Les séjours psychiatriques de longue durée en lits T

KCE reports 84B

Federaal Kenniscentrum voor de Gezondheidszorg
Centre fédéral d'expertise des soins de santé
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PREFACE

Pour la première fois, le KCE présente un projet de recherche qui concerne la psychiatrie. Il a trait à la problématique des patients séjournant depuis longtemps dans des lits T. La description de la situation devrait permettre d'alimenter le débat sur les modèles de soins appropriés au groupe social précarisé que constituent les patients psychiatriques de longue durée.

Le fait qu'il soit ressenti un besoin de mener en Belgique des études d'évaluation dans le domaine de la santé mentale au même titre que dans d'autres, est remarquable en soi. A l'instar de ce qui se passe dans plusieurs pays voisins, il est bon que le débat politique soit, chez nous aussi, alimenté par une expertise scientifique. Or jusqu'à présent en Belgique, ce débat sur l'organisation et le contenu des soins psychiatriques et de la santé mentale a été presque exclusivement conduit par les opinions des experts et la concertation entre groupes d'intérêt du secteur.

Une approche scientifique des questions d'organisation des soins de santé mentale ne peut se concevoir en Belgique sans tenir compte de la répartition des compétences entre les différents niveaux de pouvoirs. De plus, une attention particulière à la perception des véritables besoins des personnes souffrant de troubles psychiatriques persistants est nécessaire. C'est en effet à ce prix qu'on a des chances de découvrir les interventions qui seront les plus efficaces et d'un rapport qualité-prix satisfaisant.

Ce projet est le résultat d'une collaboration entre le KCE, les équipes universitaires Censtat (Uhasselt) et Lucas (KUL) d'une part et l'Agence Intermutualiste d'autre part. Cette collaboration a illustré comment des sources de données administratives peuvent être utilisées dans un but d'aide à la décision dans le secteur des soins de santé mentale, même si la recherche ne peut pas se limiter à l'analyse de ces données.

Ce rapport est le premier d'une série de projets du KCE dans le domaine de la santé mentale. Nous espérons que cette suite de rapports permettra d'enrichir les débats parfois difficiles relatifs aux objectifs et aux réformes en psychiatrie.

Jean Pierre Closon
Directeur général adjoint

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Sommaire

1 OBJECTIFS

Le présent rapport vise au premier chef à profiler les patients qui occupent pendant de longues périodes des lits T (lits dans les services neuropsychiatriques destinés au traitement des patients adultes). Le rapport décrit les différences de profils entre les hôpitaux belges.

Deuxièmement, il s'intéresse à la question de savoir quelle est la nature des soins dispensés aux occupants de longue durée des lits T et si ces soins correspondent aux preuves relatives aux normes que l'on trouve dans la littérature.

Enfin, un troisième objectif de ce rapport consiste à étudier la question de savoir si une partie de ces patients de longue durée pourrait éventuellement être éligible pour une prise en charge alternative, de nature ambulatoire ou semi-résidentielle.

2 METHODOLOGIE

Les chercheurs ont procédé à une revue de la littérature afin d'identifier le groupe cible, la nature des soins et les solutions de rechange en matière de prise en charge pour les personnes atteintes de troubles mentaux de longue durée et sévères.

Aux fins de l'étude de la situation en Belgique, ont été utilisés le Résumé Psychiatrique Minimal (à savoir une base de données sur la psychiatrie du Service Public Fédéral santé publique) ainsi que les données de l'AIM (une base de données des frais et honoraires médicaux remboursés qui est gérée par l'Agence Intermutualiste). Les informations de ces bases de données ont été traitées séparément (pas de couplage).

A l'entame de l'étude, la recherche s'est fondée sur les données relatives à 2003, des données plus récentes n'étant pas disponibles. En 2007, une étude de terrain de portée très limitée a été effectuée dans une sélection d'hôpitaux ou de services dotés de lits T.

3 RESULTATS

Dans la littérature internationale, on utilise plusieurs normes (qui varient de 6 mois à 5 ans) pour définir les patients résidant de longue périodes en psychiatrie. Ces patients de longue durée sont caractérisés en fonction du critère "séjour dans un cadre de soins résidentiel". Dans la présente étude, nous avons utilisé la limite inférieure d'un an pour baliser la population de patients. Cette limite est du reste la plus utilisée au niveau international.

Sur la base des données du RPM, on constate qu'en 2003, quelque 13.000 patients ont séjourné pendant au minimum une année dans un lit T, une maison de soins psychiatriques, une initiative d'habitation protégée ou une hospitalisation de nuit. Environ 36 % (N = 4731) de ce groupe a séjourné en lit T. A l'époque, un tiers du groupe occupait un lit T depuis déjà plus de six ans. Dans les maisons de soins psychiatriques (MSP) (N = 3147), environ 60% de la population était institutionnalisée depuis plus de 6 ans. Un comportement agressif ou antisocial, ou une attitude agressive ont été répertoriés chez 40 % des patients occupant des lits T et des MSP.

Dans tous les environnements de prise en charge étudiés, environ la moitié des patients de longue durée présente un diagnostic primaire ou secondaire de schizophrénie ou de trouble psychotique. La plupart des patients de longue durée sont de sexe masculin.

Les patients qui, avant leur admission, vivaient dans un cadre familial (de substitution) ont tendance à séjourner plus longtemps en lit T que les sujets qui vivaient seuls.

Un problème d'assuétude, des troubles de l'humeur ou des troubles de la personnalité sont associés à un séjour plus court en lit T.

Les facteurs qui vont de pair avec un séjour prolongé en lit T sont: l'âge, un niveau de fonctionnement inférieur, un comportement agressif et une attitude antisociale, l'admission sous contrainte judiciaire.

Il ressort de l'étude de terrain de portée limitée (N = 144) que 9 sur 10 des résidents de longue durée en lit T présentent au minimum un problème de comportement social qui pour les deux tiers de ce groupe est qualifié de sévère.

En Wallonie, les occupants des lits T présentent un profil clinique plus "lourd" qu'en Flandre ou à Bruxelles. En habitations protégées, les profils sont comparables entre la Flandre et la Wallonie. Pour l'ensemble de la Belgique, environ un quart de la population présente un diagnostic de retard mental. Par rapport à la Flandre (15 %), la proportion de patients souffrant de retard mental est deux fois plus élevée en lits T en Wallonie (30%). Dans les MSP à l'inverse, le groupe des personnes mentalement retardées est plus important en Flandre (52%) qu'en Wallonie (35%).

Cette étude a jeté un éclairage sur la différence entre la réintégration (renvoi vers une habitation protégée et/ou une hospitalisation de jour et/ou une hospitalisation de nuit) et la réorientation (référer un patient vers une autre structure résidentielle telle qu'une MSP, une MRS, une institution pour les handicapés mentaux ou un hôpital). Une telle distinction est rarement faite dans la littérature internationale. Dans le contexte belge, il apparaît qu'il est davantage question de réorientation d'un contexte hospitalier vers d'autres cadres résidentiels (dans ce cas, une MSP). Les données des bases de l'AIM et du RPM fournissent d'autres proportions, mais il est clair que davantage de patients sont réorientés que réintégrés. Il ressort aussi des données de l'AIM que 6 mois après la sortie d'un lit T, une partie de la population qui, à sa sortie, avait été référée vers un modèle organisationnel d'intégration se trouve en fin de compte réorientée.

Les chances de réintégration sont les plus élevées dans le cas des patients dont le séjour a été le plus court (< 2 ans). La probabilité de réintégration est très faible dans le cas des personnes dont le séjour a dépassé 6 ans et chez les personnes âgées.

En dépit des limitations des bases de données et du fait que, pour des raisons de méthodologie, nous n'avons pas pu répondre à la question de savoir si un groupe de patients pourrait être éligible pour une prise en charge dans un dispositif alternatif, une estimation statistique révèle qu'un nombre non négligeable de patients en lit T présente un profil clinique que l'on observe également dans les habitations protégées ou en hôpital de jour (t1). En Flandre, sur la base de cette estimation, le pourcentage de personnes réintégrables (de 15 à 20% environ) est plus élevé qu'en Wallonie (environ 10%) et qu'à Bruxelles (5%). Cela étant, pour répondre de manière complète à cette question, des études de plus grande envergure sont nécessaires. Les résultats précités sont purement descriptifs.

A l'exception des MSP, la Wallonie présente proportionnellement un nombre inférieur de cadres de soins alternatifs par rapport aux autres régions. L'analyse statistique ne permet pas de répondre à la question de savoir sur l'offre géographiquement disséminée des dispositifs (tous alternatifs) a un impact sur les chances pour un patient d'être réorienté ou éligible pour une réintégration. En revanche, l'analyse nous apprend que la présence d'un nombre important de lits T exerce une influence négative démontrable sur les chances de réintégration d'une personne. A cet égard également, des recherches plus fouillées s'imposent.

À propos de la nature des soins, la littérature scientifique ne recèle que peu de preuves d'un niveau élevé. La littérature est encore plus pauvre lorsqu'il s'agit du contenu des soins psychiatriques dans les dispositifs résidentiels. L'attention se concentre surtout sur la désinstitutionalisation, le traitement et la prise en charge qui sont offerts dans ce cadre. Le message essentiel de la littérature est que le traitement, le soutien et la prise en charge offerts doivent être en adéquation avec les besoins de la personne souffrant de problèmes mentaux de longue durée. Il existe toutefois un consensus selon lequel un traitement médicamenteux adapté représente un volet essentiel du contenu des soins.

Les données enregistrées fournissent un certain nombre d'indications sur les soins différenciés. La revalidation et la psychothérapie sont plus fréquemment proposées aux personnes dont le séjour a été plus court qu'aux patients de longue durée.

Dans les différents contexts de soins investigués le recours aux électrochocs est assez rare. Cette technique est administrée essentiellement dans les lits T et presque exclusivement en Province de Liège.

Une analyse rudimentaire de l'utilisation des médicaments montre une forte variabilité entre les hôpitaux au niveau de la prescription des psychotropes. Par ailleurs, on décèle certaines indications potentielles de polymédication inadaptée. À ce propos, des recherches plus nombreuses et approfondies sont indispensables.

En ce qui concerne le financement et la participation financière des patients, d'importantes interrogations sociétales se posent. Le coût pour les finances publiques est le plus élevé pour les patients qui occupent des lits T pendant des périodes prolongées. Le coût mensuel moyen par patient est environ deux fois plus élevé que pour un patient moyen en MSP et les patients qui combinent habitation protégée et hospitalisation de jour. En revanche, la participation financière personnelle (estimée) la plus élevée est due par les patients en MSP et en habitations protégées, un constat qui pose des questions d'équité pour les patients qui sont référés vers ces structures alternatives.

4 RECOMMANDATIONS

4.1 LE ROLE ET LA PLACE DES LITS T DANS L'OFFRE DE DISPOSITIFS

Un débat s'impose quant à savoir si, dans le cas de patients occupants des lits T pendant de très longues périodes (> 6 ans), il est encore question d'un traitement dans l'esprit de la mission d'un service hospitalier. Sur la base du présent rapport, il est impossible de juger si des résidents de très longue durée (> 6 ans) doivent de préférence être assignés à des lits T ou à un dispositif alternatif. Pour former un jugement, il faudrait que l'objet de l'étude soit nettement plus large. Cela étant, un débat politique et sociétal est primordial sur cette thématique. Les différences observées au niveau du profil des patients dans les lits T montrent que dans le paysage hospitalier belge, la mission est menée à bien de manière divergente. De plus, il est un fait que les patients atteints de troubles psychiatriques graves séjournent pendant de très longues périodes dans des services très coûteux pour les pouvoirs publics, alors que l'on ne sait pas avec certitude si les activités qui y sont proposées cadrent avec la mission théorique d'un service hospitalier. Un tel constat exige un débat approfondi et des explications ultérieures sur la base de matériel de recherche portant sur le volet qualitatif.

Concrètement, il faut une réflexion sociétale et politique scientifiquement étayée à propos du rôle des lits T pour certains groupes cibles. À court terme, deux axes de réflexion prioritaires s'imposent :

- Dans quelle mesure les personnes chez qui un diagnostic de retard mental (permanent) est posé doivent-elles être admises en lits T ? Clairement, cette réflexion dépasse les compétences fédérales.
- Quelles sont les structures et les options de prise en charge les plus recommandées pour les patients qui tombent sous le coup d'une contrainte judiciaire (dans ses différentes variantes) ? Quel parcours de soins faut-il prévoir pour ces personnes ? À ce propos, les lits T occupent une place prépondérante potentielle, mais il faudrait alors que cet état de fait soit repris de manière explicite dans la description de mission des lits T.

Il importe d'avoir une vision intégrée, scientifiquement étayée, du modèle d'organisation des soins de santé mentale, dans lequel différents types de dispositifs sont identifiés ; ces derniers pouvant jouer un rôle pour le groupe cible des personnes atteintes d'un trouble psychiatrique persistant et grave : une définition plus claire des missions des différents services hospitaliers et des autres structures ambulatoires et résidentielles et de leur complémentarité réciproque est essentielle.

Ce modèle doit tenir compte des compétences des communautés, car les dispositifs offerts doivent jeter un pont entre des services orientés sur les soins ("cure-oriented") et ceux qui sont axés sur la prise en charge ou le soutien ("care-oriented").

La mise au point d'un modèle d'organisation mûrement réfléchi ("balanced care model") constitue une condition nécessaire pour réaliser concrètement une sortie des patients de longue durée en lits T qui soit de qualité et socialement acceptable. La variabilité entre les établissements hospitaliers pourrait représenter un atout potentiel pour l'avenir, à condition d'y intégrer un mode opératoire que la littérature appelle *targeted approach* (approche ciblée). Dans le débat, on ne peut certainement pas manquer de s'interroger sur les possibilités de prise en charge par l'entourage direct du patient (famille, soignants proches).

Les pouvoirs publics doivent faire un choix quant à la dispersion "géographique" la plus appropriée (arrondissement, province, région) et déterminer à quel niveau géographique une prestation de soins socialement acceptable (proximité) sera offerte. A cet égard, un soutien scientifique est incontournable en ce qui concerne des recherches épidémiologiques et sociogéographiques, d'une part, et portant sur l'utilisation et les besoins en dispositifs de soins de santé mentale, d'autre part.

4.2 PARCOURS DES PATIENTS (REORIENTATION ET REINTEGRATION)

Dans un contexte international où l'on plaide en faveur d'une désinstitutionalisation, on constate qu'en Belgique, un groupe important de patients est réorienté plutôt que réintégré. Des constats similaires sont posés dans d'autres pays également. Les politiques doivent considérer si cette forme d'"institutionnalisation " dans des établissements de soins cadre avec la vision globale des soins de santé mentale. Par excellence, une telle interrogation est de nature sociétale dans laquelle le rôle et la mission des soins de santé et autres structures doivent recevoir une place.

4.3 ÉQUITE

L' élaboration d'un modèle organisationnel mûrement réfléchi doit, dans le contexte belge, se faire en prise directe avec les problématiques de la protection sociale et de la justice sociale. Une politique qui fait de la réorientation et de la réintégration son fer de lance doit tenir compte de problèmes potentiels d'équité. Une part considérable des charges financières qui, dans un système hospitalier, tombe sous le coup des frais médicaux couverts devra être assumée, en cas d'admission dans un autre type de structure (domicile, habitation protégée, MSP), par le patient (ou un autre type d'allocation sociale). Les différences de prix actuels entre les dispositifs risquent d'entraver une réorientation ou réintégration souhaitable. Un débat s'impose sur la question de savoir ce qui peut être couvert par le système d'assurance maladie, quel volet des soins relève de la responsabilité propre (à quel stade et dans quelles circonstances) et quel soutien financier via d'autres allocations sociales peut être mis au point. Il n'est bien évidemment pas souhaitable de laisser toutes les allocations sociales aux soins des CPAS, pas plus que l'on ne peut considérer que les patients psychiatriques chroniques et gravement atteints possèdent les mêmes chances au niveau sociétal et n'ont pas besoin d'une protection sociale.

4.4 BANQUES DE DONNEES

L'étude a montré que les banques de données administratives RPM possèdent un potentiel important à exploiter davantage aux fins de recherches visant à soutenir les politiques. Toutefois, il est tout aussi indispensable de procéder à leur évaluation fouillée (validité et fiabilité) et de pallier d'éventuelles limitations liées à leur utilisation dans les recherches sur les soins de santé mentale, telles que, en l'espèce, le RPM qui ne permet pas de reconstituer les trajets de soins.

4.5 ÉTUDES FUTURES

En raison de la nature des données utilisées et de la méthode appliquée, la présente étude est grevée de limites et, pour certains aspects spécifiques, des recherches plus approfondies sont nécessaires.

Ainsi, une étude portant sur le rôle des lits T (ou de tout autre service de psychiatrie) ne peut, par essence, être dissociée de la fonction des autres services et structures. L'instauration d'un dispositif de soins de santé exige une analyse "sensible au contexte" et fondée sur un socle théorique. Ladite analyse doit également tenir compte de la variabilité sociogéographique pour ce qui concerne les aspects socio-économiques, démographiques et épidémiologiques, tout en prenant en considération l'offre et les méthodologies existantes. Le vieillissement est un élément qui doit particulièrement retenir l'attention.

Il convient de multiplier les recherches sur le poids et la pertinence des réseaux sociaux des patients ainsi que le rôle que ces réseaux pourraient jouer dans la réintégration. Dans ce contexte, une étude des facteurs susceptibles de renforcer (ou de restreindre) la capacité de prise en charge par les familles et les proches constituerait un soutien précieux pour les politiques.

Il existe un besoin d'études approfondies portant sur la variabilité du comportement en matière de prescription et de consommation de médicaments. Dans le droit fil de cette nécessité, il faudra réaliser une analyse détaillée de la prescription et de la consommation de médicaments par groupe de diagnostic (y compris le problème du dosage de la dose définie journalière), l'évolution temporelle des schémas médicamenteux et le problème d'une polymédication pouvant être problématique.

Scientific summary

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1 INTRODUCTION

1.1 BACKGROUND

In the 1990's, the Belgian psychiatric health care sector went through major reforms. In general terms, these reforms lead to a reduction in the number of hospital beds and the development of alternative residential and community settings.

The reforms in the psychiatric hospital sector were to a large degree inspired by the international deinstitutionalisation movement in psychiatry. Deinstitutionalisation is the practice of moving "chronic psychiatric patients" from mental institutions into community-based environments. Deinstitutionalisation is primarily a social and ethical movement aiming at destigmatising people with severe and persistent mental problems by integrating them into the regular daily activities of society as much as possible. The process of deinstitutionalisation goes hand in hand with substituting (expensive) hospital beds by community care alternatives. The general underlying idea is that the proportion of "long-stay hospitalised psychiatric patients" can be drastically reduced, if sufficient adequate and adapted alternatives are made available.

The current Belgian supply of psychiatric treatment and care for persons with moderate or severe mental illness is rather diversified. It includes specialised units in general hospitals, units in psychiatric hospitals, psychiatric nursing homes and initiatives of sheltered living. Specialised programmes of rehabilitation, programmes of adapted ambulatory care and projects and experimental programmes are developed to integrate people in society and guaranteeing needs based care and continuity of care (a more detailed description of the Belgian supply of mental health care can be found in appendix 5).

Separate organisational units are serving respectively children and adolescents, elderly persons or people with mental retardation. We focus on services for adults. In theory, each organisation setting has a particular function in the disease course of adults with mental illness.

- Within hospitals:
  - A unit with index A in a general or psychiatric hospital is intended for persons of 15 years and older, in need of acute psychiatric care. The unit is intended for observation and the starting up of a treatment.
  - A hospital unit with index T is intended for persons of 15 years and older. It offers treatment and support after the acute phase and aims at, whenever possible, the social reintegration of the patient.
- Outside the hospital sector:
  - Psychiatric nursing homes
  - Sheltered living facilities are intended to support persistent but stabilised mentally ill persons, no longer in need of the more specialised or intensive hospital treatment.

It is currently not known whether the different T-bed units in Belgium serve a similar profile of patients, and whether the profiles of long-stay patients differ between T-units. Moreover it is not very well documented to what degree the clinical and socio-demographic profiles of long-stay persons in T-beds differ from the profiles of persistent mentally ill persons in non-hospital settings. Neither is any information available whether long stay patients in T could get adequate care outside the hospitalised T-bed setting.

1.2 AIMS

This report aims at:

- Describing the clinical and socio-demographic profiles of long-stay patients in hospital units with index T.
- Describing and discussing to what extent the content of care and treatment offered to long-stay persons in T-bed units corresponds to available knowledge and evidence in the international scientific literature.
- Discussing to what extent alternative care settings are to be, or can be made available for the current profiles of longs-stay persons with mental illness residing in T-bed units, taking into account the target group of these alternatives and the cost of care in the different settings, as well as for society as for the patient.

1.3 RESEARCH QUESTIONS

The study project has to give an answer to the following questions.

1.3.1 About the patients

- What is the clinical and socio-demographic profile of long stay patients in hospital units with index T? To what extent can we find variability between hospital units?
- Do long stay patients in a T-unit differ from patients admitted to alternative settings of long term psychiatric care (sheltered living and psychiatric nursing homes)?
- Are some groups of long stay patients in T-units eligible to be reintegrated in society or reoriented to another setting (taking into account the supply of care)?

1.3.2 About the content of care

- What is the evidence-based state of the art with regard to an efficient and effective follow-up of psychiatric patients in need of long term care, not only in terms of individual care, but also in terms of the organisation of care?
- What care do patients receive while being admitted to a unit with index T? Does this care and treatment correspond to internationally accepted guidelines?
- What is the referral trajectory of long-stay patients at admission to and discharge from a T-unit?
- What is the cost of stay or treatment in the different settings? Both societal costs and patient costs are considered.

1.4 GENERAL DESCRIPTION OF METHODOLOGY

Answering the research questions is done through the use of different research techniques.

1.4.1 Literature search

A scientific literature search pays attention to definitions and operationalisations in international literature: more specifically on ‘long stay patient’. A separate search will be done on the possibilities to reintegrate long stay patients by means of ‘alternative settings’. Lessons learned from the literature, both operational and conceptual, will be translated in operational terms as far as the variables in the available administrative databases allow for.

The scientific literature search will also focus on the available evidence and knowledge about the content of treatment and care and quality of life for severe and persistent mentally ill persons in general and long stay hospitalised patients in particular. A particular part of the literature search will focus on organisational alternatives for long-stay patients.

1.4.2 Analysis of administrative datasets

Two administrative databases are explored: the minimal psychiatric dataset (MPD or MPG/RPM) and the health insurance data managed by the *Intermutualistisch agentschap* (IMA). The data-analysis will be based on the data for the year 2003. Both databases are expected to contain data of the same persons – persons with an admission in a psychiatric setting in the reference year –, but the databases do not register on the same variables.

The aim of the analyses is

1. To describe the socio-demographic and clinical profile of the long stay-patients in T-beds
2. To describe the content of care
3. To compare profiles in mental health care settings

Because of the differences in registration principles a critical comparison between the databases is made in order to assess the possibilities for addressing the research questions and issues of validity and reliability of the datasets. The comparison of the results of both datasets is documented in appendix 3.

1.4.3 Field study

A complementary small scale field study is done to substantiate conclusions from the administrative datasets. The field study is a purposive sampling of patients to gather information on the profile, the content of care and reintegration possibilities for a sample of long stay patients in T-units. The sample of patients is selected from the MPD dataset. A questionnaire is developed to gather additional information.

1.5 STRUCTURE OF THIS REPORT

Part I makes a brief summary of the results of the extensive literature searches.

Part II of this reports sketches the results of the analysis of the administrative databases on patients socio-demographic and clinical profile.

Part III is describing the results of the analysis of the administrative databases on content of care.

Part IV is the summary of the field study.

Part V is a sketch of the cost for care for long stay patients.

Part VI are the conclusions.

This report has 8 extensive appendices, giving the necessary background information for each part of the study.

Part 1:

Literature review

Severely and persistently mentally ill persons in long-stay psychiatric hospital beds: definitions, profile and reintegration potential, evidence-based care

2 SUMMARY OF THE LITERATURE REVIEW

Appendix 1 gives a detailed overview of the literature search strategy and results. This section summarizes the conclusions. The key-messages can be found in appendix 1.

2.1 DEFINITION OF SEVERELY MENTALLY ILL

Different concepts and wordings have been used over time to speak about mental illness: 'long-term mentally ill', 'chronically mentally ill', 'seriously mentally ill', 'persons with severe and persistent mental illness' 'persons in need for continuous care'. In the last 25 years, three important criteria for defining the population of severely and persistently mentally ill persons have been proposed and used by several authors: diagnosis, disability and length of stay. Most recently, however, the disability criterion has gained more weight relative to the diagnosis criterion in measuring severity of illness and the need for treatment or care. In addition, other criteria such as safety and support have been put forward by some authors.

Key points

- **Important criteria for defining the population of the severely and persistently mentally ill are diagnosis, disability, duration, safety, support.**
- **The Disability criterion is more important than "diagnosis" in measuring severity and need for treatment or care.**

2.2 DEFINING LONG-STAY SEVERELY MENTALLY ILL INPATIENTS: OPERATIONAL DEFINITIONS

There is a lack of a consensual definition of long-stay hospitalization in the literature. Operational definitions for 'long-stay' in recent studies are mostly set at a cut-off point of one year continuous hospitalization. However, many variations are possible, with cut-off point varying between 6 months, one year, two years, three years and five years

Since the so-called deinstitutionalization, a differentiation has been made between old and new long stay patients. The term "old long stay" patients is used for a group of patients that were hospitalized before deinstitutionalization set through in a health care system. New long stay patients, are the people fitting the defined thresholds after the formally imposed reduction of the number of beds. Of course, it is very difficult to use a standardized date of this term, because of the different timing of the onset of deinstitutionalization in different countries.

Besides the difference between old and new long stay, the notion of "difficult-to-place" patients is used in literature for a small residual group of severely disabled patients who were considered too disturbed and disturbing to be managed in standard community homes.

Key points

- **Different operational definitions for 'long-stay' are used in recent studies. The vast majority of studies use a length of stay of one year**
- **Long stay patients are differentiated from other groups using a length of stay threshold between 6 months and 5 years.**
- **A distinction can be made between "old long stay" patients and "new long stay" patients , Old long stay patients is used for a group hospitalized before the deinstitutionalization movement leading to a reduction in hospital beds. New long stay patients are the people fitting the defined thresholds after policy measures of reducing the number hospital beds**

2.3 PROFILE AND REINTEGRATION POTENTIAL OF LONG-STAY SEVERELY MENTALLY ILL INPATIENTS

Several research projects have demonstrated that reintegration is a potential alternative for institutionalisation of severely mentally ill persons.

Key points

The reintegration potential and reintegration success is affected by:

1. Individual factors:

- **presence of social behavioural problems; particularly problems concerning safety of self and others (violent and aggressive behaviour)**
- **presence of other medical conditions and somatic handicaps**
- **old age**
- **severity of psychiatric problems, e.g. seriously deteriorated functioning, treatment resistant symptoms, etc.**

2. Social factors:

- **lack of informal support, e.g. being single**

3. Societal factors (supply of alternatives):

- **availability of adequate services and facilities**

2.4 EVIDENCE-BASED CARE FOR SEVERE AND PERSISTENT MENTALLY ILL HOSPITALIZED PERSONS

Numerous researchers have been debating the question "what constitutes good long-term mental health care for severely and persistently mentally ill patients?" However, the focus of attention has been almost exclusively on community-based care and not on psychiatric hospitals. Specific literature on the content and quality of care for long stay psychiatric patients is scarce and fragmentary. Recommendations for the care of long-stay psychiatric patients can be found, but the empirical evidence is generally weak. Only a handful of studies are dedicated to the actual evaluation of an intervention, most of them using a quasi-experimental design with a control condition. In general, these interventions were complex interventions that consisted of different components, making it difficult to unravel the impact of specific ingredients on the observed outcomes. Moreover, the studied interventions were almost all highly customized programs in a specific context. Formulating general conclusions on the basis of these studies is therefore virtually impossible.

Most of the available studies concerned persistently mentally ill patients in community-based care alternatives on the one hand, or acute, short-stay hospital care on the other hand. The literature generally focuses in interventions that implicitly or explicitly aim at hospital discharge. This is not surprising, given the deinstitutionalization and psychosocial rehabilitation trend of the last decades. In addition to this, international comparison on the population of "long stay inpatients" requires a context-sensitive approach. The organization of mental health services is very context dependent, related to the policy choices with regard to deinstitutionalization. The profiles of the patients who are helped in a deinstitutionalized setting in one country can probably easily be matched with the profiles in institutionalized settings in other countries.

The best, tentative conclusion we can draw from recent publications with respect to the content of care for long-stay psychiatric inpatients is that tertiary care for severely and persistently mentally ill persons must be informed by psychosocial rehabilitation principles, with sophisticated medication management and cognitive behavioural interventions and, when necessary, adapted to the special needs of subpopulations. The delivery of program components is not necessarily tied to particular care settings or time frames.

In the intervention studies we reviewed, medication management and psychosocial treatments seem to work, with cognitive and behavioural approaches as an important ingredient of the latter In addition to the importance of meeting patients' needs, the therapeutic relationship, reducing stigmatization, and the recognition of physical health care needs play an important role.

Key points

- **The treatment of long-stay psychiatric inpatients cannot be complete without medication and psychosocial treatments. Problems have been observed with inadequate medication management.**
- **The use of constraint and seclusion has to be avoided as much as possible, although it is used. Indications are found that the practice is closely related to organisational factors, and not always related to clinical necessity.**
- **Psychosocial treatments should probably involve cognitive and behavioural approaches, directed to mental health management, rehabilitation and empowerment.**
- **Quality of life and recovery enhancing care is care adapted to the needs of patients or patient groups, embedded in a positive therapeutic relationship, and aimed at reducing stigmatization.**
- **Physical health care is an important aspect to discuss content of care.**

2.5 EVIDENCE-BASED CARE FOR MENTALLY ILL PATIENTS IN NEED OF LONG-TERM CARE

Psychopharmacological and psychosocial interventions should play a central role in the treatment of the severely and persistently mentally ill. Many different types of psychological and psychosocial interventions were found to be effective in several studies; many others have been shown not to work or suffer from a lack of evidence. A good case can be made for the implementation of psychoeducation and cognitive behavioural approaches in clinical practice. Nevertheless, the effective ingredients of these interventions remain largely unclear.

One important mediating factor is the *therapeutic relationship* between the client and the professional caregiver. Many authors conclude that a positive and trustful therapeutic alliance may be a prerequisite for any successful intervention, psychosocial or other, especially in long-term treatment and care.

Shared-decision making and the inclusion of the subjective patients' view are more and more considered important aspects of empowerment and seem to promote rehabilitation or recovery of persons with SMI.

Being in tune with the patients' needs and priorities leads to greater satisfaction and a better quality of life and may improve the management and outcome of severe mental illness.

Indications are found that standardized needs assessment reduces the number of unmet needs and leads to improved symptoms and functioning.

Targeting is seen as one of the important challenges of the future by leading experts on severe mental illness and refers to determining what treatment is most effective, for which subgroup of patients in which settings and contexts, in terms of which outcomes.

Key points

- **"There are no simple solutions for the severely and chronically mentally ill, only complicated, integrated ones"[1].**
- **Psychopharmacological and psychosocial treatment are essential in the routine treatment and management of severely mentally ill persons in need of long-term care.**
- **Psychoeducation, this is providing accessible information to patient and family about all aspects of the patients' mental illness, is an important ingredient in psychosocial treatment of severely and mentally ill persons in need of long-term care.**
- **Cognitive behavioral approaches directed to illness (self-)management and the enhancement of social and living skills, should be considered an important ingredient in psychosocial treatment of severely mentally ill persons in need of long-term care.**
- **There are strong indications for the effectiveness of integrated treatment for dual diagnosis patients.**
- **Physical health care should not be overlooked.**
- **There are strong indications for the importance of a positive therapeutic relationship in the treatment of severely mentally ill persons in need of long-term care.**
- **Effective treatments should be adapted to the needs of patients or patient groups, with the help of needs assessments and the routine use of subjective outcome measures.**

2.6 ORGANISATIONAL ALTERNATIVES FOR LONG STAY HOSPITALIZED PSYCHIATRIC PATIENTS

Very little evidence is available on organisational models for the group of long stay psychiatric patients. Several organisational models have emerged in the verge of deinstitutionalisation. There are indications that a thoughtful combination of these services can address the particular needs of people with SMI. This combination has to be adapted to the particularities of the local context. The issue of continuity of care has to be elaborated further.

For patients with severe and long term disabilities with a history of long term inpatient care, outcomes are more favourable for those patients discharged to community care than those who remained in inpatient settings especially on the level of functioning and satisfaction.

But the lack of precise information on the different organisational models hampers drawing clear conclusions on the effectiveness of organisational support models. The nature of the organizational interventions developed in the context of deinstitutionalization remains a black box. The particular use of "concepts" in mental health care is not always clearly delineating the nature of organisational practices. Assertive community treatment, case management or intensive case management, assertive outreach, are conceptually connected, but are not the same. The literature shows that it is not always clear on how to disentangle the relationship between the concepts used and daily practices. As a result, there is a lack of information on the precise organizational content of the organizational alternatives to hospital based residential care. Moreover, although discussed in a lot of studies, very little health services research is focusing on the way the particularities of the health care system affects the development of organizational alternatives to long-term hospitalized mental health care.

Based on a critical analysis of systematic reviews Thornicorft and Tansella [2] argue that a balanced care of community and hospital care services seems to be required.

Hospitalisations are necessary in particular circumstances, but should take place in regular institutions, rather than isolated institutions. The evidence supports a balanced approach, including both community and hospital services. The available knowledge indicates that people with severe mental illness should be helped in a continuum of care rather than a particular organisational facility. Hospitalisation periods should be kept as short as possible, and alternatives have to be found in community care. However, the black box of continuity of care should be elaborated upon.

Key points

- **Very little evidence is available on organisational models for the group of long stay psychiatric patients. However, studies are available on organisational interventions for people with severe mental illness as an alternative for hospitalizations.**
- **Several organisational models have emerged in the verge of deinstitutionalisation. There are indications that a thoughtful combination of these services can address the particular needs of people with SMI. This combination has to be adapted to the particularities of the local context. The issue of continuity of care has to be elaborated further.**
- **For patients with severe and long term disabilities with a history of long term inpatient care, outcomes are more favourable for those patients discharged to community care than those who remained in inpatient settings especially on the level of functioning and satisfaction.**
- **The lack of precise information on the different organisational models hampers drawing clear conclusions on the effectiveness of organisational support models.**
- **There is a clear US-bias in available research. Several authors caution for the transferability of available models in other contexts.**
- **Definitive conclusions about the best organisational models for long stay people with SMI cannot be drawn. The available knowledge indicates that people with severe mental illness should be helped in a continuum of care rather than a particular organisational facility.**
- **There are people with SMI who require specialised care due to aggressiveness, non-compliance with medication and dangerousness. This form of specialised care is not limited to hospital settings. It can both be offered in residential and community care settings.**
- **The nature of the organizational interventions developed in the context of deinstitutionalization remains a black box.**
- **The particularities of the health care system affects the development of organizational alternatives to long-term hospitalized mental health care.**

Part II

Profiles of long-stay patients

Analysis of administrative databases

MPD & IMA DATA

3 SOCIO-DEMOGRAPHIC PROFILE OF LONG-STAY PATIENTS IN T-UNITS AND REFERENCE POPULATIONS

3.1 INTRODUCTION

In this first section we describe the socio-demographic characteristics of long-stay patients in T-units. We focus on age, gender, province of residence, and on social variables such as education, work and legal status.

Patients are considered as long-stay patients when they have been in the same institution for at least one year with a limited time of absence. Details about the selection of the population sample can be found in appendix 2.

A comparison of the samples in MPD and the IMA dataset, and a discussion of the differences in the sample populations is found in appendix 3.

The analysis of the IMA and MPD data is based on the year 2003, the most recent data available at the start of this project.

Long-stay patients in T are systematically compared to four other populations: long-stay patients in day-hospitalisation (t1), long-stay patients in night-hospitalisation (t2), long-stay patients in initiatives for sheltered living (IBW/IHP), and long-stay patients in psychiatric nursing homes (PVT/MSP). These settings are chosen because they can be considered as potential alternatives for patients in T-units.

3.2 DISTRIBUTION OF THE SAMPLE (MPD)

Table 3.1 describes the total number of patients in the different mental health care settings in 2003.

The long-stay population in night-hospitalisation (t2) is small (N = 288 in 2003). Conclusions based on this population need to be taken with care.

It needs to be noted that there could be an overlap between the populations in t1 and in sheltered living. Both settings can be combined, e.g. if a the patient lives in sheltered living but uses to day-hospitalisation during the day. MPD does not allow to link the unique patients.

Table 3.1: Population sizes (2003)

T	t1	t2	IBW/IHP	PVT/MSP
4731	2028	110	2980	3147

In 2003, based on MPD we identified over 4700 long-stay patients in a T-unit. One third of these patients stayed longer than 6 years. A bit over one third stayed between 2 and 6 years, and slightly less than one third stayed between 1 and 2 years (Table 3.2).

The distribution of length of stay in sheltered living is similar to what we observed in T. In the psychiatric nursing homes, about 90% of the long-stay patients are there longer than 2 years; about 60% longer than 6 years.

Table 3.2: Population size and length of stay

	T		t1		t2		IBW/IHP		PVT/MSP	
Length of stay	n	%	n	%	n	%	n	%	n	%
1 – 2 years	1391	29.4	662	32.6	44	40.0	804	27.0	347	11.0
2 – 6 years	1768	37.4	983	48.5	55	50.0	1184	39.7	947	30.1
More than 6 year	1572	33.2	383	18.9	11	10.0	992	33.3	1853	58.9
Total	4731	100	2028	100	110	100	2980	100	3147	100

3.3 AGE OF THE PATIENTS

The average age of long-stay patients in T is 52 years. Long-stay patients in day-treatment and sheltered living are on average slightly younger (2 and 3 years respectively). Compared to both reference settings, there is a larger share of older persons (above 60) in T and in psychiatric nursing homes. In t1 and sheltered living a larger concentration is observed in the middle aged group (30-60). (Table 3.3)

Long-stay patients in night-treatment are on average 10 years younger compared to T while long-stay patients in psychiatric nursing homes are on average 11 years older.

Table 3.3: Age (at 31/12/2003)

	T		t1		t2		IBW/IHP		PVT/MSP	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
	51.9	51	48.7	48	41.6	43	47.8	47	63.3	64
Age category	n	%	n	%	n	%	n	%	n	%
15 - 30	512	10.8	121	6.0	23	20.9	239	8.0	15	0.5
31 – 40	705	14.9	411	20.3	28	25.5	652	21.9	88	2.8
41 – 50	1069	22.6	658	32.5	32	29.1	855	28.7	357	11.3
51 – 60	1053	22.3	504	24.9	20	18.2	768	25.8	857	27.2
61 – 70	677	14.3	220	10.9	4	3.6	359	12.1	889	28.3
71 – 80	480	10.2	100	5.0	2	1.8	100	3.4	713	22.7
> 80	235	5.0	14	0.7	1	0.9	7	0.2	228	7.2
Total	4731	100	2028	100	110	100	2980	100	3147	100

3.4 GENDER OF THE PATIENTS

42% of long-stay patients in T are women T and 58% men. A larger proportion of men is found in all comparison populations. In general, there is a clear majority of men receiving long-term residential psychiatric care in Belgium (Table 3.4).

Table 3.4: Gender

	T		t1		t2		IBW/IHP		PVT/MSP	
Gender	n	%	n	%	n	%	n	%	n	%
Male	2736	57.8	1120	55.2	77	70.0	1960	65.8	1876	59.6
Female	1995	42.2	908	44.8	33	30.0	1020	34.2	1271	40.4
Total	4731	100	2028	100	110	100	2980	100	3147	100

In the older age categories the difference between the number of men and woman decreases, and even switches (Table 3.5). This fits with the general demographic profile of the Belgian population. In 2003, 50.3% of the persons between 20 and 64 years were male. Among persons of 65 or older, 41.2% were male (NIS[1]). Whether clinical factors contribute to the shift should be further investigated.

It is mainly in the older age categories that proportionally more men live in sheltered living and psychiatric nursing homes compared to T and t1 units.

Table 3.5: proportion of men by age category

	T		T1		t2		IBW/IHP		PVT/MSP	
Age category	n	%	n	%	n	%	n	%	n	%
15 – 30	346	67.6	89	73.6	18	78.3	164	68.6	9	60.0
31 – 40	501	71.1	245	59.6	18	64.3	455	69.8	63	71.6
41 – 50	686	64.2	367	55.8	22	68.8	586	68.5	236	66.1
51 – 60	621	59.0	276	54.8	16	80.0	484	63.0	580	67.7
61 – 70	338	49.9	108	49.1	3	75.0	217	60.5	529	59.5
71 – 80	168	35.0	33	33.0	0	0.0	51	51.0	371	52.0
> 80	76	32.3	2	14.3	0	0.0	3	42.9	88	38.6

[1] http://www.statbel.fgov.be/figures/d21_nl.asp

3.5 REGION: PROVINCE

Table 3.6 presents the province of residence (domicile) of the patients at the beginning of their long stay. The information is purely descriptive and indicative as long-stay patients often take their domicile in the hospital or institution of residence. These observations on regional distribution are thus biased by the supply of care in the different provinces, more than it represents the population distribution (see appendix 5 on supply of mental health care).

The second column of table 3.6 indicates the percentage of inhabitants, respective to the total Belgian population, that live in the respective province (NIS, 2003). Besides the absolute number of patients per province, we present the ratios of the percentage of long-stay patients in a province and the percentage of the inhabitants per province. A ratio above 100 indicates that there are proportionally more long-stay patients from the respective province in the setting. A ratio below 100 then indicates that there are proportionally less patients from the specific province in the setting.

T-units and day hospitalisation have relatively more patients from West-Vlaanderen and Namur. Very few patients from Hainaut and Liege are observed in day- (t1) or night hospitalisation (t2). For night hospitalisation the provinces Vlaams-Brabant and West-Vlaanderen have high ratios.

Initiatives for sheltered living receive proportionally more patients coming from Limburg, Oost-Vlaanderen and West-Vlaanderen. Finally, psychiatric nursing homes, house more patients from Oost-Vlaanderen and Limburg. A plausible explanation for these observations is the fact that the re-conversion of hospital beds has been carried through more strongly in these provinces and that more has been invested in alternative supply.

With a few exceptions, we observe more patients from Flemish provinces than from Walloon provinces in each of the alternative settings.

Table 3.6: Province

		T		t1		t2		IBW/IHP		PVT/MSP	
Province	%	n	ratio	n	ratio	n	ratio	n	ratio	n	ratio
Antwerpen	16.0	782	104	362	111	20	113	438	91	525	104
Limburg	7.8	369	102	164	105	12	142	340	148	372	154
Oost-Vlaanderen	13.2	704	113	598	222	18	123	594	150	802	192
West-Vlaanderen	11.0	659	128	351	157	22	182	463	141	326	94
Vlaams Brabant	9.9	429	92	214	107	24	220	265	90	200	64
Brussels - capital	9.6	348	80	85	45	6	59	287	104	193	66
Waals Brabant	3.5	87	55	16	23	2	53	31	31	24	22
Hainaut	12.4	664	113	39	15	2	15	198	53	340	86
Liege	9.9	324	69	29	14	1	9	190	64	200	64
Luxembourg	2.4	67	60	43	88	2	76	45	63	16	21
Namur	4.4	253	126	119	136	1	21	112	87	143	106

These findings are more or less in line with the distribution of the supply of mental health care facilities (appendix 5).

3.6 EDUCATION

MPD contains two variables concerning education. The type of education indicates whether the patient followed normal education or special education. The level of education indicates the highest level the patient has finished successfully. Table 3.7 shows that 18% of the long-stay patients in T-beds followed special education or no education at all.

Table 3.7: Type of education

	T		t1		t2		IBW/IHP		PVT/MSP	
Type of education	n	%	n	%	n	%	n	%	n	%
Normal	3585	75.8	1767	87.1	72	65.5	2392	80.3	1844	58.6
Special	651	13.8	192	9.5	30	27.3	439	14.7	538	17.1
No education	193	4.1	13	0.6	0	0.0	43	1.4	398	12.7
Other	99	2.1	4	0.2	0	0.0	57	1.9	37	1.1
Unknown	203	4.3	52	2.6	8	7.3	49	1.6	330	10.5
Total	4731	100	2028	100	110	100	2980	100	3147	100

We re-categorize the variable 'level of education' from 11 to 4 levels: (1) primary school finished or lower, (2) some intermediate level in secondary school but unfinished, (3) secondary school finished but no higher education, and (4) higher education.

MPD registers the highest level a person has finished successfully. For students it is the current level. We excluded students and patients with mental retardation.

The data on educational level for different age groups are presented in three separate tables (Tables 3.8 – 3.10), since age could be an important confounding factor with educational level. In Belgium, compulsory education was set at the age of 15 in 1953 and at 18 in 1983. The following three categories are used: 15-38 years, 38-64 years, + 65 years and older. (15-year olds were 65 in 2003, 18-year olds were 38 in 2003).

Table 3. 8: Level of education (< 38 years old)

	T		t1		t2		IBW/IHP		PVT/MSP	
Level of education	n	%	n	%	n	%	n	%	n	%
Primary unfin.	125	20.4	13	4.0	2	7.7	72	13.0	11	35.5
Secondary unfin.	251	40.1	133	41.3	13	50.0	163	29.4	10	32.3
Secondary fin.	207	33.7	138	42.9	10	38.5	256	46.2	10	32.3
Higher education	31	5.1	38	11.8	1	3.9	63	11.4	0	0.0
Total	614	100	322	100	26	100	554	100	37	100

Table 3.9: Level of education (38-65 years old)

	T		t1		t2		IBW/IHP		PVT/MSP	
Level of education	n	%	n	%	n	%	n	%	n	%
Primary unfin.	589	30.9	271	23.8	11	22.5	370	24.0	332	42.4
Secondary unfin.	586	30.8	362	31.8	16	32.7	515	33.4	214	27.3
Secondary fin.	523	27.4	357	31.4	17	34.7	481	31.2	182	23.2
Higher education	208	10.9	147	12.9	5	10.2	177	11.5	55	7.0
Total	1906	100	1137	100	49	100	1543	100	783	100

Table 3.10 : Level of education (> 65 years old)

	T		t1		t2		IBW/IHP		PVT/MSP	
Level of education	n	%	n	%	n	%	n	%	n	%
Primary unfin.	466	59.1	87	53.7	1	33.3	93	52.8	400	61.4
Secondary unfin.	162	20.6	37	22.8	2	66.7	41	23.3	127	19.5
Secondary fin.	107	13.6	23	14.2	0	0.0	28	15.9	92	14.1
Higher education	53	6.7	15	9.3	0	0.0	14	8.0	32	4.92
Total	788	100	162	100	3	100	176	100	651	100

The level of schooling of long-stay patients in T is generally lower compared to t1 and sheltered living (more patients with primary school unfinished, somewhat less with secondary school finished or higher education). Schooling of patients in T is on the other hand generally higher compared to psychiatric nursing homes (less patients with primary school unfinished). The differences are most obvious in the younger populations, in the 65+ group the differences are generally small.

