HIGH AND INTENSIVE CARE (HIC) IN PSYCHIATRY

Development, implementation & effects

Laura van Melle

HIGH AND INTENSIVE CARE (HIC) IN PSYCHIATRY

Development, implementation & effects

Laura van Melle

HIGH AND INTENSIVE CARE (HIC) IN PSYCHIATRY

Development, implementation & effects

door
Anne Laura van Melle
geboren te Amsterdam

Contents

General Introduction

INTRODUCTION

During the last two decades, significant reforms in mental healthcare in the Netherlands have been made. The reduction of coercion, and specifically seclusion has played a central part in these changes. The use of seclusions is controversial since no therapeutic effects have been proven and mayor negative consequences for patients and staff are known. As an answer to these reforms and inspired by the up rise of the recovery approach and by care ethical principles, the High and Intensive Care (HIC) model was developed as a new general policy for acute psychiatric wards. The HIC model aims to work proactively to reduce the use of coercive measures and improve cooperation between outpatient care and the clinic. This thesis first explores how the HIC model was developed and what it consists of. Moreover, this thesis focuses on the implementation process of HIC and effects of compliance to the HIC model on the quality of care and on the reduction of coercive measures in acute admission wards in psychiatry. In this introduction, the developments in mental healthcare and efforts to improve clinical practice will be described. Furthermore, the methodologies used and an outline of the thesis will be given.

Reforms within mental healthcare in the Netherlands

Inpatient and outpatient care in the Netherlands

In the Netherlands, patients are generally treated by outpatient care teams. Admissions to a psychiatric ward can be arranged by these teams, or by psychiatric emergency services. Patients can be admitted to either an open ward or a closed ward in a psychiatric hospital. It was assumed that intensification of outpatient services would lead to less clinical admissions and less intensive clinical admissions. The "Flexible Assertive Community Treatment (FACT) approach" was adopted for this purpose (Mulder & Kroon, 2009; Van Veldhuizen, Polhuis, Bähler, Mulder, & Kroon, 2015). The FACT approach provides means for flexible provision of care in the outpatient setting for patients with severe mental illness. FACT, as the name would suggest, is a more flexible version of Assertive Community Outreach (ACT), a form of outpatient care designed for the most demanding group of patients outside of the psychiatric hospital (van Veldhuizen, 2007). Preventing a crisis and clinical admission puts specific demands on treatment. Prevention of admission by early risk-assessment and interventions aimed at de-escalation requires well-functioning outpatient teams, such as FACT or Intensive Home Treatment (IHT; Prinsen, van Wel, Mulder, & de Koning, 2018; Johnson,

Needle, Bindman, & Thornicroft, 2008). Temporarily, admission to the closed setting of a psychiatric hospital may however still be necessary when outpatient treatment is no longer sufficient.

The reduction of coercive measures

Increasing attention for the reduction of coercion and 'good' care

Around the turn of the century, the attention for the use of coercive measures, and specifically seclusion increased in the Netherlands (Abma, 2005). While no therapeutic effect for the use of seclusion is proven, and studies about negative consequences for patients and care professionals are known, seclusion was still widely used in the Netherlands (Sailas & Fenton, 2000; Janssen et al., 2008; Larue et al., 2013; Voskes et al., 2013). Seclusion is defined as the placement of an individual in a specifically for this purpose designed locked room, with or without consent (Janssen et al., 2008; Sailas & Fenton, 2000; Janssen, 2012). At this time, the focus was primarily directed on meeting good quality standards regarding coercive practices. In this regard, eight quality criteria were developed in a qualitative project by Maastricht University in collaboration with six mental healthcare institutions in which patients, family and staff participated (Berghmans, Elfahmi, Goldsteen, & Widdershoven, 2001). After publication of these quality criteria, twelve mental healthcare institutions participated in an implementation project to establish carefulness in case of coercion, to reduce coercion, and to develop alternatives to coercive measures. Evaluation of outcomes of this project resulted in a report on good practices, which was published in 2005, and in which practices concerning communication, prevention, culture, implementation and registration were specified (Abma, Widdershoven, & Lendemeijer, 2005). This report, together with the publication of alarming and rising seclusion rates in the Netherlands stirred up the debate on frequency of the use of coercive measures in the Netherlands (Janssen, Hutschemaekers, & Lendemeijer, 2005). Moreover, several incidents that took place in seclusion rooms in which patients died were reported in the media, thereby increasing the urgency to change practice (Abma & van der Zee, 2004).

The start of a nationwide programme funded by the Dutch Government

From 2006, the Dutch Government started funding projects to reduce seclusion in support of the goal formulated by the Dutch branch organization for mental healthcare (GGZ Nederland) to reduce seclusion by ten percent yearly (Voskes, Theunissen, & Widdershoven, 2011; Abma, Voskes, Widdershoven, 2017). By 2007, a total of 34 mental healthcare institutions participated in the nationwide programme and started projects

aimed at reducing seclusion. Within the programme, the need for more adequate data on coercion arose to reliably evaluate the use of coercive measures (Janssen et al., 2008). For this purpose, six mental healthcare institutions developed a new registration method of coercive measures, called "Argus".
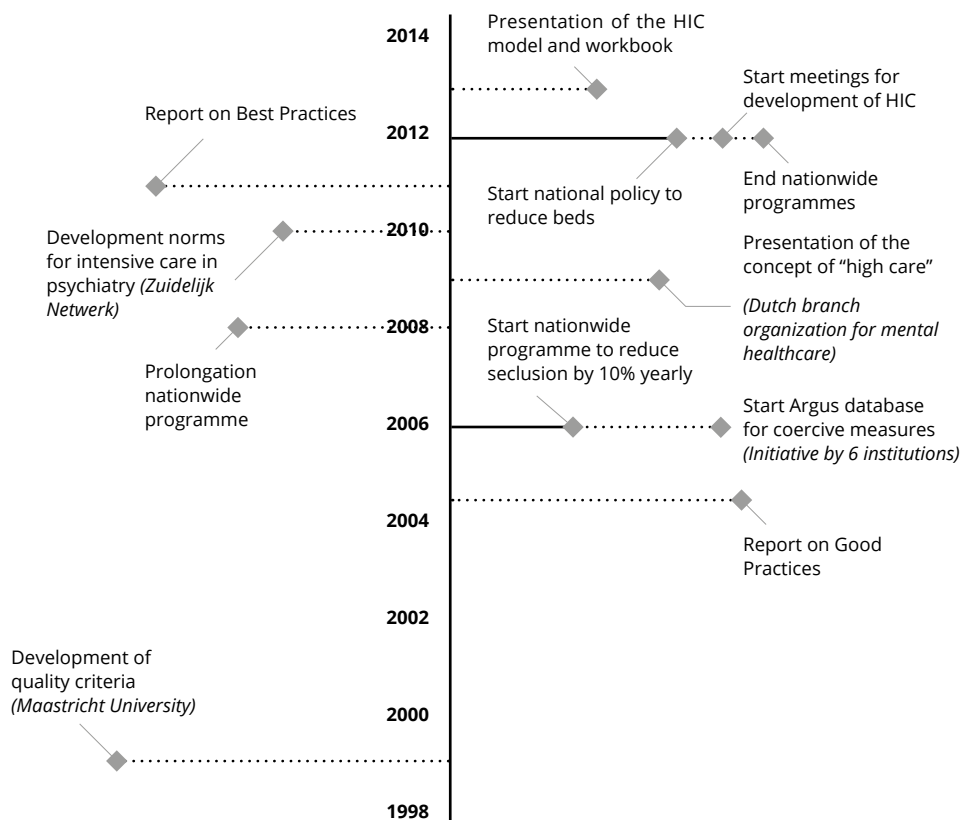
Figure 1. *Timeline of the developments in Dutch mental healthcare.*

The development of High Care

In 2008, the funding for the projects was prolonged by the government to achieve further reduction of seclusion on the condition the development of High Care would be one of the key components of innovation. In 2009, the Southern Network (het Zuidelijk Netwerk), a collaboration of six mental healthcare institutions in the south of the Netherlands, presented the idea - which was partly prompted by the subsidy conditions of the Dutch branch organization for mental healthcare - to jointly define

the development and evaluation of High Care and to operationalize it into workable components. The aim was to improve the general standard of care on acute closed psychiatric wards. Several symposia were organized around the five themes of professionalism, multidisciplinary collaboration, methodology and prevention, client and family participation and personnel & organization.

The development of Intensive Care

Around the same period, the Dutch branch organization for mental healthcare took the initiative to develop Intensive Care. In several focus groups and expert meetings involving patients, relatives and professionals, norms for Intensive Care were developed (Borgesius, 2010). These norms however, were received with criticism (Kuijpers et al., 2010). It was argued that the norms were primarily related to Intensive Care Units and too little attention was paid to the reduction of coercion on general, and on High Care wards. Moreover, it was argued that the reduction of coercion is not only a matter of acquiring new knowledge and applying new instruments, but it implies a transition of a complex system in which culture (values and thinking), the structure (organization) and the work routines (doing) have to change. It was encouraged that the further development of High Care would be indispensable to avoid regular wards to become the "waste bin" for patients with a serious mental illness and to make the reduction of coercion the responsibility of the entire institution.

National policy to reduce clinical beds

In addition to the debate about the reduction of coercion and reforms in clinical care, the number of beds also came under scrutiny. Although the reduction of the number of beds has been on the agenda since the 1980's, the rate in which this is done was low in comparison to other European countries and in several sectors even extra beds were created. Primarily, attention was paid to intensification of outpatient care as a precondition for the reduction of beds. By 2009, this resulted in that, with the exception of Belgium, the Netherlands had the highest number of clinical beds per 100.000 citizens in Europe (135 beds per 100.000 people; van Hoof, Knispel, van Erp, Overweg, Place, & van Vugt, 2012; van Hoof, van Vugt, Knispel, & Kroon, 2012). In 2012, the Dutch government, mental healthcare institutions, healthcare insurance companies and client organizations reached an agreement to reduce the number of clinical beds by one third by 2020 in comparison to the number of beds in 2008 (Ministry of Health, Welfare and Sports; Ministry of VWS, 2012). The motivation for the reduction of beds in Dutch psychiatry was twofold: Firstly, clinical stay usually does not benefit the quality of life, treatment and recovery of patients, which led to the wish to organize care more directly

in the patients' environment and involve this environment into the care process (van Hoof et al., 2012a). A report commissioned by the Dutch government, stated that the clinic is an "artificial environment" in which patients are usually disconnected from their own environment, relatives and society and in which they are confronted with daily activities and a physical and social environment they have not chosen themselves and have no influence on. Care for patients with serious mental illness should therefore take place in primarily the outpatient setting (van Hoof et al., 2012a; Trimbos-instituut, 2018).

Secondly, admissions to clinics are costly. In 2010, an estimated 62% of the budget for psychiatric care (3,3 billion euros) was spend on inpatient care. Of this amount, almost two thirds was spend on acute clinical care (van Hoof et al., 2012a). The financial incentive to reform healthcare, was amplified by increased involvement of healthcare insurance companies.

Complicating consequences of the reduction of beds

The closing of clinical beds inevitably caused increased pressure on the remaining beds. When fewer beds are available the severity of the population in the clinic increases, and beds are often reserved for the most acutely ill patients for whom a short term admission is necessary. To enable the system to work, patients are discharged before they are fully recovered. These trends called for an improvement of the care within the clinic in order to better deal with the crisis nature of the care. Moreover, good cooperation between outpatient teams and the clinic was necessary. In practice however, outpatient and clinical teams often worked separately and coordination of care was frequently insufficient. A complicating consequence of insufficient collaboration can be a lack of continuity of care, which is problematic as continuity of care is seen as an important aspect of good quality care (Waibel, Henao, Aller, Vargas, & Vázquez, 2012). Better standards for inpatient care were needed, including standards for better collaboration between outpatient and inpatient services and means for stepped care.

Results of the nationwide programme to reduce seclusion

In 2011, the registration of coercive measures in Argus was obligated for the institutions that participated in the programme and thus received funding in 2011. From 2012, this registration was made obligatory for all institutions who used coercive measures by a change in the Special Admission in Psychiatric Hospitals ACT (Wet BOPZ) by the Dutch government. This registration enabled a nationwide benchmark study which showed that although the projects had some success in the reduction of seclusion, and especially in the duration of seclusion, the original goal of a reduction of seclusion

by ten percent each year was not reached (Noorthoorn et al., 2012; Vruwink, Mulder, Noorthoorn, Uitenbroek, & Nijman, 2012). The overall result was a reduction of the number and duration of seclusion of 41% and 30% respectively between 2008 and 2013 (Noorthoorn et al., 2015; Noorthoorn et al., 2016;). Yet, not all institutions were successful, and some even showed an increase of seclusion rates (Noorthoorn et al., 2016). Moreover, a subgroup of patients remained secluded often and for a long period of time (Noorthoorn et al., 2012). In the same period, a report on best practices that were developed during the nationwide programme in the participating mental healthcare institutions was presented, which showed that although many interventions were developed to reduce seclusion, institutions deferred greatly in their use of coercive measures and the landscape of inpatient psychiatric care was highly fragmented (Voskes, Theunissen, & Widdershoven, 2011). Initiatives to reform policy were made by different parties, and many institutions developed and implemented different best practices and evidence based practices, but a national standard and agreement on policy was lacking. By 2012, the projects ended with insufficient results. A new national standard in which important developments such as the reduction of beds were taken into account was needed to strive for unambiguous care and to further reduce coercion.

Integrating and developing High and Intensive Care

During a two-day working conference in 2012, representatives from twelve mental health institutions, the Dutch branch organization of mental healthcare, the Netherlands Organization for applied scientific research (TNO), mental health charity MIND (stichting MIND, previously LPGGz), and various researchers discussed the development of a national vision on a combined approach for High and Intensive Care (HIC). Initiator GGZ Breburg, a mental healthcare institution in the south of the Netherlands, had already presented a framework of standards at an expert meeting at an earlier stage, in which new standards were framed in a model fidelity score, the HIC monitor. At several open national meetings the model was presented to provide an opportunity to make further adjustments to the concept of the model. Consensus was sought between the experts on the organizational framework of this approach, focusing on stepped care and collaboration with outpatient caregivers and family members. The aim was to develop a comprehensive approach in which insights from the nationwide programme would be integrated. The idea behind this was that several studies over the last decade showed that comprehensive approaches in the reduction of seclusion and restraint are substantially more effective than less comprehensive approaches (Gaskin, Elsom, & Happell, 2007; Gerace & Muir-Cochrane, 2019; Mann-Poll et al., 2018; LeBel et al., 2014; Putkonen et al., 2013; van de Sande et al., 2011). A book describing the full HIC model

was completed in January 2013 and presented at the first national HIC conference on June 6th 2013.

In the view of the expert group, the intensive care unit (IC) should be a small unit embedded in a larger high care unit (HC), thus making the combination of a high and intensive care unit (HIC). An important starting point of HIC had to be that the process of outpatient care is leading and that from the start of the admission coordination of care takes place between the HIC practitioner, the outpatient practitioner, the client and his or her closest relatives. Initially, patients are admitted to the HC. In case stress, anxiety and agitation rise, or when aggression is imminent, one-to-one care can be given at the HC, or depending on the severity and nature of the crisis patients can go (accompanied by a nurse of the HC) to the Intensive Care Unit (ICU).
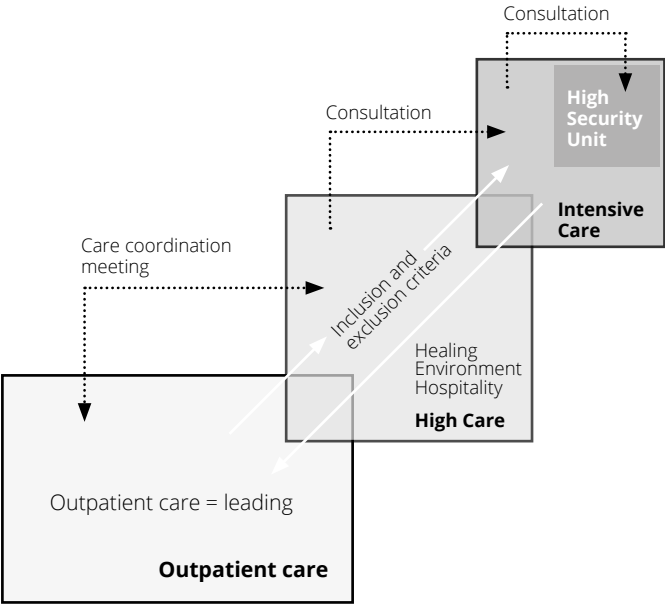
Figure 2. *Stepped care in the HIC model*

The design of the ICUs follows that of many PICUs as found in the UK and Scandinavian countries. In the PICU model this is referred to as the Extra Care Area, used as an intensive nursing intervention to manage acute disturbance as an alternative to seclusion (Beer, Pereira, & Paton, 2008; Dix & Williams 1996; Kinsella & Brosnan, 1993). PICU's are defined as *"small wards, with higher levels of nursing and other staff, built on an open plan to ease observation, and often (but not always) locked, and sometimes (but not always) with facilities for seclusion."* (Bowers et al., 2008; p. 57). In Norway, the use of the Intensive Care is known as the practice of 'shielding'. Shielding is defined as *"the confinement of*

patients to a single room or a separate unit/area inside the ward, accompanied by a member of staff" (Haugom & Granerud, 2016; p. 1). Although the use of 'shielding' is both seen as treatment and control (Husum, 2011; Vaaler, Morken, Fløvig, Iversen, & Linaker, 2006), research on the use of this approach shows that shielding involves the isolation of patients to a much lesser degree than seclusion, and shielding includes staff being present with the patient at all times (Haugom & Granerud, 2016). In the HIC model, the focus on patient contact in the ICU is particularly important. A patient in crisis is not left alone, but care can be scaled up to ensure that contact can be re-established and that the patient can return to their own room as quickly as possible.

Several differences between the HIC model and international models such as the PICU model must be noted. First, is the close connection of the ICU section with the general HC ward, and thus avoiding often disrupting transport of patients to other units in case of severe disruptive behaviour (Bowers et al. 2008; Vaaler et al. 2006). Because the ICU facilities are integrated elements connected to the HC, care can also be scaled down when indicated. This way, continuity of care is increased on the ward, which is not the case in many healthcare institutions in for example England, where PICU's are separate wards, usually not connected to a regular ward. Another difference with PICU's concerns the focus of HIC on cooperation with outpatient services. This fits the Dutch psychiatric system in which most of the psychiatric care is provided by outpatient services and in which admission to a HIC ward is seen as a temporary break of outpatient treatment.

10 fundaments of the HIC model

1. The HIC is an acute admission ward for patients in severe mental crisis for whom outpatient treatment is no longer sufficient.
2. The HIC model focuses on restoring and maintaining contact: no solitary confinement, but face-to-face contact and one-to-one care.
3. Risk-assessment and de-escalating best practices are used to prevent crisis and use of coercive measures on the ward.
4. HIC offers recovery based treatment and protection in combination with the medical model of care.
5. The HIC consists of an 'High Care Unit' (HC) and an 'Intensive Care Unit' (ICU), which provides an alternative for seclusion and means for stepped-care on the ward.
6. Whenever a patient is transferred to the ICU, it is at all times together with a nurse to provide one-to-one care to prevent further escalation. Its use is based on the belief that a patient in crisis cannot be left alone.
7. The HIC offers a welcoming and healing environment.
8. Collaboration is wanted in the triad of the HIC team and outpatient services, the patient and relatives.
9. Admission to a HIC is seen as a temporary break from outpatient treatment, which stays in the lead during admission.
10. Admission is kept as short as possible with a maximum of 3 x 3 weeks.

Two sources of inspiration

In addition to the reforms concerning the reduction of coercive measures and the reduction of beds, two influential sources of inspiration impacted the content of the HIC model. First, is the increased attention for recovery and recovery oriented care. A second source of inspiration was found in the care ethics approach.

Recovery oriented care

From the 1990's, recovery and rehabilitation models were upcoming in psychiatry, which put focus on the individual and personal needs and wishes. A shift took place from a sole focus on the biomedical model of care towards a recovery oriented approach. In the medical model, admission is seen as a necessary intervention to regain control over one's functioning by giving psychiatric treatment (Netherlands Psychiatric Association; NVvP, 1996). Of most importance in this process are diagnostics, treatment of symptoms and reduction of suffering by giving (medical) psychiatric treatment, and if needed somatic treatment according to guideless and the use of coercive measures. In the formulation of the HIC model, the aim was expressed to help patients to regain and strengthen control over their own functioning at least to a level at which they can continue with daily life outside the HIC. The treatment vision integrates recovery oriented care with the medical model. Recovery oriented care stands for treatment which is aimed at the four pillars of recovery: recovery of health, daily functioning, social roles and identity (Droës & Plooy, 2010). A definition of recovery that was used in this context is: "Recovery is described as a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness." (Anthony, 1993; p.527). Important principles in these recovery approaches are involvement of patients, use of personal strengths and resilience.

Recovery oriented care is ideally provided in outpatient treatment, and is in that sense not a novel development. The integration of the recovery approach with the medical model of care however is innovative and demands good collaboration between outpatient and inpatient services. To strengthen the integration of the recovery approach with the medical model of care in the HIC model, the outpatient practitioner remains involved, and ideally leading, during admission. This means that collaboration between outpatient practitioners and clinical staff is of great importance.

A care ethics approach

Another inspiration in the development of the HIC model came from the principles of care ethics. The theory of care ethics focuses on contact and the relationship between the persons providing and receiving care. Tronto (2013) describes care as an ongoing and reciprocal process. She distinguishes five moral qualities, which are related to five phases of care. These qualities and corresponding phases are:

1. Attentiveness – caring about. At this first phase of care, attentiveness to the needs of others is required, which also requires genuine interest for the perspectives of the persons in need of care.

2. Responsibility – caring for. Secondly, care givers have to take responsibility to address the needs of persons needing care.

3. Competence – care giving. Thirdly, whenever needs for care are identified, competence to do the work is required to adequately act on one's caring responsibilities.

4. Responsiveness – care receiving. The fourth phase requires being responsive to responses of the person cared for. This response may indicate needs are not yet met, or new needs may arise, thus caring activities must be adjusted or continued.

5. Solidarity – caring with. The final phase states that a good care process entails an equal 'democratic caring relationship'. This means that all persons involved in the caring process should be heard and respected, and power differences limited (Tronto, 2013).

The HIC model is inspired by a number of principles of care ethics, such as the focus on contact and stepped care to increase attentiveness and responsiveness to the needs of patients. Moreover, the integration of recovery oriented care is in line with the value of solidarity, to empower patients in their recovery process, with help of peer experts to increase attentiveness to patients' needs. This last phase also fits well with the need for collaboration with outpatient services. Care ethical theory can help to shed light on what is needed to make interventions to reduce coercion successful, and what bottlenecks are met in the implementation of new interventions. Care ethics theory can thus be used in the process of changing practices, and to illustrate what is needed to provide good care (Voskes, 2014).

Aim and research questions

As explained in this chapter, the HIC model was developed as an answer to developments in mental healthcare and uses inspiration from different fields to create a national approach for high quality care. Previous efforts to reduce coercion generated too little result and other developments needed to be taken into account. Consensus was sought by experts of various disciplines and backgrounds in combining evidence –and experience based practices. The ambition to reduce seclusion and other coercive measures was clearly expressed in the HIC model. This thesis seeks to evaluate the HIC model. Therefore, it is important to assess how the HIC model was received by mental healthcare institutions and ward staff. Questions such as "How do you systematically improve practice?" are relevant in this context. This thesis therefore investigates the implementation process of HIC, and scrutinizes to what extend indented effects of improving care and reducing coercion are achieved.

More specifically, the central aims of this thesis are (1) to gain insight into the development of the content of HIC model; (2) to assess the quality of a monitor to measure compliance to the HIC model; (3) to understand the process of implementation of the HIC model; and (4) to evaluate the effects of HIC on acute mental healthcare in the Netherlands.

The main research question that guides this thesis is:

"What is the relevance of HIC for quality of care and the reduction of coercion?"

Based on the main research question the following sub research questions are formulated:
- ▶ What are the elements of the HIC model and how to measure compliance to HIC?
  (Chapters 2 and 3)
- ▶ How is HIC implemented and what are facilitators and barriers in the implementation process?
  (Chapters 4 and 5)
- ▶ What are the effects of the HIC model on:
  - ‣ The quality of care?
  - ‣ The use of coercive measures?
    (Chapters 6 to 8)

Research methodology

In this study various research methods were used, including qualitative and quantitative methods. The outcomes of implementation of the HIC model on the use of coercive measures and quality of care were studied using quantitative research methods, which are outlined in detail in chapters 6, 7 and 8. For the validation of the HIC monitor, mixed methods were used (chapter 3). The qualitative elements of this study, including the implementation processes, were investigated using a responsive evaluation approach (chapters 4 and 5). Responsive evaluation is a process-oriented approach in which participants are actively involved, and dialogue between these participants forms the base for evaluation (Guba & Lincoln, 1981). The multiple perspectives of different participants and exchange of experiences foster a better understanding and interpretation of the topics evaluated. The dialogue with participants thus functions as both means and outcome of the research process (Abma, Molewijk, & Widdershoven, 2009, Widdershoven & Abma, 2007; Widdershoven, Abma, & Molewijk, 2009). This process follows iterative proceedings, as findings from the evaluation and research process are further elaborated in dialogue so mutual learning can take place (Widdershoven, Abma, & Molewijk, 2009; Abma & Stake, 2001; Guba & Lincoln, 1981). In order to create mutual understanding and foster improvement of practice, the researcher is actively involved in dialogue and practice (Widdershoven, Abma, & Molewijk, 2009). The purpose of using this approach was to stimulate mental healthcare institutions to further shape implementation the HIC model by facilitating interim evaluation and mutual feedback. This requirement to participate and work closely together with mental healthcare institutions fits in with our focus on care ethics, in which virtues such as attentiveness, solidarity and engagement are essential.

Outline of the thesis

This thesis constitutes of three parts. In the first part, the content of the HIC model and the measurement of compliance to HIC are addressed (chapter 2 & 3). The second part focuses on the implementation process of the HIC model by mental healthcare institutions throughout the Netherlands (chapter 4 & 5). In the final part, the effects of different levels of implementation of the HIC model on the use of coercive measures and on the quality of care are studied (chapter 6 to 8).

Part 1: What is HIC and how to measure compliance to the HIC model?

Chapter 2 presents a short overview of developments in the Netherlands that led to the development of the HIC model. Moreover, this chapter provides a description of the content of the HIC model, including the key-components of HIC. Chapter 3 addresses the operationalization of the HIC model into a scale to measure compliance to HIC, the HIC monitor. The results of a mixed-method validation study on the HIC monitor are presented.

Part 2: How to implement the HIC model?

In the second part of this thesis, the implementation process of the HIC model is studied using qualitative research methods. In chapter 4, the drivers of change to start implementation of HIC, and the most important facilitators and barriers to this implementation process are presented. For this study, semi-structured interviews with different stakeholders were held and a responsive evaluation approach was followed. In chapter 5, the lessons learned and effects of a community of practice of auditors are explored.

Part 3: What are the effects of HIC?

In chapter 6, the results of audits held in participating mental healthcare institutions in the Netherlands between 2014 and 2018 are presented. Moreover, the correlation of the audit results, which creates a conception of compliance to the HIC model, with the use of coercive measures are analyzed. The data on coercive measures were collected through the Argus data set (Janssen, 2012). The analysis of the association between compliance to the HIC model and coercive measures is further elaborated on in chapter 8. Chapter 7 presents and compares two measures of quality of care on HIC wards: the scores on the HIC monitor and a measure of the perceived quality of care by service users.

This thesis closes off with a general discussion (chapter 9), in which main findings of this study are presented and an answer to the research questions is given. To conclude, recommendations for research and practice are provided.

REFERENCES

Abma, T. A., & Stake, R.E. (2001). Stake's responsive evaluation. Core ideas and evolution. *New Directions for Evaluation, 92* (special issue winter 2001), 7-22.

Abma, T. A. & van der Zee, H. (2004, april 15). Dwang in schaamlap voor goede zorg, Trouw.

Abma, T. A. (2005). Dwang hoeft niet! Het cliëntenperspectief op dwang en drang in de psychiatrie. *Medische Antropologie, 17*, 201-216.

Abma, T. A., Widdershoven, G. A. M., & Lendemeijer, B. (2005). *Dwang en drang in de psychiatrie; kwaliteit van vrijheidsbeperkende interventies*. Utrecht: Lemma.

Abma, T. A., Molewijk, B., & Widdershoven, G. A. M. (2009). Good care in ongoing dialogue. Improving the quality of care through moral deliberation and responsive evaluation. *Health Care Analysis, 17*(3), 217-35.

Abma, T. A., Voskes, Y., & Widdershoven, G. A. M. (2017). Participatory bioethics and its social impact: the case of coercion reduction in psychiatry. *Bioethics, 31*, 144–152.

Anthony, W. A. (1993). Recovery from mental illness: the guiding vision of the mental health system in the 1990s. *Psychosocial Rehabilitation Journal, 4*, 11-23.

Beer, M., Pereira, S., & Paton, C. (2008). *Psychiatric Intensive Care* (2nd ed.). Cambridge: Cambridge University Press.

Berghmans, R., Elfahmi, D., Goldsteen, M., & Widdershoven, G. A. M. (2001). *Kwaliteit van dwang en drang in de psychiatrie*. Maastricht: Instituut voor gezondheidsethiek Universiteit van Maastricht.

Borgesius, H. E. (2010). *Intensive Care in de GGZ: opweg naar veldnormen*. GGZ Nederland, Amersfoort.

Bowers, L., Jeffrey, D., Hulya, B., Jarrett, M., Simpson, A., Jones, J. (2008). Psychiatric intensive care units, a literature review. *Social Psychiatry and Psychiatric Epidemiology, 54*(1), 56-68.

Dix, R., & Williams, K. (1996). Psychiatric Intensive Care Units, a design for living. *Psychiatric Bullitin, 20*, 527-529.

Dröes, J., & Plooy, A. (2010). Herstelondersteunende zorg in Nederland: vergelijking met Engelstalige literatuur. *Tijdschrift voor Rehabilitatie, 19*, 6-17.

Gaskin, C. J., Elsom, S. J., Happell, B. (2007). Interventions for reducing the use of seclusion in psychiatric facilities: review of the literature. *The British Journal of Psychiatry, 191*, 298-303.

Gerace, A., & Muir-Cochrane, E. (2019). Perceptions of nurses working with psychiatric consumers regarding the elimination of seclusion and restraint in psychiatric inpatient settings and emergency departments: An Australian survey. *International Journal of Mental Health Nursing, 28*(1), 209-25.

Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation. Improving the usefulness of evaluation results through responsive and naturalistic approaches*. San Francisco, California: Jossey-Bass.

