarily and for several years his stay had then been extended by the public prosecutor. The European Court declared that Winterwerp was right to complain that he had not been heard by a magistrate, and that the public prosecutor had not presented his appeals for discharge to a court of law.

The Winterwerp judgement demonstrated that the legal position of psychiatric patients needed to be improved. The first draft of the new Special Admissions Act was already on the table, and there was a general impression that the law would soon be changed. In early 1981, the Rotterdam Health Service based a conference on the expected changes – 'Emergency compulsory admissions in Rotterdam: present and future'. The conference was the initiative of R.E. Offerhaus, the psychiatrist responsible for the emergency psychiatric service of Rotterdam's Municipal Health Service. While the Dutch Act on Special Admissions to Psychiatric Hospitals was enacted only years later in 1994, the conference led to a number of practical agreements that anticipated the legal provisions of the new law on compulsory admissions:

- The need-for-treatment criterion would be replaced by the dangerousness criterion.
- Whereas any physician had previously been authorised to write the medical report mandatory in the compulsory admission procedure, this was now restricted to psychiatrists.
- The procedure made it obligatory for a lawyer to be involved in the procedure, and the patient had to be heard.

These new directives initially caused psychiatrists to pursue a restrained policy. For some years after the 1981 conference, Rotterdam had lower numbers of compulsory admissions per thousand inhabitants than any other Dutch city (Klein Ikkink et al. 1991).

Public mental healthcare at the turn of the millennium

Following the implementation of the Dutch Act on Special Admissions to Psychiatric Hospitals in 1994, the national increase of involuntary admissions accelerated, more than doubling from 3,101 in 1979 to 7,450 in 2004 (Mulder et al. 2006). In 1997, 20 years after its 1977 record of 325, Rotterdam had a new record number of 332 emergency compulsory admissions. In the years that followed, the numbers continued to rise, to 547 in 2005. On the basis of general factors (such as demography and legislation) and of local factors (such as community work, perspectives on how to use the law, and collaboration across disciplines), further increases are to be expected.

Demography

The rising number of residents of a non-Dutch origin is a contemporary variation on such demographic developments as the post-war repatriation and migration. Relatively more people from Suriname, the Dutch Antilles, and Morocco are now admitted to psychiatric hospitals, and are more often admitted involuntarily (Brook and de Graaf 1985; Uniken Venema and Wierdsma 1993). As prognoses for population growth in Rotterdam indicate a further increase in the number of migrants (Bik et al. 2006), an increase can also be expected in the number of admissions and compulsory measures.

Interpreting legislation

Changes in the way psychiatrists interpret the legislation have also contributed to the increase in compulsory admissions. The introduction of the new Special Admissions Act raised discussion about the meaning of the dangerousness criterion. For example, the so-called 'Big Cities Policy' agreed upon by the Dutch government and the municipalities of Amsterdam, The Hague, Utrecht, and Rotterdam in 1995 focused on a not-too-stringent interpretation of dangerousness:

> *'The Government will encourage the criteria for compulsory admission based on the Act on Special Admissions to Psychiatric Hospitals to be generally known and interpreted from the point of view of the self-protection of people' (Ministry of the Interior, 1995).*

In late 1995, the Healthcare Inspectorate published an information brochure that once again explicitly supported a broad view on the interpretation of the dangerousness criterion. According to the 1996 Evaluation Commission on the Compulsory Admission Act, the brochure had contributed to a better understanding of the dangerousness criterion in practice. Consequently, this less stringent interpretation of 'dangerousness' will contribute to an increase in emergency compulsory admissions.

Community work on the fringes of society

The number of emergency compulsory admissions has been influenced not only by general factors such as demography and legislation, but also by local factors. In late 1993, Rotterdam City Council decided to put more effort into encouraging public services to reach out to the people who end up in the frayed fringes of society. Even since then, activities under the motto 'Grab and hold', targeted at the 'degenerate' and the 'public nuisance', have been a major theme in local politics.

This approach was supported by the 'Public mental healthcare policy letter' published by the Ministry of Health in 1996. The letter set down a standard for basic public mental healthcare, including crisis intervention, assertive outreach, services for the homeless, prevention programs, and a regional cooperation platform. The Rotterdam platform was established in September 2000, all parties subscribing to a set of reforms focused on improving public mental health. The new interpretation of social psychiatry involved three key issues: co-ordination of services at neighbourhood level, case management, and assertive community treatment. This 'mentoring psychiatry' offers care-on-demand, focusing on continuous, yet differentiated care for severe mentally ill patients (Schnabel 1995). However, the 'Grab and hold'-approach in Rotterdam

has placed even greater stress on the use of compulsory mental health-care measures.

New perspectives

In 2003, the annual thematic meeting of the Rotterdam Public Mental Healthcare Platform addressed the subject of clarifying and extending the boundaries of the Dutch act on compulsory admissions. Ideas on the problems and constraints of the compulsory admissions procedure were exchanged by members of Rotterdam City Council, members of the judiciary, and representatives of the public prosecutors, local police force, psychiatrists, and managers of healthcare services. After the example of the 1981 conference, the conference participants anticipated new legislation by discussing additions to existing regulations. For example, there was broad support for the initiative of a group of psychiatrists to develop a 'Rotterdam guideline for the evaluation of addicts in connection with compulsory admission procedure'. It was felt that unambiguous use of the act on compulsory admission would result in more assessments of the possible benefits of compulsory admission for people with severe problems. This new perspective also contributed to acceleration in the number of compulsory admissions. On the other hand, it was established that patients admitted involuntarily should only be discharged from hospital after specific arrangements for outpatient aftercare have been agreed. Closer links between hospital admissions and outpatient follow-up are expected to help prevent compulsory admission and readmission.

Discussion

Summary of findings

In recapitulation, over the years, the number of emergency compulsory admissions in Rotterdam has fluctuated. In the early 20th century, despite the rapid increase in admissions to psychiatric hospitals, involuntary admissions were rare; this was due partly to the coherence between

inpatient and outpatient psychiatric services, and to the strict use of the dangerousness criterion 'avant la lettre'. The increase in compulsory admissions after World War II was related less to an idea of 'need for treatment' supported by a growing confidence in new psychiatric therapies than to repatriation and migration. The fall in the 1960s and 1970s was connected not only to broader criticisms of compulsory measures in mental healthcare, but also to the reinforcement of outpatient services and to judicial changes in the emergency procedure. The rapid increase shortly before 1980 and the equally rapid fall just shortly afterwards were caused by the outdatedness of services, initiatives to tackle this, and changing views on the implementation of judicial regulations. The years since then have been marked by the acceleration of the rate of compulsory admissions, related to a mix of demographic developments, changes in the interpretation of the dangerousness criterion, and new initiatives in public mental healthcare.

Long-term and short-term developments

Past decennia have shown a further increase in the number of emergency compulsory admissions, not only in Rotterdam, but also nationally and in other European countries (Mulder et al. 2006; Salize and Dressing 2004). The overall trend in the number of compulsory admissions has resulted from a variety of general developments, such as demographic changes and new judicial measures. In addition, a growing demand for psychiatric services and an increase in the number of patients who depend long-term on mental healthcare, generate mechanisms that contribute to the increase of the number of compulsory admissions, such as delays in voluntary admission resulting in emergency situations, and short stay followed by readmissions (Lelliott and Audini 2003). These mechanisms are reflected in regional variation within countries (Hansson et al. 1999; Klein Ikkink et al. 1991), and in the variation across Europe (Salize and Dressing 2004).

In the long term, general factors carry weight, whereas short-term developments in the use of compulsory admission are determined by other influences. The short-term factors highlight points of action that prevent psychiatric crisis situations and help prevent further increase in

emergency compulsory admissions. One local factor is the quality of care at the interface between mental healthcare and public order. The use of emergency compulsory admission is boosted by calls in society at large to deal with people who are a public nuisance and with those who avoid the support they need. Such use of compulsory measures in mental healthcare might be reduced by more coherent service delivery.

Continuity a top priority?

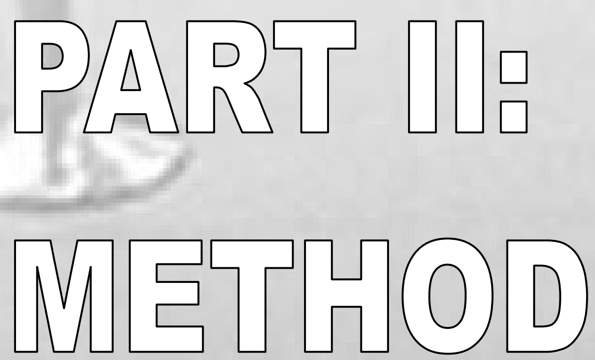
High quality care requires a comprehensive approach that is integrated into a long-term perspective on the healthcare for severe mentally ill patients. Unfortunately, such a long-term perspective conflicts with current views on political decisiveness and on mental healthcare targets focused on efficiency and performance indicators. This conflict model, or competitive model, of society makes it difficult for interconnecting initiatives to survive; these are politically vulnerable because expectations are high and because collaboration is a long-term development, whereas compulsory admissions give short-term results. For example, the Rotterdam Public Mental Healthcare Platform was discontinued only a few years after it had started. According to local authorities, it delayed decisive action, and lacked a shared regional plan for better quality of care.

The public responsibility of local government and mental health services is growing rapidly as the number of involuntary admissions of psychiatric patients in the Netherlands has more than doubled in the past 25 years. 'Continuity of care' is often seen as a key concept in the planning and use of mental health care. It is an 'ethical principle' (Thornicroft and Tansella 1999) and a 'strategic first choice' in the evaluation of (public) mental health services (Eaton 1996). In practice, however, neither the annual reports of the mental health care services nor the periodic evaluation of the Dutch act on compulsory admissions devoted much attention to the continuity-of-care concept. Prevention remains the royal route to fewer compulsory admissions, and collaboration and continuity-of-care are probably the only vehicles on that route that are controllable 'at street level'.

[i] The numbers of emergency compulsory admissions for the years from 1929 to 1981 were taken from the annual reports of the public health authority. The data for the years from 1982 until 1991 were based on records with Rotterdam-area postcodes in the national inpatient mental healthcare registry. Although these records relate to emergency admissions of inhabitants of Rotterdam, the admission may have taken place outside the Rotterdam area. Similarly, the annual reports cover compulsory admissions in Rotterdam not only of Rotterdam inhabitants, but also of residents from other areas. The number of admissions for the years 1982-1990 was therefore adjusted on the basis of the estimated number of people from outside Rotterdam who were admitted involuntarily. The numbers from 1991 onwards were calculated from registry data supplied by the public health authority for Rotterdam. From mid-2003, this registry was continued in a web-based communication and documentation system for processing compulsory admissions. This system also contains data on all emergency compulsory admissions ordered by the Mayor of Rotterdam or by a council member acting for him.

[ii] The rates of compulsory admissions per 10,000 inhabitants were calculated for the years 1979 to 2005. The line in figure 2.1 illustrates that the increase in the number of admissions cannot be explained by demographic changes.

PART II: METHOD



3

Monitoring Mental Healthcare

National and Regional Information Systems

Abstract

Background

Dutch psychiatric case registers were modelled after case registers in the United Kingdom. The rise and fall of psychiatric case registers in England set an example for an information policy in mental healthcare and for the strategic positioning of case registers in the Netherlands.

National and regional information systems

Reorganization of the British healthcare system meant the end of most psychiatric case registers in the UK. Responsibility for high-quality mental healthcare was handed over to local organizations, which implemented modern management information systems without epidemiological or healthcare research objectives. Opportunities to improve the use of administrative data were not brought about expeditiously. Consequently, the British National Health Service (NHS) now lacks nationwide high-quality clinical and financial databases to monitor health targets.

Monitoring mental healthcare

Over many years, the Dutch Ministry of Health, Welfare, and Sports has supported the development of case registers in the Netherlands. The Ministry has followed a 'double track' policy supporting both national and regional mental healthcare information systems. As in the UK, the strategy to improve the monitoring of mental healthcare in the Netherlands could be aimed at the positioning of regional information systems in a national research and development strategy, and committing case register's key stakeholders to strengthen organizational and financial support.

Introduction

In a psychiatric case register, the contact data of all inhabitants in the catchment area with mental healthcare services are collected at one central point and linked per patient. This prevents patients from being counted twice, while at the same time record linkage keeps track of them time-wise and contact-wise (ten Horn et al. 1986). In the Netherlands, the oldest psychiatric case registers are operational in the north-eastern areas, the Maastricht region, and the Rotterdam/Rijnmond region. In 1968, the Social Psychiatry Department of the University of Groningen started a case register, initially for the provincial capital Assen, and later for the wider northern area. The Department of Psychiatry of the University of Limburg developed a psychiatric case register for the Maastricht region in 1980. Data collection for the Rotterdam/Rijnmond case register started in 1990 on the initiative of the cooperative platform of mental health services in the district, supported by the Municipal Health Department Rotterdam. About that time, preliminary talks for the Amsterdam register were under way, but did not produce results. In recent years, the University of Utrecht has established a fourth psychiatric case register, and other regions have developed plans to start a comprehensive information system.

Dutch psychiatric case registers were modelled after case registers in the UK, which were set up in the late sixties. In 1975, Dutch case-register pioneers were accommodated by the World Health Organization (WHO) to explore the characteristics and new uses of administrative data in England, Scotland and Denmark (de Graaf and ten Horn 1975). Almost twenty years later, the WHO offered the present author the opportunity to learn about new developments in England; the following is an updated report.

Good old England

In the eighties, the UK had eight psychiatric case registers, in Camberwell (London), Salford (Manchester), Oxford, Nottingham, Southampton, Worcester, Aberdeen, and Cardiff. These registers were set up at a time

when computerized data was not widespread and case-register information attracted much attention. In the seventies and eighties, these Registers contributed significantly to psychiatric epidemiology and healthcare research (Gibbons et al. 1984; ten Horn et al. 1986). Reorganization of the British healthcare system around 1990 meant the end of most British psychiatric case registers. Responsibility for high-quality mental healthcare was handed over to Local Health Authorities and Trusts (district organizations providing hospital- and community-based healthcare). Most local organizations switched over to modern management information systems without epidemiological or healthcare research objectives.

British healthcare reform also created new opportunities to improve the use of administrative data in monitoring mental healthcare. Support for this development came from, first, a national strategy for the implementation of information technology in healthcare; second, the information needs of local healthcare systems; and third, liaisons with research teams.

First, a national information strategy, developed by the NHS, promoted better exchange and use of administrative data, to improve quality of care, and efficient use of resources (NHS-Information Management Group 1992). Essential in this approach are a national patient number, a general classification and coding system, and a core dataset.

- As is customary in some other countries, e.g. Denmark, a common identifier has been developed to follow patients across different healthcare organizations. Starting in the early eighties, the objective of the Department of Health was to introduce 'district unique numbers', but system-generated identifiers made it difficult to exchange patient information between district systems. The implementation of a new-format NHS number started in 1993 and was seen as an important part of the development of a national, patient-based information system on specialist mental health services (Glover and Sinclair-Smith 2000; Newcombe 1988).

- In 1990, the NHS bought the intellectual property rights to the Read Codes, also known as Clinical Terms Version 3, to imple-

ment a standard coding system. The Read codes are a system for recording clinical information consistently and accurately so that it can be of use for research and auditing. Most European countries use the International Classification for Primary Care (ICPC) – a system owned by the World Organization of Family Doctors. The Read Codes were first developed in 1982 for use in general practice by the GP Dr. James Read and later extended to other disciplines. Read was appointed head of the NHS Centre for Coding and Classification.

- The national NHS number and coding system form part of the NHS's Information-for-Health strategy to implement an Electronic Health Record for every British citizen by 2010. This detailed record is complemented by the Mental Health Minimum Data Set to produce routine reports monitoring the performance of mental health services. To quantify the national mental health policy objectives that were outlined in 1992 in 'The Health of the Nation – A Strategy for England', the Royal College of Psychiatrists' Research Unit was commissioned to develop an instrument to monitor outcomes. The resulting Health of the Nation Outcome Scales (HoNOS) is a 12-item instrument that covers clinical problems and social functioning (Wing et al. 1998).

Second, new opportunities to monitor mental healthcare came from local information needs. About 1990, the NHS reorganization introduced the purchaser-provider split in the organization of health care at the local level. Local Health Authorities and various types of Trusts became responsible for the implementation of NHS services. At the district level, support for the development of information systems came from different directions. Health Authorities needed information to monitor services and to better understand the needs of local communities. Likewise, the Mental Health Trusts needed information systems to improve the management of health and social services for people with mental health problems. Throughout the country, mental healthcare information systems were developed with emphatic names such as 'Psy-Mon' and 'MARACIS' (Lelliott et al. 1993). Potentially, the use of psychiatric case registers was

booming. District Health Authorities favoured sectorization and decentralization as a model for acute and emergency district psychiatric services (Johnson and Thornicroft 1993). To the extent that comprehensive services are sectorized, the distinction between healthcare administrations and psychiatric case registers fades away (ten Horn et al. 1986).

Third, alliances between healthcare providers, Local Health Authorities and academic research groups have been catalysts for the development of regional mental healthcare information systems. Professor Peter Huxley, of the University of Manchester, School of Psychiatry & Behavioural Sciences, aimed to breathe new life into the old Salford case register, in cooperation with the Salford District Health Authority and Social Services Department. In London, Professor Graham Thornicroft managed the PRiSM project (Psychiatric Research in Service Measurement), which was set up in connection with the development of MARACIS (Maudsley Audit, Research And Clinical Information System). The project was an evaluation study of healthcare reform and incorporated information from the Camberwell case register so that some of the patients could be followed over a long time span (Thornicroft 1993).

Information delays

Because of yet another reform in 2002, Primary Care Trusts became NHS cornerstones in buying and monitoring services. These trusts report to the Strategic Health Authority responsible for the geographic area involved. However, opportunities noted in the mid nineties to improve the use of administrative data, were not brought about expeditiously. As a result, the NHS now lacks high-quality clinical and financial databases to monitor health targets (Enthoven 2000).

First, the implementation of information technology did not pass as smoothly as expected. Only as late as 2004 did a national advisory board endors the NHS number as the unique patient identifier, aiming to make the use of this number mandatory. In addition, the expenditure and management of the Read Codes project were sharply criticized (Wise 1998). Maintenance of the codes ended in 2005, to merge Read Codes with a clinical coding system developed in the United States to form SNOMED – CT: Systematized Nomenclature of Medicine, Clinical Terms.

The Mental Health Minimum Data Set now includes HoNOS, providing a comprehensive set to study variations in service use and treatment effect-tiveness (Glover 2000). However, the data set became mandatory for mental health service providers only in 2003. Moreover, there is no national classification of mental health interventions, and the collection of clinical severity and outcome measures is limited. Thus, there is no means of monitoring effectiveness, and information-based approaches to improve healthcare services are a long way off (Elphick 2007).

Second, the national information strategy did not make the most of the information needs of local healthcare systems. The Department of Health has established Public Health Observatories in each region to monitor health and disease trends, and to evaluate local projects to improve health and to reduce health inequalities. Observatories have collected and analyzed health data from a range of sources locally and nationally. These data, however, have not been used to their full potential by researchers. According to Goldman, Sturm, and McCulloch (1999), it is often difficult to obtain access, and analysing administrative data requires computing skills that are not common in health services research.

Finally, for many years, there was no programmatic approach to NHS mental health research and development (R&D). Without coordinated direction, the dispersed and often small-scale cooperative mental health research activities contributed little to the national information strategy. Nowadays support for a Mental Health Research Network provides an infrastructure for large-scale studies (Clark and Chilvers 2005; Szmukler 2005). However, as Lelliott (2005) has pointed out, centralization of R&D programmes also involves real dangers. Increased costs will discourage local small-scale, innovative research. Lelliott's conclusion: 'The future health of mental health research in England depends on ensuring that the potential benefits of rationalization and centralization are realized and the pitfalls avoided.'

Monitoring mental healthcare in the Netherlands

The rise and fall of psychiatric case registers in the UK set an example for an information policy in mental healthcare and for the strategic positioning of case registers in the Netherlands. For many years, the sectorization of mental health care and regional information were important policy issues. In 1999, the Ministry of Health, Welfare, and Sports published a national Policy Document on Mental Healthcare, which outlined the desired long-term developments. This document set great store by regional coherence between mental healthcare providers and with adjoining health and social services. The different providers of inpatient and outpatient mental healthcare were encouraged to merge into regional organizations. In addition, the development of 'intelligent' performance indicators based on regional information systems was one of the spearheads of the mental healthcare policy.

Only a few years later, political turmoil radically changed the line of policy. The events of 9/11 and the Dutch aftermath – the assassination in 2002 of the popular politician and former professor, Pim Fortuyn – gave way to a reform of the health insurance system more in line with the Free Market Model. This 'new politics' perspective, as ardent supporters put it, was at odds with principles such as sectorization and regional coherence. Consequently, and unlike the UK, it is not clear who is responsible for local information on mental healthcare and for monitoring regional differences in the delivery of mental health services.

At present, like the NHS, the Ministry of Health lacks high quality national databases to monitor changes in healthcare. As in the UK, the strategy to improve the monitoring of mental healthcare in the Netherlands could be aimed at, first, the positioning of national and regional information systems and, second, committing case register's key stakeholders to strengthen organizsational and financial support.

National and regional information systems

In the seventies, the Dutch Mental Health Inspectorate, in cooperation with the National Hospital Board, initiated the national Inpatient Registry, which contained information on admissions from most psychiatric hospitals and inpatient centres for the treatment of addiction in the Netherlands (covering the period 1978–1996). Next, local systems in line with national information systems for outpatient mental healthcare and for alcohol- and drugs clinics were developed. Local services implemented administrative systems that had been developed nationally, so that national umbrella organizations could aggregate local information (RIS/NIS, VERNIS and LADIS/CADIS were well-known Dutch acronyms among mental health administrators). In practice, these national information systems did not include all healthcare services, and in some cases, the quality of the data submitted was questionable (Rigter et al. 2002).

In the late eighties, experience with the first Dutch case registers led to a proposal to gradually replace the In-patient Registry with a network of interlinked 'regional mental health information systems' (ten Horn 1989). But instead, the Ministry of Health, Welfare, and Sport followed a 'double track' policy. The nation-wide registers of outpatient services and the register of psychiatric admissions merged into one information system (ZORGis), managed by the umbrella organization that originated from the merger of the national collaborating centres of mental health services. At the same time, the Ministry has furthered the development throughout the Netherlands of regional information systems in mental healthcare.

The new national mental healthcare information system was introduced in 2000. However, the first report over the period 2001-2003 showed that national estimates of service use were not reliable because of missing data from several types of services, such as sheltered living, child- and adolescent psychiatry, forensic psychiatry, and alcohol- and drugs clinics. Participation was not obligatory; as a result only 53% of the 114 member services responded in 2003. The national information system of the mental health services umbrella organization has been discontinued as of 2007.

New information products are being developed, based on the data that health services produce – in particular for the Diagnosis-treatment combination Information System (DIS). As of January 1st 2006, mental healthcare services and private practices in the Netherlands are required to register service delivery in terms of diagnosis-treatment combination, and to provide standardized DIS-information. Several providers, however, will not be able to produce this information for some time. Moreover, it is still unclear how to incorporate healthcare that is beyond the diagnosis-treatment combinations system, such as mentoring or nursing. Consequently, a substantial and increasing number of long-term psychiatric patients who take up a great deal of the mental healthcare service capacity will remain out of sight. Existing regional information systems can fill this gap.

Case registers' key stakeholders

Over many years, the Ministry of Health, Welfare, and Sports has supported the development of case registers in the Netherlands. From time to time, alongside reorganizations and changes in staff, the question of the usefulness and necessity of psychiatric case registers would come up. The 1993 conference 'Meaning and use of psychiatric case registers', which was organized in Rotterdam to obtain wide support for case-register research, could not convince all participants. National policy-makers, local government representatives and health insurance companies blamed researchers for not presenting mental healthcare information in easily digestible chunks. However, financing was not stopped immediately, so that research could be more tuned to information needs (Wilken 1993).

A useful report on certain information products typical of psychiatric case registers was published in 1996 (Giel and Sturmans 1996). The presentation of the report to the Minister of Health marked the start of the project 'Regional Information of Patients in Mental Healthcare'. Through this project, the Ministry of Health tried to streamline the jumble of local mental healthcare information systems. At the time, initiatives varied from the development of sophisticated electronic communication between mental healthcare services, to first steps to gear different

registrations to one another, focusing on problem areas such as heroine users or Korsakoff patients (Vermande and Bijl 1995).

In the Regional Information Project, continuation of the case registers seemed guaranteed in their role as the mainstay of a compilation of local mental healthcare information systems. A National Platform was installed, bringing together representatives of psychiatric services, the healthcare inspectorate, insurers and user-organizations. Some Municipal Health Services participated to substantiate their commitment to epidemiology and health service research in the field of public mental health (Van Alem and Wierdsma 1995). The platform was chaired by P.A.H. Verbraak, succeeded by R.E. Offerhaus, both of whom at some time and in different capacities had been involved in the realization of the psychiatric case register for Rotterdam-Rijnmond (see Chapter 5). In an effort to standardize regional mental healthcare information, the platform organized meetings and developed basic information models.

In 2003, these activities were stopped because, among other reasons, regional information did not attract much attention. In almost all districts, mergers between regional outpatient services and psychiatric hospitals prioritized the necessary changes in the joined information systems. Next, priorities shifted to standardized data on Diagnosis-treatment combinations.

Standardization and a focus on psychiatric illness and treatment will undoubtedly contribute to a better quality of national mental healthcare information. But when regional systems are excluded from a national information strategy, the potential benefits can also be a pitfall for key stakeholders. Psychiatric case registers continue to play an indispensable supplementing part in the national information strategy: producing detailed and longitudinal information, connecting data from mental healthcare and other services, and testing innovative programmes. In these ways, case registers serve national government, local health authorities and psychiatric services (Wierdsma et al. 2007).

Conclusions

An overall view of service-use at the national level will be realized only in years to come, and it will take another few years to observe trends in the use of psychiatric services. The existing psychiatric case registers are in the unique position of being able to produce a national, representative picture of changes in the use of mental healthcare, including services for long-term patients. In addition, regional information systems can be used to study the reliability and validity of administrative records. This will improve patient administration in local mental healthcare organizations and national information systems. However, this type of research is difficult to classify under the current national research programmes on topics such as anxiety and mood disturbances, psychoses, and behavioural problems in children.

Expanding case-register research and addressing all stakeholders' information needs requires sufficient means. In the context of the development and implementation of the Diagnosis-treatment combination Information System, it seems self-evident that designated funding should be put aside for studies of the reliability and validity of administrative data. A National Platform for Health Service Research, managing a budget assigned by ministries and umbrella organizations concerned, could ensure the continuity of basic case-register operations and develop a programmatic approach to mental health research.

4

Case Registers in Psychiatry

Do They Still have a Role in Research and Service Monitoring?

Abstract

Purpose of review

To follow up on reviews of case-register research, literature searches over a two-year period were conducted to determine whether psychiatric case registers still have a role in research and service monitoring.

Resent findings

Case-register research covers a wide range of topics, and is most often found in Denmark where national databases support all kinds of record-linkage studies. Typically, case registers are used in studies of treated prevalence and incidence of psychiatric disorders, in research on patterns of care, as sampling frame in epidemiological studies, and in studies on risk factors and treatment outcome.

Discussion

Despite a wide range of research based on administrative data, stakeholders in most countries are probably not well served by current priorities. Few studies investigate longitudinal patterns of service use to evaluate healthcare policies. There is a lack of comparative record linkage studies to inform local authorities on the cooperation between mental healthcare and public services. Implementing standard tools and procedures for routine outcome assessment seems still in an early phase in most register areas. When case-register staff can capitalize on new opportunities, old and new case registers will continue to be important for research and service monitoring.

Introduction

Looking back on the nineties, the question *Do we still need psychiatric case registers?* was answered affirmatively by Tansella (2000) based on an anthology of interesting results of case-register research. Since the nineties, information and communication technologies have developed rapidly and the ongoing spread of electronic patient records facilitates monitoring of the use of mental healthcare. While opportunities for register research increased, it seems that the use of case registers did not expand at the same rate. We conducted literature searches to determine whether psychiatric case registers still have a role in research and service monitoring.

Use of psychiatric case registers

In a psychiatric case register, mental healthcare contact data of all inhabitants in the catchment area are collected at one central point and linked per patient. This prevents patients from being counted more than once, at the same time keeping track of them time-wise and contact-wise. The first comprehensive psychiatric case registers were set up in the UK in the sixties, when computerized data were not widespread and case-register information attracted much attention. For the first time, accurate overall pictures appeared of trends in mental healthcare and regional differences in service use. Psychiatric case registers were initiated in many countries, and varied in size of catchment area, participating services, and the contents and organization of the information system: from national inpatient records to regional, comprehensive registers, targeted at patients diagnosed with schizophrenia or including all treated patients. For many years, these registers contributed significantly to psychiatric epidemiology and healthcare research (ten Horn et al. 1986).

Gradually, however, the expectations of the use of administrative data shifted from scientific research to practical support for management

decisions and for the primary healthcare process. The old psychiatric case registers could not catch up with these developments. Mental healthcare managers felt that scientific staff were preoccupied with possible misuse of case-register research and misinterpretation of results; it seemed that epidemiologists were busier tuning the instrument than playing their part. At the same time, administrative work to update case-register data became more complex because of changes in the organization of psychiatric services. Deinstitutionalization changed the setting of mental healthcare from arrangements clustered round psychiatric hospitals to community services: smaller sectorized services spread throughout the region. These changes involved more personnel, more disciplines, and a shift from admission data to contact-based administrations. In some cases, these new complexities resulted in backlog or missing data. Many local mental healthcare organizations switched over to modern management information systems without epidemiological or healthcare research objectives.