3.7 OCCUPATIONAL STATUS

Information on the occupational status of the patients can be found in appendix 6. A combination of factors makes the item 'occupational status' less suitable in the present study:

- the information is gathered for different patients at different moments (for some patients at the initial admission in the hospital, for others during the course of the stay),
- the information is outdated for a major part of the patients,
- the item seems to be registered quite badly, especially in T-units.

3.8 LIVING ENVIRONMENT BEFORE ADMISSION

Table 3.11 presents information on the environment where the patient was living before admission.

The term 'Family' refers to different types of family life.

'Collective' refers to non-psychiatric institutions such as nursing homes, institutions for handicapped persons etc. 'Institution of justice' refers to a prison or a closed institution for adolescents.

47% of the long-stay patients in T were not institutionalized shortly before the moment of admission. 16% comes from a(nother) psychiatric hospital. About 9% was institutionalized in a non-psychiatric setting before admission in T. 8% comes from an institution of justice (eg. prison or institution for minors), indicating that persons with legal problems form a not negligible subpopulation of the long-stay patients in T.

Table 3.11: Living environment before admission

	T		t1		t2		IBW/IHP		PVT/MSP	
Living environment	n	%	n	%	n	%	n	%	n	%
Alone	772	16.3	550	27.1	19	17.3	199	6.7	22	0.7
Family	1452	30.7	903	44.5	28	25.5	224	7.5	45	1.4
Non-psychiatric instit.	415	8.8	69	3.4	4	3.6	146	4.9	73	2.3
Institution of justice	363	7.7	30	1.5	7	6.4	13	0.4	4	0.1
Psy. Hospital	775	16.4	156	7.7	27	24.6	1941	65.1	2688	85.4
Psy. unit Gen. Hos.	158	3.3	26	1.3	4	3.6	106	3.6	11	0.4
Psy. Nursing Home	142	3.0	5	0.3	0	0.0	43	1.4	155	4.9
Sheltered living	204	4.3	202	10.0	7	6.4	187	6.3	54	1.7
Gen. Hospital	190	4.0	18	0.9	3	2.7	16	0.5	11	0.4
Other	149	3.2	41	2.0	5	4.5	96	3.2	13	0.4
Unknown	111	2.4	28	1.4	6	5.5	9	0.3	71	2.3
Total	4731	100	2028	100	110	100	2980	100	3147	100

For Table 3.11, we used the information at the very first admission of the patient's global stay. If the admission took place in another unit than the one of the respective population (eg. A -> T), still the environment before admission in A is given.

Table 3.12 sketches the environment of the patient just before the start of the long-stay. In the case the patient was already in the hospital before starting the long-stay in T, the index of unit is given

(eg. A -> T, then the environment is A). Note that there are no units in sheltered living and psychiatric nursing homes.

Table 3.12: Living environment before start of the long stay

	T		t1		t2	
Living environment	n	%	n	%	n	%
Alone	214	4.5	214	10.6	5	5.5
Family	686	14.5	391	19.3	6	5.5
Collective	210	4.4	40	2.0	0	0.0
Institution of justice	146	3.1	8	0.4	1	0.9
Psy. Hospital	491	10.4	75	3.7	19	17.3
Psy. unit Gen. Hos.	76	1.6	9	0.4	2	1.8
Psy. Nursing Home	88	1.9	5	0.3	0	0.0
Sheltered living	71	1.5	97	4.8	1	0.9
Gen. Hospital	118	2.5	5	0.3	1	0.9
Other	95	2.0	30	1.5	1	0.9
Unknown	62	1.3	5	0.3	0	0.0
A	2267	47.9	181	8.9	6	5.5
A1	6	0.1	400	19.7	0	0.0
A2	4	0.1	1	0.1	5	4.5
T			537	26.5	60	54.6
T1	168	3.6			2	1.8
T2	23	0.5	29	0.1		
TFB	5	0.1	1	0.1	0	0.0
TFP	1	0.0	0	0.0	0	0.0
Total	4731	100	2028	100	110	100

48% of admissions in T comes from a unit A. 20% comes straight from a home situation and 10% comes from another psychiatric hospital.

Patients receiving long-term treatment in t1 come in 27% of the cases from a T unit and in 20% from a1. Another 30% comes straight from a home situation.

More than half (55%) of long-stay patients in t2 come from T, plus another 17% coming from another psychiatric hospital. 11% comes from home.

3.9 LEGAL STATUS

The MPD item registers the legal status of the patient's admission in the hospital. The patient can be admitted in the institution out of free will, or under a legal condition. Under legal condition we have four categories: (1) gedwongen opname / mise en observation, (2) internering / internement, (3) probatie / probation, and (4) other legal measure. In sheltered living and psychiatric nursing homes this item is not obligatory.

About one quarter of the long-stay patients in T was initially admitted under legal governance (Table 3.13). Also for night treatment, more than one in five is admitted under legal conditions.

Table 3.13 : Legal condition

	T		t1		t2	
Legal condition	n	%	n	%	n	%
Free will	3091	65.3	1704	84.0	80	72.7
Under legal conditions	1210	25.6	257	12.7	25	22.7
Patient unable to decide	241	5.1	14	0.7	0	0.0
Other	96	2.0	13	0.6	0	0.0
Unknown	93	2.0	40	2.0	5	4.6
Total	4731	100	2028	100	110	100

Key points

- **Only a very small group of the long-stay psychiatric patients resides in night hospitalization (t2).**
- **A majority of long-stay patients is male, in all five settings.**
- **One in three long-stay patients in a T-unit stays longer than 6 years. More than 2 in 3 reside longer than 2 years.**
- **The distribution of patients over the provinces suggest large differences in supply of the different types of institutions over the provinces and regions.**
- **About half of the long-stay patients in T was in an institution, either psychiatric or not, before the start of their long stay.**
- **About half the long-stay patients in T comes from an A-unit.**
- **One in four long-stay patients in T was initially admitted under legal conditions.**

4 CLINICAL PROFILE OF LONG-STAY PATIENTS

In this section we present the characteristics of the long-stay population in T and in the reference populations with respect to diagnosis, disability and symptoms or problems of the patient. We further present these clinical characteristics in T for patients with a stay between 1 and 2 years, between 2 and 6 years and longer than 6 years.

4.1 DIAGNOSIS

4.1.1 Main diagnosis

MPD contains data on the DSM IV diagnosis, the main diagnosis as well as the diagnosis on each of the first three axes.

The predominant diagnosis group for long-stay patients is the group of 'schizophrenia and psychotic disorders'; (40 - 45% in all settings) (Table 4.1).

The next two most frequently occurring main diagnosis categories are substance related disorders and mood disorders. Substance related disorders occur more frequently in night treatment, mood disorders occur more frequently in day treatment. Another large group are the patients with a personality disorder as main diagnosis. Finally, in T beds, almost 8% of the patients suffer dementia or another cognitive disorder. This number lies much lower in all other settings. This could be related to the inclusion of Sp-beds as T beds in MPD.

Noteworthy is the large share of patients in the psychiatric nursing homes with mental retardation as the main diagnosis, which comes to almost 1 in 3.

Table 4.1: Main diagnosis for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
Main diagnosis	n	%	n	%	n	%	n	%	n	%
Child/Adolescent disorder	187	4.0	24	1.2	8	7.3	42	1.4	89	2.8
Dementia/Cogn. Disorder	360	7.6	45	2.2	3	2.7	22	0.7	45	1.4
Adjustment disorder	115	2.4	75	3.7	1	0.9	81	2.7	39	1.2
Substance rel. disorder	484	10.2	271	13.4	21	18.2	360	12.1	191	6.1
Schiz./Psychotic disorder	2169	45.9	878	43.3	41	38.2	1383	46.4	1315	41.8
Mood disorder	433	9.2	362	17.9	4	3.6	325	10.9	185	5.9
Anxiety disorder	71	1.5	48	2.4	0	0.0	40	1.3	22	0.7
Somatoform disorder	23	0.5	8	0.4	0	0.0	7	0.2	13	0.4
Factitious disorders	1	0.0	0	0.0	0	0.0	3	0.1	2	0.1
Dissociative disorder	5	0.1	0	0.0	0	0.0	17	0.6	0	0.0
Sexual disorder	106	2.2	15	0.7	1	0.9	5	0.2	8	0.3
Eating disorder	11	0.2	2	0.1	0	0.0	1	0.0	1	0.0
Impulse-control disorders	132	2.8	19	0.9	4	3.6	24	0.8	31	1.0
Other	64	1.4	39	1.9	8	7.3	59	2.0	26	0.8
Additional codes	5	0.1	3	0.2	0	0.0	2	0.1	2	0.1
Mental retardation	158	3.3	46	2.3	5	4.6	166	5.6	1003	31.9
Personality disorders	356	7.5	184	9.1	14	12.7	432	14.5	144	4.6
Main diagnosis Axis 3	46	1.0	8	0.4	0	0.0	11	0.4	31	1.0
Unknown	5	0.1	1	0.1						
Total	4731	100	2028	100	110	100	2980	100	3147	100

4.1.2 Mental retardation

Table 4.1 contains the category mental retardation as the main diagnosis. Table 4.2 sketches whether mental retardation is the main diagnosis or not (i.e. the presence of such a diagnosis as either the first or the second diagnosis on axis 2).

Almost 1 in 5 long-stay patients in T have a condition of mental retardation. Table 4.1 shows that for 158 patients this is the main diagnosis, so over 80% of patients in T with mental retardation have a psychiatric main diagnosis. In psychiatric nursing homes, almost 1 in 2 patients have a condition of mental retardation. For the majority of them (69%) this is also the main diagnosis.

Over all the settings almost one in four (23%) long-stay/long-treatment patients have a condition of mental retardation. One in ten (10.6%) has mental retardation as the main diagnosis.

Table 4.2: Occurrence of mental retardation for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
Mental retardation	n	%	n	%	n	%	n	%	n	%
Yes	911	19.3	213	10.5	16	14.6	459	15.4	1446	46.0
No	3820	80.7	1815	89.5	94	85.5	2521	84.6	1701	54.0
Total	4731	100	2028	100	110	100	2980	100	3147	100

Tables 4.2.1 and 4.2.2 show that a very large percentage of patients suffering child/adolescent disorders are mentally retarded. This is not the case for patients with dementia or cognitive disorders.

Table 4.2.1: Mental retardation for patients with Child/Adolescent disorder

	T		t1		t2		IBW/IHP		PVT/MSP	
Mental retardation	n	%	n	%	n	%	n	%	n	%
Yes	121	64.7	15	62.5	1		32	76.2	73	82.0
No	66	35.3	9	37.5	7		10	23.8	17	18.0
Total	187	100	24	100	8		42	100	89	100

Table 4.2.2: Mental retardation for patients with Dementia/cognitive disorder

	T		t1		t2		IBW/IHP		PVT/MSP	
Mental retardation	n	%	n	%	n	%	n	%	n	%
Yes	10	2.8	1	2.2	0		2	9.1	7	15.6
No	350	97.2	44	97.8	3		20	90.9	38	84.4
Total	360	100	45	100	3		22	100	45	100

4.1.3 Other important diagnosis groups

Table 4.3 presents the number and proportion of patients with the largest diagnosis groups, irrespective of the fact if it is the main diagnosis or not. For example, a patient is considered as having a substance related disorder when the first, second or third diagnosis on the axis 1 falls in the category of substance related disorders.

Almost half of the long stay patients suffer from schizophrenia or a psychotic disorder. Comparing these results with table 4.1, we can see that this diagnosis is mostly the main diagnosis. A personality disorder is more likely to be a secondary disorder.

Table 4.3: Largest diagnosis groups, irrespective of main diagnosis, for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
Largest diagnosis groups	n	%	n	%	n	%	n	%	n	%
Substance rel. disorder	823	17.4	467	23.0	30	27.3	683	22.9	298	9.5
Schiz./Psychotic disorder	2318	49.0	959	47.3	44	40.0	1538	51.6	1473	46.8
Mood disorder	655	13.8	517	25.5	11	10.0	531	17.8	284	9.0
Personality disorders	1750	37.0	907	44.7	38	34.6	1434	48.1	1002	31.8

4.1.4 Double diagnosis

Double diagnosis is the combination of a psychiatric diagnosis and substance addiction. Table 4.4 presents the number and percentage of patients with a combination of a substance related disorder (first, second or third diagnosis on axis I of DSM IV) and a psychiatric diagnosis. The table further summarizes the psychiatric diagnoses of these patients[2]. Almost 14% of the long-stay patients in T have a combination of psychiatric diagnosis and a substance related disorder. In psychiatric nursing homes this is about 7%, in the three other settings it is over 16%.

Table 4.4: Double diagnosis for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	N	%	n	%	n	%	n	%	n	%
	551	11.6	347	17.1	17	15.5	513	17.2	219	7.0
Second diagnosis	N	%	n	%	n	%	n	%	n	%
Child/Adolescent disorder	18	3.3	4	1.2	1	5.9	4	0.8	3	1.4
Dementia/Cogn. Disorder	38	6.9	4	1.2	1	5.9	8	1.6	10	4.6
Adjustment disorder	19	3.5	17	4.9	0	0.0	26	5.1	6	2.7
Schiz./Psychotic disorder	192	34.9	96	27.7	5	29.4	150	29.2	57	26.0
Mood disorder	77	14.0	84	24.2	2	11.8	72	14.0	31	14.2
Anxiety disorder	13	2.4	8	2.3	0	0.0	16	3.1	4	1.8
Somatoform disorder	2	0.4	2	0.6	0	0.0	3	0.6	1	0.5
Factitious disorder	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dissociative disorder	2	0.4	1	0.3	0	0.0	0	0.0	0	0.0
Sexual disorder	12	2.2	0	0.0	0	0.0	9	1.8	2	0.9
Eating disorder	1	0.2	1	0.3	0	0.0	1	0.2	3	1.4
Sleep disorder	1	0.2	0	0.0	0	0.0	1	0.2	2	0.9
Impulse-control disorders	21	3.8	10	2.9	1	5.9	12	2.3	9	4.1
Other	17	3.1	23	6.6	0	0.0	27	5.3	0	0.0
Mental retardation	15	2.7	13	3.8	1	5.9	33	6.4	14	6.4
Personality disorders	123	22.3	84	24.2	6	35.3	151	29.4	77	35.2
Total	551	100	347	100	17	100	513	100	219	100

4.2 DIAGNOSIS AND LENGTH OF STAY

This section describes three length of stay groups in T units (1 to 2 years, 2 to 6 years, and more than 6 years).

4.2.1 Main diagnosis

The proportion of patients with schizophrenia or psychotic disorders increases with length of stay. 60% of all patients that stayed more than 6 years belong to this group. Also the number of patients with mental retardation as main diagnosis increases. (Table 4.5)

The proportions of patients with substance related disorders, mood disorders, dementia and cognitive disorders, and personality disorders decreases with length of stay.

These results give an indication that patients with schizophrenia or a psychotic disorder as well as patients with mental retardation have a lower chance of leaving the hospital.

[2] The following rule was used for the selection of the second diagnosis: In case the substance related disorder is the main diagnosis, the second diagnosis on axis I was selected. If there was no second diagnosis on axis 1, the first diagnosis on axis 2 was selected. In case the substance related disorder was the first diagnosis on axis 1 but the main diagnosis was on axis 2, the first diagnosis on axis 2 was selected. In case the substance related disorder was the second or third diagnosis on axis 1, the first diagnosis on axis 1 was selected. Patients were excluded when the second diagnosis was also a substance related disorder, a somatic diagnosis on axis 3, or an additional code.

Table 4.5: Main diagnosis for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
Main diagnosis	n	%	n	%	n	%
Child/Adolescent disorder	53	3.8	56	3.2	78	5.0
Dementia/Cogn. disorder	143	10.3	157	8.9	60	3.8
Adjustment disorder	38	2.7	55	3.1	22	1.4
Substance rel. disorder	195	14.0	203	11.5	86	5.5
Schiz./Psychotic disorder	486	35.0	745	42.1	938	59.7
Mood disorder	175	12.6	159	9.0	99	6.3
Anxiety disorder	23	1.7	28	1.6	20	1.3
Somatoform disorder	10	0.7	6	0.3	7	0.5
Factitious disorders	0	0.0	1	0.1	0	0.0
Dissociative disorder	4	0.3	1	0.1	0	0.0
Sexual disorder	14	0.9	65	3.7	28	1.8
Eating disorder	8	0.6	2	0.1	1	0.1
Impulse-control disorders	34	2.4	47	2.7	51	3.2
Other	30	2.2	23	1.3	11	0.7
Additional codes	4	0.3	1	0.1	0	0.0
Mental retardation	17	1.2	51	2.9	90	5.7
Personality disorders	145	10.4	144	8.1	67	4.3
Main diagnosis Axis 3	11	0.8	22	1.2	13	0.8
Unknown	2	0.1	2	0.1	1	0.1
Total	1391	100	1768	100	1572	100

4.2.2 Mental retardation

The longer the length of stay, the more patients we observe with mental retardation (without being the main diagnosis) (Table 4.6). More than one in four long-stay patients with a stay of more than 6 years in T, is mentally retarded.

Table 4.6: Occurrence of mental retardation for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
Mental retardation	n	%	n	%	n	%
Yes	159	11.4	323	18.3	429	27.3
No	1232	88.6	1445	81.7	1143	72.7
Total	1391	100	1768	100	1572	100

4.2.3 Other important diagnosis groups

The number of patients with schizophrenia or psychotic disorders (irrespective of the fact that it is the main diagnosis or not) increases as the length of stay increases. In contrast to patients with substance related disorders, mood disorders and personality disorders. However, still about one in three patients that is in the hospital for more than 6 years is diagnosed with a personality disorder.

Table 4.7: Largest diagnosis groups, irrespective of main diagnosis, for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
Largest diagnosis groups	n	%	n	%	n	%
Substance related disorder	335	24.1	341	19.3	147	9.4
Schizophrenia / Psychotic disorder	522	37.5	823	46.6	973	61.9
Mood disorder	278	20.0	233	13.2	144	9.2
Personality disorders	573	41.2	679	38.4	498	31.7

4.3 SOMATIC DIAGNOSIS

36% of the long-stay patients in T have a somatic condition (Table 4.8). In psychiatric nursing homes this number is still about 20% higher. In all other settings, this number is lower compared to T.

Table 4.8: Somatic diagnosis for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
Somatic diagnosis	n	%	n	%	n	%	n	%	n	%
No diagnosis	2716	57.5	1412	71.6	86	79.6	2114	74.5	1227	39.4
At least 1 diagnosis	1683	35.7	481	24.4	17	15.7	609	21.5	1667	53.5
Only dis. of nervous system	322	6.8	80	4.1	5	4.6	116	4.1	220	7.1
Total	4721	100	1973	100	108	100	2839	100	3114	100

Table 4.9 gives the numbers of patients with the first diagnosis on axis 3 in each of 18 categories for the patients in T-units. Patients can have up to three diagnoses on the third axis. 17% of long stay patients in T have 2 diagnoses on axis 3, and 7% has three diagnoses.

Table 4.9: Type of first somatic diagnosis on axis 3 for long-stay patients in T

Somatic diagnosis	n	%
No diagnosis on axis 3	2716	57.5
Infectious and parasitic diseases	24	0.5
Neoplasms	68	1.4
Endocrine, nutritional and metabolic diseases, immunity disorders	290	6.1
Diseases of the blood and blood-forming organs	17	0.4
Mental disorders	50	1.1
Diseases of the nervous system and sense organs	495	10.5
Diseases of the circulatory system	265	5.6
Diseases of the respiratory system	146	3.1
Diseases of the digestive system	213	4.5
Diseases of the genitourinary system	68	1.4
Complications of pregnancy, childbirth, and the puerperium	2	0.0
Diseases of the skin and subcutaneous tissue	57	1.2
Diseases of the musculoskeletal system and connective tissue	117	2.5
Congenital anomalies	24	0.5
Certain conditions originating in the perinatal period	2	0.0
Symptoms, signs, and ill-defined conditions	68	1.4
Injury and poisoning	78	1.6
Supplementary classification of factors influencing health status and contact with health services	21	0.4
Total	4721	100

The number of patients with a somatic condition increases with length of stay (Table 4.10). This observation is probably related to the age. The relationship between length of stay, age and the probability of having a somatic diagnosis is discussed further in this report.

Table 4.10: Somatic diagnosis for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
Somatic diagnosis	n	%	n	%	n	%
No diagnosis	885	63.9	1049	59.5	782	49.8
At least 1 diagnosis	407	29.4	597	33.8	679	43.2
Only dis. of nervous system	93	6.7	118	6.7	111	7.1
Total	1385	100	1764	100	1572	100

4.4 LEVEL OF FUNCTIONING

4.4.1 GAF score

The GAF scale (General Assessment of Functioning) reflects the level of psychical, social and professional functioning. The score ranges between 1 and 100, where lower scores indicate a low level of functioning and a high score reflects a high level of functioning.

Table 4.11 presents summary statistics on this scale for the five settings. The level of functioning of long stay patients in T is generally lower compared to patients in t1, t2 and sheltered living, but it is better compared to patients in psychiatric nursing homes.

Table 4.11: GAF score for long-stay patients in T and reference settings

	T	t1	t2	IBW/IHP	PVT/MSP
N	4700	2026	110	2979	3147
Mean	37.2	50.9	47.7	52.6	31.2
Std.	15.7	13.7	13.1	12.1	13.2
P25	25	40	40	45	20
Median	35	50	45	50	30
P75	50	60	60	60	40

Table 4.12 presents the summary statistics on the GAF scale for the three length of stay groups. The results show that the functioning of patients decreases with length of stay. We study further the relationship between length of stay and the GAF score further in this report.

Table 4.12: GAF – score for long-stay patients in T, per length of stay group

	1 – 2 years	2 – 6 years	More than 6 years
N	1375	1760	1565
Mean	42.4	36.8	33.0
Std.	16.2	15.4	14.2
P25	30	25	24
Median	41	35	30
P75	53	48.5	40

4.4.2 Infirmity

Infirmity refers to the degree to which a patient is dependent on others with respect to the basic living skills. This factor can play a crucial role when deciding whether a certain patient can be reintegrated in society or not. The infirmity score takes values between 0 and 6, and is based on the following variables (yes=1, no=0):

- patient receives help with hygiene
- patient receives help for problems with incontinence or patient is incontinent
- patient receives help with mobility
- patient receives help with getting up and going to bed
- patient receives help with eating
- patient receives help to get dressed

The level of infirmity or dependency is obviously highest in PVT/MSP, followed by T. Patients in the three other settings have clearly lower levels of infirmity. (Table 4.13)

Table 4.13: Infirmity score, for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	mean	med.	mean	med.	mean	med.	mean	med.	mean	med.
	1.7	1	0.1	0	0.7	0	0.3	0	2.2	2
Sum score	Cum. %		Cum. %		Cum. %		Cum. %		Cum. %	
0	43.3		91.1		71.8		82.8		27.1	
1	61.3		97.9		81.8		93.6		49.8	
2	71.4		99.1		90.0		97.6		62.9	
3	78.7		99.3		91.8		98.8		73.2	
4	84.1		99.5		93.6		99.2		80.6	
5	89.7		99.9		97.3		99.5		88.0	
6	100		100		100		100		100	

Table 4.14 shows, as expected, an increase of the infirmity level with length of stay.

Table 4.14: Infirmity score for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
	mean	med.	Mean	med.	mean	med.
	1.4	0	1.7	1	2.0	1
Sum score	Cum. %		Cum. %		Cum. %	
0	54.1		44.4		32.5	
1	69.2		62.2		53.4	
2	77.3		71.4		66.3	
3	83.2		77.8		75.7	
4	85.9		83.2		83.5	
5	91.1		88.6		89.6	
6	100		100		100	

4.5 SYMPTOMS AND PROBLEMS

In this section we analyse the differences between the five settings with respect to some problems and symptoms of the patient of which we assume that they can have an effect on the chances of reintegration of a patient in a T unit.

4.5.1 Psychosocial problems and problems in the environment

Axis 4 of DSM IV contains a list of 9 problems related to social or environmental aspects. All 9 are scored binary (0 if problem is absent, 1 if problem is present). Table 4.15 shows the numbers and percentages of patients with the respective problems in the five settings.

Problems within the primary support group (close family) occur less in PVT/MSP compared to the other settings.

It could however be that in general patients in PVT/MSP have weaker family relations or do not have family at all. This could be part of the explanation for this difference.

A similar explanation could be suggested for the lower occurrence of problems in the social environment in PVT/MSP and a higher occurrence of these problems in IBW/IHP. The latter are more part of the society than the former, resulting in a higher probability of problems related to it.

It is to be expected that the largest number of patients with work-related problems is found in IBW/IHP and in t2. These are the settings were patients work more. It is odd that still 14% of the long-stay patients in T are confronted with problems related to work. Possibly, these problems were registered at admission.

Problems related to living and financial problems are most common in sheltered living. Legal problems, finally, are more frequently observed in T-units and in night hospitalisation (t2).

Table 4.15: Psychosocial problems and problems in the environment for patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
Axis 4	n	%	n	%	n	%	n	%	n	%
Primary supporting group	2440	51.6	1134	57.2	58	53.7	1618	56.3	1179	37.7
Social environment	1669	35.3	665	33.5	40	37.0	1302	45.3	744	23.8
Educational problems	439	9.3	89	4.56	9	8.3	237	8.2	176	5.6
Work	661	14.0	333	16.8	23	21.3	751	26.1	252	8.1
Living	1113	23.5	299	15.1	28	25.9	974	33.9	457	14.6
Financial	526	11.1	179	9.0	14	13.0	578	20.1	136	4.4
Health services	177	3.7	42	2.1	4	3.7	58	2.0	108	3.5
Legal	458	9.7	65	3.3	11	10.2	167	5.8	51	1.6
Other	243	5.1	90	4.5	22	20.4	118	4.1	92	2.9

4.5.2 Other symptoms or problems

We compared the 5 settings with respect to the social functioning of the patient, anti-social attitude, aggression, substance abuse and finally whether the patient is a risk or danger for himself. All these variables are measured binary (this means that we indicate that there was a problem or not at the last registration moment).

- The variable 'social functioning' measures whether the patient has problems in social functioning other than related to work, studies, household, or leisure time. As an example the MPD manual mentions the lacking of a primary support group, but other social problems can be included as well.
- The variable 'anti-social attitude' refers to characteristics in the attitude of the patient that lead to conflicts with society. E.g. lack of loyalty, egoism, lack of responsibility, impulsiveness, lack of guilt feelings, etc.
- The variable 'aggression' indicates whether a patient shows aggressiveness towards persons, objects or when he is verbally aggressive.
- Patients are indicated as being a danger for themselves when they perform auto-aggressive acts or threat with doing so, or when they have suicide thoughts.
- The variable 'substance abuse' indicates whether the patient is having problems related to alcohol, medication, or drugs or when it is indicated that the staff takes action to check the patient on being under influence.

Few differences are observed (Table 4.16) between the settings with respect to social functioning. Anti-social attitude is somewhat more frequent in T and PVT/MSP compared to the other settings. The differences are much more important for aggression. The data suggest that aggressive behaviour decreases the patient's chances of reintegration towards day hospitalisation or sheltered living. Strikingly, the occurrence of aggression in psychiatric nursing homes is equal to that in T. The number of patients that form a danger for themselves is higher in T compared to the other settings, however, the differences are not very large. Finally, substance abuse is obviously less common in psychiatric nursing homes, in all other settings is it observed frequently.

Table 4.16: Other patient related characteristics for T-units and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Social functioning	557	11.8	166	8.2	14	12.5	332	11.1	300	9.5
Anti-social attitude	810	17.1	107	5.3	16	14.3	338	11.3	533	16.9
Aggression	1876	39.7	271	13.4	32	28.6	596	20.0	1298	41.2
Danger for self	711	15.0	169	8.3	13	11.6	330	11.1	315	10.0
Substance abuse	1795	37.9	708	34.9	55	49.1	1201	40.3	518	16.5

Key points

- **About 45% of the long-stay psychiatric patients have schizophrenia or psychotic disorder as main diagnosis, in all five settings.**
- **About one in four long-stay patients in T are persons with mental retardation. In psychiatric nursing homes this is almost one in two.**
- **Patients suffering from schizophrenia or a psychotic disorder, and patients with mental retardation are more likely to have very long stays.**
- **Patients with mood disorders, substance related disorders and personality disorders are less likely to have very long stays.**
- **The disability (GAF, infirmity) of patients in day hospitalisation and sheltered living is generally lower than that of patients in T. Patients in psychiatric nursing homes have the highest level of disability.**
- **Patients with low level of functioning are more likely to have very long stays.**
- **40% of the long stay patients have demonstrated aggressive behaviour or attitude. This number is the same in psychiatric nursing homes.**
- **Also substance abuse occurs in 40% of the long-stay T patients, which is similar in sheltered living. Among patients in night hospitalisation, we even find a higher number.**

5 PATIENT CHARACTERISTICS AND LENGTH OF STAY

In this section, we analyze the relation between length of stay and a number of patient-related characteristics, such as the age at admission and gender, the level of disability, behavioural difficulties, the presence of somatic or physical problems, the diagnosis, the educational level and the environment before the admission. We focus exclusively on long-stay patients in T-units.

5.1 METHODS

To analyse the data we use a linear mixed model with length of stay as the response variable and patient-related characteristics as explanatory variables. The hospital is added to the model as a random effect. This allows us to correct for within-hospital clustering, i.e. the fact that patients within the same hospital are more closely related than patients in different hospitals.

5.2 AGE AND GENDER

Using the present dataset it is difficult to investigate the relationship between the age and length of stay because both variables are, due to the study design, strongly linked. The dataset contains a very large range of lengths of stay (10% of the patients have a stay of 16 years or more, there are 15 stays of over 50 years). It is obvious that we will find a positive relationship between the age in 2003 and the length of stay, or, a negative relationship between the admission age and the length of stay.

To get an idea, we fit a regression model limiting the data to the admission years 2000, 2001 and 2002. Length of stay is taken as the response variable and the admission age as a covariate, as well as the square of age, which was found to be significant (p=0.0019). This relationship was expected based on a graphical exploration of the data. Length of stay increases with increasing age, but decreases again for higher ages. This effect remains when we correct for other relevant variables, such as GAF score, level of infirmity, diagnosis, etc.

A few examples can give a better idea about the size of the relationship between age and length of stay.

- For the data based on three admission years (2000-2002), the expected length of stay of a 30 year-old is about one month longer than that of a 20-year old, keeping all other characteristics constant.
- A 40-year old has an expected length of stay that is three weeks longer than a 30-year old.
- And finally, the expected length of stay of an 80-year old patient is about 3 weeks shorter compared to a 70-year old patient. The fact that, in the higher age categories, the expected length of stay decreases when age at admission increases can be due to a larger number of deceases or transferrals to (psychiatric) nursing homes.

Regarding gender, there is no difference in length of stay between men and woman.

Age has an effect on the functioning of a person and in general on many aspects of life. To avoid that age confounds the relation between several variables of interest and length of stay, we will include the age (in 2003) in all further models.

5.3 LEVEL OF DISABILITY

5.3.1 Infirmity with respect to basic living skills and mobility

Correcting for age, we find a significant quadratic relationship between length of stay and infirmity ($p<0.0001$). Length of stay increases as infirmity increases up to a score of 3, later length of stay decreases with further increasing levels of infirmity. The effect remains when we correct for other relevant patient-related variables.

This could indicate that the presence of a certain level of infirmity is a complicating factor that makes discharge from a T-unit towards more ambulatory settings less likely. On the other hand, patients with very high levels of infirmity are less likely to remain in a T-unit, and are more likely to be transferred to another setting that can provide more care such as a psychiatric nursing home or a home for elderly.

5.3.2 Social functioning

Patients having problems related to social functioning have longer lengths of stay compared to patients without these problems ($p=0.0061$). This effect remains when we correct for other relevant patient-related variables.

5.3.3 Incontinence

Correcting for age and gender, we do not find a relationship between incontinence in patients and length of stay ($p=0.2372$).

5.3.4 Psychosocial problems and problems in the environment

We would expect that the presence of problems related to the primary supporting group or problems with the social environment, problems with living or financial problems could induce a longer stay. However, correcting for age, we find a significant effect opposite to the expectations. Patients without problems in the supporting group ($p<0.0001$), social environment ($p<0.0001$), with ($p<0.0001$) or finances ($p=0.0046$, correcting for level of education) generally have longer lengths of stay compared to patients having these problems.

A plausible explanation is that, the longer a patient stays in the hospital, the further away this person gets from his social environment and society in general, and therefore the fewer problems patients have related with that environment. Patients with relative shorter stays, are still more connected to society and their environment, with the result that they are more likely to have problems related to these aspects.

We do not find an effect of the presence of legal problems on length of stay ($p=0.1301$).

5.3.5 GAF-score

The General Assessment of Functioning is a scale going from 1 to 100, higher scores indicating better functioning. Correcting for age, we find a strong negative relationship between the GAF score and length of stay ($p=0.0001$). Lower GAF scores (and thus lower level of functioning of the patient) are related to longer lengths of stay. A quadratic effect points at the fact that GAF scores over 60 do not further decrease length of stay. The effects remain if we include other relevant patient-related variables into the model.

5.4 BEHAVIOURAL DIFFICULTIES

5.4.1 Anti-social attitude

We find a significant relationship between the presence of an anti-social attitude and length of stay (P=0.0021). Patients with an anti-social attitude have generally longer stays compared to patients without. Including aggression into the model makes the effect to disappear (p=0.1610). Apparently, anti-social attitude and aggression are strongly related.

5.4.2 Aggression

We find a strong relationship between this variable and length of stay (p<0.0001), indicating that aggressive patients have longer stays than non-aggressive patients. This effect remains when we include other relevant patient-related variables into the model.

5.4.3 Danger for self

Correcting for age and the presence of a mood disorder, we do not find a significant relation between this variable and length of stay (p=0.1268).

5.4.4 Substance abuse

We find a significant negative relationship between substance abuse and length of stay (p<0.0001). These patients have shorter lengths of stay compared to patients without substance related problems, confirming the indications of previous sections.

We also analysed for the effect of substance abuse as a complicating factor in patients that do not suffer from a substance related diagnosis. However, the results confirm that the presence of substance abuse is related to shorter lengths of stay. We have indeed seen that substance abuse is a problem that is frequently observed in sheltered living, day and night hospitalisation. It seems not to be an obstacle to reintegration in more ambulatory settings.

5.5 SOMATIC PROBLEMS

We constructed a binary variable that indicates whether somatic or physical problems or disease is present, with a value 1 when the patient has a diagnosis on axis 3 of DSM IV, when a physical degeneration is indicated or when a physical problem is indicated other than tiredness, eating problems, sleeping problems, sexual problems, incontinence, epilepsy or speech problems.

Correcting for age, we do not find a relationship between the presence of a somatic problem and length of stay (p=0.1647).

5.6 PSYCHIATRIC DIAGNOSES

We analysed the relationship between length of stay and the presence of some of the most frequent psychiatric diagnoses: mental retardation, schizophrenia or psychotic disorders, substance related problems, mood disorders, and personality disorders. The presence of a disorder is measured as a binary variable (present or absent), not taking into account whether it is indicated as the main diagnosis.

Significantly longer lengths of stay are found for patients with mental retardation (p<0.0001) and for patients with schizophrenia or psychotic disorders (p<0.0001). We find significantly shorter lengths of stay for patients with substance related disorders (p<0.0001), mood disorders (p<0.0001) and personality disorders (p<0.0001).

The effect for personality disorders disappears when other patient-related factors (GAF score and mental retardation) are included into the model.

5.7 LEGAL PROBLEMS

The presence of legal problems as indicated on axis 4 of DSM IV is not related to length of stay.

In an alternative approach patients were considered as having legal problems if they were admitted in the hospital under legal conditions at least once, during the whole term of the long stay. In this approach, patients with legal problems have longer lengths of stay compared to patients without these problems ($p<0.0001$), after correcting for age, gender and the presence of schizophrenia. The effect remains after adding other relevant patient-related variables.

5.8 EDUCATIONAL LEVEL

Correcting for age and mental retardation, we find that length of stay decreases as the educational level increases[3]. All 6 pairwise comparisons give significant results, the difference between level 1 and 2 is borderline significant ($p=0.0623$).

5.9 ENVIRONMENT BEFORE ADMISSION

We compared patients that were living alone with patients that were living with their family before admission, based on the hypothesis that patients living with family have support system inducing shorter stays. However the opposite is observed: patients living alone have significantly shorter stays compared to patients living in a family-like environment (family in the broad sense, $p<0.0001$), and also compared to patients living with their own family (partner and/or children, $p=0.0029$).

The level of functioning could be an interfering factor here, but including the GAF-score or level of infirmity into the model does not alter the observations.

Key points

- **Patient characteristics that are related to longer lengths of stay in T-units are: problems related to social functioning, anti-social attitude, aggression, mental retardation, schizophrenia, legal problems, a low level of functioning and a low educational level.**
- **Patient characteristics that are related to shorter lengths of stay in T-units are: substance abuse, mood disorder, personality disorder, a (relatively) high level of functioning and a high educational level.**
- **Patients with high infirmity level (i.e. patients that need help in several basic aspects such as eating, dressing, etc.) have shorter lengths of stay in T. A plausible explanation is that they are more likely to be transferred to settings with more care.**
- **Patients with lower educational levels tend to have longer stays.**

3 We constructed a categorical variable for educational level with 4 levels: (1) primary school finished or lower, (2) some intermediate level in secondary school but unfinished, (3) secondary school finished but no higher education, and (4) higher education. Only data for patients that are not students were included

6 REINTEGRATION AND REORIENTATION

When patients are discharged from the T-unit and go home or go to live in a more community-based setting, we consider it as 'reintegration'.

When patients are discharged from the T-unit but go to another institutional setting, we consider this as 'reorientation'.

In this section we analysed the relationship between reintegration and reorientation and a number of patient-related characteristics, such as the age at admission and gender, the level of disability, behavioural difficulties, the presence of somatic or physical problems, the diagnosis, the educational level and the environment before the admission.

6.1 METHODS

Generalized estimating equations (GEE) are used for model fitting. These are logistic regression models that allow clustering, e.g. due to hospitals, to be taken into account.

6.2 DELINEATION OF REINTEGRATED AND REORIENTED POPULATION (MPD-DATA)

Of all long stay patients in T, 1146 patients ended their stay in T in 2003. 1034 patients were discharged from the hospital. 112 patients deceased. Among the deceased, 27 were less than 2 years in the hospital, 38 between 2 and 6 years, and 47 more than 6 years. The remaining 3583 were still present at 31/12/2003.

Table 6.1 shows length of stay for both groups, the patients ending their stay and the ones continuing their stay. It is obvious that the probability for a patient to terminate the stay decreases as length of stay increases.

Table 6.1 : End of stay in 2003

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
End of stay in T	511	44.6	405	35.3	230	20.1
(only non-deceased)	(484)	(46.8)	(367)	(35.5)	(183)	(17.7)
Continuation of stay in T	880	24.6	1363	38.0	1342	37.4
	%		%		%	
% of terminated stays	36.7		22.9		14.6	
(only non-deceased)	(35.5)		(21.2)		(12.0)	

Table 6.2 shows the destination of the 1034 patients that were discharged from the hospital.

Table 6.2: Destination after discharge

Destination after discharge[4]	n	%
Living alone	91	8.8
Living with family (broad sense)	170	16.4
Sheltered living	69	6.7
Home for elderly	262	25.3
Home for handicapped persons	40	3.9
Psychiatric nursing home	152	14.7
Other psychiatric residential	75	7.3
General hospital	76	7.4
Non-psychiatric collective	36	3.5
Institution of justice	8	0.8
Unknown / other / no fixed destination	55	5.3
Total	1034	100

[4] Living with family includes living with own family (partner and/or own children), with the parents, with own adult child, with other members of the family or friends, or with foster family. The label 'Other psychiatric residential' includes another psychiatric hospital, a psychiatric unit in a general hospital, or another type of residential psychiatric care not specified elsewhere. The label 'Non-psychiatric collective' refers to a place for homeless, religious communion, and other types of sheltered homes.

Only 8.5% (N=405) of the total long-stay population in T (39,6 % of the discharged group) can be considered as reintegrated. We consider as reintegrated these patients that were discharged and went to live alone, with their family, in sheltered living, or to day-treatment or night-treatment for at least 1 month.

10% (N=490) of the total long-stay population in T is reoriented: (47,4 % of the discharged group) 'Reoriented' are patients that were discharged in 2003 and transferred to a home for elderly, a home for handicapped persons, a psychiatric nursing home, and other types of non-psychiatric but collective or residential forms of living.

Some of the destinations after discharge cannot clearly be categorized as either reintegration or reorientation. We have been prudent and did not label patients going to another psychiatric residential institution, a general hospital, an institution for justice, or when insufficient information is available.

6.2.1 Trajectories (IMA-data)

In the IMA data, 778 patients were discharged from T in the course of 2003 and were not readmitted within a period of six months[5]. We tried to develop an indicative idea of the trajectory of these patients, sketching their destination the day after, 1 month and 6 months after discharge (Table 6.3).

This approach is cross-sectional. It therefore offers only limited information on the real trajectories. The table does not allow to describe *all* movements in the trajectories of each patient (we did not check for in between movements in the preset timeframes).

The differences in numbers of each destination category after 1 day, 1 month and 6 months (Table 6.3) suggest that some patients change between types of facilities after their discharge from T. Within each subgroup of discharge after day 1, we therefore did a manual "trajectory reconstruction" by looking at the destination of subgroups at month 1 and month 6.

Table 6.3: destination of long stay patients after discharge from the T-unit in 2003 (N= 778)

	After 1 day		**After 1 month**		**After 6 months**	
	N	%	N	%	N	%
Decease	*69*	*8,87%*	*85*	*10,93%*	*96*	*12,34%*
Reorientation	*318*	*40,87%*	*345*	*44,34%*	*383*	*49,23%*
General hospital A	7	0,90%	6	0,77%	17	2,19%
Psychiatric hospital A	33	4,24%	51	6,56%	88	11,31%
General hospital non psychiatric unit	65	8,35%	82	10,54%	80	10,28%
PVT/MSP	87	11,18%	88	11,31%	85	10,93%
Home for elderly	126	16,20%	118	15,17%	113	14,52%
Reintegration	*164*	*21,08%*	*161*	*20,69%*	*126*	*16,20%*
General hospital a1	1	0,13%	2	0,26%	1	0,13%
Psychiatric hospital a1	16	2,06%	19	2,44%	18	2,31%
Psychiatric hospital a2	2	0,26%	1	0,13%	1	0,13%
Psychiatric hospital t1	79	10,15%	84	10,80%	65	8,35%
Psychiatric hospital t2	21	2,70%	20	2,57%	13	1,67%
IBW/IHP	45	5,78%	35	4,50%	37	4,76%
Other	*228*	*29,31%*	*204*	*26,22%*	*170*	*21,85%*

5 The different discharge numbers between MPD and IMA / AIM data are related to the time frames taken into account (ima also considered 2004 data), and probably also related to the population differences between the datasets.

This table confirms the general observation that a larger group is reoriented. 40,9 % of the patients is reoriented towards another residential setting (home for elderly, PVT/MSP, A-unit). Only one in five is discharged for reintegration (21,1%) (psychiatric day or night treatment or sheltered living). Moreover, after six months, the proportion of reoriented patients has even increased (49,2%) compared to the reintegrated (16, 2%).

96 patients were deceased after 6 months: 69 patients were registered as deceased after one day[6] discharge, another 16 were registered as deceased after one month and 11 after 6 months.

150 persons were transferred to another psychiatric hospital setting the day after the discharge form the T-unit; 117 (78,1 %) of them to hospital units aiming at reintegration. It is remarkable too that 33 (4,3%) (+7 to A in general hospital) patients from a T-unit are discharged to an A unit, considering the "functions" of psychiatric units A and T. The manual analysis learns that after one month 15 patients have left the psychiatric hospital: 3 of them went to a general hospital and 1 to a home for elderly. The remaining 10 patients went elsewhere or died. After 6 months another 24 patients had left the psychiatric hospital. Table 6.4 sketches the trajectory of these patients.

Table 6.4: destination of long stay patients discharges from the T-unit to another psychiatric hospital (N= 150)

After one day	After one month	After six month
33 in an A-unit	3 not institutionalised	2 not institutionalised
		1 in a non psychiatric unit of a general hospital
	28 still in an A-unit	10 not institutionalised
		1 in a non psychiatric unit of a general hospital
		1 in an A-unit of a general hospital
		2 in an a1-unit
		10 in an A-unit
		1 in a t1-unit
		2 in a t2-unit
		1 in a psychiatric nursing home
	1 in a t2-unit	1 in a t2-unit
	1 in a home for elderly	1 in a home for elderly
15 in an a1-unit	1 in an A-unit	1 still in an A-unit
	13 in an a1-unit	10 in an a1-unit
		2 in a t1-unit
		1 not institutionalised
	1 in a t1-unit	1 in an A-unit
2 in an a2-unit	1 in an a2-unit	1 in an a2-unit
	1 in a t2-unit	1 in an A-unit
79 in a t1-unit	7 not institutionalised	4 not institutionlised
		1 in an non psychiatric unit of a general hospital
		2 in an A-unit
	2 in a non psychiatric unit of a general hospital	1 not institutionalised
		1 in an a-unit of a psychiatric hospital
	1 in an A-unit of a general hospital	1 in a non psychiatric unit of a general hospital
	1 in an A-unit	1 in an A-unit
	2 in an a1-unit	1 in a non psychiatric unit of a general hospital
		1 in a t1-unit
	66 in a t1-unit	12 not institutionalised
		3 in a non psychiatric unit of a general hospital
		1 in an A-unit of a general hospital
		2 in an A-unit
		2 in an a1-unit

6 This more than probably implies that these patients died during the hospital stay

		46 in a t1-unit
21 in a t2-unit	1 not institutionalised	1 not institutionalised
	1 in an A-unit	1 in a t2-unit
	1 in a t1-unit	1 in a t1-unit
	18 in a t2-unit	3 not institutionalised
		1 in a not psychiatric unit of a general hospital
		11 in a t2-unit
		2 in an A-unit
		11 in a t2-unit
		1 in sheltered living

73 patients (9,4%) were discharged to a general hospital. 8 to a psychiatric unit (A or a1). After one month 1 patient of this small group had left the hospital, to be back after 6 months. One patient was moved to a non psychiatric unit (one month) to be still there after 6 months. The remaining 6 patients all remained in a psychiatric unit after one month and 3 after six months, 2 didn't leave the A-unit of a general hospital, and 4 moved to an A-unit of a psychiatric hospital after one month. After 6 months 3 of the latter group had moved to a non psychiatric unit.