Haugom, E., & Granerud, A. (2016). Shielding in Mental Health Hospitals. *SAGE Open, 6*(6).

van Hoof, F., Knispel A., van Erp, N., Overweg, K., Place, C., & van Vugt, M. (2012). *Trendrapportage GGZ 2012 Deel 1: Organisatie, structuur en financiering Ambulantisering*. Utrecht: Trimbos-instituut.

Van Hoof, F., van Vugt, M., Knispel, A., & Kroon, H. (2012). Bedden tellen. Afbouw van de intramurale GGZ. *Maandblad Geestelijke Volksgezondheid, 67*(6), 298-309.

Husum, T. L. (2011). *Staff attitudes and use of coercion in acute psychiatric wards in Norway*. Oslo, Norway: Faculty of Medicine, University of Oslo.

Janssen, W. A. (2012). *Argus: assessment and use of data in evaluating coercive measures in Dutch psychiatry* (PhD Thesis). Vrije Universiteit, Amsterdam.

Janssen, W. A., Hutschemaekers, G. J. M.,

& Lendemeijer, H. H. G. M. (2005). Dwang cijfermatig in beeld. In: Abma, T. A., Widdershoven, G. A. M., Lendemeijer, B. (Eds.) *Dwang en drang in de psychiatrie; kwaliteit van vrijheidsbeperkende interventies.* Utrecht: Lemma.

Janssen, W. A., Noorthoorn, E. O., de Vries, W. J., Hutschmaekers, G. H. M., Widdershoven, G. A. M., Lendemeijer, H. H. G. M. (2008). The use of seclusion in the Netherlands compared to countries in and outside Europe. *International Journal of Law and Psychiatry, 31*(6), 463–470.

Johnson, S., Needle, J., Bindman, J.P., & Thornicroft, G. (Eds.). (2008). *Crisis resolution and home treatment in mental health.* Cambridge: Cambridge University Press

Kinsella, C., & Brosnan, C. (1993). An alternative to seclusion? *Nursing Times, 89*(18), 62-64.

Kuijpers, E., Lambregts, J., Richartz, B., Sterken, P., van de Meijs, J., Voskes, Y.,... Widdershoven, G. A. M. (2010). *Reactie 'Zuidelijk Netwerk' op visie en veldnormen Intensive Care.*

Larue, C., Dumais, A., Boyer, R., Goulet, M. H., Bonin, J. P., & Baba, N. (2013). The experience of seclusion and restraint in psychiatric care settings: perspectives of the patients. *Issues in Mental Health Nursing, 34*(5), 317–24.

LeBel, J. L., Duxbury, J. A., Putkonen, A., Sprague, T., Rae, C., & Sharpe, J. (2014). Multinational experiences in reducing and preventing the use of restraint and seclusion. *Journal of Psychosocial Nursing and Mental Health Services, 52*(11), 22-9.

Mann-Poll, P. S., Smit, A., Noorthoorn, E. O., Janssen, W. A., Koekkoek, B., & Hutschemaekers, G. J. M. (2018). Long-Term Impact of a Tailored Seclusion Reduction Program: Evidence for Change? *Psychiatric Quarterly, 3*, 733-46.

Mulder, C. L., & Kroon, H. (2009). *Assertive Community Treatment.* Amsterdam: Boom.

Noorthoorn, E. O, Janssen, W. A, van de Sande, R., Nijman, H. L. I., Smit, A., Hoogendoorn, A., ...Widdershoven, G. A. M. (2012). *Vijf jaar Argus. Rapportage uitkomsten vrijheidsbeperkende interventies 2011.* Casusregister Argus.

Noorthoorn, E. O., Lepping, P., Janssen, W., Hoogendoorn, A, Nijman, H. L. I. , Widdershoven, G. A. M., & Steinert, T. (2015). One-year incidence and prevalence of seclusion: Dutch findings in an international perspective. *Social Psychiatry and Psychiatric Epidemiology, 50*(12), 1857-69.

Noorthoorn, E. O., Voskes, Y., Janssen, W. A., Mulder, C. L., van de Sande, R., Nijman, H. L. I.,...Widdershoven, G. A. M. (2016). Seclusion reduction in Dutch Mental Health Care: Did hospitals meet goals? *Psychiatric Services, 67*(12), 1321–1327.

Prinsen, E., van Wel., B., Mulder, N., & de Koning. (2016). *Handboek intensive home treatment.* De Tijdstroom uitgeverij: Utrecht.

Putkonen, A., Kuivalainen, S., Louheranta, O., Repo-Tiihonen, E., Ryynänen, O. P. , Kautiainen, H., & Tiihonen, J. (2013). Cluster-randomized controlled trial of reducing seclusion and restraint in secured care of men with schizophrenia. *Psychiatric Services, 64*(9), 850-5.

Sailas, E. & Fenton, M. (2000). Seclusion and restraint for people with serious mental illnesses. *Cochrane Database of Systematic Reviews, 1,* CD001163.

van de Sande, R., Nijman, H. L., Noorthoorn, E. O., Wierdsma, A. I., Hellendoorn, E., van der Staak, C., & Mulder, C. L., (2011). Agression and seclusion on acute psychiatric wards: effect of short-term risk assessment. *British Journal of Psychiatry, 199*, 473–8.

Trimbos-instituut (2018). Landelijke Monitor Ambulantisering en Hervorming Landurige GGZ 2018. Utrecht, Trimbos-instituut.

Tronto, J. C. (2013). *Caring democracy: Markets, equality, and justice.* NYU Press.

Vaaler, A. E., Morken, G., Fløvig, J. C., Iversen, V. C., & Linaker, O. M. (2006). Effects of a psychiatric intensive care unit in an acute psychiatric department. *Nordic Journal of Psychiatry, 60*, 144-149.

Van Veldhuizen, J. R., FACT: a Dutch Version of ACT. *Community Mental Health Journal, 43,*

421-433.

Van Veldhuizen, R., Polhuis, D., Bähler, M., Mulder, N., Kroon, H. (2015). *Handboek (Flexible) ACT. Herstelondersteunende zorg en behandeling in de eigen omgeving voor mensen met ernstig psychiatrische aandoeningen.* Tweede druk. De Tijdstroom.

Voskes, Y. (2014). *No effect without ethics: Reduction of seclusion in psychiatry from a care ethics perspective.* VU University, Amsterdam.

Voskes, Y., Theunissen, J., Widdershoven, G. A. M. (2011). *Best practices rondom dwangreductie in de geestelijke gezondheidszorg. Een inventariserend onderzoek naar best practices bij de reductie van dwang.* VUmc, Amsterdam.

Vruwink, F.J., Mulder, C.L., Noorthoorn, E.O., Uitenbroek, D., & Nijman, H. L. I. (2012). The effects of a nationwide program to reduce seclusion in the Netherlands. *BMC Psychiatry, 12*, 231.

Waibel, S., Henao, D., Aller, M. B., Vargas, I., & Vázquez, M. L. (2012). What do we know about patients' perceptions of continuity of care? A meta-synthesis of qualitative studies. *International Journal for Quality in Health Care, 24*, 39-48.

Widdershoven, G.A.M. & Abma, T.A. (2007). Hermeneutic ethics between practice and theory. In: Ashcroft, R. E., Dawson, A., Draper, H., & McMil, J. R. (Eds.) Principles of Health Care Ethics. West Sussex-Wiley, pp. 215-222.

Widdershoven, G. A. M., Abma, T. A., & Molewijk, B., (2009). Emperical ethics as dialogical practice. *Bioethics, 23(4): 236-48.*

1

2

3
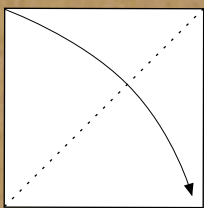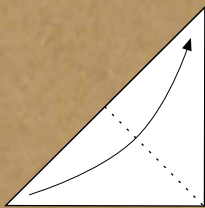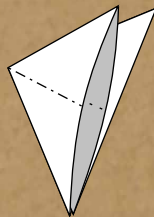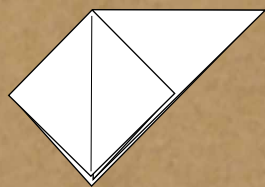
4
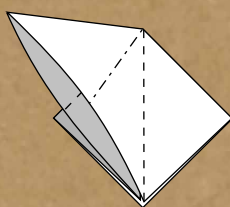
5

6
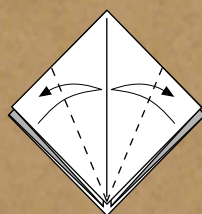
Voskes, Y., van Melle, A. L., Widdershoven,
G. A. M., van Mierlo, A. F. M. M., Bovenberg,
F. J. M., Mulder, C. L. (2021).
Psychiatric Services. doi: 10.1176/appi.ps.201800440

High and Intensive Care in Psychiatry: A New Model for Acute Inpatient Care
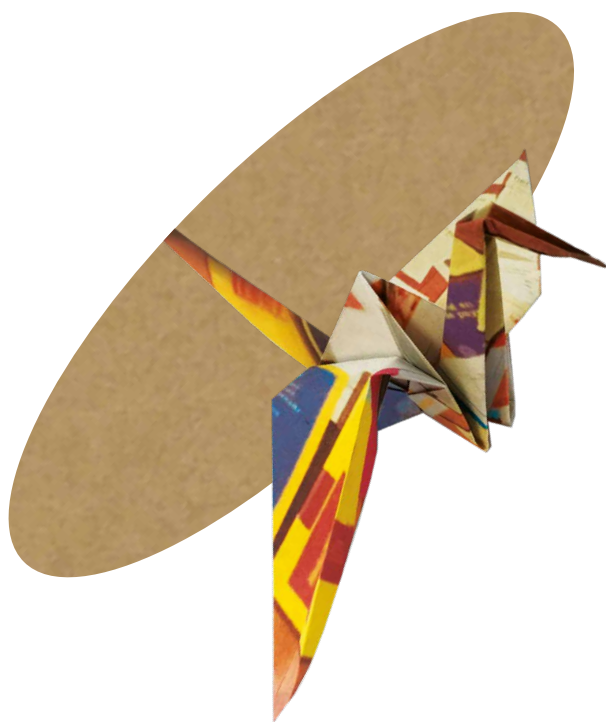
ABSTRACT

As an answer to three reforms in Dutch mental health care, an organizational framework, including methods and interventions, was developed as part of a new model for acute inpatient care. Core elements of high and intensive care (HIC) include preventing seclusion by means of a stepped-care principle; a six-step process of admission, treatment, and care; combining medical and recovery approaches; combining professional and experiential knowledge; and providing a healing environment. The HIC model differs from the utilization of psychiatric intensive care units in that it focuses on collaboration with outpatient care; establishing contact between staff, patients, and relatives; and minimizing coercion.

BACKGROUND

The quality of acute inpatient care is a matter of international debate. Three important reforms are visible in psychiatry in the Netherlands and elsewhere (WHO, 2013). First, coercive measures in mental health care, such as seclusion and forced medication, are controversial. Coercion has a large impact on patients and health care professionals, and evidence of its therapeutic effects is lacking (Sailas & Fenton, 2000). In 2001, a set of quality criteria concerning seclusion was developed in the Netherlands, shifting the attention from the legal justification of coercion to the ethical question of how to provide good care and prevent coercion. In 2006, the Dutch Association of Mental Health and Addiction Care (GGZ Nederland) formulated the goal of reducing seclusion by 10% yearly. With financial support from the government, 34 mental health institutions in the Netherlands initiated projects to reduce the number and duration of instances of seclusion (Abma, Voskes, & Widdershoven, 2017). Through new methods and organizational changes, a reduction in instances of seclusion was achieved, albeit not as large as was sought (Noorthoorn et al., 2016). The second relevant development in the Netherlands was the government policy to reduce the number of psychiatric beds. The so-called (flexible) assertive community treatment approach was adopted, putting emphasis on outpatient-centered care and involving the patient's social network (van Veldhuizen, 2007). The threshold for patients to be admitted to a mental health care institute increased. As a result, however, the condition in which patients were admitted was often more severe, increasing the need for intensive care. The third important development in mental health care was the emphasis on recovery and being in control instead of full symptom reduction (Anthony, 1993). Together, these developments put new demands on inpatient care.

In response to these demands, a new approach to intensive care in acute psychiatry was developed: the high and intensive care (HIC) model. The HIC model can be considered a "complex intervention" because of the diversity of the elements involved as well as its combination of a traditional clinical hospitalization and a community care and social psychiatry approach. The model is partly inspired by the psychiatric intensive care units (PICUs) developed in the United States and the United Kingdom. PICUs are defined as small wards with a proportion of nursing staff, built on an open plan to ease observation, sometimes with facilities for seclusion (Bowers et al., 2008). The HIC model also focuses on cooperation with ambulatory care, stepped care, and contact between staff, patients, and relatives.

This column describes the development of a novel strategy aimed at the reduction of inpatient admissions and coercion. We describe the process and the lessons learned, and we provide concluding comments and a discussion of the strategy's implications.

PROCESS DESCRIPTION

In 2011, a literature study about methods and interventions aimed at the reduction of coercion was performed, resulting in a narrative synthesis. In addition, interviews and focus groups to discuss initiatives, successes, and bottlenecks were conducted in 26 mental health care hospitals in the Netherlands (Voskes, Theunissen, & Widdershoven, 2011). The literature study and the qualitative data from the interviews and focus groups resulted in a proposal for a new approach to inpatient care: the HIC model. The model contains a structured set of requirements for the organization of inpatient care, including team structure, team process, treatment (interventions), organization of care, monitoring, professionalization, facilities, and (evaluation of) coercive measures. In three 2-day expert meetings with participants from 15 mental health care institutions in the Netherlands, the proposal was discussed, and the model was refined. Four psychiatrists, four nurses, two patients, two representatives of family organizations, two psychologists, two managers, and four researchers were present. The participating groups contributed on the basis of their experience and expertise. Patients mentioned the importance of recovery-oriented care and the involvement of peer workers. Family representatives emphasized cooperation with relatives and the possibility to stay overnight (rooming in). Nurses indicated that development of knowledge and skills is required to provide good care to patients in complex situations. Psychiatrists stressed the need for clear admission criteria and for giving attention to various treatment options (including medication) in the model. In several meetings, the model was presented to professionals and to patients and their families in all mental health care institutions in the Netherlands to elicit feedback and create support in the field. A writing team, working closely together over 3 months, described the model in a handbook. A model fidelity scale describing specific elements of the model was developed, which enables measurement of the level of implementation. This scale has been validated (van Melle et al., 2019).

LESSONS LEARNED

The main goal of the HIC model is to provide optimal treatment and safety while restoring and maintaining contact between staff, patients, and relatives and crisis prevention. Its aim is

to provide safe, protective, and respectful care. Core characteristics of the HIC model are as follows.

Stepped Care

The HIC model is based on the principles of stepped care. Admission is initiated by professionals in outpatient care only when care and support in the community are no longer possible. In the ward, the patient is admitted into the high care unit (HC), consisting of single-patient rooms, shared living areas, and a comfort room. If stress and anxiety rise, or whenever aggression is imminent, the patient can be accompanied to the intensive care unit (ICU) in the same ward. The ICU consists of large single-patient rooms where patients receive one-on-one care. Transfer to the ICU is limited to a maximum of 3 days. There is no staff for the ICU, which means that one of the nurses from the HC accompanies the patient to the ICU. The nurse will stay with the patient in the ICU full-time. In most cases, the patient settles down after a few hours in the ICU and can then return to the HC. When safety in the ICU is at stake, the high security room (HSR) can be used. The HSR is a locked room, which means that using it is a coercive measure. Thus, the HSR is a last resort.

Process of Admission, Treatment, and Care

Six phases in the process of admission, treatment, and care are defined. The first phase is getting acquainted. The patient and his or her relatives are welcomed to the ward, building rapport and trust. The second phase is risk assessment and crisis prevention. Within the first hour of admission, the nurse responsible for the patient carries out an assessment of risk of suicide and violent behavior. Structured risk assessment occurs daily during the entire admission, for example, by means of the crisis monitor. The third phase is psychiatric assessment. Directly after admission, the psychiatrist performs a psychiatric examination, including a family history, and information from the personal health record of the patient is retrieved. In the fourth phase, somatic assessment, the psychiatrist also performs a physical examination, including exploratory neurological assessment and laboratory tests. The fifth phase is treatment planning. The previous steps are integrated in a treatment plan to be drafted within 24 hours of admission. If possible, the treatment plan is developed with the patient. Finally, the sixth phase is the care planning meeting, organized within 24 hours after admission with the patient, relatives, the outpatient psychiatrist, and the HIC psychiatrist. In this meeting, treatment, time scales, and the division of tasks are discussed.

Medical and Recovery Approaches

The HIC model combines a medical approach and a recovery approach. Medical diagnosis and treatment aim to enable the patient to regain control in moments of crisis. It is seen as a necessary, but not sufficient, approach for the patient's recovery. According to Anthony (10), recovery is "a deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness."

Professional and Experiential Knowledge

The HIC team combines professional and experiential knowledge. Psychiatrists, nurses, psychologists, nursing specialists, and occupational therapists bring in professional knowledge. Experiential knowledge in the team is guaranteed by peer providers. The team collaborates with significant others, such as family and neighbors of the patient, using their experience and expertise. Training of professionals focuses not only on the increase of knowledge and the development of professional skills but also on taking into account experiential knowledge and developing core qualities such as relational skills.

Healing Environment

The HIC ward is designed according to the principles of a healing environment, thereby promoting recovery and well-being and reducing stress, anxiety, and aggression.

DISCUSSION AND IMPLICATIONS

The HIC model entails a new approach to mental health care in the Netherlands. It resembles the PICU model, in that it focuses on early risk assessment, de-escalation, and use of an ICU (extra care area in the PICU model). However, the HIC model is also different. First, admission is seen as a temporary break in outpatient care, and the outpatient care team is directly involved in the care planning meetings. Second, the HIC model also utilizes stepped care within the ward, using the ICU and the HSR only when needed. Third, the HIC model, unlike the PICU model, aims to minimize coercion. Thus, the core characteristics of the HIC model correspond with the three reforms in psychiatry in the Netherlands mentioned above. The HIC model aims to reduce coercion by focusing on contact and cooperation between staff, patients, and family. It is complementary to outpatient care, aiming for continuity between community and inpatient care. It integrates principles of recovery with a medical approach, making recovery a cornerstone of inpatient care.

During the process of developing the HIC model, we learned various lessons. First, support is needed of all stakeholders, especially of core opinion leaders in psychiatry. Second, all participants should be actively involved in the process. By presenting the development of HIC as special, we ensured that participants felt honored to be able to contribute. During the meetings, we continuously focused on learning from and with each other. This approach inspired participants and led to new insights that participants then discussed at their own institutions. Finally, the elements of the model should be concrete. We achieved this aim by developing a model fidelity scale describing key components. This scale provided support in implementing HIC. These lessons can be useful for others who want to develop a similar strategy.

Because the HIC model was the result of a bottom-up process of development that included professionals, user organizations, management, and patient and family representatives, the model is widely accepted and has been implemented in Dutch mental health care. Further research is needed to investigate the process of implementation and the effects on reduction of coercion, quality of care, continuity of care, and recovery.

REFERENCES

World Health Organization (2013). *Mental Health Action Plan 2013–2020*. Geneva: WHO.

Sailas, E., & Fenton, M. (2000). Seclusion and restraint for people with serious mental illnesses. Cochrane Database Systematic Review, 1:CD001163.

Abma, T. A., Voskes, Y., & Widdershoven, G. A. M. (2017). Participatory bioethics and its social impact: the case of coercion reduction in psychiatry. *Bioethics, 31*, 144–152.

Noorthoorn, E. O., Voskes, Y., Janssen, W. A., Mulder, C. L., van de Sande, R., Nijman, H. L. I...Widdershoven, G. A. M. (2016). Seclusion reduction in Dutch Mental Health Care: Did hospitals meet goals? *Psychiatric Services, 67*(12), 1321–1327.

van Veldhuizen, J. R. (2007). FACT: a Dutch version of ACT. *Community Mental Health Journal, 43*, 421–433.

Anthony, W. A. (1993). Recovery from mental illness: The guiding vision of the mental health service system in the 1990s. *Psychosocial Rehabilitation Journal, 16*(4), 11–23.

Bowers, L., Jeffery, D., Bilgin, H., Jarrett, M., Simpson, A., & Jones, J. (2008). Psychiatric intensive care units: a literature review. *International Journal of Social Psychiatry, 54*(1), 56–68.

Voskes, Y., Theunissen, J., & Widdershoven, G. A. M. (2011). *Best Practices in the Reduction of Coercion in Mental Health Care* [in Dutch]. Amersfoort, the Netherlands: GGZ Nederland.

van Melle, A.L., Voskes, Y., de Vet, H.C.W., van der Meijs, J., Mulder, C.L., Widdershoven, G.A.M. (2019). High and Intensive Care in Psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Administration and Policy in Mental Health, 46*, 34 – 43.

van Melle, A.L., Voskes, Y., de Vet, H.C.W., van der Meijs, J., Mulder, C.L., & Widdershoven, G.A.M. (2019). *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 43–46.
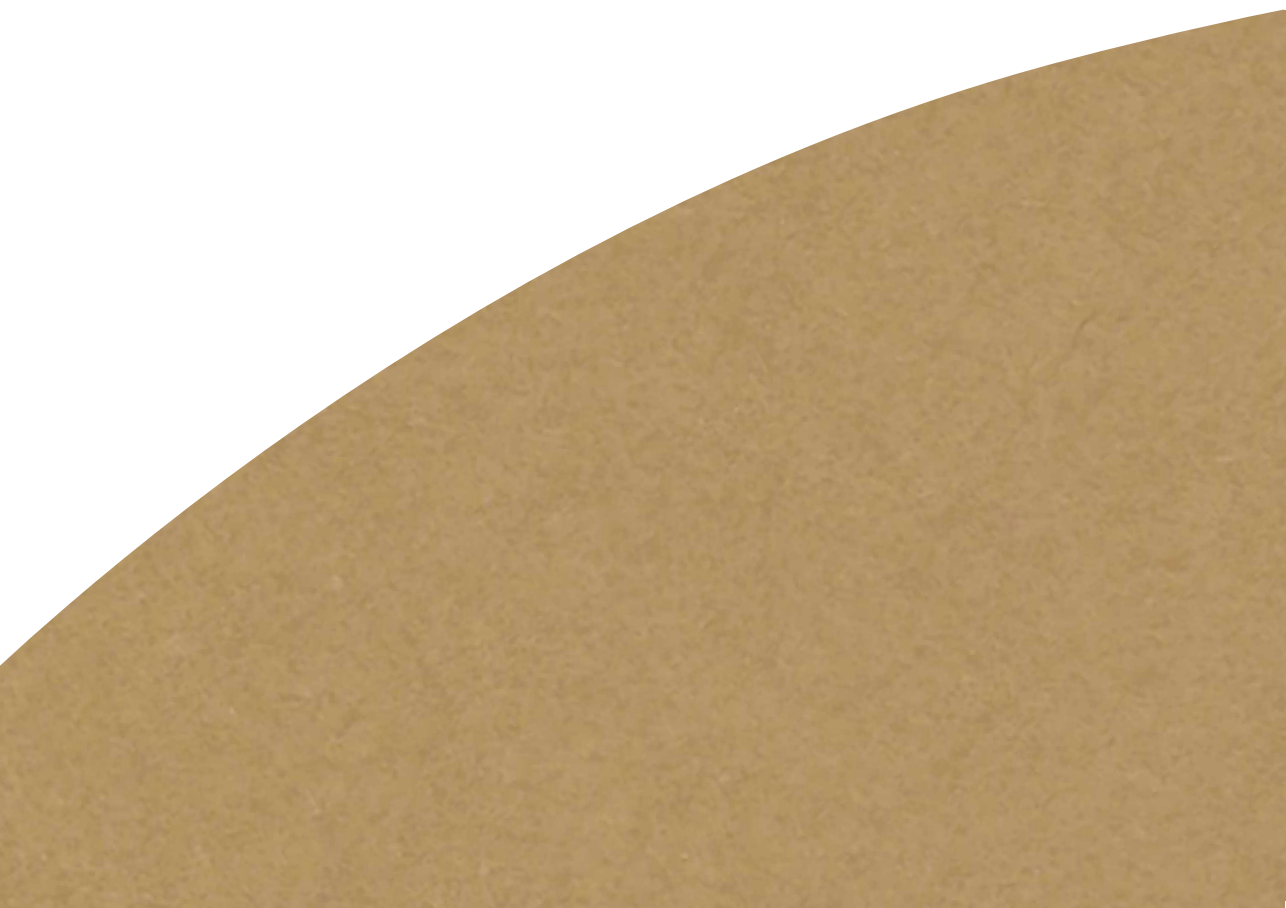
High and Intensive Care in Psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units

ABSTRACT

This study aims to validate the HIC monitor as a model-fidelity scale to the High and Intensive Care (HIC) model, a recently developed model for acute psychiatric wards. To assess the psychometric properties of the HIC monitor, 37 audits were held on closed inpatient wards at 20 psychiatric hospitals in the Netherlands. Interrater reliability, construct validity and content validity were examined. Our results suggest that the HIC monitor has good interrater properties. It can be used as a tool for assessing the implementation of the HIC model on acute psychiatric wards in the Netherlands, and for quality assessment and improvement.

INTRODUCTION

Quality of care in acute psychiatry is a subject of international debate. There are three main issues of concern: (1) prevention of coercion, especially seclusion (Huckshorn, 2006; Noorthoorn et al., 2016; Steinert & Lepping, 2009; Voskes, Kemper, Landeweer, & Widdershoven, 2013); (2) improvement of continuity of care, especially between in- and outpatient care (Banrach, 1981); and (3) fostering collaboration between mental healthcare professionals, patient, and relatives (Malm, Lundin, Rydell, Norden, & Norlander, 2015). In the Netherlands over recent years, the High and Intensive Care (HIC) model has been developed to improve the quality of mental health care. Representing a new approach to care, and also new material conditions (van Mierlo, Bovenberg, Voskes, & Mulder, 2013), the HIC model has been received with growing enthusiasm. By late 2016, 79% of mental healthcare institutions with closed acute admission wards had adopted it and had joined the HIC foundation to start implementing the model.

Consisting of core interventions and standards for acute inpatient care, the HIC model has been developed through the joint action of professionals, family representatives and peer providers. Its objective is to provide optimal treatment and safety, while restoring and maintaining contact and crisis prevention through a stepped-care principle that combines the medical and the recovery models of care. Key elements of the model are emphasis on collaboration with outpatient care, patients and relatives, a comprehensive admission process, and a healing environment. In terms of professional practice and as a set of material conditions, the development and implementation of the HIC model involves major inputs by mental healthcare institutions. To monitor these inputs and to generate and maintain motivation for implementing the model, a trustworthy model-fidelity scale is needed. Since the model is multifaceted – comprising various components, each important to the quality of High and Intensive Care – we wanted to be able to measure the extent to which the model has been implemented. To meet these purposes, the HIC model-fidelity scale – named the HIC monitor – was developed on the basis of literature research and expert consensus.

Using a model-fidelity scale to assess the quality of a mental health services model has several benefits (Vugt et al. 2011). As well as providing insight into the level of implementation of the specific model, scoring shows the extent to which components of the model have been implemented, and thereby creates a basis for future research on the model's effects, such as research on the quality of care or on reductions in coercion. And as well as providing targets for improving the services provided, the HIC monitor

scores can also be used for benchmarking purposes.

However, in order for the HIC monitor to be valuable, it needs to be validated. This means establishing inter-rater reliability, content validity and construct validity. Firstly, inter-rater reliability, involved the congruence between scores of various people who use the monitor. Secondly, content validity, required analysis of the extent to which the items of the monitor reflected the content of the model (Mook, 2001). Acting on the principles outlined by Burns and Grove (1993), we therefore draw on three sources of information: literature research, expert consensus and surveys of the experiences of staff and auditors. During the development of the HIC monitor, the former two sources were used to foster content validity. In this study content validity was further established by focusing on the latter. Lastly, construct validity, concerned the HIC monitor's ability to distinguish between various levels of the model's implementation (Cronbach & Mehl, 1955). To assess it, we investigated whether the score on the monitor reflected the HIC model's level of implementation in psychiatric wards.

METHODS

Instruments

HIC-monitor

The first version of the HIC monitor consisted of 50 items divided over twelve domains. The domains were (I) team structure, (II) team processes, (III) diagnostics, (IV) treatment and interventions, (V) organization of care, (VI) monitoring, (VII) professionalization, (VIII) the Psychiatric Hospitals Compulsory Admissions Act (BOPZ), (IX) the electronic health record, (X) healing environment, (XI) safety; and (XII) evaluation of and feedback on coercion. A separate score sheet allowed an acute admission ward to be scored according to the criteria of the HIC monitor. Scoring was done on the basis of a five-point scale (1 to 5) in ascending order from "not implemented" to "fully implemented". Five items were scored on a three-point scale that assigned scores of one, three and five. Items referring to the presence of ward facilities were scored dichotomously. Scoring in the HIC monitor was intended to assess the current situation, not projected plans or goals.

Procedures

Sample of wards

Data was collected on closed acute admission wards for adult psychiatric patients (aged 18 and older) in various mental healthcare institutions in the Netherlands. Patients admitted to these wards were in acute psychiatric crisis situations, many of whom were admitted involuntarily. The selection of wards was done by mental healthcare institutions that participated in the development and implementation of the HIC model. Each participating institution was asked to select two acute closed wards for adult patients in which they could implement the HIC model. As institutions implemented the HIC model at different times and in different phases, levels of implementation also differed.

Training of auditors

Data was collected in audit visits, for which 26 auditors were recruited by inviting each institution to provide one or more staff member from the participating wards. A one-day training programme was organized for all auditors. During the research period, three follow-up meetings were organized for the auditors to exchange experiences and to further improve the uniformity of the audit process.

Audits

Per audit, two auditors visited the ward simultaneously. Before the audit, the manager of the ward had used a questionnaire to collect basic information on team structure and the organization of care. At the ward, the auditors observed a multidisciplinary meeting in which staff discussed care for individual patients. They then interviewed nurses, medical staff, managers and one patient, and used a checklist to examine the health records. After the audit, each auditor *independently* filled in the score sheet for the HIC monitor, and sent it to the researchers. To ensure that inter-rater reliability was assessed correctly, the two auditors were not allowed to discuss the scores they gave.