To the extent that comprehensive services are sectorized, the distinction between healthcare administrations and psychiatric case registers fades away. It is often difficult, however, to obtain access, and analysing longitudinal, contact-based data requires computing skills that are not common in health services research (Goldman et al. 1999). Due to these obstacles, we expected literature searches to show that case registers are not used to their full potential in research or in support of national information strategies.

Literature searches

To compile a representative list of recent case-register studies, we searched for English-language articles published in 2006 or 2007. Electronic databases provided access to medical and mental health literature, and health administration, nursing, and allied health literature (Medline, PubMed, EMbase). Words used as search terms were case register, registration, or registry, in combination with psychiatry, mental health, or

psychiatric care. We excluded papers that showed different connotations of the search terms, for example, pre-registration of nursing students, health registry evaluations, or image registration methods. In addition, we left out papers that used register data for other purposes, for example, to test nonresponse bias in survey research. Although a variety of terms was used, the literature searches will have missed papers that not explicitly refer to administrative mental healthcare information. In total, 191 references were encountered, covering a wide range of research topics. We excluded reviews and meta-analyses (n=9), and papers that addressed technological or legal issues in register research (n=5). Several studies (n=66) analysed mental health problems in patient groups selected from information systems outside the field of psychiatry, for example, twin registry, military register, or general practitioner registration network. Other studies (n=46) used administrative data limited to hospital admissions or discharge records. The remaining 55 studies were categorized according to Mortensen's classification: studies of treated prevalence and incidence of psychiatric disorders; studies of episodes of care or course of treatment; epidemiological studies of selected patient groups; research on risk factors and outcome; and record linkage studies, which combine case-register data with information from other sources (Mortensen 1995).

Types of case-register research

The definition of a psychiatric case register addresses the following features: participating services, content, and geographic area. It is not always apparent from articles' method sections that all relevant psychiatric services participate in the information system. Most registrations cover all mental healthcare patients in a specified catchment area; some include only specific disorders monitored in a nationwide database. Not more than 25 studies were identified as psychiatric case-register studies in the strict sense. More than half of the studies included are based on the national Danish Psychiatric Central Register; other studies come from, for instance, Australia (Victorian Psychiatric Case Register), Spain (the South Granada Schizophrenia Case Register), Italy (South Verona

Psychiatric Case Register), and the Netherlands (three case registers: Northern area, Maastricht, and Rotterdam).

Studies of treated prevalence and incidence

Monitoring numbers of patients in mental healthcare and descriptive studies of first contacts with psychiatric services are a major part of register research. Reports on the prevalence of, for instance, a single depressive episode or manic/bipolar disorder in Denmark (Kessing 2006c) provide useful reference information. Longitudinal, general population studies using standardized psychiatric interviews are better equipped to investigate trends in incidence rates, whereas case-register data can be used to study cumulative incidence of relatively rare disorders such as schizophrenia (Thorup et al. 2007) or autism and additional childhood neuropsychiatric disorders (Atladottir et al. 2007a). Atladottir et al (2007a) suggest that increases in reported autism diagnoses might be part of a more widespread epidemiologic phenomenon that requires further study. Probably grey-literature studies could disclose more information on trends and regional differences.

Studies of episodes of care or course of treatment

Distinctive topics for psychiatric case registers are longitudinal studies of patterns of mental healthcare or course of treatment. Topics include treated incidence of schizophrenia and level of subsequent service use (Drukker et al. 2006), and different aspects of continuity of mental health care, such as dispersion of care over different settings (Moreno et al. 2007b), time-lapse between out-patient contacts (Moreno et al. 2007a), and evaluation of long-term coordinated actions (Tansella et al. 2006).

Some studies on the course of treatment focus on diffusion of medication (Valenstein et al. 2006) and treatment adherence (Sajatovic et al. 2007; Veronese et al. 2007). Comparing diagnoses when patients reenter the mental healthcare system can show relationships between diagnostic categories (Castagnini et al. 2007). Other studies on patterns of care have investigated the relation between compulsory measures and use of psychiatric services. This topic is especially important, because

use of coercion in mental health care varies dramatically between countries (Salize and Dressing 2004). The effect of outpatient civil commitment or conditional release was associated with a reduction in use of subsequent inpatient care (Burgess et al. 2006; Segal and Burgess 2006d). Local cooperation between different agencies and using outpatient civil commitment enables a level of community-based service provision that may prevent involuntary admission or provides an alternative to hospitalization (Segal and Burgess 2006a; Segal and Burgess 2006e; Wierdsma et al. 2007). Additional oversight, however, can invoke more frequent hospitalization, which complicates the use of outpatient civil commitment and raises new questions regarding the possible benefits of conditional release (Segal and Burgess 2006b).

Epidemiological studies of selected patient groups

Psychiatric case registers can become a sampling frame for epidemiological studies of particular patient groups, selected by patient characteristics, or previous use of psychiatric services. Sometimes epidemiological research fills gaps in the sparse information available on the validity of register data. These studies can show discrepancies between registered diagnoses and self-reports (Reigstad et al. 2006) or underreporting of mental disorders in a register-based approach compared to structured psychiatric interviews (Arajarvi et al. 2006).

The objective of these studies is to better interpret complex presentations of disorders, and to indicate specific treatment programs. Epidemiological studies describe co-morbidity and diagnostic subtypes, for example, depression and aggression in cannabis-dependent subjects (Arendt et al. 2007a), co-morbid anxiety, substance abuse, dementia, or severe depressive episodes with psychosis in older patients with bipolar disorder (Kessing 2006a; Kessing 2006b; Sajatovic et al. 2006), and affective and excitement symptom dimensions apart from positive and negative dimensions in patients with schizophrenia (Villalta-Gil et al. 2006). In a study of patients with first onset schizophrenia, Boydell et al (2007) found few differences in symptomatology or family history among patients who were or were not cannabis users, which argues against a distinct schizophrenia-like psychosis caused by cannabis.

Research on risk factors and outcome

Case-register research on risk factors is limited to indicators of determinants of psychiatric disorders incorporated in the dataset, such as age, country of birth, or place of living. Date of birth and date of contact with mental healthcare allow studies that focus on etiological factors that might follow a seasonal pattern (Atladottir et al. 2007b). Ethnic patterns of service use are a recurrent topic in register studies: male immigrants from the Caribbean area and Morocco are at increased risk of schizophrenia and appear also at increased risk of developing drug-use disorders (Selten et al. 2007). More patients seeking help for cannabis dependence also receive psychiatric treatment, and use of mental healthcare is associated with re-entry into substance-abuse treatment (Arendt et al. 2007b). Increased risk for schizophrenia in second-generation immigrants cannot be explained by parental characteristics or the urban-birth risk factor (Cantor-Graae and Pedersen 2007). No evidence was found of time trends in the urban-rural differences in the incidence of schizophrenia, or of traffic related exposures in schizophrenia risk, or of a dose-response relationship between urbanicity during upbringing and risk of bipolar affective disorders (Pedersen 2006; Pedersen and Mortensen 2006a; Pedersen and Mortensen 2006b; Pedersen and Mortensen 2006c). Some of these findings, however, seem to vary between countries; this illustrates the need for international comparative studies.

Case-register research on treatment outcome involves topics that go beyond the dataset of most current information systems. One exception is the study by Bak et al (2007) evaluating the introduction of assertive community treatment (ACT). While service use indicators showed few significant pre-post differences, remission criteria using items of the Brief Psychiatric Rating Scale suggest a positive ACT effect.

Record linkage studies

Over the years, combinations of databases in record linkage studies have opened up three broad areas of research: descriptive studies of the common grounds of psychiatric services and other healthcare and social services; research on specific risk factors; and research into the effect of mental healthcare on suicide rates and mortality.

Studies of the common grounds of different services reflect the idea that quality of mental healthcare is more and more dependent on the degree to which psychiatric services are embedded in the wider field of public health. Obvious adjoining sectors are forensic psychiatry services (longer in-patient stay and restriction on discharge reduced risk of re-offending) (Coid et al. 2007) and specialized hospital care (psychiatric patients were less likely to undergo particular specialized procedures) (Kisely et al. 2007).

Combining longitudinal registers facilitates studies on risk factors that would otherwise be highly time-consuming and money consuming. Some studies focused on the aetiology of psychiatric disorders in childhood and adolescence: maternal behaviours and obstetric conditions affect risks of later development of autism or schizophrenia (Byrne et al. 2007; Maimburg and Vaeth 2007); foetal growth was not related to risk of bipolar disorders (Ogendahl et al. 2006), but body mass index in early adulthood showed an inverse relationship with later schizophrenia (Sorensen et al. 2006). Other studies have highlighted the association between mental health disorders and infectious diseases or autoimmune diseases (Eaton et al. 2006; Mijch et al. 2006; Mortensen et al. 2007), or medical risk factors such as acute myocardial infarction or hypertension (Jakobsen et al. 2007; Johannessen et al. 2006). Social risk factors that have been studied using record linkage are, for instance, new parenthood (Munk-Olsen et al. 2006) and work-related issues (Wieclaw et al. 2006a; Wieclaw et al. 2006b).

Finally, record linkage studies have been conducted on suicide rates and excess mortality. A history of suicide attempts is a high-risk factor for suicide, and for these patients, continuity of care after discharge is considered important (Christiansen and Jensen 2007). Treatment with antidepressants showed no association with completed suicide (Sondergard et al. 2006). Parental mental illness, alcohol-related disorder in particular, was associated with higher mortality risk among the offspring (King-Hele et al. 2007; Webb et al. 2006). Number of deaths for those causes considered avoidable was higher than expected for all diagnostic groups, especially for males, young patients, and alcohol-addicted or drug-addicted patients (Amaddeo et al. 2007). For those patients considered dangerous and requiring psychiatric hospitalization, conditional

release can offer protective oversight and appears to reduce mortality risk (Segal and Burgess 2006c).

New perspectives

Despite a wide range of research based on administrative data, it seems that psychiatric case registers outside Scandinavian countries are struggling to find ways to be part of key information strategies. National information systems and local integrated patient administration systems will develop further monitoring of the use of mental healthcare. We expect, however, old and new psychiatric case registers to play an indispensable part in that process; this will be, first, by producing longitudinal information on service use, second, by connecting data from mental healthcare and other services, and third, by evaluating innovative programs using outcome data. First, case registers are epidemiological research tools for estimating treated incidence, prevalence, and patterns of care. Although the validity of administrative data, especially psychiatric diagnosis, remains a point of debate (Byrne et al. 2005), the longitudinal dimension makes case registers an essential source of information for the evaluation of long-term mental healthcare policies. Secondly, as performance-indicators prescribed at national level become standard evaluation measures, case registers' focal point can shift to record linkage studies on the grey area between mental healthcare and other health and social services. In this way, case registers could 'bench mark' regional efforts to organize local public mental healthcare. Finally, psychiatric case registers have a unique position within their region to support the quality of documentation of risk factors and treatment outcome, which facilitates evaluation studies on the effectiveness and efficiency of innovative programs.

These research opportunities bring different stakeholders in psychiatric case registers together: national policy makers, local health authorities, psychiatric services, and university-based research teams. Several stakeholders and potential moneylenders, however, probably are

not well served by current research priorities. While national policies in many countries focus on better continuity of care between inpatient and outpatient services, few studies investigate patterns of service use based on longitudinal measurements. Local authorities have an interest in monitoring the cooperation between mental healthcare and public services, but few papers are published on this topic, and (international) comparative research is sparse. By adding cumulative clinical information of chronic patients, case registers become research tools for evaluating disease management programme's, the programmatic and continuing care for patients diagnosed with, for example, schizophrenia. Implementing standard tools and procedures for this type of data collection, however, seems still in an early phase in most register areas.

Conclusion

By order of national government, local authorities, and psychiatric services, psychiatric case registers can have an important role in research and service monitoring. To capitalize on new opportunities, case-register staff face a threefold challenge: to take up new (web-based) techniques for data collection, to develop useful indicators of longitudinal patterns of care, and to assess the validity of administrative data. Probably the best way to meet these challenges is to join forces. Some 20 years ago, a worldwide meeting of psychiatric case registers was organized (ten Horn et al. 1986) – maybe it is time to renew the acquaintance.

5

The Psychiatric Case Register Rotterdam-Rijnmond

Brief History, Features and Methodological Issues

Abstract

Background

The case register for Rotterdam-Rijnmond was developed by a configuration of a range of stakeholders: psychiatric services, local health authorities, university departments, and national government. The case register can be dated back to 1978, when the need was identified for the monitoring of the effects of mental healthcare reorganization and the impact of demographic developments.

Case-register features

The definition of a psychiatric case register refers to the geographic area, participating services, and the contents and organization of the information system. This case register comprises the entire Rijnmond area with a total of approximately 1.2 million inhabitants and a mix of urban and rural areas. All specialized mental healthcare services in the region, including alcohol and drugs services, participate in the case register. The data set includes patient information, care episode information and contact data.

Methodological issues

The quality of information on diagnosis, treatment effect, and costs of mental healthcare will be improved following the implementation of national-level guidelines. But a better quality of administrative data will not resolve all methodological limitations. For all the sources of bias documented in survey research, there is a parallel source of systematic error in register research. Information bias or statistical bias has been pointed out in some studies on prevalence estimates of specific disorders and patterns of care.

Conclusion

Reliability and validity issues concerning administrative data require more attention in case-register research.

Brief history of the Rotterdam case register

The 1978 Mental Healthcare Memorandum

At the end of the seventies, the Department of Social Psychiatry and Mental Hygiene of the Municipal Health Service for the Rotterdam region worked on a report on the state of mental healthcare in the area. In 1978, the local council published the Mental Healthcare Memorandum, which declared the field of mental healthcare a 'disaster area' (see Chapter 2). It stated that psychiatric services should be strongly expanded and reorganized. Communication between service providers and the coordination of services left a lot to be desired in the absence of effective structures for consultation and feedback. The composers of the memorandum suggested the formation of a regional information system to monitor the intended developments. In the policy document, the costs of a simple system based on aggregated data of mental health services were estimated to be the equivalent of about 140,000 euros. Although this proposal was never carried out, it marks the first step in the development of a regional mental healthcare information system.

The World Health Organization conference, 1980

About two years later, in August 1980, a conference was organized in Copenhagen under the auspices of the World Health Organization (WHO), on the initiative of the Ministry of Public Health and Environmental Hygiene and with financial support from the Rotterdam council. The subject of that conference was 'Mental Health Planning for Rotterdam'. The general managers present agreed on the set-up of a joint registration and documentation system. This system was intended to provide an understanding of the effects of innovative care and the implications of demographic developments such as the proportional increase in the aging population and in ethnic minority groups. In the conference report, the idea of a psychiatric case register was mentioned for the first time:

> *'So far, because of the lack of a psychiatric case register or any effective system for record-linkage, it has not been possible to monitor such developments in any effective way. … Much more accurate and detailed information will be required in future' (WHO, 1982).*

Advisory Council for Mental Health Services, and the Offerhaus report

The conference in Copenhagen had laid the foundation for better cooperation in mental healthcare in the Rotterdam-Rijnmond area. In 1984 the informal 'platform of general managers' was transformed into the Advisory Council for Mental Health Services (Dutch acronym: SOGG, Stichting Overlegorgaan Geestelijke Gezondheidszorg Rijnmond). Representatives of health insurers, consumer organizations and local government were additional members of the advisory council. The Advisory Council was supported by a small office-staff led by W.J.J.C. Oomen, succeeded by K. Schilder and later by J.E.A. Wagenborg.

The Council held advisory functions for the various mental health population groups and initiated, supported and informed on specific projects for member agencies and client groups. The Council initiated a minimal information system based on an inquiry form distributed every trimester, but it proved too much of a burden for medical administrators, so that response remained low.

The groundwork for the psychiatric case register for Rotterdam was assigned to a committee that was started in June 1985. This committee was chaired by R.E. Offerhaus and included members of participating mental health care organizations, and external advisors from the healthcare inspectorate and the Municipal Health Service. The so-called Offerhaus report was in part taken from WHO conferences on case-register research (ten Horn et al. 1986). Based on this report, the Advisory Council, in late 1986, decided to start a feasibility study, but only after the Municipal Health Services in the person of board member P.A.H. Verbraak had agreed to finance the project. The study of the potential and basic features of the psychiatric case register for Rotterdam was completed in November 1988 (van de Ven and Wierdsma 1988).

Psychiatric case register for Rotterdam-Rijnmond

The psychiatric case register for Rotterdam started in 1990 with financial support from the Ministry of Health, Welfare and Sports. The cooperation agreement was signed on May 30th by A. Vreeken, chairman of the Advisory Council on Mental Healthcare, and Professor E.W. Roscam Abbing, director of the Municipal Health Service for Rotterdam. The formal relationship between both participants, and the representation of the case register to third parties, had been covered in extensive correspondence. At the suggestion of the chief medical officer for mental healthcare, J.B. van Borssum Waalkes, the dispute was settled by the installation of a joint management commission with an independent chairman. Over the years, the commission was chaired respectively by J.E.A. Wagenborg (Healthcare Inspectorate), Professor R.W. Trijsburg (Interim Chairman, Erasmus University, Rotterdam), A.C.F. Voogt (Healthcare Inspectorate) and H.J. van der Moer (Head of the Mental Healthcare Section of the National Council for Health Services).

After the formal start of the case register for Rotterdam, a long introductory period was necessary to organize the data collection of all the participating institutions and to process the information. The first case-register publications appeared in 1994–1995.

From the start, the university department of health policy and management, the department of psychiatry, child and adolescent psychiatry, and the department of public health participated in the case register. However, the national project *Regional Information of Patients in Mental Healthcare* gave rise to the intention to extend the university's involvement, following the examples of other case registers in the Netherlands. In the new three-party agreement, signed on January 7th 1998, Erasmus University took part in the organization of the case register to supervise the scientific usefulness and application of the register data.

O3 Research Centre Mental Healthcare Rotterdam-Rijnmond

In 1999 the Dutch Health Research Board published its *Advice on Mental Healthcare and Public Mental Health Research*. The Minister of Health, Welfare and Sports agreed with the advice that cooperation networks of

academic and care institutions should be considered an essential contribution to the improvement of the research and knowledge infrastructure. Against this background, new organizational forms were explored to expand the use of the case register for Rotterdam. The three cooperating parties looked at ways to link the case register to the local research network developed at the initiative of A.C.F. Voogt. This network included researchers covering the wide field of social psychiatry and public services. In addition to these developments, in June 2001, Professor J.P. Mackenbach (Department of Public Health) and Professor F.C. Verhulst (Department of Child and Adolescent Psychiatry) issued the report *Towards a structure for a new line of research on social psychiatry*. The report pointed at three conditions for the development of this line of research: the cooperation of departments and institutions within and outside Erasmus MC (Medical Centre), the acquisition of external funding and the creation of a chair in public mental healthcare. In the course of time, all these conditions have been met.

In July 2003, the various initiatives resulted in the declaration of intent to establish the *O3 Research Centre Mental Healthcare Rijnmond*. A.S.J. Wolters, signing on behalf of the psychiatric services in Rijnmond, Professor M.H.C. Donker, director of the Municipal Health Service for the Rotterdam region, and Professor P.J. van der Maas, vice-president of the Erasmus MC Board of Management, agreed to install a founding committee, chaired by Professor F. Sturmans. The research centre was accommodated by the Department of Psychiatry; Professor M.W. Hengeveld, head of the Department, accepted the role of the centre's managing director.

Not unlike the debate at the start of the case register, it took a long time to clarify the contributions and expectations of the participants. On April 25th 2007, the provisional arrangement was replaced by a new cooperation treaty, signed by R.F. Koning on behalf of the psychiatric services in Rijnmond, Professor M.H.C. Donker, director of the Municipal Health Service for Rotterdam-Rijnmond, and Professor H. Büller, chairman of the Erasmus MC Board of Management. The O3 Research Centre's management tasks were handed over to Professor C.L. Mulder, who was appointed to a chair in Public Mental Healthcare in January 2007.

One of the projects of the O3 Research Centre is the Psychiatric Case Register Rotterdam-Rijnmond.

Features of the Rotterdam case register

The definition of a psychiatric case register refers to the mental healthcare contact data of all inhabitants in the catchment area, collected and linked per patient. This addresses the following features: (1) the geographic area, (2) participating services, and (3) the content and organization of the information system.

(1) *Geographic area.* The register area or catchment area started with Rotterdam and its satellites (marked I in figure 5.1). It has been extended to include the Nieuwe Waterweg Noord region (marked II) and the Zuid-Holland islands (III in figure 5.1). The case register comprises the Rijnmond area with a total of approximately 1.2 million inhabitants and a mix of urban and rural areas. Table 5.1 shows some socio-demographic characteristics of the catchment area of the Rotterdam-Rijnmond case register. In particular, some of the inner-city boroughs are deprived areas, indicated by a low mean income per inhabitant and a skewed demographic distribution because of the presence of older people or non-western immigrants.

(2) *Participating services.* In the case register, data are collected of nearly all mental healthcare services in the region. With regard to general psychiatric care, there are hospitals, day care centres, short-term psychosocial care, and outpatient clinics of three general psychiatric hospitals. Apart from the university hospital, there are no psychiatric departments in general hospitals in the Rotterdam-Rijnmond district. Scattered over the area are sheltered homes for (former) psychiatric patients. In addition to the outpatient clinics, ambulatory care includes the regular departments and crisis services of the institutions for ambulatory mental healthcare.

Figure 5.1 Catchment area, Psychiatric Case Register Rotterdam-Rijnmond

Table 5.1. Demographic characteristics of the Rotterdam-Rijnmond region, 2001

Local council/ boroughs	Number of inhabitants	% 65+ years	Disposable income *	% Ethnic groups **
Rotterdam [a]	*595,255*	15.0%	10.5	31.7%
Boroughs				
Maasstad	*28,340*	12%	12.1	34%
Delfshaven	*72,010*	8%	8.7	59%
Overschie	*16,270*	19%	10.6	19%
Noord	*51,330*	10%	10.8	35%
Hillegersberg/Schiebroek	*40,620*	21%	12.9	12%
Kralingen/Crooswijk	*51,870*	13%	11.0	32%
Prins Alexander	*84,530*	20%	11.8	13%
Feijenoord	*72,030*	11%	8.8	52%
Ijsselmonde	*60,800*	20%	10.3	23%
Charlois	*66,520*	17%	9.9	36%
Hoogvliet	*36,610*	17%	10.3	21%
Hoek van Holland	*9,440*	17%	11.8	3%
Satellites				
Capelle a/d Ijssel	*65,018*	13.3%	11.9	12.4%
Krimpen a/d Ijssel	*28,698*	14.9%	11.5	4.1%
Ridderkerk	*46,542*	15.9%	11.3	5.2%
Albrandswaard	*17,721*	13.5%	12.4	4.6%
Barendrecht	*3,0976*	11.7%	12.0	4.6%
NWN-region				
Schiedam	*76,102*	15.5%	10.7	20.0%
Vlaardingen	*73,675*	17.4%	11.3	12.6%
Maassluis	*32,981*	13.0%	11.2	14.3%
South-Holland islands				
Spijkenisse	*73,853*	10.6%	10.8	10.9%
Hellevoetsluis	*38,861*	10.2%	11.0	7.5%
Bernisse	*12,739*	11.7%	11.6	1.9%
Brielle	*15,965*	12.9%	12.2	3.0%
Rozenburg	*13,225*	11.8%	11.4	6.8%
Westvoorne	*13,899*	17.0%	12.9	2.3%
Dirksland	*8,199*	13.5%	10.4	1.2%

Table 5.1 continued

Goedereede	*11,268*	14.6%	10.6	1.0%
Middelharnis	*17,039*	15.7%	10.4	1.8%
Oostflakkee	*10,140*	13.5%	10.4	1.3%
Binnenmaas	*19,232*	12.8%	12.0	1.9%
Cromstrijen	*12,791*	12.5%	11.6	1.5%
's-Gravendeel	*8,740*	13.5%	11.0	2.1%
Korendijk	*10,752*	11.9%	10.9	1.3%
Oud-Beijerland	*22,392*	12.2%	11.3	2.8%
Strijen	*9,389*	12.1%	11.2	2.3%
The Netherlands	*15,987,075*	13.6%	11.7	9.3%

[*] Mean disposable income per person (× 1000 euros)

[**] Proportion of non-western immigrants (at least one parent born outside the Netherlands)

[a] Numbers include industrial areas and people without a residential address

The case register includes data from the regional forensic psychiatric outpatient clinic but not from the forensic clinic in the area (these institutions are not district bound). The care and treatment of alcoholics and drug addicts is provided by outpatient clinics for alcohol and drugs abuse, methadone maintenance programmes, and semi-residential and residential institutions. In the child and adolescent psychiatry field, there are the youth departments of institutions for ambulatory mental healthcare, as well as the clinics and outpatient clinics of specialized services, and the department of child and adolescent psychiatry at the university hospital. Private psychiatrists and psychotherapists participate in the case register, but because of technical obstacles, this information has not yet been added. No data are collected of psycho-geriatric nursing homes and medical child homes and day care centres. These patient flows are known, however, because referral to these services is practically always made through outpatient services, and referral data are recorded in the register.

(3) *Organization and content.* The starting point of the register is the listing of all patients in care on January 1st 1990. An automated method for record linkage is used to indicate the measure of correspondence between new data and previous patient information. Identification data are used to trace patients through the various services. A so-called probability link is made, based on the first two letters of the family name, date of birth, gender, numeric part of the postal code, and country of birth. It is then determined whether this information pertains to a new patient or a renewed registration (Newcombe 1988). The letters of the names and the complete dates of birth are not recorded in research files. Other measures with regard to privacy protection are: restricted access to register data and file locking. Participating mental healthcare services are responsible for the way patients are informed about medical records and case-register data entry.

The development of the case register should not place too much of an administrative burden on participating institutions. Therefore, data are procured from existing registration systems, which, particularly in the first few years, involved converting various file formats and recoding data in accordance with the register standard (in some cases, registration forms have been processed). The data set includes patient information (age, gender, country of birth, marital status and postal code), care episode information (referral, date, diagnostic information, etc.), and contact data (date and type of care). The data set largely corresponds to the *Basic data set mental health* which was proposed by the national mental healthcare umbrella organization (Wilken 1994). This data set is currently being replaced, which in time will improve the quality of information on diagnosis, treatment and costs of mental healthcare.

Methodological Issues

In a review of case-register research, Mortensen (1995) discussed the 'untapped potential of case registers' in psychiatric epidemiology. The review aimed to illustrate that case-register data, in many cases in combination with other data, provide a valuable research tool. Case registers and

linked data create opportunities to control for confounders while offering a better understanding of the risks of introducing selection bias (because of, for example, including more long-term dependent patients through selective survival) or information bias (for example, misclassification as a result of loss to follow-up).

The counterpart of 'untapped potential' is 'systematic error' in case-register research. Methodological limitations of case-register studies are analogous to different sources of bias in survey research (Wierdsma and Sytema 1996). Noncoverage bias, for example, can arise by excluding patients in specific settings, just like in population studies specific subgroups, for instance people who are detained, can be under- sampled. Nonresponse bias can occur when patients are lost to follow-up because they move outside the catchment area, which is similar to respondents who fail to return a questionnaire. Sensitive topics, such as questions on mental health in survey research and psychiatric diagnosis in case-register studies, are prone to item-nonresponse or response bias. One way to deal with incongruities of the subjective diagnostic process is not to record DSM-IV classifications, or to record 'not otherwise specified'. Diagnostic information is often missing especially for patients in outpatient treatment with low psychiatric severity. Linking psychiatric diagnosis and type of treatment in the new Dutch healthcare financing system will undoubtedly help reduce the number of missing values, although not necessarily enhance diagnostic accuracy.

In some cases the epidemiological numerator or denominator is miscalculated, which leads to statistical bias. In his dissertation study, Blansjaar (1992) calculated high rates of Korsakoff patients in The Hague: 214 patients were registered in various mental healthcare services, so that relative to the population of The Hague the prevalence-rate was estimated at almost 4,8 per 10.000 inhabitants. Based on admission data in the Province of North-Holland, Schnabel (1992) estimated the Korsakoff syndrome prevalence-rate considerably lower: about 3 patients per 10,000 inhabitants. Blansjaar's estimates were probably biased, because it is unclear if before admission all patients in his study in The Hague had lived in the city. The Hague had a specialized sheltered home for Korsakoff-patients, which most likely had a regional instead of a local function. In that case, not the urban population but inhabitants from a

wider area should have been the epidemiological denominator, which means that prevalence of the Korsakoff-syndrome was overestimated (Wierdsma and Sytema 1996).

To avoid misinterpretation of results, research based on administrative data requires extensive knowledge of the context and background of information on service use. In a national study as part of the periodic evaluation of the Act on Special Admissions to Psychiatric Hospitals, Scholten and Tjadens (1996) found that in about 25% of the cases a judge would not grant authorization to continue the compulsory admission that in emergency situations is issued by the city mayor. The authors reported striking regional differences and the Rotterdam area beat all others: 42% of emergency compulsory admissions were not continued. Scholten and Tjadens, however, did not account for differences in the administration of compulsory admissions that were not continued. They probably included patients who were hospitalized outside the residence area, as a consequence of which the admission procedure is discontinued in that area and the judiciary in another area takes over. At the time, relatively many Rotterdam patients were admitted elsewhere because of a shortage of hospital beds in the Rotterdam-Rijnmond district. In a replication study we found no more than 20% discontinued involuntary admissions in the city of Rotterdam (Wierdsma 2003).