65 patients (8,4%) were discharged to a non psychiatric unit in a general hospital. After one month one of them is admitted in IBW/IHP and is still there after 6 months, another went to a home for elderly. 4 patients moved to an A-unit of a general hospital (one month). After 6 months, one of them is transferred to a t2-unit, 1 to a home for elderly and 2 stayed in the A-unit. 34 patients still resided in a non psychiatric unit of a general hospital after one month. After six months, one of them is found in an a1-unit, 7 in an A-unit of a psychiatric hospital, 1 in a PVT/MSP, 7 in a home for elderly and 9 are no longer in an institution. 8 patients are still in a non psychiatric unit and one died. 12 patients died within the month after the admission in a general hospital.

45 patients (5,8%) were discharged from T-unit towards IBW/IHP. Only 35 (4,5% of total population) of them are still in IBW/IHP after one month. 3 patients moved to an a1-unit (one and 6 months). 3 had a temporary stay in a non psychiatric unit, but are reintegrated in IBW/IHP after 6 months. 2 patients are in an A-unit after one month; one of them returns to IBW/IHP after six month, the other one is admitted in a home for elderly. One patient lives in a centre for psychosocial rehabilitation (category other) after one month, to be back in IBW/IHP after 6 months. 1 patient is no longer one of the facilities discussed after one and after 6 months.

87 patients (11,2%) were discharged to a psychiatric nursing home. After one month, 2 patients had left the institution, one of them to be back after 6 months. One patient deceased after one month. 84 patients are still in PVT/MSP after one month and 78 of them also after 6 months. From the remaining 6 patients, 5 were in an A-unit after 6 months, one died.

126 patients are admitted in a home for elderly after discharge from a T-unit. After one month 107 of them are still there and after 6 months 99.

228 patients (29,3%) were discharged to other than previously mentioned settings. Some of these patients will go home, but some of them go to other residential facilities (home for handicapped,…). After one month, 31 (13,6%) of this group are at least temporary readmitted in a psychiatric setting and after 6 months 70 (30,7%). (Table 6.5)

Table 6.5: discharged long stay T-patients not institutionalised after discharge: situation after one and six months

After one month	After 6 months
28 in non psychiatric unit of a general hospital	1 in an a1-unit
	8 in an A-unit
	10 in a non psychiatric unit
	7 not institutionalised
	2 in a home for elderly
9 in an A-unit of a general hospital	4 A-unit
	2 hop gen non psy psych.hosp.
	3 not institutionalised
2 in an a1-unit of a general hospital	1 unit A gen. hosp.
	1 unit a1 gen. hosp.
15 in an A-unit of a psychiatric hospital	11 unit A psych. hosp.
	1 unit a1 psych. hosp
	1 unit non psych. unit
	2 not institutionalised
2 in an a1-unit of a psychiatric hospital	1 t1-unit
	1 a1-unit
1 in a t1-unit of a psychiatric hospital	1 t1-unit
1 in PVT/MSP	1 in PVT/MSP
1 in IBW/IHP	1 in IBW/IHP
7 in a home for elderly	6 in a home for elderly
	1 died
160 not institutionalised	94 not institutionalised
	28 in a non psychiatric unit of a general hospital
	29 in an A-unit of a psychiatric hospital
	7 in an A-unit of a general hospital
	2 in IBW/IHP

6.3 REINTEGRATION (MPD DATA)

In the remainder of this section we focussed on some of the properties of the group of 405 re-integrated patients.

The upper part of Table 6.6 shows the distribution of length of stay for these patients.

- Two in three patients that were reintegrated stayed less than two years in the hospital. That is twice the proportion of this length of stay group in the total population. In other words, the chance of reintegration is largest for 'short' long stays. This can also be seen in the lower part of the table. Among the patients with a stay between 1 and 2 years, 18% was reintegrated in 2003, among the patients with a stay between 2 and 6 years, 8% was reintegrated in 2003 and among the patients that were in the hospital for more than 6 years, only 1% was reintegrated.

Table 6.7 shows a gradual decrease of the probability of reintegration with increasing length of stay.

Table 6.6: Length of stay of reintegrated patients

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Reintegrated patients	250	61.6	135	33.3	21	5.2
	%		%		%	
% in whole population	18.0		7.6		1.3	

Table 6.7: % of reintegrated patients, by length of stay

Length of stay	%
1 – 2 years	18.0
2 – 3 years	10.3
3 – 4 years	7.3
4 – 5 years	6.6
5 – 6 years	3.3
6 – 7 years	1.8
7 – 8 years	1.9
+ 8 years	1.2

In the remainder of this section, we investigate the relationship between reintegration probability and a number of other variables.

6.3.1 Age and gender

A strong negative effect of age ($p<0.0001$) on reintegration is found, also after correcting for length of stay. The probability of reintegration decreases with age. A quadratic effect for age remains significant ($p=0.0194$). This expresses the fact that especially for the oldest categories, age is negatively related to the probability to reintegrate. For patients up to 50 the effect is smaller. There are no differences between men and woman with respect to reintegration ($p=0.0966$).

6.3.2 Level of disability

Correcting for age, we find a strong positive relationship between the GAF score and the probability of reintegration ($p<0.0001$). The higher the level of functioning, the larger the probability to reintegrate.

Correcting for age, we find a significant relationship between reintegration chance and infirmity ($p<0.0001$). The probability of reintegration decreases as infirmity increases.

Correcting for age, we do not find a difference between patients with and without problems related to social functioning with respect to reintegration probability ($p=0.0728$).

Correcting for age, we find that incontinent patients have lower probabilities of reintegration ($p=0.0063$).

Patients with financial problems have a larger probability of reintegration compared to patients without financial problems ($p=0.0048$). We corrected for age and educational level.

A larger probability to reintegrate was also found for problems within the primary supporting group ($p=0.0513$) and problems with the social environment ($p=0.0069$). Patients having problems within the primary supporting group or in the social environment are more likely to reintegrate compared to patients without these problems.

Patients with problems related to education tend to have longer lengths of stay ($p=0.0484$), thereby correcting for mental retardation.

Further, we do not find any relationship between the reintegration probability and the following problems: living, problems with accessibility of health services, legal problems, problems with police or related to crime, other problems related to psychosocial or environmental aspects).

Some of the effects seem to be contrary to the expectations. However we have argued before that the usefulness of the items in axis 4 of DSM IV is very limited for the present study due to the influence of several factors that are difficult to control.

6.3.3 Behavioural difficulties

We do not find a relationship between an anti-social attitude and reintegration (p=0.1190).

Correcting for age, we find a strong relationship between aggression and the probability to reintegrate (p<0.0001), indicating that aggressive patients have lower chances of reintegration than non-aggressive patients.

Correcting for age, we do not find a relation between the presence of a danger for the patient caused by himself and the chance of reintegration (p=0.1490).

Patients with problems related to substance abuse have generally a higher chance on reintegration compared to patients not having these problems Correcting for age and the presence of a substance related diagnosis, we find a significant relationship between substance abuse and the chance of reintegration (p=0.0081).

6.3.4 Somatic problems

Correcting for age, we find a significant relationship between the presence of a somatic problem and the probability of reintegration (p=0.0145). Patients with somatic problems have lower reintegration probabilities.

6.3.5 Psychiatric diagnoses

We studied the presence of a disorder as a binary variable (present or absent), not taking into account whether it is indicated as the main diagnosis.

We find significantly lower probability of reintegration for patients with mental retardation (p<0.0001) and for patients with schizophrenia or psychotic disorders (p=0.0008).

We find significantly higher probabilities of reintegration for patients with substance related disorders (p=0.0003), mood disorders (p<0.0001), and personality disorders (p=0.0091).

6.3.6 Legal problems

We did not find a relationship between reintegration and the presence of legal problems as registered on axis 4 of DSM IV (Psychosocial problems).

We do not find any relationship either between reintegration and legal problems as described in MPD (p=0.7219).

6.3.7 Educational level

We constructed a categorical variable for educational level with 4 levels: (1) primary school finished or lower, (2) some intermediate level in secondary school but unfinished, (3) secondary school finished but no higher education, (4) higher education. We corrected for age and mental retardation and we only analyzed data from patients that are not students.

We observe that the probability of reintegration increases with increasing educational level (measure as a 4 level categorical variable) (p=0.0454), where educational level is taken as a continuous variable.

Analysing the educational level as a categorical variable we observe the same trend, however, only the difference between the first level (primary school or lower) and the third level (secondary school finished) is statistically significant.

6.3.8 Environment before admission

We constructed 4 levels of environment: (1) living alone, (2) living in a family-like environment, (3) living in a residential but non-therapeutic environment, and (4) living in a residential and therapeutic environment.

We find no difference between patients living alone and patients living in a family like environment.

We do find significant differences between patients living in a residential environment (either therapeutic or non-therapeutic) and patients living alone or with family.

Patients that, before their admission, were already living in an institution, have lower chances of reintegrating compared to patients that were living alone or with family. There is no difference between patients that were living in a therapeutic or non-therapeutic environment.

- **8.5% of all long-stay patients in T-units were reintegrated in 2003.**
- **The likelihood of reintegration decreases as the patient is longer in the T-unit.**
- **Patient characteristics that are related to lower reintegration chances are: higher age (especially after 50), lower level of functioning (high infirmity, low GAF), incontinence, indication of aggressive behaviour, presence of somatic problems, presence of mental retardation, and presence of schizophrenia or psychotic disorder.**
- **Patient characteristics that are related to higher reintegration chances are: higher level of functioning (low infirmity, high GAF), problems related to substance abuse, presence of substance related diagnosis, mood disorder, or personality disorder.**
- **There is an indication of higher reintegration chances for patients with higher educational levels.**

6.4 REORIENTATION

The upper part of Table 6.8 shows the distribution of length of stay for 490 reoriented patients. Roughly 1 in 3 patients come from each of the three length of stay groups. The lower part of Table 6.8 shows that the probability for reorientation does not vary much over the three groups; the data suggest a small decrease in probability with increasing length of stay. Table 6.9 seems to confirm this.

Table 6.8: Length of stay of reoriented patients

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Reoriented patients	176	35.9	181	36.9	133	27.1
	%		%		%	
% in whole population	12.7		10.2		8.5	

Table 6.9: % of reoriented patients, by length of stay

Length of stay	%
1 – 2 years	12.7
2 – 3 years	11.9
3 – 4 years	11.8
4 – 5 years	9.9
5 – 6 years	4.6
6 – 7 years	11.2
7 – 8 years	9.0
+ 8 years	8.0

6.4.1 Age and gender

We find a strong positive effect of age in 2003 on the probability to be reoriented ($p<0.0001$), also if we correct for length of stay. The chance of reorientation increases with age. Given the fact that a large part of reoriented patients goes to a home for elderly, this should not be a surprise. There is no difference between men and women ($p=0.6638$).

6.4.2 Level of disability

Correcting for age, we do not find a relationship between the probability of reorientation and the level of functioning as measured by the GAF-score (p=0.2929). Neither is there a quadratic effect of this variable.

Correcting for age, we find a borderline significant relationship between reorientation chance and infirmity (p=0.0521). The probability of reorientation increases as infirmity increases.

Correcting for age, patients with problems related to social functioning have generally a lower probability of reorientation (p=0.0372).

Correcting for age, the data suggest that patients that are incontinent have higher probabilities of reorientation. The effect is only borderline significant (p=0.0661).

Patients that have 'problems related to accessibility to health care services' have smaller probabilities of reorientation compared to patients without these problems (p=0.0032). The item can however cover more than one situation, one example given in the manual is a lack of health care services, another example is the patient having insufficient health insurance. It is however not unlikely that this points at patients that are waiting for a place in another setting than T.

We do not find significant effects for the rest of the psychosocial problems or problems related to the environment.

6.4.3 Behavioural difficulties

There is no difference between patients with or without anti-social attitude with respect to reorientation probability (p=0.8951) neither between aggressive and non-aggressive patients (p=0.8110).

Patients that form a danger for themselves have significantly lower probabilities of reorientation (p=0.0128).

Patients with problems related to substance abuse have generally lower chances of reorientation compared to patients not having these problems. Correcting for age and the presence of a substance related diagnosis, we find a significant relationship between substance abuse and the chance of reorientation (p=0.0003).

Correcting for age, we do not find a relationship between the presence of a somatic problem and the probability of reorientation (p=0.4472).

6.4.4 Psychiatric diagnoses

We further investigate the relationship between reorientation and the presence of some of the most frequent psychiatric diagnoses: mental retardation, schizophrenia or psychotic disorders, substance related problems, mood disorders, and personality disorders. We consider the presence of a disorder as a binary variable (present or absent), not taking into account whether it is indicated as the main diagnosis.

Patients with mental retardation seem to have higher probability of reorientation (p=0.0464), which is probably related to the fact that institutions for handicapped persons are included in the definition of reorientation. Further, also patients with a substance related diagnosis have higher probabilities of reorientation (p<0.0001). Interestingly, we find opposite results for the fact of substance abuse on one hand, and the presence of a substance related disorder on the other hand.

We find that patients suffering from schizophrenia have lower reorientation chances (p<0.0001) and the same is suggested for patients with personality disorders, however only borderline significant (p=0.0575). Finally, we do not find any difference between patients with and without a mood disorder (p=0.1474).

6.4.5 Legal problems

If we consider patients as having legal problems if they were admitted in the hospital under legal conditions at least once during the whole term of the long stay, we find that patients with legal problems have lower chances of reorientation (p=0.0350). Correcting for schizophrenia, however, this effect disappears.

6.4.6 Educational level

Correcting for age and the presence of mental retardation, we do not find a relation between the educational level and the probability of reorientation.

6.4.7 Environment before admission

Patients that were living in a family-like environment before the admission have the lowest probability of reorientation. This is significantly lower than the reorientation probability of patients that were living alone (p=0.0171) and patients that were living in a residential but non-therapeutic environment (p=0.0208).

Key points

- **10% of all long-stay patients in T-units were reoriented in 2003.**
- **Patient characteristics that are related to higher reorientation chances are: higher age, higher level of infirmity, incontinence, presence of mental retardation, and the presence of a substance related diagnosis.**
- **Patient characteristics that are related to lower reorientation chances are: the fact that the patient could be a danger for itself, the presence of substance abuse, the presence of schizophrenia or a psychotic disorder, the presence of a personality disorder and the presence or history of legal problems.**
- **Patients that were living with family before the start of the long stay have lower probability of reorientation compared to patients that were living alone.**

7 COMPARING PATIENT PROFILES ACROSS SETTINGS

This section describes the patient profiles in different mental health care settings. Complementary to this we try to assess whether certain groups of patients could be supported in other than residential long stay facilities.

7.1 COMPARISON OF PATIENT CHARACTERISTICS IN DIFFERENT SETTINGS

We compare patients in T, psychiatric nursing homes, sheltered living and day hospitalisation on a number of patient-related variables, namely:

- problems related to social functioning,
- anti-social behaviour,
- aggression,
- danger for the patient,
- substance abuse,
- somatic problems,
- mental retardation,
- schizophrenia,
- substance related diagnosis,
- mood disorder,
- GAF score, and
- infirmity score.

7.1.1 Statistical Methods

In MPD functioning is measured by GAF & infirmity scores. The GAF score and infirmity score are continuous responses. To analyse these, linear mixed models are used in which the score is the dependent or response variable and the setting (e.g. T either PVT/MSP) the explanatory variable of interest. Linear mixed models are similar to regression models, but they allow taking into account the clustering within hospitals.

All other variables are binary. As we take into account hospital clustering, generalized estimating equations (GEE) are used.

For somatic problems, GAF, and infirmity score are corrected for age.

By including length of stay into the model we make sure that this length of stay is not 'confounding' the relationship between the setting on the one hand and the patient characteristic on the other hand. A hypothetical example can clarify this. Suppose that patients with mental retardation have typically longer stays than other patients. Moreover length of stay in psychiatric nursing homes is generally longer than the stays in T. Only considering the difference in percentages of mentally retarded patients in the two settings, could lead to the conclusion that mental retardation is a characteristic that is more typical for psychiatric nursing homes. Looking at the lengths of stay groups separately, we could conclude that there is no difference, or even find an opposite effect.

Further we add an interaction effect to the model between length of stay and the setting. To explain this we elaborate further on the hypothetical example: Imagine there are more medium long-stay patients with mental retardation in T compared to psychiatric nursing homes, while the latter host more very long-stay patients with mental retardation. Not taking into account the interaction effect could make us conclude that there is no difference at all between T-units and PVT/MSP regarding the number of mentally retarded patients.

7.1.2 Psychiatric nursing homes & T-units

Table 7.1 presents the comparison between the T population and the psychiatric nursing homes (PVT/MSP). Per setting the percentages of positive cases (e.g. percentage of patients with aggression) is presented. For the variables with significant interaction between setting and length of stay, the percentages are presented per length of stay category. For variables without such interaction effect, the global percentage over all length of stay categories is given (indicated by 'all').

By showing the actual percentages we get an idea about the frequency of certain problems as well as about the actual difference between the two populations. With large datasets, we easily obtain statistically significant results, presenting the actual number makes it possible to argue how 'clinically' significant these differences are.

Table 7.1: Comparing the characteristics of patients in T and psychiatric nursing homes

		T	PVT/MSP
	Length of stay	%	%
Social functioning (*)	all	11.7	9.5
Anti-social behaviour	all	17.0	16.9
Aggression	all	39.3	41.2
Danger for patient (*)	1 – 2 years	17.3	11.0
	2 – 6 years	14.4	9.7
	> 6 years	13.7	10.3
Substance abuse (*)	1 – 2 years	46.4	30.0
	2 – 6 years	38.8	27.2
	> 6 years	27.2	8.4
Somatic problems (*)	1 – 2 years	47.6	57.9
	2 – 6 years	52.6	67.2
	> 6 years	61.6	80.0
Mental retardation (*)	1 – 2 years	11.4	24.5
	2 - 6 years	18.3	29.1
	> 6 years	27.3	58.0
Schizophrenia (*)	1 - 2 years	37.5	52.5
	2 - 6 years	46.6	54.8
	> 6 years	61.9	40.4
Substance related diagnosis (*)	1 - 2 years	24.1	16.7
	2 - 6 years	19.3	15.4
	> 6 years	9.4	4.2
		Mean	Mean
GAF score (*)	1 - 2 years	42.4	37.0
	2 - 6 years	36.8	35.6
	> 6 years	33.0	27.8
Infirmity score (*)	1 - 2 years	1.4	1.5
	2 - 6 years	1.7	1.6
	> 6 years	2.0	2.6

(*) $p<0.05$

Table 7.1 shows that danger for the patient, substance abuse and the diagnosis of substance related disorders are more common in T-units than in PVT/MSP. Mental retardation and somatic problems are more frequently observed in PVT/MSP, however, the latter is also very common in T-units. Schizophrenia is more common in PVT/MSP for lower length of stay categories. However, for lengths of stay longer than 6 years, schizophrenia is more frequently observed in T.

Furthermore, we see that in general the level of functioning (GAF) is somewhat lower in PVT/MSP compared to T. With respect to infirmity, only for very long stays a difference is observed between T and PVT/MSP, with worse scores in the latter.

Both sectors have comparable ratios of aggressive patients and patients with anti-social behaviour.

7.1.3 Sheltered living & T-units

Table 7.2 shows the results for the comparison of patient characteristics between T and sheltered living.

Table 7.2 : Comparing the characteristics of patients in T and initiatives for sheltered living

		T	IBW/IHP
	Length of stay	%	%
Social functioning	all	11.7	11.1
Anti-social behaviour (*)	all	17.0	11.3
Aggression (*)	all	39.3	20.0
Danger for patient (*)	1 - 2 years	17.3	16.7
	2 - 6 years	14.4	10.9
	> 6 years	13.7	6.8
Substance abuse	all	37.9	40.3
Somatic problems (*)	all	54.1	39.1
Mental retardation (*)	1 - 2 years	11.4	9.2
	2 - 6 years	18.3	12.3
	> 6 years	27.3	22.7
Schizophrenia	all	49.0	49.3
Substance related diagnosis	all	17.4	20.9
		Mean	Mean
GAF score (*)	1 – 2 years	42.4	52.6
	2 – 6 years	36.8	53.2
	> 6 years	33.0	52.3
Infirmity score (*)	1 - 2 years	1.4	0.25
	2 - 6 years	1.7	0.27
	> 6 years	2.0	0.33

(*) $p<0.05$

Aggression and somatic problems are more common in T-units than in sheltered living. The level of functioning is higher in sheltered living than in T. The GAF scores in IBW/IHP are on average higher and stable over length of stay categories, whereas in T, GAF scores are lower and decrease with length of stay. A similar trend can be observed for the infirmity score.

Mental retardation and anti-social behaviour are a bit more common in T. For patients that form a danger for themselves, this is true only for the patients with very long lengths of stay.

No differences are found between T and sheltered living with respect to substance abuse or substance related diagnosis and schizophrenia.

7.1.4 Day treatment (t1) & T-units

The most important differences are observed with respect to the presence of anti-social behaviour, aggression, danger for the patient, somatic problems and mental retardation. All are more common in T than in t1. The level of functioning is clearly higher in t1 than in T.

Table 7.3: Comparing the characteristics of patients in T and t1

		T	t1
	Length of stay	**%**	**%**
Social functioning (*)	all	11.7	8.2
	1 - 2 years	12.8	4.7
Anti-social behaviour (*)	2 - 6 years	17.9	5.0
	> 6 years	19.7	7.1
	1 - 2 years	30.7	12.2
Aggression (*)	2 - 6 years	36.7	13.7
	> 6 years	49.8	14.4
	1 - 2 years	17.3	11.8
Danger for patient (*)	2 - 6 years	14.4	8.1
	> 6 years	13.7	2.9
Substance abuse (*)	all	37.9	34.9
Somatic problems (*)	all	54.1	37.3
	1 - 2 years	11.4	6.8
Mental retardation (*)	2 - 6 years	18.3	10.2
	> 6 years	27.3	15.9
Schizophrenia	all	49.0	46.3
	1 - 2 years	24.1	25.4
Substance related diagnosis (*)	2 - 6 years	19.3	21.6
	> 6 years	9.4	15.1
		Mean	Mean
	1 - 2 years	42.4	51.3
GAF score (*)	2 - 6 years	36.8	50.9
	> 6 years	33.0	50.1
	1 - 2 years	1.4	0.16
Infirmity score (*)	2 - 6 years	1.7	0.10
	> 6 years	2.0	0.16

(*) $p<0.05$

7.1.5 Summary

Factors that could decrease the chances on the transferral of a patient to more community-based settings like sheltered living and day hospitalisation are the presence of aggression, anti-social behaviour and somatic problems. Furthermore a certain level of independent functioning seems to be required to make a chance in these settings.

We observed less substance related problems in psychiatric nursing homes compared to T. Substance related problems could therefore be an inhibiting factor for patients in T to be transferred to psychiatric nursing homes. Aggression or anti-social behaviour do not seem to affect a transfer, pointing at the fact that such institutions also admit more 'difficult' patients.

7.1.6 Overlap of patient profiles between the settings

The previous results also suggest some overlap in profiles between the different settings. To further investigate the overlap we created for each patient a 'profile code' based on the most important variables that distinguish between the different settings: anti-social behaviour, aggression, danger for the patient, presence of a somatic problem, substance abuse, schizophrenia, mental retardation, GAF score and infirmity score. Four-category versions were used for the two continuous variables: GAF (1-20, 21-40, 41-60, +60) and infirmity score (0, 1-2, 3-4, 5-6). Based on this combination of variables we have theoretically 2048 possible individual profiles: 972 in T, 446 in PVT/MSP, 450 in sheltered living, and 285 in t1. We determined the number of patients per profile code.

The correlation between the frequencies of the profiles in two populations gives an idea about the overlap between the profiles in these populations. (Table 7.4[7]) The table shows considerable correlation between T on the one hand and in IBW/IHP and t1 on the other hand. The correlation between T and PVT/MSP suggests some overlap between patient profiles in these settings.

The overlap between PVT/MSP on the one hand and IBW/IHP and t1 on the other hand is much smaller. The overlap between IBW/IHP and t1 is very high. In the latter case, it needs to be mentioned that it is not unlikely that a considerable portion of both populations consists of the same patients, since it is possible to combine day treatment in the hospital with a stay in an initiative for sheltered living.

Table 7.4 : Correlations between frequencies of individual profiles

	PVT/MSP	IBW/IHP	t1
T	0.56	0.62	0.65
PVT/MSP		0.29	0.28
IBW/IHP			0.95

7.2 IDENTIFYING PROFILES IN T-UNITS WITH REINTEGRATION POSSIBILITIES

In this section we want to investigate the number of long-stay patients in T with a profile that is typically for, or frequently observed in sheltered living or day hospitalisation. These patients can be considered as theoretically capable to be transferred to a more community-based setting. Regional differences in this group of patients are taken into account.

7.2.1 Overlap of patient profiles between T and sheltered living

A discussion is needed on defining the cut-off point between profiles that are most frequently observed in sheltered living. We used two operationalizations for selecting the 'IBW/IHP-profiles': the first one based on theoretical arguments, the second one statistics (frequency-)based. However, we have to keep in mind that certain arbitrary decisions always need to be made.

- First operationalization: based on previous results a patient is considered fit for sheltered living when the patient is not aggressive, has a GAF score above 40 and has infirmity score 0.
- Second operationalization: 450 different profiles were observed in IBW/IHP. 50% of the patients in this setting has one of the 20 most frequently occurring profiles. We consider a patient as fit for sheltered living when he has one of these profiles.

Clearly, the number of patients in T with characteristics for reintegration in sheltered living depends on the criteria used in the operationalization of an 'IBW/IHP-profile'. Other operationalizations could have been proposed too. But we depend on the MPD with its particular limitations: information on several variables is only binary, whereas in reality the severity of certain symptoms certainly plays a role. We therefore do not aim at estimating the exact number of T patients that could be reintegrated. The primary goal is to study whether or not the group is considerable and where they are more concentrated. (Table 7.5)

We present the total number and percentage of patients in T-units with IBW/IHP-profile according the above operationalizations for the three Belgian regions.

7 Correlations close to 1 mean that profiles that are frequent in one setting are also frequent in the other setting, and on the other hand profiles that are infrequent in the first setting are also infrequent in the second setting. Alternatively, correlations close to 0 mean that frequent profiles in one setting are infrequent in the other one and vice versa.

Table 7.5 : Patients in T with IBW/IHP profile.

	First Operationalization		Second operationalization	
	N	%	N	%
Total	715	15.1	673	14.2
Flanders	553	18.6	516	17.4
Brussels	12	4.2	17	5.9
Wallonia	150	10.2	140	9.5

Being very careful with the interpretation, both operationalizations estimate that about 15% of long-stay patients in T-units have profiles comparable to profiles very frequently occurring in sheltered living. This suggests that a considerable group of long-stay patients in T could function in a more community-based environment.[8]

Differences are observed between the three Belgian regions. Although more places are available in initiatives for sheltered living in Flanders compared to the rest of the country, we do not observe proportionally more IBW/IHP-profiles in T-beds in Brussels and Wallonia.

Table 7.6 (percentages per province) confirms this regional difference[9]. Vlaams Brabant is an outlier, where one in four long-stay T patients have a profile that corresponds to the profiles in sheltered living.

We keep repeating that these estimations depend on the operationalization used. The largest difference between the operationalizations is observed for Limburg and Oost-Vlaanderen. However, the overall conclusions keep standing.

Table 7.6: Patients in T with IBW/IHP profile.

	First operationalization		Second operationalization	
	N	%	N	%
Antwerpen	139	18.7	143	19.3
Limburg	67	16.6	52	12.9
Oost-Vlaanderen	139	19.3	111	15.4
West-Vlaanderen	87	12.9	99	14.7
Vlaams Brabant	121	27.9	111	25.6
Brussel Hoofdst	12	4.2	17	5.9
Waals Brabant	2	33.3	1	16.7
Henegouwen	90	11.7	74	9.6
Luik	35	12.1	33	11.4
Luxemburg	4	12.1	3	9.1
Namen	19	5.1	29	7.8

We further analysed the differences between the three regions with respect to some patient characteristics in T and IBW/IHP beds. (Table 7.7). In Wallonia, more patients are found in T with anti-social behaviour, aggression, and mental retardation, compared to Flanders. The average GAF score is also slightly lower. Apparently, long-stay T patients have generally 'heavier' profiles in Wallonia than in Flanders. Differences in the profiles of patients in sheltered living are not found. Even, if there are any, profiles in Wallonia are a bit 'lighter' compared to Flanders.

The profiles of patients in T and in sheltered living overlap more in Flanders.

8 In theses analyses we have not taken into account the actual reintegration of the patients. Looking only at the patients that were not reintegrated, we find a total percentage around 12.5% that could be reintegrated. The proportions between the regions do not alter.

9 The data for Waals Brabant are based on only 6 patients; the data for Luxemburg are based on 33 patients.

The larger difference in Wallonia explains why the percentage of long-stay patients in T that could theoretically be reintegrated in sheltered living is lower in Wallonia compared to Flanders.

Table 7.7 : Regional differences in patient characteristics in T and IBW/IHP

	T			IBW/IHP		
	Flanders	Brussels	Wallonia	Flanders	Brussels	Wallonia
Social functioning	10.7	23.6	11.6	13.6	2.3	6.7
Anti-social behaviour	14.7	11.5	23.1	13.0	3.3	9.5
Aggression	35.1	47.6	47.3	19.4	25.1	19.7
Danger for the patient	14.1	18.1	16.3	12.1	13.7	6.0
Substance abuse	35.3	57.6	39.3	42.0	40.1	34.3
Somatic problems	53.0	65.1	54.6	41.6	31.3	34.0
Mental retardation	14.8	8.7	30.4	15.8	5.4	16.5
Schizophrenia	47.0	70.5	48.9	46.1	70.6	50.1
Substance rel. diagnosis	19.1	12.5	14.8	22.8	13.4	18.1
GAF score (Mean)	39.3	30.3	34.3	53.6	48.9	51.6
Infirmity score (Mean)	1.6	1.9	1.8	0.3	0.3	0.2

7.2.2 Overlap of patient profiles between T and t1

Similar to sheltered living, we use two different operationalizations to label a profile as a 't1-profile' or not: a theory based and a statistical.

- First operationalization: based on our previous findings patients are suitable for day hospitalisation when they do not show anti-social behaviour, are not aggressive, are without danger for themselves, have a GAF score above 40 and an infirmity score 0. Note that this profile is more 'severe' than the theoretical operationalization for a IBW/IHP-profile.
- Second operationalization: we have 285 different profiles in t1, but over 50% of the patients in this setting have one of the 14 most frequently occurring profiles. We consider a patient as suitable for t1 when it has one of these 14 profiles.

Table 7.8 shows the results for the country and per region. Table 7.9 shows the results per province. The results are similar to the observations in Section 5.2.1. t1 and sheltered living focus at similar patient profiles, and it is even common that patients combine both settings by residing in sheltered living and going to day hospitalisation some days per week. Unfortunately, MPD does not allow us to identify these patients separately, implying that the datasets for both settings have a considerable overlap of the same patients. We found 97% of overlap between patients in T with a IBW/IHP-profile and the ones with a t1-profile (for both operationalizations).

For non-reintegrated patients, we find respectively 10 and 12% of patients with t1-profile. The proportions between the regions are maintained.

Table 7.8 : Patients in T with t1-profile.

	First operationalization		Second operationalization	
	N	%	N	%
Total	555	11.7	628	13.3
Flanders	426	14.3	485	16.3
Brussels	11	3.8	20	6.9
Wallonia	118	8.0	123	8.4

Table 7.9 : Patients in T with t1-profile.

	First operationalization		Second operationalization	
	N	%	N	%
Antwerpen	115	15.5	134	18.1
Limburg	50	12.4	55	13.6
Oost-Vlaanderen	94	13.1	100	13.9
West-Vlaanderen	72	10.7	86	12.8
Vlaams Brabant	95	21.9	110	25.4
Brussel Hoofdst	11	3.8	20	6.9
Waals Brabant	3	33.3	1	16.7
Henegouwen	65	8.5	67	8.7
Luik	31	10.7	31	10.7
Luxemburg	2	6.1	3	9.1
Namen	18	4.8	21	5.6

7.2.3 Overlap of patient profiles between T and psychiatric nursing homes

In the same way as above, we use two different operationalizations to label a profile as a 'PVT/MSP-profile' or not. The first one is again derived theoretically; the second one is based on observed frequencies of profiles in psychiatric nursing homes.

- First operationalization: based on our findings we define a patient 'typical' for a psychiatric nursing home when the patient has no substance abuse, is not a danger for himself, has a GAF score under 40 and has infirmity score larger than 0.
- Second operationalization: we have 624 different profiles in PVT/MSP, but over 50% of the patients in this setting have one of the 56 most frequently occurring profiles. We consider a patient as 'typical' for PVT/MSP when he has one of these profiles.

The results are shown in Table 7.10, per region and in Table 7.11, per province. The two different operationalizations give different estimates. This illustrates the relativity of these operationalizations and underlines the difficulty of estimating the exact size of such a group. In Table 7.11, ranking the provinces according to the estimated percentages would give very different results. Apparently, the exercise of finding PVT/MSP profiles among long-stay T patients is more difficult than finding profiles typically for IBW/IHP or t1.

Whether a psychiatric nursing home is a good alternative for a certain patient could not depend so much on the exact patient characteristics, but on the care he or she needs. Psychiatric nursing homes mostly house patients that do no longer benefit from therapy. To determine more accurately the group of patients in T with PVT/MSP characteristics, treatment characteristics could be further taken into account.

Table 7.10 : Patients in T with PVT/MSP-profile.

	First operationalization		Second operationalization	
	N	%	N	%
Total	1057	21.8	1286	26.6
Flanders	683	23.2	868	29.5
Brussels	48	13.8	73	21.0
Wallonia	316	22.7	339	24.3

Table 7.11 : Patients in T with PVT/MSP-profile.

	First operationalization		Second operationalization	
	N	%	N	%
Antwerpen	166	21.2	244	31.2
Limburg	139	37.2	106	28.3
Oost-Vlaanderen	134	18.9	206	29.1
West-Vlaanderen	139	21.2	194	29.5
Vlaams Brabant	105	24.7	118	27.8
Brussel Hoofdst	48	13.8	73	21.0
Waals Brabant	14	16.1	21	24.1
Henegouwen	128	19.3	173	26.1
Luik	77	23.8	61	18.8
Luxemburg	16	24.6	13	20.0
Namen	81	31.8	71	27.8

Key points

- **The presence of aggression, anti-social behaviour and somatic problems could decrease the chances on the transferral of a patient to more community-based settings like sheltered living and day hospitalisation.**
- **An acceptable level of independent functioning seems to be required to make a chance in these settings.**
- **The presence of a substance related problem is negatively related to a transfer to a psychiatric nursing home.**
- **Aggression or anti-social behaviour do not seem to affect such transferral, pointing at the fact that psychiatric nursing homes also admit more 'difficult' patients.**
- **A non-negligible part of the long-stay patients in T (more in Flanders than in Wallonia) has a profile that is typical for, or very frequently observed, in day hospitalisation or sheltered living.**
- **The long-stay T population in Wallonia has a heavier profile compared to Flanders (more anti-social behaviour, aggression, mental retardation and more disabled). Populations in sheltered living are comparable.**

8 REGIONAL DIFFERENCES IN LENGTH OF STAY, REINTEGRATION AND REORIENTATION

This section describes the differences between the three Belgian regions and between the Belgian provinces regarding length of stay, the number of reintegrated patients and the number of reoriented patients.

We have seen that patient characteristics have an important impact on length of stay and reintegration and reorientation. To estimate the differences between the regions, we include all the relevant patient characteristics into the model. A linear mixed model is used for the analyses on length of stay. To build the model we use a backward selection procedure: we exclude one by one the variables that do not remain significant in the total model. In the final model we then investigate the differences between the regions, correcting for age, GAF score, infirmity score, problems related to social functioning, aggression, substance abuse, mental retardation, schizophrenia, substance related diagnosis, mood disorder, legal problems, and educational level.

GEE models were used for analyses on reintegration and reorientation.

We further estimate to what extent the hospitals contribute to length of stay of a patient or to the fact of reintegration or reorientation.

8.1 LENGTH OF STAY

8.1.1 Region

The average length of stay is the shortest in Brussels, followed by Flanders and the longest length of stay is observed in Wallonia (Table 8.1). Only the difference between Brussels and Wallonia is borderline significant (p=0.0467). The lower part of the table presents the average differences between the three regions in number of days. The raw (observed) differences as well as the model-corrected differences are presented.

Remark: the data contain length of stay of the patient within one hospital. Obviously, length of stay cannot be longer than the time since the hospital was founded. A region with a larger number of 'younger' hospitals will therefore have a lower average length of stay. Since the range of the lengths of stay is very wide (up to 50 years and more for a few patients),we corrected for this factor, by repeating the analysis for two subgroups; the patients with length of stay between 1 and 6 years (medium long-stay patients), and the patients with length of stay of more than 6 years (very long-stay patients) (Tables 8.2 and 8.3).

For the medium long-stay patients, we find significantly longer lengths of stay in Wallonia compared to Flanders. Looking at the results for the very long-stay patients, even though the differences are large, they are not statistically significant.

Table 8.1 : Average length of stay in three regions

Average length of stay		
	Days	Years
Flanders	2223	6 years, 1 month
Brussels	1802	4 years, 11 months
Wallonia	3045	8 years, 4 months
Differences between average length of stay (days)		
	Raw difference	Model corrected difference
Flanders-Brussels	421 (*)	324
Flanders-Wallonia	822 (*)	425
Brussels-Wallonia	1243 (*)	749 (*)

(*) p<0.05

Table 8.2 : Average length of stay in three regions for patients with length of stay shorter than 6 years

	Average length of stay	
	Days	Years
Flanders	909	2 years, 6 months
Brussels	923	2 years, 6 months
Wallonia	1120	3 years, 1 month
	Differences between average length of stay (days)	
	Raw difference	Model corrected difference
Flanders-Brussels	14	12
Flanders-Wallonia	211 (*)	101 (*)
Brussels-Wallonia	197 (*)	89

(*) p<0.05

Table 8.3 : Average length of stay in three regions for patients with length of stay longer than 6 years

	Average length of stay	
	Days	Years
Flanders	5354	14 years, 8 months
Brussels	4390	12 years
Wallonia	5684	15 years, 7 months
	Differences between average length of stay (days)	
	Raw difference	Model corrected difference
Flanders-Brussels	964 (*)	1300
Flanders-Wallonia	330	250
Brussels-Wallonia	1294 (*)	1550

(*) p<0.05

8.1.2 Province

The comparisons of provinces with respect to length of stay is not done in a pairwise approach, since that would lead to too many comparisons (55). Each of the provinces is compared with the remainder of the population. As before, we analyse the pooled data as well as separately for medium long-stay patients (1 to 6 years) and very long-stay patients (more than 6 years). Table 8.4 presents the model-corrected differences between the average length of stay in the province with the rest of the country. The plus and minus signs indicate whether the average length of stay in a specific province is higher (+) or lower (-).

In the population of patients with stays between 1 and 6 years, we find significantly longer lengths of stay for Hainaut and Namur. In the population of very long-stay patients (+ 6 years) we observe longer lengths of stay in Liege.

Table 8.4 : Difference in average length of stay (days) between each province and the rest of the country.

Province	All data	1 – 6 years	+ 6 years
Antwerpen	+ 364	+ 49	+ 782
Brussel – capital	- 449	- 18	- 1384
Vlaams Brabant	- 30	- 73	+ 230
Waals Brabant	+ 1064	+ 60	
West-Vlaanderen	+ 302	+38	+ 31
Oost-Vlaanderen	- 380	- 86	- 351
Hainaut	+ 380	+ 130 (*)	- 545
Liege	+176	- 5	+ 2007 (*)
Limburg	- 608	- 53	+ 159
Luxembourg	- 343	- 55	- 539
Namur	+ 893	+ 159	+490

(*) p<0.05

8.1.3 Hospital effects

At the most general level we calculated the intraclass correlation coefficient (ICC). The ICC (values between 0 and 1) expresses the size of the hospital effect with respect to length of stay. If length of stay only depends on patient-characteristics, we expect the ICC to be zero. A larger ICC points at a larger influence of the hospital in length of stay. The ICC value of 0.08 indicates that the hospital has a relatively small influence in length of stay of the patient. Moreover, this number is an upper-limit. The true ICC could be even smaller, which would be the case when certain patient characteristics are not taken into account and that tend to be more similar within hospitals.

In separate groups analysis the ICC value is 0.06 for the medium long-stay patients and 0.16 for the very long-stay patients. Apparently there are more hospital tendencies with respect to the very long stays compared to the long stays up to 6 years.

8.1.3.1 A further look at the hospitals within regions

The linear mixed model allows obtaining for each hospital an estimate that expresses the hospital's tendency towards length of stay. The lowest estimation values (shortest stays) are found for Brussels and the largest values (longest stays) for Wallonia. We further test the difference by means of an analysis of variance with the length of stay-tendency as response variable and the region as explanatory variable, for the 60 hospitals. The difference between Brussels and Wallonia is borderline significant ($p=0.0619$).

For the stays up to 6 years, we obtain the lowest values (shortest stays) for Flanders and the highest values for Wallonia. The difference between Flanders and Wallonia is statistically significant ($p=0.0146$).

For the stays longer than 6 years, we find the lowest values for Brussels and the highest for Wallonia. The differences do not appear significant. We observed only 44 of 60 hospitals with patients staying longer than 6 years.

- **Taking into account differences in patient characteristics we find longer lengths of stay in Wallonia compared to Brussels. There is however a possibility that differences in the 'ages' of the hospitals in the regions is a confounding factor.**
- **in Wallonia compared to Flanders patients with medium long stays (1 to 6 years), have average longer lengths of stay.**
- **For the medium long stays, the province Hainaut has longer lengths of stay compared to the rest of the country.**
- **For very long stays (more than 6 years) the province of Liege has longer lengths of stay compared to the rest of the Belgian provinces.**
- **The impact of the hospital on length of stay of a patient is small.**

8.2 REINTEGRATION

The comparison of the differences in the number of reintegrated patients between regions or provinces is based on a model correcting for all variables for which we have found a relationship with reintegration. A backward selection procedure is used. In the final model we then investigate the differences between the regions, correcting for age, GAF score, infirmity level, aggression, substance abuse, mental retardation, schizophrenia, and mood disorder.

8.2.1 Region

The highest probabilities for reintegration are found in Brussels, later Wallonia and the lowest probability in Flanders, but none of the pairwise differences is statistically significant.

8.2.2 Province

A similar exercise was done for the provinces, comparing each province with the remainder of the population. We find a significantly higher number of reintegrated patients in Liege (p=0.0052), while the provinces Luxembourg and Namur have significantly fewer reintegrated patients (p<0.0001 and p=0.0054 respectively).

8.2.3 Hospitals within regions

To obtain hospital tendencies for reintegration a nonlinear mixed model is fitted with reintegration as binary response variable, patient-characteristics as explanatory variables and the hospital as a random variable. From these estimates an ICC of 0.12 is found, indicating some but a relatively small influence of the hospital on the reintegration probability. This estimate is an upper-limit: patient-characteristics not taken into account in the model could explain part of this correlation.

We also tested the difference between the three regions in the average 'reintegration-tendency' of the 60 hospitals. The averages are however similar, there are no significant differences. Similar results are found when we restrict to stays shorter than 6 years.

- **There are no differences between the three regions with respect to the number of reintegrated patients, after correcting for patient characteristics.**
- **The province Liege has a larger number of reintegrated patients compared to the rest of the country, the provinces Luxemburg and Namur have lower numbers of reintegrated patients.**
- **The impact of the hospital on the reintegration of a patient is small.**

8.3 REORIENTATION

8.3.1 Region

For studying the differences in the number of reoriented patients between the three regions we use a backward selection procedure for building the model. In the final model the differences between the regions were corrected for age, danger for the patient, substance abuse, schizophrenia, substance related diagnosis, and personality disorder.

Reorientation is most likely in Brussels followed by Flanders. The difference between these two regions is not significant (p=0.3291). Reorientation is least likely in Wallonia, with significant differences to both Brussels and Flanders (p=0.0499 and p=0.0028 respectively).

8.3.2 Province

A significantly higher number of reoriented patients is found in Oost-Vlaanderen (p=0.0271). Significantly lower reorientation probabilities are found for the provinces Hainaut (p=0.0041), Namur (p<0.0001), Liege (p=0.0129) and Luxembourg (p<0.0001).

8.3.3 Hospitals within regions

The ICC value of 0.08 indicates a small influence of the hospital on the reorientation probability. But significant differences are observed between hospitals in Flanders and Wallonia (p=0.0030) and between hospitals in Brussels and Wallonia (p=0.0043), with lowest reorientation tendencies in Wallonia.

Separate analyses for very long-stay patients (more than 6 years) give the same results. For medium long-stay patients (1-6 years), the results go in the same direction; but none of the pairwise differences is significant.

Key points

- **In Wallonia there are fewer 'reoriented' patients compared to Brussels and Flanders, after correcting for patient characteristics.**
- **More patients are reoriented in Oost-Vlaanderen compared to the rest of the country. In the provinces Hainaut, Namur, Liege and Luxemburg fewer patients are reoriented if we compare to the rest of Belgium.**
- **The impact of the hospital on the reorientation of a patient is small.**

8.4 SUPPLY OF CARE

In the previous section we found some differences in length of stay, and probabilities of reintegration and reorientation between the three regions and for some of the provinces. A plausible explanation for such differences could be differences in the supply of alternative care in different areas of the country. In this section we analyse the relationship between reintegration and reorientation and the specific supply of alternative settings in the areas. Corrections will be done for patient characteristics.

8.4.1 The relation between supply of care and reintegration

We hypothesise that in districts (arrondissement) with a relatively larger number of alternative places to T for patients that are capable to reintegrate, the reintegration probability will be higher. On the other hand, we expect smaller reintegration probabilities in districts with a large supply of T-beds.