Table 1. *Examples of the HIC monitor items*

Item	Score 1	Score 2	Score 3	Score 4	Score 5
Small caseload: day shift: The ward has an optimal ratio of 7 nurses per 20 beds	3 nurses or fewer per 20 beds	4 nurses or fewer per 20 beds	5 nurses or fewer per 20 beds	6 nurses or fewer per 20 beds	7 nurses or fewer per 20 beds
Coordination of care meeting (CCM): a meeting to establish treatment goals. It is held at admission	No CCM takes place within 24 hours of admission	Under 25% of patients get a CCM within the first 24 hours of admission	25%-49% of patients get a CCM within the first 24 hours of admission	50%-74% of patients get a CCM within the first 24 hours of admission	75%-100% of patients get a CCM within the first 24 hours of admission
Healing environment (HE): The ward uses an instrument (such as OAZIS) to assess and improve the level of HE	Little to no attention is paid to the living space or environment	The environment is adequate but there is no HE policy	Although the ward is familiar with principles of HE, this is not tangible in the environment	HE is a structural focus of attention, but it is not assessed	HE is a structural focus of attention, whose level is regularly assessed and improved

In a focus group discussion with the health care professionals at each ward, the researcher (LvM) gave feedback on the auditor's independent monitor scores. The discussion had a dual purpose. The first was to use the feedback on the scores as the basis for internal evaluation. The second – useful for research purposes – was to ensure both that the interpretations of the scores and that the auditors' and professionals' experiences provided insight into the relevance, comprehensiveness and comprehensibility of the HIC monitor and the auditing process. The focus group discussions involved ward managers, psychiatrists and nurses (and, if available, peer experts, nurse specialists and psychologists), and were organized on all participating wards. To allow data-analysis, the discussions were recorded.

Assessment of reliability and validity

Inter-rater reliability

To assess the inter-rater reliability per item, we examined the average agreement of the auditors' scores. Percentages of corresponding scores were used as measure of agreement (Kottner et al., 2011). Per item, we calculated the percentages of corresponding scores and corresponding scores, allowing for a one-point difference (Kottner et al., 2011). As domain scores of the HIC monitor might be used in future applications, we compared the average scores awarded by both auditors per domain. The SD of the mean differences (paired t-test) indicates the agreement in scores.

Content validity

To analyze the content validity of the HIC monitor in terms of relevance, comprehensiveness and comprehensibility (de Vet, Terwee, Knol, & Mokkink, 2011), we analyzed (1) the auditors' reflections during the follow-up meetings, and (2) the outcomes of the focus group meetings in the institutions. Items were altered in response to the feedback given in both types of meeting, and items that consistently scored low or high, thereby reducing their ability to distinguish model-fidelity standards.

Construct validity

To examine the construct validity, we formulated a hypothesis regarding any relation between a participant institution's level of implementation of the HIC model and its scores on the HIC monitor. The hypothesis was that the score on the HIC monitor would be higher at institutions that had been involved in the development of the HIC model from the beginning (and had thus started implementing HIC before the start of the study) than at institutions that had not (and had therefore planned or begun to implement the

model only at the start of the study). To test this hypothesis, the participating institutions were divided into two groups. The first consisted of 11 institutions that were expected to score higher on the HIC monitor because they were early adopters. The other consisted of 10 institutions that were expected to score lower on the HIC monitor because they were either relatively late to implement the HIC model or were just starting to implement it. A t-test for independent samples was used to compare the mean scores of these two groups on the HIC monitor.

All analyses were performed in SPSS version 22 (IBM Corp., Armonk, NY).

RESULTS

Sample characteristics

Twenty-five large mental healthcare institutions in the Netherlands were asked to participate in this study. Twenty-one (84%) agreed, representing 79% of the total number of closed beds in acute psychiatric hospitals in the Netherlands. One institution was excluded, as it offered to participate with a single ward that specialized in addiction care. One ward at another institution was excluded from analysis, as it turned out to specialize in long-stay care rather than acute care. As 17 institutions participated with two wards, and three participated with one ward, the 20 institutions included represented a total of 37 wards. Twelve of these institutions provided one auditor, and 5 provided more than one. The audit team consisted of nurses, managers, psychiatrists, and policy officers. All auditors had clinical or managerial experience with acute psychiatric care.

Inter-rater reliability

Table 2 presents the agreement percentages per item of the two independent audit scores. For all items, it shows the percentages of exact agreement, and the percentages of agreement when a one-point difference in scores was allowed. The percentages for exact agreement show that 52 items scored below the threshold of 75% agreement. When a one-point difference was allowed between audit scores, 12 items scored below the 75%, thereby obtaining a relatively good agreement for most items. When a one-point difference in scores was allowed for the two items with the lowest exact agreement percentages – "somatic screening during admission" (28.57%) and "electronic health record" (28.57%) – the respective agreement percentages increased to 80% and 62.86%. On the same basis, the items with the lowest agreement percentages were "partnership agreement on safety" (57.14%) and "evaluation of coercion" (57.14%). Due to the low

percentage, the former item ("partnership agreement on safety") was dropped. In view
of the importance to the model of evaluating coercion, "evaluation of coercion" was
reformulated as two separate items, the first stressing the evaluation of coercion within
the team to adjust future actions, and the second focusing on the evaluation of coercion
with the patient and relatives. For the domain scores, the standard deviation of the
mean difference between two auditors was less than 0.9.

Content validity of the HIC monitor

It was shown by analysis of the auditors' reflections during the follow-up meetings and
of the participants' interpretations and experiences in the institutions' focus group
meetings that the comprehensiveness and comprehensibility of the HIC monitor were
satisfactory. The HIC monitor also appeared to be a useful tool in audits and focus
groups.

Further analysis of the content validity consisted of two steps. The first involved
calculating the low- and high-scoring items. While high-scoring items might indicate a
high general standard, suggesting that no improvement is needed, low-scoring items
might indicate criteria that have either been set too high or have not gained priority
in the implementation process. Table 2 shows an overview of the average item scores
broken down by domain. The average scores across all items was 2.92. The lowest
mean scores were found in the team-structure domain, whose lowest-scoring item was
"the presence of a psychologist" (1.3). Other low-scoring items in this domain were "the
presence of an addiction specialist" (1.41), "the presence of a peer provider" (1.72), and
"the presence of a nurse practitioner" (1.96). In the remaining domains, low scores on
the items scored on a five-point scale were found for "performing Routine Outcome
Measurement" (1.63), "providing dual diagnosis treatment" (1.71) and "having a digital
whiteboard" (1.99). High scores on the items scored on a five-points scale were found
for "team spirit" (3.93), "safety-management systems" (4.05), "Execution of Psychiatric
Hospitals Compulsory Admissions ACT" (4.11) and "early diagnostics at admission" (4.26).

In the second step, the comments on the meaning of the lowest and highest-scoring
items for the HIC model were discussed to decide whether or not the item should be
kept. It appeared that some of the lower averages may have been caused by unclear
definitions and by the way the items were phrased. These were reasons to change
the formulation. For example, the term "legal consultant" was replaced by "patient
representative", and the term "domotics" was replaced by "electronic support".

Due to the feedback given during focus group discussions at the wards and follow-up meetings with the audits, new standards were added in 7 items of various domains, and one new item, "transition to outpatient care", was added to the "organization of care" domain. In 12 items, criteria were revised. In the item "education", six criteria for staff education were added: early risk assessment, family interventions, psychopathology, psycho-pharmaca, suicide prevention and observational techniques. The low-scoring item "electronic health record" was removed because the content of the item did not fit the HIC model. According to their content and purpose, several items were moved to other domains to better correspond to the essence of the domain. For example, "treatment plan" was moved from the "diagnostics, treatment, treatment interventions" domain to the "team process" domain, where it was closer to the item "care coordination meeting" in which the treatment plan is made.

To ensure face validity and comprehensibility of items of the final version, adjustments to the HIC monitor were checked with the auditors during the last follow-up meeting.

Table 2. *Inter-rater reliability of audit scores and average audit scores of the HIC monitor (N = 37)*

Item	Average score (SD)	audit score	
		% exact agreement	% agreement if 1-point difference allowed*
Team structure			
Small caseload: day shift (1a)	3.12 (1.22)	65.71	88.57
Small caseload: evening shift (1b)	2.96 (1.25)	80.00	94.29
Small caseload: night shift (1c)	2.33 (1.08)	74.29	85.71
Stepping up care (2)	3.58 (1.47)	71.43	94.29
Staff coverage (3)	4.50 (0.64)	71.43	94.29
Team (4)	2.61 (1.64)	40.00	60.00
Psychiatrists (5)	2.78 (1.46)	51.43	65.71
Psychologists (6)	1.30 (0.78)	85.71	97.14
Nursing specialists (7)	1.96 (1.47)	68.57	80.00
Nurses/SPH (8)	1.99 (1.49)	82.86	91.43
Addiction experts (9)	1.71 (1.51)	85.71	88.57
Peer Providers (10)	1.41 (0.91)	82.86	97.14
Activity supervisors: FTE (11a)	2.75 (1.44)	62.86	85.71
Activity programmes (11b)	2.58 (1.01)	97.14	51.43
Supervisors/ team leaders (12)	3.25 (1.16)	31.43	77.14
Extra disciplines (13)	3.54 (1.09)	48.57	94.29

Item	Average score (SD)	audit score	
		% exact agreement	% agreement if 1-point difference allowed*
Team process			
Vision/Work methods (14) ~	2.55 (1.41)	68.57	
Hospitability and presence (15)	3.07 (1.05)	37.14	77.14
Attitude/treatment (16)	2.64 (1.25)	37.14	77.14
Coordination of care meeting: at admission (17a)	2.09 (1.29)	48.57	77.14
Coordination of care meeting: every 3 weeks (17b)	3.07 (1.75)	45.71	77.14
Coordination of care meeting: at discharge (17c)	2.93 (1.56)	37.14	71.43
Digital whiteboard (18)	1.99 (1.45)	74.29	91.43
Care process and consultation: HIC (19a)	3.13 (1.85)	51.43	65.71
Care process and consultation: ICU (19b)	1.80 (1.51)	68.57	77.14
Care process and consultation: EBK (19c)	1.71 (1.40)	60.00	68.57
Diagnostics, treatment, treatment interventions			
Guidelines (20)	3.50 (1.36)	42.86	65.71
Early diagnostics at admission (21)	4.26 (1.27)	51.43	80.00
Copy of treatment plan (22)	2.32 (1.60)	62.86	88.57
General examination: history (23a)	2.91 (1.46)	37.14	85.71
General examination: medical (23b)	3.95 (1.43)	54.29	71.43
Risk assessment (24)	2.43 (1.52)	60.00	88.57
Conflict control and personal safety (25) ~	4.26 (1.34)	65.71	
Early and emergency medication (26)	3.53 (1.40)	62.96	77.14
Psycho-education (27)	2.54 (1.04)	37.14	74.29
Somatic screening during admission (28)	3.57 (1.01)	28.57	80.00
Dual diagnoses (29)	1.71 (1.02)	57.14	82.86
Family interventions (30)	3.18 (1.04)	51.43	82.86
Organization of care			
Admission and discharge (31) ~	3.13 (1.71)	54.29	
Waiting list (32)	4.53 (0.93)	85.71	100
Monitoring			
ROM (33)	2.05 (1.61)	71.43	80.00
ROM usage (34)	1.63 (0.99)	74.29	94.29
HIC improvement-curve (35)	2.79 (1.39)	42.86	77.14

Item	Average score (SD)	audit score	
		% exact agreement	% agreement if 1-point difference allowed*
Professionalization			
Reflection (36)	3.22 (1.79)	60.00	88.57
Education (37)	3.07 (1.72)	54.29	68.57
Knowledge of FACT/ambulatory care (38) ~	3.58 (1.21)	57.14	
Team spirit (39)	3.93 (1.06)	45.71	80.00
Psychiatric Hospitals Compulsory Admissions ACT			
Execution of Psychiatric Hospitals Compulsory Admissions ACT (40)	4.11 (0.87)	54.29	94.29
Electronic Health Record			
Electronic Health Record (41)	3.53 (1.38)	28.57	62.86
Healing environment			
Healing Environment: HE (42)	2.57 (1.20)	57.14	85.71
HC: individual rooms and bathrooms (43a) ~~	51.35%	91.43	
HC: comfort room (43b) ~~	56.76%	85.71	
HC: diversity of meeting spaces (43c) ~~	70.27%	80.00	
HC: outside space (43d) ~~	94.59%	91.43	
HC: family room (43e) ~~	27.03%	82.86	
HC: time-out/emergency bed (43f) ~~	37.84%	74.29	
HC: open workspace (43g) ~~	24.32%	97.14	
HC: domotics (43h) ~~	27.03%	74.29	
IC (44)	2.29 (1.58)	62.86	80.00
ICU (45)	2.14 (1.48)	71.43	85.71
Extra Secure Room (46) ~	1.53 (1.19)	91.43	
Safety			
Safety-management system (47)	4.05 (4.05)	65.71	97.14
Partnership agreement on safety (48)	3.72 (3.72)	45.7	57.14
Evaluation and feedback on coercion			
Evaluation of coercion (49)	3.16 (1.35)	45.71	57.14
Argus (50)	3.17 (1.45)	51.43	85.71
Total average Score	**2.92 (0.84)**		

* *for the items scored on a 5-point Likert scale, "agreement" was extended to include*
  scores that differ by 1 point on both measurements.
~ *items scored trichotomously (1, 3 and 5)*
~~ *items scored dichotomously (% yes)*

Construct validity

The data supported our prediction that the institutions that had been involved in the development and early implementation of the HIC model would score higher on the HIC monitor than those that had just started to implement it (Figure 1). The wards in the group we had expected to score higher on the HIC monitor scored a mean value of 3.18 (SE = 0.08) versus 2.60 (SE= 0.07) for the wards in the group we had expected to score lower. This difference was statistically significant (p = <0.001).
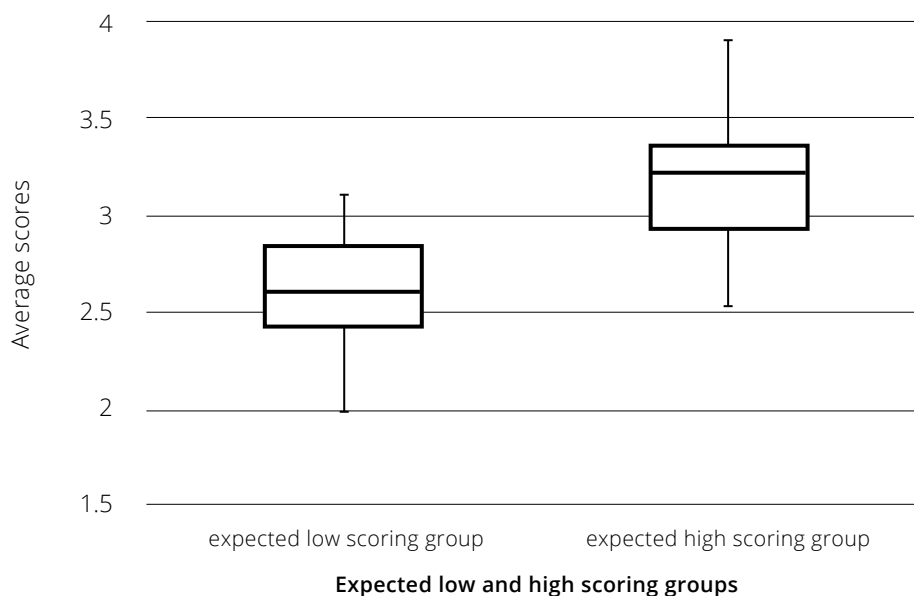

Figure 1. *Scores of expected low and high scoring groups*

DISCUSSION

Main findings

Our results show that the HIC monitor has a reasonably good inter-rater reliability and satisfactory content and construct validity.

Although Cohen's Kappa, a relative measure of reliability (Cohen, 1960), is a well-known measure of agreement between two nominal or ordinal variables for calculating inter-rater reliability, an absolute measure of agreement is much more informative (De Vet, Mokkink, Terwee, Hoekstra and Knol, 2013). We therefore chose to use agreement percentages as a measure of inter-rater reliability. Some items were not scored on a 1 to 5 Likert scale, but had only 2 or 3 response options, which made it easier to achieve agreement. The items that scored lower than an arbitrary cutoff point of 75% agreement were revised. A possible explanation for these lower percentages in agreement is that the item was not easily comprehensible, and that its purpose was therefore unclear. The combination of agreement percentages with extensive feedback on the HIC monitor allowed the lower scoring items such as "team" and "evaluation of coercion" to be further refined.

Our assessment of the content validity of the HIC monitor concerned evaluation of the relevance, the comprehensiveness and comprehensibility of the items. This led us first to eliminate several original items that the auditors and professionals considered to be irrelevant to the HIC model. Next, to achieve the primary function of the HIC monitor – to comprehensively indicate the extent to which the HIC model had been implemented – we added the item "transition to outpatient care" to the original items. Insight into the comprehensibility of the HIC monitor was provided by the interpretations and experiences of professionals in the institutions. The HIC monitor also appeared to be a useful tool in audits and focus groups, which also tended to confirm its content validity. Further evidence of the monitor's good content validity is provided by the fact that no other aspects of the HIC model had been missed by the stakeholders in the research. Lastly, to enhance the comprehensibility of the HIC monitor, we reformulated some items on the basis of the feedback provided in the focus group discussions and by the auditors. Thus, while changes to the HIC monitor were limited, maximum improvement was reached in clarifying the content of items.

We retained a number of items which had attained the maximum score by either very low numbers or very high numbers of wards. This was primarily because stakeholders in

the focus groups described these items as important components of the HIC model. A second reason was that some of the 37 participating wards showed that it was possible to meet the criteria, thus indicating that implementation of the respective items in practice was feasible. Although some domains contained a limited number of items and one domain contained one item, the current domain structure was maintained. The reason for this was that the content of the HIC monitor should reflect and encompass the entire HIC model, even if this meant that several items and domains would contain a low number of items. Moving items to other domains would therefore be artificial and would undermine the coherence and comprehensibility of the other domains.

Regarding the construct validity, our results showed that the HIC monitor can distinguish between the two groups of institutions, thereby demonstrating a measure of the level of implementation of the HIC model. As there are no other instruments to measure this level of implementation, this was the only way to obtain construct validity. As far as we know, the HIC monitor is the first instrument to assess implementation of a model for acute psychiatric wards. This means that there is no gold standard with which it can be compared.

Strengths and limitations

This was the first study intended to validate an instrument for assessing the quality of implementation of the HIC model, a new model for acute psychiatric care. One particular strength is the fact that all 37 wards – in itself a high number – were assessed by two independent and trained raters. Another is that this work resulted in a HIC monitor with satisfactory psychometric properties.

The study had three main limitations. First, the wards where audits took place were selected by the participating mental healthcare institutions. Since the institutions differed in terms of the number of wards and of the extent to which the HIC model had been developed, they may have selected wards on which the implementation of the HIC model was best established, thus leaving worse performing wards out of the picture. If so, this might have given a more positive view of the development of the HIC model within those institutions. This does not affect the validation of the HIC monitor, even though both early and late implementing institutions may have chosen their best wards. The second limitation is that, although we were able to determine the content and construct validity, we could not assess the criterion validity, as there is no gold standard for the quality of psychiatric intensive care units. In future, one might consider examining the relationship between scores in the HIC monitor and outcomes for HIC wards, such

as any reduction in the use of coercive measures, any reduction in the length of hospital stay, and any improvement in the quality of care. This establishment of criterion validity, in terms of predictive validity, can be seen as an essential step towards determining the practical utility of a model-fidelity scale (Donabedian, 1966; Lloyd-Evans et al., 2016). However, any demonstration of the relationship between criteria and the intended outcome should take account of the process in which the model-fidelity scale was developed. As the HIC monitor was created through expert consensus and contains a collection of best and evidence-based practices, it can best be described as "a sum of its parts" – which makes individual analysis of its components less relevant.

The third limitation is that, to optimize the monitor's content validity, some final adjustments were made to its content. In one sense this is a strength of the study: the adjustments to the instrument were based on the auditors' feedback and on the focus group discussions with the mental healthcare institutions. The drawback is that the HIC monitor was adapted during the evaluation process integral to this study – the practical implications being that the adjustments made to the HIC monitor should be tested in practice and that further refinement of the items might prove to be necessary at a later stage.

Future research

The HIC monitor can now be used in future studies assessing the implementation of the HIC model. Our results have already led the HIC monitor to be provided to psychiatric hospitals for use as a means of improving the implementation of the HIC model. Further research could focus on the associations between the HIC model and outcome parameters such as patient satisfaction, length of stay and the number of aggression incidents and coercive measures. A second topic of research might concern the feasibility and practical usability of the HIC monitor in implementing the HIC model and in using the HIC monitor as a tool for identifying aspects of the ward that are in need of improvement.

To increase the HIC monitor's utility and feasibility, we ensured a uniform external audit method by using both interview and scoring guidelines and checklists. A structure for the audit was also provided that could facilitate standardization scoring of the HIC monitor. Although an audit was a fairly time-consuming means of scoring the HIC monitor (one day for assessment), we have shown that it is possible to use the HIC monitor on a relatively large scale. However, we could not further explore whether the construction of the monitor – which includes an item-by-item explanation – would enable a valid and reliable internal audit.

CONCLUSION

In conclusion, as a useful tool for assessing the level of implementation of the HIC model on acute psychiatric wards, the HIC monitor can be used for quality assessment and improvement. Our study shows that the HIC monitor has reasonably good psychometric properties. Due to the consensus that was sought during its development and validation, it is an instrument that corresponds closely to daily practice, and may thus benefit the implementation of the HIC model on acute psychiatric wards. As it can be used to study the associations between the components and outcomes of the HIC model (use of coercion, patient satisfaction), it can contribute to the improvement of quality of care for acute psychiatric patients.

REFERENCES

Bachrach, L.L. (1981). Continuity of care for chronic mental patients: A conceptual analysis. *The American Journal of Psychiatry, 138*(11), 1449-1456.

Burns, N., & Grove, S.K. (1993). The practice of nursing research: Conduct, critique and utilization (2nd ed.). Philadelphia: W.B. Saunders.

Cohen J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20,* 37-46.

Cronbach, L.J., & Mehl, P.E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*, 281-302.

Donabedian A. (1966). Evaluating the quality of medical care. Reprint (2005). Millbank Quarterly, *83*(4), 691–729.

Huckshorn, K.A. (2006). Re-Designing State Mental Health Policy to Prevent the Use of Seclusion and Restraint. *Administration and Policy in Mental Health and Mental Health Services Research, 33*(4), 482-491.

Kottner, J., Audigé, L., Brorson, S., Donner, A., Gajewski, B. J., Hrobjartsson, A., … Streiner DL. (2011). Guidelines for Reporting Reliability and Agreement Studies (GRRAS) were proposed. *International Journal of Nursing Studies, 48*(6), 661-671.

Lloyd-Evans, B., Bond, G.R., Ruud, T., Ivanecka, A., Gray, R., Osborn, D., … & Brown, E. (2016). Development of a measure of model-fidelity for mental health crisis resolution teams. *BMC Psychiatry, 16*, 427.

Malm U, Lundin L, Rydell P, Norden T, Norlander T. (2015). Resource Group ACT – a review of an integrative approach to psychoeducation of individual families involving the patient. *International Journal of Mental Health, 44*(4), 269-276.

Mierlo T. van, Bovenberg F., Voskes, Y., Mulder N. (2013). Werkboek *HIC. High en intensive care in de psychiatrie.* Utrecht: de Tijdstroom.

Mook, D.G., (2001, 1st ed.). *Psychological Research. The Ideas Behind the Methods*, W. W. Norton & Company, New York.

Noorthoorn, E.O., Voskes, Y., Janssen, W.A., Mulder, C.L., van de Sande, R., Nijman, H.L., … & Widdershoven, G.A.M. (2016). Seclusion Reduction in Dutch Mental Health Care: Did Hospitals Meet Goals? *Psychiatric Services, 67*(12), 1321-1327.

Steinert, T & Lepping, P. (2009). Legal provisions and practice in the management of violent patients. A case vignette study in 16 European countries. *European Psychiatry, 24,* 135-141.

de Vet, H. C. W., Mokkink, L. B., Terwee, C. B., Hoekstra, O. S., & Knol, D. L. (2013). Clinicians are right not to like Cohen's κ. *British Medical Journal, 346*, 1-7. [f2125].

de Vet, H. C. W., Terwee, C. B., Knol, D. L., & Mokkink, L. B. (2011). Measurement in medicine: Practical guides to Biostatistics and Epidemiology. Cambridge University Press, Cambridge, UK, 154-156.

Voskes, Y., Kemper, M., Landeweer, E.G.M. & Widdershoven, G.A.M. (2013). Preventing seclusion in psychiatry: A care ethics perspective on the first five minutes at admission. *Nursing Ethics, 21*(7), 766-73.

van Vugt, M.D., Kroon, H., Delespaul, P.A.E.G., Dreef, F.G., Nugter, A., Roosenschoon, B., & … Mulder, C.L. (2011). Assertive Community Treatment in the Netherlands: Outcome and Model-fidelity. *The Canadian Journal of Psychiatry 56*(3), 154–160.
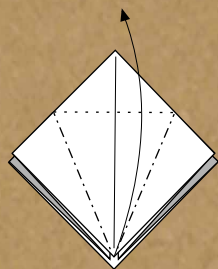
7
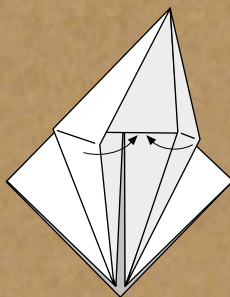
8
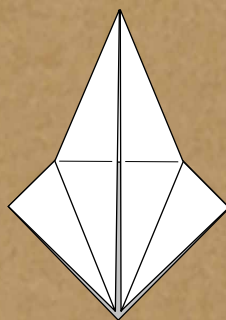
9
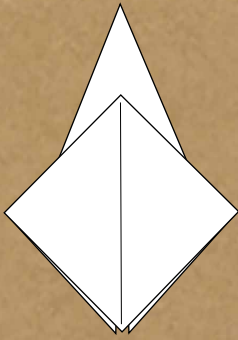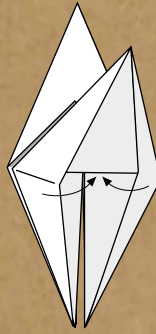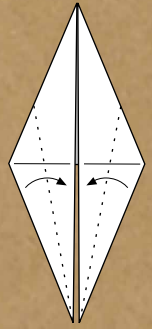
10

11

12

Implementation of High and Intensive Care (HIC) in the Netherlands:
a process evaluation

ABSTRACT

Purpose

The High and Intensive Care model (HIC) was developed to reduce coercion and improve the quality of acute mental health care in the Netherlands. This study aimed to identify drivers of change which motivate professionals and management to implement HIC, and to identify facilitators and barriers to the implementation process.

Methods

41 interviews were conducted with multiple disciplines on 29 closed acute admission wards for adult psychiatric patients of 21 mental healthcare institutions in the Netherlands. The interviews were analysed by means of thematic analysis, consisting of the steps of open coding, axial coding and selective coding.

Results

Findings reveal three major drivers of change: the combination of existing interventions in one overall approach to reduce coercion, the focus on contact and cooperation and the alignment with recovery oriented care. Facilitators to implementation of HIC were leadership, involving staff, making choices about what to implement first, using positive feedback and celebrating successes, training and reflection, and providing operationalizable goals. Barriers included the lack of formal organizational support, resistance to change, shortage of staff and use of flex workers, time restraints and costs, lack of knowledge, lack of facilities, and envisaged shortcomings of the HIC standards.

Conclusions

Drivers of change motivate staff to implement HIC. In the process of implementation, attention to facilitators and barriers on the level of culture, structure and practice is needed.

BACKGROUND

Since the beginning of this century, the prevention and reduction of coercion in psychiatry has been a topic for debate in the Netherlands. In 2006, the Dutch branch organization for mental healthcare (GGZ Nederland) formulated the aim to reduce seclusion and other coercive measures by ten percent yearly. Supported by the Dutch government, several projects have been started in the Netherlands since 2006 to reduce coercion, and mainly seclusion (Abma, Voskes & Widdershoven, 2017). As a result of the development of many interventions within these projects, considerable reduction of seclusions was achieved, albeit not as large as was aimed for. Moreover, some mental healthcare institutions did achieve a reduction in line with the aims, while others did not. One of the explanations is that the reduction of coercion is not only a matter of developing new interventions but requires a change in organizational structure, culture and practices, including stable and motivated management and support at all levels of the organization (Noorthoorn et al., 2016).

A new national approach for acute mental healthcare was needed to further reduce coercion and to simultaneously strive for better quality of care. In 2013, the HIC model was developed, which focuses on restoring and maintaining contact, crisis prevention and stepped care (van Mierlo, Bovenberg, Voskes, & Mulder, 2013). The HIC model and its development are described in detail elsewhere (Voskes et al., 2021; van Melle et al., 2019). Implementation of new care approaches such as HIC is not straightforward process. Previous studies have shown that implementation of interventions aimed at reducing coercion may require changes in leadership, training and education of staff, monitoring seclusion rates and a change of the ward environment (Gaskin, Elsom, & Happell, 2007; Boumans, Egger, Souren, & Hutschemaekers, 2014; Voskes et al., 2011; van der Schaaf, Dusseldorp, Keuning, Janssen, & Noorthoorn, 2013). More insight is needed to identify elements that influence the implementation of the new HIC model.

What drives professionals to take up HIC? Insight into the experienced drivers of change can explain the motivation to embrace the HIC model. Drivers of change may function as a catalyst by creating momentum and expressing a sense of urgency combined with a clear vision (Kotter, 1995; Buchanan et al., 2005). Also, facilitators and barriers to the implementation process of HIC are relevant. Literature on implementation suggests that a careful analysis of facilitators and barriers to the implementation process can help to make timely adjustments to the implementation process and aid to secure interventions into policy (Grol & Grimshaw, 2003; Kajermo et al., 2010; Forsner, Hansson, Brommels,

Åberg Wistedt, & Forsell, 2010). Therefore, the aim of this study is to identify the drivers of change, as well as facilitators and barriers in the implementation process of HIC.

METHODS

Design

Qualitative research was conducted using semi-structured individual and group interviews with mental health professionals.

Wards and participants

The interviews were conducted on 29 closed acute admission wards for adult psychiatric patients (18 years and older) of 21 mental healthcare institutions in the Netherlands that participated in the development and implementation of HIC. The institutions differed in the stage of implementation of HIC. The managers of participating institutions were asked to recruit staff who had experience with the HIC model and were involved in the implementation process at the ward. Participants consisted of staff working at the wards, and were selected by means of purposive sampling (Barbour, 2001) to achieve maximum diversity regarding disciplines (Maykut & Morehouse, 2000). Most participants were nurses/ nurse specialists (n = 28), psychiatrists/ psychologists (n = 9) and managers/ directors (n = 7). Also other disciplines were included; a social worker (n = 1), a psycho-motoric therapists (n = 1), a peer provider (n = 1), a nursing scientist (n = 1), and a quality officer (n = 1). In total, 49 participants were interviewed.

Data collection

The data were collected between February 2014 and May 2015. A total of 41 interviews were held, of which 33 individual interviews and eight group interviews. The interviews were carried out by the first author (LvM). A topic list was used. Questions asked were for example "How do you experience working according to the HIC model?", "What added value does HIC have in your perspective?", "How do you think the implementation of HIC is progressing at the ward?", "Which elements contribute to a better implementation?", and "Which barriers do you encounter in the implementation process of HIC?". Interviews lasted for approximately one hour and took place at the participant's work location, usually on the HIC ward. The interviews were recorded and transcribed verbatim.