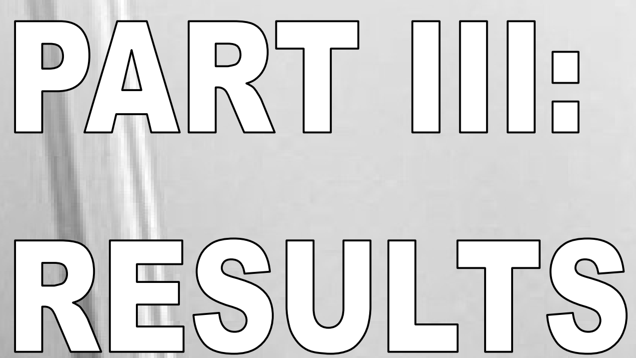
Register research requires detailed insight into administrative processes and procedures in mental healthcare. In a study of the effects of the implementation in 1994 of the new Act on Special Admissions to Psychiatric Hospitals on the development of the number of emergency compulsory admissions, Poletiek (1997) over-counted patients admitted involuntarily. In the period 1990–1995 a steady increase in the number of involuntary admissions was found. However, particularly after the introduction of the new law, there was a noticeable increase in the number of emergency compulsory admissions of patients who were already admitted voluntarily. The increase of these 'conversions' was analyzed based on the bed-occupancy figure per year, broken down by judicial status. This occupancy figure is an estimate of the number of patients on any day of the year and whose stay in the hospital is involuntary. That number was overestimated because judicial status was often not updated following the expiration of the emergency compulsory procedure. In this way, the bed-

occupancy figure included patients who were treated voluntarily after compulsory admission of three weeks maximum. The increase of 'conversions' after the implementation of the new Special Admissions Act could be interpreted as an effect of a stronger awareness of the Registration of judicial measures (Wierdsma 1997). This does not mean that the judicial status would be more frequently updated at a later time, as Poletiek's reply to the above criticism suggested. Instead, stronger registration awareness could account for more changes in judicial status, all of which would be included in the occupancy figure. Bias in the national register data was confirmed, yet Poletiek held to the conclusion that the number of involuntary admission in psychiatric hospitals increased after the introduction of the new law.

Conclusion

An overwhelming amount of literature has been published on measurement problems in field studies and on psychometric characteristics of scales used in questionnaires. In contrast, there is generally not much zest for questions about the quality of the data obtained from mental healthcare information systems. Byrne et al. (2005) conclude that the empirical literature on the validation of register data is sparse and mostly restricted to diagnostic information. Despite the widespread use of registers for psychiatric research, existing validation studies vary in conceptual sophistication and methodological rigour. They suggest that healthcare researchers should critically assess the validity of administrative data more frequently.

PART III: RESULTS



6

Mental Healthcare Follow-up: Old Acquaintances, Newcomers and Passers-By

Use of Mental Health Services as Indicator of Quality of Care

Abstract

Background

In evaluations of the Act on Special Admissions to Psychiatric Hospitals in the Netherlands (Dutch acronym BOPZ) hardly any attention has been given to the use of mental health care services before and after a compulsory admission.

Method

For 623 patients with first-time emergency compulsory admissions in Rotterdam, the use of mental healthcare services was monitored over a period of 12 months before and after admission. Outcomes were compared for various patient groups and before and after the introduction of the BOPZ Act of 1994.

Results

The average length of stay is more than two months, and in more than half of cases, first contact with mental health services occurs within one week after discharge. Within one year after compulsory admission, more than one-third of patients are readmitted. After one year, more than 50% of patients are still receiving mental healthcare. Intensive care is targeted in particular at the patient group referred to as 'old acquaintances'. Following the introduction of the BOPZ Act, the percentage of suicide threats and cases of self-neglect increased. The number of compulsory readmissions increased as well.

Conclusion

The research results provide an encouraging picture of the quality of care provided before and after compulsory admissions. However, the cases that fail to receive mental healthcare before emergency compulsory admission and miss out on outpatient follow-up emphasise the need for alternative measures such as an earlier conditional compulsory admission and more intensive outpatient treatment.

Introduction

The Dutch Act on Special Admissions in Psychiatric Hospitals (Dutch acronym BOPZ) provides the procedures for compulsory admission and the legal position of patients admitted involuntarily. The realization of the Special Admissions Act is evaluated periodically to indicate possible supplements or necessary changes (Evaluatiecommissie BOPZ 1996; 2002). At the symposium 'Ten-year BOPZ Act, looking back and looking forward' some thematic reports were discussed (Healthcare Inspectorate 2004). However, these studies pay little attention to healthcare that precede compulsory admission and outpatient follow-up. Information on psychiatric history and mental healthcare after compulsory admission is relevant from various perspectives. First, from a treatment perspective, this information is relevant because the type of first contact with specialist mental healthcare influences further service use (Fennig et al. 1999). Second, follow-up information is important to members of the City Council who are involved in the emergency compulsory admission procedure. In view of the seriousness of the emergency situation, the City Council expects that the patient concerned will be admitted for some time and that outpatient follow-up is intensive. This fits with the strict policy on the combat of public nuisance aiming to improve the quality of life in urban areas. Third, from the perspective of the mental health services, healthcare before and after compulsory admission could be interpreted as indicators of the quality of the healthcare programme. Thus service-use and follow-up are seen as an outcome measure alongside other outcome indicators such as the functioning of patients and satisfaction with service delivery (Donker 1992).

In emergency psychiatry, indicators of quality of care are less specified than, for instance, the well-known standard in the Netherlands for ambulance services. The prevailing standard is that a case of emergency should result in an arrival within 15 minutes. The Special Admissions Act provides some procedural and administrative standards for compulsory admission, but quality-criteria have not been laid down in a 'programme of demands'. When later judicial changes concern such criteria, is likely that the following measures will be included: length of stay, time between hospital discharge and outpatient follow-up, and time

between discharge and readmission. Standards for such indicators of continuity of mental healthcare before and after compulsory admission can be taken from the result of studies in the Netherlands into the coherence of inpatient and outpatient services (Brook et al. 1988; Pijl et al. 2003; ten Horn 1982).

In the present study, use of psychiatric services before and after emergency compulsory admissions in Rotterdam was compared to general information on before and aftercare. We also researched the correlation between patient-characteristics and criteria for compulsory admission. In view of the seriousness of emergency situations, we expected the proportion of short-term admissions to be less than 10%, with length of stay more than two months on average, and more than half of the patients still hospitalised after one month (van der Post et al. 2004). Furthermore, it was assumed that the median time between hospital discharge and aftercare would be relatively short (less than two weeks). Because of intensive outpatient follow-up, the likelihood of readmission could be reduced: it was expected that, within three months, less than a quarter of the patients, and within one year, less than one-third of the patients, would be readmitted. As emergency psychiatry has various target groups (Mulder and Wierdsma 2002; Wolf 1990), we mapped differences in the service use of new patients and patients already known in mental healthcare. Changes after the introduction in 1994 of the new Special Admissions Act were also analysed, because differences in judicial rules might result in considerable shifts in the use of compulsory admissions (Salize and Dressing 2004).

Method

For the years 1992–1993 and 1996–1997, data were collected on, respectively, 406 and 618 emergency compulsory admissions. In the context of administrative tasks in compulsory admission procedures, the Municipal Health Service for the Rotterdam region as of 1994 maintained an information system to register medical reports (in particular psychiatric diagnosis and the dangerousness criterion). Patient characteristics were also

Table 6.1. Patients admitted involuntarily in Rotterdam in 1992–1993 and 1996–1997, reasons for exclusion from the study on service use before and after emergency compulsory admission

	n	
Total number of patients admitted involuntarily	1024	
Persons from outside the area cannot be monitored		112
Failed recordlinkage because of missing identifiers		25
Gaps in days of admission and outpatient contacts*		162
Emergency compulsory readmissions		102
Total number of patients excluded	401	
Patients / First emergency compulsory admission	623	

* Admissions outside the area or procedures not put into effect (Wierdsma, 2003)

recorded (age, gender, country of birth, postal code). For a classification of socio-economic differences, we used neighbourhood scores according to the Jarman index (Jarman 1984). Over the years before 1994, only patient-characteristics were recorded. Therefore, in order to compare the use of emergency compulsory admissions before and after the introducetion of the Special Admissions Act, we randomly selected well over 100 medical documents over the years 1992-1993 and coded the psychiatric diagnoses and type of dangerousness according to current standards.

Information on the psychiatric history and aftercare of patients admitted involuntarily was obtained from the Psychiatric Case Register for the region of Rotterdam-Rijnmond. This register is a continuous, longitudinal recording of the mental healthcare contact of patients living in the Rotterdam-Rijnmond area (ten Horn et al. 1986; Wierdsma et al. 1999). In the records of psychiatric services participating in the case register, we looked up the emergency compulsory admissions using a limited number of patient identifiers (initial two letters of surname, date of birth, gender, country of birth, numeric postal-code, and date of admission). In the research file, patients were anonymized by omitting the letters of surnames and full dates of birth. Some patients were excluded from the study for various reasons (summarized in table 6.1). Included

and excluded patients did not show significant differences for gender, age, marital state, socio-economic position, psychiatric diagnosis, or type of dangerousness (Chi-squared tests; p<0.05).

For all patients in the final research file (n = 623), we calculated service-use indicators by accumulating hospital days and outpatient contacts over a period of twelve months before and after the first emergency compulsory admission. We excluded outpatient contacts on the same day the medical certificate was formulated, because most of these contacts are related to the compulsory admission procedure. Readmissions could not be accurately differentiated in voluntary and compulsory admissions, because registration systems did not record 'conversions' (the start of a compulsory admission procedure for patients who had already been admitted voluntarily). Use of mental healthcare was categorized by recording the highest level of service-use per month. Hospitalization was considered as highest level of care, followed by a combination of inpatient and outpatient care, or only outpatient contacts (Sytema 1994).

Results

Patient characteristics

Emergency compulsory admissions included in this study, concerned 623 unique patients, of whom 70 (11%) were admitted involuntarily more than once. Readmissions were identified only within the study-periods 1992–1993 and 1996–1997; 30 patients (5%) were admitted in both periods. Table 6.2 shows patient characteristics and tests of differences between patients who had only one compulsory admission and patients readmitted involuntarily. Emergency compulsory admission concerned more men (55%), mostly aged between 12 and 45 year (71%), and not married (74%). A substantial part if these patients were born outside the Netherlands (34%), and lived in deprived city-areas (47%). Medical reports for the first compulsory admission indicated a diagnosis of schizo zophrenia or other psychoses for 49% of the patients, and in most cases

Table 6.2. Characteristics of patients admitted involuntarily in Rotterdam (N=623), in 1992–1993 and 1996–1997, subdivided by single or repeated compulsory admissions

	Patients (%)	Single admission (n=553)	Repeated admissions (n=70)	n	
*Age at admission**					$Chi^2(2)$=
12 – 44	70.8%	88.8%	11.2%	439	7.91
45 – 64	18.4%	83.3%	16.7%	114	P= .019
65 years +	10.8%	97.0%	3.0%	67	
Gender					$Chi^2(1)$=
Male	56.1%	90.5%	10.5%	343	0.419
Female	44.9%	87.9%	12.1%	280	P=.517
*Country of birth**					$Chi^2(6)$=
Netherlands	66.4%	89.8%	10.2%	402	6.57
Suriname	10.6%	87.5%	10.3%	64	P=.363
Dutch Antilles	4.3%	80.8%	19.2%	26	
Morocco	3.0%	88.9%	11.1%	18	
Turkey	1.5%	88.9%	11.1%	9	
Other non-western	6.1%	78.4%	21.6%	37	
Other countries	8.1%	91.8%	8.2%	49	
*Marital state**					Chi^2 (3)=
Unmarried	74.0%	87.5%	12.5%	449	3.46
Married	17.8%	93.5%	6.5%	108	P= .326
Divorced	6.8%	88.6%	11.4%	35	
Widowed	2.5%	93.3%	6.7%	15	
Socio-econ. position					Chi^2 (1)=
Low	46.9%	86.6%	14.4%	292	6.46
High	53.1%	91.5%	8.5%	331	P=.019
*Type of danger***					Chi^2 (3)=
Suicide	34.8%	87.7%	12.3%	163	0.535
Self-neglect	24.1%	86.0%	16.0%	113	P=.911
Danger to others	27.4%	87.5%	12.5%	128	
Public safety	13.7%	87.5%	12.5%	64	

Table 6.2 continued

*Diagnoses***					Chi^2 (6)=
Schizophrenia	19.4%	90.1%	9.9%	91	16.07
Delusions	8.1%	89.5%	10.5%	38	P=.020
Other psychosis	29.3%	88.3%	11.7%	137	
Manic/mixed	12.8%	76.0%	26.0%	60	
Other affect. disorder	8.1%	94.7%	6.3%	38	
Addiction	4.7%	72.7%	27.3%	22	
Other	17.5%	89.0%	11.0%	82	

* Differences in n-values because of missing data ** Data of 468 patients because of 155 patients in the years 1992–1993 only patient characteristics were recorded

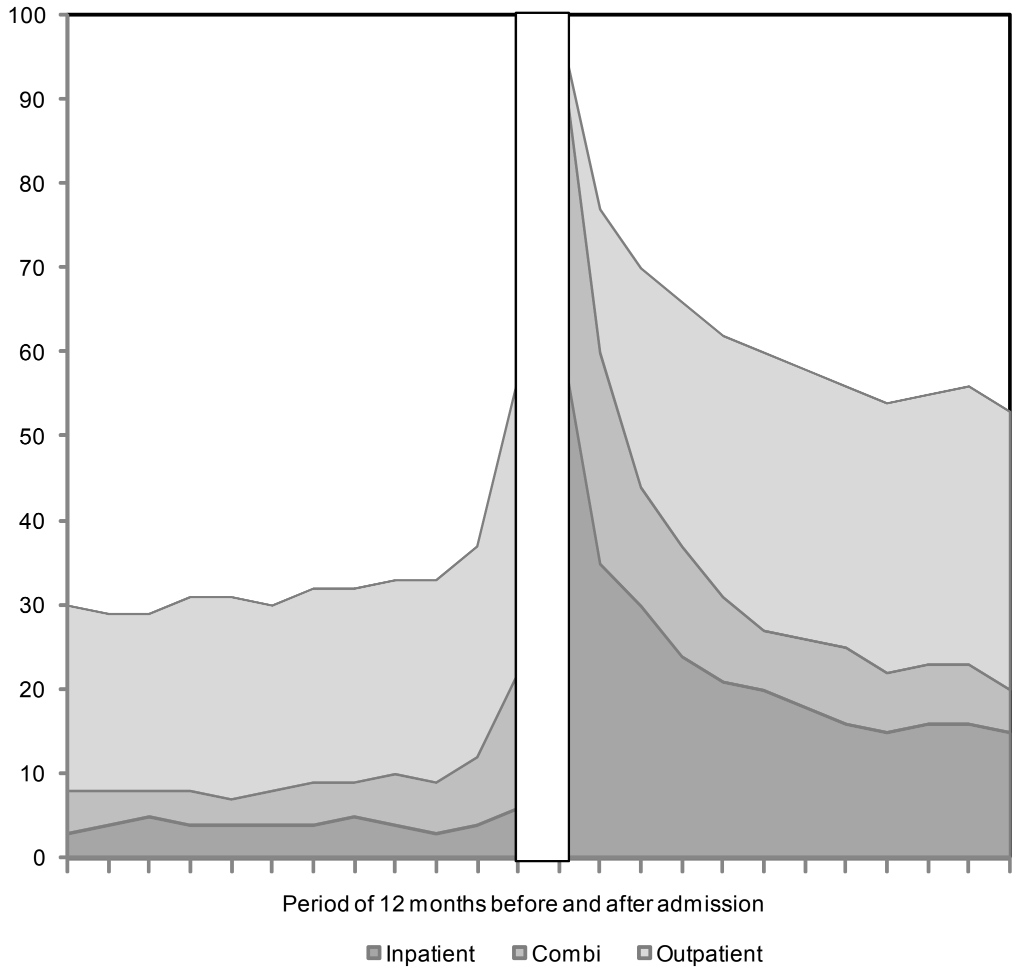
(59%), self-harm was the primary category regarding the dangerousness criterion. Repeated compulsory admissions were more common among the age group of 45 to 65 years, among patients with low socio-economic position, patients born in 'other non-western countries' (e.g. refugees and asylum-seekers) and patients diagnosed with manic or mixed emotional disorders.

Psychiatric history

Figure 6.1 shows the course of service-use in which the highest level of mental healthcare per month was recorded over a 12-month period before and after the first emergency compulsory admission. For example, when in the previous three months a patient was admitted voluntarily for six weeks and had outpatient contacts over the following six weeks, this was counted respectively as: (a) inpatient care in the third month before the compulsory admission, (b) a combination of inpatient care and outpatient care in the second month, and (c) outpatient care in the first month before the compulsory admission.

Of all patients admitted involuntarily, 71% had had previous contacts with mental health services. Figure 6.1 shows that per month about 30% of the patients were in mental healthcare, with about 7% of inpatient care as the highest contact level.

Figure 6.1. Patients in mental healthcare one year before and after emergency compulsory admission, per month by level of care (in percentages)



In the month before emergency compulsory admission, 54% of patients were in contact with mental healthcare, and the proportion of admission increased to 9% in the penultimate month and increased further to almost 19% in the last month before compulsory admission.

Table 6.3. Length of stay, Outpatient aftercare, and readmission of patients admitted involuntarily

	Total (n=623)	Old acquaintances (n=376; 60.4%)	Newcomers (n=112; 18.0%)	Passers-by (n=135; 21.7%)	
Length of stay					
less than 3 weeks	36.4%	28.2%	42.0%	60.0%	$Chi^2(2)=43.98$ P=.000
more than 6 months	13.0%	17.3%	8.9%	4.4%	$Chi^2(2)=16.49$ P=.000
average nr of days	71	92	60	34	F(2)=18.76 P=.000
Outpatient aftercare					
within 1 week	51.4%	52.4%	47.8%	-	$Chi^2(2)=0.604$
average nr of days	15	15	15	-	P=.437
Readmission					$Chi^2(1)=0.09$
within 3 months	17.5%	19.1%	17.9%	-	P=.759
within 1 year	36.0%	40.7%	37.5%	-	$Chi^2(1)=0.37$ P=.545
Still in care 12 months after admission	51.7%	66.0%	56.4%	-	$Chi^2(1)=4.19$ P=.041

Old acquaintances = patients with psychiatric history and aftercare
Newcomers = patients with aftercare only
Passers-by = patients mostly without psychiatric history and without further contacts

Length of stay

Table 6.3 summarizes the results of the analyses of length of hospitalization and continuity of mental healthcare. Emergency compulsory admission can last a maximum of three weeks, but over one in three patients (36%) were discharged within this time frame, and almost 20% of compulsory admis-sions lasted not more than one week. After one month

Table 6.4. Socio-demographic and clinical characteristics of patients admitted involuntarily

	Old acquaintances (n=376; 60.4%)	Newcomers (n=112; 18.0%)	Passers-by (n=135; 21.7%)	
Age at admission				$Chi^2(2)=1.73$
% Younger than 45 years	69.5%	76.9%	70.1%	P=.421
Average	40 years	37 years	40 years	
Gender				$Chi^2(2)=2.81$
% Males	52.4%	58.0%	60.4%	P=.245
Country of birth				$Chi^2(2)=8.38$
% Suriname / Dutch Antilles and other non-western	18.5%	30.4%	18.1%	P=.015
Marital status				$Chi^2(2)=8.75$
% Not married	76.5%	72.3%	62.2%	P=.013
Socio-economic position				$Chi^2(2)=2.11$
% Low	46.3%	52.7%	43.7%	P=.347
Type of danger				$Chi^2(2)=0.63$
% Suicide / Self-neglect	60.3%	56.6%	58.0%	P=.729
Diagnosis				$Chi^2(2)=9.24$
% Schizophrenia	18.1%	9.8%	8.9%	P=.010

Old acquaintances = patients with psychiatric history and aftercare
Newcomers = patients with aftercare only
Passers-by = patients mostly without psychiatric history and without further contacts

almost half of the patients (47%) were still hospitalized, about 13% had been admitted for more than six months, and the average number of hospitalization days was 71. Some patients (n=39) were hospitalized during the entire 12-months observation period. Excluding these long-stay patients, the average length-of-stay after emergency compulsory admission was 7 to 8 weeks.

Outpatient aftercare and readmission

Emergency compulsory admission is usually followed by outpatient treatment, and of all cases with follow-up contacts almost one in two (51.4%) had first face-to-face contact within one week. One month after discharge, outpatient aftercare had been started for 87% of these patients. No differences in patient characteristics were found for the time gap between hospital discharge and aftercare.

Compulsory admission was followed by new hospitalization within three months in 17.5% of all cases and within one year in more than one-third of the cases (35%). Figure 6.1 shows that, after two months, almost one-quarter of patients (23%) were no longer in contact with mental healthcare services. One year after admission, more than half of patients (52%) still had mental healthcare, and the share of inpatient care was about 20% (admission or combination of admission and outpatient care).

Based on the combination of psychiatric history and aftercare, we distinguished three patient groups: 'old acquaintances' (patients in contact with psychiatric services before and after compulsory admission), 'newcomers' (no contacts for one year before admission, but with aftercare), and 'passers-by' (no or limited psychiatric history and no outpatient contacts or hospitalization after emergency compulsory admission). Tables 6.3 and 6.4 show patient and clinical characteristics of these subgroups.

Old acquaintances

In the year prior to compulsory admission, most patients (60%) had already made contact with psychiatric services and continued treatment after admission. This subgroup includes 34 patients who were hospitalized for 12 months or longer.

> *Male, 26 years of age, since puberty known to have depression, suicidal expressions and aggressive behaviour. Had been previously admitted based on a criminal justice procedure in connection with rape. General practitioner reports maltreatment of the parents and a court injunction forbidding the person concerned to appear in the district where his ex-girl-*

friend lives. Compulsory admission is followed by a hospitalization period of more than 12 months.

Emergency compulsory admission can be preceded by a period of intensive mental healthcare. Many patients concerned are long-term healthcare dependent.

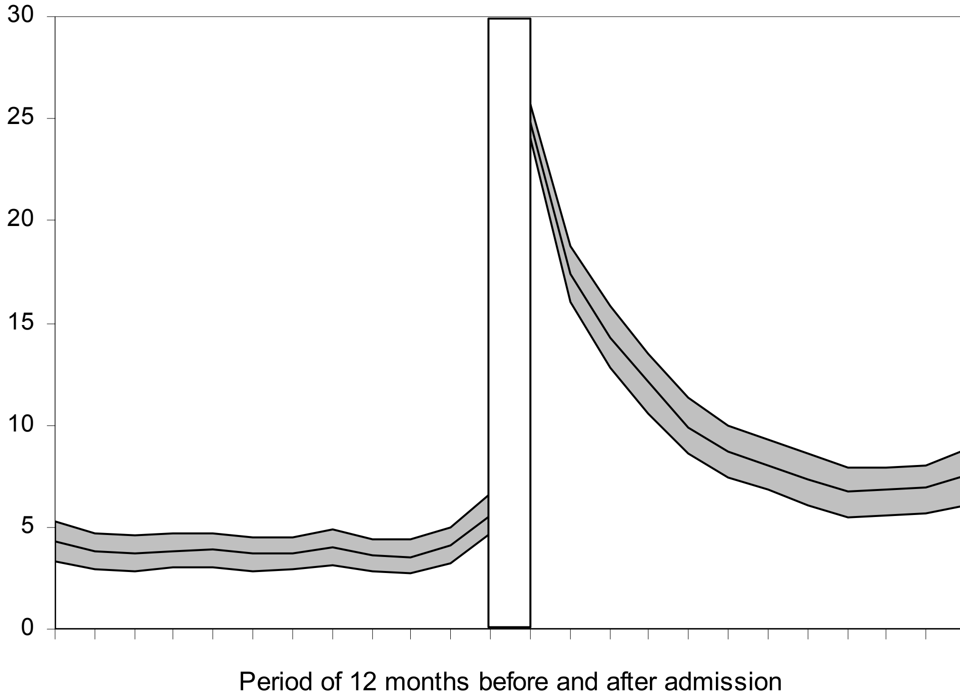
Patient concerned is 35 years old, unmarried and lives alone. Diagnosis: serious personality disorder and paranoid delusional condition. Dangerousness: threat to himself and others. There is imminent auto-mutilation by means of a knife and setting himself on fire – has previously given himself a serious burn. The patient has an extensive psychiatric history with several hospitalizations. Has outpatient treatment and was discharged from a psychiatric hospital two days before the emergency compulsory admission. Has been reported, almost immediately after discharge, to the psychiatric emergency centre and readmitted involuntarily.

One year after compulsory admission, 66% of 'old acquaintances' were still in contact with psychiatric services. Figure 6.2 illustrates the course of the intensity of mental healthcare. Prior to involuntary hospitalization, the average number of outpatient contacts and hospital days increased from about 4 to more than 6 contacts and/or hospital days per month. Moreover, the average number of hospital days after admission was high: 92 day or about 3 months on average (excluding hospitalization periods of 12 months or more). After emergency compulsory admission, many patients not only were in contact with psychiatric services for a long time, but also had intensive follow-up: 8 to 10 contacts and hospital days per month on average. As shown in table 6.4, this patient group has relatively more unmarried people and patients diagnosed with schizophrenia.

Newcomers

In 18% of the cases, emergency compulsory admission was the start of an episode of mental healthcare (we included 5 patients who had received no aftercare but had been hospitalised for 12 months or more). One year after admission, 55% of patients were still in mental healthcare and on

Figure 6.2. Average number of outpatient contacts and hospital days of 'old acquaintances' per months, one year before and after emergency compulsory admission (excluding length of stay of 12 months and longer), with 95% confidence interval



average had fewer than 5 outpatient contacts or hospitalization days. Table 6.4 shows that relatively more patients born in Suriname, Dutch Antilles, or 'other non-western country' were admitted involuntarily upon first contact with psychiatric services. In some cases, the medical report indicated that the patient had previously been in mental healthcare, but had lost contact.

> *Patient concerned is 27 years of age, male, born in Suriname, known to have schizophrenia, needs medication but has not taken his medicine for some time. Was locked in by the police at least ten times in the past six months on charges of threats and assaults. Went on the rampage and after several warnings was again locked in. Compulsory admission lasted well*

over three weeks, followed by outpatient aftercare within fourteen days and regular, monthly follow-up. The patient was readmitted within one year.

Among the 'newcomers' are patients who will be categorized as 'old acquaintances' in the long term.

For some years now, an elderly woman causes extreme public nuisance, particularly at night. Diagnosis: paranoid psychosis. Local residents and Housing Corporation have tried to persuade her to move house. Outpatient mental health service and the policeman on the beat have tried to make contact, but the patient concerned rejects any help. After compulsory admission, which lasted ten weeks, outpatient mental healthcare could be started and since then, the patient has been visited every month.

Passers-by

According to our data, about one in five patients (22%) admitted involuntarily did not have mental healthcare follow-up. Table 6.4 shows the relatively short average length of stay for this group of 'passers-by'. In some cases, there had been no previous contact with mental healthcare (n=64). This includes supportive interventions and required assessments for care in other healthcare circuits.

Male, 61 years old, unmarried and living in a sheltered home. Diagnosis: depressive period in strict sense. Dangerousness: severe self-neglect. Patient concerned refuses to drink and to take his medication for epilepsy. Dehydration and epileptic attacks are to be expected in short term. After three weeks of involuntary hospitalization, the patient could return to the sheltered home. Some years later, he was readmitted involuntary for a short time.

Conversely, the remaining emergency compulsory admissions were preceded by mental healthcare (n=71). One of the reasons for a breakdown

in psychiatric treatment is that the mental healthcare system has reached its limits.

> *Woman, 53 years of age, married. Dangerousness: public safety and physical health of other people. She threatens visitors to the chemist's shop in order to extort flunitrazepam; every day she comes to the general practitioner's surgery and behaves in such a deviant way that normal procedure becomes disordered. The policeman on the beat reports that the patient concerned is locked in at the police station once a week. One night she was on the streets shouting, refused medication prescribed by the substitute general practitioner, and set her dogs on him. About one and a half years earlier, the emergency psychiatric service had concluded, after careful consideration, that outpatient treatment was not an option. Emergency compulsory admission was implemented anticipating the start of a procedure for a regular involuntary admission. The emergency compulsory admission lasted for four weeks, but no other steps for involuntary admission were taken.*

Before and after the new Special Admissions Act

The number of emergency involuntary admissions increased by more than 50% in the periods 1992–1993 and 1996–1997. No differences were found in patient characteristics or clinical characteristics, except for type of dangerousness and readmission. Medical reports in the admission procedure indicated fewer threats to public safety as the most important danger. The percentage of threats of suicide and self-neglect increased from 45% to 64% (Chi^2 (3) =16,82; P=.001). The share of patients with repeated (involuntary) admissions increased from 26% to 35% (Chi^2 (1)=5,87; P=.015).

Average length of stay after emergency compulsory admission and the time interval between discharge and outpatient follow-up remained unaltered since the introduction of the new Special Admissions Act. Moreover, the percentages of ‘old acquaintances’, ‘newcomers’, and ‘passers-by’ in the total number of emergency admissions changed little before and after the introduction of the new act. Notably after the intro-

duction of the new admissions act in 1994, the average length of stay of 'newcomers' increased from 6–7 weeks to about 10 weeks.

Discussion

Main findings

More than one-third of patients who had an emergency compulsory admission in Rotterdam left the psychiatric hospital within three weeks, and about one in five patients were not hospitalized for no more than one week. In Amsterdam, van der Post et al (2004) found a similar percentage (19%) of patients who were admitted for a short time. Our data indicate that a short length of stay after involuntary admission occurred more often among patients who had no psychiatric history and no aftercare. Possibly, this involves cases in which dangerousness was temporary. In addition, brief hospitalization fits the profile of the 'involuntary admission for observation': an amendment to the Special Admissions Act intended to create the opportunity to admit patients who are a danger to themselves but who have not yet been diagnosed with a psychiatric disorder. Additional research is necessary to decide to what extent assessments overlap for emergency compulsory admission and involuntary admission for observation.