We fit a logistic regression model with the binary variable reintegration as the response. The explanatory variables of interest are (1) the number of beds per 1000 inhabitants in T, and (2) the number of beds per 1000 inhabitants in "community oriented care". In this category we count the number of places in sheltered living, psychiatric day care (t1) and psychiatric night care (t2) in a hospital, and in specific centres for rehabilitation. The number of beds in T also includes beds in psychogeriatry (SP6) in psychiatric hospitals.

Further we correct for a number of patient-specific characteristics. Only significant variables were included in the model. Using a backward selection procedure these were: age, infirmity score, GAF score, aggression, substance abuse, mental retardation, schizophrenia, and mood disorder.

The second hypothesis was confirmed: the probability of reintegration is smaller in districts with a large supply of T-beds ($p=0.0305$).

The first hypothesis is however not confirmed. We do not find a relation between reintegration and the supply of beds in "community based care" ($p=0.2619$).

8.4.2 The relation between supply of care and reorientation

We also hypothesised that in areas with a relatively larger number of beds that can be considered as an alternative to T for patients with more care needs, the reorientation probability will be higher. On the other hand, we expect smaller reorientation probabilities in areas with a large offer of T-beds.

We fit a logistic regression model with the binary variable reorientation as the response. The explanatory variables of interest are (1) the number of beds per 1000 inhabitants in T, and (2) the number of beds per 1000 inhabitants in an alternative institutionalized setting. In this category we count the number of places in homes for the elderly (ROB and RVT), in psychiatric nursing homes and in institutions for the housing of disabled persons recognised by the regional authorities.

The number of beds in T also includes beds in psychogeriatry (SP6) in psychiatric hospitals. Further we correct for a number of patient-specific characteristics. Only significant variables were maintained into the model.

Using a backward selection procedure these were: age, danger for the patient, substance abuse, and substance related diagnosis, schizophrenia, and personality disorder.

There is not a significant effect of the supply of T-beds in an area (p=0.2120) on reorientation.

The relationship between reorientation and the supply of alternative institutions is significant (p=0.0353), but opposite to the expectations. We find that patients living in areas with more alternative supply have lower probabilities of reorientation. After further investigation, this appears to be related to the supply in homes for elderly. We find that the probability of going to an elderly home is smaller in regions with a larger supply of such beds (p=0.0049). This again seems contradictory; however, many factors influence the demand for such care, and maybe resthomes for elderly are not considered as an alternative at all for our study population.

We do not find a relationship between the chance of going to a psychiatric nursing home and the supply of such beds in the area (p=0.4107).We do not have a solid explanation for this observation: further study with a larger number of patients and discharge data over several years, are needed to study this topic more deeply. A possible explanation could be that the transfer of patients is not limited to local geographical areas.

Key points

- **The supply of beds that can be considered as an alternative to T seem not to have an impact on the probability of reintegration or reorientation.**
- **The probability of reintegration is smaller in areas with a larger supply of T-beds.**

Part III

Content of care

Analysis of administrative databases

MPD & IMA DATA

9 CONTENT OF CARE OF LONG-STAY PATIENTS IN T-UNITS AND REFERENCE SETTINGS

This section describes the care and treatment received by long-stay patients in T-units and in the alternative settings. Descriptive analyses are presented for the three length of stay groups of patients in T-units.

It is important to note that all items concerning care and treatment are scored as binary variables. This means that it is registered whether a certain type of care or treatment was offered at least once over the past 6 months or never. MPD does not offer information on the intensity or frequency of a certain treatment in one patient. All further analyses are therefore based on differences between the number of patients that receive a certain type of treatment, and not on differences between the intensities.

9.1 BASIC CARE

MPD holds 6 topics related to basic care (hygiene, faecal continence, mobility, getting up or going to bed, food and dressing). For each topic one item registers whether the patient was supported by the team to take care of himself. Support can be respectively verbal stimulation, encouraging, demonstrating. A second item registers whether the members of the team actually needed to help the patient on the specific topic (Table 9.1).

Not surprisingly, psychiatric nursing homes have the largest number of patients needing basic care. With respect to receiving support, T units are comparable with psychiatric nursing homes. With respect to helping the patients, the nursing homes have a higher work load. Patients in day treatment need little help or support on basic care.

Table 9.1: Basic care for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Hygiene – support	3112	65.8	433	21.4	67	60.9	1276	42.8	2034	64.6
Hygiene - help	2246	47.5	103	5.1	28	25.5	353	11.9	2165	68.8
Faecal continence - support	719	15.2	28	1.4	10	9.1	51	1.7	541	17.2
Faecal continence - help	828	17.5	16	0.8	5	4.6	33	1.1	680	21.6
Mobility – support	1902	40.2	262	12.9	33	30.0	578	19.4	1280	40.7
Mobility – help	999	21.1	37	1.8	13	11.8	171	5.7	839	26.7
Bed – support	3045	64.4	116	5.7	63	57.3	519	17.4	1723	54.8
Bed – help	1156	24.4	18	0.9	11	10.0	83	2.8	756	24.0
Food – support	2417	51.1	253	12.5	43	39.1	856	28.7	1627	51.7
Food – help	1340	28.3	54	2.7	10	9.1	136	4.6	1069	34.0
Dressing – support	2175	45.6	45	1.2	30	27.3	214	7.2	1436	45.6
Dressing – help	1378	29.1	22	1.1	13	11.8	49	1.6	1223	38.9

The 'cumulative' reception of basic care was calculated as a sum score over the six topics per patient. The minimum score is 0 (the patient does not receive help or support on any topic), the maximum score is 12 (the patient receives help on all 6 topics)[10]. (Table 9.2). It should be noted that patients in t1 normally cannot receive help or support related to getting up or going to bed because they do not sleep in the hospital (having an impact on the theoretical maximum sum score).

In psychiatric nursing homes patients receive most assistance for basic care, and clearly more than in T-units. In all other settings, patients receive less assistance compared to T.

10 Per topic the patient gets a score of 0 (no support or help), 1 (support), or 2 (help).

Table 9.2: Sum scores for basic care, for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	mean	med.	mean	med.	mean	med.	mean	med.	mean	med.
	5.1	4	0.7	0	3	2	1.5	1	5.8	6
Sum score	Cum. %		Cum. %		Cum. %		Cum. %		Cum. %	
0	10.0		64.0		23.6		42.1		8.0	
1	18.8		82.5		42.7		61.7		14.1	
2	29.6		91.8		53.6		78.9		24.0	
3	38.7		96.1		63.6		87.3		32.1	
4	50.6		97.8		74.6		93.1		41.1	
5	61.4		98.5		80.0		95.9		49.8	
6	68.9		98.9		87.3		97.6		60.0	
7	74.5		99.0		91.8		98.4		67.6	
8	79.4		99.3		93.6		99.0		74.4	
9	83.0		99.5		93.6		99.1		79.4	
10	87.2		99.8		96.4		99.5		85.0	
11	90.1		99.9		98.2		99.5		88.4	
12	100		100		100		100		100	

9.2 TREATMENT

The variable 'Administration of a treatment' in MPD contains information on treatments that are administered to the patient by the team. A patient that takes his pills without help of the team is not registered here. This information can therefore not be used to draw conclusions on the use of medication.

Table 9.3 shows the results for the five settings and Table 9.4 shows the results for the three length of stay groups in T. In hospital settings, helping the patient with the intake of the medication seems to be a standard practice that does not depend so much on the patient. In sheltered living this seems to be much less the case.

Table 9.3: Administration of a treatment to long-stay patients in T and reference settings

	T		T1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Injection	1606	34.0	393	19.9	29	26.9	260	9.1	989	31.8
Oral	4561	96.4	1633	80.5	103	93.6	1441	48.4	3046	96.8
Care after electroshock	38	0.8	1	0.1	0	0.0	12	0.4	7	0.2
Other specific care	1250	26.4	99	4.88	14	12.7	130	4.4	992	31.5

Table 9.4: Administration of a treatment to long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Injection	399	28.7	604	34.2	603	38.4
Oral	1335	96.0	1699	96.1	1531	97.4
Care after electroshock	10	0.7	10	0.6	17	1.1
Other specific care	298	21.4	438	24.8	518	33.0

9.3 SURVEILLANCE, SECLUSION AND RESTRANT

MPD registers different types of surveillance during the past 6 months. Table 9.5 shows that all types of surveillance related to freedom of movement (fixation, isolation, seclusion, control and prohibition of leaving) are generally more common in T compared to the other settings. Furthermore, surveillance on the patient for reasons of suicide or life risk is also clearly more common in T than in other settings.

Table 9.6 shows that controlling the patients on the use of substances (alcohol, drugs, medication) is less frequent when patients have longer stays. Control and prohibition measures of leaving decreases, however very slightly, for increasing length of stay. Checking the vital parameters increases slightly with length of stay.

Table 9.5: Surveillance on long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Risk for life/suicide	1481	31.3	210	10.4	18	16.4	321	10.8	377	12.0
Vital parameters	3749	79.2	905	44.6	62	56.4	475	15.9	2893	91.9
Being under influence	1313	27.8	432	21.3	38	34.6	640	21.5	268	8.5
By monitoring	103	2.2	3	0.2	0	0.0	16	0.6	14	0.4
Fixation	613	13.0	13	0.6	3	2.7	22	0.7	333	10.6
Isolation	478	10.1	3	0.2	7	6.4	18	0.6	30	1.0
Seclusion	647	13.7	9	0.4	14	12.7	16	0.5	163	5.2
Control of leaving	3064	64.8	470	23.2	47	42.7	184	6.2	1317	41.9
Prohibition of leaving	1208	25.5	72	3.6	18	16.4	66	2.2	386	12.3
Other measure	1302	27.5	290	14.3	35	31.8	844	28.3	871	27.7

Table 9.6: Surveillance on long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Risk for life/suicide	426	30.6	555	31.4	508	32.3
Vital parameters	1025	73.7	1418	80.2	1309	83.3
Being under influence	507	36.5	498	28.2	316	20.1
By monitoring	29	2.1	35	2.0	38	2.4
Fixation	180	12.9	247	14.0	191	12.2
Isolation	134	9.6	191	10.8	154	9.8
Seclusion	141	10.1	268	15.2	244	15.5
Control of leaving	941	67.7	1133	64.1	994	63.2
Prohibition of leaving	391	28.1	450	25.5	369	23.5
Other measure	321	23.1	465	26.3	516	32.8

9.4 EXAMINATIONS OF PATIENTS

Table 9.7 illustrates that physical examinations are generally less common in t1 and sheltered living. Psychiatric nursing homes and T-units are comparable on all physiological evaluations (physical examination, neurophysiologic examination, biological examination). Mental examinations and psychological tests are most common in T-units. Mental examinations, social examinations and psychological tests decrease when length of stay increases (Table 9.8) a lot of this information should be available after a long stay of the patient in the hospital. A slight decrease in discussions on the patient's situation (in team meetings, with network and medical-legal consultation) is observed, with increasing length of stay.

Table 9.7: Evaluations of long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Physical examination	3673	77.6	744	36.7	67	60.9	1240	41.6	2565	81.5
Mental examination	2627	55.5	824	40.6	56	50.9	591	19.8	967	30.7
Social examination	1995	42.2	764	37.7	46	42.8	1283	43.1	791	25.1
Psychological test	417	8.8	49	2.4	6	5.5	48	1.6	51	1.6
Evaluation care plan	4452	94.1	1639	80.8	102	92.7	1161	39.0	2684	85.3
Speech evaluation	87	1.8	12	0.6	3	2.7	4	0.1	20	0.6
Neurophysiologic exam.	1002	21.2	218	10.8	10	9.1	66	2.2	603	19.2
Biologic exam.	2538	53.7	555	27.4	33	30.0	351	11.8	1719	54.6
Meeting team	3833	81.2	1639	80.8	97	88.2	2559	85.9	2136	67.8
Consultation network	3083	65.2	1288	63.5	75	68.2	2165	72.7	1860	59.1
Medical-legal consultation	664	14.0	92	4.5	16	14.6	450	15.1	346	11.0
Specific protocol	446	9.4	54	2.7	18	16.4	44	1.5	170	5.4
Other specific evaluation	727	15.4	202	10.0	24	21.8	665	22.3	361	11.5

Table 9.8: Evaluations of long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Physical examination	1088	78.2	1347	76.2	1240	78.9
Mental examination	837	60.2	986	55.8	807	51.3
Social examination	761	54.7	744	42.1	496	31.5
Psychological test	211	15.2	134	7.6	73	4.6
Evaluation care plan	1326	95.3	1656	93.7	1475	93.8
Speech evaluation	33	2.4	38	2.2	17	1.1
Neurophysiologic exam.	279	20.1	391	22.1	331	21.1
Biologic exam.	686	49.3	988	55.9	869	55.3
Meeting team	1205	86.6	1477	83.5	1154	73.4
Consultation network	951	68.4	1148	64.9	988	62.9
Medical-legal consultation	238	17.1	248	14.0	181	11.5
Specific protocol	135	9.7	150	8.5	167	10.6
Other specific evaluation	220	15.8	237	13.4	273	17.4

9.5 MEDICATION (MPD DATASET)

MPD registers whether (yes or no) 9 general categories of medication have been prescribed/used in the last 6 months. The frequency and doses are not registered. (Table 9.9).

Anxiolytics and sleeping pills are most frequently administered in T-units. Neuroleptics are generally very frequently used for long stay psychiatric patients in all the settings (between 60 and 80% of the patients). Long-acting neuroleptics are administered to 1 in 5 patients in all settings, only in psychiatric nursing homes it is less frequent.

The use of antidepressants and sleeping pills decreases as length of stay increases. The use of long-acting neuroleptics increases with longer length of stay, and they are more frequently used among the very long stay patients. (Table 9.10)

Table 9.9: Medication for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Anxiolytics	2196	46.4	856	42.2	25	22.7	992	33.3	1046	33.2
Antidepressants	2175	46.0	1068	52.7	38	34.6	1199	40.3	917	29.1
Neuroleptics	3774	79.8	1318	65.0	77	70.0	1821	61.1	2373	75.4
Long-acting neuroleptics	941	19.9	435	21.5	20	18.2	527	17.7	364	11.6
Sleeping pills	1924	40.7	735	36.2	24	21.8	964	32.4	841	26.7
Mood stabilizers	697	14.7	324	16.0	16	14.6	272	9.1	193	6.1
Nootropics	192	4.1	62	3.1	1	0.9	73	2.5	97	3.1
Somatic medication	3823	80.8	1262	62.2	81	73.6	1651	55.4	2725	86.6
Other psychotropic drug	1233	26.1	437	21.6	19	17.3	327	11.0	948	30.1

Table 9.10: Medication for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Anxiolytics	658	47.3	824	46.6	719	45.7
Antidepressants	782	56.2	839	47.5	558	35.5
Neuroleptics	1069	76.9	1373	77.7	1339	85.2
Long-acting neuroleptics	231	16.6	358	20.3	355	22.6
Sleeping pills	607	43.6	731	41.4	587	37.3
Mood stabilizers	215	15.5	266	15.1	219	13.9
Nootropics	60	4.3	61	3.5	74	4.7
Somatic medication	1086	78.1	1436	81.2	1306	83.1
Other psychotropic drug	289	20.8	443	25.1	502	31.9

9.6 PSYCHOSOCIAL TREATMENTS

MPD registers what type of psychosocial treatment the patient has received during the last 6 months. Treatment here is taken in the broadest sense of the term (Table 9.11).

Counselling and supportive therapy is the most common type in all settings. Psychotherapy is much less frequently used and clearly more common in a hospital setting (T, t1, t2). Training of skills, such as every day life activities, occupational therapy, assistance with social interaction and integration are frequently registered.

Psychosocial treatments are less frequently offered for patients that stay longer in the hospital. All forms of therapy aiming at improving the patient's functioning, decrease as length of stay increases (individual psychotherapy and group psychotherapy, psychosocial or family therapy, psychomotor therapy). Similar observations are made about counselling and supportive therapy and rehabilitation (non-productive occupational therapy, training of cognitive skills, assistance with social interaction and integration). The only activities that increase in frequency with increasing length of stay are the training of the activities of daily life (ADL) and assistance with socio-cultural and leisure activities. We thus have some indications that for the longest residential patients, efforts for reintegration are diminishing. (Table 9.12)

Table 9.11: Psychosocial treatments for long-stay patients in T and reference settings

	T		t1		t2		IBW/IHP		PVT/MSP	
	n	%	n	%	n	%	n	%	n	%
Conversation	3746	79.2	1722	84.9	99	90.0	2777	93.2	1778	56.5
Relation/family therapy	447	9.5	153	7.5	14	12.7	141	4.7	59	1.9
Psychotherapy individ.	1427	30.2	567	28.0	35	31.8	175	5.9	252	8.0
Psychotherapy group	1188	25.1	674	33.2	43	39.1	193	6.5	97	3.1
Psychomotor therapy	2122	44.9	772	38.1	33	30.0	76	2.6	984	31.3
Speech therapy	238	5.0	23	1.1	5	4.6	5	0.2	56	1.8
Occupational therapy: econ. Prod.	710	15.0	543	26.8	35	31.8	389	13.1	318	10.1
Occupational therapy: non-prod.	2652	56.1	1473	72.6	47	42.7	753	25.3	1592	50.6
ADL training	2916	61.6	773	38.1	62	56.4	1428	47.9	1541	52.1
Socio-cultural and leisure	3135	66.3	953	47.0	66	60.0	1740	58.4	2338	74.3
Cognitive intellect. train.	1188	25.1	391	19.3	13	11.8	368	12.4	560	17.8
Psycho-pedagogic intervention	261	5.5	67	3.3	10	9.1	139	4.7	325	10.3
Social interaction and integration	2465	52.1	735	36.2	65	59.1	2164	72.6	1162	36.9
Other psychosocial treatment	952	20.1	325	16.0	20	18.2	786	26.4	779	24.8

Table 9.12: Psychosocial treatments for long-stay patients in T, per length of stay group

	1 – 2 years		2 – 6 years		More than 6 years	
	n	%	n	%	n	%
Conversation	1151	82.8	1406	79.5	1185	75.4
Relation/family therapy	228	16.4	153	8.7	68	4.3
Psychotherapy individ.	580	41.7	534	30.2	316	20.1
Psychotherapy group	479	34.4	439	24.8	275	17.5
Psychomotor therapy	749	53.9	771	43.6	606	38.6
Speech therapy	50	3.6	101	5.7	87	5.5
Occupational therapy: econ. Prod.	230	16.5	291	16.5	187	11.9
Occupational therapy: non-prod.	903	64.9	955	54.0	796	50.6
ADL training	830	59.7	1095	61.9	995	63.3
Socio-cultural and leisure	905	65.1	1149	65.0	1085	69.0
Cognitive intellect. train.	408	29.3	431	24.4	356	22.7
Psycho-pedagogic intervention	124	8.9	81	4.6	58	3.7
Social interaction and integration	824	59.2	899	50.9	745	47.4
Other psychosocial treatment	279	20.1	327	18.5	347	22.1

9.7 DIFFERENCES BETWEEN THE SETTINGS

The comparison of T-units and three reference settings (day hospitalisation, sheltered living and psychiatric nursing homes) is statistically corrected for patient characteristics in order to limit the impact of differences in patient mix on the differences in treatments.

For each of the treatment types we fit a GEE model, which takes into account clustering of patients within hospitals, and where the administration of the treatment is the binary response variable, and the setting (e.g. T versus t1) is the explanatory variable of interest. Patient characteristics were maintained in the model when they remained statistically significant.

Let us remind once again that information is not available on the frequency or intensity of different treatments. We can only make comparisons between the settings with respect to the number of patients that received a certain treatment, and not with respect to the number of times a treatment was administered.

Table 9.13 presents the results for medication based treatments. The results for psychosocial treatments and surveillance are presented in Table 9.14 and Table 9.15, respectively. A minus-sign indicates that the treatment is applied to a significantly larger number of patients in T-units compared to the respective alternative setting. A plus-sign then indicates that the specific treatment is more commonly applied in the alternative setting. An empty cell indicates no statistical difference.

Table 9.13 suggests that, among all settings for long-stay psychiatric patients, medication-based treatments are most common in T-units. All categories of psychotropic medication are administered to a larger number of patients in T compared to PVT/MSP, with an exception for the rest group of 'other psychotropic or psycho-physiological treatments'. Five out of seven medication groups are more frequently administered in T than in IBW/IHP, but no difference is found for long-acting neuroleptics and nootropics. T-units and day hospitalisation (t1) have similar frequencies of administration of antidepressants, mood stabilizers and nootropics. Long-acting neuroleptics are more frequently used in t1.

Table 9.13: Differences between T and reference settings regarding the administration of medication.

	t1	IBW/IHP	PVT/MSP
Anxiolytics	-	-	-
Antidepressants		-	-
Neuroleptics	-	-	-
Long-acting neuroleptics	+		-
Sleeping pills	-	-	-
Mood stabilizers		-	-
Nootropics			-
Somatic medication	-	-	
Other psychotropic/psychophysiologic	-	-	+

(-) treatment more frequent in T; (+) treatment more frequent in alternative setting ($p<0.05$)

Table 9.14 Psychosocial treatments are in general applied to a larger number of patients in T-units compared to the reference settings. In PVT/MSP assistance with socio-cultural and leisure activities, psycho-pedagogical intervention and 'other psychosocial treatments' are more frequently applied than in T. No difference is found between T-units and psychiatric nursing homes with respect to both types of occupational therapy. Initiatives for sheltered livinghave higher rates than T of counselling and supportive therapy, assistance with social interaction and integration, Equal numbers for assistance with socio-cultural and leisure activities are found between sheltered living and T. In day hospitalisation more group therapy and occupational therapy is applied, and equal amounts of counselling and supportive therapy and relation or family therapy.

Table 9.14: Differences between T and reference settings regarding the psychosocial treatments.

	t1	IBW/IHP	PVT/MSP
Conversation		+	-
Relation/family therapy		-	-
Psychotherapy individ.	-	-	-
Psychotherapy group	+	-	-
Psychomotor therapy	-	-	-
Speech therapy	-	-	-
Occupational therapy: econ. Prod.	+	-	
Occupational therapy: non-prod.	+	-	
ADL training	-	-	-
Socio-cultural and leisure	-		+
Cognitive intellect. train.	-	-	-
Psycho-pedagogical intervention	-	-	+
Social interaction and integration	-	+	-
Other psychosocial treatment	-		+

(-) treatment more frequent in T; (+) treatment more frequent in alternative setting ($p<0.05$)

Almost all types of surveillance are used more in T than in any of the other settings. Controlling the vital parameters is more frequently applied in PVT/MSP as well as the use of 'other measures'. Patients in day hospitalisation are equally frequently checked on the use of substances as patients in T. An odd result (although this type of surveillance is very rare in both settings) is that patients in sheltered living receive equally frequent surveillance by monitoring. In the MPD manual, surveillance by monitoring is conceived literally as surveillance by means of a monitor (e.g. electrocardiogram, tv-network, E.E.G.). Confusion with a much broader interpretation of the term 'monitoring' in mental health care is not to be excluded.

Table 9.15 : Differences between T and reference settings regarding different types of surveillance.

	tI	IBW/IHP	PVT/MSP
Risk for life/suicide	-	-	-
Vital parameters	-	-	+
Being under influence		-	-
By monitoring	-		-
Fixation	-	-	-
Isolation	-	-	-
Seclusion	-	-	-
Control of leaving	-	-	-
Prohibition of leaving	-	-	-
Other measure	-		+

(-) treatment more frequent in T; (+) treatment more frequent in alternative setting ($p<0.05$)

Key points

- **Basic care is most frequently provided in psychiatric nursing homes. However it is clearly much more frequent in T-units than in sheltered living or day hospitalization.**
- **All types of surveillance related to freedom of movement (fixation, isolation, seclusion, control and prohibition of leaving) are generally more common in T compared to the other settings.**
- **Also surveillance for risk of suicide or life is clearly more commonly applied in T-units.**
- **Neuroleptics are taken by 60 to 80% of all long-stay psychiatric patients, in the 5 settings. The use of neuroleptics is most common among patients with very long stays.**
- **Counselling and supportive therapy is much more frequently applied in the group of long-stay psychiatric patients than psychotherapy, in all the settings.**
- **The most common psychosocial treatments among long-stay psychiatric patients are activities with focus on coping with the problems (occupational therapy, ADL training, assistance with socio-cultural and leisure activities, assistance with social interaction and integration) more than on curing (psychotherapy).**
- **A majority of psychosocial treatment forms is offered less frequently to patients that are longer in the hospital. This is not only the case for different types of therapy but also for different forms of rehabilitation activities.**

9.8 CONSUMPTION OF HEALTH CARE (IMA DATASET)

The IMA-dataset contains detailed information on reimbursed health care consumption of the long stay patients in the study sample. The data analysed concern the period 01/01/2002 until 31/12/2003.

9.8.1 general overview

We grouped the numerous health care activities into a number of categories (see appendix 2). Table 9.16 describes per setting and category of activities the percentage of long stay patients that received at least one activity in the course of the studied period. The table gives an overview of the percentage of people for whom at least one activity in each category was invoiced during the last year. Moreover, the IMA data do not hold information on the content of a number of services (consultation GP, physiotherapy …). So it is quite possible that for many of the activities, there is not a direct link with the treatment of mental health problems.

Table 9.16: Percentage of long stay patients for whom at least one activity was invoiced during their stay per category of activities and per setting

	IBW / IHP N = 2.104	IBW / IHP + t1 N = 268	PVT / MSP N = 2.136	T N = 3.739	t1 n = 384	t2 N = 65	Total
Clinical biology	77,95%	100,0%	89,19%	100,0%	100,0%	100,0%	92,01%
Radiology	59,84%	64,18%	74,34%	70,58%	51,56%	44,62%	67,67%
Consultations, visits and advices	94,01%	80,97%	92,51%	41,08%	76,82%	36,92%	69,30%
Specialised services	61,74%	73,88%	77,25%	79,54%	62,24%	67,69%	73,64%
Surgery	41,54%	42,91%	45,79%	42,85%	32,81%	27,69%	42,70%
dental care	43,77%	50,75%	30,66%	39,90%	50,78%	44,62%	39,42%
nursing care	33,22%	19,78%	1,17%	2,09%	16,15%	4,62%	10,58%
physiotherapy	24,14%	10,07%	10,96%	5,94%	6,51%	1,54%	11,70%
Rehabilitation	5,23%	2,24%	1,08%	1,31%	1,56%	1,54%	2,24%
others	77,85%	100,0%	99,11%	100,0%	100,0%	100,0%	94,42%

* the category 'specialised activities ' = nucleair medicine, punctures, internal medicine, pneumonology, stomatology, la gastroenterology, la radiotherapy, …

9.8.1.1 Clinical biology

Clinical biology activities seem to be a common practice in the treatment of mentally ill persons, in all settings[11]. At the moment of admission it helps to draw a complete picture of the health problems (physical problems that could explain other f.i. behavioural problems, deficiencies, poisoning,…). Clinical biology is a support in the pharmacological treatment to determine the optimal dose, the concentration of certain substances in the blood, the control on the therapy fidelity, the examination on possible side effects of psycho pharmaceutical drugs).

In all hospital settings the proportion of consumers of clinical biology is 100 % for all age categories and for all lengths of stay[12].

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11 Part of the explanation could also be artifact, as a lump sum is being paid for clinical biology, whether or not the service is delivered

12 All background tables for length of stay and age can be found in appendix 8. For the ima data the analysis did not consider the interaction between length of stay and age. We always quote both variables in a simple approach.

This is to be explained as a lump sum for clinical biology is invoiced for every patient whether it is delivered or not. In IBW / IHP there is a variability between the age categories, but without a clear tendency. An analysis per length of stay results in a somewhat smaller proportion of consumers for longer stays (> 6 years). In PVT / MSP the proportion increases per age category. This increase in clinical biology is perhaps not in particular related to mental health treatment but to the older age structure and the more frequent occurrence of general health problems in older persons. In PVT/MSP the proportion tends to be smaller for shorter stays (probably a younger population).

Differences between the provinces in hospital settings were logically not observed. But for long stay patients in IBW / IHP and PVT / MSP, we do observe differences between the provinces. For both settings the smallest proportion is found in Brussel (respectively 63,5 % and 67,1 %). In IBW / IHP the highest proportions are found in Walloon provinces and in Limburg (83 % or more). The proportions in the other Flemish provinces vary from 71 % to 78 %. In PVT / MSP we also observe smaller proportions in Namur (80 %) and Vlaams Brabant (81 %). In all other provinces this was at least 91 %.

9.8.1.2 Radiology

A considerable proportion of long stay patients has been invoiced at least one radiological activity. The highest proportion is found for long stay patients in PVT / MSP. This could be due to the older age structure.

In T-units the proportion is somewhat higher for older long stay patients, with the exception of long stay patients older than 80 year. The proportion tends to be smaller for longer stays. In t1, IBW / IHP and PVT / MSP we observe an increase with age but not so clear with length of stay.

The proportion of invoiced radiologic activities differs between the provinces. In all settings the smallest proportion is found in long stay patients from Brussel. For long stay patients in T we observe an outlier value for Namur (82 %). For all other provinces the proportion varies between 63,7 % in Oost-Vlaanderen and 76,6 % in Brabant Wallon. For IBW / IHP and PVT / MSP we observe very different values between provinces with the smallest values for Brussel (respectively 49,3 % and 59,2 %).

9.8.1.3 Visits and consultations

The observed differences of the category 'visits and consultations' between the settings can at large be explained by differences in legal reimbursement regulations for each setting. In hospital settings (T, t1 and t2) a psychiatrist can not invoice a fee for activities separately as the cost of the treatment is covered by the daily fees for supervision. The observed visits and consultations in this category are thus taking place during absences from the hospital. Sheltered living follows the regulations of ambulatory settings: consultations with psychiatrists are invoiced separately. The important percentages observed for consultations and visits in psychiatric nursing homes and in sheltered living also include consultations for general practitioners.

In IBW / IHP, the proportion of patients for whom at least one consultation or visit was invoiced, doesn't vary with age. For long stay patients in psychiatric day treatment, the proportion of patients for whom a consultation or visit was invoiced decreases to the category of 51-60 years but increases for the older age category. For long stay patients in PVT / MSP, the general proportion does not vary with age.

In T, consultations and visits were generally invoiced for more patients in Walloon provinces. In psychiatric day treatment we observe clear differences between Flemish provinces. In IBW / IHP we observe high proportions in all provinces, but there are some differences (f.i. 72, 6 % in Brussel and 100 % in Luxemburg). In PVT / MSP we also observe high proportions for all provinces, but again the values in Brussel are the lowest (68,9 %).

9.8.1.4 *Dental care*

Only a minority of 39,4 % of the long stay patients received dental care in 2002 and / or 2003. This percentage is even lower for residents in PVT / MSP. Especially long stay patients in psychiatric day treatment, whether or not in combination with sheltered living seem to have a greater chance to bee seen by a dentist. This could be explained by the somewhat younger age structure.

In all settings the proportion of consumers of dental care clearly decreases with age (table 9.17). In t1 the proportions for patients older than 60 year are eye-catching. In T and PVT / MSP we observe, as expected due to an interaction with age, a decreasing tendency with length of stay (Table 9.18).

Table 9.17: proportion of long stay patients for whom at least one service of dental care was invoiced in 2002 or 2003 per setting and age category

	15-30	31-40	41-50	51-60	61-70	71-80	80+
T (n = 3.739)	62,37%	54,18%	42,44%	33,22%	30,83%	24,93%	17,45%
t1 (n = 384)	77,78%	71,60%	59,05%	51,69%	15,79%	20,00%	0,00%
PVT / MSP (n = 2.136)	56,25%	53,62%	47,88%	35,37%	26,90%	23,14%	12,20%
IBW / IHP (n = 2.104)	63,87%	57,38%	45,00%	35,18%	32,89%	26,92%	0,00%

Table 9.18: proportion of long stay patients for whom at least one service of dental care was invoiced in 2002 or 2003 per setting and length of stay

	1-2 year	2-6 year	6-10 year	More than 10 year
T (n = 3.739)	41,89 %	40,87 %	34,64 %	31,45 %
t1 (n = 384)	55,00 %	50,66 %	47,92 %	56,41 %
PVT / MSP (n = 2.136)	35,86 %	31,66 %	29,58 %	22,15 %
IBW / IHP (n = 2.104)	39,89 %	45,68 %	43,36 %	32,20 %

The smallest proportion of dental care was observed in Brussel (27,8%). In Vlaams Brabant dental care was invoiced for more than half of the long stay patients in T (54,9 %). In IBW / IHP, the differences between the provinces are smaller than for T. The highest proportion is found in Liege (49,4 %) and the smallest in Luxemburg (35,3 %). For all other provinces the value varies from 41,1 % to 48,1 %. In PVT / MSP the proportion in Vlaams Brabant is eye-catching (50 %). This is more than twice the value observed in Namur (21,6 %) and Hainaut (23,5 %).

9.8.1.5 *Home nursing activities*

About one third (33 %) of the long stay patients in sheltered living, and 16 % of the long stay patients in psychiatric day treatment receive home nursing. For long stay patients combining psychiatric day treatment with sheltered living this is 19 %. Patients in partial hospitalisation regimens probably receive ambulatory care during periods of absence from the hospital.

For long stay patients in psychiatric day treatment, as well as for long stay patients in IBW / IHP, the proportion of consumers of home nursing increases with age. Only in the age category 71-80 years the proportion observed in t1 exceeds the one observed in IBW / IHP.

In Liege more than one in two long stay patients in IBW / IHP received home nursing (55,7 %). The lowest values are observed in Brussel (12,3 %) and Luxemburg (17,7 %).

Key points

- **Clinical biology was invoiced at least once in a period of two years for all hospitalised long stay patients, regardless of their age, length of stay or province. It was also invoiced for the majority of the long stay patients in IBW/IHP and PVT/MSP, but with differences with age, length of stay and per province.**
- **In all settings there is a substantial proportion of long stay patients for whom radiology was invoiced. The proportion increases with age. There are differences between the provinces.**
- **Reimbursable dental care was not invoiced even once for about two thirds of the long stay patients for one year or more. In PVT/MSP the proportion is even higher, but it is lower in t1 and IBW+t1. Reimbursed dental care decreases with age and length of stay in T and PVT/MSP.**
- **Home nursing was invoiced at least once for one in three long stay patients in IBW/IHP, for one in six long stay patients in psychiatric day treatment and for almost one in five long stay patients combining sheltered living with psychiatric day treatment. The proportion increases with age in IBW/IHP and t1. In IBW/IHP we observe low values in Brussel (12 %) and Luxemburg (18 %) and a higher value in Liege (56 %).**

9.8.2 Specific activities

Following activities (nomenclature codes) in the competence of neuropsychiatrists were studied:

- so-called electroshocks: "Convulsive therapy with a chemical of physical process – the therapy really has to be convulsive – electronarcosis, by service (code 477050 / 477061). This nomenclature code is only in use since 01/09/2002. .
- "Polysomnographic examination of at least six hours with protocol and extracts from the lines."
  - "The continuous and simultaneous registration that contains at least the EEG, the EOG, ECG, de continuous oxymetry and two parameters of the respiration (codes 477374/ 477385)."
  - "The continuous electroencephalographic registering during at least 24 hours by means of a portable apparatus with magnetic band (technique of the Holter type) with a minimum of four derivations, the consultation at the moment of the placing and removing of the apparatus included, with protocol and extractions from the lines (codes 477411 / 477422)".

These activities are not frequently executed, but are more often executed in T-units than in other settings (Table 9.19). This certainly is the case for electroshocks.

Table 9.19: number of long stay patients per setting for whom specialised activities where invoiced

	IBW / IHP (N = 2.104)		IBW / IHP + t1 (N = 268)		PVT / MSP (N = 2.135)		T (N = 3.738)		t1 (N = 384)		t2 (N = 65)	
	N	%	N	%	N	%	N	%	N	%	N	%
code 477050 / 477061	3	0,1	0	0	0	0	41	1,1	1	0,3	0	0
codes 477374 / 477385	16	0,8	2	0,3	7	0,3	22	0,6	2	0,5	0	0
477411 / 477422	6	0,3	1	0,1	2	0,1	6	0,2	0	0	0	0
Total	24	1,1	3	0,4	9	0,4	68	1,8	3	0,8	0	0

Striking differences are observed between the provinces (Table 9.20). Table 9.21 and 9.22 and 9.23 give the results for respectively convulsive therapy and the two types of polysomnographic examination.

In all provinces the activities are mainly observed in T-units. In Flanders we observe small proportions in West-Vlaanderen (0,54 %) and Oost-Vlaanderen (0,76 %). In both provinces only ECT was applied. In Antwerp specialised services where applied for 2,35 % of the long stay patients in T; it mainly concerns polysomnographic examinations (1,91% and 0,44%). In Vlaams Brabant and Limburg, where they where applied for 3,2 to 3,9 %, it mainly concerns ECT.

Liege is an outlier, where electroshocks were invoiced at least once for 6,17 % of the long stay patients in T. ECT was applied for 5,29 %. Specialised services weren't applied for long stay patients in T in Brabant Wallon, Luxembourg and Namur. In Brussel the observed proportion is 2,02 % and exclusively concerns polysomnographic examinations.

For psychiatric day treatment the observed value for Vlaams Brabant (3,17%) is remarkable. It concerns both ECT (1,59%) and polysomnographic examinations (1,59%). Luxembourg has a too small number of long stay patients to discuss the values.

In IBW/IHP these services are rarely applied and if applied it concerns mostly polysomnographic examinations.

ECT was not applied in IBW/IHP+t1 and in PVT/MSP. In PVT/MSP we observe specialised services for only a small proportion of the long stay patients. For patients combining IBW/IHP with psychiatric day treatment, Antwerp is an outlier (7,5 %).

Table 9.20: proportion of long stay patients for whom at least one of the specialised services was applied in 2002 and / or 2003 per province and per setting.It mainly concerns polysomnographic examinations.

	Antwerpen	Vlaams Brabant	West Vlaanderen	Oost-Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem-bourg	Namur
T (n = 3.739)	2,35%	3,26%	0,54%	0,76%	3,93%	2,02%	0,00%	0,66%	6,17%	0,00%	0,00%
tI (n = 384)	0,00%	3,17%	0,00%	0,00%	0,00%	*0,00%*	*0,00%*	*0,00%*	*0,00%*	*33,33%*	*0,00%*
IBW/IHP (n = 2.104)	1,77%	2,14%	1,05%	0,00%	1,34%	0,46%	*5,26%*	2,70%	0,63%	0,00%	1,79%
IBW/IHP + tI (n = 268)	7,5%	0,00%	0,00%	0,00%	0,00%	*0,00%*	/	*0,00%*	*0,00%*	*0,00%*	*0,00%*
PVT/MSP (n = 2.136)	0,87%	0,00%	0,00%	0,22%	0,46%	0,00%	*0,00%*	0,43%	0,94%	*0,00%*	0,00%

Table 9.21: proportion of long stay patients for whom convulsive therapy was applied at least once in 2002 and / or 2003, per province and per setting.

	Antwerpen	Vlaams Brabant	West Vlaanderen	Oost Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem-bourg	Namur
T (n = 3.739)	0,15%	2,67%	0,54%	0,76%	2,95%	0,00%	0,00%	0,44%	5,29%	0,00%	0,00%
tI (n = 384)	0,00%	1,59%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
IBW/IHP (n = 2.104)	0,00%	0,53%	0,35%	0,00%	0,00%	0,00%	0,00%	0,00%	0,63%	0,00%	0,00%
IBW/IHP + tI (n = 268)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
PVT/MSP (n = 2.136)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

Table 9.22: proportion of long stay patients for whom a polysomnographic examination (codes 477374/ 477385) was applied at least once in 2002 and / or 2003, per province and per setting.

	Antwerpen	Vlaams Brabant	West Vlaanderen	Oost Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem-bourg	Namur
T (n = 3.739)	1,91%	0,30%	0,00%	0,00%	0,98%	2,02%	0,00%	0,00%	0,44%	0,00%	0,00%
tI (n = 384)		1,59%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	*33,33%*	0,00%	0,00%
IBW/IHP (n = 2.104)	1,42%	1,07%	0,70%	0,00%	0,89%	0,46%	*5,26%*	1,35%	0,00%	0,00%	1,79%
IBW/IHP + tI (n = 268)	5,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
PVT/MSP (n = 2.136)	0,87%	0,00%	0,00%	0,22%	0,46%	0,00%	0,00%	0,43%	0,00%	0,00%	0,00%

Table 9.23: proportion of long stay patients for whom a polysomnographic examination (codes 477411 / 477422) was applied at least once in 2002 and / or 2003 per province and per setting.

	Antwerpen	Vlaams Brabant	West Vlaanderen	Oost Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem-bourg	Namur
T (n = 3.739)	0,44%	0,30%	0,00%	0,00%	0,98%	2,02%	0,00%	0,00%	0,44%	0,00%	0,00%
t1 (n = 384)	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	*33,33%*	0,00%
IBW/IHP (n = 2.104)	0,71%	0,53%	0,00%	0,00%	0,89%	0,46%	*5,26%*	1,35%	0,00%	0,00%	1,79%
IBW/IHP + t1 (n = 268)	2,50%	0,00%	0,00%	0,00%	0,00%	0,00%	/	0,00%	0,00%	0,00%	0,00%
PVT/MSP (n = 2.136)	0,00%	0,00%	0,00%	0,22%	0,46%	0,00%	0,00%	0,43%	0,00%	0,00%	0,00%

9.8.2.1 Supervision on hospitalised patients

Besides a number of technical activities a psychiatrist is limited to invoice daily fees for supervision for hospitalised patients. The fees for supervision cover:

- The direct supervision of an admitted patient and his medical file;
- The direct contacts with the patient and his family;
- The contacts with the referring doctor;
- The coordination by the psychiatrist or neuropsychiatrist of multidisciplinary team meetings;
- The organization of diagnostic and therapeutic activities, executed by nurses, clinical psychologists and paramedics;
- The individual or collective psychotherapy and the starting and follow-up of the individual pharmaceutical treatment.

Some preliminary comments have to be made:

- A detailed analysis of the content of supervision is impossible with the IMA data. It would require an analysis of the medical files which is beyond the scope of our research.
- The fee for supervision is related to length of stay of a patient and to the type of unit (A, K, T). The fees are higher in units A than T. The amount diminishes with length of stay.
- There are no separate codes in case of partial hospitalisation. Consequently the information on unit A and unit T will relate to periods in A and T but can also relate to periods in a1, a2 or t1, t2.
- Only 1 long stay patient in sheltered living, about 30 long stay patients in T and 3 patients in psychiatric home nursing were invoiced for supervision in a unit K. Given the limited numbers this information is not mentioned in the table.

This information relates to the periods within a setting, absence of 6 months at the maximum included. Consequently hospital admissions / admissions in another unit before or after a stay are not taken into account.

Table 9.24: number of long stay patients per setting for whom fees for supervision where invoiced in 2002 and / or 2003 during a stay

Unit	Day / month	IBW / IHP (N = 2.104)		IBW / IHP + t1 (N = 268)		PVT / MSP (N = 2.136)		T (N = 3.739)		t1 (N = 384)		t2 (N = 65)	
		N	%	N	%	N	%	N	%	N	%	N	%
A	Day 1-12	545	25,9	59	22,0	131	6,1	16	4,3	2	0,5	2	3,1
	Day 13-30	484	23,0	54	20,2	101	4,7	171	4,6	3	1,0	2	3,1
	Day 31-90	324	15,4	46	17,2	58	2,7	237	6,3	4	1,0	2	3,1
	91st day - 7th month	151	7,2	31	11,6	23	1,1	209	5,6	4	1,0	2	3,1
	≥ 7* month	116	5,5	43	16,0	25	1,2	326	8,7	17	4,4	0	0,0
	Total	709	33,7	106	39,6	164	7,7	736	19,7	23	6,0	3	4,6
T / Sp6	Day 1-12	26	1,2	51	19,0	11	0,5	233	6,2	12	3,1	2	3,1
	Day 13-60	39	1,9	59	22,0	7	0,3	382	10,2	12	3,1	4	6,2
	61st day - 7th month	51	2,4	69	25,8	12	0,6	845	22,6	20	5,2	12	18,5
	7th – 13th month	46	2,2	69	25,8	10	0,5	1.196	32,0	34	8,9	17	26,2
	≥ 13th month	201	9,6	219	81,7	48	2,3	3.584	98,9	384	100	62	95,4
	Total	287	13,6	268	100	70	3,3	3.662	97,9	384	100	64	98,5

* There are no separate codes for the fees for supervision in A, K and Tf. given the limited number of long stay patients for whom fees for supervision in K and Tf where invoiced, we dare assume that there are mainly invoiced for long stay patients in units A from the 7th month on.

As could be expected, fees for supervision were invoiced for almost all hospitalised long stay patients[13]. The most frequently invoiced fees are those for patients in units T, t1 or t2 from the 13th month on. The invoicing of fees for shorter stays can be explained as absences for 6 months at the maximum are included in our sample. But only after an interruption of the hospitalisation of at least 30 days the fee for surveillance for day 1 to 12 can be invoiced again.

Long stay patients in T-units are sometimes (re)admitted to A-units (f.e. in case of crisis). Fees for supervision in A-units are invoiced for almost one in five long stay patients in T[14]. This is not the case for long stay patients in psychiatric day treatment or psychiatric night treatment.

Residents in psychiatric nursing homes are not often (re)admitted to a psychiatric unit of a hospital. Fees for supervision in units A, a1 and a2 are invoiced for only 7,7 % of the residents and fees for supervision in units T, t1 and t2 for only 3,3 % of the residents. This can partly be explained as one of the conditions for a stay in PVT / MSP is a stabilised condition. Moreover a PVT / MSP is a more medicalised setting than IBW / IHP.

13 Fees for supervision are normally always invoiced for each day of hospitalisation. Finding patients for whom not one fee for supervision was invoiced must be due to registration errors.

14 If a patient had a stay of at least three months in T, supervision fee of + three months will continue to be invoiced at an A unit. It is not possible to draw conclusions about length of stay in A-units from these results because of the specific rules for the invoicing of the fees. If a long stay patient is transferred temporary from a T-unit to an A-unit the counter of number of days in not reset at zero

In contrast, many long stay patients in IBW / IHP are sometimes treated in a psychiatric hospital in units with index A, a1 or a2. For some long stay patients (10%) the codes for at least 13 months of hospitalisation in T are invoiced. Given the regulation on the fees for supervision this necessarily relates to patients with a readmission in hospital after a short stay in sheltered living.

In general, we observe a decreasing proportion of invoiced supervision with age and with length of stay in IBW / IHP and for PVT / MSP, pointing to a decrease in hospital admissions for these groups.

In IBW/IHP we observe differences between the provinces (Table 9.25). In Wallonia fees for supervision were invoiced for a higher proportion of long stay patients in sheltered living.