Ethical considerations

All participants received written information on the purpose of the study and were asked to sign an informed consent form prior to the interview. The Medical Ethics Review Committee of the Amsterdam University Medical Center declared that the study did not require specific ethics approval. This study was approved by the Amsterdam Public Health Research Institute.

Analysis

The analysis of the data was based on an iterative process, meaning that the analysis of the data started during the period of data collection (Srivastava & Hopwood, 2009). The interviews were analysed by means of thematic analysis. The first step consisted of the steps of open coding of transcripts. Next, data were analysed deductively by means of axial coding and selective coding (Boeije, 2009), based on the following three predetermined categories: drivers of change, facilitators and barriers. For each category, underlying themes were identified. To increase the validity of the study, the interviews were interpreted by multiple researchers (LvM, YV & GW) (Barbour, 2001; Böhm, 2004). Reports of the interviews were provided to the participants as a member check to ensure the correctness of the interpretation of the interviews by the researchers (Steinke, 2004; Meadows & Morse, 2001).

RESULTS

This section will first discuss the results with regard to the drivers of change. Second, the facilitating factors and the barriers to the implementation process will be presented.

Drivers of change

We found three drivers of change: 1) HIC combines existing interventions in one overall approach to reduce coercion; 2) HIC focuses on contact and cooperation; and 3) HIC is in line with recovery oriented care.

HIC combines existing interventions in one overall approach to reduce coercion

Many participants reported to see the HIC model as a culmination of efforts to reduce coercion in the past. They mentioned that HIC takes these efforts a step further by bringing attention to the urgency to keep working on the reduction of coercion, clearly linking these efforts to quality of care and by providing concrete guidelines for professionals.

"We were already working on reducing coercion...but in mental health care we need a 'trigger'. HIC offers an incentive to keep improving and to take action in reducing coercion" (psychiatrist)

"We have already taken many steps to reduce coercion, but the ward environment still needs many changes. HIC makes it concrete....HIC has been a way to ensure continued development..." (manager)

HIC provides a focus on contact and cooperation

Participants stressed the need to focus on contact with patients to facilitate recovery. The HIC model offers them a framework for restoring and maintaining contact with patients, and thereby provides an alternative to routines and rules that were based on control. A team leader said:

"We had to transform a ward that was good at controlling, almost in a forensic way, while we just have regular psychiatric patients, no forensic patients, but still seven pages with ward rules. This had to change."

A nurse describes the need for better collaboration with outpatient services to ensure continuity of care. The HIC model fosters a better alliance with care partners such as outpatient teams:

"I notice that the collaboration with outpatient teams has improved, which is very important, we know how to find each other better.... Now it's better coordinated... I think this was already something that was needed, but I don't know if we would have started working on this without HIC." (nurse)

HIC is in line with recovery oriented care

The HIC model aligns with a recent development in mental health care, namely the focus on recovery oriented care. By emphasizing self-determination, connectedness and self-management HIC incorporates some of the core elements of recovery oriented care. A manager said:

"It is a great guideline to transform a ward in a short period of time into something that also completely fits within the philosophy of the institution at the moment.

> *'Recovery is feasible', 'recovery takes place at home'; these concepts are highly relevant!"*

The HIC model also contributes to creating a "healing" ward environment with concrete standards for high quality care focused on recovery. A psychiatrist explained:

> *"With the HIC model I want to work towards a ward where the care is so good, I would in a matter of speaking, be willing to admit my sister to".*

Facilitators and barriers

Although HIC inspires to change practice, conditions are needed to actually realize HIC and barriers must be overcome. This section describes the facilitators and barriers in the implementation of HIC that were experienced by participants.

Facilitators

1.   Leadership

Participants emphasized the importance of a clear management style and good communication with the team about the changes needed. A manager mentioned the need to set norms for implementation of HIC:

> *"We do not allow a discussion on whether or not we are going to do this [implementing HIC]. We present the HIC model as a norm. Than they just have to make it their own and act accordingly." (manager)*

Nurses emphasized that support from management to innovate and to strive for a further reduction of seclusion is necessary, as it increases staff motivation to take more risks and to be more creative. Also a director agreed with this:

> *"You have to support it if someone dares to do that [to go outside with a patient], even if that patient may run away. So we should not reprimand someone whenever they think out of the box."*

2.   Involving staff

Next to top-down initiatives and support, a bottom-up approach is also needed. Participants indicated that it is important to organize team meetings, to create project

or working groups and to discuss ideas regarding implementation strategies. This can assist in setting goals, taking responsibility for these goals and evaluating the outcome. HIC should not feel as another set of rules, but something that nurses want to embrace to improve quality of care. A manager said:

> *"The project group consists of employees who are present on the work floor. So the input comes from practice... That works because you give them [HIC staff] responsibility."*

3.   Making choices about what to implement first

According to participants, implementation of the HIC model requires making choices and prioritizing. A step-by-step approach, in which one should try to avoid implementing too many interventions at the same time, is needed. A nursing scientist explained:

> *"The risk is that not everyone keeps up with the developments, and that you get incomplete developments. It is better to implement at a slower rate than doing it all at once and risking that nobody knows what they are doing."*

Before planning next steps it is important to evaluate what went well and what needs improvement. A careful planning process was considered to increase its success and therefore create feelings of achievement. A nurse said:

> *"We have to take the time to do it right and together, so that the chances of success and benefits are well secured. When it is done too quickly, it might explode because you have not properly secured it."*

4.   Using positive feedback and celebrating success

Positive feedback on improvements made in relation to HIC is experienced as highly motivating. A nurse said:

> *"Many patients who were previously admitted at the old ward said they absolutely dreaded to be admitted here again. However, later on they told us they really appreciated the new way of working, especially the hospitable treatment, welcoming attitude, and less controlling behaviour."*

Moreover, it is important to share success stories with each other and also to share the feeling of pride. This stimulates the willingness to change. It is also important to celebrate successes. A nurse indicated:

"*A success story makes you want to try again, because you noticed it worked! It requires effort, but it is something that empowers the team. We can do this together. It works miracles.*"

5. Training and reflection

Education for nurses and training of competences were seen as essential to successful implementation of the HIC model. Training provides staff with the required knowhow and with the confidence to provide intensive care to their patients. Through training participants learn how to apply principles of HIC in their daily work. A nurse explained:

"*Training in conversation techniques for different crisis situations can make escalation less likely. The application of these techniques that suit the situation can increase security and improve hospitality on the ward.*" (nurse)

Several participants stressed the importance of reflection and feedback in order to keep improving quality of care at the ward:

"*Openness to feedback is very important and others should be asked for advice. The ward should stay in development.*" (psychiatrist)

6. Providing operationalizable goals

Participants stated that the HIC workbook provides a clear vision and concrete working methods. The HIC monitor is said to provide guidelines to improving care. Also audit results on the HIC monitor were mentioned as a positive factor.

"*By participating in the audits we hope to address streamlining the care within our teams and improve collaboration. The audits also offer the opportunity to look how other wards are doing and the exchange of experiences is inspiring to us.*" (manager)

Managers also valued creation of a learning network of auditors in which experiences and knowledge were exchanged. Participants also valued the audits to help reflect

on the implementation process. A nurse said:

> "*Our intention is to evaluate regularly, but we're quickly swayed by the issues of the day. That is why I value the audit to stop to reflect and to get a clear overview of how things are going...it helps us to safeguard interventions into working practices.*"

Barriers

1. Lack of formal organizational support

Firstly, the lack of a formal fiat from the organization to start implementing HIC was often mentioned to be a barrier. This meant that less resources were made available by the organization and staff felt less inclined to adopt a new vision when this vision was not officially supported by the organization. A nurse explained that the direction of the organization was unclear to many, which made further planning of implementation difficult:

> "*I did receive the HIC workbook but I didn't read it because it is still unclear when and where we will start with HIC. At this point we do not know which direction to go and therefore we cannot focus on for example training and planning an implementation strategy.*"

2. Resistance to change

Difficulties during the implementation process of HIC also included staff members showing resistance. A team leader stressed that not everyone within the team is able to adjust to the new ward culture and ways of working:

> "*A culture has been built up here for six, seven years and you don't change in a year. That just takes time. This sometimes also costs people who work here, who then no longer feel comfortable with the new way of working.*"

A manager said that having a psychiatrist on the team who does not want to change had a negative impact on the rest of the team and possibilities to innovate. Resistance to change was also present in the collaboration with the outpatient care. Nurses, psychiatrists and managers indicated that many outpatient care workers are reluctant to being involved with the care process in the clinic, and to frequently visit the ward. At some wards this resulted in longer admissions. A psychiatrist commented:

"I noticed we are not yet aligned in vision. The HIC model states when the crisis is over, a patient should go home. However, outpatient care might indicate to wait and let the patient stay a little longer at the clinic without it really substantively contributing to the healing process."

3. Shortage of staff and flex workers

Many wards experience difficulty to fill available positions for different disciplines such as nurses, psychiatrists, nurse practitioners and peer experts. Staff members frequently indicate that their current staff size is too small to always be able to provide one-to-one care. These shortages, vacancies and an increased use of flex personnel and can have negative consequences for team cohesion and continuity of care. As many flex workers are unfamiliar with the HIC model, this can stagnate innovation and lead to an increase of coercive measures. A team leader explained:

"If you look at how the HIC is officially classified in terms of staffing and you really want to work according to HIC principles, then you really need more personnel. We can't live up to that now and on that part implementation is stagnating."

Nurses reported that the shortage of staff and flex workers also have a negative effect on feelings of safety. The ability to trust co-workers is necessary to provide one-to-one care in situations where patients would previously have been secluded. Feeling unsafe impedes innovation. A nurse said:

"Whenever you feel less safe, you tend to adhere to the rules, It cannot be done, it cannot succeed, It doesn't work. Whenever you do feel safe, you are willing to try."

4. Changes take time and costs are high

According to participants, it takes time to bring about the wanted changes needed for implementation of HIC. For example, drafting plans for renovations and the realization of these plans to build the intensive care units take time. Often, these plans cause discussion within the team and organization, which can further delay the start. Moreover, disagreement about investments can further distance management from nursing staff. Some interviewed managers wanted to prioritize investment in facilities, whilst several nurses from these locations would rather see an increase in number of staff. A peer provider said:

"*You can build astonishing HIC facilities, but if you have a terrible staff you will get nowhere. I think a good team is much more valuable than an adjusted building.*"

Financial barriers include high staffing costs, which makes many managers concerned about the feasibility of adhering to the standards to achieve full implementation of the HIC model. A manager expressed his concern that these standards of care will not be cost-effective. This proves to be of extra difficulty for smaller wards, who will have to meet the same standards but have less revenue. A team leader mentioned:

"*It is a big [financial] drain if you want to organize hand-in-hand care, seven days a week, 24 hours a day. And if you don't have enough [staff] formation, how will you do it? Especially at night and on weekends. We are currently struggling with that.*"

5. Lack of knowledge

Nurses mentioned that they experienced a lack of knowledge about specific interventions, such as how to best provide one-on-one care. Also, having to work with new instruments that can be experienced as substituting nurses' own competence and intuition can foster feelings of insecurity. An example is mentioned by a nurse concerning uncertainties with rooming-in of relatives at the ward, while dealing with privacy and safety concerns. A nurse commented on the provision of one-on-one care:

"*It is not clear for everyone what intensive care exactly is, the definitions are not always clear (...) One-on-one care, how do you practice that? For which patients is it appropriate and for which is it not? It is a continuing quest.*" (nurse)

6. Lack of facilities

Difficulties are encountered due to technical limitations and the current building structure which do not always support HIC working methods. For example, nurses report some patient rooms to be too small to provide good one-on-one care, to not have their own bathroom, or a bathroom with only cold water. The IC is often seen as an essential condition to avoid seclusion, and without it no other solution to reduce coercion is seen:

"*There are patients who are too restless or too aggressive to be at the ward and for whom seclusion is just a bit too much, and not necessary. We now have a patient who we would rather have on an IC, but because we don't have it yet and other*

facilities are still missing, he is now secluded. If we would have more staff or space we could just take him out of the seclusion room." (nurse)

7. Envisaged shortcomings of the HIC standards

A final barrier in the implementation experienced by respondents refers to the HIC standards. Some stakeholders criticized elements of the HIC model. Notably, the idea of a High Security Room (HSR) was seen as contradictory to the philosophy of HIC to not seclude patients:

> *"In my view, the HSR (EBK) is just a disguised seclusion room…We don't want to lock people up anymore, but we still invest in such a space."* (team leader)

Also, several participants missed elements in the approach, such as guidelines on how to provide one-on-one care and handling emergency scenarios and detailed descriptions of competences and tasks of nurses, psychologists, nurse practitioners and peer experts.

DISCUSSION

This paper analyses the most important drivers of change to embrace the HIC model, and the facilitators and barriers characterizing the implementation process in 21 mental healthcare institutions in the Netherlands. Findings reveal three major drivers of change: the combination of former initiatives in an overall approach to reduce coercion, the alignment with recovery oriented care and the focus on contact and cooperation. These drivers of change explain the motivation to start the implementation of the HIC model. In the earlier coercion reduction projects the focus was generally on separate elements. Moreover, these were framed in a negative way, emphasizing what should be prevented or reduced - seclusion in particular – while attention for positive motivation to change was limited. The drivers of change we identified in our study show the strength of a positive framing of new working methods.

Although the drivers of change provide motivation to implement HIC, actually adopting new working routines requires changing deeply rooted structures and culture at wards and institutions (Loorbach, 2007). Attention for barriers and facilitators may help to steer implementation process in the desired direction. We will elaborate on the barriers and facilitators that were identified in this study and discuss them in terms of culture, structure and practice.

In our study, barriers related to culture were most evident in the resistance to change among some professionals. These findings highlight that changing *culture* takes time and that additional efforts are needed to address resistance among key stakeholders such as psychiatrists and outpatient care professionals. Our study suggests that actively involving staff in setting goals related to HIC may help to realize a change in culture. Previous studies showed that active involvement of staff in an early stage of an implementation process helps to address their needs and diminishes resistance to change (Huckshorn, 2013; Needleman & Hassmiller, 2009; Jun, Kovner, & Strimpfel, 2016). Also, leadership supporting HIC was identified in this study as an element which could facilitate a change in culture. This is in line with the description of good leadership in literature, which is said to change staff's willingness to change and beliefs about the new HIC model and its effectiveness (Huckshorn, 2013; Ashcraft, Bloss, & Anthony, 2012). Previous research on reduction of coercion found psychiatrists to be influential; when a psychiatrist shows commitment to the transition towards HIC, this will facilitate the shared vision, joint responsibility and trust (Abma, Molewijk, & Widdershoven, 2009). Other strategies identified in this study and that may be helpful in realizing a culture change include the use of positive feedback and celebration of successes.

Several barriers identified in this study can be related to *structure*, including a shortage of staff and facilities, the lack of a formal institutional policy and the costs associated with implementation of HIC. A lack of resources is a common barrier in implementation of services in mental healthcare (Forsner et al., 2010; Michie et al., 2007). Potential facilitators that emerged in our study include having an implementation plan to prioritize and structure the different aspects of the implementation process at an organizational level. Also, insight into the potential (cost)effectiveness of the intended change may be beneficial in allocating means for the implementation process. The HIC workbook and the monitor provide structural elements needed for the implementation of HIC at the workplace level (van Melle et al., 2019).

This study showed that implementation of new *practices* requires a planning process in which a limited number of changes are promoted. This may help to address the barrier of time pressure, which causes people to stick to old routines (Correa et al., 2020). The HIC workbook and the monitor provide concrete descriptions of the envisioned working practices according to the HIC model and can facilitate the incorporation of these practices in daily routines of professionals at wards. In addition, providing training about HIC interventions may support professionals to avoid coercion and take a pro-active approach in their daily work (Huckshorn, 2013). Our study also indicates that stimulating

reflection on care practices and quality of care helps professionals to evaluate current habits and routines and consider new ways of working.

The implementation of HIC focused on change in culture and practice. Facilitators in these domains were perceived to be effective, and barriers were often addressed. On the level of structure, barriers are more persistent. Shortage of employees and lack of funding and facilities are driven by organizational and national policies, the labor market and the need to be cost-effective in providing care. As such, implementation of HIC may not always be prioritized in budgets and organizational plans, while for HIC to be successful budget and resources need to be allocated.

Strengths and limitations

A strength of this study is the nationwide scope, assessing experiences with and views on the implementation of HIC among a diverse group of managers and staff of HIC wards. Another strength is that the interviews were held in the first two years of the implementation of HIC, while wards differed in stages of implementation. This provided in-depth insights into the drivers of change, barriers and facilitators in various wards.

A limitation of this study is a potential bias in the selection of respondents. Many participants were actively involved in project groups set up to implement HIC, and may have been inclined to be supportive of the HIC model compared to professionals not involved in such groups. Another limitation is the limited generalizability beyond the context of acute mental healthcare in The Netherlands. Findings from this study however correspond with outcomes of studies in different contexts and countries (Vukadin, Schaafsma, Westerman, Michon, & Anema, 2018; Correa et al., 2020). This suggests that the results could potentially be relevant for other settings, and especially other mental healthcare setting such as long term mental healthcare and outpatient mental healthcare, for which setting-specific drivers, barriers and facilitators need to be taken into account.

CONCLUSION

The HIC model is fostered by three drivers of change: the combination of existing interventions to reduce coercion in a systematic way, the focus on contact and cooperation, and the alignment with recovery oriented care. The implementation of HIC is facilitated by leadership, involving staff, prioritizing goals and activities, using positive feedback and celebrating successes, and providing operationalizable goals in the HIC

workbook, monitor and audits. Barriers included the lack of formal organizational support, resistance to change, shortage of staff and use of flex workers, time restraints and costs, lack of knowledge, lack of facilities, and envisaged shortcomings of HIC standards. Improving the complex system of care in acute admission wards requires positive motivation through drivers of change, as well as attention for facilitators and barriers on the level of culture, structure and practice.

REFERENCES

Abma, T. A., Voskes, Y., Widdershoven, G. A. M. (2017). Participatory Bioethics and its Social Value: Coercion Reduction in Psychiatry as a Case. *Bioethics, 31*, 144-152.

Abma, T. A., Molewijk, B., & Widdershoven, G.A.M. (2009). Good care in ongoing dialogue. Improving the quality of care through moral deliberation and responsive evaluation. *Health Care Analysis, 17*(3): 217-35.

Ashcraft, L., Bloss, M., & Anthony, W. A. (2012). Best practices: The development and implementation of "no force first" as a best practice. *Psychiatric Services, 63*(5), 415–417.

Barbour, R.S. (2001). Checklists for improving rigour in qualitative research: A case of the tail wagging the dog? *British Medical Journal, 322*, 1115–1117.

Boeije, H. (2009). *Analysis in qualitative research.* London: Sage.

Böhm, A. (2004). Theoretical Coding: Text Analysis in. *A companion to qualitative research.* In Flick, U., Kardorff, E., & Steinke, I. (Eds). *A Companion to Qualitative Research* (pp. 270-275). London: SAGE Publications.

Boumans, C.E., Egger, J. I., Souren, P.M., Hutschemaekers, G.J. (2014). Reduction in the use of seclusion by the methodical work approach. *International Journal of Mental Health Nursing, 23*(2): 161-70.

Buchanan, D., Fitzgerald, L., Ketley, D., Gollop, R., Jones, J. L., Saint Lamont, S., ... & Whitby, S. (2005). No going back: *A review of the literature on sustaining organizational change. International Journal of Management Reviews, 7*(3), 189–205.

Correa, V. C., Lugo-Agudelo, L. H., Aguirre-Acevedo, D. C., Plata Contreras, J. A., Posada Borrero, A. M., Patiño-Lugo, D. F., Castaño Valencia, D. A. (2020). Individual, health system, and contextual barriers and facilitators for the implementation of clinical practice guidelines: a systematic metareview. *Health Research Policy and Systems, 18*(74).

Forsner, T., Hansson, J., Brommels, M. Åberg Wistedt, A., & Forsell, Y. (2010). Implementing clinical guidelines in psychiatry: a qualitative study of perceived facilitators and barriers. *BMC Psychiatry, 10,* 8.

Gaskin, C., Elsom, S., & Happell, B. (2007). Interventions for reducing the use of seclusion in psychiatric facilities: Review of the literature. *British Journal of Psychiatry, 191*(4), 298-303.

Grol, R., & Grimshaw, J. (2003). From best evidence to best practice: effective implementation of change inpatients' care. *The Lancet, 362*(9391), 1225–30.

Huckshorn, K. A. (2013). Reducing seclusion and restraint in mental health settings: A phenomenolgical study of hospital leader and staff experiences (PhD thesis). Available from ProQuest Dissertation Pubishing (UMI No. 3553916).

Jun, J., Kovner, C. T., & Stimpfel, A. W. (2016). Barriers and facilitators of nurses' use of clinical practice guidelines: an integrative review. *International Journal of Nursing Studies, 60*, 54–68.

Kajermo, K. N., Boström, A. M., Thompson, D. S., Hutchinson, A. M., Estabrooks, C. A., & Wallin,

L. (2010). The BARRIERS scale -- the barriers to research utilization scale: A systematic review. *Implementation Science, 5*, 32.

Kotter, J.P. (1995). Leading change: why transformation efforts fail. *Harvard Business Review, 73*, 59–67.

Maykut, P., & Morehouse, R. (1994). *Beginning Qualitative Research: A Philosophic and Practical Guide*. London: The Falmer Press.

Meadows, L. & Morse, J. M. (2001). Constructing evidence within the qualitative project. In: J. M. Morse, J. Swanson & A. Kuzel (Eds.). *The nature of evidence in qualitative inquiry* (187–202). Sage Publications: Thousand Oaks.

Loorbach, D. (2007). *Transition management: new mode of governance for sustainable development.* International Books, Utrecht, The Netherlands.

van Melle, A., Voskes, Y., de Vet, H., Van der Meijs, J., Mulder, C., & Widdershoven, G. (2019). High and intensive care in psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 34-43.

Michie, S., Pilling, S., Garety, P., Whitty, P., Eccles, M. P., Johnston, M., & Simmons, J., (2007). Difficulties implementing a mental health guideline: an exploratory investigation using psychological theory. *Implementation Science, 26*, 2-8.

van Mierlo, T., Bovenberg, F., Voskes, Y., & Mulder, N. (2013). *Werkboek HIC. High en intensive care in de psychiatrie*. Utrecht: de Tijdstroom.

Noorthoorn, E. O., Voskes, Y., Janssen, W. A., Mulder, C. L., van de Sande, R., Nijman, H. L. I.,...Widdershoven, G. A. M. (2016). Seclusion reduction in Dutch Mental Health Care: Did hospitals meet goals? *Psychiatric Services, 67*(12), 1321–1327.

Needleman, J., & Hassmiller, S. (2009). The role of nurses in improving hospital quality and efficiency: Real-world results. *Health Affairs, 28*(4): 625–633.

van der Schaaf, P., Dusseldorp, E., Keuning, F., Janssen, W., & Noorthoorn, E.O. (2013). Impact of the physical environment of psychiatric wards on the use of seclusion. *British Journal of Psychiatry, 202*, 142-149.

Srivastava, P., & Hopwood, N. (2009). A Practical Iterative Framework for Qualitative Data Analysis. *International Journal of Qualitative Methods, 8*, 76-84.

Steinke, I. (2004). Quality criteria in qualitative research, in: Flick, U., Kardorff, E. V., & Steinke, I. (Eds). *A Companion to Qualitative Research* (pp. 184–190). Thousand Oaks, Sage.

Voskes, Y., Theunissen, J., & Widdershoven, G.A.M. (2011). *Best practices rondom dwang-reductie in de Geestelijke Gezondheidszorg*. Amersfoort: GGZ Nederland.

Voskes, Y., van Melle, A., Widdershoven, G., Mierlo, A., Bovenberg, F., & Mulder, C. High and Intensive Care in Psychiatry: a new model for acute inpatient care in the Netherlands. *Psychiatric Services*. doi: 10.1176/appi. ps.201800440

Vukadin, M., Schaafsma, F.G., Westerman, M.J., Michon, H. W. C., & Anema, J. R. (2018). Experiences with the implementation of Individual Placement and Support for people with severe mental illness: a qualitative study among stakeholders. *BMC Psychiatry, 18,* 145.

Gerritsen, S., van Melle, A. L., Zomer, L. J. C., Widdershoven, G. A. M., Voskes, Y. Submitted to *Implementation Science.*

Communities of Practice in acute and forensic psychiatry: lessons learned and perceived effects

ABSTRACT

Aim

In the Netherlands, two new approaches have been developed for acute and forensic psychiatry, called High and Intensive Care (HIC) and Forensic High and Intensive Care (FHIC). To support the implementation of these approaches, Communities of Practice (CoPs) were created. The CoPs consist of care professionals, including mental health nurses, psychiatrists, social workers and managers. A core aspect of the CoPs is that care professionals perform audits in all participating healthcare institutions. The aim of this study is to gain insight into the lessons learned and perceived effects of the CoPs.

Design

A qualitative approach was used.

Methods

Data were collected through focus groups with participants in the CoPs. Additional data was derived from focus groups with teams implementing HIC or FHIC, and observations by the researchers. Data were collected in the period between 2014 and 2019. Data were analysed thematically.

Results

Lessons learned are: 1) create an ambassador role for CoP participants, 2) organize concrete activities, 3) take care of a multidisciplinary composition, and 4) foster shared responsibility and work on sustainability. Perceived effects of the CoPs were: 1) support of HIC and FHIC implementation, 2) creation of a national movement, and 3) further development of the HIC and FHIC approaches.

Conclusion

The audits served as an important vehicle to activate the CoPs, and stimulated the implementation of HIC and FHIC.

Impact

CoPs are increasingly used in healthcare. However, CoPs vary greatly in form and objective, and more insight is needed in the facilitation of CoPs. The findings may help others in creating a CoP when it comes to the implementation of best practices and improving healthcare by providing insight into lessons learned and perceived effects of two CoPs.

INTRODUCTION

In recent years, two new care approaches have been developed in the Netherlands: High and Intensive Care (HIC), which focuses on acute psychiatry (Voskes et al., 2021) and Forensic High and Intensive Care (FHIC), which focuses on forensic psychiatry (de Leede, van der Helm & Voskes, 2017). Both approaches have been formulated as care models, based on a comprehensive set of best- and evidence-based practices to support care professionals and institutions to intensify care in case of a crisis, and prevent and reduce the use of coercive measures. Currently, the care models are being implemented nationwide in Dutch (forensic) mental healthcare institutions (van Melle et al., 2019).

To support and stimulate care organization with the implementation of HIC and FHIC, two Communities of Practice (CoPs) were created. The creation of the CoPs aimed to facilitate interaction and learning among care professionals in (forensic) mental healthcare in order to foster the implementation of HIC and FHIC. CoPs are according to Wenger (2011, p. 1): "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly".

The CoPs of HIC and FHIC are national groups composed of care professionals working at different wards implementing HIC or FHIC. A core activity of the CoPs was performing site visits to each other's institution by organizing audits (van Melle et al., 2019). In addition, participants in the CoPs regularly gathered at national meetings to exchange experiences and knowledge. In this way a structured interaction among care professionals from a large number of Dutch (forensic) mental healthcare institutions was created.

Within the healthcare sector, CoPs are becoming more popular (Li et al., 2009a; Ranmuthugala et al., 2011a). However, there is great variety in the form and objective of CoPs (Ranmuthugala et al., 2011a). Also, more insight is needed in how to facilitate CoPs (Li et al., 2009b). The aim of this study is to gain insight into lessons learned from the CoPs of HIC and FHIC, and into perceived effects. This was investigated through qualitative research focusing on the perspective of the auditors, audit-receiving teams and observations made by the researchers. The findings may help others in creating a CoP when it comes to the implementation of best practices and the improvement of healthcare.

BACKGROUND

This section provides background information on the HIC and FHIC approaches, the formation of the CoPs, the activities that took place and the role of the researchers in the creation of the CoPs.

The HIC and FHIC models

The HIC and the FHIC models provide standards for temporary high-quality clinical care for patients in crisis and combine evidence based interventions and best practices to reduce coercion. When outpatient care is not sufficient due to crisis, the patient will be temporarily admitted to a HIC or FHIC (de Leede et al., 2017; Voskes et al., 2021). The HIC model was developed first based on former research and through meetings of professionals, peer providers and family representatives (Voskes et al., in press). Forensic institutions were interested in a similar approach and through several expert meetings and research the FHIC model was developed, with a central focus on safety in contact and an open institutional climate (de Leede et al., 2017).

In both care models, the emphasis is on restoring and maintaining contact, risk assessment and crisis prevention through stepped care (Voskes et al., in press). This stepped care is visible in the combination of the 'high care function' (HC) and the 'intensive care function' (IC). The moment the patient cannot stay on the regular closed ward (High Care) with other patients, care can be temporarily scaled up to the IC, where intensive care units (ICUs) and High Security Rooms (HSRs) are located. When a patient is transferred to the IC, a nurse will accompany the patient to provide one-to-one guidance. Key elements of the HIC and the FHIC model are hospitality, healing environment and the extensive collaboration with outpatient or other referring care services, patients and their relatives (de Leede et al., 2017; Voskes et al., 2021).

The CoPs of HIC and FHIC

The formation of the CoPs

In the development of HIC and FHIC, many mental healthcare institutions and professionals from acute and forensic psychiatry were involved. Based on former experiences on reduction of coercion, we decided to bring (mental) healthcare professionals together and involve them to jointly learn and reflect (Abma, Voskes & Widdershoven, 2017). For this reason, we created CoPs of professionals working on

the implementation of HIC and FHIC. This resulted in two national groups composed of multidisciplinary care professionals from 26 mental healthcare institutions for HIC, and 16 forensic mental healthcare institutions for FHIC.

To further stimulate exchange and cooperation, a fidelity scale (the HIC monitor) was developed to assess compliance to the model (van Melle et al., 2019). For FHIC, a comparable process took place which resulted in the FHIC monitor. To foster the implementation of HIC and FHIC audits were organized, in which the degree of adherence to the model was assessed by scoring the monitor. Therefore, a group of representative care professionals from each institution was formed. Participating institutions selected a number of care professionals from different disciplines, including nurses, psychiatrists, social workers and managers. In the CoP of FHIC also peer providers participated, as they are part of the FHIC team and were expected to bring a valuable perspective from their own experience as patient. All care professionals received a 1-day training to be able to perform audits. For HIC a total of 50 care professionals participated within the period of 2014 and 2018. For FHIC a total of 37 care professionals participated in the period of 2017 and 2019. Together these care professionals had a central position with the CoPs of HIC and FHIC.