Length of stay after involuntary admission in Rotterdam is similar to the results of van der Post et al.'s (2004) study in Amsterdam. When an emergency compulsory admission is issued, the average length of stay is more than two months, and more than half of patients are still hospitalized after one month. Moreover, other results show that mental healthcare following compulsory admission is most often speedy and intensive. Time between hospital discharge and start of aftercare is 15 days on average, and in almost half of the cases less than one week. Within one year after emergency compulsory admission, more than one-third of patients were readmitted, and after one year, the majority of patients were still in mental healthcare.

Intensive follow-up is targeted in particular at patients who had an extensive psychiatric history. For these 'old acquaintances', the average number of contacts and hospital days after involuntary admission is almost twice as high as that before. This confirms once more the idea that emergency psychiatry is mostly oriented towards people with chronic psychiatric problems (Wolf 1990).

Results also show some changes after implementation of the Special Admissions Act. There is an increase in the number of emergency compulsory admissions and an increase to more than 60% of the share of suicide threats and self-neglect as grounds of dangerousness. An increase in average length of stay of patients new to mental healthcare illustrates that short stays are not always considered to be in the patients' best interest. One interpretation could be that these changes were in response to the brochure *Danger in the Special Admissions to Psychiatric Hospitals Act* ('Gevaar in de Wet BOPZ'), which the Healthcare Inspectorate published shortly after implementation of the new act. This brochure again explicitly mentioned the 'need to treat' motives as considerations in involuntary admission. Another interpretation of the increase in the length of stay of new patients could be that certain ethnic groups are overrepresented among the 'newcomers'. Accessibility of mental healthcare is not equal for all sections of the population. Earlier studies indicate that patients born in Suriname or the Dutch Antilles in particular are less often in outpatient mental healthcare and are relatively more often hospitalized voluntarily or involuntarily. Possibly, this involves serious problems that necessarily imply longer lengths of stay (see Dieperink et al. 2002; Uniken Venema and Wierdsma 1993).

Additional research

In general, our study results give a positive picture of the quality of mental healthcare after emergency compulsory admission. The average time-interval between hospital discharge and commencement of aftercare following involuntary admission approximately corresponds to that for other psychiatric admissions (about fourteen days). Moreover, the percentage of patients who are readmitted is close to what could be expected compared to other studies in the Netherlands (less than 25% and one-third of the patients readmitted within one year respectively).

However, the lack of specific quality standards makes it difficult to evaluate outcome measures such as length of stay and the time interval between hospital discharge and follow-up. Perhaps much higher percentages of patients who had outpatient aftercare within one week after hospital discharge should be expected. Such standards concerning the quality of care for compulsory admissions should be developed by the Healthcare Inspectorate, in consultation with mental healthcare services and consumer interest groups. As part of the periodic evaluation of the Act on Special Admissions in Psychiatric Hospitals, a quality check of psychiatric history and aftercare could be performed based on existing case registers in the Netherlands (see Giel and Sturmans 1996).

Implications

The increase in the percentage of readmissions after the introduction of the Special Admissions Act could be interpreted as proof of the inability of psychiatric services to organize efficient (outpatient) support for some patient groups. Mental healthcare in relation to involuntary admission involves mostly long-stay patients who are well-known in the psychiatric institutions. Although 65% of the patients admitted involuntarily had a psychiatric history, only about half had a psychiatric consultation in the months before admission, and this percentage showed an increase only a short time before compulsory admission. The readmission of 'old acquaintances' and intensified outpatient care shortly before admission could indicate that alternatives for emergency compulsory admission were started reluctantly or were simply initiated too late.

The exclusion of possible alternatives for involuntary admission is one of the criteria laid down in the Special Admissions Act (involuntary admissions as 'ultimum remedium'). To begin with, alternatives could include the use of other ways of coercion and persuasion, such as legal restraint or mentorship. Since 2003, Dutch law includes compulsory outpatient treatment: provided that the patient under court order complies with outpatient treatment, compulsory admission is suspended. Supervision of the conditions for discharge and of the quality of aftercare might also prevent compulsory readmission (Wierdsma et al. 2004). The Dutch government declared in a 'Plan of action to prevent social loss and public nuisance' ('Plan van aanpak verloedering en overlast') to look into the

surplus value of an 'Aftercare under Supervision' register (Parliament 2004-2005, 29325, no. 2).

Moreover, alternatives for emergency compulsory admission could be found in intensified ways of managing the care of severely mentally ill people in the community. Assertive Community Treatment (ACT, see Mulder and Kroon 2005) is a team-based approach aimed at keeping patients in contact with services, reducing hospital admissions and improving outcome and patient satisfaction (Marshall and Lockwood 2002).

Other ways of using coercion and persuasion and intensive outpatient treatment should contribute to better quality of care and fewer numbers of patients who have to manage without appropriate mental healthcare follow-up after emergency compulsory admission.

7

Integration of Services Matters (Somewhat)

Service Integration affects
Compulsory Admissions and Follow-up

Abstract

Background

Over recent years, the number of compulsory admissions in many countries has increased, probably as a result of the shift from inpatient to outpatient mental health care. As this effect might be mitigated by better formal or collaborative relationships between services, we tested the effect of service integration on emergency compulsory admissions and psychiatric follow-up.

Methods

In a retrospective record linkage study, we compared differences over time between two neighboring districts, varying in level of service integration. We included patients aged 18 to 60, who had a first emergency compulsory admission (n=830).

Results

Over a ten-year period, compulsory admission rates increased by 47%. In terms of these rates and their relative increase, the differences between the integrated and non-integrated services were small. Over the years, a different case mix developed of more severely ill patients, and patient characteristics showed different profiles in the two districts. Length of stay was more than ten days shorter in the integrated district, where the proportion of involuntary readmissions decreased somewhat more, and where aftercare was provided to about 10% more patients than in the non-integrated district.

Conclusions

Services outcomes showed better results where mental healthcare was more integrated, but only limited effects were found. Other factors than integration of services may be more important in preventing compulsory admissions.

Introduction

Over recent decades, the configuration of mental health services in many countries has changed fundamentally. Changes in the planning of psychiatric services, which were widely supported, reflected two key concepts: deinstitutionailzation and sectorization. A reduction in the number of hospital beds was linked to the establishment of comprehensive, outpatient-oriented service systems that were responsible for circumscribed catchment areas. But the shift from hospital-based to community-based services raised critical issues relating to the quality of community treatment for the severely mentally ill; it also led to an increase in compulsory admissions (Johnson and Thornicroft 1993; Lamb and Bachrach 2001; Munk-Jørgensen 1999; Ravelli 2006). Although an association between deinstitutionalization and involuntary hospitalizations was often observed in national trends, for instance in England (Lelliott and Audini 2003; Wall et al. 1999), France (Verdoux and Tignol 2003), Austria, Germany (Salize and Dressing 2004), and the Netherlands (Mulder et al. 2006), it was seldom tested critically (Salize and Dressing 2005).

On the basis of a structured comparison of data on all EU member states, Salize and Dressing (2004) contradicted suggestions that there was an overall upward trend in the numbers of compulsory admission of mentally ill patients. They suggested that time series of percentages of involuntary admissions on all admissions, show that involuntary quotas in most member states were more or less stable.

However, because compulsory admission is generally thought of as a last resort, stable proportions of involuntary admissions related to the increase in psychiatric hospitalizations are not preferred outcomes. From the perspective of patients, it could be argued that the shift to community care should not be associated with more compulsory admissions, following the example of Italy (Guaiana and Barbui 2004). In fact, after the Italian psychiatric reforms in 1981, some districts with a comprehensive and well-integrated range of services had a 80% fall in the number of compulsory admissions (Tansella 1996).

Other studies have touched on the idea that service-characteristics affect the use of involuntary admission. In a review of research on service integration, Durbin et al (2006) found consistent and positive results for continuity indicators, e.g. follow-up after hospital discharge. Huxley and Kerfoot (1993) concluded that higher emergency compulsory-admission rates can be expected in areas with high social deprivation, inadequate resources, and poorly organized emergency services. In a comparative case-register study, Hansson et al (1999) found an association between poor access to specialized services (in terms of formal referral procedure) with higher rates of compulsory admissions. Bindman et al (2002) found that rates of compulsory admission in 34 geographical sectors were associated with indicators of service quality, such as delays in obtaining an acute bed or hostel place, or in obtaining home visits to acutely ill patients. Webber and Huxley (2004) failed to show a clear association between social exclusion and risk of emergency compulsory admission in two London boroughs, one suburban and one urban, suggesting that other variables should be considered. An alternative interpretation they offered was that the suburban area was better able to plan assessments and avoid emergency responses because it had a longer history of integrated community mental health services.

These studies on the effects of service integration, suggest that fewer compulsory admissions and high-quality aftercare can be expected in areas where services have formal or collaborative relationships. In integrated services, we expected to find lower compulsory admission rates, shorter stays, fewer involuntary readmissions, and swift psychiatric follow-up. In a retrospective case-register study in the Netherlands, we tested the effects of service integration in the context of deinstitutionalization of mental healthcare. Variance in data of psychiatric services was used in naturalistic comparative analyses evaluating the effects of integration of local mental healthcare (Zinkler and Priebe 2002).

Methods

Setting

The Netherlands' second largest city is Rotterdam, which is one of the world's largest seaports. The city has a population of approximately 550,000, or a total of 1.2 million for the greater urban area. In reflection of the nation trends in mental healthcare, the shift away from inpatient care in Rotterdam was mainly a major expansion in outpatient services and sheltered living (Pijl et al. 2005). For many years, national mental healthcare policy in the Netherlands has been characterized by deinstitutionalization and sectorization. Outpatient services have been concentrated into regional institutes for ambulatory mental healthcare, and alternatives for admission to psychiatric hospitals have developed, such as day-patient treatment, sheltered living, and day activity centers. Although the policy of the Dutch government and of health insurance companies was to integrate psychiatric services, mergers were not imposed on local service providers (Ravelli 2006).

In the northern Rotterdam district, admission capacity was transfered from a psychiatric hospital outside the region, and spread across the new catchment area in smaller, mainly multi-functional service-units. The hospital already had a strong tradition of sheltered housing (Holman and Wennink 1985) and community psychiatry (Henselmans 1993). This may have helped to make collaboration with outpatient services easier. In 1998, this collaboration finally resulted in a merger between the psychiatric hospital and an outpatient clinic.

In the period from 1993 to 2004, almost all general psychiatric hospitals in the Netherlands were involved in mergers with ambulatory mental healthcare institutions. Eventually, only three psychiatric hospitals out of a total of 41 failed to achieve a merger (Ravelli 2006). One of these was in the southern Rotterdam district, where mental healthcare is provided by a large psychiatric hospital that has several multi-functional units throughout the region, and a separate healthcare organization for outpatient services covering the same catchment area. There was a radical 'incompatibilité des humeurs' because the hospital has taken a bio-

medical approach to psychiatry, whereas the outpatient service supported a public mental healthcare perspective.

While it should be noted that the actual configuration of mental healthcare in Rotterdam is more complex, the services mentioned cover about 80% of all contacts in this study. Notwithstanding our somewhat simplified characterization of mental healthcare in the city's northern and southern district, there are obvious differences in service integration. These differences are bound to be reflected in the use of compulsory admission and patterns of psychiatric follow-up.

Procedure of emergency compulsory admission

Differences in the level of integration of mental health services have developed within the same administrative and legal framework for compulsory admission. Dutch law stipulates that, in emergency situations, a town's mayor decides whether legal conditions for compulsory admission have been met; within a few days, a judge must decide whether the involuntary admission is to be continued. In the event of an emergency compulsory admission, a written medical report is obligatory. This medical report will contain information on psychiatric diagnosis and the dangerousness criterion. The psychiatrist or physician is obliged to score the principal diagnoses and the most important type of danger; the Municipal Health Service administered this information.

The Psychiatric Case Register

For 1991–1993 and 2001–2003, we selected all first compulsory admissions to one of the region's psychiatric hospitals of patients aged 18 to 60 years, living in Rotterdam. Patients' records were matched by means of computerized record linkage (Newcombe 1988), using a limited number of identifiers; 146 patients were excluded because of missing data (total n = 830). Ethics approval was secured from a review board that represents all institutions participating in the case register. Figure 1 illustrates the northern and southern districts and rates of compulsory admission at neighbourhood level. The map shows higher rates in the older, inner-city neighbourhoods and similar variations in both districts.

Figure 7.1. Emergency compulsory admissions per 10.000 inhabitants by neighbourhoods in Rotterdam (2000)

Patient-characteristics

The information systems registered patient's age, gender, country of birth, marital state, and postal code. Socio-economic differences were scored using neighborhood-values of the Jarman-index (Jarman 1984), adjusted for the Dutch context (e.g. percentage of immigrants instead of percentage of households headed by a person born in the New Commonwealth). Mental healthcare contacts spanning a period of twelve months before and after the compulsory admission were used to classify patients as 'old acquaintances' (extensive contacts before and after admission), 'new comers' (no previous contacts, extensive follow-up), and 'passers-by' (few or no contacts before and after involuntary admission).

Service-use indicators

Service-use indicators were calculated based on all contact-records, excluding information from sheltered living, which would inflate indicators of the use of mental healthcare. Lelliott and Audini (2003) have identified some of the mechanisms that correlate deinstitutionailzation, e.g. a reduction in the numbers of psychiatric beds, with an increase in the numbers of compulsory admissions. One such mechanism is delay in admission, which can result in an emergency situation, a short hospital stay, and then readmission. Considering that service integration, or the lack of it, might influence the outcome of different mechanisms, we calculated several service-use indicators. First, because a high admission threshold might create a different case mix of patients in acute psychiatric wards, we looked at changes in patients' characteristics and admission criteria over time and between service-areas. Second, we compared the number of involuntary readmissions over a twelve-month follow-up period after the first compulsory admissions. Next, we calculated the length of stay; the statutory maximum length is three weeks, but this period can be extended voluntarily, or on the basis of other judicial measures. Finally, because follow-up after discharge might affect a patient's motivation and chances of being readmitted, we calculated 'readiness of aftercare', operationalized as the time between hospital discharge and outpatient follow-up (Sytema et al. 1997).

Analysis

Compulsory admission rates for the 1991–1993 and 2001–2003 periods were calculated on the basis of the municipal health department's registration and of demographic data obtained from Statistics Netherlands. We evaluated changes in service-use indicators using Chi^2 -tests and analyses of variance. Cox regression analysis was used to compare time-intervals between involuntary admission (starting event) and aftercare (terminating event). Readmission and no outpatient follow-up after the first compulsory admission were considered to be censored observations; in these cases, events were defined on the basis of the time between discharge and date of readmission, or of the number of days from date of discharge up to the end of the 12-month observation period respectively.

We constructed a Cox's proportional hazard model to relate 'readiness of aftercare' to differences in time and service district; patient-characteristics were included in the model to correct for differences in case mix. Statistical analyses were performed using SPSS for Windows (version 11.5, SPSS Inc); $p < 0.05$ was considered significant.

Results

Rates of compulsory admission

Between 1991–1993 and 2001–2003, there was approximately a 50% increase in the emergency compulsory admission rate per 10,000 inhabitants aged 18-60. In the district with integrated services, the rate started at 3.8; ten years later, it had risen to 5.5 (43% increase). The admission rate in the non-integrated district increased from 3.7 to 5.8 per 10,000 inhabitants (57% increase).

Case mix

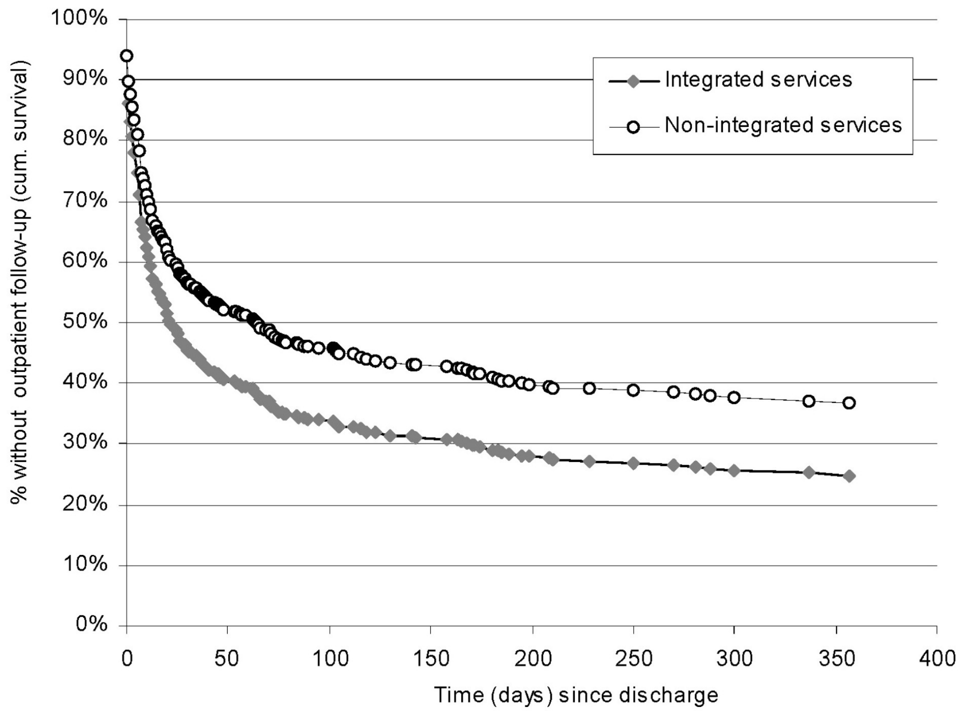
Table 1 summarizes the differences and changes in case mix of compulsory admissions in the study period. Although we found no main effect of service integration on changes in case mix, there were some time and district interaction effects. There was a rise in emergency compulsory admission involving patients who were unmarried, male, born outside the Netherlands, had a psychiatric history, were diagnosed with psychosis or addiction, or who were a danger to them selves. However, while the proportional increase in the number of unmarried men applied only in the district where services were integrated, the increase in the percentage of immigrants was found only in the district where services were not integrated. In the integrated district, changes in type of danger showed an increase in self-neglect, and fewer admissions were based on 'danger to others'. In contrast, in the non-integrated district, the percentage of admissions related to 'danger to others' increased.

Table 7.1. Patient's characteristics and admission criteria for first emergency compulsory admissions by integration of psychiatric services and differences over the years 1991–1993 and 2001–2003 (percentages in brackets)

Item	Categories	Integrated services n= 489		Non-integrated services n= 341		'91–'93 versus '01–'03
Gender	Male	64.9%	(+ 9.6%)	67.1%	(+ 7.1%)	$Chi^2(1)$=
	Female	35.1%		32.9%		6.41 P=.011
Age	Average / SD	34.7	/ 10.5	34.4	/ 10.4	n.s.
Country	Netherlands	57.2%	(- 0.7%)	49.4%	(- 12.4%)	$Chi^2(5)$=
of birth	Suriname	11.7%	(- 2.5%)	11.7%	(+ 0.8%)	13.39
	Dutch Antilles	6.4%	(+ 0.6%)	10.0%	(+ 5.5%)	P=.020
	Morocco	4.3%	(+ 2.2%)	6.9%	(+ 6.0%)	
	Turkey	4.0%	(+ 1.9%)	7.8%	(+ 3.3%)	
	Other	16.4%	(- 1.5%)	14.3%	(+ 3.0%)	
Marital	Unmarried	78.9%	(+ 21.0%)	74.9%	(+ 8.5%)	$Chi^2(2)$=
status	Married	13.4%	(+ 11.9%)	19.0%	(- 1.9%)	26.65
	Divorced/widowed	7.7%	(+ 9.1%)	6.1%	(- 6.6%)	P=.000
Deprivation	< -.10	38.8%	(+ 5.6%)	39.0%	(+ 4.5%)	n.s.
(Jarman-index)	-.10 +	61.2%		61.0%		
Psychiatric	Old Acquaintances	76,30%	(+ 10.0%)	71,90%	(+ 4.6%)	$Chi^2(3)$=
history	Newcomers	16,70%	(- 3.3%)	21,20%	(- 0.6%)	8.82
	Passers-by	7,00%	(- 6.7%)	6,90%	(- 4.0%)	P=.012
Diagnoses**	Schizophrenia	27.4%	(+ 1.8%)	22.8%	(+ 1.4%)	$Chi^2(3)$=
	Other psych.	41.2%	(+ 11.2%)	43.8%	(+ 9.5%)	18.83
	Affective disor.	16.9%	(- 14.3%)	21.4%	(- 8.5%)	P=.001
	Addiction	5.1%	(+ 1.1%)	7.1%	(+ 7.0%)	
	Other diagnoses	9.5%	(+ 0.7%)	4.9%	(+ 11.5%)	
Type of	Suicide	34.8%	(+ 3.3%)	33.5%	(+ 5.4%)	$Chi^2(3)$=
danger*	Self-neglect	20.9%	(+ 8.8%)	20.5%	(- 2.9%)	11.21
	To others	34.8%	(- 6.3%)	39.3%	(+ 9.6%)	P=.011
	Public safety	9.5%	(- 5.8%)	6.7%	(- 12.1%)	

** n= 714 due to missing data before 1994 n.s.= not statistically significant

Figure 7.2. Number of days between hospital discharge and the next outpatient contact (in a one year follow-up period).



Hospital days

Length of stay of patients admitted compulsorily increased from an approximate average of 65 days in the 1991–1993 period to almost 87 days in 2001–2003 ($F(1,826)= 7.70$, $P=.009$). Although the differrence between districts decreased from 53 vs. 77 days in 1991–1993 to 81 vs. 92 days in 2001–2003, overall hospitalization episodes were more than ten days shorter for patients admitted to integrated services ($F(1,826)= 5.32$, $P=.021$).

Compulsory readmissions

Between 1991–1993 and 2001–2003, the percentage of patients readmitted involuntarily decreased from 32.1% to 17.7% in the integrated district, and from 30.9% to 19.5% in the non-integrated district. There was a main effect only for changes over time ($Chi^2(1)= 18.64$, P=.000).

Readiness of aftercare

Figure 2 shows the number of days after discharge (x-axis) and the proportion of patients without follow-up (y-axis), excluding 'passers-by'. The curves for the two districts show that, for about two-third of the discharges (63.8%), aftercare started within two weeks. The average number of days between discharge and aftercare was 29 days (SD=53) and did not change over time. Figure 2 indicates that, after the first two weeks, integrated services had favorable scores for 'readiness of aftercare', with about 10% more patients receiving psychiatric follow-up. The Cox's proportional hazard model relating the time between discharge and outpatient follow-up to service-integration, periods of observation, and patient's characteristics (age, sex, marital status), showed a significant effect for service-integration only (hazard ratio= 1.39, CI 95%= 1.14 – 1.68).

Conclusions

Main findings

In a retrospective study we tested the effects of service integration on compulsory admission and psychiatric follow-up. Our results suggest that service integration had only limited effects on the use of emergency compulsory admissions. The increase in involuntary admissions in the study area is broadly consistent with the national trend in the Netherlands over recent decades (Mulder et al. 2006). Between 1991–1993 and 2001–2003, rates in the study area increased by 47%, from 3.8 to 5.6 emergency compulsory admissions per 10,000 of the population aged 18

to 60 years. Admissions rates and the relative increase were only somewhat lower in the district where mental health services were more integrated.

The policy of deinstitutionalization was expected to affect patients who are more compliant and less at risk of acting violently, and thereby to lead to a different case mix in psychiatric hospitals (Lelliott and Audini 2003). However, we found that the increase in emergency compulsory admission involved patients who were likely to have less social support (unmarried men, and patients born outside the Netherlands), and who are severely ill (those with a psychiatric history, those diagnosed with psychosis or addiction, and those who are a danger to themselves). There were differences in case mix, which suggest different case-finding profiles in the integrated and non-integrated district. This difference might be labeled as 'need for treatment' versus 'public order'. The integrated approach seemed to target a difficult-to-reach patient group (self-neglect), whereas the clinic-based service was probably more orientated towards conventional procedures, such as the local police reporting patients (danger to others).

Hospital policy aiming to achieve fewer admissions and early discharge was thought to be connected with increased risk of compulsory readmission, shorter length of stay, and delay in follow-up after discharge. Contrary to expectations, we found that the number of patients readmitted involuntarily was more than 10% lower in 2001–2003 than in 1991–1993. This trend could be interpreted as the outcome of longer admission episodes and swift outpatient follow-up. The average length of admissions increased from two months to almost three months and, in most cases, aftercare contact took place within two weeks. In the integrated district, the length of stay was at least ten days shorter and about 10% more patients received aftercare than in the non-integrated district.

Study limitations

Our study may have been affected by three main limitations. First, because patients were classified by postal code rather than by psychiatric hospital, comparison of the integrated and non-integrated services may have been biased by crossover between districts. However, as this pro-

blem involves about 12% of the patients, distortion of our main findings seems unlikely.

The second limitation is that we excluded patients who lived in Rotterdam but had not been placed in one of the psychiatric hospitals in the region. Due to a shortage of beds, these so called 'guest placements' were relatively frequent in the integrated northern district; we excluded 17% of the patients living in the northern area and 10% of those from the non-integrated district. On the principle that this potential bias will only have an effect when there are comprehensive and selective differences between districts, we think that this problem did not seriously affect service-use indicators.

The third potential limitation is that, despite the differences between the two districts, the city's mental healthcare system is not characterized by absolute contrasts comparable to (quasi-) experimental conditions. Due to the presence of an independent outpatient service for northwestern Rotterdam, the northern district is not fully integrated. Similarly, because the psychiatric hospital in the southern district has multi-functional centers – such as a lithium-policlinic, which is involved in patient follow-up – this district is also partly integrated. Various additional services cover the entire catchment area. Overall, however, we believe that there were distinct ways in which the integrated and non-integrated districts differed with regard to the interactions between hospital care and outreaching mental healthcare.

Discussion

Recent national policy in the Netherlands has focused on the integration of mental health services (Ravelli 2006). While our study provides some support for the idea that integrated services advance the continuity of mental healthcare, the strength of the association does not seem to be in proportion to the amount of time and effort spent implementing integration strategies. This is consistent with the findings of the ACCESS program (Access to Community Care and Effective Services and Support)

in the US, which demonstrated that such strategies have little effect on individual-level outcomes (Goldman et al. 2002).

Service integration involves a range of activities such as reorganization, new support and consultation structures, and the regrouping of information systems, all of which can distract the attention of those involved from formulating a comprehensive plan of action for reducing the number of compulsory admissions. For there is a range of interventions that can help to prevent the use of involuntary admission. For example, management of a more difficult case mix of patients might be supported by treatment adherence therapy (Staring et al. 2006). Similarly, early discharge can be made feasible by intensive case management, Dekker et al (2000) reporting that three out of four projects showed a drop in the number of compulsory admissions. The risk of compulsory readmission might also be outbalanced by patients indicating preferences for care in the event of relapse; Henderson et al (2004) demonstrated the reduction of compulsory treatment through the use of joint crisis plans. And finally, there is some indication that involuntary admission can be prevented by the early detection of problems and coordinated action on the part of primary care services and emergency psychiatric teams (Wierdsma et al. 2007). Research that goes beyond service-structures is needed to find processes in mental healthcare that create effective alternatives to compulsory admission.

8

Prevention of Compulsory Admission Can Work

Effects of Community-Care Networks on the Use of Psychiatric Services

Abstract

Background

Community-care networks are a partnership between the local police force, housing corporations, general social services, specialized home care and mental healthcare services. The networks were set up to improve the healthcare for patients with (chronic) psychiatric problems through local cooperation between different agencies operating in underprivileged areas. This study aimed to evaluate the effects of community-care networks on service use and compulsory admission.

Design

An ecological intervention design was used, comparing underprivileged neighbourhoods with and without a community-care network. Mean numbers and standardized ratios of psychiatric emergency contacts, hospitalization rates and involuntary admissions were assessed over a 10-year period.

Results

Standardized ratios for contact with psychiatric emergency services were higher in the neighbourhoods where community-care networks were set up (standardized ratios = 137, 95% CI 121 to 145 in the network neighbourhoods vs standardized ratios = 107, 95% CI 96 to 119 in the control neighbourhoods). Number of admissions and standardized ratios for involuntary admissions were lower in the community-care network neighbourhoods than in the control neighbourhoods (standardized ratios = 123, 95% CI 95 to 157 vs standardized ratios = 152, 95% CI 120 to 191).

Conclusions

Community-care networks have a significant impact on the use of mental healthcare services. These networks may be an important tool in the prevention of involuntary admissions.

Introduction

In recent years, the number of patients receiving mental healthcare in the Netherlands has grown (Kooi et al. 2000; Pijl et al. 2000). Even so, there are patients in need of care for a range of problems, such as severe mental illness, addiction, somatic problems, and financial and social problems, who have no contact with mental health care services or who actively avoid mental health care (Lourens et al. 2002). According to the Health Council of the Netherlands, the number of people with multiple problems is increasing because of the marginalization of vulnerable people in the job and housing markets, and because of a lack of specific and appropriate interventions to help underprivileged patients who have mental illnesses. The Dutch Health Council states that coordinating the efforts of different agencies may help bridge the gulf between supply and demand for healthcare resources among patients with multiple problems (Health Council of the Netherlands 2004).

In many healthcare projects, a coordinator or case manager is responsible for arranging and coordinating the necessary care for a patient. The role of the coordinator can range from a 'care broker's function' to a role in which the coordinator is primary responsible for treatment or supervision (Kroon 1996; Roovers and Wilken 1997; Wolf 1995). In the Netherlands, healthcare projects for patients with chronic psychiatric problems are in the form of outreach programmes or assertive community treatment programmes (Allness and Knoedler 1998; Henselmans 1993; Mulder and Kroon 2005; Stein and Santos 1998).