Table 9.25: number of long stay patients in IBW/IHP and PVT/MSP for whom fees for supervision where invoiced in 2002 and / or 2003 during a stay per province

	Ant-werpen	Vlaams Brabant	West Vlaanderen	Oost Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem bourg	Namur
IBW/IHP (n = 2.104)	33,69%	28,88%	36,84%	25,54%	36,61%	36,53%	*47,37%*	51,35%	48,73%	47,06%	59,82%
PVT/MSP (n = 2.136)	13,87%	14,18%	4,65%	6,74%	5,50%	15,24%	*25,00%*	6,96%	10,33%	*50,00%*	5,41%

Since May 1st 2003, a specific fee can be invoiced for availability of a (neuro)psychiatrist during absences of patients with therapeutic aims in units A, K and T. The fee can be invoiced from the second month of hospitalisation, with a maximum of 3 days per calendar month and 21 days per calendar year. It cannot be invoiced after discharge. This fee for availability is invoiced for almost half of the long stay patients combining sheltered living with psychiatric day treatment. It is invoiced for 43 % of the long stay patients in psychiatric day treatment and for one in five of the long stay patients in T (Table 9.26).

Table 9.26: number of long stay patients for whom the fee for availability was invoiced in 2002 and / or 2003 during a stay (in %), per setting

	IBW / IHP (N = 2.104)	IBW / IHP + t1 (N = 268)	PVT / MSP (N = 2.136)	T (N = 3.739)	t1 (N = 384)	t2 (N = 65)
Fee for availability	2,09%	49,25%	0,05%	20,86%	42,71%	21,54%

Two other codes refer to fees that can be invoiced at the moment of admission or at the moment of discharge of hospitalised patients:

- From the 1st of May 2003 it is possible to invoice a fee for a psychiatric intake examination & a written report for patients in a unit A, K, T or Sp6. The examination has to be executed by a (neuro)psychiatrist.
- From the 1st of May 2003 it is also possible to invoice a fee for a psychiatric examination at the moment of discharge, a report included, for patient admitted in units with index A, K, T or Sp6. The exam has to be executed by a specialist in psychiatry or neuropsychiatry.

These activities are most frequently invoiced for long stay patients in T and sheltered living (whether or not in combination with psychiatric day treatment). (Table 9.27)

This confirms the finding that long stay patients in sheltered living are from time to time readmitted to hospital. For a very low proportion of long stay patients in PVT / MSP these fees where invoiced.

Table 9.27: number of long stay patients for whom a specific fee at the moment of intake or discharge was invoiced in 2002 and / or 2003, per setting

	IBW / IHP (N = 2.104)		IBW / IHP + t1 (N = 268)		PVT / MSP (N = 2.136)		T (N = 3.739)		t1 (N = 384)		t2 (N = 65)	
	N	%	N	%	N	%	N	%	N	%	N	%
Intake	83	3,9	19	7,1	9	0,4	48	1,3	3	0,8	1	1,5
discharge	115	5,5	35	13,1	10	0,5	224	6,0	13	3,4	2	3,1
Intake and / or discharge	137	6,5	41	15,3	18	0,8	236	6,3	15	3,9	2	3,1

9.8.3 Specific consultations and visits

Consultations and visits of doctors, can be differentiated between contacts with GP's, contacts with specialists in neurology, psychiatry or neuropsychiatry and contacts with other specialists. We focus on consultations with a specialist in neurology, psychiatry or neuropsychiatry (Table 9.28) .

Table 9.28: number and proportion of long stay patients for whom fees for consultations of specialists in neurology, psychiatry and / or neuropsychiatry were invoiced in 2002 and / or 2003 per setting

	IBW / IHP (N = 2.104)		IBW / IHP + t1 (N = 268)		PVT / MSP (N = 2.136)		T (N = 3.739)		t1 (N = 384)		t2 (N = 65)	
	N	%	N	%	N	%	N	%	N	%	N	%
Consultations	1.345	63,9	86	32,1	146	6,8	117	3,1	20	5,2	4	6,2

Two in three long stay patients in sheltered living consulted or visited a specialist. This proportion remains rather stable for long stay patients up to 60 year, but is lower for older long stay patients. There is no correlation with length of stay. Analysing the services of (neuro)psychiatrists (without the services of neurologists), we observe a decreasing tendency with age (Table 9.29). The proportion of consumers tends to be smaller for longer stays (more than 6 years) (Table 9.30). The proportion of services of GP's in IBW / IHP is higher for the two oldest age categories, but also for younger long stay patients the proportion amounts to 86 % or more.

Table 9.29: percentage of long stay patients in IBW/IHP for whom at least one service of a specialist in (neuro)psychiatry was invoiced in 2002 or 2003 per age category.

15-30	31-40	41-50	51-60	61-70	71-80	80+
82,58%	79,86%	78,10%	75,54%	59,73%	43,59%	33,33%

Table 9.30: percentage of long stay patients in IBW/IHP for whom at least one service of a specialist in (neuro)psychiatry was invoiced in 2002 or 2003 per category of length of stay.

1-2 years	2-6 years	6-10 years	More than 10 years
74,45%	75,87%	60,84%	61,02%

In Brussel a lower value is observed for for services of GP's (57,1 %) in IBW / IHP. The value of Vlaams Brabant (80,2 %) is lower than in other provinces.

Services of (neuro)psychiatrists were invoiced in the Flemish provinces for 71 % to 75 % of the long stay patients, with the least in Oost-Vlaanderen (66,8 %). Higher proportions are observed for the Walloon provinces (77,7 % to 94,1 %). In Brussels we observe 68,5 %.

For the subgroup combining sheltered living with psychiatric day treatment an activity of a neurologist and / or (neuro)psychiatrist was invoiced for one in three long stay patients. The highest proportions are found for the younger long stay patients and for shorter stays.

In hospital settings and PVT / MSP these activities are covered by a lump sum. The results for these settings necessarily refer to activities during an absence from hospital.

The consultations and visits invoiced are mainly for activities of GP's and / or other specialists. Rather small proportions of neuropsychiatrist consultations are observed for all age categories. In t1 the proportion of patients receiving services of GP's decreases to the age category of 51-60 year. For services of (neuro)psychiatrists the proportion does not differ very much between the age categories or with length of stay.

A fee can be invoiced by a GP for a visit to a hospitalised person, if the patient or a family member request it. This fee is payable only once per period of admission. It can not be cumulated with the fee for other services except for a selected number of activities that are not executed on the same day. The fee also covers the relocation costs (code *109723*). This fee is mostly invoiced for long stay patients in PVT / MSP and IBW / IHP, both settings in which a generalist still has an important role in the care for the residents. The invoicing is remarkably low for long stay patients in T, partly to be explained through the strict regulations for reimbursement of this activity. (Table 9.31)

Table 9.31: number and proportion of long stay patients for whom fees for a visit of a generalist to a hospitalised patient were invoiced in 2002 and / or 2003 per setting

	IBW / IHP (N = 2.104)		IBW / IHP + t1 (N = 268)		PVT / MSP (N = 2.136)		T (N = 3.739)		t1 (N = 384)		t2 (N = 65)	
	N	%	N	%	N	%	N	%	N	%	N	%
Generalist – visit to hospitalised patient	112	5,3	13	4,9	141	6,6	5	0,1	21	5,5	0	0

9.8.4 Psychotherapy

Also for ambulant patients there are specific codes to invoice the fees for activities referring to psychotherapeutic treatment. This only refers to activities by (neuro)psychiatrists and not to activities of non-medical therapists. Table 9.32 gives for each setting the number and percentage of long stay patients for whom at least one code referring to ambulant psychotherapeutic treatment has been invoiced during his stay in the course of 2002 and / or 2003. We found that one in four long stay patients in sheltered living received ambulant psychotherapeutic treatment. This is not illogical as this kind of service is not covered by the lump sum paid by the RIZIV / INAMI to the IBW / IHP. As to the other settings the lump sum does cover this.

In IBW / IHP there is a clear correlation with age: for younger long stay patients psychotherapy is invoiced for 36: up to the age of 30 but only for 6 % for long stay patients older than 70 (Table 9.33).

Psychotherapy is invoiced for one in three patients with length of stay of 1 to 2 years and only for 8 % for patients with length of stay of at least 10 years (Table 9.34).

Table 9.32: number and proportion of long stay patients for whom fees for ambulant psychotherapeutic activities were invoiced in 2002 and / or 2003 per setting

	IBW / IHP (N = 2.104)		IBW / IHP + t1 (N = 268)		PVT / MSP (N = 2.136)		T (N = 3.739)		t1 (N = 384)		t2 (N = 65)	
	N	%	N	%	N	%	N	%	N	%	N	%
psychotherapy	528	25,1	26	9,7	35	1,6	58	1,6	12	3,1	0	0

Table 9.33: proportion of long stay patients for whom fees for ambulant psychotherapeutic activities were invoiced in 2002 and / or 2003 per setting and per age category

	IBW / IHP (N = 2.104)	IBW / IHP + t1 (N = 268)	PVT / MSP (N = 2.136)	T (N = 3.739)	t1 (N = 384)
15-30	36,1%	6,3%	0%	4,8%	0%
31-40	35,6%	13,7%	8,7%	2,9%	3,7%
41-50	28,1%	10,9%	4,6%	1,6%	6,7%
51-60	21,1%	9,1%	1,3%	0,5%	0%
61-70	11,4%	3,9%	1,2%	1%	1,8%
71-80	6,4%	0%	0,6%	0%	3,3%
80+	0%	/	0%	0%	0%

Table 9.34: proportion of long stay patients for whom fees for ambulant psychotherapeutic activities were invoiced in 2002 and / or 2003 per setting and per length of stay

	IBW / IHP (N = 2.104)	IBW / IHP + t1 (N = 268)	PVT / MSP (N = 2.136)	T (N = 3.739)	t1 (N = 384)
1-2 years	32,73%	5,88%	3,29%	2,45%	5%
2-6 years	24,13%	12,89%	1,70%	1,34%	3,93%
6-10 years	14,69%	10,26%	1,29%	0%	1,04%
More than 10 years	8,74%	0%	0%	0%	2,56%

There are differences between the provinces (Table 9.35). For long stay patients in T, for whom these services can only be invoiced during absences from hospital, the highest proportions are observed in Liege (4,85%) and Brussel (3,54%). The value for Hainaut (0,22%) is the overall lowest.

For long stay patients in IBW/IHP, the proportion is very different between provinces, with more variability in the Walloon provinces. In Brussel (44,29%) and Liege (46,20%) psychotherapy is invoiced for more than two in five, in contrast to Luxemburg for only one in twelve (8,82%).

Table 9.35: proportion of long stay patients for whom fees for ambulant psychotherapeutic activities were invoiced in 2002 and / or 2003 per setting and per province

	IBW / IHP (N = 2.104)	IBW / IHP + tl (N = 268)	PVT / MSP (N = 2.136)	T (N = 3.739)	tl (N = 384)
Antwerpen	26,24%	15,00%	0,87%	2,06%	3,39%
Vlaams Brabant	21,39%	6,25%	1,49%	2,08%	1,59%
West Vlaanderen	13,33%	2,78%	1,16%	0,54%	4,11%
Oost Vlaanderen	20,00%	6,90%	0,00%	1,32%	1,83%
Limburg	17,41%	12,50%	0,46%	0,66%	*0,00%*
Brussel	44,29%	50,00%	14,02%	3,54%	*22,22%*
Brabant Wallon	63,16%	/	0,00%	1,56%	*0,00%*
Hainaut	21,62%	25,00%	0,87%	0,22%	*20,00%*
Liege	46,20%	0,00%	0,94%	4,85%	*0,00%*
Luxembourg	8,82%	0,00%	0,00%	2,27%	*0,00%*
Namur	30,36%	0,00%	0,00%	1,75%	*4,00%*

9.8.5 Collective holiday camps during a psychiatric admission

Collective holiday camps are organised and led by and under the responsibility of the psychiatric institutions. A non interrupted holiday camp can not last more than two weeks and can not take place at the end of an admission.

Table 9.36 presents the results for long stay patients in T-units per length of stay. We observe an increasing tendency in the proportion of long stay patients for whom the codes for collective holiday camps were invoiced.

This activity is invoiced for a smaller proportion of long stay patients older than 60 year.

Table 9.36: number and proportion of long stay patients for whom the codes referring to collective holiday camps during a psychiatric admission were invoiced in 2002 and / or 2003 per setting

		1-2 years	2-6 years	6-10 years	> 10 years	Total
T	N	128	145	72	43	388
(n = 3.739)	%	8,24	9,70	17,69	15,19	10,38

Key points

- **Electroshocks and polysomnographic examinations were mainly invoiced for long stay patients in T and to a lesser extent IBW/IHP. The numbers remain small. We observed differences between the provinces. In T, the overall highest value was observed in Liege.**
- **The proportion of long stay patients in IBW/IHP that consulted a (neuro)psychiatrist decreases with age and tends to be smaller for longer stays. These services were generally invoiced for a higher proportion of Walloon long stay patients.**
- **Many long stay patients in T had at least one contact with a generalist. There are differences between the provinces. Higher proportions are observed in the two oldest age categories. For younger long stay patients the proportion amounts to 86 % or more.**

- **For one in five long stay patients in T supervision by (neuro)psychiatrists was invoiced in A-units. Supervision in T was invoiced at least once for 14 % of the long stay patients in IBW/IHP. One in three has been admitted in an A-unit. The invoicing of supervision and thus the (re)admission in hospital, decreases with age. The proportion of patients for whom supervision in invoiced tends to be higher in Wallonia. It is rarely invoiced for long stay patients in PVT/MSP.**
- **The fee for availability during therapeutic absences was invoiced for one in five long stay patients in T and for almost half of the long stay patients in IBW/IHP.**
- **Psychotherapeutic treatment by a (neuro)psychiatrist was invoiced for one in four long stay patients in IBW/IHP. The proportion decreases with age and length of stay. We observed differences between the provinces, especially in Wallonia.**
- **10 % of the long stay patients in T attended at least once a reimbursed collective holiday camp. This proportion decreases with length of stay.**

9.9 MEDICATION (IMA DATA-SET)

Just like MPD, the IMA-dataset contains detailed information on the prescribed medication.[15] Both datasets have their particularities:

- The MPD data refer to the administration of medication during the past six months while IMA-data relate to the utilisation during the period 01/01/2002-31/12/2003.
- MPD classifies the medication in 9 very general categories while IMA-data can analyse the medication use at a very detailed level. It is not easy to link the categories of both classifications.
- MPD only registers the medication administered during the stay in a specific unit in one hospital while IMA includes the medication utilised in another setting / hospital / unit for absences shorter than six months.
- The IMA database partly lacks information on non reimbursable medication (D-category). Information on D-medication is only available if these drugs are delivered by a hospital pharmacy (i.e. hospitalised persons during their stay and the majority of residents in psychiatric nursing homes). For residents in sheltered living information on category D medication is thus only available for the periods spent in hospital.
- As a consequence of previous point the information about the use for certain categories of N-medication is of limited value, especially for patients in sheltered living (IBW/IHP). In particular for the D-medication subgroups ‘anxiolytics’ and ‘hypnotics and sedatives’, to a lesser extent for other N-subcategories containing a number of D-medications.

9.9.1 Method

Using descriptive statistics, a sketch is made of the proportion of long stay patients in the different settings that utilised different drug types. The analysis is not focussing on patient profiles and / or clinical profiles as IMA has no information on this. Moreover the analysis is descriptive and did not focus on DDD analysis.

The analysis used the following operationalisations:

15 As explained in the technical note relative to the IMA-dataset, we can not be sure that the medication was consumed. But given the settings under study we assume that a great majority of patients actually consumes it. In this section we often use the term medication use or consumption, while strictly conceptual we should use “prescribed and reimbursed”.

- Prescribed medication refers to the period 2002 or 2003. We take into account two years because some long stay patients could have had only a small stay in 2003. The analysis sketches prescribed medication of the last year.
- Our operationalisation of "long stay patients" has particular implications: for long stay patients in T-units medication use after discharge in 2003 is not taken into account. The utilisation during temporary intermediate stays of less than six months in another setting / unit is taken into account.
  - For example, a patient is admitted in a T-unit from January 1st until March 31st and from May 1st until June 30th, the whole period from January 1st until June 30th is taken into account. If a stay starts in 2001 and finishes in 2004, we will only take into account the precription in 2002 and / or 2003. The same principle is applied for the long stay patients in other settings.
- The statistics are limited to counting whether a long stay patient used a certain class of medication or not. Once a (even one) drug from a specific category has been prescribed and reimbursed, a long stay patient is included as a "user" of that type of medication. The percentages of users per setting thus only offer a very general view, without much detail. Moreover, the analysis is not focussing on daily doses, period of use …) etc.
- Complementary to the latter remark: in a hospital setting the treatment refers to one day. In an ambulant setting (IBW/IHP included) it refers to the utilisation of one "package". A package implies that a treatment can last longer than one day.
- For the category of N-medication we differentiated occasional and chronic users by a very general proxy. A long stay patient is considered as an occasional consumer if only one packing or unity was prescribed. If at least two were prescribed the long stay patient is labelled as a routine consumer.

The analysis is using the Anatomical Therapeutic Chemical Classification System (ATC-codes). For each class five sublevels are defined. Table 9.37 gives the overview of the first level ATC-codes.

Table 9.37: Overview of the anatomical therapeutic chemical classification system (first level)

ATC-code	Description
A	Alimentary tract and metabolism
B	Blood and blood forming organs
C	Cardiovascular system
D	Dermatologics
G	Genito-urinary system and sex hormones
H	Systemic hormonal preparations, excluding sex hormones and insulins
J	Anti-infectives for systemic use
L	Antineoplastic and immunomodulating agents
M	Musculo-skeletal system
N	Nervous system
P	Antiparasitic products, insecticides and repellents
R	Respiratory system
S	Sensory organs
V	Various

9.9.2 Results

Table 9.38 makes the overview of the prescribed medication of ATC level 1:

- In all settings, almost all long stay patients get (reimbursed) medication during their stay.
- The highest proportion of long stay patients utilising medication for each first level ATC-category, is observed in T-units and in psychiatric nursing homes.
- The highest proportion in all settings are long stay patients utilising nervous system medication (N-category) (96,3 %). Still, almost 10 % of the study population in sheltered living did not use reimbursed N-medication during their stay in 2002 or in 2003.
- Other frequently prescribed medication groups are: anti-infectives for systemic use (ATC1 = J), alimentary tract and metabolism (ATC1 = A) and respiratory system (ATC1 = R). But more differences are observed between the settings. Part of these differences could on the one hand be explained by differences in the prevalence of side effects of N-medication, on the other hand by age structure of the population and the prevalence of somatic problems.

Table 9.38: number and percentage of long stay patients that utilised one or more drugs during their stay classified per setting and per first level ATC-code (2002 or 2003)

	IBW / IHP (N=2.272)		PVT / MSP (N=2.136)		T (N=3.739)		t1 (N=484)		t2 (N=65)		Total
	N	%	N	%	N	%	N	%	N	%	
A	1.078	47,5%	1.678	78,6%	3.050	81,6%	207	42,8%	34	66,2%	69,5%
B	673	29,6%	1.048	49,1%	1.465	39,2%	78	16,1%	18	35,4%	37,7%
C	830	36,5%	1.380	64,6%	1.936	51,8%	185	38,2%	26	43,1%	50,1%
D	842	37,1%	1.356	63,5%	2.343	62,7%	150	31,0%	35	60,0%	54,4%
G	427	18,8%	542	25,4%	993	26,6%	94	19,4%	12	18,5%	23,8%
H	382	16,8%	427	20,0%	633	16,9%	54	11,2%	5	7,7%	17,3%
J	1.557	68,5%	1.995	93,4%	3.201	85,6%	337	69,6%	44	78,5%	82,0%
L	38	1,7%	73	3,4%	79	2,1%	2	0,4%	0	0,0%	2,2%
M	1.117	49,2%	1.034	48,4%	1.996	53,4%	198	40,9%	23	43,1%	50,2%
N	2.057	90,5%	2.097	98,2%	3.704	99,1%	459	94,8%	61	95,4%	96,3%
P	29	1,3%	24	1,1%	110	2,9%	7	1,5%	2	3,1%	2,0%
R	864	38,0%	1.448	67,8%	2.576	68,9%	178	36,8%	40	63,1%	58,7%
S	357	15,7%	686	32,1%	1.139	30,5%	69	14,3%	13	26,2%	26,0%
V	415	18,3%	568	26,6%	675	18,1%	23	4,8%	3	9,2%	19,4%
Z *	1	0,04%	6	0,3%	3	0,1%	0	0,0%	0	0,0%	0,1%
Total	2.212	97,40%	2.135	99,95%	3.737	99,95%	482	99,59%	65	100,00%	99,25%

(*) ATC code not known

9.9.2.1 medication and age

For the majority of first level ATC-categories, the proportion of users rises with age. For the first level ATC N-category, the overall proportion of users remains rather stable. But there are some differences between settings (Table 9.39). Despite the sometimes small numbers, in T-units there is no association between age and utilisation, while in psychiatric nursing homes and t1-units increasing age seems to go hand in hand with (slightly) decreasing utilisation.

As mentioned before, this analysis is not giving any information on the doses (DDD). This DDD analysis will probably reveal more differences.

Table 9.39: number and percentage of long-stay patients utilising N-medication during their stay (2002 or 2003) per setting and per age category

	15-30		31-40		41-50		51-60		61-70		71-80		80+	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
T (n = 3.739)	395	99,8%	547	99,5%	889	98,8%	881	99,2%	513	98,8%	335	99,4%	144	96,6%
t1 (n = 484)	21	100%	94	97,9%	138	95,8%	105	93,8%	64	88,9%	33	94,3%	4	100%
PVT / MSP (n = 2.272)	16	100%	69	100%	254	98,1%	532	98,5%	582	98,5%	486	97,8%	158	96,3%
IBW / IHP (n = 2.136)	151	89,9%	429	92,7%	595	92,7%	546	90,6%	264	85,4%	67	82,7%	5	83,3%
Total (n = 8.696)	593	96,9%	1.151	96,7%	1.897	96,5%	2.076	96,2%	1.427	95,5%	922	96,9%	312	96,3%

9.9.2.2 medication and length of stay

Length of stay seems in general terms to be negatively related to the proportion of users for almost all first level ATC-categories. Maybe, this can be explained by the fact that after a certain period patients are more or less stabilised and that pharmaceutical treatment focuses more on maintenance rations. Another explanation can be that side effects of medications disappear f.i. after changing to another drug or adapting the dose.

The proportion of long stay patients utilising N-medication is quite stable in T-units and in psychiatric nursing homes with length of stay (Table 9.40). A non negligible proportion of long stay patients in sheltered living have no prescribed and reimbursed N-medication.

Table 9.40: number and percentage of long-stay patients utilising N-medication during their stay (2002 or 2003) per setting and per length of stay

	1-2 years		2-6 years		6-10 years		> 10 years	
	N	%	N	%	N	%	N	%
T (n = 3.739)	1.540	99,1%	1.480	99,0%	405	99,5%	279	98,6%
t1 (n = 484)	19	95,0%	228	97,0%	141	91,6%	71	94,7%
PVT / MSP (n = 2.272)	299	98,4%	1.216	98,7%	303	97,4%	279	96,5%
IBW / IHP (n = 2.136)	455	87,8%	1.407	92,2%	143	87,7%	52	80,0%

Key points

- **For each first level ATC-category the highest proportion of users is observed in T-units or PVT/MSP. In all settings and for most ATC-categories, the proportion tends to increase with the age and decrease with length of stay.**
- **Of all ATC-categories, the highest proportion of users is found for the N-category. In T-units we did not observe an association with age or length of stay.**
- **10% of the long stay patients in IBW/IHP did not use N-medication during their stay in 2002 or 2003.**
- **Anti-infectives (J), drugs for alimentary tract and metabolic conditions (A) and for the respiratory system (R) where the other most frequently utilised ATC-categories.**

9.9.3 Medication for the nervous system during a stay

This section sketches the utilisation of medication for the nervous system (N-category as in Table 9.41). We focused on a selected number of N-categories and subcategories for which we found a considerable proportion of users in T-units. Additionally, the experts consulted in this study referred to the particular utilisation of pipamperone and clotiapine (to obtain behavioural stabilisation), clozapine (in case of resistance to more classical drug regimes) and medication in case of alcohol abuse (acamprozaat). These drugs could possibly indicate patients difficult to treat.

Table 9.41: subdivision of the N-category

N-code	Description	Clarification
N03	Anti-epileptics	
N04	Anti-parkinson drugs	
N04A	Anticholinergic agents	
N04B	Dopaminergic agents	
N05	Psycholeptics	
N05A	Antipsychotics	
N05AA	Phenothiazines with aliphatic side chain	Classical antipsychotics
N05AA02	Levomepromazine	
N05AC	Phenothiazines with piperidine structure	Classical antipsychotics
N05AC02	Thioridazine	
N05AD	Butyrophenone derivatives	Classical antipsychotics
N05AD01	Haloperidol	
N05AD05	Pipamperone	
N05AD06	Bromperidol	
N05AD07	Benperidol	
N05AF	Thioxanthene derivatives	Classical antipsychotics
N05AF01	Flupentixol	
N05AF05	Zuclopenthixol	
N05AG	Diphenylbutylpiperidine derivatives	Classical antipsychotics
N05AH	Diazepine, oxazepine, and thiazepine	Atypical antipsychotics
N05AH02	Clozapine	utilised in case of therapy resistant schizophrenia
N05AH03	Olanzapine	
N05AH04	Quietiapine	
N05AL	Benzamides	Classical antipsychotics
N05AL05	Amisulpride	
N05AN	Lithium	
N05AX	Other antipsychotics	
N05AX07	Prothipendyl	Classical antipsychotics
N05AX08	Risperidone	Atypical antipsychotics
N05AX09	Clotiapine	Atypical antipsychotics
N05B	Anxiolytics	
N05BA	Benzodiazepine derivatives	
N05BA01	Diazepam	
N05BA05	Clorazepate potassium	

N05BA06	Lorazepam	
N05BA12	Alprazolam	
N05C	Hypnotics and sedatives	
N05CD	Benzodiazepine derivatives	
N05CD01	Flurazepam	
N05CD06	Lormetazepam	
N05CD08	Midazolam	
N06	Psychoanaleptics	
N06A	Antidepressants	
N06AA	non selective monoamine oxidase inhibitors	
N06AB	Selective serotonin reuptake inhibitors	
N06AX	Other antidepressants	
N06AX05	Trazodone	
N06AX11	Mirtazapine	
N06AX16	Venlafaxine	
N06B	Psychostimulants	
N07	Other nervous system drugs	
N07BB	Drugs used in alcohol dependence	
N07BC	Drugs used in opioid dependence	
N05AD05/N05AX09	Drugs used for behavioural regulation	

9.9.3.1 General findings[16]

- For most N-categories and subcategories the highest proportions of long stay patients getting prescribed at least one drug is generally found in T-units followed by psychiatric nursing homes (be it with often comparable values). For a number of subcategories the highest proportion is found in long stay patients combining sheltered living with psychiatric day treatment.
- Psycholeptics were prescribed to 92 % of the study population. This proportion is higher in T-units and PVT / MSP and lower in IBW / IHP, but still prescribed at least once to more than 80 % of the population.
- More than half of the global long stay population and 60 % of the long stay patients in T-units utilised psycho-analeptics. In PVT / MSP the proportion is lower.
- Over 40 % got anti-parkinson drugs prescribed. The highest proportion was found in PVT / MSP and is at least partly to be explained by differences in age structure of the population. For long stay patients in IBW / IHP we found a lower proportion.
- 10 % of the population got one or more of the other nervous system drugs studied prescribed. For long stay patients in sheltered living this is 16 %; for long stay patients combining sheltered living with psychiatric day treatment only 6,7 %.
- Questions could be raised on polypharmacy, but our analysis is not detailed enough to make a detailed analysis (summing the specific products within a general class is often more than the total sum, potentially indicating the use of more than one medication within the

16 The proportion of users refers to the percentage of patients that used one or more of the drugs selected. We did not take into account all drugs of a category.

same class) a further analysis would be needed on sequences of prescription and doses to be able to make clear statements.

Table 9.42: proportion of long stay patients utilising N-medication during their stay (2002 or 2003) per setting

		IBW / IHP (n = 2.104)	IBW / IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)	Total (n = 8.696)
N03	**Anti-epileptics**	17,73%	20,90%	21,0%	31,6%	14,84%	10,8%	24,4%
N04	**Anti-parkinson drugs**	31,80%	39,55%	47,0%	43,5%	39,06%	30,8%	41,1%
N04A	*Anticholinergic agents*	31,27%	39,18%	*45,7%*	*42,4%*	37,50%	*30,8%*	*40,1%*
N04B	*Dopaminergic agents*	0,76%	0,37%	*3,0%*	*2,2%*	2,08%	*0,0%*	*1,97%*
N05	**Psycholeptics**	82,13%	89,93%	94,9%	96,7%	86,46%	81,5%	92,0%
N05A	*Antipsychotics*	76,52%	84,70%	*89,7%*	*91,8%*	78,65%	*72,3%*	*86,7%*
N05AA	Phenothiazines with aliphatic side chain	12,93%	10,82%	17,7%	19,5%	7,29%	10,8%	16,6%
N05AA02	Levomepromazine	12,17%	8,21%	16,1%	17,9%	6,51%	6,2%	15,2%
N05AC	Phenothiazines with piperidine structure	4,90%	5,60%	7,9%	8,1%	7,03%	9,2%	7,2%
N05AC02	Thioridazine	4,66%	5,60%	7,2%	7,8%	7,03%	9,2%	6,8%
N05AD	Butyrophenone derivatives	29,71%	31,72%	48,0%	45,2%	27,86%	30,8%	40,8%
N05AD01	Haloperidol	16,11%	17,91%	27,6%	23,0%	15,36%	4,6%	21,8%
N05AD05	Pipamperone	9,27%	11,19%	17,7%	20,2%	8,07%	16,9%	16,1%
N05AD06	Bromperidol	6,89%	6,34%	5,6%	6,9%	6,77%	10,8%	6,6%
N05AD07	Benperidol	1,52%	1,49%	4,4%	5,1%	1,56%	4,6%	3,8%
N05AF	Thioxanthene derivatives	14,16%	16,42%	19,2%	25,7%	16,67%	16,9%	20,6%
N05AF01	Flupentixol	6,04%	5,97%	3,6%	4,8%	8,07%	3,1%	4,9%
N05AF05	Zuclopenthixol	8,75%	10,82%	16,2%	22,4%	9,64%	15,4%	16,6%
N05AG	Diphenylbutylpiperidine derivatives	4,94%	4,85%	5,4%	3,6%	4,43%	0,0%	4,4%
N05AH	Diazepines, oxazepines and thiazepines	26,43%	37,31%	30,7%	48,0%	22,66%	29,2%	36,9%
N05AH02	Clozapine	4,04%	13,43%	4,8%	12,5%	7,29%	12,3%	8,4%
N05AH03	Olanzapine	18,77%	21,64%	21,5%	29,5%	11,98%	16,9%	23,8%
N05AH04	Quietiapine	6,56%	6,34%	7,9%	16,0%	3,91%	6,2%	10,8%
N05AL	Benzamides	11,50%	10,07%	9,6%	18,2%	8,07%	6,2%	13,7%
N05AL05	Amisulpride	6,70%	4,48%	5,3%	12,2%	3,91%	4,6%	8,5%
N05AN	Lithium	5,75%	12,31%	5,9%	7,5%	8,33%	4,6%	6,8%
N05AX	Other antipsychotics	40,83%	41,42%	47,4%	57,3%	37,50%	33,9%	49,3%
N05AX07	Prothipendyl	13,31%	8,21%	13,6%	17,7%	5,99%	3,1%	14,7%
N05AX08	Risperidone	25,57%	25,75%	29,6%	32,0%	23,70%	23,1%	29,2%
N05AX09	Clotiapine	14,50%	19,03%	17,1%	27,2%	14,06%	20,0%	20,7%
N05B	*Anxiolytics*	29,56%	45,15%	*52,5%*	*62,9%*	32,55%	*35,4%*	*50,2%*
N05BA	Benzodiazepine derivatives	29,42%	44,78%	51,4%	62,3%	32,55%	35,4%	49,6%
N05BA01	Diazepam	6,70%	7,09%	13,0%	16,6%	3,65%	7,7%	12,4%
N05BA05	Clorazepate potassium	7,41%	12,69%	12,6%	23,4%	7,29%	3,1%	15,6%
N05BA06	Lorazepam	13,02%	14,55%	21,9%	28,3%	10,42%	13,9%	21,7%

N05BA12	Alprazolam	9,89%	14,93%	12,1%	15,7%	9,64%	13,9%	13,1%
N05C	*Hypnotics and sedatives*	21,72%	33,58%	*39,1%*	*45,8%*	21,35%	*30,8%*	*36,8%*
N05CD	Benzodiazepine derivatives	18,73%	29,10%	33,9%	39,1%	17,71%	24,6%	31,5%
N05CD01	Flurazepam	2,76%	5,97%	5,4%	8,5%	3,13%	3,1%	6,0%
N05CD06	Lormetazepam	11,55%	20,15%	21,7%	27,6%	12,76%	23,1%	21,4%
N05CD08	Midazolam	6,99%	5,60%	8,7%	5,6%	1,56%	1,5%	6,5%
N06	**Psychoanaleptics**	51,33%	54,48%	43,9%	59,0%	52,86%	44,6%	52,9%
N06A	*Antidepressants*	50,81%	53,36%	*41,9%*	*56,9%*	51,82%	*41,5%*	*51,3%*
N06AA	non selective monoamine oxidase inhibitors	12,31%	10,45%	7,7%	11,8%	10,16%	7,7%	10,7%
N06AB	Selective serotonin reuptake inhibitors	29,94%	35,07%	24,4%	34,0%	30,73%	20,0%	30,5%
N06AX	Other antidepressants	30,32%	33,58%	23,8%	37,8%	29,43%	21,5%	31,9%
N06AX05	Trazodone	19,68%	22,01%	14,9%	24,4%	17,45%	15,4%	20,5%
N06AX11	Mirtazapine	6,13%	6,72%	3,9%	8,4%	5,21%	1,5%	6,5%
N06AX16	Venlafaxine	8,46%	8,58%	5,1%	10,9%	6,25%	0,0%	8,6%
N06B	*Psychostimulants*	0,67%	2,24%	*3,56%*	*3,3%*	0,26%	*3,1%*	*2,6%*
N07	**Other nervous system drugs**	11,07%	16,04%	9,8%	10,1%	6,77%	12,3%	10,3%
N07BB	Drugs used in alcohol dependence	5,47%	11,19%	2,3%	5,4%	3,65%	12,3%	4,8%
N07BC	Drugs used in opioid dependence	0,14%	0,37%	0,0%	0,03%	0,00%	0,0%	0,1%

9.9.3.2 Anti-epileptics

Anti-epileptic drugs can obviously be administered to patients suffering from epilepsy. But they are administered too as part of the psychiatric drug treatment, e.g. in case of mood disorders, aggression and neuralgia. Almost a quarter of the global long stay study population utilised anti-epileptics. In T-units it is almost one in three long stay patients. The proportion decreases with the age. This tendency is the clearest in T-units. The proportion of users also decreases with length of stay but this tendency is less pronounced.

9.9.3.3 Anti-parkinson drugs

Besides for treating Parkinson disease, anti-Parkinson drugs can also be utilised to prevent and/or treat undesirable side effects of certain psychopharmacologic drugs (extra pyramidal side effects like Parkinsonism and a number of other movement disorders). It are almost exclusively anticholinergic agents, most likely administered for treating the extra pyramidal side effects of psycholeptics, mainly antipsychotics. Comparable proportions are observed for T-units (44 %) and PVT / MSP (47 %). They are also often prescribed for long stay patients in psychiatric day treatment (t1), whether or not in combination with IBW / IHP.

Only in T-units the proportion of users decreases with age. This could be linked to the higher incidence of side effects in younger patients.

As to the dopaminergic agents the proportion of users is higher for long stay patients from 60 years on, which is most probably linked to the higher incidence of Parkinson disease.

In T-units the prescription of anticholinergic agents increases with length of stay. A possible explanation can be the fact that the negative side effects of (some) antipsychotic drugs more often occur in case of long-lasting use. As to the dopaminergic agents we found the opposite. In IBW / IHP we found positive relation in both categories between drug utilisation and length of stay. In PVT / MSP this positive relation is observed only for dopaminergic agents, associated with the higher age of this group.

9.9.3.4 Psycholeptics

The most frequently prescribed subgroup of psycholeptics is antipsychotic drugs (87 %), followed by anxiolytics (50 %) and hypnotics / sedatives (37 %). These observations should be read with care, as none of the drugs in these two latter subgroups is reimbursable. The information is incomplete and the proportion could be underestimated, mainly in sheltered living (IBW/IHP).

Antipsychotic drugs

The percentage of long stay patients receiving antipsychotic drugs is high (> 75 %). Antipsychotic drugs are more frequently utilised in T-beds and PVT / MSP (about 90 %) compared to the other settings, but even there, the percentage is high (above 75 %). In each setting risperidone is the single most frequently utilised substance from the antipsychotic class (29 %). Besides risperidone (32 % in T-units) long stay patients in T-beds get olanzapine (29,5 %) and clotiapine (27 %). The same ranking was found for long stay patients combining sheltered living with psychiatric day treatment. In PVT / MSP and t1 haloperidol comes in the second place. We found in general a slightly decrease with age and observed higher prescription of antipsychotic drugs in the longest categories of length of stay.

The most frequently utilised *classical antipsychotic* drugs are the butyrophenone derivatives (40,8%). The highest proportion is found in PVT / MSP (48 %) followed by T-units (45 %). Within this group the most frequently utilised substances are haloperidol and pipamperone.

In T-units there is no clear association between age and the utilisation of classical antipsychotics. For some subgroups/substances the relation seems non linear: we observed an increase up to a certain age (40 or 50) and a decrease after that age. For other groups it simply decreases. The proportion of users for all subcategories of classical antipsychotics in T-units increases with length of stay. In PVT / MSP and IBW / IHP this relationship is not that clear.

Within the subgroup of *atypical antipsychotic* drugs (Risperidone, clotiapine, clozapine, olanzapine and quietiapine), risperidone, followed by olanzapine and clotiapine are most prescribed. They are most frequently prescribed in T-units, followed by PVT / MSP and IBW / IHP (whether or not in combination with t1). The proportion of clotiapine and quietiapine in T-units clearly differs from the proportion in other settings. For the three settings the proportion of users decreases with age (f.e. clozapine in T-units with almost one in four younger long stay patients receiving it). This could be explained by the higher risk for extra pyramidal side effects of classical antipsychotics in younger long stay patients. An exception is risperidone in T-units.

In T-units the proportion of long stay patients utilising atypical antipsychotics generally tends to decrease with length of stay but not in a very pronounced way. The only exception is clozapine where the proportion increases. In PVT / MSP we found a decreasing proportion for all substances, in IBW / IHP not for clozapine and clotiapine.

Anxiolytics

The highest proportion of users of anxiolytic drugs is found in T-units (62 %) followed by PVT / MSP (53 %). Lorazepam is the most frequently utilised substance within the category of benzodiazepines over all settings (21,72%).

For some age categories other substances are higher (f.i. clorazepate potassium for long stay patients in T between 31 and 50 years).

With the exception of t1 the use of anxiolytics decreases with age, especially in PVT / MSP, but the decrease is not linear. The highest proportion of users is found in PVT / MSP in the age category 31-40 years (84 %).

In T-units and PVT / MSP there is clearly a decreasing tendency in the utilisation of anxiolytics with length of stay.

Hypnotics and sedatives

The highest proportion of hypnotics and sedatives is found in T-units (46 %) followed by PVT / MSP (39 %). Lorametazepam is most frequently used. In T-units the use of hypnotics and sedatives increases with age, in contrast to other N-categories. The proportion of users decreases with length of stay.

9.9.3.5 Psycho-analeptics

Antidepressants were utilised for 51 % of the study population. This proportion is higher for long stay patients in T-units (57 %) and lower for long stay patients in PVT / MSP (42 %). They are also frequently utilised in IBW / IHP and in psychiatric day treatment. The most frequently utilised subcategory of antidepressant is 'other antidepressant', mainly trazodone, mintazapine and venlafaxine. In general the proportion of users decreases with age, but at the level of subcategories the picture is more complex. In all settings the utilisation of antidepressants diminishes with length of stay.

Only a small minority of long stay patients get psychostimulants (2,6 %). This category of drugs is f.i. administered in the treatment of ADHD and sometimes in case of depression.

9.9.3.6 Other nervous system drugs

Less than 5 % of the long stay study population get drugs for alcohol dependency. The highest proportion was found in IBW / IHP in combination with t1 (11,2 %). In T-units and IBW / IHP the highest proportion is observed in the age category 41-50 years (respectively 8,2% and 7,93%). In PVT / MSP this is 31-40 years (10,1%). In T-units and PVT / MSP we found a decreasing proportion with length of stay. This is not the case in IBW / IHP.

There are almost no long stay patients using drugs for the treatment of opioid dependency. We assume that these drugs are more frequently utilised for patients in the first period of an (in general shorter) admission and after stabilisation in centres for rehabilitation.

9.9.3.7 Drugs used for behavioural regulation

A separate analysis was done on specific medication categories of behavioural regulation in particular pipamperone and clotiapine (Table 9.43). We analyse the proportion of users for each of the substances separately and for both.

Pipamperone is obviously more frequently utilised in T-units and PVT / MSP compared to the other settings. In T-units and PVT / MSP the proportion decreases with age; in IBW / IHP it remains rather stable. In T-units the proportion slightly increases with length of stay as in PVT / IHP be it less pronounced.

Clotiapine is utilised for more than one in five long stay patients in T, but also to a not negligible proportion of long stay patients in all other settings.

Almost one third of the long stay study population got at least one of the drugs for behavioural regulation (32,4 %). In T-units this proportion is 41 %, 10 % more than in PVT / MSP and almost twice the percentage in IBW / IHP and t1. This proportion decreases with age. We found the same tendency in PVT / MSP and IBW / IHP. The experts in this project already expected to find a correlation between age and this medication.

An important finding is that in none of the settings an influence is found of length of stay on the proportion of long stay patients utilising drugs for behavioural regulation (Table 9.44).

Table 9.43: proportion of long stay patients utilising drugs for behavioural regulation during their stay (2002 or 2003) per setting

		Percentage of patients						
		IBW / IHP (n = 2.104)	**IBW / IHP + t1 (n = 268)**	**PVT / MSP (n = 2.135)**	**T (n = 3.739)**	**t1 (n = 384)**	**t2 (n = 65)**	**Total**
N05AD05	Pipamperone	9,27%	11,19%	17,7%	20,2%	8,07%	16,9%	16,1%
N05AX09	Clotiapine	14,50%	19,03%	17,1%	27,2%	14,06%	20,0%	20,7%
N05AD05/ N05AX09*	Drugs used for behavioural regulation	21,63%	27,99%	30,9%	40,7%	21,09%	36,9%	32,4%

* these categories were grouped separately on demand of the clinical experts: it consists of medication for behavioural regulation

Table 9.44: proportion of long stay patients utilising pipamperone and clotiapine during their stay (2002 or 2003) per setting and length of stay

	1-2 years	**2-6 years**	**6-10 years**	**> 10 years**
T (n = 3.739)	41,38%	40,40%	40,54%	39,22%
t1 (n = 384)	5,00%	20,96%	23,96%	23,08%
PVT / MSP (n = 2.135)	31,25 %	31,49 %	33,76 %	24,91 %
IBW / IHP (n = 2.104)	18,76%	23,20%	16,78%	20,34%
IBW / IHP + t1 (n = 268)	23,53	33,59	21,79	23,81

Key points

- **In T, most of N-(sub)categories medication are prescribed more than in other settings. The values in PVT/MSP are often comparable.**
- **Psycholeptics were prescribed for 92% of the study population. The proportion is higher in T-units (97%) and lower in IBW/IHP (82%).**
- **Anti-psychotics are more frequently prescribed for long stay patients in T, but with still high proportions in the other settings. The proportion tends to diminish with age and increase with length of stay. In each setting, risperidone is the single most frequently prescribed substance from the anti-psychotic class (29%). Besides risperidone (32 %) other frequently prescribed drugs in T-units are olanzapine (29,5 %) and clotiapine (27 %). In PVT/MSP and t1 haloperidol comes in the second place.**
- **The most frequently prescribed classical antipsychotic drugs are butyrophenone derivatives (40,8%). The highest proportion is found in PVT/MSP (48%) and in T-units (45 %). Within this group the most frequently prescribed substances are haloperidol and pipamperone. In T-units there is no impact of age on the proportion of long stay patients using classical anti-psychotics. The proportion increases with length of stay.**
- **Atypical antipsychotics are most frequently prescribed in T-units, followed by PVT/MSP and IBW/IHP. For clotiapine and quietiapine the values in T are very different from the ones observed in the other settings. Clozapine is prescribed equally in T and in IBW/IHP +t1 (13 %), but much more than in t1 (7 %), PVT/MSP (5 %) or IBW/IHP (4%).**
- **50% of the long stay study population got anxiolytics prescribed. Higher proportions were observed in T (62%) and PVT/MSP (53%). Especially in PVT/MSP, but also in T and IBW/IHP the proportions decrease with age. In T and PVT/MSP the proportion decreases with length of stay.**
- **Hypnotics and sedatives are prescribed to 46% of long stay T-bed patients, and to 39 % in PVT/MSP.**
- **More than half of the global long stay population and 60 % of the long stay T-patients got psycho-analeptics prescribed. Lower proportions are observed in PVT / MSP.**
- **Anti-depressants were precirbed to 51% of the study population with a higher proportion in T (57%) and a lower proportion in PVT/MSP (42%). The proportion decreases with age and length of stay.**
- **Drugs used in the treatment of alcohol or opioid dependency are not frequently prescribed in the long stay population, except in IBW/IHP + t1 where disulfiram was given to 11% of the long stay patients.**
- **Almost one third of the long stay study population got at least one of the drugs for behavioural regulation (Clotiapine and pipamperone) prescribed during their stay in 2002 or 2003. It is markedly more for long stay patients in T (41 %) than in other settings (PVT/MSP: 31%; IBW/IHP +t1: 28 %; IBW/IHP only: 22 %).**
- **Anti-epileptics and anti-Parkinson drugs were prescribed to respectively 24% and 41% of the study population, but with higher proportions in T (32% and 44%) and smaller proportions in IBW/IHP and t1. The observed differences can however not be linked to possible differences in clinical profiles between the settings.**

9.9.4 Geographical differences

This section compares the prescribed N-medication per province. For the analysis we use the province in which a patient is domiciled. This could be different of the domicile of the hospital of treatment.