Activities of the CoP

The core activity of the care professionals within the CoPs of HIC and FHIC was the performance of audits. During an audit, two or three trained auditors from different institutions visited a ward from another institution. In this way, professionals from different institutions were brought together, which facilitated the sharing of knowledge and experiences. During an audit, auditors received a tour through the ward, held interviews with team members and patients, observed a team meeting and performed a file check. Based on this information, auditors scored the model fidelity scale for either HIC or FHIC. Three times a year, meetings took place with the auditors to update their knowledge, learn from each other and discuss experiences obtained during audits.

Various additional activities were organized besides the audits. Meetings were organized that brought the participants of the CoPs together, including other professionals as policy makers and researchers. Starting from 2013, yearly HIC conferences were organized, in which research, newly developed interventions, innovations, treatment procedures and local projects in line with HIC and FHIC were presented. In addition, informal platform meetings for HIC and FHIC were organized on a yearly basis. In this way, a platform for care workers was provided to discuss challenges and opportunities

to work with the HIC and FHIC approaches the care models in daily practice. During the conferences and platform meetings, the participants of the CoPs played an active role in presentations and workshops.

The role of the researchers as facilitators

For both CoPs, the researchers had a facilitating role. They supported exchange of knowledge and experiences by planning and organizing trainings, follow up meetings with the CoP, audits and focus groups with HIC and FHIC teams. In addition, they were involved in the development of the programme and organization of the yearly conferences and informal platform meetings.

METHODS

Aim

The aim of this study was to gain insight into the process of creating the CoPs of HIC and FHIC and its specific lessons learned, and in the perceived effect of the CoPs from the perspective of auditors and teams.

Design

To gain insight in the CoPs that were created to support the implementation process of HIC and FHIC into practice, a qualitative approach was used. By using focus groups, viewpoints, perspectives and experiences were exchanged in a dynamic and interactive way (Flick, 2018). The focus groups followed a semi-structured design, and addressed lessons learned and perceived effects of the CoPs. The focus groups were facilitated by four researchers. In addition, observations were made by the researchers.

Participants

Participants in this study were care professionals of the mental health and forensic institutions. In this article we will refer to auditors, by which we mean the trained care professionals who performed HIC or FHIC audits at other care institutions. In addition, we will refer to teams, by which we mean the teams working on the implementation of HIC and FHIC and received an audit in this context. Both the group of auditors as teams were diverse in disciplines, work experience, gender and age. Many participants were mental health nurses.

Data collection

During three follow up meetings with auditors, data were collected through focus groups to create insight in their views and experiences of performing audits. Additionally, data was extracted from focus groups with teams after each audit. Also, observations by the researchers were used as data.

1.   *Focus groups with auditors*

A total of three focus groups were organized; two focus groups with HIC auditors and one focus group with FHIC auditors. The goal of these focus groups was to evaluate the process of performing audits and reflect upon the experiences of the auditors.

During the first focus group, organized in April 2015, with 20 HIC auditors, the auditors were asked to describe 1) three positive experiences with regard to the audit process and 2) aspects they have learned from the process of performing audits and what was of added value for their own institutions. The answers on these questions were written down on post-its and gathered on large flip-overs, as input for the plenary discussion on these topics.

The second focus group was organized in October 2017 with a group of 13 FHIC auditors. Auditors were asked to describe 1) positive experiences with regard to the audit process, 2) challenges with regard to the audit process and 3) the aspects they have learned from the process and brought to their own institution. Answers on these questions were gathered on flip-overs as input for a plenary discussion.

During the third focus group with 16 HIC auditors in March 2018, participants were asked to reflect upon their experiences of performing HIC audits. The group of HIC auditors was divided into small groups of four to six people. They were asked to develop a vacancy advertisement to recruit new auditors, using their own experiences for the text. The vacancy had to include 1) the work field of auditors, 2) the profile of an ideal auditor 3) the benefits of being an auditor and 4) the downsides of being an auditor.

2.   *Focus groups with teams*

After each audit, a focus group was organized led by the researchers, with the team which was audited to reflect on the audit scores. Next to this, the aim of the focus group was to evaluate the process and effects of the audits. In total, 78 focus groups

were conducted with HIC teams and for FHIC 23 focus groups took place. In order to include multiple perspectives, in each participating team, members from at least three different disciplines (e.g. nurses, social workers, peer providers, psychiatrist, psychologist or managers) were included. On average, five team members attended the focus group discussions.

3. *Observations from the researchers*

Data was also derived from observations made by the researchers. Insights could therefore be included about the way care professionals in the CoP interact and profiled themselves, and how they were perceived by others. The researchers discussed the observations and used this in comparison with the data derived from the focus groups.

Ethical considerations

Participating institutions received an information letter about the study, and prior to each focus group the researchers explained the study to its participants and asked them to give verbal consent. To prevent data from being traceable to persons or institutions, identifiable data have been coded. The Medical Ethical Committee of the researchers institution approved the study.

Data analysis and rigour

The data retrieved from the focus groups were analysed in MAXQDA version 2018, using a thematic analysis (Braun, Clarke, Hayfield & Terry, 2018). First, the data was labelled with codes, as part of an open coding approach, performed by three researchers. When doubt existed, codes were discussed. Second, for each research question, codes were clustered into themes that matched the content of the codes. These themes were discussed among four researchers until consensus was reached (investigator triangulation; Creswell & Miller, 2000). By using this predefined categories but also allowing themes to emerge from the data, the thematic coding combined a deductive and inductive approach (Fereday & Muir-Cochrane, 2006). To check the researchers interpretations, a member check was performed for each focus group (Steinke, 2004). A small remark was sent by a number of participants, though this did not result in adjustments in the analysis. The final themes were discussed with two researchers from the research group who were not involved in the data collection or the formation of the CoPs to ensure objectivity.

FINDINGS

This section presents the findings of the study. Based on the analysis of the qualitative data, themes were identified regarding (A) *lessons learned* in the CoPs; and (B) *perceived effects* of the CoPs. The study participants worked in acute or forensic psychiatry at wards located throughout the country, and varied in gender, work experience, age, and discipline.

A. Lessons learned

From the data the following lessons learned were identified: 1) create an ambassador role for CoP participants, 2) organize concrete activities, 3) take care of a multidisciplinary composition, and 4) foster shared responsibility and sustainability.

Create an ambassador role for CoP participants
 Within their own institutions, auditors were seen and approached as substantive experts on the (F)HIC model. A nurse of an audited team indicated:

> "*One of the coordinating nurses focuses on the HIC model and, in his role as HIC auditor, he offers an additional source of knowledge regarding the model.*"

Colleagues expect from auditors to take the lead in developments regarding HIC or FHIC. Because of the contact and exchange between auditors and care professionals from other institutions, auditors were familiar with national developments. They acquired an ambassador role within their own institution with regard to the implementation of HIC and FHIC. This ambassador role was for many auditors something to be proud of. Auditors indicated that they also positioned themselves as an expert and took an exemplary role for colleagues. As a HIC auditor mentioned:

> "*A positive experience is that my role as auditor gives me an expert position within my institution.*"

Professionals were proud to be an auditor and this was visible on social media and in their email signatures, where they specifically indicated to be a (F)HIC auditor.
From this, the following lesson can be derived: participants in CoPs can find inspiration and acknowledgement in having an ambassador role for the new care approaches.

Organize concrete activities

Participants considered the audits as an important vehicle to foster active exchange among care professionals in acute and forensic psychiatry. As mentioned by one of the HIC auditors:

"The audits offer an occasion for exchange of knowledge between institutions, in which ideas can also be gained for your own institution. It is better to take over something good then to invent something bad."

Next to the audits, national meetings provided an opportunity for learning from others. A HIC team expressed that they would like to gather experiences about a best practice during a national meeting:

"We envision the feasibility of one of the best practices as a major challenge. Therefore, we would like to obtain experiences from other HIC wards where this is already well organized. Possibly this would be an interesting theme for the coming HIC platform meeting."

This results in the following lesson: the organization of concrete activities can foster energy and active exchange among CoP participants.

Take care of a multidisciplinary composition

The CoPs of HIC and FHIC consisted of people with a variety of disciplines, such as nurses, social workers, psychologists, psychiatrists and managers. Therefore, the CoPs did not include a one-sided perspective and teams receiving audits indicated to feel understood and represented. As indicated by a FHIC team:

"All three auditors had different backgrounds which made the conversation interesting. During the day many aspects were recognized and at the same time the auditors were pleasantly surprised about what they heard."

Care professionals were able to ask questions on the basis of their own expertise. Combining and sharing ideas from different disciplines, each with their own views, experiences and perspectives, enriched the CoPs. Additionally, it was considered crucial that auditors worked at a HIC or FHIC ward themselves. When providing feedback during an audit, auditors were able to relate to their own working environment.

In the FHIC CoP, the perspective of peer providers was highly valued during audits, as they were able to ask critical questions from their own experience as being patients. An audit-receiving team mentioned:

> "The auditors were passionate and we were particularly impressed by the peer provider. This auditor highlighted the person behind the patient, something that we experienced as confronting but very valuable. We want to take his advice and feedback along, for example by just looking at the naming of something: are you talking about a cell or a bedroom?"

This leads to the following lesson: taking care of a multidisciplinary composition can strengthen the exchange of knowledge and experience among participants.

Foster shared responsibility and work on sustainability

As participants in the CoPs, auditors felt responsible for the continuation of the implementation of HIC and FHIC, both on a national level and in their own institution. In the assignment during a focus group to write a text for a vacancy for a position in the audit team, HIC auditors noted:

> "As auditor you have the responsibility to take on a pioneering role with regard to HIC in your own institution; you set an example to colleagues and take them along in the process."

Auditors constantly engaged colleagues of their own institution in the developments, by sharing insights and inviting them to national meetings. In this way, the gap in knowledge, enthusiasm and responsibility between care professionals was diminished. If this does not happen right from the start, there is a risk that colleagues of auditors will feel insufficiently included in the ongoing developments, as indicated by a FHIC team:

> "At the moment it feels like the train has already started to run and the team is now being thrown on it instead of starting to run with the team in it".

Care professionals also took care to actively involve their care institution in the CoPs, by approaching management and asking for support. A participant in the FHIC CoP said:

> "We hope to get a reasonable amount of time [from the institution] to motivate and guide the entire team. This is a fundamental aspect to be able to implement FHIC".

Participants in the CoPs also mentioned the risk of frequent staff changes at clinical wards. A member of a FHIC team said:

"*There has been and will be many changes in our team so we have to make sure that the FHIC approach does not disappear from sight.*"

This requires a shared responsibility and careful transfer of knowledge and roles within the CoP. To foster sustainable CoPs, the initial facilitators and all care professionals should together take responsibility and initiative.

From this, the following lesson can be learned: the continuity of implementation requires sharing the responsibility and work on sustainability.

B. Perceived effects

Based on the analysis, three perceived effects of the CoPs came to the fore: 1) support of HIC and FHIC implementation, 2) creation of a national movement and 3) further development of the HIC and FHIC approaches. These effects are further explained in the sections below.

Support of HIC and FHIC implementation

All care professionals perceived that the CoPs had an effect on the implementation of HIC and FHIC. For instance by reflecting on work routines and the exchange of experiences, as a HIC auditor said:

"*It is helpful to put one's own working routines under a magnifying glass and at the same time exchange experiences with regard to these routines.*"

In this process, it was experienced as helpful to compare ways of working on similar wards in other parts of the country. This could also result in the awareness of being distinctive or good at something, and provide an example for other institutions. Because of this, auditors and teams felt proud. Sometimes, the CoP even resulted in a competitive feeling, as a FHIC auditor mentioned in the focus group:

"*It makes you competitive, and you are more aware of pitfalls that you see at other institutions.*"

Furthermore, auditors and teams mentioned that as a result of the exchange within the CoP barriers could also be discussed and overcome. To hear or see that other professionals were able to implement the new approach was perceived as helpful. An example is a forensic care institution which envisioned FHIC as difficult to implement due to their strong focus on security. After seeing and hearing about a best practice during a self-organized site visit, they were surprised about the feasibility of this intervention. A nurse explains:

> "*During a site visit, situations were sketched out that we had not thought to be possible to do at our own institution. It became clear that we could implement this intervention as well.*"

So hearing and seeing how other care professionals at similar wards work creates confidence among care professionals regarding the possibility to overcome difficulties of implementing HIC or FHIC.

From this, the following perceived effect can be derived: the CoPs were experienced as a means to support implementation of HIC and FHIC.

Creation of a national movement

The CoPs participants often mentioned a feeling of togetherness and ownership of HIC or FHIC. Auditors felt part of a large national movement regarding HIC or FHIC. This was confirmed by audit-receiving teams, as they appreciated the visit and input of the auditors as signs of being part of a larger movement. A FHIC team member says:

> "*The audit and the auditors' visit gave energy because we realized that FHIC lives nationwide and not only within our institution.*"

Care professionals working with HIC or FHIC throughout the country were able to find each other easily, because of the contact that was established in the CoP. Next to the formal activities that were organized by the researchers, participants were able to find each other, as one of the nurses said:

> "*I try to make contacts and find the right people, because I know that there are institutions that work according to this [best-practice]*".

Because of the contact between professionals of different institutions, more collaboration was facilitated, as illustrated by a quote of one of the HIC auditors:

> *"HIC and the audits created short lines between mental healthcare institutions"*

From this, the following perceived effect can be derived: the CoPs helped creating a national movement.

Further development of the HIC and FHIC approaches

In the focus groups, auditors indicated that they felt responsible to contribute to the development of HIC or FHIC, and were willing to find out more about a particular subject in order to share this within the CoP. As a result of the audits, auditors were aware of new developments and proposed additions to the HIC or FHIC monitor. Working with model fidelity scales intensively during the audits allowed care professionals to give feedback on the content of the scales. Possibilities for improvements of the scales were discussed during the regular meetings with auditors. Both auditors and audited teams valued the experience that their ideas and feedback on the model were included in the development of HIC and FHIC. As one of the members of a HIC team said:

> *"It is a positive experience to be heard when providing critical comments on criteria in the HIC monitor."*

From this, the following perceived effect can be derived: the CoPs contributed to the further development of the HIC and FHIC approaches.

DISCUSSION

The aim of this study was to derive lessons learned from the creation of the HIC and FHIC CoPs, and gain insight into their perceived effects.

The topics mentioned in the lessons learned show similarities with the four key characteristics of CoPs mentioned in a review by Li et al (2009a): 1) social interaction, 2) knowledge-sharing, 3) knowledge-creation and 4) identity-building. National audits and training and refection days for auditors fostered interaction between care professionals, and sharing and creating of knowledge. This also spread to teams in mental healthcare institutions implementing HIC or FHIC through the audits and national meetings. The auditors had a central position in the CoPs, gaining an identity as ambassador for HIC or FHIC within their own institutions and on a national level. This can be related to the fourth characteristic of a CoP: identity-building (Li et al., 2009a).

Our results with regards to the lessons learned also show a difference with the existing literature on CoPs. We found that the multidisciplinary composition of the CoPs increased mutual understanding between disciplines and strengthened the exchange of knowledge during for instance the audits. In contrast, former research indicated that a mix of disciplines in a CoP can be a challenge because members envisioned the CoP differently or experienced a barrier to participate in conversations about care (Bindels, Cox, Widdershoven, van Schayck, & Abma, 2014; Lathlean & Le May, 2002). An explanation for our different findings might be the presence of a shared vision, in this case the HIC or FHIC approach. Another explanation might be that the training of the auditors suppressed possible hierarchy between disciplines and made care professionals more equal.

The CoPs fostered implementation of HIC and FHIC, and created a national movement. This also means that the CoPs stimulated quality improvement and reduction of coercive measures. This finding confirms the shifting aim of CoPs; from learning and exchange towards changing or improving practice (Li et al., 2009b; Ranmuthugala et al., 2009b; Kothari, Boyko, Conklin, Stolee, & Sibbald, 2015). This reality change was closely related to the use of audits in both CoPs. The audits were experienced as a means to inspire and support each other in the implementation of HIC and FHIC. Auditors structured the site visits by using the model fidelity scale. These findings are consistent with research from Bindels et al (2014, p. 120), indicating: "the importance of co creating rules of interaction with CoP members and a structured method appreciated by all to foster

each other's input". Combing and structuring various elements within a CoP, for instance by organizing audits, might foster the creation of a CoP and a reality change.

Strengths and Limitations

This study shows a number of strengths and limitations. The strengths include the variety in participants, setting and data collection. Two comparable CoPs from different settings were included, as well as a large number of care institutions and multidisciplinary care professionals. Although the study was performed in both acute and forensic psychiatry, it is unknown whether the findings are generalizable for other (healthcare) sectors and countries. The role of the researchers as CoP facilitators can be considered as both a strength and limitation. On the one hand, the close involvement may have helped to deepen the analysis, while on the other hand it may have hindered a more distanced analysis. To limit this, two researchers with a less active role in the CoPs facilitation were involved.

Conclusion

To conclude, this paper presented lessons learned and perceived effects of two CoPs within acute and forensic mental health care. Lessons learned regarded the importance of an ambassador role for CoP participants, of organizing concrete activities, of assembling expertise of professionals with various backgrounds, and of fostering shared responsibility and work on sustainability. The perceived effects of the CoPs included fostering implementation of HIC and FHIC, creating a national movement, and contributing to the further development of the HIC and FHIC approach. Specifically, the audits served as an important vehicle to activate the CoPs, and stimulated the implementation of HIC and FHIC.

REFERENCES

Abma, T. A., Voskes, Y., & Widdershoven, G. A. M. (2017). Participatory bioethics research and its social impact: the case of coercion reduction in psychiatry. *Bioethics, 31*(2), 144-152.

Bindels, J., Cox, K., Widdershoven, G. A. M., van Schayck, C. P., & Abma, T. A. (2014). Stimulating program implementation via a Community of Practice: a responsive evaluation of care programs for frail older people in the Netherlands. *Evaluation and Program planning, 46*, 115-121.

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2018). Thematic analysis. In P. Liamputtong (Eds.), *Handbook of Research Methods in Health Social Sciences* (pp. 1–18). Singapore: Springer.

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice, 39*(3), 124-130.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International journal of qualitative methods, 5*(1), 80-92.

Flick, U. (2018). *An introduction to qualitative research*. 6th ed. London, Sage Publications.

Kothari, A., Boyko, J. A., Conklin, J., Stolee, P., & Sibbald, S. L. (2015). Communities of practice for supporting health systems change: a missed opportunity. *Health research policy and systems, 13*(1), 33.

Lathlean, J., & Le May, A. (2002). Communities of practice: an opportunity for interagency working. *Journal of clinical nursing, 11*(3), 394-398.

de Leede, P., van der Helm, P. & Voskes, Y. (2017). *Werkboek Fhic. High en Intensive Care vanuit forensisch perspectief*. Utrecht: KFZ.

Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., & Graham, I. D. (2009a). Use of communities of practice in business and health care sectors: a systematic review. *Implementation science, 4*(1), 1-9.

Li, L. C., Grimshaw, J. M., Nielsen, C., Judd, M., Coyte, P. C., & Graham, I. D. (2009b). Evolution of Wenger's concept of community of practice. *Implementation science, 4*(1), 11.

Ranmuthugala, G., Cunningham, F. C., Plumb, J. J., Long, J., Georgiou, A., Westbrook, J. I., & Braithwaite, J. (2011b). A realist evaluation of the role of communities of practice in changing healthcare practice. *Implementation Science, 6*(1), 49.

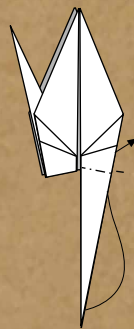Ranmuthugala, G., Plumb, J. J., Cunningham, F. C., Georgiou, A., Westbrook, J. I., & Braithwaite, J. (2011a). How and why are communities of practice established in the healthcare sector? A systematic review of the literature. *BMC health services research, 11*(1), 273.

Steinke, I. (2004). Quality criteria in qualitative research. *A companion to qualitative research, 21*, 184-90.

van Melle, A., Voskes, Y., de Vet, H., Van der Meijs, J., Mulder, C., & Widdershoven, G. (2019). High and intensive care in psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 34-43.

van Mierlo, T., Bovenberg, F., Voskes, Y., & Mulder, N. (2013). Werkboek *HIC. High en intensive care in de psychiatrie*. Utrecht: de Tijdstroom.

Voskes, Y., van Melle, A., Widdershoven, G., Mierlo, A., Bovenberg, F., & Mulder, C. High and Intensive Care in Psychiatry: a new model for acute inpatient care in the Netherlands. *Psychiatric Services*. doi: 10.1176/appi.ps.201800440.

Wenger, E. (2011). *Communities of practice: A brief introduction.* Retrieved from https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/11736/A%2brief%2introduction%20to%20CoP.pdf?sequence=1&isAllowed=y

13

14

15
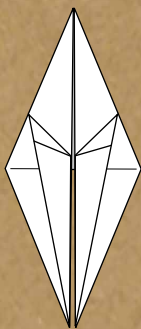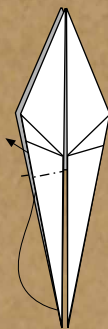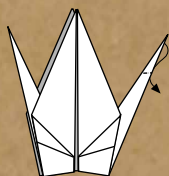
16
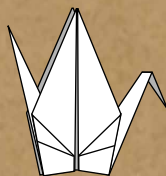
17
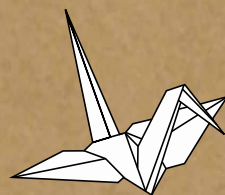
18

van Melle, A.L., S. Gerritsen, L. Zomer, E. O. Noorthoorn,
C.L. Mulder, G.A.M. Widdershoven, Y. Voskes (2021).
Tijdschrift voor Psychiatrie, 63(5). (translated from Dutch).

High and Intensive Care (HIC):
a next step in the reduction of coercion

ABSTRACT

Background

The High and Intensive Care (HIC) model provides a framework for acute admission wards. It is being implemented since 2013 by all mental healthcare institutions in the Netherlands.

Aim

To investigate the progress of implementation of the HIC model between 2014 and 2018 and the association of the implementation with coercive measures.

Methods

Between 2014 and 2018, 79 audits were organized in two phases within 25 mental health care institutions to measure the development of the degree of implementation of HIC using a model fidelity scale, the HIC monitor. HIC monitor scores were compared to data on coercion to determine the relationship between implementation of the HIC model and coercive measures.

Results

Scores on the HIC monitor increased over time, especially in terms of vision, hospitality and facilities. However, a third of the wards scored lower on the HIC monitor in the second audit compared to the first audit. Institutions that score higher use less seclusion and use less forced medication.

Conclusion

Overall, the implementation of the HIC model shows progress. In mental health care institutions that have implemented the HIC model better, less coercion is used. Securing implementation proves difficult. Attention should be paid to staff shortage and continuing evaluation of coercion.

INTRODUCTION

Background

Since 2001, efforts have been made to reduce coercion in mental healthcare in the Netherlands (Abma, Widdershoven, & Lendemeijer, 2005). Supported by the Dutch government and the Dutch Psychiatric Association (NVvP), 34 mental health institutions started projects between 2006 and 2012 to reduce the number and duration of seclusions (Voskes, Theunnissen, & Widdershoven, 2011; Abma, Voskes, & Widdershoven, 2017). These projects yielded a number of best and evidence-based practices such as 'the first five minutes method' aimed at improving contact at admission (Voskes. Kemper, Landeweer, & Widdershoven, 2014), and the crisis monitor, a set of observation tools for the evaluation of symptoms and the estimation of danger (van de Sande et al., 2011). Although a reduction of the duration of seclusions was achieved, the initial aim to reduce seclusion by 10% per year was not obtained (Noorthoorn et al., 2012). A subgroup of patients still underwent seclusion often and sometimes for a long time (Noorthoorn et al., 2012). A further impetus to reduce coercion was needed. In addition, a framework for acute short-term clinical care was needed, focusing on collaboration with outpatient partners and empowerment of patients. Therefore, the Dutch government and the NVvP took the initiative to develop a standard for intensive care in psychiatry, resulting in "field standards for intensive care in mental health care" in 2010 (Borgesius, 2010). These field standards, together with (experience-based and evidence-based) best practices from the projects to reduce coercion in mental health care (Voskes et al. 2011), gave rise to the development of a new model for acute admission wards for patients in need of intensive psychiatric care called High and Intensive Care (HIC) (Voskes et al., 2021). In a series of expert meetings, with participants from fifteen mental healthcare institutions, the HIC model was developed. It was described in the HIC workbook, including a model fidelity scale, the HIC monitor (van Mierlo, Bovenberg, Voskes, & Mulder, 2013; van Melle et al., 2019; Voskes et al., 2021).

The HIC model

In 2013, High and Intensive Care (HIC) was presented as a new care model (Voskes et al., 2021). It has since been implemented by all mental health institutions in the Netherlands (van Melle et al., 2019). The HIC model brings together the interventions from the projects to reduce coercion and offers a framework for clinical care for patients for whom outpatient treatment is temporarily inadequate and short-term clinical admission is necessary (van Mierlo et al., 2013). In the HIC model, a combination is made of a "High Care function" (HC) and an "Intensive Care function" (IC). If necessary, care on the closed ward (the HC) can

be temporarily scaled up to the IC, in which Intensive Care Units (ICUs) and High Security Rooms (EBKs) are located. The IC does not have its own staff. Patients are transferred from the HC to the ICU accompanied by a nurse to provide one-on-one care. If this is not possible for safety reasons, the patient will go to the HSR. This is an enclosed space that is only used in emergency situations; the HSR replaces the seclusion room. The use of the HSR is a coercive measure. Use of the HSR must be continuously supervised and the aim is to give the patient as much control as possible over what happens around him.

Restoring and maintaining contact is a central element of the HIC model. To foster contact, a preventive and de-escalating approach is taken and care providers assume a patient-friendly and hospitable attitude (Voskes et al., 2021; van Mierlo et al., 2013). A basic principle in the HIC model is to foster that the patient regains control and to facilitate recovery so that the patient can resume daily life outside the HIC. An admission to a HIC is regarded as a temporary interruption (or start) of an outpatient treatment by a FACT team (Van Veldhuizen, Polhuis, Bähler, Mulder, & Kroon, 2015). FACT offers multidisciplinary treatment and guidance in various recovery areas to patients with a Serious Mental Illness (SMI) (Van Veldhuizen et al., 2015). In addition, IHT teams, which can temporarily intensify outpatient care to prevent clinical admission can function as a gatekeeper for the clinic (Prinsen, van Wel, Mulder, de Koning, 2016). However, when symptoms worsen and there is significant risk of serious harm to the patient or others, hospitalization may be required. The HIC model offers a framework for cooperation and coordination between outpatient and inpatient teams to make admissions as short as possible and to promote continuity of care. Treatment on a HIC has a maximum duration of three weeks, a period that can be extended once if necessary. The treatment vision combines recovery oriented care and the medical model of care, focusing on treatment of a psychiatric crisis is treated, as well as on protection and safety.

Purpose and Research questions

Over the past five years, the application of the HIC model has been investigated within a large number of mental healthcare institutions. We first focused on the implementation of HIC within these institutions. Next, we investigated the relationship between the degree of implementation of the HIC model and the use of coercive measures. In this article we discuss the main results of the research. The research questions were:

- ▶ How did the implementation of the HIC model proceed between 2014 and 2018?
- ▶ What is the relationship between the degree of implementation of the HIC model and the use of coercive measures?

METHODS

In this study, audits were organized in mental health care institutions in the Netherlands using the HIC monitor, a model fidelity scale. In addition, data from the Argus register (Janssen, 2012) was used to relate the scores on the HIC monitor to the use of coercion.

Participants

Between 2014 and 2018, audits took place in two phases at acute closed admission wards in the Netherlands. In the first phase, from February 2014 to May 2015, 38 audits were conducted at wards of 21 participating institutions. In the second phase, a total of 41 audits were organized between June 2016 and January 2018 within 25 participating institutions. Of these, 27 audits took place on the ward that had also been audited during the first phase of the study. One institution of the participating institutions was excluded from the analysis because of the specialization in addiction care. One unit from an institution was excluded from the analysis because it was a long-term care instead of an acute care unit.

Instruments

HIC Monitor

The elements of the HIC model are described in the HIC monitor, a model fidelity scale that aims to measure the degree of implementation of the HIC model, as described in the HIC workbook (van Mierlo et al., 2013). The monitor covers 67 items, divided over eleven domains, namely: (I) team structure, (II) team processes, (III) diagnostics, treatment, and treatment interventions, (IV) care organization, (V) monitoring, (VI) professionalization , (VII) legal framework, (VIII) Electronic Patient Record (EPD), (IX) spatial design, (X) safety; and (XI) evaluation and feedback of coercive measures. The items are scored on a 5-point scale ranging from score 1 (not implemented) to score 5 (fully implemented). The HIC monitor has been validated with minor adjustments (van Melle et al., 2019), resulting in acceptable inter-rater reliability and good content and construct validity. Domain VIII concerning the EPD has been removed due to low inter-rater reliability and insufficient content validity. The first phase of this study was performed using the first version of the monitor and the second phase of the study using the validated HIC monitor.

Argus

Data on the frequency and duration of seclusion and on the number of forced medication used on HIC wards were collected for the year 2014 using the Argus registration system (Janssen, 2012). Argus was developed to obtain an unambiguous registration of the most applied forms of coercive measures in mental health care (Noorthoorn et al., 2016). To specify the association between the HIC monitor and seclusion, corrections were done for patient characteristics such as gender, age, marital status and diagnosis. Diagnosis was categorized according to the classification in the DSM-IV-TR. The use of coercive medication, defined as acute intramuscular medication, was also registered in Argus.

Procedure: audits

The audits were carried out by trained auditors, working in different disciplines at the participating institutions. During an audit, two auditors jointly visited a ward, after which they independently completed the score form of the HIC monitor. The items were assessed on the basis of three components. Firstly, the assessment of data from the ward / team: the team filled in a number of basic data on a questionnaire prior to the audit. Based on these data, the auditors checked a number of elements of the monitor. Subsequently, two auditors visited the team. During this visit, the auditors were present at a multidisciplinary meeting. The auditors also conducted interviews with various disciplines and with a patient. Finally, the auditors also reviewed patient files to assess care activities and registration.

Analysis

The analysis consisted of several parts. Averages and differences in HIC monitor scores between wards and over time have been calculated to provide insight into the degree of implementation of the HIC model. We also examined which items from the HIC monitor scored remarkably high or low on the 5-point scale. The threshold for high scores was set at a score higher than 4, and for low scores at a score below 2. We also examined which items showed a decrease in scores or an increase of more than 1 point on the 5-point scale. In order to gain insight into the relationship between HIC monitor scores and coercive interventions, the scores on the HIC monitor were associated with the number and duration of seclusions and the number of intramuscular coercive medication given without consent of the patient over the period of 2014. To this end, wards were divided into two groups based on the median of the HIC monitor scores. We tested whether wards with a high or low score with respect to the median differed in the use of seclusion and intramuscular coercive medication under resistance. This also made

it possible to provide a picture of possible substitution of seclusion by medication, which is the case when low seclusion rates are associated with higher coercive medication rates. The figures presented on seclusion and coercive medication have been corrected for duration of admission by dividing the number of hours of seclusion by the number of admission hours and dividing the number of intramuscular coercive medication provided without consent by the number of admission days.