The City Council of Rotterdam, the second largest city in the Netherlands, adopted a more front-end approach and has set up community-care networks in underprivileged neighbourhoods (Poodt et al. 1997; Poodt and Wierdsma 1999). These networks distinguish themselves from other coordinated care interventions in that, in addition to healthcare agencies, they also include welfare services, housing corporations, and the local police force. The participants of such a network bear joint responsibility for the (coordination of) care for people with multiple problems living in the area, with emphasis on the detection and prevention of new problems rather than on supporting patients already in contact with

specialist services. Process evaluations of community-care networks have shown that the feeling of being supported, not having to face problematic situations alone, makes network participants more tenacious in establishing contact with patients who refuse help (Poodt 1997; van der Hijden 1993). In an earlier study, we found a decrease in the number of eviction orders and in the number of notifications of problem situations to the Municipal Health Service in areas with a community-care network (Poodt and Wierdsma 2001). In addition, patients benefited from the supervision provided by the community-care network, showing improvements in health and social functioning as measured by the Goal Attainment Functioning score and the Health of the Nation Outcome Scales (Goldman et al. 1992; Wing et al. 1998). In particular, improvements have been achieved in areas such as living conditions, social contacts, depression, and other mental and behavioural problems (Poodt and Wierdsma 1999; Poodt and Wierdsma 2001).

To evaluate the effectiveness of community-care networks, we monitored the use of mental health services, both inpatient and outpatient services, over 10 years. We hypothesized that

- neighbourhoods with community-care networks make more use of emergency psychiatric services because early detection of problematic situations might increase the need for immediate action;

- the number of patients admitted to a psychiatric hospital decreases as the health situation and social functioning of patients improve under community-care network supervision; and

- the rate of emergency compulsory admissions is lower in neighbourhoods with community-care networks as a result of early involvement of emergency psychiatric services and community support systems.

Method

Type of intervention

Dutch healthcare consists of a mix of public and private services in connection with a mixed system of insurance and healthcare funding. Apart from public university hospitals, Dutch hospitals are managed on a private non-profit basis. Most of the specialist care is organized by hospitals. General practitioners mainly work in private practices and play an important gate-keeping role in access to specialist services, including mental health services, and alcohol and drug clinics. Social insurance covers a statutory package and is mandatory for those earning below an income threshold (about € 30 000, US $ 38 000, £ 20 000). In addition, the Exceptional Medical Expenses Act provides cover for exceptional care and uninsurable risks (e.g., compulsory admission or medical expenses for handicapped people). Social welfare services constitute an adjoining set of arrangements to support people who have social or financial problems. Although there have been many changes in the Dutch health care system in recent years, medical and social welfare services on the whole have been free from charge at point of use and readily available in underprivileged areas also. However, despite the availability of healthcare and social welfare services, a 'multiple-problem group' does not use these facilities. Instead of adding yet another service, community-care networks combine and reinforce the activities of different agencies operating in the same neighbourhood.

Community-care networks are a partnership between the local police force, housing corporations, general social services, specialized home care, and mental healthcare services. The backbone of the community-care network is a network coordinator, who is often a community psychiatric nurse. When a patient is reported by one of the network partners, the network participants gather relevant information and (if necessary) the coordinator starts intensive outreach to contact the person. Next, a plan of action can be drawn up, if possible in consultation with the patient. The coordinator monitors the implementation of the plan and ensures that everyone adheres to the agreed strategy. As soon as possible, community-care network involvement is scaled down or the responsi-

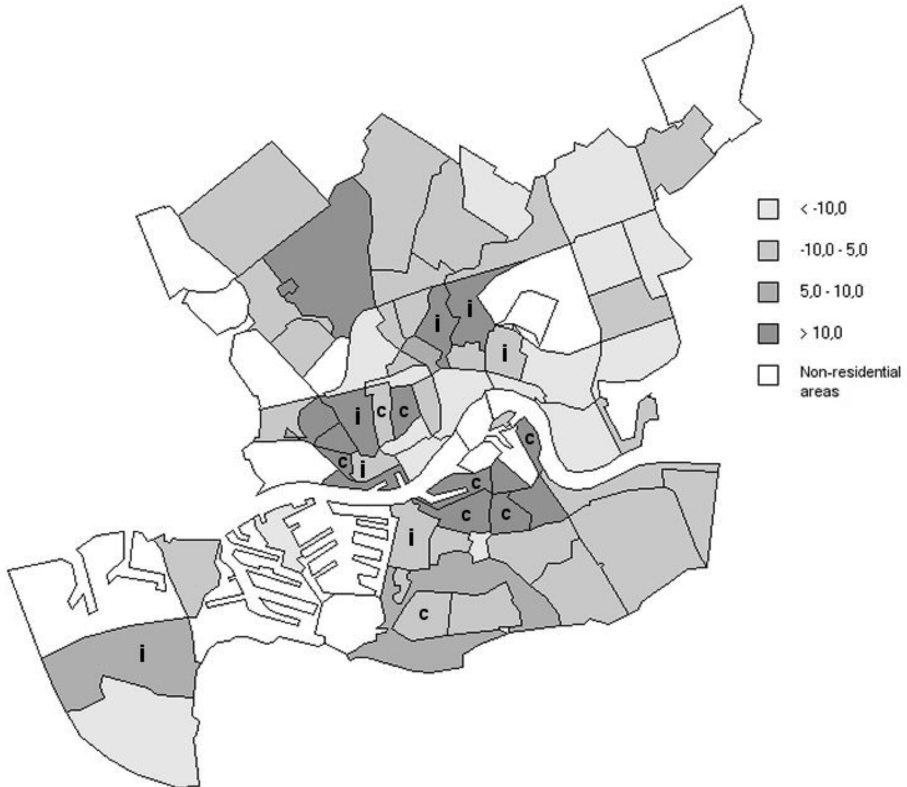
bility is transferred to the most appropriate agency, usually a welfare agency, or a mental healthcare service.

The first community-care network was set up in 1992 and after a first wave in the mid-1990s the number has grown to more than 25 networks at present. In the starting period, the City Council of Rotterdam reserved a budget to develop the network approach in underprivileged neighbourhoods. On the Municipal Health Service's advice, the financial support was allocated to neighbourhoods where relevant partners submitted an application showing commitment to adopt the community-network approach. This study focused on the first series of seven networks.

Study design

The study was set up as an ecological intervention comparing neighbourhoods with and without a community-care network. The seven neighbourhoods with intervention were matched with eight control neighbourhoods regarding geographical location (in case of potential differences in primary healthcare and social welfare services) and socioeconomic position (because more mental health problems are reported in underprivileged areas) (Reijneveld and Schene 1998; Thornicroft 1991). For every intervention neighbourhood, we inspected the socioeconomic position of adjoining areas. These areas had to be within the catchment area of the local departments of community services for the neighbourhood with a community-care network. To match neighbourhoods by socioeconomic position we used the Jarman-index or 'underprivileged area score' (Jarman 1984). This score is a weighted average of eight census variables that were considered by a poll of British general practitioners to be important factors in creating high workloads - high positive scores indicate high relative demand. Some of the items were adjusted because they are not relevant in the Dutch context (e.g. percentage of households headed by a person born in the New Commonwealth or in Pakistan). The index for the year 1995 was calculated on the basis of the items and values shown in table 1; index scores for different years are highly correlated (for the years 1993 and 1997, the mean (SD) change was 2.6 (2.4), Spearman's r = 0.91). Because the combination of matching criteria could not always strictly be applied, practical considerations led to the selection of

Figure 8.1. Neighbourhood variation in underprivileged area score (Jarman index) for Rotterdam 1995, i = intervention, c = control area



eight control areas (figure 8.1). This procedure in part accounts for differences in mean scores (SD) for some of the items listed in table 8.1. The mean (SD) Jarman score was 9.8 (4.74) for the intervention areas and 12.2 (7.37) for the control areas. Although these scores differed slightly, they were 3 – 4 times higher than the overall score for the other residential areas (2.8 on average), showing that the targeted neighbourhoods were underprivileged areas.

Use of mental health care was monitored at the neighbourhood level for the years 1992-2001, covering the period from the introduction of community-care networks to their being fully operative. Owing to the practical setting of the study, it proved difficult to pinpoint the exact start and degree of implementation for each community-care network. In practice, some degree of cooperation between relevant partners at the neighbourhood-level was a precondition for funding. At the end of 1995 four networks had started, and in early 1998 all seven community-care networks were fully operational. Therefore, we expected differences in the average use of emergency psychiatric services, hospitalization, and compulsory admissions to start to show in 1999.

Data

The size and nature of the use of mental health services and the flow of patients between services were monitored by the psychiatric case register for the Rotterdam region (Wierdsma et al. 1999). This case register covers all contacts of the Rotterdam inhabitants with mental health services, with the exclusion of private psychiatry or psychotherapy practices; however, this is unlikely to affect findings since private practices form only a small part of the outpatient care and play no role in emergency psychiatry or hospital admissions. We restricted analyses to people aged 20 - 64 years because in The Netherlands, child psychiatry and psychogeriatric care are closely interwoven with other youth services and facilities for elderly people, including emergency services and inpatient care, and thus could bias the mental health care indicators. For similar reasons we excluded data on the use of alcohol and drugs (outpatient) services. We also excluded the data on long-stay patients or those with previous psychiatric problems living in sheltered or other community accommodation, because service use is higher in these facilities and this would inflate care indicators at the neighbourhood level. Demographic and other administrative data were obtained from the Centre for Research and Statistics of the municipality of Rotterdam. Ethics approval was secured from a review board representing all participating services (Wierdsma et al. 1999).

Table 8.1. Underprivileged area score items, weighted z score, and number of inhabitants for the intervention and control areas (demographic data 1995, Rotterdam is the reference area)

Item	Reference area	Weight	Intervention areas (n=7)		Control areas (n=8)	
			Mean	Range	Mean	Range
Elderly living alone (%)	8.3	6.62	5.2	3.4 – 8.5	5.8	3.4 – 13.1
Children < 5 years (%)	6.3	4.64	7.5	5.9 – 9.0	7.2	4.7 – 9.3
Unskilled labour (%)*	20.9	3.74	23.4	19.0 – 32.8	27.2	17.8 – 36.1
Unemployed % **	17.3	3.34	24.1	20.5 – 27.4	23.9	15.9 – 28.9
One-parent families %	10.9	3.01	15.1	10.6 – 17.7	14.3	10.4 – 21.2
Dwellings without bath %	11.8	2.88	17.7	1.0 – 29.6	19.5	1.0 – 40.0
Change of address ***	38.1	2.68	62.4	39.7 – 95.5	68.8	59.1 – 92.5
Ethnic groups % ****	40.1	2.50	53.6	38.7 – 66.8	59.1	33.8 – 75.9
UPA-score (weighted z-score)	2.8		9.8	3.7 – 16.7	12.2	-2.2 – 20.9
Inhabitants (aged 20-64 years), n	369,824		9,718		7,967	

* Primary school is highest education level

** Percentage of the working population

*** Mobility score combines number of births, deaths, establishments, number of persons leaving the area, and change of address within the area.

**** People born outside the Netherlands, the rich, western-European and North-American countries not included

Standardized service use ratios

Detailed demographic information enabled us to correct for the geographic variation in the use of mental health services that is the result of the size and differences in age and sex of the neighbourhood population. In addition to rates per 1000 of the population we used indirect standardization, relating the actual number of patients in an area to the expected number if the age and sex specific patterns of service use were that of the reference population. The reference values were calculated for the wider area (Rotterdam) for three broad sex and age groups (20-34, 35-54, and 55-64). In this way, we obtained the selected measures of service use as standardized hospitalization ratios and standardized contact ratios.

To focus on the effects of the community-care network approach we also calculated standardized service use ratios over the last 3 years of the study period (1999 – 2001). Confidence intervals (CI) were estimated using the Poisson process approximation (Liddell 1984).

Results

Use of emergency psychiatric services

The number of patients in contact with emergency services was fairly constant in the region as a whole (about 3.0 per 1000 population). There was a small increase in the contact-rate: from 5.1 contacts per 1000 in 1992 to 5.6 contacts per 1000 population in 2001. Figure 8.2 shows the differences in contact rates in the intervention neighbourhoods and in the control neighbourhoods. From 1995 onward the contact rates both for intervention and control neighbourhoods were higher than the overall contact rate. In the beginning of the observation period, the number of patients and the number of contacts per 1000 were higher in the control areas than in the intervention areas, but this reversed in 1999.

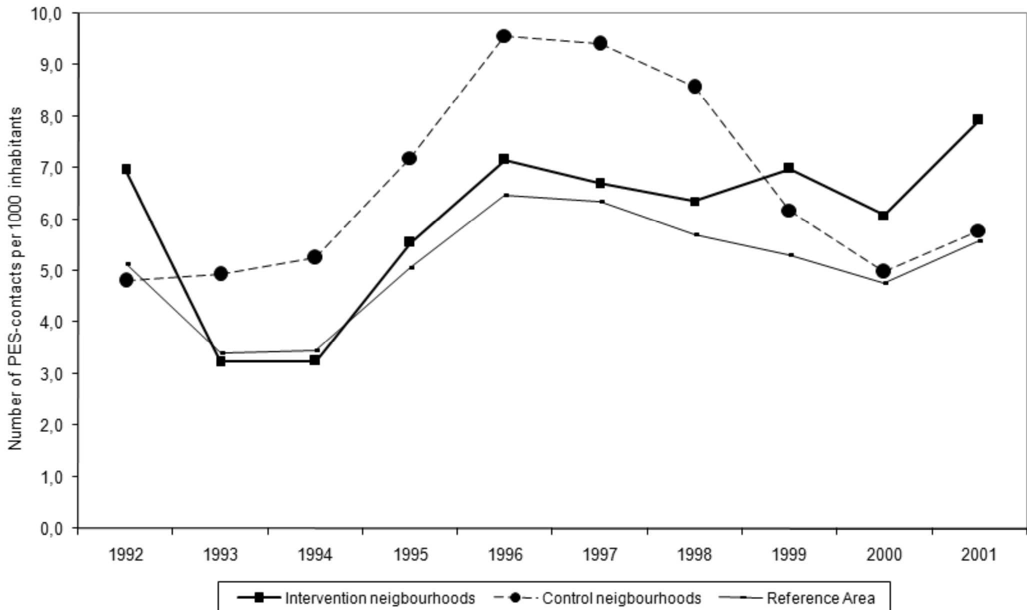
The standardized contact ratio over the years 1999-2001 was significantly higher then the reference area for the intervention neighbourhoods: 137 (95% CI 121 to 145) vs 107 for the control neighbourhoods (95% CI 96 to 119).

Hospitalization rates

The number of patients per 1000 in the region decreased from 3.9 per 1000 inhabitants hospitalized in 1997 to 3.1 in 2001. The average hospitalization rate in the period 1997 - 2001 was 3.5 per 1000 inhabitants in the intervention areas, and 4.0 per 1000 inhabitants in the control areas. The mean number of hospital days per patient was lower than the regional average in the intervention areas, and higher in the control areas (93 and 108, respectively, in 2001).

Figure 8.3 shows the standardized hospitalization ratios over the years 1992-2001. Except at the start of the observation period, the hospitalization ratios were lower in the intervention neighbourhoods than in the control neighbourhoods. Over the years 1999-2001, the standardized hospitalization ratio was not higher for the intervention areas (108, 95%

Figure 8.2. Number of contacts with psychiatric emergency services (PES) per 1000 inhabitants aged 20–64 in neighbourhoods with and without a community-care network in Rotterdam (reference area), 1992-2001



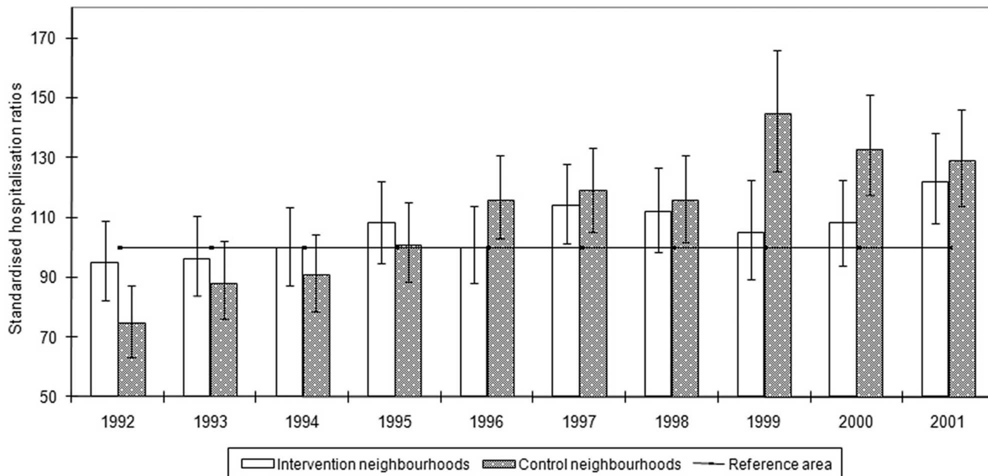
CI 100 to 118) whereas it was significantly higher in the control areas (135, 95% CI 125 to 145).

Emergency compulsory admissions

The rate of compulsory admissions among people aged 20 to 64 years almost doubled during the observation period, rising from 0.43 admissions per 1000 inhabitants in 1992 to 0.82 admissions per 1000 in 2001 (95% increase). The rate of compulsory admissions increased in this period by about 65% in the intervention areas and by 171% in the control areas. Although the rate of compulsory admission was initially higher in the intervention areas, after some years this pattern reversed.

Figure 8.4 shows the number of compulsory admissions as standardized ratios in relation to the reference area (Rotterdam = 100). From

Figure 8.3. Standardised hospitalisation ratios and confidence intervals for neighbourhoods with and without a community-care network (Rotterdam is reference area, patients aged 20–64 years), 1992-2001



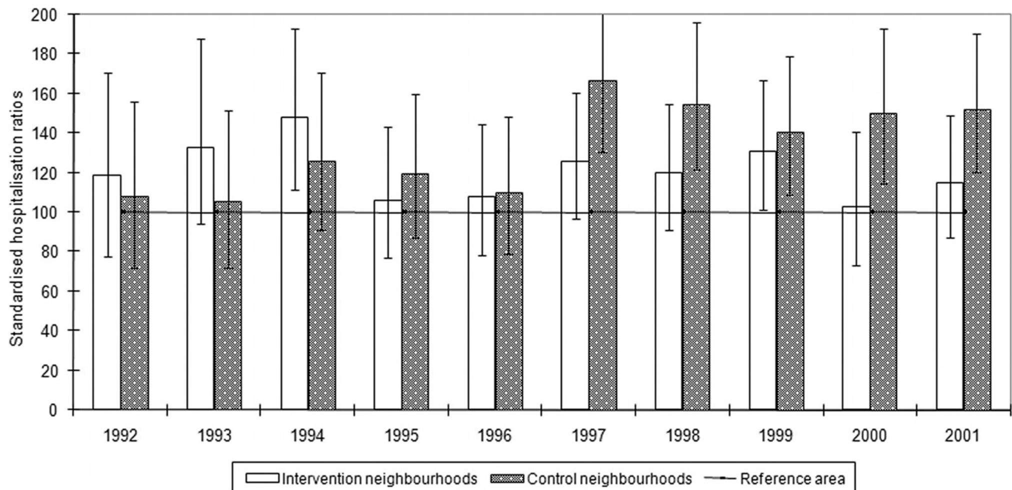
1996 onwards, the number of compulsory admissions in the intervention areas was often that expected according to the age and sex distribution of the population, whereas is was higher in the control areas. The standardized compulsory admission ratio over the years 1999-2001 was significantly higher for the control areas: 148 (95% CI 128 to 169) vs 115 (95% CI 99 to 133) for the intervention areas.

Discussion

Main findings

After the implementation of community-care networks, we found marked differences between intervention areas and matched control areas in trends and outcomes at the end of a 10-year study period: more contacts

Figure 8.4. Standardised compulsory admission ratios and confidence intervals for neighbourhoods with and without a community-care network (Rotterdam is reference area, patients aged 20 – 64 years), 1992-2001



with emergency psychiatric services and less (compulsory) admissions in the intervention neighbourhoods as compared to the control neighbourhoods. Despite the fact that within the area, the same procedures concerning compulsory admission were effective and the same alternative services were at hand, the rate of acute compulsory admissions was significantly higher in the neighbourhoods without a community-care network.

Strengths and limitations of the study

Ecological intervention studies are difficult to implement because the practice of healthcare services and local policy change the research setting constantly. Because the initial development of community-care networks in the mid-1990s was bounded by a fixed budget, we could analyse use of mental health services in a quasi-experimental design. Geographical variation as a result of the size and differences in age and sex of the neighbourhood population could be corrected using detailed demographical information.

An important limitation of this study is that we did not include more recently established community-care networks, and so we cannot exclude the possibility that the results were linked to the first batch of networks and their pioneering coordinators. Also, the difficulties we had in matching intervention areas with relevant control areas cannot be ignored. This may be accompanied by a different use of mental health services at neighbourhood-level. However, the mean underprivileged area scores for both intervention and control areas were much higher than the regional average. In addition, Jarman Index Scores were stable, and correlation coefficients for different years were high. This implies that it is unlikely that the results can be explained by increasing socio-economic differences between intervention and control neighbourhoods.

Implications

The introduction of local community-care networks seems to have a significant impact on the use of mental health services. This is consistent with the findings of the ACCESS program (Access to Community Care and Effective Services and Support) in the US, which promoted service integration in nine experimental sites, along with funds to support assertive community treatment in both experimental sites and nine comparison community sites. The ACCESS study demonstrated that integration strategies are likely to improve collaboration and cooperation between a mental health agency and other agencies in the same community. However, compared with the results of assertive community treatment, the integration strategies did not improve patient outcomes, except for independent housing (Goldman et al. 2002). Our study suggests that collaboration and cooperation between agencies may also help to prevent problems from escalating and to reduce the 'need' for admission, especially compulsory admission.

The potential of coordinating the efforts of different agencies in local community-care networks was acknowledged by the Dutch Commission on Socio-Economic Differences in Health. The commission recommended that the government facilitate the spread of community-care networks (Stronks and Hulshof 2001). The City Council of Rotterdam

followed through on the community network initiative, and from 2001 this approach was expanded to all neighbourhoods.

It may be that community-care networks are effective because participants closely monitored the situation of the patient. Our study also suggests that close co-operation between the community-care network and emergency psychiatric services is important. Possibly, this is the result of improved detection of problems through assertive outreach and a better communication between the community-care network coordinators and staff of emergency services. The upward trend of emergency psychiatric service contacts in the areas with a community-care network was mirrored by a downward trend in the control areas, which may be explained by the limited growth in the capacity of emergency psychiatric services over the years. At the end of the study period, there was a decline in the differences between the intervention and control neighbourhoods in the number of hospital admissions, both voluntary and involuntary. Perhaps more patients with chronic psychiatric problems who have been avoiding mental health care were contacted, inevitably leading to more hospital admissions. Moreover, community networks might evoke earlier hospital discharge and, conesquently, more readmissions and emergency admissions (the mean number of hospital days per patients was lower in the intervention areas).

Additional research

Further studies should identify the key elements in this community-network approach, because existing networks differ (eg, in coordinator training and full- or part-time appointments). Cost-benefit analysis can contribute to public support for sufficient funding and a better understanding of possible cost-reducing mechanisms. A preliminary cost analysis, in which we weighed the increase in use of psychiatric emergency services against the decrease in (compulsory) admissions, showed that it makes financial sense to invest in community-care networks.

PART IV: CONCLUSIONS AND DISCUSSION

9

General Discussion

Evaluation of Mental Healthcare after Emergency Compulsory Admission

Yarmouth and Waveney Mental Health Services win regional finals of Health Awards

'For some time, professionals have spoken about the importance of 'continuity of care' and providing a 'seamless service'. Yet at a time when it is most needed, professionals hand the care of the patient over to a new team. When a patient is taken on by the home treatment team, only to subsequently need in-patient care, they find themselves moving between the two teams at a time when stability and routine are most crucial. … To avoid this disruption, in the Great Yarmouth area our integrated acute service now works as one team. Staff can work within the in-patient unit, support service users within community-based crisis beds, or support them in their own home. This way, the care, support, treatment and staff remain constant whatever the setting in which it is delivered.'

Norfolk Mental Health Care NHS Trust
Press Release June 10, 2004

The importance of continuity of care

Dutch law distinguishes between two types of compulsory admission to a psychiatric hospital. The first type is the common procedure, whereby a judge determines whether legal conditions have been met. The second type of compulsory admission involves emergencies, whereby the city's mayor or a member of the municipal council decides on compulsory admission. Within a few days, a judge must decide whether the admission is to be continued. Whereas the hospital admission process is regulated in detail, the Dutch Act on Special Admissions in Psychiatric Hospitals (Dutch acronym BOPZ) is less concerned with hospital discharge and outpatient follow-up (Wierdsma 2003). Only the third national BOPZ-evaluation committee referred to the importance of continuity of care (COC), arguing that the principle of reciprocity requires a parallel obligation to provide appropriate health and social services, including ongoing care following discharge from compulsory admission (Evaluatiecommissie BOPZ 2007). The opening case study identified some of the problems and processes that stand in the way of better continuity of care (Chapter 1). Emergency compulsory admission was associated with continuity errors and near accidents. A recurrent topic in this example of Murphy's Law in public mental healthcare was the problematic transfer between healthcare settings because of a lack of guidelines.

Over the years, public responsibility concerning follow-up after admission has increased as the number of emergency compulsory admissions has increased (Chapter 2). This trend can be depicted as the result of a variety of combinations of factors that contribute to regional differences in the use of emergency compulsory admissions (van Vree et al. 2002). Upward and downward swings in Rotterdam, related to changes in general and local factors, make five periods stand out. First, in the early 20th century, despite the rapid increase in admissions to psychiatric hospitals, compulsory admissions were rare; this was due partly to the coherence between inpatient and outpatient psychiatric services, and to strict use of the dangerousness criterion. Second, the increase in compulsory admissions after World War II was related less to an idea of 'need for treatment' supported by a growing confidence in new psychiatric thera-

pies than to the key role of the Rotterdam harbour in demographic swings caused by of repatriation and migration. Third, the fall in the number of emergency admissions in the sixties and seventies was connected not only to broader criticisms of compulsory measures in mental health-care, but also to the reinforcement of outpatient services and to judicial changes in the emergency procedure. Fourth, the rapid increase shortly before 1980 and the equally rapid fall shortly afterwards were caused by the out-dated nature of services, initiatives to tackle this, and changing views on the implementation of judicial regulations. The years since then have been marked by an acceleration in the rate of compulsory admissions, related to a mix of demographic developments, changes in the interpretation of the dangerousness criterion, and new initiatives in public mental healthcare. The overall, long-term trend in the number of compulsory admissions has resulted from a variety of general developments, such as demographic changes and new judicial measures. Short-term developments are determined by other influences, which highlight points of action. Coherent, continuous service delivery was one of the local factors that influenced fluctuations in the number of emergency compulsory admissions. *In conclusion, continuity of mental healthcare is one of the few determinants of the use of compulsory admission that can be directed by local public mental healthcare policies.*

Generally, COC is interpreted as the degree to which episodes of treatment are linked in a seamless, uninterrupted whole, in conformity with patients' needs (Bachrach 1981; Bass and Windle 1972). Continuity is less of an issue when patients who do not receive follow-up treatment are also those least in need of aftercare; in some cases, discontinuity of care provides an opportunity to re-evaluate treatment progress and patients' needs. Typically, continuity includes a variety of attributes that establish 'connectedness' in care: responding to patients' individual needs, and communication between patient and healthcare professionals and among service providers. In practice, efforts to improve continuity of mental healthcare have resulted in various developments based on ideas such as community support systems, treatment protocols, service integration, case management and assertive community treatment.

Continuity of mental healthcare is associated with diagnostic accuracy, medication adherence and reduced hospitalization and has been

on the political and social agenda worldwide for many years (Haggerty et al. 2003; Reid et al. 2002). According to the Health Council of the Netherlands (2004), continuity of care is one of the basic principles of mental healthcare for severely ill patients in acute need, who often avoid contact with health services. Continuity of care has been identified by Britain's National Health Service (NHS) as a priority theme for the national Service Delivery and Organization R&D Programme (Freeman et al. 2002). Similarly, the American Institute of Medicine has declared continuity of healthcare to be a primary aim for improving healthcare quality. The American College of Physicians has placed it at the heart of far-reaching ideas for changes in service delivery (Wolinsky et al. 2007). In many countries, ongoing interest in continuity of mental healthcare is linked to changes that have led the delivery of psychiatric services to become fragmented – mainly through changes in adjacent service-delivery systems, eligibility criteria for accessing treatment programmes, and the creation of multiple funding streams (Bachrach 1981; Durbin et al. 2006; Freeman et al. 2002; Lamb and Bachrach 2001). These changes have been associated with the increase in the number of compulsory admissions, which have placed the COC-concept at the centre of the public mental health arena. In an attempt to reduce a 'revolving-door' phenomenon in community-based mental healthcare, outpatient follow-up of patients admitted involuntarily has become increasingly important (Salize and Dressing 2005).

Against this background, this thesis aimed to evaluate mental healthcare follow-up after emergency compulsory admission. The main research questions cover basic types of evaluation research: normative and impact studies. The general objective has been translated into the following research questions:

(1) If follow-up on voluntary admission is considered the norm, does aftercare following emergency compulsory admission meet the same standard?

(2) Do differences in psychiatric service delivery affect patterns of care and use of compulsory admission?