As the IMA-dataset does not contain information on diagnosis, we can not explain the observed differences in the proportion of users with differences between the provinces in the clinical profile of the long stay patients.

9.9.4.1 General findings

In all settings and for almost all studied types of medication we found variability in proportion of users over the provinces. For some types of medication the highest proportion found has to be considered as a real 'outlier' compared to the other provinces.

In all settings and for almost all selected types of medication we found the highest proportion of users in a Walloon province (mostly Liege or Luxemburg) or Brussel, especially in T-units. For sheltered living and psychiatric nursing homes the differences between the provinces are smaller.

9.9.4.2 T-units

For psycholeptics in general and antipsychotics in particular a difference of 10 % between the highest (98 % in Brussel) and the lowest proportion (88 % in Oost-Vlaanderen) is observed. There are only small differences in proportion between the Flemish provinces in the use of anti-epileptics (26,1% in Vlaams Brabant and 29% in West-Vlaanderen).

As to the classical antipsychotic drugs the most frequently utilised substances are zuclopenthixol and haloperidol but there are some differences in ranking. In contrast to all other provinces we found an important proportion of long stay patients utilising levomepromazine in Hainaut, Liege and Luxemburg. With the exception of Luxemburg pipamperone is more frequently utilised in Walloon provinces.

For atypical antipsychotics (N05 AH, risperidone and clotiapine) more variability is observed, with the highest utilisation figure in Brussel (60 %) and the lowest in Luxemburg (39 %). Clozapine is less frequently utilised in the Walloon provinces.

Compared to the other provinces, anxiolytics and also hypnotics and sedatives are less frequently utilised in Brussel.

Drugs for behavioural regulation (pipamperone and / or clotiapine) are most frequently utilised in Liege (58 %). In Flanders the smallest proportion is observed in Oost-Vlaanderen (37,1 %).

Drugs for alcohol dependence are more frequently utilised in the Flemish provinces and especially in Oost-Vlaanderen (9,6 %).

9.9.4.3 t1

Because of the small numbers of long stay patients in psychiatric day treatment in the Walloon provinces, we only present some findings for the Flemish provinces.

Many classical antipsychotics are less prescribed in Oost-Vlaanderen, with the exception of flupentixol (10,5%) and pipamperone (12,0%). Pipamperone is also more frequently utilised in Limburg (13,9%). The smallest value for pipamperone is observed in Vlaams Brabant (4,2%).

A low proportion of users of atypical antipsychotic drugs is observed for Oost-Vlaanderen (6 %) and a high percentage in Vlaams Brabant (22 %). Olanzapine is more frequently prescribed in Antwerp, quietiapine in Vlaams Brabant.

We found a higher proportion of long stay patients utilising anxiolytics in West-Vlaanderen (42,7%).

There is a smaller variability for psychoanaleptics.

Drugs used for alcohol dependence are most frequently prescribed in West-Vlaanderen (7,3%) and Oost-Vlaanderen (6,8%).

9.9.4.4 Sheltered living

Generally spoken antipsychotic drugs are less frequently prescribed in Flemish provinces.

There is variability in the proportion of long stay patients getting prescribed pipamperone. In Hainaut the percentage is only 2,60 %. In West and Oost-Vlaanderen, Liege and Luxemburg the proportion of users is more than 10 %.

The atypical antipsychotics in the category N05AH are more frequently utilised for Walloon long stay patients. As to risperidone the variability in the proportion of users is smaller in Flanders than in Wallonia. Especially the result of Luxemburg is eye catching (8,8 %).

Lithium is more often utilised in West-Vlaanderen.

In Flanders antidepressants are more frequently utilised in Vlaams Brabant and Limburg. We found comparable values in all Walloon Provinces.

Drugs used for behavioural regulation are more frequently utilised in Flanders and the variability between the provinces is small (21,6 % - 23,6 %). The only exception in Wallonia is Luxemburg (44 %).

9.9.4.5 PVT / MSP

Anti-epileptics are mostly prescribed in Namur, anti Parkinson drugs in Liege.

In Limburg more than one out of four long stay patients in PVT / MSP got pipamperone prescribed. This is much more than in other provinces.

In general atypical antipsychotics are more frequently utilised in Brussel, mainly caused by olanzapine. Clozapine is more frequently utilised in Flanders.

Key points

- **In all settings and for almost all studied types of medication we found variability over the provinces, with some outliers. The highest proportions are generally found in one of the Walloon provinces (often Liege or Luxemburg) or Brussel, especially in T-units.**
- **There is a wide variability between hospitals in the prescription of specific substances; in particular for the atypical antipsychotics, but also for the majority of classical antipsychotics. Clozapine is less frequently utilised in the Walloon provinces.**
- **In T-units drugs for behavioural regulation (pipamperone and / or clotiapine) are most frequently utilised in Liege (58 %). In Flanders the smallest proportion is observed in Oost-Vlaanderen (37,1 %). With the exception of Luxemburg pipamperone is more frequently utilised for long stay T-patients from Walloon provinces.**
- **For long stay patients in t1, many classical and atypical antipsychotics are less prescribed in Oost-Vlaanderen, with the exception of pipamperone.**
- **Generally spoken antipsychotic drugs are less frequently prescribed in Flemish provinces for long stay patients in sheltered living. Drugs used for behavioural regulation are more frequently utilised in Flanders with only a small variability between the provinces (21,6 % - 23,6 %).**
- **In Limburg more than one out of four long stay patients in PVT / MSP received pipamperone. This is much more than in other provinces. In general, atypical antipsychotics are more frequently utilised in Brussel. This is mainly caused by the predominance of the proportion of long stay patients utilising olanzapine. Clozapine is more frequently utilised in Flanders.**

9.9.5 Variability between hospitals (T-units)

This section describes the variability in the prescription of N-medication between hospitals in general and per region (Flanders, Wallonia and Brussel), for long stay patients in T-units.

- As we included all stays of a long stay patient as long as the interruption is shorter than six months, it is possible that a patient had been admitted to more than one hospital. In that case we consider the first hospital in which the patient stayed in 2003.
- For our population the analysis is limited to 5 hospitals in Brussel, 18 in Wallonia and 34 in Flanders. In order to present relevant information we only retain those hospitals to which we 'assigned' at least 30 long stay patients resulting in 2 hospitals in Brussel, 12 in Wallonia and 25 in Flanders. In case no long stay patient in a hospital consumed the medication category under study, the hospital is not taken into account.

9.9.5.1 Results

Figure 9.1 presents the variability between hospitals in the proportion of long stay patients utilising N-medication at ATC 3rd level. The results are presented as boxplots. The box represents 50 % of the hospitals; the complete boxplot measures the 99th percentile.

For 75 % of the hospitals we found only small variability between hospitals in the utilisation of psycholeptics (N05), but for some hospitals we observe proportions smaller than 90 % (figure 9.1). Looking at the subcategories of the psycholeptics, the variability is the smallest for the prescribed anti-psychotic medication (figure 9.2). This is coherent with the findings from MPD that the overall probability of getting neuroleptics is very high and doesn't depend very much on the hospital.

There is a wide variability between hospitals, particularly for the atypical antipsychotics, but also for the majority of classical antipsychotics (figure 9.3). In the latter category there are only a few exceptions. We found outliers with higher proportions and outliers with smaller proportions. For butyrophenone derivatives (N05AD) the proportions observed vary from less than 10 % to more than 80 %. For the subcategory of diazepines, oxazepines and thiazepines (N05AH) it varies from less than 20 % to more than 80 %.

As to the psycho-analeptics (figure 9.1 – N06) the variability between hospitals seems at first sight to be contrary to the conclusion from MPD-analysis. But the latter analysis corrected for patients' characteristics, including diagnosis. Combining both findings, this is indicative of differences between hospitals in terms of patient population characteristics.

Given the explicit link with specific problems (alcohol or drug abuse) the variability found in the utilisation of 'other nervous system drugs' can also be linked to differences between hospitals in patients' profiles (figure 9.1 – N07). Likewise, for the other N-categories we found an important variability between hospitals.

As to the anti-parkinson drugs the variability is caused by variability in the prescription of anti-cholinergic agents, mainly administered to curb the side effects of the psycholeptics.

Figure 9.1: Variability between hospitals of the proportion of long stay T-patients utilising N-medication during their stay (2002 or 2003), ATC 3rd level (Belgium)

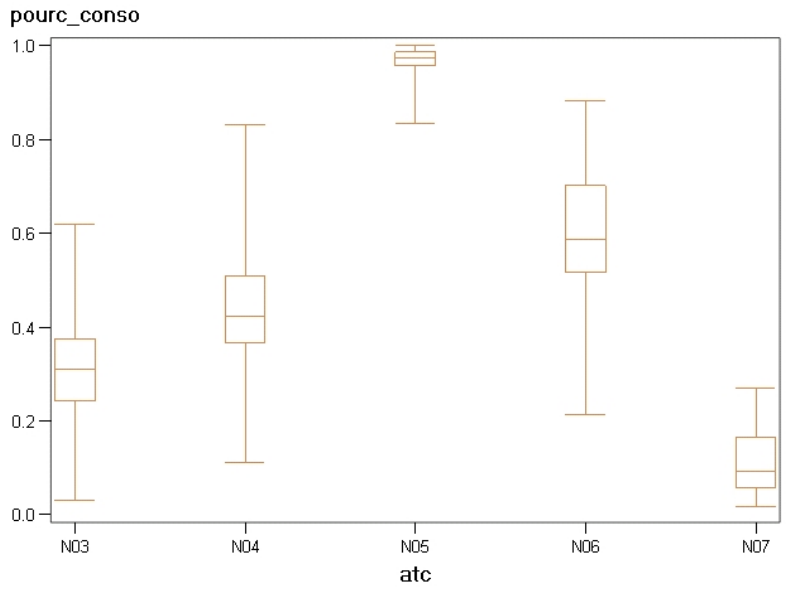


Figure 9.2: Variability between hospitals of the proportion of long stay T-patients utilising N-medication during their stay (2002 or 2003), ATC 4th level (Belgium)

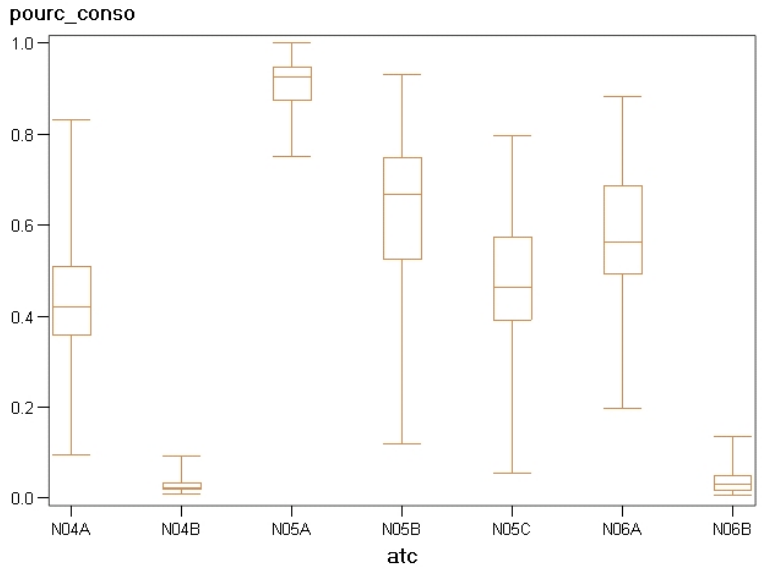
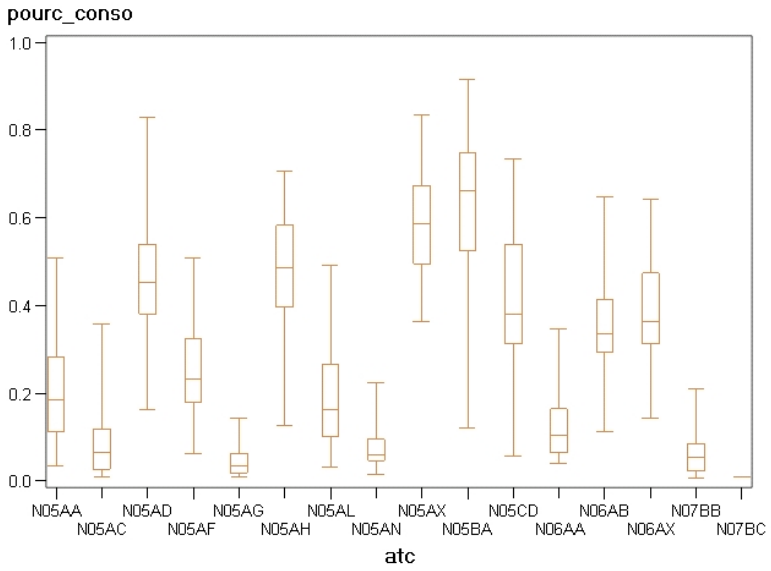


Figure 9.3: Variability between hospitals of the proportion of long stay T-patients utilising N-medication during their stay (2002 or 2003), ATC 5tj level (Belgium)



Analysis per region

As we consider only two hospitals in Brussel, it is not very relevant to compare the results with the results of the other regions. It is however an interesting finding that for many (sub)categories the values for both hospitals are not very different. One of the exceptions within the group of antipsychotics is the result for clotiapine. Other exceptions are anxiolytics and hypnotics / sedatives.

Anti-epileptics

Both in Flanders and Wallonia we found a large variability between hospitals in the utilisation of anti-epileptics but the inter quartile distance is somewhat smaller in Flanders. The median value is also higher in Wallonia.

Anti-parkinson drugs

All hospitals considered we found a large variability between hospitals in the utilisation of anticholinergic agents both in Flanders and Wallonia, but the inter quartile distance is much smaller in Flanders.

psycholeptics

As to the psycholeptics in general we found a high utilisation percentage, with a wider dispersal in Flanders, and a slightly lower median value.

Antipsychotics

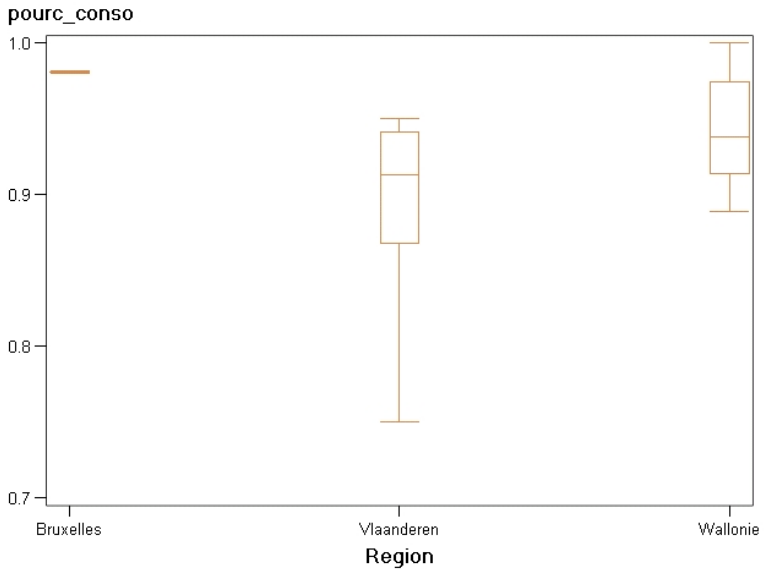
Figure 9.4 shows the variability per region in the utilisation of antipsychotics (N05A). We found a similar picture as for the psycholeptics in general, but with smaller proportions of long stay patients getting them prescribed (75 %).

The variability for classical antipsychotics is higher in Wallonia. Moreover the median value and the inter quartile distance are smaller in Flanders. This is certainly the case for pipamperone.

As to the atypical antipsychotics, the variability is larger in Flanders for Clozapine. While median values are comparable, some Flemisch hospitals have much higher proportions.

For olanzapine the variability is higher in Wallonia if we take into account the interquartile distance. For all hospitals the variability is high in both regions. The variability for risperidone is large in both regions. For clotiapine we can draw the same conclusion, but with a smaller inter quartile distance in Flanders.

Figure 9.4: Variability between regions of the proportion of long stay T-patients utilising antipsychotics during their stay (2002 or 2003) (N05A)



Anxiolytics (N05B)

The variability between Walloon hospitals is smaller than in Flanders, with a higher prescription. If we look at the subcategories of anxiolytics we can refine this general conclusion. For some of them the variability in Flanders is small and for others it is greater in Wallonia.

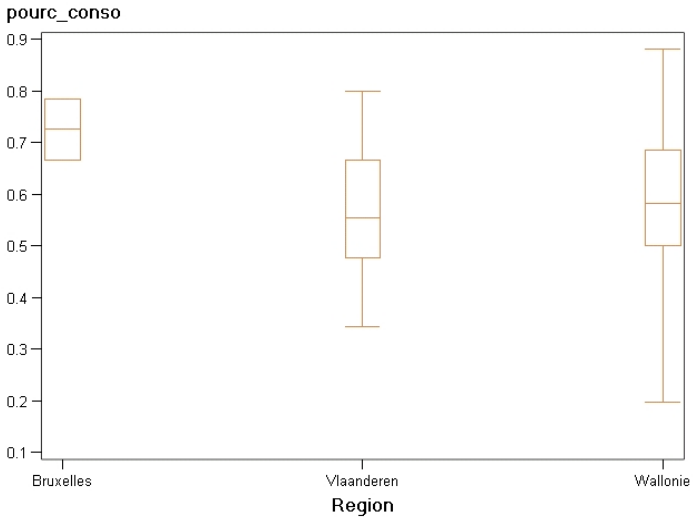
Hypnotics and sedatives (N05C)

The variability between Walloon hospitals exceeds the variability between the Flemish hospitals if we take into account the inter quartile distance.

Antidepressants (N06A)

The first and third quartile, the median and the inter-quartile range are comparable for Flanders and Wallonia. In Wallonia there are a number of hospitals with an obviously lower proportion of users, as well as a number of hospitals with a higher proportion. Looking at the subcategories of antidepressant we observe more differences between the regions.

Figure 9.5: Variability between regions of the proportion of long stay T-patients utilising antidepressants (N06A) during their stay (2002 or 2003)



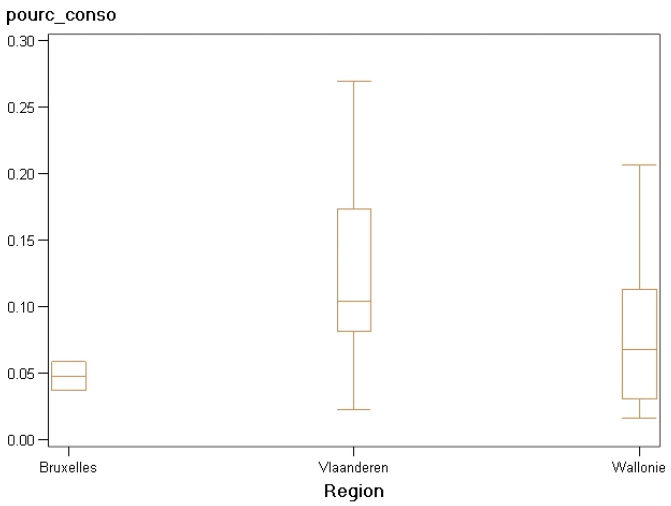
Psychostimulantia (N06B)

Psychostimulantia are not utilised for many long stay patients, but we observe a higher variability in Flanders with a number of higher proportions.

Other nervous system drugs (N07)

These drugs are more frequently prescribed in Flanders than in Wallonia but in both regions we observe an important variability (figure 6). As mentioned before this should logically be explained by differences between the hospitals in patient characteristics but it is not possible to check this.

Figure 9.6: Variability between regions of the proportion of long stay T-patients utilising 'other nervous system drugs' (N07) during their stay (2002 or 2003)



Key points

- **The variability between hospitals is small for the prescribed anti-psychotic medication. A wide variability is observed, particularly for the atypical antipsychotics, but also for the majority of classical antipsychotics. For antipsychotics in general the dispersal is wider in Flanders, but for classical antipsychotics it is wider in Wallonia. For atypical antipsychotics it varies from one substance to another.**
- **The observed variability for psycho-analepticare indicative of differences between hospitals in terms of patient population characteristics.**
- **The variability between Walloon hospitals is smaller than in Flanders, with a higher utilisation profile.**

9.9.6 Occasional versus chronic use of N-medication

We also tried to differentiate "occasional prescription" from more frequent prescription, without taking into account the DDD (see appendix 8). The findings of this exercise can be summarized as follows:

- For the majority of (sub)categories of N-medication the proportion of occasional users remains small.
- In T-units we observe low proportions of occasional users of antipsychotics for all age categories and all categories of lengths of stay. The proportion of occasional users is higher for classical antipsychotics than for atypical antipsychotics. The same is observed in t1, but with somewhat higher proportions. For anxiolytics we roughly observe more occasional users in older age categories.
- The highest proportions of occasional users in PVT / MSP were found for classical anti-psychotics, but the difference with the proportion for atypical substances is smaller. The proportion of occasional users of anxiolytics and hypnotics and sedatives in PVT / MSP is higher than in T-units. The proportion is the highest for lengths of stay of more than 10 years. With 1,82 % the proportion of occasional users is smaller than in T-units.
- In IBW/IHP the proportion of occasional users of psycholeptics in general and of the subcategories of psycholeptics, is higher than in the other settings. however, we can not be sure of the completeness of the available data for anxiolytics and hypnotics and sedatives for they or not reimbursable drugs. Also the proportion of occasional users of antidepressants is rather high compared to the other settings.

10 TREATMENT AND LENGTH OF STAY, REINTEGRATION AND REORIENTATION IN T-UNITS (MPD-DATASET)

In this section we study whether a relationship can be found between treatments and length of stay, reintegration, or reorientation. Psychosocial as well as drug-related treatments will be investigated, as well as constraint and seclusion measures. We also look for hospital tendencies in the administration of medication and psychosocial treatments. We analyze the relation between treatment and the three outcome variables at the hospital level. In other words, we study whether patients have shorter lengths of stay in hospitals that frequently use certain types of treatments. In the same way we study whether such hospitals have higher numbers of reintegrated or reoriented patients.

We fitted a multilevel or GEE model summing all relevant patient characteristics as well as the treatment variable of interest. By making this choice, we investigate whether there is a relationship between length of stay (resp. reintegration, resp. reorientation) and the treatment variable that is not explained by the patient characteristics.

We clearly warn that these results can by no means document causal effects. It remains possible that other confounding factors cause the association between the response and explanatory variable, which we did or could not (due to the limits of MPD) include in our model. The study of causal effects requires rigorous experimental research and can never be derived from any type of epidemiological data. We can only show the presence of an association.

10.1 TREATMENT AND LENGTH OF STAY IN T-UNITS

We analyze the relation between treatment and length of stay in three parts: for the total population of long-stay patients in T-units, for the medium long-stay patient (1-6 years) and for the very long-stay patients (more than 6 years).

10.1.1 Support through conversation

In general, counselling and supportive therapy is related to shorter stays ($p=0.0388$). This relationship is not found for the medium long stay patients ($p=0.3301$) but we do find it for the very long stay patients ($p=0.0350$). In general 'support through conversation' is frequently used for all patients but it decreases from 80% for the shortest stays to 60% for the longest stays.

10.1.2 Relation or family therapy

For the overall population, we do not find a relationship between relation or family therapy and length of stay ($p=0.3847$). For the medium long-stay patients, however we find that this type of therapy is related to shorter stays ($p=0.0007$). For the very long-stay patients there is no difference in length of stay between patients that received this type of therapy and the ones that did not receive it.

10.1.3 Individual psychotherapy

In general, receiving individual psychotherapy is related to shorter stays ($p=0.0226$). This counts for medium long-stay patients ($p<0.0001$), but not for the very long-stay patients ($p=0.3739$).

10.1.4 Group psychotherapy

In general, receiving group therapy is related to shorter stays ($p=0.0041$). For the respective groups of medium or long-stay patients this relationship is not found, indicating that group psychotherapy is more frequent among patients with 1 to 6 years of stay than among patients with more than 6 years of stay.

10.1.5 Psychomotor therapy

In the total population, we find a relationship between receiving psychomotor therapy and shorter stays (p=0.0013). This relation is also found for the medium long-stay patients (p=0.0090) but not for the very long-stay patients (p=0.5956).

10.1.6 Speech therapy

There is no relationship between speech therapy and length of stay (p=0.8846). Either is this the case in the two separate length of stay groups.

10.1.7 Occupational therapy (economically productive)

No relationship is found between occupational therapy (economically productive) and length of stay. Neither in general (p=0.8640) nor for the two distinct length of stay groups.

10.1.8 Occupational therapy (economically non-productive)

A relationship is observed between following non-productive occupational therapy and length of stay (p=0.0147), with shorter lengths of stay for patients that follow this type of therapy. The effect is different (p=0.0758 and p=0.2136) for the medium and the very long-stay patients respectively).

10.1.9 Training activities of daily living (ADL)

There is no relationship between ADL training and length of stay (p=0.7102). Neither is this the case in the two separate length of stay groups.

10.1.10 Assistance with socio-cultural and leisure activities

A difference in length of stay is not observed between patients that did and did not receive assistance with socio-cultural and leisure activities (p=0.2197). The same result is found for the two length of stay groups separately.

10.1.11 Cognitive skills training

In general we do not find a relationship between cognitive skills training and length of stay (p=0.1889). For patients with stays shorter than 6 years, however, we find that this type of training is related to shorter lengths of stay (p=0.0087). For the second group there is no relation (p=0.9420).

10.1.12 Psycho-pedagogical intervention

We do not find a relationship between length of stay and psycho-pedagogical intervention in general (p=0.9304) neither for the two length of stay groups separately.

10.1.13 Assistance with social interaction and integration

In general, no difference is found in length of stay between patient that received assistance with social interaction and integration and patients that did not receive this type of support (p=0.8842). However, for medium long-stay patients we do find that patients that receive this type of support have shorter stays (p=0.0075). For the very long-stay patients, we do not find such difference.

10.1.14 Anxiolytics

For the total population we find that the administration of anxiolytics is related to shorter stays (p=0.0066). Looking at both length of stay groups separately, no significant differences are revealed (p=0.6484 and p=0.3212 for group 1 and 2 respectively). The analysis was corrected for the presence of anxiety problems or anxiety disorder.

10.1.15 Antidepressants

In general, we find that the administration of antidepressants is related to shorter stays ($p<0.0001$). Looking at both length of stay groups separately, the differences are not statistically significant ($p=0.0713$ and $p=0.0826$ for group 1 and 2 respectively).

10.1.16 Neuroleptics

In the whole population, neuroleptics are related to longer lengths of stay ($p=0.0066$). We do not find a relation with length of stay for medium long-stay patients ($p=0.6666$), but we do find this effect for very long-stay patients ($p=0.0141$).

10.1.17 Long-acting neuroleptics

In the whole population there is no relation between the administration of long-acting neuroleptics and length of stay ($p=0.1730$). For medium long-stay patients we find however longer stays for patients that receive this type of medication ($p=0.0098$). For very long-stay patients, we do not find such a relation ($p=0.2613$).

10.1.18 Sleeping pills

For the total population no relation is observed between the taking of sleeping pills and length of stay ($p=0.3633$). For medium long-stay patients, however, we find that patients that take sleeping pills have shorter stays ($p=0.0431$). For the second group we find no effect ($p=0.6991$). The analysis was corrected for the presence of sleeping problems.

10.1.19 Mood stabilizers

No relation is found between the administration of mood stabilizers and length of stay ($p=0.1034$).

10.1.20 Nootropics

Neither do we find a relation between the administration of nootropics and the length of stay ($p=0.0889$). We corrected for the presence of memory problems and dementia or cognitive disorder.

10.1.21 Somatic medication

No relation is found between the administration of somatic medication and length of stay ($p=0.1034$). We corrected for the presence of a somatic diagnosis.

10.1.22 Fixation

No relation is found between fixation of the patient and length of stay in general ($p=0.5668$) or for the separate groups.

10.1.23 Isolation

Similarly, we did not find a relation between isolation of the patient and length of stay ($p=0.7595$). Neither was this the case for the separate groups of medium and very long-stay patients.

10.1.24 Seclusion

Patients secluded in the last 6 months have generally longer stays compared to other patients ($p=0.0213$). This result is also found for the group of medium long-stay patients. For very long-stay patients no difference is found.

10.1.25 Control of leaving

No difference was found in length of stay between patients that were or that were not under control of leaving in the last 6 months (p=0.1539). Neither was such a difference found for the two groups separately.

10.1.26 Prohibition of leaving

In the total population we did not find a difference in length of stay between patients with or without prohibition of leaving (p=0.2639). The same result was found for the medium long stay patients. However, for the very long-stay patients, we find longer lengths of stay for patients under prohibition of leaving (p=0.0064).

10.2 TREATMENT AND REINTEGRATION

The relation between the administration of different treatments and reintegration is studied in a similar way as in the previous section, now using a GEE model.

10.2.1 Psychosocial treatments

Of all psychosocial treatments, only for individual psychotherapy, we find a significant relationship with reintegration (p=0.0484). It is however not unlikely that this effect is mediated by length of stay. For the medium long stays, this effect is not observed.

For none of the remaining psychosocial therapies a link with reintegration is found.

10.2.2 Medication

Patients that receive neuroleptics or long-acting neuroleptics have lower reintegration probabilities (p=0.0227 and p=0.0148 respectively). Patients that receive sleeping pills have higher probabilities of reintegration (p=0.0415). We corrected also for problems related to sleeping. Both results are confirmed for the group of medium long stay patients.

For other types of medication, we do not find a relationship with reintegration probability.

10.2.3 Freedom-limiting measures

Patients that underwent fixation, isolation or seclusion have smaller chances to reintegrate compared to other patients (p=0.0064, p=0.0070, and p=0.0132 respectively). For patients under control of leaving or with prohibition of leaving, no differences were found compared to other patients.

10.3 TREATMENT AND REORIENTATION

The relation between reorientation and different types of treatment is analysed by GEE models for the total population as well as medium and very long-stay patients.

10.3.1 Psychosocial treatments

We find that patients that received individual psychotherapy have smaller probabilities of reorientation (p=0.0410). Analysing the two length of stay groups separately, we see this effect repeated for the medium long stay patients (p=0.0060) but not for the very long stay patients (p=0.7824).

Further we find higher reorientation probabilities for patients that receive assistance with social interaction and integration (p=0.0052) and confirmed for medium long stay patients (p=0.0678) as well as for the very long stay patients (p=0.0012).

For none of the remaining psychosocial therapies, a link with reorientation is found.

10.3.2 Medication

Patients that receive long-acting neuroleptics have lower reorientation probabilities (p=0.0181). This relation is found also for the very long stay patients (p=0.0012) but not for the medium long stay patients (p=0.4545).

For other types of medication, we do not find a relationship with reorientation probability.

10.3.3 Freedom-limiting measures

Patients that underwent fixation in the last 6 months have larger chances of reorientation (p=0.0340). This appears to be mainly true for the group of very long-stay patients, but not for the medium long-stay patients.

Patients that underwent isolation or seclusion, or patients that were under prohibition of leaving the hospital have lower chances of reorientation (p=0.0252, p=0.0635, and p=0.0209 respectively). This difference is more strongly observed in the group of very long-stay patients. It is absent in the group of medium long-stay patients.

No difference was found between patients that were or were not under control of leaving the hospital (0.7680).

- **Even after taking into account patient characteristics, a large number of psychosocial treatments are more frequently applied to patients with shorter stays than to patients with longer stays. These are: support through conversation, relation or family therapy, individual psychotherapy, group psychotherapy, psychomotor therapy, non-productive occupational therapy, cognitive skills training, and assistance with social interaction and integration.**
- **None of the psychosocial treatments is more frequently applied to patients with longer stays than to patients with shorter stays.**
- **Again taking into account patient characteristics, we find much less of a relationship between specific treatments and the reintegration or the reorientation of patients. None of the psychosocial treatments is convincingly related to a higher reintegration chance. Reorientation chances are lower for patient receiving individual psychotherapy, and higher for patients receiving assistance with social interaction and integration.**
- **The above conclusions could suggest that the length of stay determines the treatment.**

10.4 HOSPITAL TENDENCIES AND TREATMENT

The frequency with which a certain type of treatment is applied within a hospital depends to a great extent on the patient-mix, i.e. the typical characteristics of the patients within the hospital, which could differ considerably between hospitals due to specialisation. Apart from the patient characteristics, it is plausible that some hospitals are more inclined to certain types of treatment than others. Then, the probability that a patient receives a certain type of treatment does not only depend on patient characteristics but also on the hospital in which the patient stays.

The question was studied using the intraclass correlation (ICC) for a certain treatment. If the probability of receiving treatment X only depends on patient characteristics, we expect the ICC to be zero. The larger the ICC, the larger the hospital-factor in the probability of getting or not getting treatment X.
The ICC is calculated based on a generalized linear mixed model (i.e. multilevel model for categorical data) where the treatment is the binary response variable (treatment received or not) and patient characteristics are the explanatory variables. A random intercept is further added for hospital. Patient characteristics that were accounted for are the age, length of stay, problems related to social functioning, anti-social attitude, aggression, substance abuse, danger for self, mental retardation, schizophrenia, mood disorder, substance related disorder, personality disorder, GAF score, and infirmity score. In specific cases the following characteristics were also taken into account: anxiety disorder, presence of anxiety (in case of anxiolytics), dementia or cognitive disorder, disorientation, memory problems (in case of nootropics), somatic diagnosis (in case of somatic medication). A backward selection procedure was followed, keeping only the significant variables into the model.

The ICC values for all medication-based and psychosocial treatments are shown in Table 10.1. In the category of medication-based treatments we find an especially high ICC value for nootropics, followed by long-acting neuroleptics and mood stabilizers. So these are medication types for which the probability of getting them depends most on the hospital. The probability of getting antidepressants or neuroleptics depends much less on the hospital. In the category of psychosocial treatments we find the highest ICC values for psycho-pedagogical intervention, speech therapy and relation and family therapy, and also for 'other psychosocial therapy'.

We remark once more that these ICC values are upper-bounds for the hospital impact. Whenever a relevant patient-characteristic in the model has been omitted that explains the use of a certain therapy, and when patients with these characteristics tend to be clustered within hospitals, the ICC value is expected to be lower.

Table 10.1 : ICC expresses the within-hospital correlation with respect to a certain type of treatment.

Medication based	ICC	Psychosocial	ICC
Anxiolytics	0.20	Conversation	0.24
Antidepressants	0.09	Relation/family therapy	0.30
Neuroleptics	0.07	Psychotherapy individ.	0.17
Long-acting neuroleptics	0.29	Psychotherapy group	0.20
Sleeping pills	0.19	Psychomotor therapy	0.15
Mood stabilizers	0.24	Speech therapy	0.36
Nootropics	0.59	Occupational therapy: econ. Prod.	0.18
Somatic medication	0.10	Occupational therapy: non-prod.	0.10
Other psychotropic	0.22	ADL training	0.17
		Socio-cultural and leisure	0.07
		Cognitive intellect. train.	0.23
		Psychopedagogical intervention	0.41
		Social interaction and integration	0.18
		Other psychosocial treatment	0.42

Table 10.2 presents the results of a similar analysis as described above, for ten different types of surveillance on the patient. The ICC value is the highest for surveillance of patients on being under influence. This could possibly point at specialisation of certain hospitals, or units within hospitals, in the treatment of substance related problems. Surveillance on the risk for life or suicide, surveillance by monitoring and 'other measure of surveillance' have indicative ICC's.

Low values are found for fixation and isolation. Whether or not these measures are applied seems to depend largely on patient factors and not on hospital factors.

Table 10.2 : ICC expresses the within-hospital correlation with respect to a certain type of surveillance.

	ICC		ICC
Risk for life/suicide	0.25	Isolation	0.08
Vital parameters	0.17	Seclusion	0.17
Being under influence	0.36	Control of leaving	0.15
By monitoring	0.26	Prohibition of leaving	0.09
Fixation	0.11	Other measure	0.27

Key Points

- **The factor 'hospital' whether or not a patient receives a certain type of treatment is very high for nootropics. It is non-negligible in long-acting neuroleptics and mood stabilizers. This factor is low for antidepressants, neuroleptics and somatic medication.**
- **Regarding psychosocial treatments, the hospital factor is highest for psycho-pedagogical intervention, speech therapy and relation or family therapy. Low values are found for assistance with socio-cultural and leisure activities and non-productive occupational therapy.**

10.5 ANALYSIS AT HOSPITAL LEVEL

We were also wondering whether a relationship could be found between treatment and the three outcome variables (reintegration, reorientation and length of stay) at the hospital level.

10.5.1 Reintegration

For each hospital we calculated a reintegration-tendency score that is related to the likelihood that a patient in this hospital will reintegrate independent of the patient's characteristics. To calculate this tendency, the patient-mix of the hospital was taken into account as good as possible. Further we scored for each hospital and for each type of treatment a "treatment-tendency", (e.g. an antidepressants-tendency). This score per hospital expresses the likelihood that a patient in this hospital will receive this particular type of treatment, independent of the patient's characteristics. Also for calculating these tendencies, the patient-mix was taken into account.

We analyzed the relationship in two ways: (1) without taking into account the patient-mix in the hospitals, and (2) taking into account the patient-mix.

For the first analysis we simply regress the percentage of patients that received a certain treatment on the percentage of patients that were reintegrated. For the second analysis we regress the treatment-tendency on the reintegration tendency. The results are presented in Table 10.3. The results of the first analysis are indicated in the columns with heading 'Perc.', whereas the results of the second analysis are indicated in the columns with heading 'Tend.'. A plus-sign indicates a significant positive relationship; a minus-sign indicates a significant negative relationship. An example for the first analysis (percentages): in hospitals where more neuroleptics are administered, there are fewer reintegrated patients. An example for the second analysis (tendencies): in hospitals with a higher tendency towards cognitive skills training, more patients are reintegrated.

The results show a relationship between reintegration and several types of treatments if we do not take into account the patient mix. This suggests that hospitals do have clustering with respect to their patient populations, most likely due to specialisations. The results further show that most psychosocial treatments are more often applied in institutions with 'lighter' patients, i.e. institutions with a higher percentage of reintegration.

If we look at the results when the patient mix is taken into account, we find much less relationships between treatments and reintegration. We observe that:

- hospitals with higher tendencies towards the administration of sleeping pills also have higher reintegration tendencies,
- hospitals with higher tendencies towards giving conversational support have higher reintegration tendencies, or, since generally the number of patients that receive conversational support is very high (around 80%), it would be better to say: hospitals with lower tendency towards giving conversational support have lower reintegration tendencies,
- hospitals with higher tendencies towards cognitive skills training also have higher reintegration tendencies,
- hospitals with higher tendencies towards the use of economically productive occupational therapy have lower reintegration tendencies.

Again, caution is required to use these results. The patient mix is taken into account as good as possible, based on a large number of variables from MPD. However, when an important patient characteristic would still not be taken into account, it could still influence the results. These results do not allow to express causal relationships (e.g. It is not allowed to say: cognitive skills training increases the chances of reintegration. We can only conclude that both tendencies are positively related).

Table 10.3 : Relation between treatment and reintegration at hospital level, without and with correction for the patient mix.

Medication based	Perc.	Tend.	Psychosocial	Perc.	Tend.
Anxiolytics			Conversation	+	+
Antidepressants	+		Relation/family therapy	+	
Neuroleptics	-		Psychotherapy individ.	+	
Long-acting neuroleptics	-		Psychotherapy group	+	
Sleeping pills		+	Psychomotor therapy	+	
Mood stabilizers			Speech therapy		
Nootropics			Occupational therapy: econ. Prod.		-
Somatic medication	-		Occupational therapy: non-prod.	+	
Other psychotropic			ADL training	+	
			Socio-cultural and leisure	+	
			Cognitive intellect. train.	+	+
			Psychopedagogical intervention	+	
			Social interaction and integration		
			Other psychosocial treatment		

10.5.2 Length of stay

Similar as in the previous analysis, the relationship between treatment characteristics and length of stay characteristics of hospitals was estimated. To do this we calculated for each hospital a length of stay-tendency. This value is large when a hospital is characterized by longer lengths of stay, the value is small when the hospital is characterized by shorter lengths of stay. To calculate this tendency, the patient-mix of the hospital was taken into account.

For the first analysis, in which we do not take into account the patient mix, we regress the percentage of patients that received a certain treatment on the average length of stay per hospital. For the second analysis, in which we do take into account the patient mix, we regress the treatment-tendency on the length of stay tendency. Table 10.4

The results show that, when we do not correct for patient mix, half of the medication based treatments is related to longer lengths of stay. Or, in other words, hospitals with longer average lengths of stay have higher rates of administration of anxiolytics, neuroleptics, nootropics, somatic medication and other psychotropic medication. Furthermore, they have lower frequencies of doing relation therapy, individual or group therapy, non-productive occupational therapy, and psycho-pedagogical intervention.

When we do correct for the patient mix, we still find that hospitals with longer average lengths of stay administer more anxiolytics, however, sleeping pills are more frequently used in hospitals with shorter lengths of stay.

Finally, we find a borderline significant relation indicating more speech therapy in hospitals with longer lengths of stay. Caution is needed to interpret these results.

The most important conclusion may be that, most of the relationships between average length of stay and hospital characteristics regarding medication classes, this is explained by differences in patient mix within the hospitals.

Table 10.4 : Relation between treatment and length of stay at hospital level, without and with correction for the patient mix.

Medication based	Perc.	Tend.	Psychosocial	Perc.	Tend.
Anxiolytics	+	+	Conversation		
Antidepressives			Relation/family therapy	-	
Neuroleptics	+		Psychotherapy individ.	-	
Long-acting neuroleptics	+		Psychotherapy group	-	
Sleeping pills		-	Psychomotor therapy		
Mood stabilizers			Speech therapy		(+)
Nootropics	(+)		Occupational therapy: econ. Prod.		
Somatic medication	+		Occupational therapy: non-prod.	-	
Other psychotropic	+		ADL training		
			Socio-cultural and leisure		
			Cognitive intellect. train.		
			Psycho-pedagogical intervention	-	
			Social interaction and integration		
			Other psychosocial treatment		

10.5.3 Reorientation

The relationship between treatments and reorientation is studied in precisely the same way as in the previous sections. (Table 10.4) There is generally very little association between reorientation and treatment. When we do not correct for the patient mix, we find that hospitals with a larger reorientation percentage have higher rates of administration of somatic medication, and offer less conversational support, ADL training and psycho-pedagogical intervention. After correcting for the patient mix only the relationship with conversational support remains. Hospitals that give less conversational support to the patients have higher reorientation-tendencies.

Table10.5: Relation between treatment and reorientation at hospital level, without and with correction for the patient mix.

Medication based	Perc.	Tend.	Psychosocial	Perc.	Tend.
Anxiolytics			Conversation	-	-
Antidepressants			Relation/family therapy		
Neuroleptics			Psychotherapy individ.		
Long-acting neuroleptics			Psychotherapy group		
Sleeping pills			Psychomotor therapy		
Mood stabilizers			Speech therapy		
Nootropics			Occupational therapy: econ. Prod.		
Somatic medication	+		Occupational therapy: non-prod.		
Other psychotropic			ADL training	-	
			Socio-cultural and leisure		
			Cognitive intellect. train.		
			Psycho-pedagogical intervention	-	
			Social interaction and integration		
			Other psychosocial treatment		

Key points

- **Not taking into account the patient mix within hospitals, we find obvious relationships between the frequencies with which hospitals apply certain treatments and the number of reintegrated patients as well as average lengths of stay within these hospitals.**
- **However, when we do take into account the patient mix, few of these relationships remain.**

Part IV

Profiles of long-stay patients

Content of care

a small field study

11 A FIELD STUDY ON A SAMPLE OF LONG STAY PATIENTS IN T-BEDS

In order to substantiate the findings from the administrative datasets, a small scale field study was done on a purposively selected sample of long stay patients in T-units. The details of the study are described in appendix 4.

In general, the results from the field study followed closely the results from the MPD and IMA/AIM registration data. There were some indications that the selection of patients in the field study led to a sample of more 'severe' cases in terms of reintegration potential: The patients were relatively older and had considerably longer stays. There were relatively more patients with schizophrenia or related psychotic disorders and they had more physical health problems. Also, the majority of the discharged patients were reoriented rather than reintegrated and discharge potential came down to reorientation rather than reintegration potential for almost all of the inpatients. The reason for this picture is not clear. Based on the sampling procedure, which lead to an under-representation of patients from hospitals with low reintegration scores, the reverse would sooner be expected.

Other important discrepancies between the field study and the registration data are summarized here:

1. For almost three fourths of the patients at least one important physical health problem was reported, which was considerably more than registered in MPD and could only partially be explained by the older age of the patients in the field study. Therefore, the prevalence of physical health problems is probably larger than registered in MPD.
2. Psychosocial treatment in general and problem-directed therapy in particular, were delivered relatively more often to younger than to older patients. Thus, in addition to duration of stay (MPD), age seems to be an important factor in the delivery of psychosocial treatment. In general, the field study results suggest that the age of the patients is a more important factor in care delivery than length of stay.
3. Two thirds of the long-stay patients in the field study received preventive dental care in the course of one year, which is more than suggested from the IMA/AIM data on dental care reimbursement.

The second objective of the field study was to complement the registration data by providing additional and more detailed information with respect to the profile and care of long-stay psychiatric patients in Belgium. Important insights are summarized here:

1. The majority of the long-stay patients are single. Also, being single is associated with longer hospital stays.
2. Social behavioural problems are common in long-stay patients and are often seriously disrupting. Some of these problems are associated with longer hospital stays and reduced reintegration potential (e.g. bulimia, begging, stealing and verbal hostility).
3. The level of functioning of long-stay patients is generally low, especially with respect to integration outside the living group and transferable activities (self-care, domestic activities and work activities). Most patients are nevertheless involved in a structured daytime activity for at least one half day a week, especially ADL-training. Discharge potential of inpatients is mainly associated with a higher functioning score with respect to self-care.
4. In addition to clinical reasons for the ongoing hospital stay (functioning level, behavioural problems, physical health problems, etc.), the absence of suitable alternatives, unwillingness to leave the hospital, unwillingness of family members or unavailability of family caregivers are also regularly reported.

Insufficient financial means is not a common reason, but is mentioned relatively more often in patients unwilling to leave the hospital.