RESULTS

Implementation of HIC 2014-2018

Average audit scores from audit rounds 1 and 2

First, the mean scores from both audit rounds were calculated. During the first audit, an average score of 2.9 (range 1.99 to 3.92; N = 38) on a scale of 1 to 5 was obtained. The mean score on the second audit was higher than the score on the first audit; score 3.34 (range score 2.35 to 4.23; N = 41). On average, the HIC monitor score increased by 16.8%. Of the 27 wards that were also audited during the first round, 21 wards showed an increase in the average total score on the audit (average increase 0.7; range 0.06 to 1.31). However, on six wards the score during the second audit was lower than during the first audit (mean decrease -0.26; range -0.03 to -0.49). As can be seen in figure 1, this decrease mainly took place within the group of wards that achieved a high score on the first audit (in 2014-2015).

Figure 1. *Average HIC monitor scores on the first audit round held between 2014-2015 and the second audit round held between 2016-2018 (n=27).*

Remarkably high and increasingly high scoring items

Subsequently, the scores of the two audit rounds were compared. Table 1 shows the remarkable high (> 4) and low (<2) scoring items on the first and second audit. In both audit rounds, the high-scoring items related to different aspects of care, such as training of teams in de-escalating techniques ("conflict management and personal safety"), and "team spirit", a measure of team cohesion, good team atmosphere, enthusiasm and innovation. In the second audit round, predominantly more high-scoring items were visible. These items were mainly related to a significant increase in the use of family interventions, in which significant others are actively involved in the treatment process and the possibility of "rooming-in", the possibility of staying overnight at the ward, was offered. The score on "hospitality" also increased, which means that the first five-minute method was well implemented on wards, and that patient preferences were taken into account in choosing the allocation of patients to nurses per shift (Table 2). An increase in knowledge and alignment with the outpatient treatment teams appeared to be visible, which is an indication that outpatient treatment was increasingly seen as guiding during admission. The greatest increase in scores was visible in the acceptance of the vision regarding HIC and recovery oriented care by the team, and in the adjustment of attitude and treatment from a more controlling way of working to a culture in which contact with patients and significant others is central. Finally, there was a striking increase in the improvement of facilities in the ward such as the "Intensive Care Units" (ICUs) and "High Security Rooms" (HSRs).

Table 1. *Remarkably high and low scoring items on the HIC monitor on the first and second audit rounds.*

Scores audit 1				Scores audit 2			
Remarkable low scores (<2)		Remarkable high scores (>4)		Remarkable low scores (<2)		Remarkable high scores (>4)	
Psychologists	1.30	Sufficient outside space	4.89	Psychologists	1.59	Sufficient outside space	4.93
Peer experts	1.41	No waitinglist	4.52	Addiction experts	1.66	Conflict control and personal safety	4.54
High Security Rooms (HSR)	1.53	Conflict control and personal safety	4.26	Peer experts	1.75	No waitinglist	4.56
Addiction experts	1.71	Team spririt	3.93			Knowledge of FACT and outpatient treatment	4.48
Open workstations	2.00					Team spirit	4.36
						Family interventions	4.28
						Hospitality	4.15

Remarkably low and increasingly low scoring items

The remarkably low scoring items can also be found in Table 1. In the second audit round a decrease in low scoring items (<2) was visible. Low scoring items in both audit rounds were related to a lack of presence of relevant disciplines, as a large number of wards missed the presence of a number of disciplines, including peer experts. Only in the first audit round, low scores were also related to the absence of facilities, indicating that investments were made over time to structurally improve wards. In addition to the remarkably low scoring items (<2), there were also a number of items that showed a noticeable decrease in scores (see Table 2). Remarkable is the decrease in score for the follow-up discussion of early and acute coercive medication with the patient. This is consistent with the decrease visible on the item "evaluation of coercive measures", a representation that coercion is not always evaluated with patients and significant others. A decrease in scores was also visible for the item "reflection on practices", with regard to intervision or (group) supervision.

Table 2. *Items on the HIC monitor that show remarkable increase of decrease on the second audit compared to the first audit.*

Remarkably increasing items			Remarkably decreasing items		
Item	Audit 1	Audit 2	Item	Audit 1	Audit 2
Family interventions	3.1	4.28	Early and acute coercive medication	3.7	2.6
Hospitality	3.0	4.15	Evaluation of coercive measures	3.3	2.9
Knowledge of FACT and outpatient treatment	3.0	4.48	Reflection on practices	4.0	3.1
Staff attitude	2.6	3.8			
Open workstations	2.6	3.8			
Intensive Care Units (ICUs)	1.9	3.8			
High Security Rooms (HSRs)	1.3	2.7			

Association of implementation of HIC and freedom-restricting interventions

The scores on the HIC monitor from the first audit round were compared to the Argus data from 2014. Table 3 shows that the 17 wards that scored highest on the HIC monitor together secluded for a total of 40476 hours compared to a total of 76847 hours of seclusion in the 16 lower scoring wards. This indicates that wards that score high on the HIC monitor seclude for a less number of hours. This difference is significant (p <.001), also when the number of hours of seclusion is corrected for the number of

admission hours. Wards that scored relatively high on the HIC monitor also used less coercive medication than institutions with a lower score on the HIC monitor. Again, when correcting for the number of admission days, the use of coercive emergency medication was significantly lower at the wards that scored higher on the HIC monitor.

Table 3. *Differences between wards scoring high and low on the HIC monitor.*

HIC score	N wards	Seclusion hours	Number of Seclusion Incidents	Hours seclusion per admission hours**	Enforced Medication	Medication Events per admission days*
High > 184	17	40476 hours	690	2.58	538	0.0162
Low < 184	16	76847 hours	1404	4.20	1030	0.0207

*   Significant differences student t test p<0.05

**   Significant differences student t test p<0.001

DISCUSSION

The HIC model has been developed to provide a framework for treatment and care in closed admission wards in acute psychiatry. In this article, we described how five years of implementation of the HIC model took place on the basis of the development of scores on the HIC monitor. First, audit results generally show an increase in HIC monitor total scores, which indicates that over the years teams have increasingly started working according to the HIC model. The changes in scores on the HIC monitor regarding attitude and treatment show that a transition has taken place from a controlling culture to a culture in which contact with patients and significant others and recovery are central elements.

It is remarkable that the HIC monitor scores of items related to available facilities show that many institutions have made investments to the building structure, but that presence of relevant disciplines appears to be unchanged. These findings are in accordance to the national shortage of staff, which means that teams are often supplemented with flex workers. This poses a challenge to structurally apply and secure HIC interventions into practice (Menkhorst & Spijkerman, 2019), which may have repercussions on the further implementation of the HIC model. Although investments in facilities such as ICUs can

help to work better according to HIC principles, investments in staff could have a positive effect, mainly on the sustainability of implementation of the HIC model and in the further reduction of coercive measures.

It also appears that sustainability is a problem, which is visible in the decrease in HIC monitor scores at a number of institutions. In addition to staff shortages, this may also be due to reorganizations and the departure of leaders and other staff, which leads to less stability in teams. Strikingly, most of the decrease in scores occurred within institutions that previously scored high on the HIC monitor, while the largest increase occurred within institutions that previously scored lower on the HIC monitor. There seems to be room for a better implementation of the HIC model, but safeguarding model fidelity appears to be more difficult.

This study also shows that in 2014 wards that obtained a higher score on the HIC monitor, and are thus further in the implementation of the HIC model, use less coercion. This applies to seclusion as well as to the number of forced medication. The result that wards with relatively higher HIC model fidelity had both fewer seclusions and number of forced medication indicates that no substitution of seclusion by medication took place. This is not in accordance with findings from earlier research in which this substitution did occur (Noorthoorn et al., 2016). It is worrying that from 2015 onwards we have insufficient insight into the number of coercive measures on a national level. Simultaneously, we see from the audits that evaluation of coercion at institutions is less frequent. In order to properly pursue the objective to further reduce coercion, both data and evaluation of coercive measures are needed. Getting feedback on the reduction of coercion and seeing immediate results from efforts to reduce coercion can be an important motivator to further reduce coercion (Voskes et al., 2011). Evaluation of coercion requires reflection on practices. More attention needs to be paid to reflection, given the decrease in HIC monitor scores in this area between the first and second audit rounds. Reflection is also important for safeguarding activities (Voskes et al., 2011). The audits and feedback of coercive measures are important means in this respect.

Strengths

A strength of this study is the national scope, as the majority of institutions with acute closed admission wards in the Netherlands participated. This resulted in active collaboration with mental health care institutions and auditors who have generated broad support of the HIC model. This is reflected in the efforts of many institutions to further implement the HIC model. The uniformity of practices created by the HIC model

also offers inspiration for further development of practices internationally, and for research on an international scale.

Limitations

This study has some limitations. First, the researchers are involved in the HIC development and are therefore not independent towards the model. The researchers reflected on this during the data collection, analysis and interpretation of the data. Second, the HIC monitor was not yet validated in the first phase of the study, and to measure the effect of implementation of the HIC model a comparison was made between the Argus data and the first version of the HIC monitor. However, given that the adjustments to the HIC monitor during validation were limited, the influence on the results is considered to be minimal (van Melle et al., 2019). In addition, this analysis was performed using cross-sectional data, and longitudinal research with Argus data is necessary to monitor the long-term effects of implementation of the HIC model. Since January 1st 2012, the registration of coercive measures in Argus has been mandatory for all care providers in mental health care as a result of an amendment to one of the regulations in the Special Admissions in Psychiatric Hospitals Act (Bopz Act 1993). However, due to privacy reasons, no new national Argus data is available after 2014. The availability of this data is necessary to investigate the long-term relationship between implementation of HIC and the use of coercive measures. Insight into these data is especially important now that the shortage of staff and the current Corona pandemic may hamper the reduction of coercion. Moreover, research highlights the need for attention to reduce coercion.

CONCLUSION

In recent years, the HIC model has brought about major changes in Dutch mental health care. This has made an important increase in uniformity of care practices. Significant progress has been made in the implementation of the HIC model in the last five years. Institutions that have implemented the HIC model to a further degree appeared to use less coercion. However, implementation requires continuous attention. To safeguard the implementation of the HIC model, attention should be paid to the national shortage of staff and to the evaluation of coercion. Regarding the latter, it is important to make data on coercive measures available, and to systematically reflect on the use of coercion.

REFERENCES

Abma, T. A., Voskes, Y., & Widdershoven, G. A. M. (2017). Participatory bioethics and its social value: coercion reduction in psychiatry as a case. Bioethics, 31, 144-152.

Abma, T. A, Widdershoven, G. A. M., & Lendemeijer, B. (2005). *Dwang en drang in de psychiatrie; kwaliteit van vrijheidsbeperkende interventies*. Utrecht: Lemma.

Borgesius, H. E. (2010). Intensive Care in de GGZ: *Op weg naar veldnormen*. Amersfoort: GGZ Nederland.

Janssen, W. A. (2012). Argus: assessment and use of data in evaluating coercive measures in Dutch psychiatry (PhD Thesis). Vrije Universiteit, Amsterdam.

van Melle, A., Voskes, Y., de Vet, H., Van der Meijs, J., Mulder, C., & Widdershoven, G. (2019). High and intensive care in psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 34-43.

Menkhorst R, Spijkerman C. (2019, February 6). *Elke dag nieuwe gezichten; personeelstekort in de ggz*. De Groene Amsterdammer.

van Mierlo, T., Bovenberg, F., Voskes, Y., & Mulder, N. (2013). *Werkboek HIC. High en intensive care in de psychiatrie.* Utrecht: de Tijdstroom.

Noorthoorn, E. O, Janssen, W. A, van de Sande, R., Nijman, H. L. I., Smit, A., Hoogendoorn, A., …Widdershoven, G. A. M. (2012). Vijf jaar Argus. Rapportage uitkomsten vrijheidsbeperkende interventies 2011. Casusregister Argus.

Noorthoorn, E. O., Voskes, Y., Janssen, W. A., Mulder, C. L., van de Sande, R., Nijman, H. L. I.,…Widdershoven, G. A. M. (2016). Seclusion reduction in Dutch Mental Health Care: Did hospitals meet goals? *Psychiatric Services, 67*(12), 1321–1327.

Prinsen, E., van Wel., B., Mulder, N., & de Koning. (2016). *Handboek intensive home treatment.* De Tijdstroom uitgeverij: Utrecht.

van de Sande, R., Nijman, H. L., Noorthoorn, E. O., Wierdsma, A. I., Hellendoorn, E., van der Staak, C., & Mulder, C. L., (2011). Agression and seclusion on acute psychiatric wards: effect of short-term risk assessment. *British Journal of Psychiatry, 199*, 473–8.

Van Veldhuizen, R., Polhuis, D., Bähler, M., Mulder, N., Kroon, H. (2015). *Handboek (Flexible) ACT. Herstelondersteunende zorg en behandeling in de eigen omgeving voor mensen met ernstig psychiatrische aandoeningen.* Tweede druk. De Tijdstroom.

Voskes, Y., Kemper, M., Landeweer, E. G. M., & Widdershoven, G. A. M. (2014). Preventing seclusion in psychiatry: A care ethics perspective on the first five minutes at admission. *Nursing Ethics, 21*(7), 766-73.

Voskes, Y., van Melle, A., Widdershoven, G., Mierlo, A., Bovenberg, F., & Mulder, C. High and Intensive Care in Psychiatry: a new model for acute inpatient care in the Netherlands. *Psychiatric Services*. doi: 10.1176/appi. ps.201800440.

Voskes, Y., Theunissen, J., Widdershoven, G. A. M. (2011). *Best practices rondom dwangreductie in de geestelijke gezondheidszorg. Een inventariserend onderzoek naar best practices bij de reductie van dwang.* VUmc, Amsterdam.

van Melle, A. L., Gerritsen, S., Zomer, L. J. C., Nijssen, Y. A. M., Mulder, C. L., Widdershoven, G.A.M. & Voskes, Y. Submitted to *Plos One*.

Comparing two ways of measuring quality of care on high and intensive care units

ABSTRACT

Introduction

To improve the quality of care and to reduce coercion, the High and Intensive Care (HIC) model was developed for acute psychiatric wards and is currently applied in most hospitals in the Netherlands. The purpose of this study was to;

- ▶ Assess the score on the HIC monitor, a validated model fidelity scale, as an indication of quality of care
- ▶ Assess the quality of care as perceived by patients
- ▶ To examine the association between the score on the HIC monitor and the perceived quality of care

Methods

Data were collected between June 2016 and May 2018. On 18 HIC wards in the Netherlands scores on the HIC monitor were assembled through 41 audits, and 531 structured interviews with patients were held using the KWAZOP questionnaire. Data were analyzed with descriptive statistics. Associations between the HIC monitor score and the KWAZOP scores were examined trough a two-level multilevel regression model. Qualitative thematic analysis was used for the open questions on the KWAZOP.

Results

On average, 3.34 on a 5 point Likert-scale was scored on the HIC monitor. Highest scoring items (>4) included de-escalating techniques, team spirit, and family interventions. Low scoring items concerned lack of diversity in disciplines and care regarding coercion. Five of the seven KWAZOP subscales were rated positively by more than 70% of patients. Patients perceived quality of care related to freedom and privacy as highest and care regarding coercion and recovery oriented care as lowest. Patients were satisfied with staff attitude and hospitality, and less positive about treatment related interventions. We found no significant relation between HIC monitor scores and KWAZOP scores.

Conclusion

The score on the HIC monitor and the measure of patient satisfaction (KWAZOP) give a different indication of the quality of care, but may be complimentary to each other.

INTRODUCTION

Admission to an acute closed psychiatric ward is often experienced as distressing and burdensome by patients (Morrison, Bowe, Larkin, & Nothard, 1999; Nugteren et al., 2016). Feelings of humiliation, fear and powerlessness have been reported (Alexander, 2006; Shattell, Andes, & Thomas, 2008; Svindseth, Dahl, & Hatling, 2007). The loss of control over the environment, and interventions such as involuntary treatment may repeat previous traumatic experiences, and aggravate psychiatric symptoms (Gaskin, Elsom, & Happell, 2007; Frueh et al., 2005). Especially, being submitted to coercive measures such as seclusion, or witnessing other patients undergoing coercion may cause distress and hostile feelings towards care professionals (Iversen, Høyer, & Sexton, 2007; Nugteren et al., 2016; Thibeault, Trudeau, D'Entremont, & Brown, 2010). In order to reduce coercion and improve the quality of care in the Netherlands, the High and Intensive Care (HIC) model has been developed. Currently, most hospitals in the Netherlands apply this model as a quality standard for closed psychiatric wards (van Melle, Noorthoorn, Widdershoven, Mulder, & Voskes, 2020; van Mierlo, Bovenberg, Voskes, & Mulder, 2013; Voskes et al., 2021).

HIC is a consensus based model, and consists of best practices and evidence based practices. The model focuses on restoring and remaining contact, early risk assessment and de-escalation by means of a stepped-care approach. In accordance with HIC, admission should be as short as possible and function as a temporary break in outpatient care, which remains leading during admission. HIC combines a "high-care-function" (HC), which contains the general ward with single patient rooms with an "intensive-care-function" (IC), which contains several Intensive Care Units and Extra Security Rooms which allow for intensive one-to-one contact. One of the key points of the HIC model is the integration of the recovery approach with the medical model of care, making recovery an important focus of the care process. Stepped care aims to reduce coercion and increase safety by focusing on contact, and cooperation between staff, patient and relatives (Voskes et al., 2021).

Multiple components important to the quality of care are integrated in the HIC model. To measure the extent to which wards are compliant to HIC, and thus to assess the quality of care on these wards, the HIC monitor was developed. The HIC monitor is a validated model fidelity scale and can be used for quality assessment of wards working with HIC (van Melle et al., 2019). Moreover, the monitor can be used to investigate possible associations between components of the HIC model, and intended outcomes such as

applied coercive measures and patient satisfaction with care. In one earlier study, an association was found between higher HIC model fidelity scores and lower number of hours spend in seclusion (Van Melle et al., 2020).

Nowadays, a measure of patient satisfaction with care is commonly used as a distinctive indicator for quality of care (Manary, Boulding, Staelin, & Glickman, 2013; Vermeulen, Schirmbeck, Tricht, & de Haan, 2018). By comparing outcomes of quality measurement by means of the HIC monitor with assessment of perceived quality of care by patients, quality of care can be further improved. As the HIC model remains under development, input from patients can be used for further adjustments to the model. The purpose of this study was to:

- ▶ Assess the score on the HIC monitor as an indication of quality of care
- ▶ Assess the quality of care as perceived by patients
- ▶ To examine the association between the score on the HIC monitor and the perceived quality of care

METHODS

Sample of Wards and Participants

Selection of Wards

Data was collected on acute closed wards for adult psychiatric patients of mental healthcare institutions in the Netherlands between June 2016 to May 2018. Admission to these wards is often involuntarily, but can also occur voluntarily. Participating mental healthcare institutions were asked to select a ward in which the implementation of HIC was followed and the quality of care could be assessed by means of the HIC monitor and patient interviews.

Selection of Participants

Inclusion criteria for patients to be interviewed using the KWAZOP (see under) were capability to answer questions for a longer stretch of time, sufficient command of the Dutch language and minimal duration of admission of three days. Patients who stayed at the ward for less than three days were excluded, as this period is perceived to be too short to give patients the opportunity to fully assess the quality of care at the ward (Nijssen, De Haan, Schene, Koeter, & Gersons, 2001). The same threshold of three days was maintained after discharge or transfer to another ward as to avoid experiences to

become mixed. To avoid selection bias, all patients admitted to wards who fitted the criteria were asked to participate until a total number of 30-40 interviews per ward was reached. Due to administrative and logistic reasons, no records were collected of non-participating patients.

Instruments

The HIC monitor

The HIC monitor is a validated instrument to measure compliance to the HIC model as an indicator of the quality of care (van Melle et al., 2019). The monitor consists of 65 items over 10 domains, namely (I) team structure, (II) team processes, (III) diagnostics, treatment and interventions, (IV) organization of care, (V) monitoring, (VI) professionalization, (VII) the Psychiatric Hospitals Compulsory Admissions Act (BOPZ), (VIII) healing environment, (IX) safety; and (X) evaluation of and feedback on coercion. These domains were constructed on the basis of the content of items, and not on a factor analysis, to increase usability of the instrument as a checklist to guide and assess the compliance to the HIC model. The monitor is scored on a 5-points scale ranging from 1 (no compliance) to 5 (full compliance).

The KWAZOP

The KWAZOP *(Kwaliteit van zorg op gesloten psychiatrische opname afdelingen)* questionnaire is a validated measurement of the perceived quality of care on acute closed psychiatric wards (Nijssen, 2000). The questionnaire consists of 67 items covering 7 subscales: (I) medical treatment; (II) nursing care; (III) openness and safety; (IV) freedom and privacy; (V) involvement of relatives; (VI) coercive measures; and (VII) recovery oriented care. Questions were only answered on the fifth subscale when relatives were involved in the care process and on the sixth subscale when coercive measures have been used during patients' time at the ward. The type of coercive measure used is not specified in the questionnaire. KWAZOP subscales and especially the last subscale on recovery oriented care cover a large part of the content of the HIC monitor, which made us choose this instrument above other frequently used instruments for assessment of quality of care (Nijssen, Ralston, Weeghel, & van de Sande, 2014).

Questions are answered on a three-point scale, using various terms (1) sufficient/always/ yes (2) neutral, or (3) insufficient/never/no. In two open questions, patients are asked what they experienced as positive and what they think can be improved. Lastly, an overall grade of the ward is given by the patients on a ten point scale ranging from 1

(very bad) to 10 (excellent). The KWAZOP questionnaire has the form of an interview, in order to overcome problems with written text and influence of mental illness symptoms (Guiot, 1997; Nijssen et al., 2001).

Procedure

Data were collected between June 2016 and May 2018. Data on the HIC monitor were assembled through audits. The audits were performed by representatives of the participating institutions. They were trained by the researchers (LvM, SG & YV) and an experienced auditor to perform an audit, consisting of interviews with nurses, medical staff, managers and patients, to examine the health records, the ward and to observe a multidisciplinary meeting in which staff discussed care for individual patients. Auditors filled in the score sheet to the HIC monitor and sent it to the researchers after each audit.

In addition, data on perceived quality of care using the KWAZOP were gathered through structured interviews with patients at the same wards and during the same period audits took place. The interviews were conducted by staff members from the concerning mental healthcare institutions, who were instructed by the researchers (LvM, SG, & LZ). Interviewers were not involved in direct care process of the concerning patients, in order to avoid bias such as socially desirable answers. For each ward, a care professional who oversaw discharge was appointed as coordinator to ask patient for participation, plan the interviews and collected informed consent forms. After approximately 30 interviews at a ward, the questionnaires were anonymised by the local coordinator and then sent securely to the researchers via mail or email.

Reliability

To increase reliability of the HIC monitor scores, audits were held by two auditors who simultaneously visited the wards. They first independently scored the HIC monitor and then determined a consensus score for each item on the HIC monitor (van Melle et al., 2019).

To assess the reliability of the KWAZOP interview with the patient, the interviewer scored the reliability, and thus the usefulness of the interview on a 4 point scale after the interview. The assessment of the reliability was based on moments in the interview in which patients were asked to give examples or arguments to their answer. A lowest score of 1 (very unreliable) was given if the answer was almost never adequately substantiated. The highest score of 4 (very reliable) was given when examples and arguments given

by the patient were always plausible and adequately substantiated. Patients with a reliability score of 2 to 4 were included in the analysis. Participating wards were asked to complete a minimum of 30 interviews to enable reliable analysis of the questionnaires (Nijssen et al., 2001).

Analysis

Descriptive statistics were computed on the HIC monitor and KWAZOP total, domain/subscale and item scores. Descriptive statistics were also computed on the demographical and clinical characteristics gender, age, educational level, legal status, psychiatric history, country of origin and living situation that were collected from the patient interviews. A Chi square test of independence was performed to test equal distribution of characteristics in the wards. To examine the association between HIC monitor outcomes and the KWAZOP, a two-level multilevel regression model was used: level 1 involved the patients, level 2 involved the participating wards. The KWAZOP total score and subscales were treated as dependent variables, and the HIC monitor total score and patient variables were treated as independent variables. Normal distribution of data was calculated using residuals. Because the HIC monitor domains, in contrary to the KWAZOP subscales, were not constructed by means of factor analysis, we chose to show simple descriptive statistics for the domains for content purposes, but refrained from further analysis of associations between HIC monitor domains and KWAZOP (item) scores.

Data were analyzed using SPSS version 22. Patients' answers on the open questions of the KWAZOP were analysed, using a thematic analysis. Two predefined categories were used in the analysis as the questions focused on either factors patients were satisfied or unsatisfied about. For the codes within these categories, an open coding approach was used, which were then clustered into themes. This way, the thematic coding combined a deductive and inductive approach (Fereday & Muir-Cochrane, 2006).

RESULTS

Sample characteristics of participating wards

A total of 25 mental healthcare institutions in the Netherlands participated in this study. One institution was excluded from analysis because it specialized in addiction care. A total of 41 wards participated in the audits with the HIC monitor, as most institutions participated with two wards. For logistic reasons, institutions were asked to select one of the two wards to participate in the assessment of the perceived quality of care, which resulted in 22 participating wards. On 18 wards, on average 22 interviews using the KWAZOP (min 19, max 40) were conducted. On the other four wards, interviews were not conducted due to changes in personnel, problems with coordination and time limits. During the period of research, data on non-participation was collected by 11 wards, showing an average participation rate of 51.51% (range 32.26 – 91.89%). Reasons for non-participation were either refusal to participate in the study (not interested, unable or angry) or no request to be interviewed (no interviewer available, rapid transfer or discharge). In total 531 KWAZOP questionnaires were returned from 18 HIC wards. From these questionnaires, 28 (5.3%) interviews were indicated as highly unreliable by the interviewer (score 1) and therefore excluded from analysis. In total, 503 questionnaires were included for further analysis. Interviews took 33.59 minutes on average (range 8 to 90 minutes). Some interviews were not fully completed, but included when reliability was rated between 2-4.

Due to a high (>50%) number of missing a total of 8 items were removed from analysis. These items mainly concerned the evaluation of the topic addressed in a previous item. For example the question "were you able to speak to a peer expert?" had the follow-up question "were you satisfied with this conversation", which demanded a positive rating on the first question in order to answer the second question.

Scores on the HIC monitor

During the 41 audits an average of 3.34 (range 2.35 to 4.23; N = 41) was scored on the HIC monitor. Highest scoring items (>4) are shown in Table 1 and were related to different aspects of care, for example to the training of teams in de-escalating techniques ("conflict control and personal safety"; 4.54), and to "team spirit" (4.36), a measure of team cohesion, good team atmosphere, enthusiasm and innovativeness. Another high scoring item regarded family interventions (4.28), meaning family members are actively involved in the treatment process and given the opportunity for "rooming-in", the possibility for

family to stay overnight on the ward. High scores were also obtained because of no waiting lists (4.56); and sufficient outside space (4.93). Other remarkable high scoring items related to hospitality (4.15), meaning the intervention "the first 5-minutes of admission" was well implemented on wards and patients preference was taken into account in the allocation of nurses, and to knowledge of and alignment with working methods of outpatient services (4.48). Other high scores were related to embracing a team-driven recovery oriented vision (3.8), to adjusting the attitude and ward culture towards recovery oriented care (3.8), and to the availability of "Intensive Care Units" (3.8). The remarkably low scoring items (<2) can also be found in Table 1. Low scoring items pertaining to a lack of diversity in disciplines, showed that a large number of wards missed the presence of certain disciplines such as peer experts (1.75), addiction experts (1.66), or psychologists (1.59). Other relatively low scoring items concerned care in regards to coercive measures, such as the follow-up discussion of coercive medication with the patient (2.6) and "evaluation of coercive measures" (2.9), which are infrequently evaluated with patients and relatives.

Tabel 1. *Remarkable low and high scoring items on the HIC monitor.*

Remarkable low scores (<2)		Remarkable high scores (>4)	
Psychologists	1.59	Sufficient outside space	4.93
Addiction experts	1.66	Conflict control and personal safety	4.54
Peer experts	1.75	No waiting list	4.56
		Knowledge of working methods of outpatient services	4.48
		Team spirit	4.36
		Family interventions	4.28
		Hospitality	4.15

Perceived quality of care: KWAZOP Sample Characteristics

Table 2 shows the demographical and clinical sample characteristics in percentages, which differed greatly between participating wards on all levels. On average, 57.2% of the interviewed patients were male (min 22.2%, max 87.5%). Half of the participating patients were involuntarily admitted to the wards (50.9%; min 16.67% - max 82.6%), meaning that at some wards the majority of patients were involuntarily admitted, while at other wards the majority was admitted voluntarily.

Table 2. *Demographic and clinical characteristics of interviewed ward populations of participating wards (n=18).*

Characteristics ward population	Average %	Min %*	Max %**
Gender-male	57.19	22.22	87.50
Age			
▸ <25	12.6	3.45	33.33
▸ 26-40	41.29	27.27	63.33
▸ 41-55	32.71	6.67	41.74
▸ >55	12.42	3.33	40.74
Educational level			
▸ No / primary education/different	8.50	0	20
▸ Secondary education	66.15	27.93	81.25
▸ Higher education	25.35	6.25	55.17
Country of origin			
▸ % Born in the Netherlands	83	56.5	100
Living situation			
▸ Living differently (mostly supported housing)	7.69	0	30
▸ Living alone	46.64	36.67	70
▸ Living together (with parents, children or with others)	37.55	23.33	48.72
▸ No living address	7.09	0	20
Legal status			
▸ % involuntary admission	50.94	16.67	82.61
Psychiatric history			
▸ % previous admission	74.91	55.56	91.30
Duration of admission			
▸ Duration <7 days	16.31	8.7	38.10
▸ Duration 8-21 days	36	7.69	71.43
▸ Duration 22-63 days	34.58	14.07	66.67
▸ Duration >64 days	14.07	0	32

A Chi square test of independence was performed to test equal distribution of characteristics in the wards. No differences were found for the variables educational level (X^2, 34 (N = 503), 37.78, p = 0.301) and psychiatric history (X^2, 17 (N = 499), 21.21, p = 0.217). Gender was not equally distributed in the wards (X^2, 17 (N = 503), 31.67, p = 0.017) nor were the variables age (X^2, 51 (N = 503), 70.88, p = 0.034), country of origin (X^2, 17 (N = 503), 45.88, p < 0.001), living situation (X^2, 51 (N = 503), 75.97, p = 0.013), legal status (X^2, 17 (N = 503), 66.67, p < 0.001) and duration of admission (X^2, 17 (N = 389), 69.89, p = 0.021). No records were collected of non-participating patients, disabling conclusions about selection bias.