Monitoring mental healthcare

Evaluating follow-up after compulsory admission, presupposes comprehensive information on the use of psychiatric services. The main research topics of this thesis were studied using administrative data collected in the psychiatric case register for Rotterdam-Rijnmond. In a psychiatric case register, the contact data of all inhabitants in the catchment area with mental healthcare services are collected at one central point and linked per patient (ten Horn et al. 1986). Dutch psychiatric case registers were modelled after case registers in the UK. The rise and fall of the case registers in England set an example for an information policy in mental healthcare, and the strategic positioning of case registers in the Netherlands (Chapter 3). Reorganization of the British healthcare system meant the end of most of the psychiatric case registers in the UK. Responsibility for high-quality mental healthcare was handed over to local organizations, which implemented modern management information systems without epidemiological or healthcare research objectives. Opportunities to improve the use of administrative data were not brought about expeditiously. Consequently, the British NHS now lacks nationwide high quality clinical and financial databases to monitor health targets (Enthoven 2000). The same is true for the Dutch Ministry of Health, Welfare and Sports. Over many years, the Ministry has supported the development of case registers in the Netherlands. However, a proposal to gradually replace the national registry by a network of interlinked 'regional mental health information systems' (ten Horn 1989) was never effectuated. Instead, the Ministry followed a 'double track' policy supporting both national and regional mental healthcare information systems. Now and then, partly because of reorganizations and changes in staff, the question of the usefulness and necessity of psychiatric case registers would come up.

To determine whether psychiatric case registers still play a role in research and service monitoring, literature searches were conducted to follow up on reviews of case-register research in the eighties and nineties (Chapter 4). Typically, case registers are used in studies of the treated prevalence and incidence of psychiatric disorders, in research on patterns of care, as a sampling frame in epidemiological studies, and in studies on

risk factors and treatment outcome (Mortensen 1995). Despite this wide range of research based on administrative data, several stakeholders are probably not well-served by current priorities. Few studies investigate longitudinal patterns of service use to evaluate national healthcare policies. There is a lack of comparative record-linkage studies to inform local authorities on the co-operation between mental healthcare and public services. The implementation of standard tools and procedures for routine outcome assessment seems to still be in an early phase in most register areas. When case-register staff can capitalize on new opportunities, psychiatric case registers will continue to be important for research and service monitoring.

By order of national government, local health authorities, psychiatric services, and university departments, psychiatric case registers can play an important role in evaluating mental healthcare services. The case register for Rotterdam-Rijnmond was developed in this configuration of stakeholders (Chapter 5). This case register can be dated back to 1978, when the need was identified for the monitoring of the effects of innovative care and the impact of demographic developments such as the aging population and the increase of ethnic minority population. The case register comprises the entire Rijnmond area, with a total of approximately 1.2 million inhabitants and a mix of urban and rural areas. Since January 1st 1990, data have been collected of nearly all specialized mental healthcare services in the region, including alcohol and drugs services. The data set includes patient information, care episode information and contact data.

To improve the quality of information on diagnosis, treatment effect and costs of mental healthcare, changes in the case register's data structure follow national-level guidelines. These developments, however, cover only some of the reliability and validity issues in case-register research. For all sources of bias documented in survey research, there is a parallel source of systematic error in register research (Wierdsma and Sytema 1996). Despite the widespread use of administrative data in psychiatric epidemiology, the empirical literature on the validation of register data is sparse (Byrne et al. 2005). Using longitudinal data and record linkage, case registers can study the reliability and validity of administrative records to improve the patient administration of local mental

healthcare organizations and national information systems. *In conclusion, in any scenario of the development of the national mental healthcare information system and local integrated patient administration systems, psychiatric case registers can play a supplementing part in the national information strategy: producing detailed and longitudinal information, connecting data from mental healthcare and other services, and evaluating innovative programmes.*

Mental healthcare after compulsory admission

The research topics of this thesis have been addressed in complementary studies that evaluated patterns of care in relation to emergency compulsory admissions, using cross-sectional data (probing the state of affairs at a number of time points) and dynamic information (determining the sequence of mental healthcare events), both at the patient level and in ecological designs. Next, the main results of Chapters 6 to 8 are summarized, underpinning an overall assessment of continuity of mental healthcare after emergency compulsory admission.

Mental healthcare follow-up: mostly swift and intensive

For 623 first emergency compulsory admissions, gaps in service use, and duration of care were monitored over a period of twelve months before and after the admission. In general, results show a positive picture of the quality of mental healthcare after emergency compulsory admission. The average time interval between hospital discharge and start of aftercare following compulsory admission approximately corresponded to that for voluntary admissions. When an emergency compulsory admission was issued, the average length of stay was more than two months. Time between hospital discharge and start of aftercare was fifteen days on average, and in almost half of the cases, less than one week.

Prior to involuntary hospitalization, the average number of outpatient contacts and hospital days increased from about four to more than six contacts or hospital days per month. Intensive follow-up was targeted

in particular at patients who had an extensive psychiatric history. For the 'old acquaintances', the average number of contacts and hospital days after involuntary admission were almost twice as high as before. After one year, more than half the patients were still in mental healthcare. Moreover, the percentage of patients who were readmitted was close to what could be expected compared to other studies in the Netherlands. Within one year after emergency compulsory admission more than one-third of patients were readmitted, in most cases voluntarily.

More than one in five patients admitted involuntarily, however, did not have mental healthcare follow-up. For about half this patient group, the first contact with mental healthcare was an emergency compulsory admission. *In conclusion, the cases of absence of outpatient follow-up and the number of cases lacking mental healthcare before compulsory admission, indicate that more attention is needed on intensive outpatient treatment and for alternative coercive and non-coercive measures.*

Integration of services matters (somewhat)

Some studies have suggested that, when psychiatric services have collaborative or formal relationships, differences in the use of compulsory admissions could be expected compared with non-integrated mental healthcare services. In a naturalistic comparative study, we evaluated the effects of changes in local mental healthcare. Different levels of service integration could be compared within the same administrative and legal framework for use of compulsory admission.

The study gives some support to the idea that integrated services advance the continuity of mental healthcare and reduce the use of compulsory admissions. Several service-use indicators were calculated over a twelve-month follow-up period after the first compulsory admission, e.g. rates and relative increase, case mix of patients, length of stay, and time between hospital discharge and outpatient follow-up. All service outcomes showed somewhat or significantly better results for integrated services. The rate of emergency compulsory admission, the relative increase and the proportion of patients readmitted compulsorily were only somewhat lower for the area where mental health services had cooperative relationships. Differences in case-finding profiles suggest that an integrated

approach targets a difficult-to-reach patient group (self-neglect), whereas the clinic-based service seemed more public order oriented (danger to others). Hospitalization episodes were more than ten days shorter, and about 10% more patients received psychiatric follow-up in the integrated service area.

Study results showed limited effects of service integration, indicating that there are other, more important factors that affect the use of emergency compulsory admission. *In conclusion, service integration is not a major contribution to a comprehensive plan of action to reduce the number of compulsory admissions.*

Prevention of compulsory admission can work

In an ecological intervention study, the effectiveness was evaluated of community-care networks: close cooperation at the neighbourhood level between mental healthcare services, the local police force, housing corporations, specialized home care and general social services. Use of mental health services, both inpatient and outpatient services, was monitored over a ten-year study period for neighbourhoods with and without a community-care network.

After the implementation of community-care networks, marked differences were found between intervention areas and matched control areas. There were more contacts with emergency psychiatric services, and fewer admissions in the intervention neighbourhoods, as compared with the control neighbourhoods. Despite the fact that within the area, the same procedures concerning compulsory admission were effective and the same alternative services were at hand, the rate of emergency compulsory admissions was significantly higher in the neighbourhoods without a community-care network. An upward trend of emergency psychiatric service contacts was found in areas with a community-care network. *This leads to the conclusion that lower rates of emergency compulsory admissions accompanied by more frequent contact with emergency psychiatric services, indicate the importance of close co-operation between community-care networks and emergency psychiatric services.*

Changes in patterns of care

The past decades have shown a further increase in the number of emergency compulsory admissions, not only in Rotterdam, but also nationally (Mulder et al. 2006) and in other European countries (Salize and Dressing 2004). Developments over time in Rotterdam suggest that distinct mechanisms may be reflected in regional variations within countries and in variations across Europe (Hansson et al. 1999; Klein Ikkink et al. 1991).

First, study results showed changes after the implementation of the new Special Admissions Act in 1994. There was an increase in the number of patients who had several emergency compulsory admissions, and an increase to more than 60% of the share of suicide threats and self-neglect as grounds of dangerousness (Chapter 6).

Second, growing demand for psychiatric services and an increase in the number of patients who depend long term on mental healthcare (Dieperink et al. 2006; Kooi et al. 2000) generate mechanisms that contribute to an increase in the number of compulsory admissions, such as delays in voluntary admission resulting in emergency situations, and short stays followed by readmissions (Lelliott and Audini 2003). Deinstitutionalization policy was expected to concern patients who are more compliant and less at risk of acting violently, which would lead to a different case mix in psychiatric hospitals. We found that an increase in emergency compulsory admission is related to patients who are likely to have less social support: unmarried men, born outside the Netherlands; and who are severely ill: psychiatric history, diagnosed with psychosis or addiction, and a danger to themselves (Chapter 7).

Third, hospital policy aimed at fewer admissions, and early discharge was expected to correlate with an increased risk of compulsory readmission, shorter length of stay, and delays in follow-up after discharge. Instead, after an initial increase following the introduction of the new Act, a decrease was found in the percentage of patients readmitted compulsorily. This trend could be interpreted as the outcome of longer admission episodes, whereas the time between hospital discharge and outpatient follow-up remained unchanged (Chapters 6 and 7).

Finally, deinstitutionalization and sectorization seem to have an impact on support structures and consultation procedure in public mental healthcare. At the end of the study period, there was a decline in the differences between the neighbourhoods with and without community networks in the number of admissions. Two hypotheses were suggested to account for the longitudinal development of effects of the community-care network approach. First, community networks could evoke earlier hospital discharge and, consequently, more readmissions and emergency compulsory admissions. This is not in line, however, with the finding of an increased length of stay after compulsory admission, as mentioned earlier. Second, it could be that community-care networks contacted more patients with chronic psychiatric problems who were avoiding mental healthcare, inevitably leading to more contacts with emergency psychiatric teams and less difference in the number of hospital admissions at the neighbourhood level. The increase in emergency compulsory admissions seems to reflect, in part, better continuity of mental healthcare through a more intensive, outreaching approach for a group of patients not seeking care or avoiding the care they need (Chapter 8).

Evaluating mental healthcare follow-up

(1) The first research question addressed in this thesis was: does aftercare following emergency compulsory admission meet the same standard as voluntary admission? The study results showed that the quality of mental healthcare after emergency compulsory admissions approximately corresponds to quality of care concerning voluntary hospitalization. However, there is no 'golden standard' so far regarding follow-up after involuntary mental healthcare. Perhaps, for instance, much higher percentages should be expected of patients who had outpatient aftercare within one week after hospital discharge. There is still much room for improvement as indicated by the number of cases lacking mental healthcare before compulsory admission and cases of an absence of outpatient follow-up.

(2) The second research question was: do differences in psychiatric service delivery affect patterns of care and use of compulsory admission? Differences in psychiatric service delivery affect continuity of care following compulsory admission. Service-use indicators showed somewhat or significantly better results for services characterized by collaborative or formal relationships, supporting the idea that integrated services advance the continuity of mental healthcare and can help reduce the number of compulsory admissions. The implementation of community-care networks resulted in more contacts with emergency psychiatric services and fewer admissions and compulsory admissions in neighbourhoods where a partnership was established between the local police force, housing corporations, general social services, specialized home care and mental healthcare services.

In conclusion, aftercare following emergency compulsory admission is mostly swift and intensive, but could be improved by high-quality psychiatric service delivery. The last decade has seen a different perspective on patients' best interests, indicated by changes in case mix (severely ill patients who have little social support), a shift in dangerousness criterion from 'danger to others' to 'self-neglect', increased lengths of stay, and intensive follow-up. Local community networks, together with mental health outreach services, help prevent relapse and compulsory readmission through long-term monitoring, intensive follow-up and an assertive outpatient approach. In the long run, the number of emergency compulsory admissions might decrease, or perhaps it will increase more slowly, as more and more care-avoiding patients are brought into the mental healthcare system. Although it will be difficult to study this phenomenon because of the impact of other complicating factors and the absence of appropriate controls, we can study the effects of local differences in mental healthcare systems on the use of compulsory admissions (Chapters 7 and 8). This type of research can provide insights into possible underlying reasons for increases or decreases in the number of patients admitted involuntarily.

Strengths and weaknesses

Monitoring whether quality standards have been met, should be standard practice in all health districts. However, administrative data to evaluate service delivery is often not available. In this thesis, aftercare following compulsory admissions could be studied across a range of years based on longitudinal data from the psychiatric case register for Rotterdam and the local emergency compulsory admission registry. Information on the procedure for emergency compulsory admission has helped in the recognition of some of the problems in the interpretation of study results. Detailed information on demographic changes and on neighbourhood differences in health-related topics facilitated the use of ecological research designs. In addition, a comprehensive view of the region's healthcare system and intra-regional differences and gaps in service delivery directed the intervention studies and policy recommendations.

Case-register data, however, come with all the downsides of routinely administered information. First, the data set is not composed to answer specific research questions but is restricted to items monitoring the performance of mental health services. Consequently, potentially important predictors or confounders, such as illness severity, illness insight and medication compliance, cannot be taken into account. Second, the validity and reliability of clinically relevant variables in the data set, particularly psychiatric diagnosis and co-morbidity, are questionable. Local diagnostic perspectives may influence the administrative process, which in itself is selective and inevitably biased towards documenting evidence for a diagnosis (Byrne et al. 2005).

Multi-site research is an obvious way to meet the methodological problems posed by local professional idioms and the ideographic development of psychiatric services. If comprehensive information on service use is necessary, however, this strategy is limited to those catchment areas where case registers are operative. For this thesis, record linkage with data on compulsory admissions over a range of years precluded regional comparison. In the Netherlands, Rotterdam is unique in having longitudinal patient-level information available on service use and emergency compulsory admissions.

Operational COC definitions have remained relatively one-dimensional: in general, they are discharge oriented and are based on aggregate counts of service use rather than on longitudinal information (Adair et al. 2003; Johnson et al. 1997). This thesis has focused on the duration of contact with psychiatric services. Dropouts and gaps between ambulant follow-up after hospital discharge indicate a lack of continuity of mental healthcare. These are relevant effects of different forms of service delivery, but types of continuity of care that are harder to quantify, such as contact density and the dispersion of contacts in different settings, require further investigation (Crawford et al. 2004).

Cross-sectional approaches of patterns of care were used, analyzing information summarized in a single measure, either by calculating indices that reflect patterns of care within a defined observation period or by calculating differences in time between events, for instance a Cox regression analysis of ambulant follow-up after hospital discharge. Summarising chronological patterns of care in a single measure, however, invites criticism that the idea of long-term connected and coherent care is not captured (Haggerty et al. 2003). Usually, the continuous element of patterns of care is simplified by comparing two periods or by calculating the differences between distinct observation periods. An alternative approach has been suggested by Fortney et al. (2003), who, for each day of the observation period, calculated scores that reflect types of COC over the continuity defining period, for example over the previous three months. While these time-variant repeated measures enable longitudinal analyses, their application has not yet been studied extensively (for an example, see de Vries and Wierdsma 2008).

An important limitation to the evaluation studies is the lack of specific quality standards, which makes it difficult to evaluate service-use measures such as length of stay and the time interval between hospital discharge and follow-up. We found that about 50% of patients started receiving outpatient aftercare within one week after hospital discharge, but perhaps a much higher percentage of swift follow-up should be expected. Moreover, it has been argued that our results are biased because more than one in five patients in the study was not included in the denominator (ten Horn 2006). Among the patients not included in the calculated proportion, however, there were possibly many patients referred to juve-

nile services or nursing homes. We expected that most of these patients were followed up, perhaps even relatively swiftly, so that the estimated percentage would not be biased. What this exchange of thoughts implies is that a comprehensive perspective on the quality of mental healthcare related to emergency compulsory admissions should include information on the interfaces with adjoining health and social services.

Statistical analysis offers no solution to the lack of quality standards, which is a matter of relevance, not of statistical significance. In fact, in case-register research, statistics can complicate the problem of interpretation. One reason is that many researchers are still preoccupied with P-values, which in large cohort studies are useless because even irrelevant effects can have alpha levels that exceed the conventional 5% critical value (Del Giudice 2007). There is another reason why statistical analyses may complicate the interpretation of study results. Often explanatory variables of interest in ecological designs, for example service integration, will not vary much. Adding different settings or time-series introduces incomparability between datasets, and statistical controlling is difficult. This limits effect sizes, and consequently, small ecological effects should not immediately be dismissed as inconsequential (Blakely and Woodward 2000).

Related to the previous limitations of COC studies is the lack of a theoretical foundation. Over the years, several review papers have clarified the concept: continuity is a multi-dimensional concept, including information exchange, disease management, personal relationship and flexibility of contact (Adair et al. 2003; Crawford et al. 2004; Freeman et al. 2002; Haggerty et al. 2003; Johnson et al. 1997; Joyce et al. 2004; Saultz 2003). A better understanding is needed of the processes that constitute information continuity, management continuity and relational and contact continuity. To address these topics, research should incorporate theories from various disciplines. Thus, educational theory might support the introduction of new information and communication technology; theories of organizational change and communication might help disseminate new policies and standards; and behavioural theories might strengthen the patient–provider relationship and improve treatment adherence.

Multilevel perspective

Modern society has created a complex, vertically integrated healthcare system and the continuity problems that come with it (Gulliford et al. 2006). Without better understanding of the mechanisms whereby integrated care and continuity of care improve outcomes, interventions may be misdirected or inappropriately evaluated (Haggerty et al. 2003). Over the years, these mechanisms have changed fundamentally. Traditionally, the doctor role combined assessment, diagnostic treatment, disease management and the sustainment of a caring relationship. However, this patient–practitioner relationship has evolved into a social system that links doctors to service users, supported by treatment teams and healthcare organizations, and monitored by health insurers and health authorities. All actors bring their role-specific expectations, sanctions, norms and values into the interaction processes.

This complexity has initiated integrative mechanisms, such as electronic health information systems, telecommunications technology, treatment standards or disease management programmes. For research into the effects of integrative system interventions, Saultz (2003) has suggested a hierarchical perspective. First, continuity of mental healthcare implies an organized collection of medical and social information about each patient. Second, there should be a team of providers that assumes responsibility for the quality of care. Third, there needs to be an ongoing relationship between the patient and a personal healthcare professional.

This hierarchy appears to work both ways. Knowing all about the illness and social circumstances, as well as applying guidelines and directives flexibly so as to achieve 'connectedness' with the patient, indicate the type of contacts and the intensity required. Conversely, it is only through continuity of contact that the treatment team will be able to maintain a relationship, implement plans and procedures, and monitor the patient's needs. To use the jargon of multilevel analysis in longitudinal studies: in a four-level structure, observations are clustered within patients, patients are clustered within providers, and healthcare services are clustered in healthcare districts. This multilevel COC perspective can direct new interventions. Many research questions arise: Is better quality or availability of information reflected in the scope and detail of individual

care plans? Are there sufficient opportunities for patients to have real input into their treatment plan? Does the quality of referral information enable the current provider to assess whether there is an emergency situation? Are care plans in accordance with service policy and in response to identified patient needs? Can discharge planning reduce the risk of readmission? Does routine outcome assessment help to better monitor clinical and social needs and prevent the use of coercive interventions?

Long-term perspective

In a review of continuity of mental healthcare literature, Johnson et al. (1997) and Adair et al. (2003) hinted at a triple challenge for health service researchers. The first challenge is to develop concepts and measures that clarify the conceptual boundaries between continuity and other service measures, such as quality of care, service access and patient satisfaction. The next challenge is to improve the operational definitions of continuity of care, which have remained relatively one-dimensional and discharge-based. The third challenge is to design and test interventions that are intended to improve continuity of mental healthcare. Looking at the literature published over the past decade, the current assessment of these challenges should be that, while conceptual consensus is growing, there is still room to improve continuity-measures, and the development of practical interventions is in its infancy.

There is still only limited evidence on the associations between continuity of mental healthcare and patient outcomes or improved service delivery (Adair et al. 2003). One reason lies in the lack of standard measures for assessing continuity on the basis of administrative data (Wolinsky et al. 2007). A full assessment of continuity of care, as part of overall quality of care, requires that different types of continuity of care (informational, management, relational and contact continuity) are monitored from providers' and patients' perspectives, combining various

observational research methods, such as interviews, routine assessments and administrative data collection.

In the absence of grounded theoretical insights, best practices can be derived by developing, monitoring and evaluating interventions that arise in real-life situations, such as the early detection of mental problems, coordinated action, and intensive case management. Evaluating interventions focused on improving continuity of care implies that research is embedded in practical settings. First, it requires us to take account of the nature of the patient population involved – for the most severely ill patients there is no linear relationship between better continuity of mental healthcare and patient outcomes (Bachrach 1981). Second, local concerns and conditions must also be considered when studying real-life experiences. Many forms of leverage characterize the approach of these patients who often avoid social support and medical care. Coercion is widely used to improve continuity of mental healthcare through better adherence to psychiatric treatment (Monahan et al. 2005). Not only international differences in types of leverage, but also even regional variations in the implementation of existing regulations affect the interpretation of COC interventions. This in turn limits the transfer of new initiatives to other areas.

For a better understanding of the processes that constitute continuity of mental healthcare, we need systematic evaluations of COC-related interventions. At a national level, this requires research and development programmes that cover controlled and naturalistic studies of the effects of COC interventions. Such programmes could include electronic health information systems to improve information continuity, disease management programmes that are indicative for better management continuity, and clinical pathways to facilitate relational and contact continuity. To address these topics, we need an international research agenda. Therefore, unfortunately, improving continuity of mental healthcare to counter the epidemic growth in the number of compulsory admissions is a long-term goal.

Epilogue

Towards Fewer Compulsory Admissions

‘Denn nichts is für den Menschen als Menschen etwas wert, was er nicht mit Leidenschaft tun kann.’

Max Weber – ‘Wissenschaft als Beruf’, 1919

Less is more

In many if not all urban areas, there is likely to be a group of individuals with multiple problems who are well known to the police and health and social services. This group causes public nuisance through criminal offences, begging or otherwise deviant behaviour. In practice, it is difficult to take corrective measures because offences are most times misdemeanours so that long-lasting judicial measures are not an option. At the same time, the people concerned do not explicitly present themselves for help, which limits the possibilities of effective interventions by social services, mental healthcare and alcohol and drugs clinics. In the past few years, public opinion in the Netherlands has seemed less inclined to tolerate this deadlock. This new political climate has been echoed in local reports. According to local policy reports, a firm approach and, if necessary, new compulsory measures should improve the quality of life in urban areas. In the report *Captured in care*, published mid 2003, the City Council of Rotterdam described the way in which the 700 most troubling addicts should be taken off the street. Likewise, in the report *Drug nuisance and the problem of addiction*, the City Council of Amsterdam suggested measures to reduce the problems associated with drug abuse.

These policy reports presuppose that there are insufficient means to deal with these 'worrying avoiders of care'. However, much of the policy debate is primarily focused on legal compulsion, whereas different types of informal control get much less attention but are more commonly used (Monahan et al. 2005). A 'less is more' philosophy favouring types of informal control could prove to be equally effective. A wide range of measures has been developed, and there seems to be no compelling reason to create new arrangements, particularly as some existing measures are not currently being applied to their full potential. When addressing the issue of whether more coercion will be effective in enhancing public safety, both formal and informal types of leverage should be considered.

Types of leverage

Existing measures vary from conditional care to short-term compulsory admission in the context of the Dutch Act on Special Admissions to Psychiatric Hospitals (Dutch acronym BOPZ) and, at the other end of the spectrum, the criminal justice measure that places a person for an indefinite time at the government's convenience. The following list of measures is ordered by level of deprivation of freedom, albeit that demarcation lines are not always that clear.

Conditional care

Under conditions relating to housing, financial management or relationships, the person involved is eligible for certain types of social support and healthcare. An often-used type of leverage is support by social workers in the settlement of debts.

Street curfews and (day) shelter

According to a bylaw (article 173, subsection 3), in case of a threatening disturbance of public order, the mayor is authorized to give the orders that are considered necessary. 'Street curfews' is based on this principle: the person involved is not allowed to loiter in a circumscribed area during a specific time frame. These orders include the offer to go to a centre for the homeless and enter a treatment programme.

Mentorship, financial management, guardianship

The magistrate can impose these separate civil actions when someone is no longer able to look after his or her own interests. The mentor can intervene when problems arise in connection with healthcare or social services. The financial manager looks after the person's financial interests; however, in all other aspects of life, the person involved is still autonomous. The guardian has more elaborated powers: not only financial management, but also, for example, deciding on the place of residence (naturally, placement in a healthcare service is still granted on medical grounds only).

Conditional suspension of detention on demand
The Code of Criminal Procedure makes it possible to offer the alternative of a treatment programme to addicts who have been (repeatedly) in contact with the judicial system. One example is the leverage alternative of the Judicial Shelter Programme for the Addicted, which is a non-judicial service where participants go through programme steps from detoxification to resocialization. If the participant withdraws from the programme, the detention will still be executed.

Compulsory outpatient treatment
This measure has been recently introduced in the Dutch Act on Special Admissions. Based on a medical report, the magistrate can decide that the patient involved must adhere to treatment that is stipulated in a treatment programme as agreed. In case of non-observance of the agreement, compulsory hospitalization can be applied as sanction.

Penitentiary programme
After a period of detention, the remaining sentence can be served with supervised and supported activities wholly or partially outside the penitentiary. A probation officer is executor and supervisor.

Emergency compulsory admission
In emergency situations, when because of a mental illness someone is an immediate threat to himself or his social environment, the mayor can issue an order to have the person involved admitted involuntarily. Within three workdays, the magistrate decides whether the emergency compulsory admission has to be continued. The period of validity of this type of admission is three weeks at the most after the magistrate's decision.

Compulsory admission for observation
This latest measure in the Dutch Act on Special Admissions in Psychiatric Hospitals enables a compulsory admission of three weeks maximum, to observe someone in order to make a psychiatric diagnosis.

Compulsory admission, at one's own request, and self-bonding
In addition to the above-mentioned measures, the Dutch Act on Special Admissions includes several other forms of involuntary admissions. First,

there is the temporary compulsory admission (duration: six months at most), which can be followed by the continued compulsory admission (duration: one or two years). Second, patients who know that their motivation for treatment quickly diminishes when admitted involuntarily can request a compulsory admission. Third, self-bonding is a relatively new form of compulsory admission, which enables patient and therapist to have compulsory admission laid down as an advance directive in a healthcare plan.

Article 37 of the Code of Criminal Procedure

This article concerns offences for which the perpetrator is not held accountable, in which case the criminal court can decide that the person involved is to be compulsory admitted to a psychiatric hospital for the duration of one year at most. This measure is similar to the above-mentioned compulsory admission but is decided by a criminal judge instead of a civil judge. After admission, the legal provisions of the Special Admissions Act apply.

Psychiatric treatment in the context of a suspended or unconditional sentence

When the perpetrator is held accountable, as opposed to the placement under article 37, the person involved may obtain a conviction in which psychiatric treatment is incorporated. In the case of a suspended sentence, treatment adherence can be a condition for suspending imprisonment. The unconditional sentence can be the so-called Criminal Shelter for Addicts, which is a combination of repression and care in which participants follow a rehabilitation programme.

Placement at the Government's Convenience (Dutch acronym TBS)

The TBS involves severe violent offences and placement in a specialized, high security institution is mostly executed following a prison sentence. In 1997, an amendment of the law introduced the 'TBS under conditions'. This measure will be applied more often, because it takes up less inpatient capacity. In the case of non-observance of the conditions set by the criminal court, the public prosecutor can take action by issuing a warrant for arrest and altering the conditions.

This leverage continuum contains many forms of coercion, even though in the previous list some types of leverage were left out. Some measures affect patient groups but are only meant to combat public nuisance (for example, in the Netherlands the so-called Victorian Act enables the closure of houses that are used in drug deals). Seclusion and medical and physical constraints were left out because these forms of coercion are used only in a clinical setting.

The use of leverage is widespread; in a multi-site study, Monahan et al. (2005) found that about 50% of severely mentally ill patients experienced at least one of four specific forms of leverage. Financial management, housing, criminal justice or outpatient commitment are used frequently, and in varying compositions, to improve treatment adherence.

This focus on treatment adherence is in line with the idea that compulsory admissions are a last resort. The 'ultimum remedium' principle, however, seems in contrast to the finding that in about one in five cases of emergency compulsory admission in Rotterdam continuation is not granted by the court. Reasons not to grant authority to continue emergency compulsory admission were, in order of increasing frequency: absence of a mental disorder, signs of willingness to be admitted voluntarily, and a lack of immediate danger to oneself or others (Wierdsma 2003). This suggests that, for a substantial number of compulsory admissions, less coercive alternatives could have been looked into more closely.

Ten suggested actions towards less coercion

Prior to recent changes in legislation, the government noticed that the Act on Special Admissions allows more use of coercive measures than applied in practice. Therefore, policymakers have advocated transparent guidelines and information campaigns targeted at the various professions involved in the use of coercive measures. To counteract this public demand for more coercion in psychiatry, a comprehensive plan of action is needed to reduce the number of compulsory admissions. In the view outlined here in a list of actions, additional regulations are necessary, aimed at

supervision and quality controls. Instead of 'cross-sections' using national registrations, local monitors should be developed that at the patient level give a detailed perspective of the use of leverage in the community. Information exchange and feedback are key issues in these developments (Actions 1 and 2). In addition, paired sets of policies are suggested that, first, address the supply side of mental healthcare; second, structure goal-attainment decisions for mental health professionals; third, integrate the actions of separate services; and fourth, favour continuity of care and transparency of service delivery. We need to improve access to mental healthcare services and at the same time increase bed-capacity and expand rehabilitation programmes (Actions 3 and 4). Professionals should use standardized assessment instruments, as well as involve patients in the treatment process (Actions 5 and 6). Less coercive types of leverage could be applied when there is intensive cooperation between services (Actions 7 and 8). Finally, protocols for aftercare and hospital discharge should be accompanied by more transparency about errors and near misses (Actions 9 and 10).