5. The nature or severity of the psychiatric disorder, the need for hospital care and support and the presence of additional somatic problems are relatively more commonly mentioned reasons for the ongoing hospital stay in patients with no discharge potential. The mention of insufficient social skills is associated with longer stays.
6. Reintegrated patients receive slightly different treatment and care types in the last year of their hospital stay than reoriented patients. Individual and insight-directed psychosocial treatment is more common in reintegrated patients, physical health care and daily functioning support is more common in reoriented patients.
7. For a large majority of the inpatients with discharge potential, this potential comes down to reorientation rather than reintegration potential.
8. In general, the different treatments and care types are delivered to virtually the same proportion of patients, regardless of their discharge potential.
9. Most long-stay inpatients would need medication, psychosocial treatment and medical care after discharge. In addition, they need practical help with daily activities, support in finding a suitable living place, support for their family, assistance with meaningful leisure activities and assistance with social contacts and intimate relations. At least one third of the patients also needs intensive psychiatric home care, dental care, support with obtaining an income, active family involvement and an assertive outreaching approach. In general, patients with no discharge potential need more support after discharge, especially physical health care, active family involvement and support to their social environment.

Part V

Cost of care for long-stay patients

Analysis of administrative databases

IMA DATA

12 COST OF HEALTH CARE CONSUMPTION

12.1 INTRODUCTION

In this section we analyse the cost for health care services and medication for long stay patients in the different settings during their stay. We focus on the reimbursement by RIZIV / INAMI and on the co-payments and supplements, paid by the patient. The data analysed concern the cost for services and medication delivered in the period 01/01/2002 until 31/12/2003, even if invoiced later. If possible we add information about other forms of public financing.

First we focus on the cost per category of services. Next we add more detailed information on the cost for a number of specific services provided within the framework of the psychiatric care and on the cost of N-medication.

A mean monthly cost per long stay patient is calculated. We calculate the total cost, divide it by length of stay (in days) and multiply it by 30. This method does not account for possible differences of costs from one month to another (f.i. if more or a different type of care is needed in case of crisis) and is therefore to be considered as indicative.

The analysis of the costs, both at the level of the patient and the level of society is mainly determined by both financing and reimbursement regulations. Some services are covered by the lump sums in residential facilities while for other service providers these costs are paid for through different regulations. Appendix 5 describes the financing and reimbursement principles of services in the different health care settings.

In the period under study, a difference was still made between small risks (doctor's visits, physiotherapy, ambulant delivery of medication …) and great risks (mainly hospitalisation costs), only the latter being insured in the obligatory health insurance for the self-employed and their dependents. But only 4 % of the total study population is insured as self-employed and self-employed persons with a formal status of a disabled person falls under the regime of small risks.

A majority of the long stay patients is entitled to preferential reimbursement. For those patients the reimbursement by RIZIV/INAMI is higher and the co-payment for the patient lower or zero.

12.2 HEALTH CARE REIMBURSEMENT IN GENERAL

12.2.1 Reimbursement by RIZIV / INAMI

Table 12.1 gives for each setting the mean cost of health care at the expense of RIZIV / INAMI per category of health care services and completed with a mean total cost.

Table 12.1: Mean monthly reimbursement by RIZIV/INAMI per long stay patient per setting during a stay (2002-2003)

Category of services	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)	Mean
Clinical biology	14,26	18,81	13,79	22,61	11,66	16,61	17,78
Radiology	7,21	5,35	8,69	5,61	2,67	2,15	6,59
Consultations, visits and advices of doctors	28,85	12,95	13,94	1,20	8,15	1,35	11,69
Specialised services*	11,60	9,69	10,80	11,27	4,40	4,50	10,83
Surgery	5,93	7,16	6,70	4,16	1,93	1,19	5,19
Supervision	14,08	49,38	4,80	101,53	39,11	82,74	52,10
Dental care	4,80	6,16	3,40	4,83	4,93	4,98	4,52
Home nursing	12,64	7,49	0,30	0,37	22,96	4,01	4,57
Physiotherapy	3,49	2,08	0,68	0,34	0,69	0,22	1,25
Price per day of hospitalisation	7,48	1.059,46	4,03	4.116,14	3.822,30	3.977,14	2.003,78
Retirement and care homes (RVT / MRS)	0,00	0,00	0,20	0,60	0,00	0,00	0,31
Rest homes for elderly (ROB / MRPA)	0,01	0,00	0,46	0,38	0,61	0,00	0,31
Day care centre (DVC / CSJ)	0,28	0,00	0,00	0,00	0,00	0,00	0,07
Psychiatric nursing home (PVT / MSP)	0,24	0,17	1.723,39	0,62	0,00	0,00	423,64
Sheltered living (IBW / IHP)	579,88	529,27	0,00	1,21	1,95	3,25	156,99
Rehabilitation	12,82	2,49	0,53	2,57	1,61	23,79	4,66
Social maximum billing**	4,86	4,29	2,32	17,45	3,30	14,66	9,64
Lump sum chronically ill and incontinence	2,31	4,46	1,84	10,73	5,60	9,21	6,08
Other	6,68	11,99	0,25	4,66	3,53	3,39	4,23
Medication	92,35	105,35	124,11	138,53	80,14	86,55	119,83
Total	809,17	1.836,55	1.920,20	4.444,83	4.015,54	4.236,02	2.844,05

* The category 'specialised activities ' = nuclear medicine, punctures, internal medicine, pneumonology, stomatology, la gastroenterology, la radiotherapy, …

** Maximum billing = the amount reimbursed for patients within the framework of the so-called social maximum billing and the income-based maximum billing for families with a low or moderate income level. The mutual insurance funds to not have information of reimbursements within the framework of the income-based maximum billing for families with higher income levels.

12.2.1.1 Total cost

The majority of the costs are directly related to the type of mental health care setting (price per day of hospitalisation and supervision in hospital settings, lump sum in sheltered living, lump sum in psychiatric nursing home) (Table 12.1).

The lump sum in PVT / MSP and IBW / IHP represent only the financing by RIZIV / INAMI. Both settings are also partly financed by the Federal Public Service Health, food chain safety and environment. The total budget in 2003 was 7.330.000 € for IBW / IHP and 9.720.000 for PVT / MSP. Taking into account the total number of invoiced days we obtain an additional public cost of 192,05 € in IBW / IHP and 256,28 € in PVT / MSP on mean per long stay patient on monthly basis. These amounts should be added to the mean total cost.

The monthly public cost per long stay patient during a stay is the highest for long stay patients in T-units, amounting to 4.444,83 € on mean. Although the results for psychiatric day treatment and psychiatric night treatment have to be interpreted carefully because of the limited number of long stay patients, the total cost is also very high (respectively 4.015,14 € and 4.236,02 € per long stay patient and per month). An admission in PVT / MSP amounts on mean to 1.920,20 € per long stay patient per month; this is 60 % cheaper for society than a stay in a T-unit. If we add the financing of the FOD/SPF Public Health, we obtain a total monthly cost of 2.176,48 € per long stay patient on mean. This is still more than 50% cheaper than a stay in a T-unit. The mean monthly reimbursement per patient for long stay patients in IBW / IHP (809,17 €) is one sixth of the mean total monthly cost per long stay patient in T-units. After adding the cost for the FOD/SPF Public Health (+ 192,05 € per patient and per month), we obtain a total mean monthly reimbursement per long stay patient of 1.001,22 €, still less than one fourth of the mean total cost per long stay patient in T-units.

Although cheaper for society than a long stay in T, the combination of a stay in sheltered living with psychiatric day treatment seems to be quite expensive for society (2.092,83 € per long stay patient per month on mean), as it mainly means an accumulation of the cost for sheltered living with the cost for psychiatric day treatment.

Comparing the mean monthly reimbursement for specific service categories between settings, necessitates to take into account differences in financing rules (Table 12.2).

- For hospital settings (T, t1 and t2) we add up the lump sum day price and the costs for supervision.
- For psychiatric nursing homes we add up the lump sum for PVT / MSP and the cost for consultations and visits, based on an assumption that generalists play an important supervision role in this setting. We are aware that this assumption can be debated when it relates to psychiatric problems. We also count the mean cost for the FPS Public Health.
- For sheltered living, we add up the lump sum for IBW / IHP and a number of cost categories referring to ambulatory services (consultations and visits, physiotherapy, rehabilitation, and home nursing) which are covered by the daily lump sum in residential hospital settings. We also count the mean cost for the FPS Public Health.
- For long stay patients combining sheltered living and psychiatric day treatment we count all costs taken into account for these settings.

Table 12.2: comparison between the settings of the mean total reimbursement RIZIV/INAMI in € per long stay patient related to a stay - (2002-2003)

	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
Cost	829,73	1.855,17	1.993,61	4.217,67	3.822,30	4.059,88

12.2.1.2 Reimbursement per category of services

The highest mean monthly reimbursement per long stay patient for:

- clinical biology in T-units (22,61 €), as explained before, related to the medication treatment:
- for radiology in PVT / MSP (8,69 €).
- for physiotherapy and consultations in the ambulatory IBW / IHP. The costs for consultations is probably mainly explained through the psychiatrist and the fact that the reimbursement for these services is higher than GP consultations.

It catches the eye to find the highest mean monthly reimbursement per patient for home nursing in long stay patients in psychiatric day treatment. It is an indication that the "care" function of patients in psychiatric day treatment is substituted with home care support.

Table 12.1 includes on the one hand the lump sums reimbursements for chronically ill and the lump sum reimbursements for incontinence material and the maximum billing on the other hand (reimbursements within social maximum billing and the income-based maximum billing for families with a low or moderate income level[17]) .Table 12.3 gives for each of the reimbursement categories the proportion of long stay patients for whom these specific reimbursements were paid in 2002 and / or 2003).

Table 12.3: proportion of long stay patients with reimbursement within the framework of the maximum billing or lump sums for chronically ill in 2002 and/or 2003 per setting.

	IBW / IHP (n = 2.104)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)	Total
Maximum billing	21,21%	14,93%	37,50%	23,55%	36,92%	26,92%
Lump sum chronically ill and incontinence	16,86%	14,19%	75,53%	30,79%	52,31%	42,47%

There are several possible explanations for the differences between the settings in the proportion of long stay patients receiving a reimbursement within the framework of the 'maximum billing'. Hospitalised patients (with long stays) have a greater chance of attaining the fixed threshold for co-payments because the patient's fee per day of hospitalisation is counted. In contrast, the daily cost for a stay in PVT / MSP or IBW / IHP is never counted, as these facilities function in a different "logic" (support in stead of health care). The higher proportion of long stay patients in sheltered living is probably to be explained through the more frequent intermediate hospitalisations.

37,5 % of long stay patients in T-units received a reimbursement within the framework of the maximum billing. This relative small proportion can be explained through the regulative framework. The daily patient's fee in a psychiatric hospital is taken into account only during the first 365 days.

If readmission in a psychiatric hospital occurs the counter is only reset at 0 in case of an interruption of more than 6 months. The mean amount reimbursed is 17,45 € per month.

17 the mutual insurance funds do not have information of reimbursements within the framework of the income-based maximum billing for families with higher income levels

We assume that the results with respect to the lump sums for chronically ill mainly relate to the yearly lump sum for chronically ill persons with high expenses for health care, as the lump sum for incontinence material can not be attributed to persons in hospital, IBW/IHP and PVT/MSP. In the hospital settings many long stay patients received the lump sum for chronically ill persons: one of the criteria of attribution is the number and length of stay of hospitalisations during a period of reference. The counting of the total amount of patient's fees is done in the same way as for maximum billing. The mean amount reimbursed is the highest for long stay patients in T (10,73 € per month on mean) and is almost twice the amount for long stay patients in day treatment (5,60 €).

12.2.1.3 Impact of age

In none of the settings we found a relation of age and the mean total monthly cost per patient.

In T-units the mean monthly reimbursement per long stay patient decreases for consultations and visits, dental care, supervision and medication.

For psychiatric day treatment an increasing mean monthly reimbursement per patient is observed for home care. Older patients more often need this support and probably more expensive services were invoiced.

In contrast, the mean monthly reimbursement per long stay patient for rehabilitation are concentrated in the youngest age (15-30 year) group compared to other age groups.

In PVT / MSP the mean monthly reimbursement per long stay patient for medication decreases with age. The same is true for the mean monthly reimbursement per long stay patient for consultations and visits, dental care and the mean monthly reimbursement per long stay patient for fees related to supervision.

In IBW / IHP the mean monthly reimbursement per long stay patient decreases for medication, consultations and visits and supervision. The mean monthly reimbursement per long stay patient for home nursing increases with age. It is an indication that older long stay patients more often need this support and that more expensive services were invoiced.

12.2.1.4 Relation with length of stay

There is no relation between length of stay and mean monthly total cost per patient for long stay patients in T and patients in PVT / MSP. For long stay patients in psychiatric day treatment the mean monthly total cost per patient increases. This can possibly be explained by a decrease in absences from the hospital. For long stay patients in sheltered living it decreases, potentially indicating that the longer a stay in IBW/IHP the smaller the chance to use a number of services (hospitalisation, dental care, psychotherapeutic treatment).

In T we observe a decreasing mean monthly reimbursement per long stay patient for supervision, clinical biology, dental care and radiology. The decrease for supervision can be explained by the fact that the reimbursed amount per day for supervision is higher at the beginning of an admission and then decreases as the number of days of hospitalisation increases.

In sheltered living we also found a decreasing mean monthly reimbursement per long stay patient for radiology and dental care and in PVT / MSP for dental care.

For long stay patients in psychiatric day treatment we observe a decreasing mean monthly reimbursement per patient for home nursing with length of stay.

For long stay patients combining sheltered living with psychiatric day treatment, large differences are observed between patients with stays of 6 years at maximum and patients with stays of at least 6 years. A possible explanation can be that persons with shorter stays in sheltered living are more often in hospital for psychiatric day treatment (an interim phase after hospitalisation), while patients with longer stay only go to the hospital once or twice a week.

In all settings the mean expenses per long stay patient per month for the system of maximum billing (MAF) decrease with length of stay. In hospital settings this can be explained by the fact that the patient's contribution in the cost of stay is taken into account only for the first year of admission. In IBW / IHP and PVT / MSP it could be explained by the fact that temporary hospital admissions more frequently occur at the beginning of a stay. In both cases patients with very long stays often do not reach the threshold amount of co-payments. Consequently the reimbursement by RIZIV / INAMI decreases.

12.2.1.5 Distribution of the costs

For each setting we calculated the distribution of the mean monthly reimbursement per patient (percentiles p5, p25, p50, p75 and p95) for the most relevant categories of medical services. In each of these categories, long stay patients for whom no expenses were observed are included. Caution is needed while interpreting the results, as differences in costs per long stay patient can have more than one cause. They can be caused by differences in prices of the services delivered as well as differences in the number of services delivered during the studied period. The latter can be caused by differences in length of stay in the studied period (2002 – 2003). Moreover differences in treatment will also be related to differences in clinical profile and health problems.

T-units

For all separate categories selected, the mean monthly reimbursement per long stay patient T-units exceeds the median monthly cost per long stay patient. (Table 12.4) For the total the mean (4.826,09 €) is substantially lower than the median (5.585,68 €).

An analysis of the distribution of the monthly total cost per long stay patient per age category learns that the inter quartile distance is the largest for the youngest long stay patients between 15 and 30 years (Table 12.5). The analysis per length of stay learns that the distribution is smaller for longer stays (Table 12.6).

Table 12.4: distribution of the monthly reimbursement RIZIV / INAMI per long stay patient in € for some categories of services in T-units during a stay - (2002-2003) (N = 3.739)

	Mean	P5	P25	Median	P75	P95
Clinical biology	22,61	10,99	16,28	20,72	24,95	37,57
Radiology	5,61	0,49	1,27	3,35	7,26	18,79
Supervision	101,53	61,51	76,60	78,65	108,04	203,47
Dental care	4,83	0,24	1,02	2,61	6,10	17,12
Price per day	4.116,14	3.579,64	4.256,65	4.456,00	4.721,61	5.235,61
Social maximum billing	17,45	0,47	2,73	6,95	23,64	66,00
Medication	138,53	11,36	53,35	108,83	185,07	337,97
Total cost	4.444,81	4.492,12	5.204,61	5.585,68	6.017,84	6.878,62

Table 12.5: distribution of the total monthly reimbursement RIZIV / INAMI per long stay patient in € in T-units during a stay per age category - (2002-2003)

	P5	P25	Median	P75	P95	P75-P25
15-30	4374,59	5059,53	5581,26	6028,12	7486,57	968,59
31-40	4307,16	5163,02	5591,39	6073,68	6870,43	910,66
41-50	4466,39	5145,41	5563,54	6015,18	6861,72	869,77
51-60	4604,97	5256,32	5574,23	5966,15	6744,91	709,83
61-70	4638,04	5218,45	5625,38	6056,19	6772,91	837,74
71-80	4727,80	5273,88	5622,74	6084,62	6912,90	810,74
80+	4786,33	5261,28	5580,23	5986,70	7265,78	725,42

Table 12.6: distribution of the total monthly reimbursement RIZIV / INAMI per long stay patient in € in T-units during a stay per category of length of stay (2002-2003)

	P5	P25	Median	P75	P95	P75-P25
1-2 years	4267,73	4934,96	5405,02	5876,13	6819,78	941,17
2-6 years	4747,42	5394,96	5723,35	6186,63	6998,90	791,67
6-10 years	4921,61	5313,35	5640,86	6021,70	6678,92	708,35
More than 10 years	4919,39	5302,16	5547,70	5870,61	6499,11	568,45

t1-units

The mean monthly reimbursement per long stay patient for each category is higher than the median, except for the total cost. (Table 12.7)

The distribution pattern of the expenses for home nursing is eye catching, indicating that the costs are high for persons in need of this care.

The inter quartile distance of the monthly total cost per long stay patient (P75-P25) increases up to the age category 51-60 years to decrease for older long stay patients. The distribution of the monthly total reimbursement per patient is the largest for patients with lengths of stay between 6 and 10 years.

Table 12.7: distribution of the monthly reimbursement RIZIV / INAMI per long stay patient in € for some categories of services in t1-units during a stay - (2002-2003) (N = 384)

	Mean	P5	P25	Median	P75	P95
Clinical biology	11,66	3,79	8,07	10,84	14,30	21,34
Radiology	2,67	0,28	0,70	1,59	2,94	7,82
Consultations and visits	8,15	0,53	1,69	3,90	9,03	23,85
Supervision	39,11	10,87	25,63	36,96	48,96	75,64
Dental care	4,93	0,31	1,81	3,47	7,00	13,83
Home nursing	22,96	0,14	0,41	7,00	33,00	87,99
Price per day	3.822,30	2.998,92	3.430,68	3.783,22	4.180,69	4.836,02
Social maximum billing	3,30	0,17	0,84	2,01	3,36	10,29
Medication	80,14	3,25	22,42	55,97	113,10	236,69
Total cost	4.015,54	3.482,14	4.132,52	4.635,72	5.070,20	5.938,18

IBW

For many categories the mean monthly reimbursement per long stay patient is higher than the median. For clinical biology, home nursing and physiotherapy the mean is even higher than p75, pointing to a concentration of the expenses in a small group of long stay patients (N = 2.104).

The variation in the percentile distribution of many categories of services indicates large differences in monthly cost between the long stay patients. For the lump sum IBW / IHP, and consequently the total cost per month, these differences are smaller.

The inter quartile distance diminishes with the age, but the differences are rather small. As to length of stay, the distance is clearly smaller for patients with lengths of stay of at least 10 years.

Table 12.8: distribution of the monthly reimbursement RIZIV / INAMI per long stay patient in € for some categories of services in IBW / IHP during a stay - (2002-2003)

	Mean	P5	P25	Median	P75	P95
Clinical biology	14,26	0,80	2,48	5,74	14,16	46,73
Radiology	7,31	0,57	1,75	4,04	9,14	23,89
Consultations and visits	28,85	3,32	11,76	22,43	35,99	72,02
Dental care	4,80	0,28	1,05	2,79	6,00	16,08
Home nursing	12,64	0,11	1,27	3,35	10,07	64,59
Physiotherapy	3,49	0,20	0,84	1,49	3,22	13,41
Lump sum IBW / IHP	579,88	450,07	497,42	537,21	620,86	855,32
Social maximum billing	4,86	0,19	0,77	2,29	5,59	19,21
Medication	92,35	2,42	25,117	65,14	126,85	267,56
Total cost	809,79	533,81	637,60	774,78	973,58	1.555,24

IBW + tI

Table 12.9 summarizes the distribution of the monthly costs per patient for long stay patients combining sheltered living with psychiatric day treatment. The observed distribution of the monthly cost per long stay patient for supervision is probably to be explained by differences in the number of days spent in hospital.

Table 12.9: distribution of the monthly reimbursement RIZIV / INAMI per long stay patient in € for some categories of services in IBW / IHP + tI during a stay - (2002-2003) (N = 268)

	Mean	P5	P25	Median	P75	P95
Clinical biology	18,81	3,44	7,31	10,84	16,71	40,99
Radiology	5,35	0,35	1,06	2,81	6,45	18,36
Consultations and visits	12,95	0,49	2,11	6,96	17,49	39,97
Supervision	49,38	13,13	28,23	40,43	55,37	112,25
Dental care	6,16	0,46	1,53	3,70	8,15	17,87
Home nursing	7,49	0,05	0,68	1,49	5,36	56,08
Physiotherapy	2,08	0,24	0,42	0,66	1,65	4,93
Price per day	1.059,46	53,66	308,34	740,86	1.925,45	2.339,27
Lump sum IBW / IHP	529,27	331,92	480,13	522,09	578,51	685,95
Social maximum billing	4,29	0,11	0,66	1,56	4,65	16,70
Medication	105,35	4,84	35,09	82,57	149,24	279,66
Total cost	1.836,55	879,57	1.426,82	2.215,33	3.163,46	3.848,36

PVT / MSP

For most categories the mean monthly reimbursement per long stay patient is higher than the median except for the social maximum billing (Table 12.10).

The inter quartile distance of the lump sum PVT / MSP is rather small. This is not surprising as for most residents the stay is not or rather seldom interrupted. For the other categories the inter quartile distance is larger.

The respective analysis per age category and length of stay shows a decreasing inter quartile distance.

Table 12.10: distribution of the monthly reimbursement RIZIV / INAMI per long stay patient in € for some categories of services in PVT / MSP during a stay - (2002-2003) (N = 2.136)

	Mean	P5	P25	Median	P75	P95
Clinical biology	13,79	1,46	4,09	8,42	16,51	42,42
Radiology	8,69	0,68	1,97	5,20	11,25	29,61
Consultations and visits	13,94	1,20	4,47	9,13	17,62	41,19
Dental care	3,40	0,18	0,58	1,65	4,75	11,75
Lump sum PVT / MSP	1.723,39	1.465,39	1.668,32	1.709,14	1.782,66	1.987,8
Social maximum billing	0,25	0,07	0,52	1,21	2,46	7,62
Medication	124,11	10,00	42,37	91,96	162,81	345,54
Total cost	1.920,23	1.706,87	1.810,39	1906,00	2.046,24	2.292,87

Key points

- **The mean total monthly reimbursement per patient is the highest for long stay patients in T. The observed reimbursement of 4.444,83 € is more than twice the mean monthly reimbursement per patient in PVT/MSP (2.176,48 €) and for long stay patients combining sheltered living with psychiatric day treatment (2.092,83 €). The lowest mean monthly reimbursement per patient is observed in long stay patients in IBW/IHP (1.001,22 €).**
- **In none of the settings age has an impact on the mean monthly total reimbursement per long stay patient. In contrast, the mean monthly reimbursement per long stay patient for dental care, supervision, consults and medication decreases with the age for T-patients. In t1-units the mean monthly reimbursement per long stay patient for home nursing increases with the age. In IBW/IHP the mean monthly reimbursement per long stay patient for supervision and consultations decreases with the age, the cost for home nursing increases.**
- **For long stay patients in T the mean monthly total reimbursement per patient is not influenced by length of stay. In t1 it increases, in IBW/IHP it decreases.**
- **In all settings the monthly reimbursements per patient aren't evenly distributed over the patients. In T, IBW/IHP and PVT/MSP the distribution of the costs is the largest for younger long stay patients and (logically) for shorter lengths of stay;**
- **Social protective reimbursements are mainly observed in long stay patients in T. The mean monthly reimbursement per long stay patient amounts to 17,45€ for the maximum billing and to 10,73 € for the lump sums for chronically ill and incontinence material.**

12.2.2 Cost at the expense of long stay patients

Table 12.11 presents the mean monthly cost per long stay patient for co-payments and supplements. Again, long stay patients without expenses are included. For most categories of services the mean monthly sum per long stay patient for co-payments remains rather small, because many long stay patients are entitled to preferential reimbursement. Moreover, no particular services are invoiced for the majority of long stay patients.

Table 12.11: Mean monthly amount per long stay patient in € for co-payments and supplements and other costs per setting (2002-2003)

	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)	Mean
Clinical biology	0,43	0,27	0,71	0,07	0,16	0,03	0,33
Radiology	0,18	0,11	0,17	0,07	0,07	0,03	0,12
Consultations, visits and advices	3,30	1,15	1,50	0,18	0,99	0,10	1,32
Specialised services	0,23	0,23	0,16	0,15	0,07	0,13	0,17
Surgery	0,01	0,00	0,02	0,01	0,01	0,00	0,01
Supervision	0,47	1,42	0,14	4,24	2,03	4,81	2,14
Dental care	0,27	0,38	0,21	0,44	0,34	0,52	0,33
Nursing care	0,01	0,00	0,00	0,00	0,50	0,00	0,03
Physiotherapy	0,53	0,29	0,14	0,07	0,19	0,05	0,21
Price per day hospitalisation	0,78	4,27	0,55	382,01	10,75	315,26	167,54
MRS	/	/	/	/	/	/	/
MRPA	/	/	/	/	/	/	/
CSJ	/	/	/	/	/	/	/
Psychiatric nursing home (PVT / MSP)	/	/	/	/	/	/	/
Sheltered living (IBW / IHP)	/	/	/	/	/	/	/
Rehabilitation	0,08	0,00	0,00	0,00	0,00	0,88	0,03
Social maximum billing	-4,86	-4,29	-2,32	-17,45	-3,30	-14,66	-9,64
Lump sums chronically ill	-2,31	-4,46	-1,84	-10,73	-5,60	-9,21	-6,08
Others	1,16	8,52	18,13	21,67	10,25	20,08	14,92
Medication	12,08	17,26	*21,75**	22,41	16,86	20,58	14,47
Room supplements	0,61	0,51	0,39	11,81	0,04	2,74	
Fee supplements	0,01	0,94	0,00	16,25	1,23	0,00	
Other costs	18,62	18,75	71,04	65,07	12,86		

* The observed value for co-payments for medication (1,96) can not be correct. So we calculated the cost starting from the theoretical approach. The patients daily contribution was 0,7 from 01/01/2002 until 30/06/2002 and raise to 0,8 as of 01/07/2003 ➔ ((18*0,7)+(6*0,8))/24*30=21,75

12.2.2.1 Medical services

The mean monthly co-payment per long stay patient for clinical biology is the highest in PVT/MSP (0,71 €).

The observed mean monthly co-payment per long stay patient for consultations in IBW/IHP (3,30 €) is explained as these patients have to pay consultations as any ambulant patient.

The mean monthly co-payment per long stay patient for supervision remains very low, certainly since these services are invoiced for every day in hospital. But as the majority of the study population is entitled to preferential reimbursement there is no co-payment for patients entitled.

Many long stay patients in IBW/IHP and t1 are in need of nursing care. Nevertheless, the mean monthly co-payment per long stay patient is very small, as home nurses seldom invoice the co-payment.

The mean monthly amount a long stay patient has to pay for the price per day of hospitalisation is logically the highest in T-units (382,01 €). This is also the most important category of co-payment for these patients.

The amount is somewhat lower for younger long stay patients (Table 12.12). A possible explanation can be that younger long stay patients are more often entitled to the preferential reimbursement and / or have persons dependent. For them the daily amount is lower (appendix 5). The same is true for children. The relation between average amount and length of stay (Table 12.13) is partly explained by differences in the daily amount in function of the period of admission.

As there is no co-payment for the price per hospitalisation day in psychiatric day treatment, the amount observed refers to periods of inpatient hospitalisation. The amount is higher for older long stay patients. This can be related to more frequent complete hospitalisations for older long stay patients as well as to the higher daily amount invoiced. The mean monthly amount per long stay patient decreases with length of stay. It is related to more frequent complete hospitalisations for shorter stays.

In general, differences with age and length of stay can also be related to changes in the social insurance status of patients during an admission.

Table 12.12: mean monthly co-payment per long stay patient in € for the price per day per setting per age category (2002-2003)

	15-30	31-40	41-50	51-60	61-70	71-80	80+
T	338,74	322,11	398,12	383,26	427,74	415,75	377,64
tl	3,15	9,98	12,57	6,24	15,80	12,87	25,55

Table 12.13: mean monthly co-payment per long stay patient in € for the price per day per setting per length of stay (2002-2003)

	1-2 year	2-6 year	6-10 year	More than 10 year
T	433,56	329,07	378,01	384,29
tl	20,26	14,15	3,43	3,97

The amount paid by residents isn't considered as a co-payment in terms of the health care insurance. One should know however that these patients do pay an amount per day (see appendix 5).

The mean monthly co-payment per long stay patient for medication should be read with care. Especially for long stay patients in IBW/IHP, as IMA data have no information on cost for D-medication (this category also containing anxiolytics, sedatives and hypnotics). Moreover there are different regulations for hospitalised and ambulatory patients (see supra). Therefore we won't compare the observed mean monthly cost per long stay patient between the settings.

Table 12.11 also contains two negative values, referring to the mean reimbursement per patient per month long stay patients received due to corrective measures (maximum billing and lump sums for chronically ill and incontinence material). The highest amounts are reimbursed for long stay patients in T.

12.2.2.2 Supplements and other costs

As we accept absences of patients of 6 months at maximum, we should keep in mind that room supplements and fee supplements for long stay patients in the different settings not necessarily relate to a stay in a psychiatric hospital or unit, but can also be invoiced because of temporary stays in non psychiatric units in general hospitals. Moreover, the IMA-dataset information is not necessarily complete and fully reliable. The observed values only give an indication of an often important cost category.

Room supplements are mostly invoiced for long stay patients in T-units. The mean monthly amount per long stay patient is 11,81 €. The mean monthly amount per patient is higher for stays of more than 10 years (16,87 €) and patients older than 60 years Patients with very long stays are probably less frequently absent from the hospital. (Table 12.14) and older patients have a probable higher risk of an admission in general hospital for somatic health problems.

There are differences between the provinces (Table 12.15). The highest monthly mean amounts per patient are paid by long stay patients from Vlaams Brabant (22,10 €) and West-Vlaanderen (19,57 €). The smallest in Limburg (2,85 €). In Wallonia the highest mean monthly amounts are observed in Liege (16,69 €) and Luxemburg (16,39 €). In general, the mean amount per long stay patient for room supplements remains low. (01/02/2002 the maximum allowed amount for room supplements in a common room was 18,95 € per day).

Table 12.14: mean monthly room and fee supplements per long stay patient in T-units in € per age category (2002-2003)

	15-30	31-40	41-50	51-60	61-70	71-80	80+
Room supplements	10,41	8,01	9,36	11,77	15,11	15,71	24,21
Fee supplements	1,01	53,42	3,60	29,60	2,39	0,22	0,00

Table 12.15: mean monthly room and fee supplements per long stay patient in T-units in € per province (2002-2003)

	Antwerp	Vlaams Brabant	West-Vlaanderen	Oost-Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem-bourg	Namur
Room supplements	8,75	22,10	19,57	13,32	2,85	5,37	3,60	6,82	16,69	16,39	5,71
Fee supplements	0,00	0,45	0,17	0,02	0,00	294,07	3,42	1,92	0,24	0,00	5,15

Fee supplements remain (very) low in all settings. The highest mean amount per patient per month is observed for long stay patients in T-units (16,25 €). More expensive technical services are not that common for psychiatric patients and the fee for supervision is lower than the fee for technical services. Moreover fee supplements are forbidden for patients in a double room entitled to preferential reimbursement. The outlier value for Brussel has to be read with care as the information relates to only a very small number of patients.

The nature of the expenses for 'other services' can be very different: telephone costs, water, newspapers, personal laundry. Moreover this information is not very reliable and the amount can be very different between patients and settings and therefore difficult to compare. The values are thus only indicative.

The highest mean supplementary cost per patient per month is observed in long stay patients in PVT/MSP (71 €). This could partly be explained by the age structure of the population. This mean cost per long stay patient rises with age from less than 50 € per month for long stay patients younger than 30 year to more than 80 € per month for long stay patients older than 70 year.

A long stay patient in T pays on average 65 € per month. This cost rises with age and is higher for longer stays. This could be explained by less frequent absences from a T-unit.

For long stay patients in sheltered living and psychiatric day treatment the mean monthly supplementary cost per patient seems to be much lower. Those patients are more responsible to organise their lives and we can expect that many living expenses are not registered and unknown.

Supplementary costs for other services vary between provinces (Table 12.16). In T-units the highest costs are generally observed for Flemish long stay patients. (West-Flanders mean 100 € per month, Antwerp 44 €). In Wallonia, the mean monthly cost in Luxemburg is 68,6 € in Liege 30,4 €.

In Flanders, the mean monthly amount per long stay patient in PVT/MSP varies between 30,47 € in Antwerp and 131,83 € in Limburg. In Wallonia the smallest mean amount is observed for Liege (28,57 € per month), the highest in Luxemburg (150,32 € per month).

Table 12.16: mean monthly other cost per long stay patient in € and per setting during a stay (2002-2003)

	Antwerp	Vlaams Brabant	West-Vlaanderen	Oost-Vlaanderen	Limburg	Brussel	Brabant Wallon	Hainaut	Liege	Luxem-bourg	Namur
T	44,06	81,12	99,95	65,71	93,62	23,89	41,86	58,98	30,44	68,61	64,01
t1	9,29	14,61	8,55	21,44	12,25	8,34	8,41	2,00	0,11	19,53	0,79
IBW/IHP	1,28	1,55	1,18	87,98	0,96	1,68	0,12	1,15	1,09	1,42	3,32
IBW:IHP+t1	9,48	14,65	10,26	48,17	8,38	2,04	NA	3,39	0,43	0,00	1,96
PVT/MSP	30,47	113,52	104,44	86,01	113,83	40,46	59,44	53,24	28,57	150,32	63,58

Key points

- **For most categories of services the mean monthly co-payment per long stay patient remains rather small.**
- **The mean monthly amount per day of hospitalisation is logically the highest in T-units (382,01 €). The amount is somewhat lower for younger long stay patients and for shorter stays.**
- **In institutions for elderly care, PVT/MSP and in IBW/IHP there is no health care insurance related co-payment, but patients pay an amount per day.**
- **The highest amounts for maximum billing and lump sums for chronically ill reimbursements are found in long stay patients in T.**
- **Room supplements are mostly invoiced for long stay patients in T-units (monthly mean 11,81 €). The amount is higher for stays of more than 10 years (16,87 €) and patients older than 60 years. The information available is not fully reliable.**
- **The mean amounts per long stay patient for room supplements remain low. The highest mean monthly amounts are observed for long stay patients from Vlaams Brabant (22,10 €) and West Vlaanderen (19,57 €), the smallest for long stay patients from Limburg (2,85 €). In Wallonia the highest mean monthly amounts are observed in Liege (16,69 €) and Luxemburg (16,39 €).**
- **The mean monthly amount per long stay patient for fee supplements is (very) low in all settings. In T-units the mean monthly amount per patient is highest (16,25 €).**
- **The information for payments for other services is not complete and not fully reliable. Purely indicative: the monthly mean in T was 65 €. This cost rises with age and is higher for longer stays. In T-units the highest costs are generally observed for Flemish long stay patients.**

12.3 SPECIFIC SERVICES

12.3.1 Reimbursement by RIZIV / INAMI

12.3.1.1 Specialised services

The number of patients getting specialised psychiatric services (see supra) is too small to develop a reasonable picture based on mean monthly costs. We will not discuss the issue here.

12.3.1.2 Fees for supervision of hospitalised patients

The reimbursement for supervision depends on the unit of admission and the number of days of hospitalisation. The reimbursement is higher in A-units and during the first days of an admission (see annex 3). The highest amounts are found in T- As long stay patients in sheltered living have temporary readmissions in A-units; the costs for fees for supervision mainly relate to stays in these units (Table 12.17).

Table 12.17: mean monthly reimbursement per long stay patient in € for supervision per setting during a stay - reimbursement RIZIV / INAMI (2002-2003)

Day / month		IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
A	Day 1-12	2,72	1,79	0,50	0,25	0,02	0,18
	Day 13-30	3,48	2,80	0,64	0,67	0,13	0,58
	Day 31-90	2,48	3,32	0,49	1,01	0,17	0,59
	91st day - 7th month	0,43	0,91	0,08	0,44	0,11	0,21
	≥ 7* month	0,45	1,14	0,04	0,81	0,08	0,00
	Total						
T	Day 1-12	0,04	0,99	0,02	0,63	0,13	0,11
	Day 13-60	0,19	2,80	0,11	3,79	0,52	1,51
	61st day - 7th month	0,23	3,97	0,09	10,85	0,97	6,14
	7th – 13th month	0,15	4,01	0,07	16,39	2,11	12,31
	≥ 13th month	0,54	24,30	0,12	61,58	33,51	59,73
	Total	1,15	36,07	0,41	93,24	37,24	79,80

The mean monthly reimbursement per long stay patient for the fee for availability during the absence of a patient for therapeutic reasons and the fees at intake or discharge is too low to give reasonable comments.

12.3.1.3 Specific consultations

For long stay patients in sheltered living the mean monthly reimbursement for consultations and visits of specialists in neurology, psychiatry and neuropsychiatry amounts to 8,5 €. The reimbursement for long stay patients in other settings is much lower as these services are covered by the price per day during periods of hospitalisation. (Table 12.18)

For persons entitled to the preferential scheme, the reimbursement for a consult of an acknowledged (neuro)psychiatrist or neurologist amounted to 30,40 € on 01/01/03 (31,70 € as of 01/04/03).

Table 12.18: Mean monthly reimbursement RIZIV / INAMI for consultations and visits of specialists in neurology, psychiatry and neuropsychiatry per long stay patient in € and per setting - (2002-2003)

	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
Consultation	8,52	3,58	0,25	0,08	0,29	0,09

Table 12.19 presents the mean monthly reimbursement per long stay patient for a number of other services of general practitioners in the category 'consultations and visits'. We do not know to what extent these consultations and visits are related to the treatment and follow-up of psychiatric problems. The highest mean monthly reimbursement per patient is found in sheltered living: 9 €. In 2003 the reimbursement of a consultation for a person entitled to the preferential scheme amounted to 15,81 € (16,81 € as of 01/10/03)[18]. The reimbursement for a consultation amounted to 19,20 (19,87 as of 01/04/2003 and 23,01 as of 01/10/03) [19]. The reimbursement for consultations and the reimbursement for house visits are comparable.

In PVT/MSP the mean monthly reimbursement per patient is 7 €. Given the characteristics of the setting the expenses are mainly related to GP visits.

18 The reimbursement increased in 2003. Also in 2002 there were several adaptations.

19 For patients with a general medical file the reimbursement is 30 % for consults and for some patients also for visits.

The reimbursement for a visit of a recognized generalist in a centre amounted to 15,79 € as of 01/01/03 (preferential scheme – 16,47 as of 01/04/03 and 19,64 € as of 01/10/03).

We also found a not negligible cost for services of generalists for long stay patients in day treatment, whether or not in combination with sheltered living.

Table 12.19: mean monthly reimbursement RIZIV / INAMI per long stay patient in € and per setting for other services in the category "advices, consultations and visits" (2002-2003)

	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
GP consultation (acknowledged)	4,01	3,19	0,16	0,09	2,91	0,27
GP house call (recognized)	3,95	1,48	0,23	0,05	1,54	0,03
GP visit in centre (recognized)	0,03	0,01	5,88	0	0,02	0
consultation other specialist	1,03	0,62	0,78	0,24	0,49	0,22
Total	9,02	5,30	7,05	0,38	4,96	0,52

12.3.1.4 Psychotherapy

The mean monthly reimbursement per long stay patient for ambulatory psychotherapeutic treatment is most relevant for residents in sheltered living. It amounts to 5,6 €. In the other settings the psychotherapeutic treatment during a stay is covered by the daily amount. Any other psychotherapeutic treatment can only be invoiced during absences from the institution.

The mean monthly reimbursement for sheltered living in combination with psychiatric day treatment is 2,2 €. In general, the fees for group therapy are rarely invoiced.

The fees for psychotherapy were adapted several times during 2002 and 2003. On 01/01/03 (preferential) reimbursement for an individual session with an certified psychiatrist amounts to 48,14 € (45,70 if not certified).

Table 12.20: mean monthly reimbursement RIZIV/INAMI for ambulatory psychotherapeutic treatment per long stay patient and per setting in € (2002-2003)

	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
Psychotherapy psychiatrist	1,29	0,34	0,21	0,02	0,04	0,00
Psychotherapy acknowledged psychiatrist	4,27	1,86	0,10	0,06	0,56	0,00
Psychotherapy psychiatrist – 2 persons	0,03	0,00	0,00	0,00	0,00	0,00
Psychotherapy psychiatrist from 3rd person on	0,00	0,00	0,00	0,00	0,00	0,00
Psychotherapy acknowledged psychiatrist group 2 persons	0,01	0,00	0,00	0,00	0,00	0,00
Psychotherapy psychiatrist group 8 persons	0,01	0,02	0,00	0,00	0,00	0,00
Psychotherapy child or youngster	0,00	0,00	0,00	0,00	0,00	0,00
Total	5,61	2,22	0,31	0,08	0,60	0,00

12.3.1.5 Collective holiday camps

The mean monthly reimbursement per long stay patient for collective holiday camps is highest in T, as the amounts for t2 have to be read with care due to the low number of patients

Table 12.21: mean monthly reimbursement per long stay patient in € per setting for collective holiday camps during a stay - reimbursement RIZIV/INAMI (2002-2003)

IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
0,00	2,59	0,00	4,56	2,13	7,78

12.3.1.6 Rehabilitation conventions for mentally ill persons

Despite the limited number of long stay patients for rehabilitation (3 % of the population), the mean monthly reimbursement per patient is not negligible for long stay patients in IBW/IHP. The reimbursement of services in other services necessarily took place at moments of absence from hospital.

Table 12.22: mean monthly reimbursement per long stay patient in € for rehabilitation in a number of specific centres per setting during a stay - reimbursement RIZIV/INAMI (2002-2003)

	IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
Psychosocial rehabilitation (772)	10,31	1,18	0,11	0,00	0,00	0,00
Rehabilitation for addicts (773)	0,75	0,00	0,00	0,00	0,00	0,00
Rehabilitation for psychotics (774)	0,00	0,00	0,00	1,37	0,00	24,66
Convention psychiatry for adults (965)	0,00	0,00	0,00	0,00	0,00	0,00
Convention psychiatry for children and youngsters (965)	0,00	0,00	0,00	0,00	0,00	0,00
Total	11,06	1,18	0,11	1,37	0,00	24,66

Key points

- **The fee for specialised services is rather high and for hospitalised patients completely reimbursed by RIZIV/INAMI. But due to the small number of long stay patients for whom they are applied, the mean monthly reimbursement remains small.**
- **Reimbursement for supervision is higher for the first days of admission and higher in A-units, according to the current rules. The observed mean monthly reimbursement per long stay patient in IBW/IHP indicates for frequent short readmissions in an A-unit.**
- **The highest mean monthly reimbursement per patient for consultations and visits is observed in IBW/IHP. For services of GP's the mean monthly reimbursement per long stay patient is 9 € per month, for services of psychiatrists 8,52€ per month. In PVT/MSP the mean monthly reimbursement for GP services amounts to 7 €.**
- **The mean monthly reimbursement per long stay patient for psychotherapy amounts to 5,6 € for long stay patients in IBW/IHP. The mean monthly reimbursement per long stay patient for psychosocial rehabilitation is 10,31€ per month.**

12.3.2 Cost at the expense of patients

We limit the information on the co-payments of patients for specific services to specific consultations and psychotherapy. The fees for specific specialised services and for supervision are completely reimbursed for patients entitled to preferential reimbursement, the majority of the study population.

12.3.2.1 Specific consultations

For consultations and visits of (neuro)psychiatrists and neurologists and of GP's the highest mean is found in long stay patients in sheltered living (0,94 € and 0,89 €). The mean monthly co-payment for GP services amounts to 0,60 € for long stay patients in PVT/MSP.

Table 12.23: mean monthly reimbursement per long stay patient in € for consultations and visits of (neuro)psychiatrists and neurologists and GP's per setting during a stay - co-payment (2002-2003)

	IBW/IHP (n = 2.104)	IBW/IHP + t1 (n = 268)	PVT/ MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)
Consultations (neuro)psychiatrists and neurologists	0,94	0,33	0,03	0,01	0,09	0,01
Consultations and visits GP's	0,89	0,37	0,60	0,02	0,49	0,03

12.3.2.2 Psychotherapy

In IBW/IHP a mean monthly amount of 0,64€ per long stay patient is paid

12.3.2.3 Other

As mentioned before we did not observe a co-payment for a stay in IBW/IHP. But every resident pays a monthly rent. As this is not regulated there are differences in the amount they have to pay and in the package of services covered. An internet search (2008) learned that amount vary between 250 and 500 € per month. Besides this a resident in IBW/IHP also pays his daily living costs like food, but we have no indications on the amount.

Key points

- **The results on the co-payment are mainly relevant for long stay patients in IBW/IHP. A long stay patient pays a mean monthly sum of 0,89 € for GP services, 0,94 € for services of (neuro)psychiatrists and neurologists and 0,64€ for psychotherapy.**
- **A patient in IBW/IHP also has to pay a monthly rent. We found a number of examples going from 250 € to 500 €.**

12.4 COST OF N-MEDICATION

In this section we analyse the monthly cost per long stay patient of N-medication during a stay on a monthly basis. The cost of medication delivered during absences from hospital (6 months at the maximum) is also taken into account. The only exception is the cost of ambulatory delivered D-medication as we do not have any information about this, but it is an important expense for some patients.

The mean cost per month is calculated by dividing the total cost for medication by the total length of stay in days and multiplied by 30. In order to take into account individuals without medication consumption, the sum of all mean costs per individual is divided by the total number of individuals.