Perceived quality of care: KWAZOP scores

On average, patients awarded a score of 7.24 to the wards (min 6.28; max 7.86; N = 41). Graph 2. shows percentages of positive ratings on the KWAZOP subscales. Patients indicated greatest satisfaction with the subscale "freedom and privacy" (median 82.2%). Within this subscale, patients were most positive about their privacy during daily self-care (93.2% sufficient) and about the opportunity to be alone (84.6% sufficient). Patients also perceived ward rules to be flexible (81.% sufficient), although patients were less satisfied with the information regarding these rules (54.4% sufficient), and about the information on patient rights (42.1% sufficient). On average 41.82% of patients felt they could insufficiently find rest at the ward.

Second best rated was the subscale "Openness & Safety". Patients felt they could sufficiently have private conversations and receive visitors with sufficient privacy at the ward (82% and 80.1% sufficient). Patients were also positive about the accessibility of nurses and felt that nurses honored commitments made with them (75.4% and 77.4% sufficient). Half of the patients however indicated to have experienced nuisance by other patients or to have experienced an emergency situation on the ward during their admission (49.8% and 55.1%), which negatively influenced their feelings of safety on the ward.

Regarding "quality of care for relatives", patients were satisfied with the ability to contact relatives (88.9%) and felt nurses were sufficiently available to relatives whenever visiting the ward (86%). 61.7% of patients felt their relatives received sufficient information about their situation and 67.1% of patient felt there was sufficient attention for the home situation.

On the subscale "nursing care", patients were most positive about the time they could have to speak to nurses (75.1% sufficient), the opportunity to share and explain their problems to nurses (75.4% sufficient) and about the understanding of nurses for their situation (74.5% sufficient). Even though only 36.7% of patients felt there was continuity of nurses appointed to them at the ward, more than half of the patients were satisfied with the overall continuity of nurses on the ward (59.4%).

Patients' perceptions of the "medical treatment" by psychiatrists was comparable to the perception of treatment by nurses on the same elements. Around 73% of patients perceived there was sufficient opportunity to share and explain their problems to psychiatrists. Less positive was their perception of the understanding of psychiatrists for their situation (66.7% sufficient) and the opportunity to speak to a psychiatrist (55.6%). More than half of patients felt they received insufficient information about their medication and (side) effects of medication (56.4%).

The subscale "recovery oriented care" scored second lowest (median 68% sufficient). Patients indicated to have felt welcome at the ward and to have experienced a good level of self-determination during admission (79.3% and 79% sufficient). Patients were also positive about the open and honest communication of staff towards them, in which they experienced nurses to have genuine interest in their story and background (77.3% and 66.9% sufficient). Regarding the treatment interventions however, patients felt they were insufficiently asked to draw up a joint crisis plan nor did they perceive to be involved in drawing up their treatment plan together with a physician (36% and 31% sufficient). Moreover, patients perceived there was insufficient opportunity to speak to a peer expert on the ward, and on some wards this opportunity to contact peer experts was lacking (21.1% sufficient).
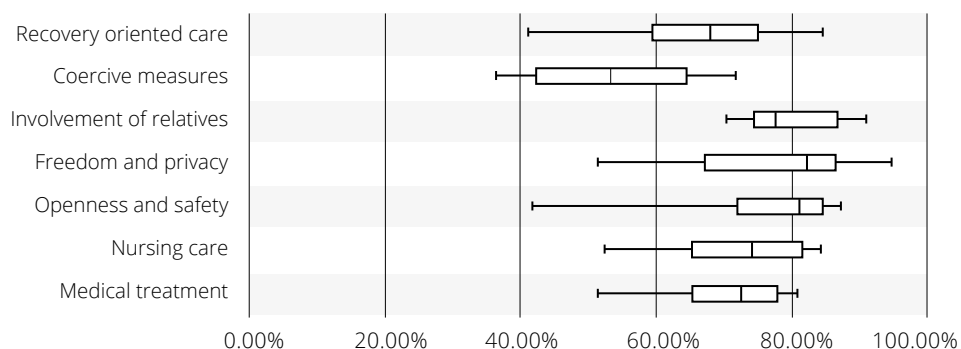

Figure 1. *Percentage of patients with a positive rating on KWAZOP subscales based on item scores (n=18 wards).*

Patients perceived quality related to "coercive measures" as the lowest subscale (median 53.33% sufficient). The low rating of the coercive measure scale by patients seems for a large part due to that on many wards patients experienced little opportunity to evaluate coercive measures afterwards even though 57,3% of patients indicated to have wanted such evaluation (median 28.52 sufficient, min 0% - 67%).

Perceived quality of care: open questions on the KWAZOP

Analysis of the responses to the open questions on the KWAZOP questionnaire identified four main themes, in which patients indicated to be satisfied with the care they received, but also emphasized the need for improvement: (1) staff attitude and presence (2) information and control, (3) treatment and support, and (4) healing environment.

Regarding the theme 'staff attitude and presence', patients indicated that they valued the attentive and respectful attitude of staff and personal interests they showed to meet individual preferences. Presence of nurses on the ward was also positively valued, as this meant more flexibility to speak to nurses. The availability of medical staff however was unsatisfactory according to many patients. Patients also indicated that staff could be more assertive to respond to disturbances on the ward and they should take stronger action to ensure safety on the ward.

Within the theme "information and control", patients found it important to have a sense of self-determination and were generally positive about the flexibility of staff regarding ward rules. Some patients experienced a lack self-determination in discussions about their treatment, and found co-operation with medical staff to be lacking. Patients also indicated to be dissatisfied with the information that was given regarding treatment, especially about medication. Some patients indicated to find a lack of clarity about rules as degrading and felt a strong difference in hierarchy between staff and them as patients. Also, some patients found staff rotation to be confusing and were sometimes irritated by ambiguous information given by staff.

Regarding the theme "treatment and support", patients were generally positive about the care and perceived the opportunities to speak with staff as helpful and insightful for their recovery process. Patients also indicated to have missed (group) therapy on the ward or conversation with a psychiatrist, and found the number of activities on the ward minimal.

Concerning the theme "healing environment", patients were generally positive about the design, ambiance and hygiene on the ward and garden, especially after renovations. Having a private room they were able to lock and opportunity to be on your own were highly appreciated. Disturbance and noise by other patients on the ward was cause for annoyance. The quality of food was found of special importance and generated mixed opinions.

Association of perceived quality of care with HIC model implementation rates

Finally, we looked into the relation between the HIC monitor scores and KWAZOP total score and subscales. No significant relation was found between the HIC monitor total score and the KWAZOP total score or subscales (B = -0.249; p = 0.819). Analysis of the HIC monitor domains with the KWAZOP total score also yielded no significant results. Adjustment for control variables (sex, age, educational level, living situation, psychiatric history, country of origin and legal status) did not meaningfully change the results of the analyses.

DISCUSSION

This study considered two measures of quality of care: the measure of degree of compliance to the HIC model at acute closed psychiatric wards and the perceived quality of care by patients admitted to these wards. The results showed that wards score generally well on the HIC monitor and that high scoring items (>4) were related to different aspects of care. Examples were the training of teams in de-escalating techniques, team spirit, and use of family interventions. Moreover, the high scores on attitude and regarding ward culture show that a culture in which contact and recovery of the patient are central elements of care are well embraced. Low scores on the HIC monitor however suggest that specific elements of the HIC model have not been implemented adequately. This is especially visible in regards to the presence and diversity of disciplines such as peer experts. Peer experts promote recovery oriented care by communicating shared experiences to foster a sense of connectedness, and bridge the gap between patients and mental healthcare professionals, which can also create a better understanding of the needs of patients and ultimately contribute to the quality of care (Gillard, Gibson, Holley, & Lucock, 2014; Otte et al., 2019). Other low scoring elements were primarily related to the evaluation of coercive measures, which are infrequently evaluated with patients and relatives. These low scores can in part be explained by changes to the domain during the validation process of the HIC monitor, during which evaluation of coercion was split into two separate items differentiating between evaluation with the patient and evaluation with the team (van Melle et al., 2019). A second explanation might be that coercive measures have been less frequently evaluated, indicating a need for better attention to this evaluation process.

The results further suggest that perceived quality of care on HIC wards is in general positive, which is consistent with results from other studies on patient satisfaction with inpatient psychiatric care (Nugteren et al., 2016; Woodward, Berry, & Bucci, 2017). The lowest scoring KWAZOP subscale concerns coercive measures. This may be caused by a lack of, or insufficient evaluation of coercive measures, especially since more than half of patients indicated to have wanted (better) evaluation of coercive measures, and is in line with our findings in the HIC monitor on the need for better evaluation of coercive measures. Another important finding is the low perception of patients regarding recovery oriented care, which is remarkable because this is one of the key points of the HIC model. Research shows that elements of recovery oriented care, such as efforts to diminish paternalistic and restrictive approaches to care, increasing patient involvement, paying attention to staff supportiveness and accessibility, can increase

patient' satisfaction with treatment (Tansella, 2010; Woodward et al., 2017). Therefore it is worrying that patients perceive these elements as in need of improvement. Other elements in our study related to recovery oriented care, such as attitude, presence and hospitality however scored relatively high in relation to treatment related aspects. This positive outcome is different from previous studies on quality of care, in which approachability and engagement of nurses was often found to be lacking (Nugteren et al., 2016; Woodward et al., 2017). This may indicate that implementation of the HIC model, in which presence of nurses on the ward and their attitude in contact with patients are one of the main elements, has a positive effect on patient satisfaction (van Melle et al., 2019; Voskes et al., 2021).

In answer to our third research question, we found that scores on the HIC monitor were not associated with perceived quality of care. The absence of correlation between the HIC monitor total score and the perceived quality of care does imply that wards that either score high or low on the HIC monitor can have a good perceived quality of care. An explanation for the lack of association between HIC monitor scores and the KWAZOP results might be that perceived quality of care is determined more strongly by individual experiences or personal characteristics, as previously found in several studies (Jiang et al., 2019; Woodward et al., 2017) and which is not directly reflected in the HIC total score. Another explanation might be that HIC is a consensus-based model which mainly includes elements defined by mental healthcare professionals. These elements may not directly correspond with the elements that are perceived as the most important aspects of good quality care by patients. Third, changes made to improve the score on the HIC monitor do not always result in effects on quality of care visible or tangible to patients. For example, the use of a digital whiteboard to improve transfer of information about patients, will result in increased HIC monitor scores, but will not necessarily be noticed or appreciated by patients. The assessment of quality of care with the HIC monitor and with the KWAZOP generate different results and highlight a number of different elements that can be improved. For this reason, it is important to use multiple instruments and to combine insights for a more extensive change of practice. Both instruments are complementary to one another.

Strengths and limitations

A strength of this study was the national scope and spread of the wards over the Netherlands, giving us a good representation of the implementation of HIC and perceived quality of care on acute admission wards in the Netherlands. The combination of HIC monitor and KWAZOP scores allowed us to take note of two different measures of

quality of care and the differences between clinical wards in the Netherlands.

This study was not without limitations. Audits were held on two wards per institution, but because of the time intensiveness and logistic reasons it was decided to hold the KWAZOP interviews on a single ward per institution. To increase impact and to gain a better image of the perceived quality of care on all wards, the involvement of all wards is preferred. A second limitation was that it is not possible to statistically compare domains and subscales on both instruments because of differences in the way both scales were constructed. Other limitations concern the population sample in our study. First, for some wards it was challenging to organize the KWAZOP interviews at the wards due to last minute transfers and discharge of patients, or lack of available interviewers, resulting in approximately 50% of patients that were not included in the study. This may have resulted in a different sample, as instead of including all patients within a limited time range, the sample was collected over a longer time period, sometimes extending to over a year's time. This may also have influenced the validity of the comparison of KWAZOP scores to the HIC monitor score, as this last measure was collected at a single moment and many changes can occur within one year's time. Moreover, the organization of last minute interviews by independent interviewers proved difficult, resulting in that some wards chose to ask nurses to hold the interviews, which may have led to more socially desirable answers. Third, 28% of wards did not register the patients that could not participate due to various reasons, meaning we do not have a complete picture of our sample. Because no baseline sample of the population of wards in the Netherlands was available, we cannot test the representativeness of our sample.

CONCLUSIONS

The assessment of quality of care with the HIC monitor and with the KWAZOP generate different results and highlight a number of elements that can improve the overall quality of care. The differences between the two indicate that both instruments have added value for a more complete assessment of quality of care. We did not find an association between HIC monitor scores and KWAZOP scores. Experiences of patients and professionals highlight other priorities in quality of care. In the development of policy for acute psychiatric wards it is suggested to combine both instruments to achieve optimal quality of care.

REFERENCES

Alexander, J. (2006). Patients' feelings about ward nursing regimes and involvement in rule construction. *Journal of Psychiatric and Mental Health Nursing, 13*(5), 543–553.

Gaskin, C. J., Elsom, S. J. & Happell, B. (2007). Interventions for reducing the use of seclusion in psychiatric facilities. *Britisch Journal of Psychiatry, 191*, 298–283.

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods, 5*(1), 80–92.

Frueh, B. C., Knapp, R. G., Cusack, K. J., Grubaugh, A. L., Sauvageot, J. A., Cousins, V. C., … & Hiers, T. G. (2005). Patients' reports of traumatic or harmful experiences within the psychiatric setting. *Psychiatric Services, 56*(9), 1123–1133.

Gillard, S., Gibson, S. L., Holley, J., & Lucock, M. (2014). Developing a change model for peer worker interventions in mental health services: A qualitative research study. *Epidemiology and Psychiatric Sciences, 24*(5), 435–445.

Guiot, M. (1997). *Is de patiënt competent? De bruikbaarheid van het kwaliteitsoordeel van patiënten op de gesloten psychiatrische opname afdeling.* Universiteit van Amsterdam.

Iversen, K. I., Høyer, G., & Sexton, H. C. (2007). Coercion and patient satisfaction on psychiatric acute wards. *International Journal of Law and Psychiatry, 30*(6), 504–511.

Jiang, F., Rakofsky, J., Zhou, H., Hu, L., Liu, T., Wu, S., … & Tang, Y. L. (2019). Satisfaction of psychiatric inpatients in China: Clinical and institutional correlates in a national sample. *BMC Psychiatry, 19*(1).

Manary, M. P., Boulding, W., Staelin, R., & Glickman, S. W. (2013). The Patient Experience and Health Outcomes. *New England Journal of Medicine, 68*(3), 201–203.

Morrison, A. P., Bowe, S., Larkin, W., & Nothard, S. (1999). The psychological impact of psychiatric admission: Some preliminary findings. *Journal of Nervous and Mental Disease, 187*(4), 250–253.

Nijssen, Y. A. M., De Haan, R. J., Schene, A. H., Koeter, M. W. J., & Gersons, B. P. R. (2001). Kwaliteitsbeoordeling op gesloten psychiatrische opnameafdelingen: Een illustratie van het KWAZOP-instrument. *Tijdschrift Voor Psychiatrie.*

Nijssen, Y. A. M. (2000). Kwaliteit kortgesloten Het beoordelen van de kwaliteit van de zorg op gesloten psychiatrische opname-afdelingen (PhD thesis). Universiteit van Amsterdam.

Nugteren, W., van der Zalm, Y., Hafsteinsdóttir, T. B., van der Venne, C., Kool, N., & van Meijel, B. (2016). Experiences of Patients in Acute and Closed Psychiatric Wards: A Systematic Review. In *Perspectives in psychiatric care* (Vol. 52, Issue 4, pp. 292–300). Blackwell Publishing Inc.

Nyssen, Y. A. M., Ralston, A., Weeghel, J. Van, & Van De Sande, R. (2014). Herstel-ondersteunende zorg, ook op de gesloten opnameafdeling. *Nurse Academy GGZ, 1*, 54–58.

Otte, I., Werning, A., Nossek, A., Vollmann, J., Juckel, G., & Gather, J. (2019). Beneficial effects of peer support in psychiatric hospitals. A critical reflection on the results of a qualitative interview and focus group study. *Journal of Mental Health, 29*(3), 289–295.

Shattell, M. M., Andes, M., & Thomas, S. P. (2008). How patients and nurses experience the acute care psychiatric environment. *Nursing Inquiry, 15*(3), 242–250.

Svindseth, M., Dahl, A., & Hatling, T. (2007). Patients' experience of humiliation in the admission process to acute psychiatric wards. *Nordic Journal of Psychiatry, 61*(1), 47–53.

Tansella, M. (2010). Alternatives to standard acute in-patient care for people with mental

disorders: From systematic description to evaluative research. In *British Journal of Psychiatry* (Vol. 197, Issue suppl. 53).

Thibeault, C. A., Trudeau, K., D'Entremont, M., & Brown, T. (2010). Understanding the Milieu Experiences of Patients on an Acute Inpatient Psychiatric Unit. *Archives of Psychiatric Nursing, 24*(4), 216–226.

Van Melle, A. L., Noorthoorn, E. O., Widdershoven, G. A. M., Mulder, C. L., & Voskes, Y. (2020). Does high and intensive care reduce coercion? Association of HIC model fidelity to seclusion use in the Netherlands. *BMC Psychiatry, 20*(1).

van Melle, A. L., Voskes, Y., de Vet, H. C. W., van der Meijs, J., Mulder, C. L., & Widdershoven, G. A. M. (2019). High and Intensive Care in Psychiatry: Validating the HIC Monitor as a Tool for Assessing the Quality of Psychiatric Intensive Care Units. *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 43–46.

Mierlo T. van, Bovenberg F., Voskes, Y., Mulder N. (2013). Werkboek HIC. High en intensive care in de psychiatrie. Utrecht: de Tijdstroom.

Vermeulen, J. M., Schirmbeck, N. F., van Tricht, M. J., & de Haan, L. (2018). Satisfaction of psychotic patients with care and its value to predict outcomes. *European Psychiatry, 47*, 60–66.

Voskes, Y., van Melle, A. L., Widdershoven, G. A. M., Mierlo, A., Bovenberg, F., & Mulder, C. L. (2021). High and Intensive Care in Psychiatry: a new model for acute inpatient care in the Netherlands. *Psychiatric Services.* doi: 10.1176/appi.ps.201800440

Woodward, S., Berry, K., & Bucci, S. (2017). A systematic review of factors associated with service user satisfaction with psychiatric inpatient services. *Journal of Psychiatric Research, 92*, 81–93.

Van Melle, A.L., Noorthoorn, E.O., Widdershoven, G.A.M., Mulder, C. L., & Voskes, Y. (2020). *BMC Psychiatry, 20*(1), 469.
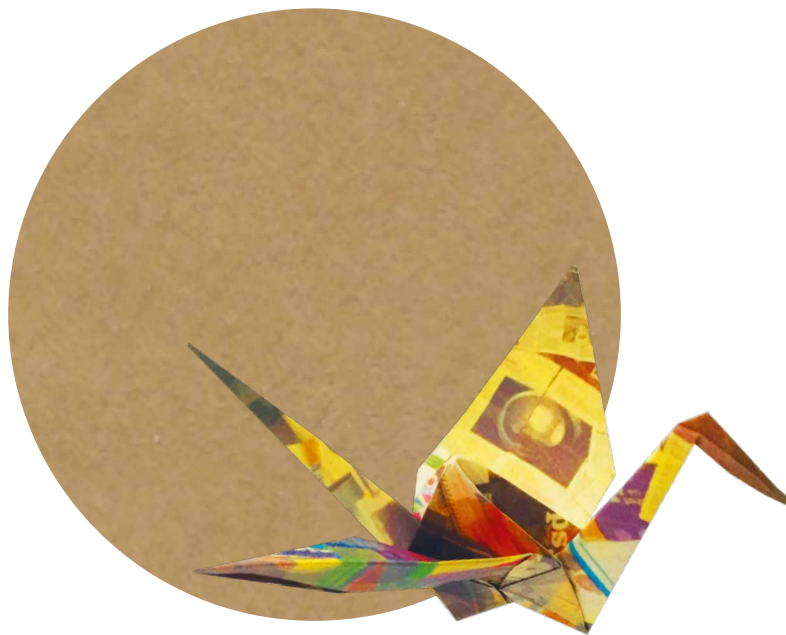
Does High and Intensive Care reduce coercion?

Association of HIC model fidelity to seclusion use in the Netherlands

ABSTRACT

Background

A new inpatient care model has been developed in the Netherlands: High and Intensive Care (HIC). The purpose of HIC is to improve quality of inpatient mental healthcare and to reduce coercion.

Methods

In 2014, audits were held at 32 closed acute admission wards for adult patients throughout the Netherlands. The audits were done by trained auditors, who were professionals of the participating institutes, using the HIC monitor, a model fidelity scale to assess implementation of the HIC model. The HIC model fidelity scale (67 items) encompasses 11 domains including for example team structure, team processes, diagnostics and treatment, and building environment. Data on seclusion and forced medication was collected using the Argus rating scale. The association between HIC monitor scores and the use of seclusion and forced medication was analyzed, corrected for patient characteristics.

Results

Results showed that wards having a relatively high HIC monitor total score, indicating a high level of implementation of the model as compared to wards scoring lower on the monitor, had lower seclusion hours per admission hours (2.58 versus 4.20) and less forced medication events per admission days (0.0162 versus 0.0207). The HIC model fidelity scores explained 27% of the variance in seclusion rates ($p < 0.001$). Adding patient characteristics to HIC items in the regression model showed an increase of the explained variance to 40%.

Conclusions

This study showed that higher HIC model fidelity was associated with less seclusion and less forced medication at acute closed psychiatric wards in the Netherlands.

INTRODUCTION

The use of seclusion in psychiatry is highly problematic. Effects on reducing stimuli and creating a context for calming the patient, which are often mentioned as a reason for secluding an agitated patient, have not been demonstrated (Sailas & Fenton, 2000; Mayers, Keet, Winkler, & Flisher, 2010; Kaltiala-Heino, Tuohimäki, Korkeila, & Lehtinen, 2003; Gutheil, 1987). On the other hand, negative experiences and traumatizing effects have been shown (Larue et al., 2013; Happell & Koehn, 2011). In acute adult psychiatry in the Netherlands, seclusion use has been an issue of debate over the past twenty years. The Dutch Government invested heavily in seclusion reduction between 2006 and 2012 (Abma, Voskes, & Widdershoven, 2017; Noorthoorn et al., 2016; Vruwink, Mulder, Noorthoorn, Uitenbroek, & Nijman, 2012). A national programme was started, aiming at reduction of seclusion by 10% a year, without substitution by other coercive measures, including forced medication. This aim was underlined by the Dutch ministry of Health, Welfare and Sport in a letter to the House of Representatives in 2012 (VWS, 2012). Hospitals were provided with funding to improve involuntary care and to reduce seclusion. As part of this programme, several interventions have been developed and implemented (Voskes, Kemper, Landeweer, & Widdershoven, 2014; van der Ham, Voskes, van Kempen, & Widdershoven, 2013). The effects of some of these initiatives have been studied (Noorthoorn et al., 2016; Vruwink et al., 2012). The overall result was a reduction of the number and duration of seclusion of 41% and 30% respectively between 2008 and 2013 (Noorthoorn et al., 2016, Noorthoorn et al., 2015). Yet, not all institutions were successful, and some even showed an increase of seclusion rates (Noorthoorn et al., 2016). Moreover, results from the national seclusion reduction programmes showed a relative increase of forced medication by 81% between 2011 and 2013 suggesting substitution of seclusion by forced medication (Noorthoorn et al., 2016). Long term follow-up data confirmed this impression (Mann-Poll et al., 2018; Verlinde et al., 2017).

From several studies over the last decade we know comprehensive approaches in the reduction of seclusion and restraint to be substantially more effective than less comprehensive approaches (Mann-Poll et al., 2018; Gerace & Muir-Cochrane, 2019; LeBel et al., 2014; Putkonen et al., 2013; van de Sande et al., 2011; Gaskin, Elsom, & Happell, 2007). In order to further reduce seclusion and improve quality of care, from 2012 onwards a new comprehensive care model was developed for acute inpatient mental healthcare: High and Intensive Care (HIC) (van Melle et al., 2019). The HIC model combines new organization of care with a new care approach. The HIC model integrates

the medical model and the recovery model and focuses on contact and crisis prevention and continuity of care between outpatient treatment and acute admission wards. The model is widely adopted in Dutch mental healthcare; a large majority of healthcare institutions have reorganized acute care and built new HIC wards. On these wards, patients are admitted for a maximum of 3 weeks, when outpatient treatment is no longer sufficient and admission to a closed setting is necessary. The HIC model aims at a reduction of coercive measures by improving healthcare practice using evidence- and practice-based approaches (van Melle et al., 2019).

The HIC model focuses on hospitality at admission, care planning and risk assessment. Within the HIC ward a distinction is made between a "high-care function" and an "intensive-care function". Initially, patients are admitted to the High Care (HC) section, consisting of single patient rooms, living areas and a comfort room. One-to-one care is given either at the HC section, or, depending on the severity and nature of the crisis, at the Intensive Care (IC) section. The IC section consists of several Intensive Care-Units (ICUs) with an individual bedroom and living area and High Security Rooms (HSRs). The purpose of the ICU is to provide one-to-one care in a separate area, without contact with other patients on the HC, while avoiding seclusion in a HSR for as long as possible.

The HIC model implies a set of quality criteria, described in the HIC monitor (van Melle et al., 2019). The monitor contains various domains, including team structure, team processes, diagnostics and treatment, and building environment. We hypothesized that a higher fidelity to the HIC model, as expressed in higher total scores on the monitor, to be associated with less coercion use (seclusion and forced medication).
This article presents the associations between HIC model fidelity and seclusion rates in acute psychiatric wards in the Netherlands. We aim to answer three research questions.

1. Is HIC model fidelity associated with seclusion rates?
2. Is HIC model fidelity associated to substitution of seclusion by forced medication?
3. How much variance of seclusion rates is explained by the HIC monitor scores taking patient characteristics into account?

METHODS

Setting

By 2014, 84% of Dutch mental healthcare institutes with closed acute admission wards had adopted the HIC approach and had started to implement the HIC model. This study was carried out in 2014 in 32 closed acute admission wards for adult patients of 18 mental healthcare institutions throughout the Netherlands. These institutions all provided inpatient and outpatient services and differed in size of catchment area.

Instruments

HIC monitor

The HIC monitor (van Melle et al., 2019) is a model fidelity scale to measure the implementation level of the HIC model. It consists of 67 items, divided into 11 domains: (I) team structure, (II) team processes, (III) diagnostics, treatment, and treatment interventions, (IV) organization of care, (V) monitoring, (VI) professionalization, (VII) the Psychiatric Hospitals Compulsory Admissions Act (BOPZ), (VIII) the electronic health record, (IX) healing environment, (X) safety; and (XI) evaluation of and feedback on coercion. Wards were audited, using the HIC monitor. The items are scored on a 5-points scale ranging from 1 (not implemented) to 5 (fully implemented) by trained auditors, who were professionals of the participating institutes. Audits consisted of a full day of interviews with staff and patients, examination of health records and observation of the ward and multidisciplinary meetings in which staff discussed care for individual patients. The HIC monitor has been validated, resulting in minor changes (van Melle et al., 2019) showing reasonably good interrater reliability and satisfactory content and construct validity. In this study, the old version of the monitor was used.

Assessing coercive measures

For a full year (2014) data on seclusion and forced medication were collected using the Argus rating scale (Janssen, 2012) Four types of coercive measures are included in the scale; seclusion, physical restraint, mechanical restraint and forced medication (Janssen et al., 2011).

In the current study we used seclusion as main outcome. Seclusion was defined as the seclusion of a patient in a specifically designated room that has been approved by the health authority. The use of forced medication was used as a secondary outcome variable. For manual restraint by means of 'holding' is sporadically applied at some

wards, and mechanical restraint is hardly used in acute adult psychiatric wards, restraint was not included in this study. In the Argus analysis model, coercive measures are identified as counters, and patient and ward characteristics as well as admission time as denominators (Janssen et al., 2013).

Coercive measures (counters)

At a day-to-day level exact data were collected concerning the frequency and time spent in seclusion and the number of times forced medication was used. Hours spent in seclusion as well as number of events of forced medication were the counters (Noorthoorn et al., 2015).

Patient characteristics and admission time (denominators)

To understand the association between the HIC monitor scores and seclusion use we corrected for patient characteristics including age, gender, marital status, and diagnosis. Diagnoses were categorized in the main groups of the DSM-IV (Noorthoorn et al., 2016). These were included in the database next to admission time. The database was organized at the level of a single admission per record. The HIC monitor scores were given at ward level. This information was repeated in all patient admission records of a single ward. A readmitted patient could occur more than once in the database. Time spent in seclusion as compared to admission time was identified as outcome measure.

Analysis

Association of HIC monitor scores and seclusion

First, we divided the wards into two groups based on the median HIC monitor score at the audits: wards with relatively high and low scores on the HIC monitor. We tested if a high or a low median sore on the HIC monitor was associated with a high or low use of seclusion or forced medication. Also, this allowed gaining an impression of substitution, which is the case when low seclusion figures are associated with high forced medication figures.

Associations of HIC monitor scores and seclusion, controlling for patient characteristics

 Second, a multilevel logistic regression analysis was performed to understand the association of patient characteristics and scores on the HIC monitor with the use of seclusion in the wards. The proportion of time in seclusion as compared to admission time was modeled by a multilevel Generalized Linear Latent and Mixed Model (GLAMM)

module. First, a binomial distribution with the logistic link function (in short: multilevel Logistic regression) was used to relate independent variables to outcome variables. This technique can be extended from modeling dichotomous outcome variables to modeling proportions as outcome variables and we used the latter option (Baum, 2008). A patient's admission was identified as level 1, the patient as level 2, the ward as level 3. Model fit was determined at each step of the analysis by means of increase in McFadden's R square (McFadden, 1974). Patient characteristics and HIC monitor findings could be seen as predictors, modifiers or confounders of seclusion use as outcome.

This analysis was performed in three steps. First, we investigated the direct association of the HIC monitor total scores with seclusion. Second, we investigated the association of patient characteristics and diagnosis with seclusion. Third, the HIC monitor total and item scores, patient characteristics and diagnosis were combined in a full model. For this last step, relevance of variables was identified by means of the criterion of Hosmer and Lemeshow (Homer, & Lemeshow, 2013). This criterion suggests including only variables with a p – value of less than 0.2 in a next step of the model. In understanding the findings, the variables with a significant association to outcome as well as to the explained variance as expressed by the McFadden's r2 are emphasized. The McFadden's r2 provides an impression of the explained variance at full scale level. The multilevel analysis was performed in SPSS version 25 and checked in STATA version 12.

RESULTS

Table 1 presents the association of the total score on the HIC monitor with seclusion hours, hours seclusion per admission hours and number of forced medication events per admission days. It shows that wards scoring high on the HIC monitor have lower seclusion hours and less forced medication events than wards scoring low on the HIC monitor (hours of seclusion per admission hours was 0.0258 for the high scoring wards opposed to 0.0420 for the low scoring wards; medication events per admission days were 0.0162 for the high scoring wards opposed to 0.207 for the low scoring wards). We also observed wards with high seclusion exposure, also had higher forced medication exposure figures. We did not observe any evidence for substitution (more forced medication against less seclusion), even when observing the data at an institutional level.