Action 1. Set quality standards to evaluate levels of continuity of mental healthcare after (emergency) compulsory admission.

More than one-third of patients who had an emergency compulsory admission leave hospital within the maximum duration of three weeks, and about one in five patients did not have mental healthcare follow-up (Chapter 6). The medical director is authorized to discharge a patient who was admitted involuntarily or to discontinue the coercive measure when the patient shows the necessary willingness for treatment, and admission is continued voluntarily. In other words, the front-end of compulsory admission procedures is structured through regulations and forms, but the follow-up after admission is not as well organized. It seems that the careful balancing of individual autonomy and public safety is suddenly set aside. Because of the lack of quality standards, it is difficult to monitor this process and evaluate outcome measures, such as length of stay or the time interval between hospital discharge and follow-up. The Healthcare Inspectorate, in consultation with mental healthcare services

and consumer interest groups, should develop national standards concerning the quality of care for compulsory admissions.

Action 2. To detect trends in the use of all types of leverage, develop a Public Mental Health Monitor based on local comprehensive information systems focusing on regional differences and best practices.

In the Netherlands, as in other European countries, national government lacks high-quality databases to monitor changes in mental healthcare (Chapter 3). At the start of the new Act on Special Admissions in 1994, a national registration of compulsory measures was foreseen, but as yet, this information system has not been very useful for the periodic evaluation of the implementation of the law. This data is not linked to information on the use of mental healthcare or other information systems. Only as late as 2002, was the Forensic Registration and Information System (FRIS) extended with the recording of above-mentioned article-37 placements. Information on other types of coercive measures, let alone informal types of leverage, is not routinely collected. Evaluation of innovations such as compulsory outpatient treatment could indicate whether adjustments or additional measures are necessary. Because essential information systems are not in place, the empirical foundation of this evaluation leaves much to be desired. Without comprehensive information systems, it is difficult to evaluate the effectiveness of coercive measures in the context of its effects on other parts of the leverage continuum.

Given the complexities of organizing and analyzing comprehensive, longitudinal information, it seems self-evident to develop a national monitor from the bottom up via psychiatric case registers. This way, comparative studies can be set up into types of patients who benefit from the use of leverage, and types of leverage that are most effective in improving treatment adherence.

International comparisons are even more difficult because of the impact of different judicial arrangements (Salize and Dressing 2004). Taxonomists in public mental health are needed to identify and name

different types of leverage. Organising these into systems of classification will help to compare interventions and decide which are most effective.

Action 3. Improve access to psychiatric services for minority ethnic groups.

Accessibility of mental healthcare is not equal for all sections of the population. Repeated compulsory admissions are more common among patients born in 'other non-western countries', and relatively more patients from ethnic minorities were admitted involuntarily at first contact with psychiatric services (Chapters 6 and 7).

There are other indications that some ethnic groups have difficulties in finding their way to mental healthcare, which means that a psychologist or psychiatrist sees patients when the problems have got out of hand. Based on data from psychiatric hospitals, higher admission rates, both voluntary and compulsory, were reported for patients born in Suriname who were diagnosed with schizophrenia (Selten and Sijben 1994; Uniken Venema and Wierdsma 1993). Emergency compulsory admissions are less often not granted by the court where patients from ethnic groups are concerned (Wierdsma 2003). Relatively more black and minority ethnic patients have once-only contact with psychiatric services, and more often their first contact is an emergency intervention or compulsory admission (Mulder and Wierdsma 2002; Wierdsma and Uniken Venema 1996).

Part of the problem might be mental healthcare workers' unfamiliarity with the differences in clinical presentation between ethnic groups, as a result of which some immigrant groups are more likely to be seen as dangerous and less motivated for treatment (Mulder et al. 2006). Patients born in Suriname or the Dutch Antilles, however, are also less often in psychiatric outpatient care or day care and are overrepresented in alcohol and drugs clinics. Service policies aimed at better accessibility and greater effectiveness of treatment programmes for minority ethnic groups will continue to be necessary (Dieperink et al. 2002; Dieperink et al. 2007; Selten et al. 2007).

Action 4. Increase bed capacity and expand rehabilitation programmes to accommodate chronic psychiatric patients.

Differences in the use of compulsory admission or compulsory outpatient treatment have been associated with differences in inpatient capacity (Chapter 2). Severe shortages of psychiatric beds will inevitably lead to a situation where emergency compulsory admissions are used as a crowbar to get a patient hospitalized. It can also direct the court to impose compulsory outpatient treatment where inpatient care would be more appropriate (Klein Ikkink et al. 1991; van Vree et al. 2002).

Recently, service capacity has been expanded, especially for drug addicts with personality disorders, because this patient group causes a high level of public nuisance. To accommodate 120 drug addicts with psychiatric problems who have dropped out of care in Rotterdam or Amsterdam, new inpatient and sheltered-living facilities have been created far away from urban areas. These patients will be allowed to return to their formal residence only if treatment has had a distinct beneficial effect.

Emergency compulsory admissions, however, concern a wider group of patients, most of whom have an extensive psychiatric history (Chapter 6 - Mulder and Wierdsma 2002). In Dutch mental healthcare, this group of long-term service-dependent patients has increased steadily over the years (Dieperink et al. 2006). More housing facilities, employment projects and other rehabilitation projects are needed to create a stable environment which contributes to the recovery of severely ill patients (Drake et al. 1993). In addition to intensive outpatient care, prevention of emergency compulsory admissions will require increased bed capacity and rehabilitation programmes.

Action 5. Stimulate 'unity of language' among professionals by specific phrasing of the criteria and using standardized assessments.

New legislation and different interpretations of legal criteria are important factors explaining the differences in the use of emergency compulsory admissions (Chapter 2). The new Act on Special Admissions, introduced in 1994, was intended to bring more unity in the implementation of the law; nevertheless, regional variation is still considerable. Professional opinions contribute to differences between services and within service areas. In multiple-problem cases, both healthcare workers and magistrates can focus on different aspects when assessing the nature and severity of the situation (Poletiek 2002). In addition, some of the existing measures of leverage are not being fully implemented, because interpretations of the judicial criteria differ; for example, addiction is rarely considered a psychiatric illness, with reference to the argument that excessive smoking and risking one's own health are not sufficient grounds for compulsory admission. However, in line with the directive that was developed by a group of psychiatrists working in the Rotterdam area, the court now considers chronic addiction a psychiatric illness that can lead to long-term compulsory hospitalization (Dutch Supreme Court, September 23rd 2005, no. R05/076, LJN AU0372).

In some cases, the medical report underlying the compulsory admission is not very informative, which reinforces differences in the interpretation and use of coercive measures (Wierdsma 2001). More specific phrasing of the criteria, pre-coding relevant categories, and better form layout could help to structure the information (Hanssen and Janssen 1999). Detailed information on admission criteria and changes during hospital stay is also needed to evaluate the effectiveness of the different types of leverage. Standardized 'routine outcome assessment', such as the Health of the Nation Outcome Scales in England, should be implemented to indicate the seriousness of problems in areas of interest and the changes that have occurred (Mulder et al. 2004; Wierdsma 1995).

Action 6. Strengthen the legal position of patients by ensuring independent need assessment and making the patient's legal status explicit.

Impaired awareness of illness and lack of social support prevent severely mentally ill patients from influencing their care plan or following procedures to issue complaints (Chapter 1). The 1994 Dutch Act on Special Admissions was intended to strengthen the legal position of patients who have been admitted involuntarily. Legal aid extends to only the first phase of compulsory admission. Consequently, no one on behalf of the patient is watching how the transition from involuntary admission to voluntary hospitalization takes shape in practice (Poletiek 1997). Studies of perceived coercion indicate that the correlation between formal legal status and subjectively experienced coercion is modest. Some patients admitted voluntarily experience coercion, and a proportion of legally involuntary patients believe that they were hospitalized at their own request. Approximately 40 to 50% of patients have no idea of the legal status of their hospitalization (Monahan et al 1995; 2005).

Action 7. Apply less coercive types of leverage, such as legal guardianship, more often, and experiment with healthcare professionals as mentors.

Not all formal types of leverage are executed in a very orderly manner (Chapter 1). Almost one out of four emergency compulsory admissions is not continued (Scholten and Tjadens 1996). Moreover, in the Netherlands, almost 200 patients per year seize the opportunity to escape from a closed ward of a psychiatric hospital and out of compulsory admission. In some cases, coercive measures are not executed, because the patient has gone underground (Wierdsma 2003). In these cases, it seems that other measures could have been considered. Less coercive types of leverage can be brought about by new legislative arrangements, by including specific target groups, and by adapting procedures.

First, compulsory outpatient treatment, for example, has been introduced as an alternative to compulsory admission as late as 2006 –

although before then, discharge from hospital under specific conditions was used much to the same effect. When the patient agrees with conditions set by the court and laid down in the treatment plan, compulsory admission is postponed. We estimated that about one-third of involuntary admissions could have been replaced by compulsory outpatient treatment (Wierdsma and Reisel 2005).

Second, some measures are restricted to specific target groups, but could be more widely utilized to benefit patients with severe psychiatric disorders and social problems. Involuntary admission at one's own request was especially aimed at (drug) addicts, but in practice it has not been widely used; nationally, there are no more than about 100 cases (Inspectie voor de Gezondheidszorg 2007).

Third, most requests for the appointment of a mentor, in the context of legal guardianship, are limited to patients suffering from dementia or who are mentally handicapped (Oomens et al. 1998). Because some of the long-term service-dependent patients have no social network, and volunteer mentors are sometimes hard to find, it would be useful to experiment with the appointment of healthcare professionals as mentors.

Action 8. Organise intensive cooperation of primary care services and interdisciplinary outpatient care for severely mentally ill patients.

Community-care networks have been developed at the neighbourhood level to coordinate the efforts of different agencies targeted at patients with multiple problems (Chapter 8). These networks emphasize the detection and prevention of new problems rather than supporting patients already in contact with specialist services. The network coordinator, preferably a community psychiatric nurse on the payroll of one of the participating services, starts intensive outreach to contact the person involved and monitors the implementation of a shared plan of action, ensuring that all parties adhere to the agreed strategy. Evaluation studies have shown improvements in areas such as patients' living conditions, social contacts and mental and behavioural problems (Poodt and Wierdsma 1999; Poodt and Wierdsma 2001). In addition to community-care net-

works, assertive community treatment (ACT) has been introduced to prevent psychiatric admission and improve aftercare. Multi-disciplinary, outpatient ACT teams support chronic psychiatric patients on a 24 x 7 basis, covering a range of problem areas (Marshall and Lockwood 2002; Mulder and Kroon 2005).

The similarities between community-care networks and ACT teams have created a public mental healthcare demarcation problem. This issue was considered to be resolved by drawing a clear line between the coordinating role of the Municipal Health Service and the executive, patient-oriented tasks of private mental healthcare providers (Mulder and Voogt 2006; Sleegers 2005). In the process, however, the community-care networks' method of working has changed. Networks have turned into offices where local social and healthcare services can report problem situations. Network coordinators have become 'network managers' working for the Municipal Health Service, mostly not experienced psychiatric nurses, who set out a course of action and monitor developments. The effectiveness of these new-style networks has not been evaluated; nevertheless, there has been a rapid spread of community networks. Obviously, we still have a long way to go towards evidence-based public mental healthcare.

Action 9. Improve continuity of care by introducing aftercare under supervision, and standards for hospital discharge.

Differences in the organization of mental healthcare affect the use of emergency compulsory admission and aftercare (Chapter 7). Current arrangements need amendment to reflect changes in the organization of community outpatient services and psychiatric hospitals. For instance, the Dutch Act stipulates that a medical report has to be presented by an independent physician or psychiatrist. An independent assessment is more difficult nowadays in the context of the growing number of mergers between services. This issue is linked to one of the key advices of the third Special Admissions Act Evaluation Committee: the introduction of a regional board for psychiatric care, made up of a psychiatrist, a legal expert and a users representative. The board should have a central role

in the new regulations aimed at continuity of care. This is expected to bring about improvements in preparing the court's decision and supervising compulsory admission, and the ending of involuntary treatment and aftercare (Evaluatiecommissie BOPZ 2007).

The Committee's advice implies radical changes, which, like the 1994 amendment of the law, could take many years to round off. Meanwhile, Dutch law would not explicitly include an aftercare arrangement. A useful leg up to the Board for Psychiatric Care could be (a) the introduction of regional 'supervision registers' and (b) adopting discharge criteria that enforce aftercare.

(a) In the mid-nineties, mental health services in England were encouraged to prioritize the severely mentally ill. In reaction to public concerns about the implementation of community care, regional 'supervision registers' and 'aftercare under supervision' regulations were issued. Prior to psychiatric hospital discharge, patients who posed a risk to themselves or their social environment were put on a list to plan a structured transfer from inpatient to outpatient care. Within catchment areas, more detailed procedures had to be agreed upon to decide on the criteria to put someone on the list or remove a patient from the supervision register. In the national 'Plan of action on social loss and public nuisance', the Dutch government has indicated its support for initiatives to evaluate the surplus value of an 'Aftercare under Supervision' register (Tweede Kamerstuk 2004-2005, 29325, no. 2).

(b) The 'Care Programme Approach' in England guarantees the assignment of a case manager, an objective and comprehensive assessment of needs, a tailor-made healthcare plan and planned sessions to monitor the realization of the care plan. Following this example, mental health services could come to an agreement to apply these criteria on the discharge of patients who have been admitted involuntarily. The physician directors of the psychiatric hospitals in the Rotterdam region have agreed to improve follow-up after compulsory admission by implementing the 'Rotterdam Standard'. This standard means, among other things, that the intended follow-up professional is consulted in the development of the care plan. In addition, the transfer of patients should be arranged like 'tiled windows': the first aftercare contact takes place in the clinic, and follow-up starts within two weeks after discharge.

Action 10. Start Regional Committees on Medical Errors and Near Accidents in Public Mental Healthcare.

Despite all efforts, control mechanisms and procedures can break down, in which case errors should be reported and acted upon to prevent repetitions (Chapter 1). Public mental healthcare, however, is characterized by a supply-chain approach so that it is often unclear which part of the chain is responsible for a particular error or near accident. To solve the problem of divided responsibility, the 1996 policy letter on public mental healthcare (Parliament, 1996–1997, 25424, no. 2) stated that in the context of the Dutch Act on the Quality of Health Services, the local city council is to be considered the Public Mental Healthcare Provider responsible. The law obliges every healthcare provider to set up a procedure to handle complaints and to install a committee that records and investigates medical errors and near accidents. Likewise, the city council should form a committee to address issues relating to quality of care, reported not only by patients, but also by workers in the field of public mental healthcare. This could be an additional task of the above-mentioned Board for Psychiatric Care (Evaluatiecommissie BOPZ 2007). As in other areas of healthcare, annual reports on medical errors and near-misses communicate transparency, professionalism and good practice.

Public mental health ombudsman

The Dutch Act on Special Admissions to Psychiatric Hospitals is evaluated periodically, which has resulted in several changes in judicial concepts and regulations. Reactions from city councils and ongoing debates among psychiatrists have urged the Dutch government to create more opportunities to start compulsory treatment when someone is admitted involuntarily; other EU member states do not distinguish between admission and treatment. This call for compulsory treatment should not limit the debate to medical interventions. There is a wide range of types of leverage to improve adherence to psychiatric treatment in the community. In the absence of grounded theoretical insights, best practices can be

produced from developing, monitoring, and evaluating interventions that arise in real-life situations. Based on this information, a national Public Mental Health Ombudsman would be likely to paint an entirely new picture of the quality of public mental healthcare.

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Patients involved in the case study on public mental healthcare (Chapter 1) gave their written permission to incorporate their personal experiences into this inventory of obstacles to continuity of care. The case presentation is in part based on detailed reports of social workers and psychiatric nurses of the Municipal Health Service for Rotterdam-Rijnmond.

Some of the quotations without explicit reference in the chapter on compulsory admissions in a historical perspective (Chapter 2) were extracted from a Rotterdam biography published in Berkhout, FIB (1951) Bekende Rotterdammers [Well-Known People from Rotterdam]. These extracts have been published in the online collection of documents and photographs on the history of Rotterdam developed and maintained by A.R.C. Engelfriet, webmaster http://www.engelfriet.net.

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SUMMARY

The Dutch Act on Special Admissions to Psychiatric Hospitals (Dutch acronym BOPZ) in Dutch law stipulates the criteria and procedures for compulsory admission. In general, the BOPZ Act distinguishes between two types of compulsory admission. The first is the common procedure, whereby a judge determines whether legal conditions have been met based on a medical report by an independent psychiatrist. The second type of compulsory admission involves emergencies, whereby the city's mayor or a member of the municipal council decides on compulsory admission on the advice of an independent physician. Within a few days, a judge must decide whether the admission is to be continued. A dangerous situation may involve danger-to-self, for instance social loss or suicide threat, or it may concern the social environment or public order, for instance because of aggressive behaviour or serious public nuisance. The number of emergency compulsory admissions has increased in recent years. A lack of continuity of mental healthcare may be one of the contributing factors. In the literature, continuity of care has been labelled an 'ethical principle' and a 'strategic first choice' in the planning and evaluation of public mental health services. However, periodic evaluations of the Dutch act on compulsory admissions have devoted little attention to continuity of care. Against this background, this thesis has aimed to evaluate mental healthcare follow-up after emergency compulsory admission. The main research questions were: (1) If follow-up on voluntary admission is the norm, does aftercare following emergency compulsory admission meet the same standard? (2) Do differences in psychiatric service delivery affect patterns of care and use of compulsory admission?

Background

Chapter 1: Compulsory admission and continuity of care

Public mental healthcare is often concerned with people who have multiple problems but who do not seek the help they need. It concerns people who neglect themselves or who become lonely, people who live at the 'frayed fringes of society'. Based on a case report, it is shown that sometimes dozens of social workers and organizations can be involved in

service delivery to support one patient over a long period. Document research indicates that effective social and medical support requires intensive collaboration by all parties concerned and creative solutions for the difficulties imposed by current rules and procedures. When collaboration fails, problems may escalate and, in some cases, compulsory admission to a psychiatric hospital is the only way left to remedy a dangerous situation. Many steps have to be taken to have someone admitted to a psychiatric hospital against his or her will. A physician has to draw up a medical report, a judge then decides whether the judicial criteria have been met, and a lawyer looks after the interests of the patient admitted involuntarily. There is, however, surprisingly little regulation of aftercare following a compulsory admission. Dutch law does not explicitly include an aftercare arrangement that meets the 'Care Programme Approach', the framework for discharge planning and aftercare in England. This approach involves assessing the patient's healthcare and social care needs, developing a care plan agreed by all stakeholders, identifying a key worker or case manager and monitoring the delivery of the care plan in view of the patient's progress. Thus, there is room for improvement of continuity of care after emergency compulsory admission. The physician directors of psychiatric hospitals in the Rotterdam region have agreed on closer supervision of follow-up after compulsory admission. But what is the scale of the problem they are facing?

Chapter 2: Compulsory admission from a historical perspective

The number of emergency compulsory admissions strongly increased over a period of about 75 years, from 1929 to 2005. Upward and downward swings in Rotterdam, related to changes in general and local factors, make five periods stand out. First, in the early 20th century, despite the rapid increase in admissions to psychiatric hospitals, compulsory admissions were rare; this was due partly to the coherence between inpatient and outpatient psychiatric services, and to strict use of the dangerousness criterion. Second, in the years after World War II, the increase in compulsory admissions was related less to an idea of 'need for treatment' supported by a growing confidence in new psychiatric therapies than to the key role of the Rotterdam harbour in demographic swings caused by the repatriation of traumatized militaries and the return of emigrants

from, for instance, the United States, Canada and Australia. Third, the fall in the number of emergency admissions in the sixties and seventies was connected not only to broader criticisms of compulsory measures in mental healthcare, but also to the reinforcement of outpatient services and to judicial changes in the emergency procedure. Fourth, the rapid increase shortly before 1980 and the equally rapid fall just afterwards were caused by the outdated nature of services, initiatives to tackle this, and changing views on the implementation of judicial regulations. The years since then have been marked by an acceleration in the rate of compulsory admissions, related to a mix of demographic developments, changes in the legislation, changes in the interpretation of the dangerousness criterion, and new initiatives in public mental healthcare.

The overall, long-term trend in the number of compulsory admissions has resulted from a variety of general developments, such as demographic changes and new judicial measures. Short-term developments are determined by other influences, for instance continuous service delivery, which highlight points of action. *In conclusion, continuity of mental healthcare is one of the few determinants of the use of compulsory admission that can be directed by local public mental healthcare policies.*

Method

Evaluating follow-up after compulsory admission, presupposes comprehensive information on the use of psychiatric services. But is this kind of information readily available?

Chapter 3: National and regional information systems

In a psychiatric case register, the contact data of all inhabitants in the catchment area with mental healthcare services are collected at one central point and linked per patient. This prevents patients from being counted double, and at the same time keeps track of them time-wise and contact-wise. In a worldwide inventory over fifty case registers were counted in the mid-eighties. At the time, computerized data were not

widespread, and case-register information attracted much attention. Dutch psychiatric case registers were modelled after the case registers in the United Kingdom. The rise and fall of psychiatric case registers in England set an example for an information policy in mental healthcare, and the strategic positioning of case registers in the Netherlands. Reorganization of the British healthcare system meant the end of most case registers. Responsibility for high-quality mental healthcare was handed over to local organizations, which implemented modern management information systems without epidemiological or healthcare research objectives. Policies to improve the use of administrative data, for instance by introducing a minimal data set and a national patient identification number, were not brought about expeditiously. Consequently, the British National Health Service now lacks nationwide high-quality clinical and financial databases to monitor health targets.

The same is true for the Dutch Ministry of Health, Welfare and Sports. Over the years, the Ministry has supported the development of case registers in the Netherlands. A proposal to gradually replace the old national inpatient registry with a network of interlinked 'regional mental health information systems' was never effectuated. Instead, the Ministry followed a 'double track' policy supporting both national and regional mental healthcare information systems. From time to time, partly because of reorganizations and changes in staff, the question of the usefulness and necessity of psychiatric case registers would come up.

Chapter 4: Do we still need psychiatric case registers?

To determine whether psychiatric case registers still have a role in research and service monitoring, literature searches were conducted as a follow-up on reviews of case-register research in the eighties and nineties. Current international literature shows that case-register data are used in various research projects in combination with census data or linked to other data sources. Typically, case registers are used (a) in studies of the treated prevalence and incidence of psychiatric disorders, (b) in research on care episodes and patterns of care, (c) as sampling frames in epidemiological studies, (d) in studies on risk factors and treatment outcome

and (e) record-linkage studies that relate use of mental healthcare to other information systems.

Despite this wide range of research based on administrative data, several case-register stakeholders are probably not being well-served by current priorities. First, at the national level, few studies investigate longitudinal patterns of service use to evaluate healthcare policies. Second, there is a lack of comparative record-linkage studies to inform local authorities on the co-operation between mental healthcare and public services. Finally, the implementation of standard tools and procedures for routine outcome assessment to evaluate mental healthcare programmes are still in an early phase in most register areas. When case-register staff can capitalize on new opportunities, such as internet applications and useful indicators of service use, psychiatric case registers will continue to be important for research and service monitoring.

Chapter 5: The psychiatric case register for Rotterdam-Rijnmond

The main research topics of this thesis were studied using administrative data collected in the psychiatric case register for Rotterdam-Rijnmond. This case register was developed by the psychiatric services in the region, the Municipal Health Service for Rotterdam-Rijnmond, and Erasmus university departments, with financial support from the Dutch Ministry of Health. The case register can be dated back to 1978, when the need was felt to monitor the effects of innovative care and the impact of demographic developments such as the aging population and increase in the ethnic minority population. As of 2003, Erasmus MC, department of psychiatry, accommodates the case register. Case-register research is part of the activities of the O3 Research Centre for Mental Healthcare Rijnmond in the field of social psychiatry and psychiatric epidemiology.

The case register comprises the entire Rijnmond area, with a total of approximately 1.2 million inhabitants. This region is a mix of urban and rural areas. Since January 1st 1990, data have been collected of nearly all specialized mental healthcare services in the region, including alcohol and drugs services. The data set includes patient information, care episode information and contact data.

To improve the quality of information on diagnosis, treatment effect and costs of mental healthcare, changes in the case register's data structure follow national-level guidelines. These developments, however, cover only some of the reliability and validity issues in case-register research. Despite the widespread use of administrative data in psychiatric epidemiology, the empirical literature on the validation of register data is sparse. Using longitudinal data and record linkage, case registers can study the reliability and validity of administrative records to improve the patient administration of local mental healthcare organizations and national information systems. *In conclusion, in any scenario of the development of the national mental healthcare information system and local integrated patient administration systems, psychiatric case registers continue to play an essential part in the national information strategy: producing detailed and longitudinal information, connecting data from mental healthcare and other services, and evaluating innovative programmes.*

Results

Chapters 6 to 8 combine data from the psychiatric case register for Rotterdam-Rijnmond with basic information in medical reports collected in a local registry on emergency compulsory admissions.

Chapter 6: Mental healthcare follow-up: mostly swift and intensive

For 623 first emergency compulsory admissions, gaps in service use, and duration of care were monitored over a period of twelve months before and twelve months after admission. Results were compared for three patient groups: 'old acquaintances', 'newcomers' and 'passers-by'. To compare the use of emergency compulsory admissions before and after the introduction of the Special Admissions Act, data were collected for patients admitted in the years 1992–1993 and 1996–1997.

In general, the results show a positive picture of the quality of mental healthcare after emergency compulsory admission. The average time interval between hospital discharge and commencement of aftercare

following compulsory admission approximately corresponded to that for voluntary psychiatric admissions. Time between hospital discharge and start of aftercare was fifteen days on average, and in almost half of the cases, less than one week. When an emergency compulsory admission was issued, the average length of stay was more than two months. Within one year after emergency compulsory admission, more than one-third of patients were readmitted, in most cases voluntarily. After one year, more than half the patients were still in mental healthcare; intensive follow-up was especially targeted at 'old acquaintances': patients with an extensive psychiatric history. The proportion of compulsory admissions made on the grounds of suicide threats and self-neglect increased to more than 60% after the implementation of the Special Admissions Act. In addition, the share of patients with repeated (involuntary) admissions was higher in the years 1996–1997 than in the years 1992–1993.

The quality of aftercare following emergency compulsory admission proved to be similar to that of follow-up after voluntary admission, although, more than one in five patients admitted involuntarily did not have mental healthcare follow-up. For about half of this patient group, the first contact with mental healthcare was an emergency compulsory admission. *In conclusion, the cases of absence of outpatient follow-up and the number of cases lacking mental healthcare before compulsory admission indicate that more attention is needed on intensive outpatient treatment and on alternative coercive and non-coercive measures.*

Chapter 7: Integration of services matters (somewhat)

Some studies have suggested that when psychiatric services have collaborative or formal relationships, differences in the use of compulsory admissions could be expected compared with non-integrated mental healthcare services. In a naturalistic comparative study, we evaluated effects of changes in local mental healthcare. Different levels of service integration could be compared within the same administrative and legal framework for use of compulsory admission.

In a retrospective record-linkage study covering the years 1992–1993 and 2001–2003, we compared differences over time between the northern Rotterdam district (intensive cooperation, merger of inpatient

and outpatient services) and the southern district (different healthcare perspectives, low level of service integration). We included patients aged 18 to 60, living in Rotterdam, who had a first emergency compulsory admission in the observation period (n=830). Psychiatric history was established for these patients, and their use of mental healthcare was monitored for twelve months following emergency compulsory admission.

The study gives some support to the idea that integrated services advance the continuity of mental healthcare and reduce the use of compulsory admissions. All service outcomes showed somewhat or significantly better results for integrated services. The rate of emergency compulsory admission, the relative increase and the proportion of patients readmitted compulsorily were only somewhat lower for the area where mental health services had cooperative relationships. Differences in case-finding profiles suggest that an integrated approach targets a difficult-to-reach patient group (self-neglect), whereas the clinic-based service seemed more public-order oriented (danger to others). Hospitalization episodes were more than ten days shorter, and about 10% more patients received psychiatric follow-up in the integrated service area.

Study results showed limited effects of service integration, indicating that there are other, more important factors that affect the use of emergency compulsory admission. *In conclusion, service integration is not a major contributor to a comprehensive plan of action to reduce the number of compulsory admissions.*

Chapter 8: Prevention of compulsory admission can work

Community-care networks are partnerships between the local police force, housing corporations, general social services, specialized home care, and mental healthcare services. The networks were set up to improve healthcare for patients with (chronic) psychiatric problems through local cooperation between separate agencies operating in underprivileged areas. We evaluated the effects of intensive cooperation in community-care networks on the number of emergency mental healthcare contacts, psychiatric hospitalizations and emergency compulsory admissions.

In an ecological intervention study, we compared service-use indicators for neighbourhoods where community-care networks were established (intervention areas) and for matched neighbourhoods without

such networks (control areas). Use of mental health services, both inpatient and outpatient services, was monitored over a ten-year study period. The study period covered the years from the introduction of community-care networks to the time they became being fully operative.

After the implementation of community-care networks, marked differences were found between intervention areas and matched control areas. There were more contacts with emergency psychiatric services and fewer admissions in the intervention neighbourhoods as compared with the control neighbourhoods. Despite the fact that within the area, the same procedures concerning compulsory admission were effective and the same alternative services were at hand, the rate of emergency compulsory admissions was significantly higher in the neighbourhoods without a community-care network.