12.4.1 Reimbursement of RIZIV / INAMI

Table 12.24: mean monthly reimbursement per long stay patient in € and per setting for categories of N-medication during a stay – reimbursement RIZIV/INAMI (2002-2003)

		IBW / IHP (n = 2.104)	IBW/ IHP + t1 (n = 268)	PVT / MSP (n = 2.136)	T (n = 3.739)	t1 (n = 384)	t2 (n = 65)	Mean
N03	ANTI-EPILEPTICS	4,02	4,69	4,40	5,76	2,69	1,45	4,80
N04	ANTI-PARKINSON DRUGS	0,95	1,13	2,09	1,53	1,57	0,66	1,51
N04A	*Anticholinergic agents*	0,89	1,13	1,35	0,86	1,16	0,66	1,01
N04B	*Dopaminergic agents*	0,06	0,00	0,74	0,67	0,41	0,00	0,50
N05	PSYCHOLEPTICS	50,91	66,80	65,33	88,95	45,49	65,32	71,17
N05A	*Antipsychotics*	50,89	66,80	65,30	88,94	45,49	65,32	71,15
N05AA	Phenothiazines with aliphatic side-chain	0,26	0,21	0,45	0,38	0,13	0,05	0,35
N05AA02	Levomepromazine	0,25	0,17	0,43	0,35	0,11	0,03	0,33
N05AC	Phenothiazines with piperidine structure	0,19	0,26	0,36	0,33	0,44	0,13	0,30
N05AC02	Thioridazine	0,18	0,26	0,34	0,32	0,42	0,11	0,29
N05AD	Butyrophenone derivatives	4,48	3,96	6,20	6,32	4,39	3,45	5,67
N05AD01	Haloperidol	2,83	2,46	4,28	3,99	2,24	0,28	3,63
N05AD05	Pipamperone	0,29	0,35	0,69	0,68	0,39	0,52	0,56
N05AD06	Bromperidol	1,27	1,02	0,93	1,28	1,71	2,54	1,21
N05AD07	Benperidol	0,08	0,13	0,25	0,33	0,06	0,11	0,23
N05AF	Thioxanthene derivatives	1,12	0,90	1,50	1,98	1,40	1,01	1,59
N05AF01	Flupentixol	0,45	0,32	0,22	0,29	0,56	0,08	0,32
N05AF05	Zuclopenthixol	0,67	0,58	1,28	1,69	0,84	0,93	1,27
N05AG	Diphenylbutylpiperidine derivatives	0,44	0,49	0,67	0,29	0,40	0,00	0,43
N05AH	Diazepines, oxazepines and thiazepines	26,72	41,90	33,13	54,78	22,10	36,94	40,70
N05AH02	Clozapine	3,10	10,82	3,40	7,49	5,50	8,02	5,44
N05AH03	Olanzapine	19,76	27,34	24,77	34,70	14,10	24,30	27,43
N05AH04	Quietiapine	3,85	3,73	4,96	12,60	2,50	4,62	7,83
N05AL	Benzamides	2,91	1,65	3,02	6,65	2,09	5,13	4,49
N05AL05	Amisulpride	2,74	1,14	2,49	5,64	1,83	5,11	3,85
N05AN	Lithium	0,17	0,38	0,11	0,11	0,25	0,07	0,14
N05AX	Other antipsychotics	14,58	17,05	19,78	18,04	14,25	18,54	17,44
N05AX07	Prothipendyl	0,15	0,09	0,19	0,15	0,07	0,02	0,15
N05AX08	Risperidone	14,01	16,40	18,61	17,02	13,62	17,95	16,52
N05AX09	Clotiapine	0,43	0,56	0,98	0,87	0,55	0,58	0,76
N06	PSYCHOANALEPTICS	12,05	14,90	10,18	15,49	14,19	8,37	13,22
N06A	*Antidepressants*	12,00	14,90	10,06	15,13	14,03	8,37	13,02
N06AA	non selective monoamine reuptake Inhibitors	0,77	0,52	0,34	0,54	0,54	0,27	0,54
N06AB	Selective serotonin reuptake inhibitors	6,07	8,06	6,15	7,88	8,67	5,14	7,04

N06AX	Other antidepressants	5,05	6,05	3,54	6,63	4,57	2,97	5,35
N06AX05	Trazodone	1,16	1,15	0,77	1,15	0,95	0,62	1,05
N06AX11	Mirtazapine	0,89	1,16	0,64	1,09	0,62	0,04	0,90
N06AX16	Venlafaxine	2,42	3,06	1,58	3,72	2,04	1,90	2,77
N06B	*Psychostimulants*	0,00	0,00	0,00	0,00	0,00	0,00	0,00
N07	OTHER NERVOUS SYSTEM DRUGS	0,28	0,16	0,35	0,23	0,05	0,29	0,26
N07BB	Drugs used in alcohol dependence	0,25	0,16	0,31	0,20	0,04	0,29	0,23
N07BC	Drugs used in opioid dependence	0,00	0,00	0,00	0,00	0,00	0,00	0,00

12.4.1.1 General findings

Table 12.24 shows that the highest expenses are for psycholeptics – almost exclusively antipsychotics – with an overall mean monthly reimbursement per long stay patient of 71 €. With 89 € per long stay patient the mean monthly reimbursement in T-units is even higher. The results for PVT/MSP, IBW/IHP+t1 and t2 are comparable. The lowest mean reimbursement per patient is found for long stay patients in psychiatric day treatment and for those in sheltered living.

In the second place comes the reimbursement for psychoanaleptics, mainly antidepressants, with an overall mean monthly amount of 13 € per long stay patient. The amount is higher for long stay patients in T-units, for long stay patients in psychiatric day treatment and for patients combining sheltered living with psychiatric day treatment.

12.4.1.2 Anti-epileptics

The mean monthly reimbursement for anti-epileptics is the highest in T-units and amounts to 5,8 € per long stay patient. The mean monthly reimbursement per long stay patient in IBW / IHP and PVT / MSP is comparable. The amount reimbursed can be higher than expected, taking into account the proportion of users, but this medication belongs to the A-category and is reimbursed completely. We can also assume that for a number of patients this medication has to be taken permanently.

12.4.1.3 Antiparkinson drugs

The highest mean reimbursement per patient per month is done for long stay patients in PVT / MSP. This can partly be explained by the age structure. The highest mean reimbursement per patient per month is observed in long stay patients between 50 and 70 year (80 in PVT / MSP).

Comparing the settings, there is no univocal correlation with length of stay.

Within the category of antiparkinson drugs the highest mean monthly reimbursement per long stay patient is found for anticholinergic agents. Although they are rarely delivered, the reimbursement for dopaminergic agents in T is not much lower than the reimbursement for anticholinergic agents. This can probably partly be explained by the higher cost per unit of dopaminergic agents. Nevertheless the monthly reimbursement per long stay patient remains low.

12.4.1.4 Antipsychotics

General findings

The mean monthly total reimbursement per patient for antipsychotic drugs is clearly higher for long stay patients in T-units compared to all other settings. The lowest amount is found for long stay patients in t1. This could be explained by differences in clinical profile, assuming that long stay patients in psychiatric day treatment are the most stabilized.

For the different subcategories of antipsychotics, the highest expenses are mostly made for long stay patients in T-units or in PVT / MSP.

Atypical antipsychotics

In general and for each setting separately the majority of the reimbursements for antipsychotic medication are made for atypical subcategories (N 05 AH and N 05 AX). But as we do not take into account differences in intensity of use, we do not know to what extent this can be explained by intensity or by a higher price per unit.

Within the subgroup of the atypical antipsychotics, olanzapine and risperidone turn out to be the most expensive substances in all settings. The mean monthly reimbursement per long stay patient for clotiapine is limited. The expenses for quietiapine are higher in T, the expenses for clozapine are the highest for long stay patients combining sheltered living with psychiatric day treatment.

Classical antipsychotics

The mean monthly reimbursement per long stay patient at the level of the substances is often very low and less than 1 €. The highest expenses are caused by the deliverance of amisulpride (3,85 €), Haloperidol (3,63 €) and zuclopenthixol (1,27 €).

The lower mean monthly reimbursement per long stay patient for antipsychotics in PVT / MSP compared to T-units is mainly caused by the lower mean reimbursement per long stay patient for atypical antipsychotics. We assume this can be linked to the fact that these atypical drugs are less frequently used for older long stay patients. The only exception is risperidone. The mean monthly reimbursement per long stay patient for the majority of the classical antipsychotics is comparable or even higher.

Impact of age

For long stay patients in T-units, there is a clear impact of age on the mean monthly reimbursement per patient of antipsychotics. The overall expenses for antipsychotics for the youngest long stay patients are 4,6 times higher than those for the oldest long stay patients. This is mainly caused by the decreasing reimbursement of the atypical drugs (N 05 AH).

At the level of the substances this correlation isn't always present, as well as for classical antipsychotics as for atypical. For example we find a correlation for amisulpride, quietiapine and clozapine. This is not the case for haloperidol, zuclopenthixol, olanzapine or risperidone. For a number of substances the highest expenses are done for long stay patients between 41 and 50 year.

In the other settings we also observe a decreasing cost per age category for the overall cost for antipsychotics. Again this is mostly due to a decreasing cost of atypical antipsychotics.

Impact of length of stay

For long stay patients in T-units we found a tendency of an increasing cost with length of stay, in general as well as at the level of many substances. Only for quietiapine we found a decreasing tendency. For olanzapine and amisulpride the cost remains rather stable.

Contrary to the results for long stay patients in T-units, we observe a decreasing reimbursement per patient with length of stay for long stay patients in IBW / IHP and PVT / MSP. Especially for patients with lengths of stay of more than 10 years the mean monthly reimbursement per patient is lower. Again this is to a large extent caused by the decreasing expenses for atypical antipsychotics, with the only exception of risperidone.

For long stay patients in psychiatric day treatment the overall mean monthly reimbursement per patient for antipsychotics remains rather stable. But at the level of the substances there is no clear tendency.

For long stay patients combining sheltered living with psychiatric day treatment, there is no clear tendency. We found a remarkable increase of the expenses for olanzapine for patients with a length of stay of more than 10 years (45,43 € while 27, 34 € as the overall mean in this setting).

12.4.1.5 Antidepressants

The overall mean monthly reimbursement per long stay patient amounts to 13 €.

For long stay patients in T-units and in PVT / MSP the reimbursement decreases with the age. In the other settings the correlation is less clear or absent.

In T-units we also found a decreasing tendency with length of stay. This is also for IBW / IHP and PVT / MSP.

Both the findings with respect to age and to length of stay correspond to a decreasing tendency in the proportion of users.

12.4.1.6 Other nervous system drugs

As these drugs are rarely delivered in the studied settings, the monthly cost remains low. Moreover, a number of drugs belonging to those categories are not reimbursed.

Key points

- **The mean monthly reimbursement for anti-epileptics amounts to 5,8 €. This medication is completely reimbursed.**
- **The highest mean cost for anti-Parkinson medication is found in long stay patients in PVT/MSP, partly to be explained the age structure of that population.**
- **The mean monthly reimbursement for antipsychotics amounts to 71 €, but is higher in T-units (89 €). At the level of the subcategories and substances the highest costs are observed for long stay patients in T or PVT/MSP.**
- **The cost is higher for atypical antipsychotics and within this group for olanzapine and risperidone. The cost for clotiapine is limited. The expenses for quietiapine are obviously higher in T, the expenses for clozapine are the highest for long stay patients combining sheltered living with psychiatric day treatment.**
- **The mean monthly reimbursement at the level of the substances of classical antipsychotics is often very low and less than 1 €. The highest cost are observed for amisulpride (3,85 €), haloperidol (3,63 €) and zuclopenthixol (1,27 €).**
- **The overall expenses for antipsychotics in T-units are 4,6 times higher for the youngest long stay patients than those for the oldest long stay patients. This is mainly caused by the decreasing cost of the atypical drugs (N 05 AH). At the level of the substances this correlation isn't always present, as well as for classical antipsychotics as for atypical. In the other settings the observed decreasing cost per age category is also mainly due to atypical antipsychotics.**
- **Contrary to the results for long stay patients in T-units, we observe a decreasing cost with length of stay for long stay patients in IBW / IHP and PVT / MSP. For long stay patients in psychiatric day treatment the overall mean monthly reimbursement for antipsychotics remains rather stable.**
- **The mean monthly reimbursement for anti-depressants amounts to 13 €; the cost is lower in PVT/MSP (10 €) and higher in T (15 €). In both settings the mean cost decreases with the age and length of stay.**

12.4.2 Cost at the expense of patients

As to the cost of medication at the expense of patients, we only mention the total cost (see Table 12.11) for two reasons. In hospital settings the patient's co-payment consists of a daily lump sum that covers the cost of all medication, regardless of the real consumption and the category. In ambulatory settings the IMA-data only dispose of incomplete information as the out of pocket payment for D-medication is unknown. Consequently the observed cost is underestimated and it is not possible to make a reliable estimation.

13 SUMMARY AND CONCLUSIONS

13.1 INTRODUCTION

This report aimed at enlightening three central topics concerning a specific category of psychiatric hospital beds: T-beds: (1) describing the clinical and socio-demographic profiles of long-stay patients in hospital units with index T, (2) describing and discussing to what extent the content of care and treatment offered to long-stay persons in T-bed units corresponds to available knowledge and evidence in the international scientific literature and (3) discussing to what extent alternative care settings are to be, or can be made available for the current profiles of long-stay persons with mental illness residing in T-bed units. These issues are closely related to questions on mental health care reforms (deinstitutionalisation) and positioning the role of different health care services and facilities in the mental health care landscape.

The research is based on an extensive literature search and an analysis of two administrative databases (Minimal psychiatric dataset and health insurance data (ima)) for the year 2003. The research is innovative as such, as MPD and IMA data are being intensively used for a research on the mental health, potentially enabling a reflection on the future use MPD for policy research purposes.

The population distributions between the databases were comparable, but as each administrative database has its particular characteristics, strengths and weaknesses, we also found differences between both datasets. A lot of the differences can be explained by the nature of registration of both datasets, but further in depth methodological research is needed to explore the differences and the reliability and validity of each of the datasets. From a methodological point of view, the results of this research have therefore to be interpreted within the constraints of registration characteristics of each database. We developed important insights using the databases, but some issues require further elaboration.

This research is in the first place descriptive and indicative concerning the profiles of patients in T-units and alternative mental health services.

13.2 OBSERVATIONS ON AVAILABLE EVIDENCE

There is a rather extensive international scientific literature trying to describe the population at the centre of our research question. This literature discusses conceptual issues, operational definitions, as well as aspects of content of care and organisational alternatives for institutional care. Little research is dealing with content of care issues in psychiatric hospital settings. Relatively little high level evidence is available on the effectiveness of (alternative) organisation models or treatment care and support interventions. This is not surprising as we deal with a “chronic” health care problem for which the societal functioning is becoming a more important issue than the biomedical healing. The concept of “chronic” psychiatric or mental health patients is therefore avoided, and substituted by the notion of severe and persistent mental illness defined in terms of diagnosis, disability, duration, safety and need for support. Consensus is rising that for treatment and care the degree of disability is a more important criterion than the specific diagnostic category. Moreover, the discussion about care and support for long stay patients or persons with severe mental illness is a sociological one too, as the focus is being put on how and to what extent people can be reintegrated (deinstitutionalised) in society as well as on how the process of destigmatization of mental illness can be enhanced by developing alternative forms of care and support.

13.3 “LONG STAY PATIENTS” IN PSYCHIATRY

In international literature long stay patients are identified using the duration in institutional care as the central criterion. Typically, a minimum duration of one year in a residential facility is considered before labelling a patient as 'long stay'. Depending on the studies, this criterion can vary from six months to five years.

This research used the one-year threshold to include patients in the population sample, but used different thresholds to describe the population profile.

On the basis of the MPD data (2003), a total of 13,000 patients were identified as having stayed at least one year in T-units, psychiatric nursing homes, initiatives for sheltered living psychiatric day or night hospitalization. 36% reside in T-beds, about a quarter (24%) in PVT/MSP, about one in four (23%) in IBW/IHP, one sixth (16%) in t1, whereas patients in t2 beds represent a mere 1% (approx. 250 patients). IMA-data show that about 3% of long stay patients combine a stay in sheltered living with psychiatric day treatment (t1).

Approximately 70% of T-bed patients have a total length of stay longer than 2 years; one third more than six years. A similar distribution of length of stay is observed for IBW/IHP.

The stay in a PVT/MSP is on average substantially longer. The opposite is true for t1 and t2. These observations seem logic considering the functions of these services in the organisation of mental health care.

With a few exceptions, there are generally more long-stay patients per inhabitant in each of the settings studied in the Flemish provinces, compared to the Walloon provinces. This difference is pronounced for facilities considered as alternatives to the T-units.

13.3.1 Socio-demographic characteristics and health insurance status

The average age in T-beds is 52 years. As expected the population in PVT/MSP is older, while it is younger in the other settings.

Consistent with international observations, there is a marked predominance of men (e.g. 58% in T).

Patients with lower educational levels have on average longer stays.

Most long-stay patients depend for their income on an allowance and are entitled to the higher reimbursement scheme (verhoogde tegemoetkoming/intervention majorée). The proportion increases with longer length of stay. In t2 and IBW/IHP, a limited number of persons (respectively 12,31% and 9,68%) have a (part time or full time) professional occupation or receive an allowance for unemployment.

13.3.2 Entry in T

About half of the long-stay patients in T were in an institution, either psychiatric or not, before the beginning of their long stay. The other half was coming from a home situation. For about half the long-stay patients the admission to T was preceded by a stay in an A-unit.

One in four long-stay patients in T was initially admitted under legal conditions. Their length of stay is generally longer compared to patients that were admitted voluntarily, also if we control for other variables such as aggression.

13.3.3 Clinical profile

About 50% of the long-stay psychiatric patients have a (primary or secondary) diagnosis of schizophrenia or psychotic disorder in all five settings. The percentage of persons with schizophrenia rises with length of stay and reaches 60% among patients with a length of stay of more than 6 years.

Overall, one in four long-stay patients is mentally retarded, and this proportion increases for the longest length of stay category.

Most long-stay persons with mental retardation have a psychiatric disorder as a primary diagnosis, except for PVT/MSP.

Whereas only 3% of the patients in T-units have a *primary* diagnosis of mental retardation, the condition is mentioned in as many as 20% of the patients. Mental retardation is registered for 46% of PVT/MSP patients (in 32% as primary diagnosis). In t1, the proportion is 11%, in IBW/IHP it is 15%.

In T-beds, 37% of the patients have 'personality disorders' (mainly as a secondary diagnosis). 17% of the patients have substance-related diagnoses, 14% mood disorders. These diagnostic categories are mentioned much more frequently in t1 and IBW/IHP. However, problems related to substance abuse are mentioned for 40% of T-bed and IBW/IHP patients, 35% of t1 patients.

Somatic diagnoses are mentioned in 36% of T-bed patients, and in up to 54% of PVT/MSP residents. They are less frequent in IBW/IHP (22%) and in t1 (24%).

13.3.4 Level of disability

The degree of disability of patients in day hospitalisation and sheltered living is similar, and substantially lower than in T. The highest scores are found in psychiatric nursing homes, but the differences with T-units are small. In accordance with the literature the degree of disability increases with length of stay.

Infirmity scores, i.e. the level to which the patient is dependent on others with respect to basic living skills, follow a similar pattern, with relatively low infirmity in t1 and IBW/IHP, and the highest infirmity in PVT/MSP.

13.3.5 Other symptoms and problems

Aggressive behaviour or an aggressive attitude is mentioned in 40% of T-bed and PVT/MSP patients, whereas it is much less frequent in IBW/IHP (20%) or t1 (13%).

Psychosocial problems, and more specifically those linked to family relationships and to work appear to be more frequent in IBW/IHP, and less so in PVT/MSP, which can probably be explained by the higher degree of isolation and unemployment/ retirement in the latter setting. Overall, the primary supporting group is experienced as problematic for over 50% of these patients. Anti-social attitude is found in one patient in six in T and PVTMSP; it is less frequent in IBW/IHP (11%) and t1 (5%).

Patients who form a risk for their own safety are more frequent in T-units (15%) than in alternative settings (around 10%).

13.4 PATIENT CHARACTERISTICS AND LENGTH OF STAY IN T-BEDS

Patient characteristics associated with a longer stay are: higher age (especially above 50 years old), lower level of functioning (high infirmity, low GAF, problematic social functioning), aggressive behaviour and anti-social attitude and legal problems.

- A diagnosis of schizophrenia or psychotic disorder and mental retardation are also associated with longer stays in T beds. Substance abuse, mood disorders and personality disorders is associated with shorter stays in T.

In the small scale field study in T-Units (N=144) it was observed that nine out of ten long-stay patients in the study sample had at least one social behavioural problem. At least one of these problems was characterised as serious in two thirds of the patients.

Suicide risk and substance abuse were associated with shorter hospital stays. Bulimia, begging and serious stealing were associated with longer hospital stays.

Based on the MPD analysis, problems related to the primary supporting group, problems with the social environment, with living or with finances, conversely, are inversely related to length of stay. We assume that these elements are becoming less of a problem considering the life situation of the very long stay patients.

In the field study the nature or severity of the psychiatric disorder, insufficient functioning in daily activities, insufficient social skills, the need for hospital care and support and the need for hospital protection and supervision were the most common reasons for ongoing hospital stay. Other frequently cited reasons were additional somatic problems, the absence of suitable alternatives, danger to self or others, unwillingness to leave the hospital, unwillingness of family members or unavailability of family caregivers. Insufficient financial means was not a commonly reported reason, but was nevertheless associated with unwillingness to leave the hospital, although these patients could have a discharge potential. In patients with no discharge potential, the nature or severity of the psychiatric disorder, the need for hospital care and support and somatic problems were relatively more frequently mentioned reasons for the ongoing hospital stay.

The field study has confirmed that lower levels of functioning with respect to autonomy and self-care are associated with longer stays indeed.

Patients admitted from a family(like) situation tend to have longer stays than patients who were living alone, even after correction for level of functioning and mental retardation. This could be an indication of the possible problems in care capacity and the need to recover of the family after having gone to any length in the care of mentally ill persons.

13.5 GEOGRAPHICAL DISTRIBUTION

We observed a 'heavier' profile of the long-stay population in T-units in Wallonia compared to Flanders (more anti-social behaviour, aggression, mental retardation and more disabled).

In IBW/IHP, the patient characteristics are comparable between Flanders and Wallonia.

The proportions of persons with mental retardation in the respective facilities differ between regions: In Wallonia, 30% of the long-stay patients in T have mental retardation against 15% in Flanders. In PVT/MSP in Flanders, 52% of the residents have mental retardation as a main or a secondary diagnosis, while in Wallonia it is 35%. Questions could be raised whether T-beds are the best facilities to support people with a diagnosis of mental retardation on a long term basis. A further analysis is needed to link these observations with the supply of care for mentally handicapped patients in the two regions.

In general we find higher proportions of patients in alternative settings to T in Flanders than in Wallonia. This is not surprising as the supply of alternatives is lower in Wallonia than in Flanders (except for PVT/MSP).

On the level of provinces we noticed that West-Vlaanderen and Namur have higher proportions of long stay patients in T-beds and psychiatric day hospitalisation. Very few patients from Hainaut and Liege are in psychiatric day hospital (t1).

Limburg, Oost-Vlaanderen and West-Vlaanderen host relatively more patients in IBW/IHP.

Oost-Vlaanderen and Limburg house relatively more patients in PVT/MSP. These are provinces where the re-conversion of hospital beds has been carried through more strongly.

13.6 OVERLAP OF PATIENT PROFILES BETWEEN SETTINGS

A remarkable finding, related to our research question is that a non-negligible group of the long-stay patients in T has a profile that is typical for, or very frequently observed in t1 or IBW/IHP. Patients in T with a reintegration profile are observed more frequently in Flanders (between 15 and 20% of the T-bed population) than in Wallonia, (approximately 10%) and Brussels (around 5%).

Although caution is needed to interpret the data, this would suggest that a substantial number of patients in T-units could fit in an IBW/IHP (possibly in combination with day hospital).

Overall and based on the information from the MPD dataset, the T-bed population that potentially could be reintegrated is estimated at approximately 12%. Moreover the regional differences show that a more detailed analysis is needed on the facilities to which long stay patients can be referred to after their stay in T-units: there is still a vast amount of patients for which T-units seem to become a permanent place of living.

13.7 REINTEGRATION AND REORIENTATION

The international scientific literature does not elaborate on the difference between reintegration and reorientation. This distinction is however useful for Belgium. Our findings show that discharge from hospital settings does not necessarily lead to reintegration, as is often the case in other countries.

In this report, similar to the general understanding in literature, reintegration is defined as a discharge of T towards community-based setting; in our analysis home, t1, t2 or IBW/IHP. Reorientation is defined as a discharge from T towards another residential care setting (other inpatient hospital setting, home for the elderly, home for handicapped persons, psychiatric nursing home). According to MPD data, of the 1034 T-bed patients (22% of the overall study population) discharged in 2003, almost half is reoriented, while two fifths are reintegrated. An analysis of the discharged patients in the IMA database shows that 40,9 % of the patients is reoriented towards another residential setting (home for elderly, PVT/MSP, A-unit). Only one in five is discharged for reintegration (21,1%) (psychiatric day or night treatment or sheltered living). Moreover, after six months, the proportion of reoriented patients has even increased (49,2%) compared to the reintegrated (16, 2%).

Whether or not a long-stay patient is or could be eligible for reintegration in a more community-based setting depends –according to the international literature- on individual, social and societal factors.

- Among the individual factors, are social behavioural problems (particularly problems concerning safety of self and others, such as violent and aggressive behaviour), old age and/or the presence of other medical conditions and somatic handicaps, and the severity of psychiatric problems, e.g. seriously deteriorated functioning, treatment resistant symptoms, etc.
- Social factors are mainly linked to the availability of informal support from family or other individuals.
- Societal factors have to do with the availability of adequate alternative services and facilities.
    - Based on our data, however, we could not confirm the hypothesis that the geographical dispersed supply of alternative places to T, has an impact on the probability of reintegration or reorientation. Although we observe regional differences in supply of care, it seems not to be statistically significant.

13.7.1 Conditions affecting reintegration

The results of the MPD data of individual factors affecting the chances for reintegration are comparable to the scientific literature.

The probability of reintegration is largest (18%) for 'short long-stay patients' (< 2y), and becomes very low on the one hand (1.3%) for patients staying more than six years in T, and on the other hand for the elderly.

Infirmity with respect to basic living skills and mobility, incontinence, lower GAF score, aggression, somatic problems, and a low educational level are all associated with a lower probability of reintegration. Indeed, we observed that aggression, anti-social behaviour and somatic problems occur less frequent in IBW/IHP and t1 compared to T. Likewise, GAF and infirmity scores show a higher level of disability in T than in IBW/IHP and t1, indicating that a certain level of independent functioning is required to make a chance in the latter two settings.

Schizophrenia, psychotic disorder and mental retardation are associated with lower reintegration chances. Patients with substance abuse, mood disorders and personality disorders have higher probabilities to be reintegrated.

We do not find a difference in reintegration chances for patients that were previously living with family compared to patients that were living alone.

Social functioning, legal problems, problems with living, anti-social attitude or danger for self showed no significant relationship with reintegration chances.

According to the field study, the discharge potential of inpatients was mainly associated with a higher functioning score with respect to self-care. For a large majority of the patients with discharge potential, this potential came down to reorientation rather than reintegration potential. Thus, the 'reintegration potential' found in inpatients on the basis of the MPD data was not perceived in the same way by the respondents in the field study group.

13.7.2 Conditions affecting reorientation.

Reorientation emerges as a prolongation of the T-bed stay for patients with reduced independency. The probability to be reoriented increases with age, disability, incontinence and mental retardation. In general, reorientation is most likely for patients with high level of disability and low probability of improvement, without or with few behavioural problems. But the differences with the non reoriented patients remain small.

Problems with social functioning, safety for self, the diagnosis of schizophrenia, psychotic disorder or current substance abuse are associated with a lower reorientation probability. However, we still observed a large proportion of patients with schizophrenia and psychotic disorders in PVT/MSP. A more detailed exploration of "reorientation" towards different types of residential facilities is needed to get a better insight in discharge destination[20]. A specific analysis of the destination of the group of patients with mental retardation would be interesting to study more in detail.

Patients previously living with family, have lower chances of reorientation. We cannot really explain this observation, and a further inquiry in this problem is needed.

In contrast to the observations on reintegration, aggressive behaviour does not affect the chances of reorientation. Aggression or anti-social behaviour is equally common in PVT/MSP and in T-units, an indication that it is not a particular barrier for reorientation from T to PVT/MSP.

13.8 CONTENT OF CARE

As mentioned before, there is very little high level evidence available on treatment and care in mental health care. Moreover, the scientific literature is characterised with conceptual fuzziness, making that a lot of the interventions and organisational models in mental health care remain black boxes. Little research deals with content of care and treatment in a residential hospital setting. In general the research is focussing on treatment or care, regardless of the facility.

In general terms there is a consensus in literature that treatment and care should be adapted to the needs of individual patients or subgroups of patients. Treatment of severe and persistent mentally ill patients should aim at psychosocial rehabilitation and involve both psychopharmacological and psychosocial treatment. Symptom reduction will be an important objective of pharmacological treatment and (cognitive) behavioural interventions. Psychosocial treatment should consist of psycho-education and cognitive behavioural interventions directed to the enhancement of social and living skills. This means support in the activities in real life situations and the development of structured daily activities in vocational, educational and free-time situations.

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20 Our operationalisation included all residential care facilities (it included institutions for people with mental retardation, and homes for the elderly).

The support of functioning in a social environment (community or family) is considered as an important aspect of care. Special attention should also be paid to the needs of important persons in the social environment of the patient. A positive therapeutic relationship, characterized by a good balance between professional distance and involvement (low expressed emotion), is crucial in the long-term treatment and care of the severely and persistently mentally ill. In the counselling process attention should be given to working out feelings of grief and bereavement that are going along with the persistence of the illness.

As severe and persistent mental illness is associated with medical comorbidity, physical health care and prevention of illness are important. In particular problems of overweight and pulmonary diseases of large numbers in the target group are mentioned. Prevention of risk behaviour in the field of sexuality is another important aspect as well as prevention in the dental field.

13.8.1 Content of care in Belgian facilities

Basic care is most frequently provided in PVT/MSP, and provided more in T-units compared to t1 or IBW/IHP.

All types of surveillance related to freedom of movement (fixation, isolation, separation, control and prohibition of leaving) are generally more common in T compared to the other settings. Surveillance for risk of suicide or life is more common in T-units.

In all settings, counselling and supportive therapy is much more frequently applied than specific psychotherapy. A large number of psychosocial treatment types are more frequently applied in T-units than in the three reference settings, taking into account patient characteristics. Supportive therapy is more predominant in PVT/MSP, but decreases with length of stay.

The most common psychosocial treatments are activities on the problems of daily life and social functioning (occupational therapy, ADL-training, assistance with socio-cultural and leisure activities, assistance with social interaction and integration) rather than activities with a curative objective (psychotherapy).

An important observation for the quality of care discussion is that, regardless of patient characteristics, different forms of rehabilitation activities and psychosocial treatments (counselling or supportive therapy, relation or family therapy, individual psychotherapy, group psychotherapy, psychomotor therapy, non-productive occupational therapy, cognitive skills training, and assistance with social interaction and integration) are more frequently offered to patients with shorter stays than to patients with longer stays.

The field study learned that psychosocial treatment in general and problem-directed therapy in particular, were delivered relatively more often to younger than to older patients. Thus, in addition to duration (MPD), age seems to be an important factor in the delivery of psychosocial treatment. Further, the delivery of insight-directed psychosocial treatment was associated with higher education levels, the presence of mood disorders and the absence of mental retardation. Active family involvement and peer contact were stimulated relatively more for younger patients than for older patients. Older patients received more support with respect to autonomy; younger patients received more support with respect to integration outside the living group and work activities. It suggests that besides individual characteristics, length of stay and age determine the content of treatment and rehabilitation activities, an issue asking for further debate and analysis on quality of care for the very long stay patients, including the role of T-units in the mental health care landscape.

13.8.2 Drug treatment

Drug utilisation has been studied in a rather rudimentary way, only analysing the question whether a patient has been prescribed a drug (one dose in hospital and PVT/MSP, and one package in outpatient setting). The observed practice variability is therefore purely descriptive and not to be interpreted as actual differences in terms of quality of care.

In all settings, almost all patients get (reimbursed) ATC-codes pharmaceuticals prescribed. Almost all patients received psychotropic drugs (N), whatever their age. Anti-infectives (J), drugs for alimentary tract and metabolic conditions (A) and drugs for the respiratory system (R) were the most frequently prescribed other first level categories. About 10% of IBW/IHP residents didn't receive reimbursable N-medication in 2002 or 2003 (take into account that the data do not know on non-reimbursed D-medication).

For most N-category drugs, patients in T have the highest prescription proportions. Psycholeptics were delivered to 92 % of the study population. This proportion is higher in T-units and PVT/MSP, somewhat lower in IBW/IHP (but still above 80%). Antipsychotic drugs are more frequently prescribed (about 90 % of the patients) in T-beds and PVT/MSP than in other settings. Even there, the proportion is high (above 75 %).

Risperidone is the single most frequently precribed substance from the antipsychotic class (29 %). Besides risperidone (32 %), olanzapine (29,5 %) and clotiapine (27 %) are frequently prescribed in T-units. The prescription of antipsychotic drugs increases with length of stay.

- The most frequently delivered classical antipsychotic drugs are butyrophenone derivatives (40,8%), with the highest proportion in PVT/MSP (48%) and T-units (45 %). Haloperidol and pipamperone are prescribed most.
- Atypical antipsychotic drugs are most frequently prescribed in T-units, followed by PVT/MSP and IBW/IHP whether or not in combination with t1. Risperidone is prescribed most, followed by olanzapine and clotiapine. The combination of Clotiapine and pipamperon, typically used for behavioural regulation, is prescribed markedly more T-bed patients (41 %) than in other settings (PVT/MSP : 31% ; IBW/IHP +t1 : 28 % ; IBW/IHP : 22 %).
- Clozapine, which tend to be used in non-responders to more 'classical' antipsychotics, is equally prescribed in T and IBW/IHP +t1 (13 %). Far less in t1 (7 %), PVT/MSP (5 %) or IBW/IHP (4%).

The highest prescription of anxiolytics and hypnotics and sedatives is found in T-units (62 %), followed by PVT/MSP (53 %).

In PVT/MSP it is mainly prescribed in the younger age categories. More specifically, hypnotics and sedatives are prescribed to 46% of T-bed patients, and to 39 % in PVT/MSP.

Antidepressants have been prescribed to 51 % of the study population, and 57 % of the T-bed patients.

Drugs for treating alcohol or opioid dependency are not frequently prescribed in this population, except in IBW/IHP + t1 where disulfiram was given to 11% of the patients.

In all settings, and for almost all selected types of medication, we found the highest proportion of prescriptions in one of the Walloon provinces (mostly Liege or Luxemburg) and in Brussels. These geographical differences in T-units are probably partly related to the more severe clinical profile in Walloon hospitals.

There is a wide variability between hospitals in the proportion of prescribed medication at the level of substances; in particular for the atypical antipsychotics and the majority of classical antipsychotics. The analysis of medication prescription in MPD data showed that the 'hospital' factor plays a major role whether or not a patient receives a certain medication treatment. After correction for case-mix this is in particular the case for nootropics. This 'hospital' factor is low for antidepressants, neuroleptics and somatic medication. These rudimentary MPD profiles of medication prescription could be an indication of a certain degree of 'specialisation' within hospitals.

As a general comment, further in depth analyses are needed to compare medication prescription profiles and variability, especially focussing on daily doses and polypharmacy would be necessary to assess the variability in drug treatment.

13.8.3 Somatic and supportive care

Overall, long stay patients in T-bed and PVT/MSP get more (reimbursed) medical interventions than the other settings, except for dental care.

- Clinical biology tests were almost universally used in the T-bed population, regardless of age, length of stay or province. They were also frequently used in IBW/IHP (78 %) and PVT/MSP (89 %).
- The highest proportion of patients having received medical imaging exams is found in PVT/MSP, probably due to the older age structure as we observed an increase with age in all settings.
- 60% of long-stay patients had not a single dental care reimbursement for the period studied. In PVT/MSP, this proportion reaches 70%, and in t1 and IBW/IHP+t1 still half of the patients had no dental care.

Home nursing was invoiced at least once for one in three long stay patients in IBW/IHP, for one in six long stay patients in t1 and for almost one in five long stay patients combining IBW/IHP with t1.

Both for dental care and home nursing differences are observed between the provinces.

The number of patients reimbursed for electroshocks and polysomnographic examinations is small. These activities were mainly invoiced for long stay patients in T and to a lesser extent IBW/IHP. In T, the highest value for ECT was observed in Liege (6.17% of the patients in 2002-2003); only very rarely or not at all in half of the other provinces. Polysomnography was mainly performed in Antwerp and Brussels.

The contacts of patients with a general practitioner vary between provinces. We observe a higher frequency in the eldest age categories, but also in younger patients, the frequencies amount to 86 % or more.

The fee for psychiatric supervision is systematically invoiced for all admitted patients. One in five long stay patients in T also had supervision in A-units. We observed differences between the provinces; the proportion tends to be higher in Wallonia. Supervision in T was invoiced at least once for 14 % of the long stay patients in IBW/IHP. One in three has been admitted in an A-unit. Admission in A or T is rare in long stay patients in PVT/MSP.

The fee for availability during therapeutic absences was invoiced for one in five long stay patients in T and for almost half of the long stay patients in IBW/IHP.

Psychotherapeutic treatment by a (neuro)psychiatrist was invoiced for one in four long stay patients in IBW/IHP but the proportion decreases with the age and with length of stay. Overall, three quarters of the patients are not reimbursed for a consultation with a psychiatrist, and 10% has not been reimbursed for psychopharmacological treatment. We observed a substantial variability between the provinces, especially in Wallonia. We cannot readily explain this variability as the profiles of patients in Flanders and Wallonia in IBW/IHP are comparable.

13.9 THE COST OF HEALTH CARE

Public financing

The average monthly total public cost per patient is the highest for long stay patients in T. The cost in T (mean estimate 4.444,83 €) is more than twice the average monthly cost per patient for long stay patients in PVT/MSP (mean estimate 2.176,48€) and for long stay patients combining sheltered living with psychiatric day treatment (2.092,83 €). The lowest average monthly cost per patient is observed in long stay patients in IBW/IHP (1.001,22 €). In T-units age and length of stay have no impact. In all settings the monthly public costs per patient are unevenly distributed over the patients.

In T, IBW/IHP and PVT/MSP the differences are largest for younger patients and for shorter durations of stay.

Co-payments and supplements

The average monthly co-payments for a long stay patient per day of hospitalisation is the highest in T-units (382,01€). The amount is somewhat lower for younger patients.

Although residents pay an amount per day in institutions for elderly care, PVT/MSP and in IBW/IHP, we are not able to calculate the mean monthly personal contribution. We estimated the monthly contribution for a resident without dependent persons, entitled to preferential reimbursement at about 225 € per month.

For long stay patients in T and PVT/MSP the co-payment for medication comes in second place. This cost seems to be lower in other settings, but the information available is incomplete. For most other categories of medical services the average monthly co-payment remains rather small, partly due to the preferential reimbursement.

The highest amounts for reimbursement in the system of maximum billing and lump sums for chronically ill are found in long stay patients in T.

Although the information on room and fee supplements and various other costs is not necessarily reliable, room supplements are mostly invoiced for long stay patients in T-units (on average 11,81€ per patient per month). The average monthly amount per patient for fee supplements remains low in all settings. The highest average monthly amount per patient is observed in T-units (16,25 €).

Globally, a long stay patient in T pays on average 65 € per month for different non medical services. This cost rises with age and is higher for longer stays. In T-units the highest costs are generally observed for Flemish patients.

In IBW/IHP, besides limited co-payments for GP and (neuro)psychiatrist fees, the patients have mainly to pay a monthly rent (We found examples ranging between 250€ and 500€) and costs for daily living.

13.10 DISCUSSION

With respect to the organization of care, a balanced care model of different types of services is proposed in the scientific literature. Balanced mental health care is essentially community-based, in which hospitals play an important back-up role. Coordination of care and the continuity of care are important characteristics in the prevention of relapse. It is within this model the organisation of mental health care services has to be reflected upon. The question on the role of hospital T-beds is an essential issue in this reflection, especially since Belgium is a world leader in the number of psychiatric hospital beds per 100.000 inhabitants and has more than 7,000 long-term psychiatric hospital beds. Further reflections are needed on the place and care of long stay-patients in particular and on how to support people with severe mental illness. One could wonder whether the formally defined role of T-beds in the landscape of mental services, is really met if we look at the lengths of stay. A general estimation showed that about 12% of the long stay population has a profile to be reintegrated. We still noticed a group of very long stay patients in expensive T-beds for which the number of rehabilitation activities seems to be dropped. The marked variability between regions, between provinces and between individual institutions needs further analysis. Flanders has a proportional higher level of institutionalised long stay-patients. Whilst overall, T patients in Wallonia tend to be more 'severe' cases than in Flanders, the marked between-hospital differences are indicative of some degree of specialisation of the centres.

The non-negligible (but widely varying) percentages of persons with mental retardation in these psychiatric settings are a matter of concern. A specific approach for this group of persons could probably lead to a more purposeful use of the T-beds in the psychiatric hospital landscape. But of course, adapted and needs based solutions have to be found for people with mental retardation for longer term support.

We also found that a large group of long stay patients is not reintegrated, but reoriented. This could be partly related to the problem of the "old long stay" patients, but this is not sure at all. It could also be that a large group of older patients is being drained to substitute residential places in PVT/MSP in the verge of the reconversion of psychiatric hospital beds. This movement could illustrate that "institutional care" is still embedded in the mental health care approach rather than deinstitutionalisation.

We keep repeating that the administrative datasources should be used with care when discussing the content of care. The way we analysed the data only allows interpreting it as indications. The analysis shows that the content of care for people with severe and persistent mental illness in Belgian T-beds holds the components of what we find in the literature as being good care for this target group, i.e. psychopharmacological and psychosocial treatment. A major disadvantage of these datasources (MPD in particular) and the analyses made (IMA) is that we can only have indications whether an activity has taken place, not on the intensity of these activities, neither on the adequacy or purposeful use of these activities. According to the field study, the different treatments and care types in T-units were delivered to virtually the same proportion of patients, regardless of their discharge potential. Only patients with discharge potential received more insight-directed psychotherapy and support with domestic activities. More worrying is the indication from MPD that the length of stay in a T-bed seems negatively related to the types interventions offered to the patients (cfr the waning of e.g. rehabilitation activities with length of stay), putting the challenging question in front whether the very long stay patients are still getting treatment, or are just being cared for.

The exploration of the financial implications for the public authorities and the patient warn for two important issues to be discussed too. Equity issues are to be taken into account in policies aiming at reintegration and reorientation especially for this vulnerable patient group. From the point of view of the public authorities, a hospital admission, regardless of the unit, is the most expensive type of care. The highest cost is the amount per day for the stay itself, but which, in a T bed, covers an extensive package of services. The amount paid per diem in a PVT/MSP and certainly in an IBW/IHP is much lower, but with major differences in the package included in the price. A specific point of interest is the cost for medication. The average amount paid by RIZIV/INAMI differs from one setting to another, partly because of differences in clinical profiles. But, in hospital units and PVT/MSP a patients pays a daily lump sum, regardless of his individual consumption. In IBW/IHP a patients pays part of the cost of reimbursable medication and the full price of non reimbursable medication.

To some extent, discharge from T leads to a shift of part of the burden onto the patient. This is especially true for patients transferred to a PVT/MSP. The situation of patients in IBW/IHP is more difficult to evaluate because of some missing pieces of information. Consequently, from a financial point of view, neither the institution nor the patient have incentives for reintegration or reorientation.

Alleviating the current patient burden in community-oriented setting could eventually result in a financial win-win situation for the patient and the authorities, guaranteeing the quality of care for patients and relatives. Of course this will require a reflection which also goes beyond the federal health care competencies, as other types of facilities will need to be given a place and role in a balanced care model. The current policy segmentation of organisation and financing competencies over different authorities is a serious matter of concern, which should be duly addressed when considering integrated mental health care reform

- **On the basis of the MPD data (2003), a total of 13,000 patients were identified as having stayed at least one year in T-units, psychiatric nursing homes, initiatives for sheltered living psychiatric day or night hospitalization.**
- **Approximately 70% of T-bed patients have a total length of stay longer than 2 years; one third more than six years.**

- **Patient characteristics associated with a longer stay in T are: higher age (especially above 50 years old), lower level of functioning (high infirmity, low GAF, problematic social functioning), aggressive behaviour and anti-social attitude and legal problems.**
- **We observed a 'heavier' profile of the long-stay population in T-units in Wallonia compared to Flanders (more anti-social behaviour, aggression, mental retardation and more disabled).**
- **In general we find higher proportions of patients in alternative settings to T in Flanders than in Wallonia. This is not surprising as the supply of alternatives is proportionally lower in Wallonia than in Flanders (except for PVT/MSP) based on the population number.**
- **A non-negligible group of the long-stay patients in T has a profile that is typical for, or very frequently observed in t1 or IBW/IHP. Patients in T with a reintegration profile are observed more frequently in Flanders (between 15 and 20% of the T-bed population) than in Wallonia, (approximately 10%) and Brussels (around 5%).**
- **the geographical dispersed supply of alternative places to T, seems not to have an impact on the probability of reintegration or reorientation. In contrast, a proportional higher supply of T-beds seems to affect negatively the probability of reintegration.**
- **The proportions of persons with mental retardation in the respective facilities differ between regions:**
- **Questions could be raised whether T-beds are the best facilities to support people with a diagnosis of mental retardation on a long term basis. A further analysis is needed on the supply of care for mentally handicapped patients in the two regions.**
- **The probability of reintegration is largest (18%) for 'short long-stay patients' (< 2y), and becomes very low on the one hand (1.3%) for patients staying more than six years in T, and on the other hand for the elderly.**
- **Infirmity with respect to basic living skills and mobility, incontinence, lower GAF score, aggression, somatic problems, and a low educational level are all associated with a lower probability of reintegration.**
- **In contrast to the observations on reintegration, aggressive behaviour does not affect the chances of reorientation.**
- **Different forms of rehabilitation activities and psychosocial treatments are more frequently offered to patients with shorter stays than to patients with longer stays.**
- **The length of stay in a T-bed seems negatively related to the types of services offered to the patients**
- **There is a wide variability between hospitals in the proportion of prescribed medication (in particular for the atypical antipsychotics and the majority of classical antipsychotics). The 'hospital' factor plays a major role whether or not a patient receives a certain medication treatment. After correction for case-mix this is in particular the case for nootropics. Further in depth analyses are needed to compare medication prescription profiles and variability, especially focussing on daily doses and polypharmacy.**
- **The average monthly total public cost per patient is the highest for long stay patients in T, the lowest in sheltered living. But from an equity point of view a debate is needed whether the alternative services are adequate for the vulnerable population of persons with persistent mental illness.**

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