Intensive cooperation between services at 'shop floor' level seems an effective tool in the prevention of emergency compulsory admissions. *This leads to the conclusion that lower rates of emergency compulsory admissions accompanied by more frequent contact with emergency psychiatric services indicate the importance of close co-operation between community-care networks and emergency psychiatric services.*

Conclusions and discussion

Chapter 9: Evaluation of mental healthcare after compulsory admission

The research questions addressed in this thesis were: (1) Does aftercare following emergency compulsory admission meet the same standard as voluntary admission? (2) Do differences in psychiatric service delivery affect patterns of care and use of compulsory admission?

Study results regarding the first research question showed that aftercare following emergency compulsory admission is mostly swift and intensive but could be improved by high-quality psychiatric service delivery. Research into the second question indicates a relatively small effect of level of service integration on the use of compulsory admission. Perhaps this means, that the formal integration of mental health services

does not guarantee better continuity of care. We did find effects of community-care networks on the use of compulsory admission. It seems that intensive cooperation in public mental healthcare contributes to the prevention of emergency compulsory admissions. The last decade has seen a different perspective on patients' best interests, indicated by changes in case mix, a shift in the dangerousness criterion from 'danger to others' to 'self-neglect', increased lengths of stay, and intensive follow-up. Local community networks, together with mental health outreach services, help prevent relapse and readmission through long-term monitoring, intensive follow-up, and an assertive outpatient approach. In the long run, the number of emergency compulsory admissions might decrease, or perhaps it will increase more slowly, as more and more care-avoiding patients are brought into the mental healthcare system.

Research into the trends in the number of compulsory admissions can provide insights into possible underlying reasons for increases or decreases in hospitalization rates. Continuity of mental healthcare is one of the underlying factorsd. However, there is still only limited evidence on the associations between continuity of mental healthcare and patient outcomes or improved service delivery. Without better understanding of the mechanisms whereby care delivered over time improves outcomes, continuity interventions may be misdirected or inappropriately evaluated. This indicates a triple challenge for health-service researchers. The first challenge is to develop concepts and measures that clarify the conceptual boundaries between continuity and other concepts, such as quality of care, service access and patient satisfaction. A multilevel perspective is needed to analyze the effects of types of continuity of care. The next challenge is to improve the operational definitions of continuity of care, which have remained relatively one-dimensional and discharge-based. The third challenge is to design and test interventions that are intended to improve continuity of mental healthcare. Looking at the literature published over the past decade, the current assessment of these challenges should be that, although conceptual consensus is growing there is room to improve continuity measures, and the development of practical interventions is still in its infancy. Therefore, unfortunately, improving continuity of mental healthcare to counter the epidemic growth in the number of compulsory admissions is a goal for the long term.

DUTCH PART

Samenvatting

In Nederland gaat de Wet Bijzondere Opnemingen in Psychiatrische Ziekenhuizen (Wet BOPZ) over de criteria en procedures op grond waarvan iemand tegen zijn of haar wil kan worden opgenomen. In grote lijnen zijn er twee soorten dwangopnamen te onderscheiden. Ten eerste, bij een rechterlijke machtiging beoordeelt een rechter, op grond van een geneeskundige verklaring van een onafhankelijke arts of psychiater, of er als gevolg van een psychiatrische stoornis sprake is van een gevaar dat alleen kan worden voorkomen door een opname, of door ambulante zorg onder voorwaarden (bijvoorbeeld dat betrokkene medicatie inneemt). Ten tweede, in spoedeisende gevallen beslist de burgemeester, of een wethouder, op advies van een onafhankelijke arts of psychiater, of een inbewaringstelling moet worden afgegeven. Vervolgens beoordeelt de rechter binnen enkele dagen of de dwangopname moet worden voortgezet. Het gevaar betreft vaak de betrokkene zelf, bijvoorbeeld door maatschappelijke teloorgang of suïcidedreiging, maar ook kan het de omgeving betreffen, bijvoorbeeld door agressief gedrag of ernstige overlast. De laatste jaren is het aantal dwangopnamen sterk gestegen. Gebrek aan continuïteit van zorg is een van de mogelijke oorzaken van deze toename. In de internationale literatuur is continuïteit van zorg een 'strategische eerste keuze' en een 'ethisch uitgangspunt' genoemd voor de planning en evaluatie van de openbare geestelijke gezondheidszorg. Toch heeft zorgcontinuïteit weinig aandacht gekregen in de periodieke evaluatie van de Wet BOPZ. Tegen deze achtergrond was het doel van dit proefschrift de nazorg na gedwongen spoedopname te evalueren. Twee vragen stonden centraal:

(1) komt de nazorg na een gedwongen opname overeen met het vervolgtraject bij vrijwillige opname?;

(2) hebben verschillen in de organisatie van de geestelijke gezondheidszorg effect op zorgpatronen en het toepassen van dwangopnamen?

Achtergrond

Hoofdstuk 1: Gedwongen opnamen en continuïteit van zorg
De openbare geestelijke gezondheidszorg gaat vaak over mensen die veel problemen hebben maar toch geen hulp vragen. Het gaat om mensen die vervuilen en vereenzamen; mensen die leven aan de rafelrand van de samenleving. Aan de hand van een casusbeschrijving wordt duidelijk gemaakt dat in dit geval ongeveer 80 hulpverleners, verdeeld over ruim 20 instellingen, over een langere periode betrokken zijn bij de zorg rond de patiënt. Het dossieronderzoek laat zien dat de problematiek vraagt om intensieve samenwerking van alle partijen en creatieve oplossingen voor knelpunten in de bestaande regels en procedures. Wanneer dat niet lukt, kunnen problemen escaleren en is soms een gedwongen opname in een psychiatrisch ziekenhuis nog de enige mogelijkheid om een gevaarlijke situatie te voorkomen.

Er moet heel wat gebeuren voordat een gedwongen psychiatrische opname tot stand komt. Een arts of psychiater stelt een medisch rapport op, een rechter beoordeelt of aan de wettelijke criteria is voldaan en een advocaat behartigt de belangen van de patiënt. Vreemd genoeg is er weinig geregeld met betrekking tot het vervolg na een dwangopname. Nederland kent geen nazorgregeling zoals in de 'Care Programme Approach' in Engeland, waarbij de patiënt vóór ontslag uit de kliniek een zorgcoördinator krijgt toegewezen, een objectieve en integrale indicatiestelling van de zorgbehoeften wordt uitgevoerd, een zorgplan wordt opgesteld, en beoordelingsgesprekken over de uitvoering van het zorgplan worden afgesproken. Er zijn dus nog mogelijkheden om te komen tot betere continuïteit van zorg rond gedwongen opnamen. In Rotterdam hebben de geneesheer-directeuren daartoe een eerste aanzet gegeven door meer toezicht te houden op de aansluiting van klinische en ambulante zorg. Hoe omvangrijk is het probleem waar zij voor staan?

Hoofdstuk 2: Inbewaringstellingen in historisch perspectief
Het aantal inbewaringstellingen in Rotterdam is over een periode van ruim 75 jaar, van 1929 tot en met 2005, sterk toegenomen tot meer dan 500 dwangopnamen per jaar. Vijf tijdvakken kunnen worden onder-

scheiden op basis van de opwaartse en neergaande trends. Ten eerste de beginperiode van de vorige eeuw: dwangopnamen waren toen nog schaars ondanks de snelle toename van het aantal psychiatrische opnamen. Dit was deels het gevolg van goede samenwerking tussen het gemeentelijk psychiatrisch ziekenhuis 'Maasoord' met een 'Voor- en Nazorgdienst' en met ondersteuning van chronische patiënten door de 'Vereniging ter Behartiging van de Maatschappelijke Belangen voor Zenuw- en Zielszieken'. Ten tweede, de periode na de Tweede Wereldoorlog: de toename van het aantal inbewaringstellingen in deze jaren had niet zozeer te maken met het behandeloptimisme van de sociale psychiatrie, maar met de rol die de Rotterdamse haven had bij de repatriëring van getraumatiseerde militairen en de terugkeer van uitgewezen emigranten vanuit onder andere de VS, Canada en Australië. In de derde periode, de jaren zestig en zeventig, daalde het aantal dwangopnamen door de kritiek van de antipsychiatrie, de aanpassingen in de wetgeving, en de versterking van de ambulante sector. Ten vierde, eind jaren zeventig steeg het aantal inbewaringstellingen snel, om begin jaren tachtig even snel weer te dalen. In deze periode werd veel gedaan aan het wegwerken van capaciteitsproblemen in de regio en kwam er meer samenhang in de geestelijke gezondheidszorg (GGz). Bovendien werden de procedures aangescherpt vooruitlopend op de nieuwe wetgeving. Ten vijfde, na de invoering van de Wet BOPZ in 1994 steeg het aantal dwangopnamen in Rotterdam. De toename is het gevolg van een mix van demografische ontwikkelingen, wetswijzigingen, veranderingen in de interpretatie van de wetgeving, en veranderingen in de openbare geestelijke gezondheidszorg.

Op de lange termijn speelden algemene factoren een rol, zoals onder andere veranderingen in maatschappelijke opvattingen en de neerslag daarvan in wettelijke regelingen en in de toepassing van de Wet BOPZ. Lokale invloeden, onder andere de samenhang in de zorg, bepaalden de korte termijn fluctuaties in het aantal inbewaringstellingen en bieden aanknopingspunten voor preventieve interventies. *Concluderend zijn er verschillende determinanten van het gebruik van dwangopnamen; continuïteit van zorg is een van de weinige factoren die worden beïnvloed door lokaal beleid op het terrein* van de openbare geestelijke *gezondheidszorg (stelling 1).*

Methode

Evaluatie van continuïteit van zorg veronderstelt dat gebruik kan worden gemaakt van gegevens van gedwongen opnamen en het gebruik van zorg over meerdere jaren. Is de beschikbaarheid van dergelijke informatie wel zo vanzelfsprekend als gedacht?

Hoofdstuk 3: Nationale en regionale informatiesystemen
In een psychiatrisch casusregister worden de contacten met GGz-instellingen van patiënten uit een omschreven geografisch gebied op één centraal punt verzameld en gekoppeld. Patiënten kunnen in de tijd en over verschillende zorgvoorzieningen worden gevolgd. In het midden van de jaren '80 telde een wereldwijde inventarisatie meer dan vijftig casusregisters die in de begintijd van de informatisering de nodige aandacht trokken met relatief geavanceerde dataverwerking en analyses. De casusregisters in Engeland hadden hierin een voortrekkersrol. In Nederland zijn vergelijkbare registers al langere tijd operationeel voor de regio's Noord-Nederland, Maastricht en omgeving, en Rijnmond. De opkomst en neergang van de Engelse psychiatrische casusregisters kunnen een voorbeeld zijn voor de positionering van de Nederlandse registers in het landelijke GGz-informatie beleid. Door reorganisaties in de Britse gezondheidszorg verloren de oude registers hun betekenis. De verantwoordelijkheid voor de kwaliteit van de GGz werd neergelegd bij lokale instanties. De nieuwe organisaties maakten voor hun bedrijfsvoering gebruik van managementinformatiesystemen zonder taken op het gebied van epidemiologisch onderzoek of gezondheidszorgonderzoek. Mogelijkheden om deze administratieve gegevens te ontsluiten, bijvoorbeeld door de introductie van een basis gegevensset en landelijk patiëntnummer, werden niet voortvarende benut. Met als gevolg dat de Britse regering nog niet beschikt over betrouwbare nationale gegevens van de ontwikkeling van het zorggebruik om de doelstellingen van het gezondheidsbeleid te monitoren.

Evenals in Engeland is er in Nederland beperkte informatie op landelijk niveau beschikbaar over de ontwikkeling van de GGz. Er is geen uitvoering gegeven aan plannen om het oude landelijke Patiëntenregister Intramurale Geestelijke Gezondheidszorg te vervangen door een samen-

werkingsverband van regionale registers. Even leek het erop dat de continuïteit van de casusregisters was gegarandeerd als steunpilaren in een landelijk dekkende verzameling van uniforme informatie van regionaal samenwerkende GGz-organisaties. Enkele jaren geleden is dit beleid echter stopgezet. Door de vele fusiebewegingen en wijzingen in landelijke afspraken, kregen de noodzakelijke veranderingen in de registraties van GGz-instellingen meer prioriteit dan de ontwikkeling van vergelijkbare regionale kerncijfers.

Het Ministerie van Volksgezondheid, Welzijn, en Sport (VWS) was door de jaren heen een belangrijke financier van de psychiatrische casusregisters in Nederland. Maar omdat het Ministerie niet meer streeft naar een dekkend netwerk van regionale GGz-informatie, en er veel wordt verwacht van het landelijke Diagnose-behandel-combinatie Informatie Systeem (DIS), is opnieuw de vraag gerezen naar nut en noodzaak van de psychiatrische casusregisters.

Hoofdstuk 4: Hebben we casusregisters nog wel nodig?
In navolging van reviews van registeronderzoek in de jaren tachtig en negentig, is onderzocht of de psychiatrische casusregisters nog een rol spelen in het epidemiologisch onderzoek en het monitoren van het zorggebruik. Uit recente internationale literatuur blijkt dat registergegevens in uiteenlopende onderzoeksprojecten worden gebruikt in combinatie met bevolkingsgegevens of gekoppeld aan andere bronnen. Onderzoek met gegevens van psychiatrischs casusregisters kent vijf varianten: (a) studies naar het vóórkomen van psychiatrische stoornissen en de ontwikkeling van het aantal patiënten in behandeling; (b) onderzoek naar episoden van zorg en het verloop van de behandeling; (c) epidemiologisch onderzoek betreffende bijzondere patiëntgroepen; (d) studies van risicofactoren en resultaten van behandeling; en (e) onderzoek dat registergegevens combineert met informatie uit andere bronnen. Ondanks deze brede waaier aan onderzoek zullen beleidsmakers binnen overheidsorganen of GGz-instellingen zich soms moeilijk kunnen vinden in de actuele onderzoeksprioriteiten. Ten eerste zijn er weinig studies van longitudinale patronen van zorg gericht op de evaluatie van doelstellingen van het nationale gezondheidsbeleid. Ten tweede, er is gebrek aan vergelijkende studies waarin de samenwerking tussen de GGZ en publieke diensten wordt onder-

zocht ten behoeve van lokaal beleid. Tot slot, veel registergebieden verkeren nog in een beginfase van de ontwikkeling van standaard meetinstrumenten en procedures voor het vastleggen van 'routine outcome'-maten waarmee het zorgbeleid van GGz-instellingen kan worden gevolgd. Wanneer registeronderzoekers weten in te spelen op nieuwe mogelijkheden, onder andere internettoepassingen en instrumentontwikkeling, blijven psychiatrische casusregisters een belangrijke bijdrage leveren aan het gezondheidszorgonderzoek en het monitoren van veranderingen in de GGz.

Hoofdstuk 5: Het Psychiatrisch Casusregister Rotterdam-Rijnmond
De onderzoeksgegevens voor dit proefschrift komen voornamelijk uit het psychiatrisch casusregister voor Rotterdam-Rijnmond. Dit casusregister is opgezet door de GGz-instellingen in de regio Rijnmond, de Gemeentelijke Gezondheidsdienst voor Rotterdam-Rijnmond, en het Erasmus MC, met financiële steun van het Ministerie van VWS. De geschiedenis van het Rotterdamse register gaat terug tot eind jaren zeventig, toen partijen in de openbare geestelijke gezondheidszorg besloten om de effecten van zorgvernieuwingen te monitoren en om de planning van voorzieningen af te stemmen op demografische ontwikkelingen zoals de vergrijzing en de toename van etnische minderheden. Vanaf eind 2003 is het register ondergebracht bij de afdeling Psychiatrie van het Erasmus MC. Het registeronderzoek is onderdeel van de activiteiten van het O3 Onderzoekcentrum GGz Rijnmond, een samenwerkingsverband op het gebied van de sociale psychiatrie en psychiatrische epidemiologie van de GGz-instellingen, de GGD Rotterdam-Rijnmond, en Erasmus MC.

Het registergebied omvat de regio Rijnmond met in totaal ongeveer 1.2 miljoen inwoners. De regio is een mix van urbane en meer rurale gebieden. Vanaf de startdatum 1 januari 1990 zijn de zorggegevens verzameld van de belangrijkste gespecialiseerde GGz-voorzieningen in de regio, inclusief de alcohol- en drugs hulpverlening. De gegevenset omvat patiënt informatie, zorgepisode informatie, en contactgegevens.

Verbetering van de kwaliteit van de informatie over de psychiatrische diagnose, het effect van de behandeling, en de kosten van de hulpverlening, wordt op termijn bereikt door aan te sluiten bij landelijke richtlijnen. Daar kan registeronderzoek aan bijdragen door de betrouwbaar-

heid en validiteit van administratieve gegevens te onderzoeken. Dergelijk onderzoek is schaars, maar belangrijk voor de verbetering van de administratieve systemen van GGz-instellingen en van landelijke informatie voorzieningen. *Concluderend, in elk scenario van de ontwikkeling van landelijke GGz-informatiesystemen en lokale, geïntegreerde patiënten administraties, spelen psychiatrische casusregisters een onmisbare rol in een nationale informatie strategie: casusregisters geven een gedetailleerd longitudinaal beeld van het zorggebruik, kunnen GGz-informatie met gegevens van andere diensten verbinden, en innovatieve zorgprogramma's evalueren (stelling 2).*

Resultaten

In de hoofdstukken 6 tot en met 8 is een lokale registratie met kerngegevens van de geneeskundige verklaring bij inbewaringstellingen gecombineerd met zorggegevens uit het psychiatrisch casusregister voor Rotterdam-Rijnmond.

Hoofdstuk 6: Psychiatrische voorgeschiedenis en nazorg bij dwangopname
Van 623 patiënten in Rotterdam die voor de eerste keer in bewaring zijn gesteld, werd het zorggebruik geïnventariseerd gedurende een periode van 12 maanden vóór en 12 maanden na de inbewaringstelling. De uitkomsten zijn vergeleken van drie patiëntgroepen: 'oude bekenden', 'nieuwkomers' en 'passanten'. Voor een vergelijking van de situatie voor en na de invoering in 1994 van de Wet BOPZ, is het zorggebruik vergeleken van patiënten die waren opgenomen in de perioden 1992-1993 en 1996-1997.

In het algemeen laten de resultaten een positief beeld zien van de kwaliteit van zorg na gedwongen opname. De gemiddelde tijd tussen ontslag uit het ziekenhuis en de start van de ambulante nazorg kwam ongeveer overeen met het tijdsinterval bij vrijwillige opnamen. De tijd tussen ontslag en het begin van de nazorg was gemiddeld 15 dagen en in de helft van de gevallen niet meer dan één week. De gemiddelde opnameduur was

ruim twee maanden en meer dan een derde van de patiënten met een inbewaringstelling verliet binnen drie weken het psychiatrisch ziekenhuis. Binnen één jaar na de inbewaringstelling werd een derde van de patiënten opnieuw opgenomen. Na één jaar was ruim de helft nog in zorg. Intensieve nazorg was vooral gericht op 'oude bekenden': de groep patiënten met een uitgebreide voorgeschiedenis in de GGz. Na de invoering van de Wet BOPZ steeg het percentage inbewaringstellingen op grond van suïcidedreiging en bij zelfverwaarlozing. Ook het aantal herhaalde dwangopnamen was in de periode 1996-1997 hoger dan in 1992-1993.

De kwaliteit van de nazorg na inbewaringstelling kwam overeen met vrijwillige opnamen, maar ook kreeg meer dan één op de vijf gedwongen opgenomen patiënten geen ambulante nazorg. Voor ongeveer de helft van deze patiënten was het eerste contact met de GGz een inbewaringstelling. *Concluderend, het aantal gedwongen opgenomen patiënten zonder ambulante nazorg en de inbewaringstelling van patiënten zonder psychiatrische voorgeschiedenis, geven aan dat meer aandacht nodig is voor intensieve ambulante begeleiding, en voor alternatieve dwang- en drangmaatregelen (stelling 3).*

Hoofdstuk 7: Effecten van extramuralisering en integratie van de GGZ

Eerder onderzoek liet verschillen zien in het gebruik van gedwongen opnamen tussen geïntegreerde GGz-voorzieningen, zorginstellingen met onderlinge samenwerkingsafspraken of formele relaties, en niet-geïntegreerde voorzieningen. In een vergelijkend onderzoek van het zorggebruik op de linker en de rechter Maasoever zijn de effecten van veranderingen in de lokale GGz geëvalueerd. Verschillende maten van integratie van de hupverlening konden worden vergeleken binnen hetzelfde administratieve en juridische raamwerk voor gedwongen opnamen.

In een retrospectief onderzoek over de perioden 1991-1993 en 2001-2003, zijn de verschillen in kaart gebracht in de tijd gezien en tussen de gebieden Noord (intensieve samenwerking, gefuseerde instellingen) en Zuid (verschillende zorgvisies, geen fusie). Patiënten werden geselecteerd in de leeftijd van 18 tot 60 jaar, die woonden in Rotterdam, en in de onderzoeksperioden een eerste psychiatrische opname met inbewaringstelling hadden (N=830). De psychiatrische voorgeschiedenis van

patiënten werd vastgesteld en het zorggebruik na de inbewaringstelling gevolgd over een periode van 12 maanden.

De resultaten geven enige steun aan het idee dat integratie van GGz-voorzieningen bijdraagt aan continuïteit van de zorg, en kan leiden tot minder gebruik van gedwongen opnamen. Alle zorggebruik indicatoren waren iets beter of significant beter voor de geïntegreerde voorzieningen. Het aantal inbewaringstellingen per 1000 inwoners, de relatieve toename van het aantal dwangopnamen, en het percentage patiënten met gedwongen heropnamen, waren in de verwachte richting maar slechts iets lager in het gebied waar de intramurale en ambulante zorg fuseerden. Verschillen in patiëntprofielen en de gevaarscriteria suggereren dat de geïntegreerde aanpak gericht was op een moeilijk te bereiken groep (zelfverwaarlozing), terwijl de kliniek georiënteerde zorg meer gericht was op openbare orde (gevaar voor anderen). De opnameduur was meer dan 10 dagen korter, en ongeveer 10% meer patiënten kregen nazorg in het geïntegreerde GGz-gebied.

De resultaten laten een beperkt effect zien van de integratie van de GGz. Er zijn vermoedelijk andere, meer belangrijke factoren die het toepassen van gedwongen opnamen beïnvloeden. *Concluderend, de integratie van zorgvoorzieningen draagt slechts in geringe mate bij aan een samenhangende aanpak om het aantal gedwongen spoedopnamen terug te dringen (stelling 4).*

Hoofdstuk 8: Preventie van gedwongen opnamen: effecten van lokale zorgnetwerken

Lokale zorgnetwerken zijn samenwerkingsverbanden in de eerstelijnszorg van wijkagenten, woningbouwcorporaties, maatschappelijk werk, gespecialiseerde thuiszorg, en de GGz. Deze samenwerking is gericht op complexe problematiek die partijen alleen niet goed aankunnen. Dergelijke netwerken zijn in sociaal-economisch achtergestelde buurten in Rotterdam opgezet, om de zorg te verbeteren voor patiënten met (chronisch) psychiatrische problemen die zelf de weg naar de hulpverlening moeilijk weten te vinden. De effecten zijn onderzocht van de intensieve samenwerking in de eerstelijn op het aantal crisiscontacten, psychiatrische opnamen en inbewaringstellingen.

Het onderzoek is opgezet als een ecologische interventiestudie, waarin buurten met een lokaal zorgnetwerk (interventie buurten) en gematchte buurten zonder een dergelijk samenwerkingsverband (controle buurten) zijn vergeleken. Gemiddelden en gestandaardiseerde waarden voor het aantal contacten met de acute diensten van de GGz, het aantal psychiatrische opnamen en gedwongen opnamen zijn per buurt vastgelegd over een periode van 10 jaar. De onderzoeksperiode omvat de beginfase van de lokale zorgnetwerken tot en met de jaren waarin de eerste netwerken volledig operationeel werden.

De onderzoeksresultaten lieten duidelijke verschillen zien tussen de interventiebuurten en de controlebuurten na de implementatie van lokale zorgnetwerken. Er waren relatief meer crisiscontacten en minder opnamen in buurten met een lokaal zorgnetwerk. Ondanks het feit dat overal dezelfde procedures voor inbewaringstellingen werden gevolgd, was het aantal gedwongen opnamen relatief lager in de buurten met een lokaal zorgnetwerk dan in de controlebuurten.

Intensieve samenwerking 'op de werkvloer' lijkt een belangrijk instrument in de preventie van psychiatrische opnamen met inbewaringstelling. *Concluderend: de afname van gedwongen opnamen in relatie tot de toename van het aantal crisiscontacten in de buurten met een lokaal zorgnetwerk, onderstreept het belang van de samenwerking van de lokale zorgnetwerken met de gespecialiseerde GGz-crisisdienst (stelling 5).*

Conclusies en discussie

Hoofdstuk 9: Evaluatie van continuïteit van zorg na inbewaringstelling en vervolgonderzoek

In dit proefschrift stonden twee onderzoeksvragen centraal: ten eerste, komt de kwaliteit van de nazorg na gedwongen spoedopname overeen met nazorg na vrijwillige opname?, en ten tweede, hebben verschillen in de organisatie van de zorg effect op het zorggebruik en de toepassing van dwangopnamen?

De resultaten ten aanzien van de eerste vraagstelling laten zien dat de nazorg in de meeste gevallen snel tot stand komt en vaak intensief is, maar ook dat er verbeteringen mogelijk zijn in de zorg rond inbewaringstellingen. Onderzoek naar de tweede vraagstelling wijst op een gering effect van de integratie van zorgvoorzieningen op de toepassing van dwangopnamen. Mogelijk betekent dit dat formele integratie van zorgvoorzieningen niet garandeert dat de continuïteit van zorg beter geregeld is. We vonden wel een effect van lokale zorgnetwerken op het toepassen van acute gedwongen opnamen. Intensievere samenwerkingsverbanden in de openbare geestelijke gezondheidszorg kunnen bijdragen aan het voorkómen van acute dwangopnamen. De afgelopen jaren is bij gedwongen opnamen het belang van de patiënt in een ander perspectief komen te staan, zoals blijkt uit veranderingen in de kenmerken van gedwongen opgenomen patiënten (meer ernstige zieke patiënten met een beperkt sociaal netwerk), de verschuiving in het gevaarscriterium van 'gevaar voor anderen' naar 'zelfverwaarlozing', de toegenomen opnameduur, en intensieve nazorg. Lokale zorgnetwerken en ambulante GGz-voorzieningen helpen terugval en heropname van patiënten te voorkomen door een lange-termijn aanpak, intensieve begeleiding, en een assertieve benadering. Op den duur zou daardoor het aantal gedwongen spoedopnamen kunnen afnemen, of minder snel stijgen, omdat meer zorgmijdende, langdurig zorgafhankelijke patiënten in de GGz komen.

Onderzoek naar de ontwikkeling van het aantal gedwongen opnamen kan inzicht geven in de onderliggende redenen voor de toename of daling. Een van die onderliggende factoren is zorgcontinuïteit. Er is echter nog weinig bekend over de samenhang van continuïteit van zorg en verbetering van het functioneren van patiënten en betere kwaliteit van zorg. Zonder kennis van de mechanismen waardoor continuïteit van zorg bijdraagt aan betere behandelingsresultaten, kunnen interventies verkeerd worden ingezet of ondeugdelijk worden geëvalueerd. Er ligt dan ook een drievoudige uitdaging voor het gezondheidszorgonderzoek.

Ten eerste, de ontwikkeling van een begrippenkader en indicatoren die de conceptuele grenzen afbakenen tussen continuïteit van zorg en andere zorgkenmerken, zoals kwaliteit en bereikbaarheid van de hulpverlening, en tevredenheid van patiënten. Een multilevel perspectief

is nodig om de effecten te evalueren van verschillende typen continuïteit van zorg.

De tweede uitdaging is de ontwikkeling van betere operationele definities van zorg. Vaak zijn de operationalisaties nog één-dimensioneel en ontslaggeoriënteerde, waardoor onder andere het longitudinale aspect van continuïteit van zorg onderbelicht blijft.

Een derde uitdaging is het ontwerpen en testen van interventies gericht op het verbeteren van continuïteit van zorg.

De huidige stand van zaken is dat er in de literatuur al meer conceptuele overeenstemming is ontstaan, maar de operationele definities nog verbeterd kunnen worden en het ontwikkelen van interventies nog in een beginstadium verkeerd. Het terugdringen van het aantal inbewaringstellingen door betere continuïteit van zorg is dus nog een zaak van lange adem.

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Het is er dan eindelijk toch van gekomen. Hoe ouder, hoe wijzer? Of is het: hoe ouder, hoe gekker? In elk geval komen er met het klimmen der jaren ook meer mensen om te bedanken. Het is echter geen perfect lineair verband omdat ik ongetwijfeld namen ben vergeten, maar ook omdat er mensen zijn weggevallen. Wie ik ben vergeten moet me dat maar niet kwalijk nemen; in de haast om een lijst op te stellen, heeft mijn tanende geheugen soms problemen gegeven. Daar staat tegenover dat ik graag nog een aantal mensen had uitgenodigd waar ik mee heb mogen samenwerken; zij zouden - zeker weten - van de partij zijn geweest. Aan hen heb ik dit proefschrift opgedragen.

Elk onderzoeksverslag leunt zwaar op bijdragen van anderen. Dat geldt in het bijzonder voor een verzameling van artikelen op basis van longitudinale registratie gegevens.

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André

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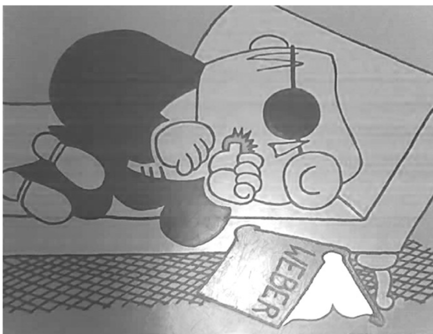

Vrij naar:

Peter de Wit . 1995.

Sigmund – tweede sessie.

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