Table 1. *Differences between wards scoring high and low on the HIC monitor.*

HIC score	N wards	Seclusion hours	Number of Seclusion Incidents	Hours seclusion per admission hours**	Enforced Medication	Medication Events per admission days*
High > 184	17	40476 hours	690	2.58	538	0.0162
Low < 184	16	76847 hours	1404	4.20	1030	0.0207

*   Significant differences student t test p<0.05

**   Significant differences student t test p<0.001

Table 2 presents the findings of the multilevel regression analysis calculating the association between seclusion use as outcome and patient characteristics and the HIC monitor score as predictors of seclusion. The first two columns of Table 2 show HIC monitor total scores, as well as the percentages of patient characteristics in the total population and in the secluded patients. The next columns present the findings of the multilevel regression. The final columns present the findings of the multilevel analysis with the HIC monitor as well as the patient characteristics and diagnoses in the full model.

Table 2. *Associations between HIC monitor and patient characteristics with seclusion analyzed by means of Multi level analysis.*

			Basic frequencies		multivariable blockwise model					multivariable final model					
			% or mean All patients	% or mean secluded	Ex (b)	95 CI ex (b)		p	R^2	Ex (b)	95 CI ex (b)		p	R^2	R^2
N=			6068	1058											
HIC Total score					0.98	0.96	0.99	<0.001	0.27	0.97	0.96	0.98	0.000	0.27	
Patient characteristics	Demographics	Age**	41.1%	37.1%	0.97	0.96	0.98	0.000		1.75	1.38	2.21	0.000		
		Male**	56.1%	67.4%	1.78	1.42	2.26	0.000	0.17	0.82	0.66	1.02	0.088		
		Partner*	45.6%	41.9%	0.76	0.61	0.95	0.014		1.59	1.18	2.15	0.002		
	Diagnosis	No diagnosis**	18.4%	23.4%	1.97	1.41	2.77	0.000		1.59	1.18	2.15	0.002		
		Adjustment disorder	6.7%	5.5%											
		Anxiety disorder**	6.9%	3.8%											
		Depression**	10.6%	5.2%											
		Bipolar	8.9%	10.5%	1.75	1.15	2.64	0.008		1.81	1.22	2.68	0.003	0.27	0.4
		Psychosis	15.2%	16.3%	1.62	1.12	2.34	0.009		1.39	1.01	1.92	0.043		
		Schizophrenia	10.5%	12.3%	1.82	1.24	2.68	0.002	0.27	1.50	1.06	2.12	0.020		
		Organic disorder	1.1%	0.9%%	2.23	0.96	5.17	0.060		3.08	1.72	7.47	0.013		
		Drug abuse	23.8%	23.9%	1.64	1.19	2.28	0.003							
		Developmental disorder & Autism	4.0%	3.9%											
		Intellectual Disability	2.0%	2.3%											
		Personality disorder**	26.5%	20.7%											
HIC Items [a]															

[a] Presented in online table (https://rdcu.be/cirVK)

** P<0.001

* P<0.05

The investigated institutions had a total of 7126 patients admitted at their HIC wards. Of these patients, 1058 (14.8%, range over wards 2.5% - 35.8%, 95% CI=3.5% - 30.5%) were secluded. Higher scores on the HIC monitor were associated to less seclusion use (Ex(b)=0.98, P<0.001). Concerning patient characteristics young age, male gender, having no final diagnosis, bipolar disorder, psychosis, schizophrenia and organic disorder were associated with increased seclusion use. Having a partner was associated to less seclusion use. The explained variance of the HIC total score was 27%; the explained variance with respect to the patient characteristics was also 27%. Combining the full model of patient characteristics with HIC total score and items resulted in an explained variance of 40% (detailed online table).

DISCUSSION

Wards that scored high on the HIC monitor, displaying higher HIC model fidelity and implementation of the HIC model, showed lower seclusion rates than wards that scored low on the HIC monitor. This shows that implementation of the HIC model contributes to the reduction of seclusion at acute closed psychiatric wards. Moreover, wards that scored high on the HIC monitor also showed low rates of forced medication, indicating that substitution of seclusion by forced medication did not occur. Confounding by patient compilation was ruled out using the multilevel analyses including patient characteristics.

The HIC monitor total score was associated to less seclusion use showing an explained variance of around 27%. The influence of patient factors on the use of seclusion is consistent with earlier studies, also showing an explained variance of around 27% (Noorthoorn et al., 2015). When combined in a full model covering both HIC monitor total score and items and patient characteristics, a substantial increase in explained variance was visible. The explained variance by the full model increased to 40% which is a relatively high figure (McFadden, 1974; Mittelböck, & Schemper, 1996). McFadden's R2 is a statistic indicating the approximate explained variation in logistic regression (McFadden, 1974; Twisk, 2010). A value under 20% indicates low explained variance, a value between 20% and 30% is a reasonable result, and a value above 40% designates a good level of explained variance (McFadden, 1974; Mittelböck, & Schemper, 1996). We may conclude that seclusion use is predicted by both the HIC model as well as patient characteristics.

This study investigated the association between the HIC monitor total score and items and the use of seclusion and forced medication. The association of seclusion and medication rates with domains and items within the HIC monitor is presented in the online appendix. These associations are less relevant than the overall score on the HIC monitor. The HIC model is a formative model in which the items and domains jointly represent the compliance with the HIC model (van Melle et al., 2019; de Vet, Terwee, & Bouter, 2003). The structure of the HIC monitor has the form of a taxonomy that enables the user to measure compliance with the HIC model and thus provides a quality check on care being delivered. The domains within the model were not constructed by means of factor analysis but a priori based on the content of the items, as the strength of the HIC monitor lays in its function as a checklist to guide the process of implementation of the HIC model.

Our study included several mental healthcare institutions at one moment in time. This does not enable conclusions about the development within institutions. A recent study on reduction of seclusion in two institutions showed a substantial reduction of seclusion rates after implementation of the HIC methodology in one institution, while the other institution in which the HIC model was not actively implemented, showed less reduction of seclusion (Mann-Poll et al., 2018; Verlinde et al., 2017). For the time being, the longitudinal findings are anecdotal and originating from a small amount of institutions. It might be the case that these institutions support publication of their seclusion rates, which may imply a selection bias. In an international perspective, seclusion rates from institutions which allow for publication are lower than rates in otherwise similar institutions (Lepping, Masood, Flammer, & Noorthoorn, 2016; Flammer & Steinert, 2015). Currently, the HIC model is only being implemented in the Netherlands. This precludes international comparison.

Strengths and limitations

A strength of this multicenter study is the scope, as 21 mental healthcare institutions and 38 wards throughout the Netherlands were included. This allowed us to investigate the effects of the policy expressed in the HIC model on a large scale, as advised by Verlinde et al. (2017). Moreover, findings are based on 11425 admissions of 7126 patients, making this study one of the largest studies looking into both patient and ward characteristics (Bak & Aggernæs, 2012; van der Schaaf, Keuning, Dusseldorp, Janssen, & Noorthoorn, 2013). Also, this study provides a confirmation of the construct validity of the HIC monitor as operationalization of the compliance to the HIC model and strengthens its psychometrical properties.

The study was not without limitations. First, the same data used to validate the HIC monitor were used in this study. However, since the instrument was already developed before this time and minor revisions were done to the HIC monitor after validation, the influence on the data is minimal (van Melle et al., 2019). Second, the analyses were done on cross-sectional data. In order to get insight into the causal effects of the HIC model on seclusion rates, experimental studies are needed.

CONCLUSION

This study shows that the HIC model, combining interventions in a structured way, is associated with a reduction of seclusion at acute closed psychiatric wards in the Netherlands. Moreover, there is no indication of substitution of seclusion by forced medication when working according to HIC principles. The HIC model, combined with patient characteristics, has a high explained variance regarding seclusion use. As this study measured the association between HIC scores and seclusion rates in a cross-sectional way for one year, a follow up of developments over time is needed.

REFERENCES

Abma, T. A., Voskes, Y., & Widdershoven, G. A. M. (2017). Participatory bioethics and its social value: coercion reduction in psychiatry as a case. *Bioethics, 31*, 144-152.

Bak, J., & Aggernæs, H. (2012).Coercion within Danish psychiatry compared with 10 other *European countries. Nordic Journal of Psychiatry, 66*(5), 297–302.

Baum, C. F. (2008). Modelling proportions. *Stata Journal, 8*(2), 299–303.

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P. (2007). The strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Journal of Clinical Epidemiology, 18*, 800-804.

Flammer, E., & Steinert, T. (2013). Involuntary medication, seclusion, and restraint in German psychiatric hospitals after the adoption of legislation in. *Frontiers in Psychiatry, 28*(6): 153-154.

Gaskin, C. J., Elsom, S. J., Happell, B. (2007). Interventions for reducing the use of seclusion in psychiatric facilities: review of the literature. *The British Journal of Psychiatry, 191*, 298-303.

Gerace, A., & Muir-Cochrane, E. (2019). Perceptions of nurses working with psychiatric consumers regarding the elimination of seclusion and restraint in psychiatric inpatient settings and emergency departments: An Australian survey. *International Journal of Mental Health Nursing, 28*(1), 209-25.

Gutheil, T. G. (1987). Observations on the theoretical bases for seclusion of the psychiatric inpatient. *The American Journal of Psychiatry, 135*, 325–28.

van der Ham, A. J., Voskes, Y., Van Kempen, N., & Widdershoven, G. A. M. (2013). The implementation of Psychiatric Advance Directives: experience from a Dutch crisis card initiative. *Psychiatric Rehabiliaton Journal, 36*(2), 119-21.

Happell, B., & Koehn, S. (2011). Scratching beneath the surface: influencing factors on nurses' attitudes toward the use of seclusion. *Issues in Mental Health Nursing, 32*(7), 449-56.

Hosmer, D. W., Lemeshow, S. (2013). *Applied Logistic Regression*. New York Wiley.

Janssen, W. A. (2012). *Argus: assessment and use of data in evaluating coercive measures in Dutch psychiatry* (PhD Thesis). Vrije Universiteit, Amsterdam.

Janssen, W. A., Noorthoorn, E. O., Nijman, H. L. I., Bowers, L., Hoogendoorn, A. W., Smit, A., & Widdershoven, G. A. M. (2013). Differences in seclusion rates between admission wards: does patient compilation explain? *Psychiatric Quarterly, 84*, 39–52.

Janssen, W. A., van de Sande, R., Noorthoorn, E. O., Nijman, H. L., Bowers, L., Mulder, C. L, … & Steinert, T. (2011). Methodological issues in monitoring the use of coercive measures. *Internation Journal of Law Psychiatry, 34*(6), 429-38.

Kaltiala-Heino R, Tuohimäki C, Korkeila J. & Lehtinen, V. (2003). Reasons for using seclusion and restraint in psychiatric inpatient care. *International Journal of Law and Psychiatry, 26*(2), 139-49.

Larue, C., Dumais, A., Boyer, R., Goulet, M. H., Bonin, J. P., & Baba, N. (2013). The experience ofseclusion and restraint in psychiatric care settings: perspectives of the patients. *Issues in Mental Health Nursing, 34*(5), 317–24.

LeBel, J. L., Duxbury, J. A., Putkonen, A., Sprague, T., Rae, C., & Sharpe, J. (2014). Multinational experiences in reducing and preventing the use of restraint and seclusion. *Journal of Psychosocial Nursing and Mental Health Services, 52*(11), 22-9.

Lepping, P., Masood, B., Flammer, E., & Noorthoorn, E. O. (2016). Comparison of restraint data from four countries. *Social Psychiatry Psychiatric Epidemiology, 51*(9), 1301–1309.

Mann-Poll, P. S., Smit, A., Noorthoorn, E. O., Janssen, W. A., Koekkoek, B., & Hutschemaekers, G. J. M. (2018). Long-Term Impact of a Tailored Seclusion Reduction Program: Evidence for Change? *Psychiatric Quarterly, 3*, 733-46.

Mayer, P., Keet, N., Winkler, G., & Flisher, A. J. (2010). Mental health service users' perceptions and experiences of sedation, seclusion and restraint. *International Journal of Social Psychiatry, 56*(1), 60-73.

McFadden, D. (1974). Conditional logit regression of qualitative choice behaviour; *in Frontiers in Econometrics*. Zarembka, P. (Ed). New York, Academic Press.

van Melle, A., Voskes, Y., de Vet, H., Van der Meijs, J., Mulder, C., & Widdershoven, G. (2019). High and intensive care in psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 34-43.

Mittelböck, M., Schemper, M. (1996). Explained variation for logistic regression. *Statistics in Medicine, 15*(19), 1987–97.

Noorthoorn, E. O., Lepping, P., Janssen, W., Hoogendoorn, A., Nijman, H. L. I., Widdershoven, G. A. M., Steinert, T. (2015). One-year incidence and prevalence of seclusion: Dutch findings in an international perspective. *Social Psychiatry and Psychiatric Epidemiology, 50*(12), 1857-69.

Noorthoorn, E. O., Voskes, Y., Janssen, W. A., Mulder, C. L., van de Sande, R., Nijman, H. L. I.,...Widdershoven, G. A. M. (2016). Seclusion reduction in Dutch Mental Health Care: Did hospitals meet goals? *Psychiatric Services, 67*(12), 1321–1327.

Putkonen, A., Kuivalainen, S., Louheranta, O., Repo-Tiihonen, E., Ryynänen, O. P. , Kautiainen, H., & Tiihonen, J. (2013). Cluster-randomized controlled trial of reducing seclusion and restraint in secured care of men with schizophrenia. *Psychiatric Services, 64*(9), 850-5.

Sailas, E. & Fenton, M. (2000). Seclusion and restraint for people with serious mental illnesses. *Cochrane Database of Systematic Reviews, 1*, CD001163.

van de Sande, R., Nijman, H. L., Noorthoorn, E. O., Wierdsma, A. I., Hellendoorn, E., van der Staak, C., & Mulder, C. L., (2011). Agression and seclusion on acute psychiatric wards: effect of short-term risk assessment. British *Journal of Psychiatry, 199*, 473–8.

van der Schaaf, P., Dusseldorp, E., Keuning, F., Janssen, W., & Noorthoorn, E.O. (2013). Impact of the physical environment of psychiatric wards on the use of seclusion. *British Journal of Psychiatry, 202*, 142-149.

Schippers E. Minister van Volksgezondheid, welzijn en sport, Vergaderjaar 2011–2012 Brief regering; Terugdringing van de toepassing van dwang en drang - Geestelijke gezondheidszorg 25 424 Nr. 185 12 juli 2012.

Twisk, J. W. R. (2010). *Inleiding in toegepaste biostatistiek* (2nd ed.). Amsterdam: Elsevier gezondheidszorg.

Verlinde, A. A., Noorthoorn, E. O., Snelleman, W., van den Berg, H., Snelleman – van der Plas, & Lepping, P. (2017). Seclusion and enforced medication in dealing with aggression: A prospective dynamic cohort study. *European Psychiatry, 39*, 86–92.

de Vet, H. C. W., Terwee, C. B., & Bouter, L. M. (2003). Clinimetrics and psychometrics: two sides of the same coin. *Journal of Clinical Epidemiology, 56*, 1146-1147.

Voskes, Y., Kemper, M., Landeweer, E. G. M., & Widdershoven, G. A. M. (2014). Preventing seclusion in psychiatry: A care ethics perspective on the first five minutes at admission. *Nursing Ethics, 21*(7), 766-73.

Vruwink, F. J., Mulder, C. L., Noorthoorn, E.O., Uitenbroek,, D., Nijman, H. L. I. (2012). The effects of a nationwide program to reduce seclusion use in the Netherlands. *BMC psychiatry, 12*, 231-2.

General Discussion

INTRODUCTION

This thesis examined the development, implementation and effects of High and Intensive Care (HIC) in acute mental healthcare. HIC is a new model for psychiatric practice and has brought about major changes in the organization of mental healthcare for many institutions. In this final chapter, we will first answer the research questions presented in chapter 1. Next, we will reflect on these findings and on the research methodology from a care ethics perspective. Finally, we will formulate recommendations for future research and practice.

The research question of the thesis is: "What is the relevance of HIC for mental healthcare and in particular for the quality of care and the reduction of coercion?"

The research question entails the following sub questions:

▶ What are the elements of HIC and how to measure compliance to the HIC model?
▶ To what degree is HIC implemented and what are enablers and barriers in the implementation process?
▶ What are the effects of HIC on the quality of care and the use of coercive measures?

MAIN FINDINGS

In this section, the main findings from our study will be presented and discussed. The findings are divided into three parts: (development, implementation and effects), following the research questions. In the first part (development), the elements of the HIC model and the measurement of compliance to the HIC model are addressed. The second part (implementation) focuses on the implementation process of the HIC model in mental healthcare institutions in the Netherlands. The final part (effects) studies the effects of implementation of HIC on the quality of care and the use of coercive measures.

1. Development: What is HIC?

Chapters 1 and 2 describe the efforts that were undertaken to develop a new model for inpatient care with the aim to reduce coercion. The HIC model is based on literature and input from expert meetings. The model was presented to representatives of mental healthcare institutions, and patient and family representatives in order to create support in the field and to refine it.

This inclusive bottom-up process resulted in a new model: High and Intensive care (HIC). HIC focuses on contact and cooperation between staff, patient and significant others. Moreover, cooperation with outpatient services fosters continuity of care. As described in chapter 2 the main goal of the HIC model is to provide optimal treatment and safety, while restoring and maintaining contact and crisis prevention. The aim is providing care that is safe, protective and respectful. This aim to provide good quality care includes the reduction of coercive measures. Five core characteristics of the HIC model are defined. The first characteristic is stepped-care, with the opportunity of using the Intensive Care (IC) in case stress and anxiety rise, or whenever aggression is imminent. Second, six phases are defined in the process of admission, treatment and care: 1. Getting acquainted; 2. Risk assessment and drawing up a crisis prevention plan 3. A psychiatric assessment, including family history; 4. Somatic assessment, including physical examination, exploratory neurological assessment and laboratory tests; 5. Drafting the treatment plan together with the patient within 24 hours of admission; and 6. Organizing a care planning meeting within 24 hours of admission, in which the patient, significant others, outpatient care workers and staff of the clinic take part and in which time scales and responsibilities are discussed. A third characteristic of the HIC model is the combination of the medical and the recovery approach, making recovery a cornerstone of inpatient care. Fourth, on a HIC ward both professional and experiential knowledge from peer providers are combined. The last characteristic is the design of the ward according to healing environment principles.

In addition to the development of this new model, an instrument (the HIC monitor) was developed to make compliance with the model measurable to provide guidance for institutions during the implementation process, and for research purposes. Our results described in chapter 3 show that the HIC monitor has a reasonably good inter-rater reliability and satisfactory content and construct validity. The study described in chapter 7 provides a confirmation of the construct validity of the HIC monitor and strengthens its psychometrical properties. The study revealed the HIC monitor to be a useful tool for assessing the level of compliance to the HIC model on acute psychiatric wards. Moreover, it can be used for quality assessment and improvement.

2. Implementation: How to implement the HIC model?

Implementation of new interventions first demands motivation to change. Concrete drivers of change can function as a catalyzer by expressing a sense of urgency combined with a clear vision (Kotter, 1995; Buchanan et al., 2005). In chapter 4, three important drivers of change were identified that explain the motivation of stakeholders to embrace HIC: 1) HIC combines existing interventions in one overall model to reduce coercion; 2) HIC focuses on contact and cooperation; and 3) HIC is in line with recovery oriented care. The drivers of change we identified in our study show the strength of a positive framing of concrete and comprehensive working methods. This is in line with previous research on the reduction of coercion in which the combination of interventions was found effective (Huckshorn, 2004).

It is not easy to implement new practices. First, this process requires active facilitation and attention for barriers that may be encountered. Facilitators to the implementation of HIC revealed in chapter 4 were leadership, involving staff, making choices about what to implement first, using positive feedback and celebrating successes, training and reflection, and providing operationalizable goals. Barriers included the lack of formal organizational support, resistance to change, shortage of staff and use of flex workers, time restraints and costs, lack of knowledge, lack of facilities, and envisioned shortcomings of HIC standards. The implementation of HIC demands the change of a complex system (Loorbach, 2007). We conclude that positive motivation through drivers of change, as well as attention to the barriers and facilitators on the level of culture, structure and practice is needed.

Second, to support and stimulate mental healthcare institutions with the implementation of HIC, a community of practice (CoP) was created. The CoP composed of a multidisciplinary mix of care professionals working at wards implementing HIC. Auditors

had a central role in the CoP. Chapter 5 provided insight into the lessons that can be learned from the creation of the CoP, and into the perceived effects of the CoP. Important aspects in the lessons learned were to create an ambassador role for CoP participants, to organize concrete activities, to develop a multidisciplinary CoP and to foster shared responsibility and sustainability. Furthermore, perceived effects of the CoP were the support of the HIC implementation, the creation of a national movement, and further development of the HIC model. The audits served as an important vehicle to activate the CoP, and stimulated the implementation of HIC. The movement motivated healthcare professionals to become actively involved in the CoP and in implementation practices within their institution. Our research also had an important role in the implementation process. The role of the research and that of the researchers will be discussed more explicitly further in this discussion.

In chapter 6 we saw that audit results generally show an increase in HIC monitor total scores, which indicated that over the years mental healthcare institutions had increasingly started working according to the HIC model. From this we can conclude that the implementation of HIC has gained momentum. However, does this also mean that this will yield the desired outcome, such as the reduction of coercive measures? This prompted the next question on effects of HIC.

3. Effects: What are the effects of HIC?

Findings regarding the effects of the HIC model can be divided in effects on the quality of care and on the reduction of coercion. Regarding effects on the quality of care we saw that both the HIC monitor and the KWAZOP are important measures of the quality of care, assessing outcomes including approachability and engagement of nurses, attitude, presence and hospitality. In previous studies it has been shown that one of the most highly valued aspects of the care process is contact with nurses, and patients are less satisfied with care when nursing staff is not present or engaged in the care process (Woodward, Berry, & Bucci, 2017; Van Nugteren et al., 2016). Our results described in chapter 7 show that presence of nurses on the ward and their attitude in contact with patients are highly rated by patients and on the HIC monitor. The study did not show that a better compliance to the HIC model was associated with better satisfaction of patients with the quality of care. The assessment of quality of care using the HIC monitor and with the KWAZOP generated different results and highlighted various elements that can be improved. For this reason, it is important to use multiple instruments and to combine insights for a more extensive change of practice. Both instruments are complementary to one another.

Regarding the effects on the reduction of coercion, we found that wards that scored high on the HIC monitor, thus displaying a further degree of implementation of the HIC model, showed lower seclusion rates than wards that scored low on the HIC monitor. This implies that implementation of the HIC model contributes to the reduction of seclusion at acute closed psychiatric wards. Moreover, we found that wards that scored high on the HIC monitor also showed low rates of forced medication, indicating that substitution of seclusion by forced medication did not occur. Confounding by patient compilation was ruled out using the multilevel analyses including patient characteristics. When it comes to the explanation of the reduction of seclusion, chapter 8 shows that the HIC monitor total score was associated with less seclusion use showing an explained variance of around 27%. An explained variance of around 27% was also found for influence of patient factors on the use of seclusion, which is consistent with earlier studies (Noorthoorn et al., 2015). It is when these patient characteristics are combined with the full HIC model that we saw a substantial increase in explained variance 40%. From this we may conclude that seclusion use is associated with both patient characteristics as well as the degree of implementation of the HIC model.

Reflection from a care ethics perspective

In this section we investigate how the findings of this study can be viewed from a care ethics perspective. We will focus on two questions: 1. How can HIC be viewed from a care ethics perspective? 2. How can the process of development, implementation and research be interpreted from a care ethics perspective?

Reflection on HIC from a care ethics perspective

The main objectives of HIC are to reduce coercion and to provide good quality of care on acute psychiatric wards. These objectives reflect a care ethics approach. From a care ethics perspective, coercion is highly problematic (Voskes, 2014). Coercion results in a lack of contact between patient and staff and feelings of distrust, powerlessness and shame experienced by both patients and staff which damage the therapeutic relationship (vanDerNagel, Tuts, Hoekstra, & Noorthoorn, 2009; Hoekstra, Lendemeijer, Jansen, 2004; Theodoridou, Schlatter, Ajdacic, Rössler, & Jäger, 2012). The five phases and corresponding values of Tronto (2013) can be recognized in the core elements of the HIC model. Prevention of coercion requires attentiveness to the needs of patients, responsibility and competence in order to act adequately in a timely manner and cooperation between all parties involved. These requirements can be captured in

three culture changes, that are visible in HIC and embody a care ethical approach: 1. From control to contact; 2. From reactive to proactive; and 3. From (in)dependence to solidarity. These changes will be explained further below.

▶ *From control to contact*

The HIC model focuses on contact between staff, patients and significant others. It contains interventions aimed at either remaining in contact or restoring it when necessary. Providing 1-to-1 care is an important means to actively engage with patients when tensions increase. By providing 1-to-1 care nurses can optimally respond to the needs of patients. When these needs are such that care on the regular High Care (HC) ward is no longer adequate, care can be moved into the Intensive Care Unit (ICU), where there is more room for intensive care without the disturbance by fellow clients on the HC. This stepped-care model ensures that the current needs of patients can be better matched and that contact remains central. In the stepped-care process one of the nurses accompanies the patient to the ICU. Because the nurse will stay with the patient full-time on the ICU, it is important to evaluate which of the staff has the best contact with the patient. This is in line with Tronto's first phase of care (2013), to be attentive to needs of patients, and to the second phase of responsibility to address these needs. The assessment of these needs can only be done when there is contact, which means that interventions aimed at building and remaining contact are crucial for the care ethical process. The intervention of the "first five minutes", described in chapter 6, is a good example of how contact can be established in a systematic way. In this intervention the focus is put on how to receive and welcome a patient to the ward, and how to establish contact from the first moment a patient enters the ward and to being attentive to the patient's needs (Voskes, Kemper, Landeweer, & Widdershoven, 2013).

Chapter 6 showed that a change in culture has taken place on HIC wards in which controlling ways of working were replaced by a focus on contact and an attentive attitude was adopted by healthcare professionals. This culture change also demands being present at the ward. An example of how this is facilitated in the HIC model is the use of working stations or open desks on the ward, instead of using nursing offices. By being more present *physically*, conditions for establishing contact and being attentive and responsive to patients' needs are fostered.

Adjusting care according to the needs of patients can be challenging, especially when patients show aggression or agitation. According to care ethics, competence is required

to timely and responsively deal with these situations. Good training for staff is important to increase staff competence to offer a fitting attitude, with respect and hospitality to the patient and relatives. Reflection and evaluation of difficult situations can also be helpful tools to foster competence and responsiveness. To adequately provide care, it is also necessary that the right facilities are available to facilitate contact. These facilities require investments in the building to create a 'healing environment', including the construction of an IC in order to be able to offer intensive 1-to-1 support and thus provide stepped-care to continue to meet the patient's care needs. Chapter 6 shows that resources are adapted to match the needs of both care provider and care recipient as closely as possible. In the developments surrounding the implementation of HIC, an emphasis is placed on investment in the building.

▶ *From reactive to pro-active*

The HIC model was developed to reduce coercive measures on the ward, and especially seclusion. The prevention of seclusion is most successful when preventing escalation or aggression. This requires that care providers have to take the responsibility to act proactively instead of reactively. A good illustration of pro-active interventions in the HIC model is the use of risk assessment, for example by means of the CrisisMonitor (Van de Sande et al., 2009; 2011). This a set of existing observation scales, including the Brøset Violence Checklist (Almvik, Woods, & Rasmussen, 2000), which can signal predictors for aggressive behavior and show an increase or decrease in agitation during admission. Another instrument is the joint crisis plan, which can help to gain insight into the development of a crisis, early warning signs and concrete actions that should be taken to de-escalate the situation (Henderson et al., 2014; Farrelly et al., 2014; 2015). Joint crisis plans are ideally drafted in the triad of patients, relatives and healthcare professionals (Thornicroft et al., 2013). The drafting of such a plan, or use of other observation scales not only means a pro-active stance is taken to prevent further crisis, but it also fosters responsibility of staff and patient, increases attentiveness to the needs of patients, and provides concrete suggestions on how to competently deal with warning signs.

Whenever warning signs demand responsive action to respond to patient's needs, provision of care should competently be intensified or be scaled down. As mentioned previously, HIC is based on the principles of stepped-care. This starts during outpatient care, where care is moved into the clinic only when care and support in the community are no longer possible. On the ward, the patient is admitted at the HC. If necessary due to the patient's needs, or indicated by the use of the CrisisMonitor, the patient can be

accompanied to the ICU where they receive one-to-one care. In the context of safety, the possibility of seclusion in the High Security Room (HSR) has been included in the HIC model as a last resort in the stepped-care process. In chapter 3 we saw that mental healthcare professionals regarded the HSR as being counter to the aim to reduce seclusion, as the physical presence of a HSR as part of the ward may increase the risk that it will be used. The HIC model however puts a strong emphasis on a pro-active attitude and working methods to prevent the development of crisis and aggression on the ward, and ultimately to prevent the use of the HSR. The slogan is "a good HSR is an empty HSR'". The ICU is an example of a pro-active way of working by responsibly acting on warning signs to ultimately prevent the use of the HSR.

▶ *From (in)dependence to solidarity*

The HIC model emphasizes the importance of collaboration between inpatient and outpatient care. Chapter 2 describes how collaboration with outpatient teams and family is sought in the HIC admission process. In light of care ethical theory this can be viewed as a means to foster solidarity and a democratic caring relationship. The care coordination meeting (Zorgafstemmingsgesprek; ZAG) is a good example of *caring with* - a democratic caring action in which all persons involved in the caring process can clarify their needs and responsibilities. Chapter 6 shows that the care coordination meetings are increasingly organized at frequent intervals and in most cases at the start of admission to the HIC, every three weeks during admission and at discharge. Not only does this type of coordination benefit the continuity of care, it also ensures that the admission to the HIC can be kept as short as possible, which can favor the recovery process. This is in line with the principle that it is beneficial for patients to recover at home through outpatient treatment (Delespaul, Milo, Schalken, Boevink, & van Os, 2016; Szmukler, 1999; van Veldhuizen, Polhuis, Bähler, Mulder, & Kroon, 2015). Chapter 3 also shows that coordination and collaboration with outpatient services does not always run smoothly and the HIC model has not yet been fully adopted throughout the outpatient field. Knowledge and adoption of practices such as being present for care coordination meetings by outpatient teams are necessary for this democratic action to work. A broader acceptance of the culture and vision behind the collaboration would benefit solidarity of the care process.

Care is a moral and political activity embedded in community and in relations (Tronto, 1993). In the context of mental healthcare, HIC wards can be seen as moral and political communities in which relationships involve certain power dynamics. Care in acute

psychiatry is characterized by a difference in power dynamics between the patient and staff, and between staff, which implies solidarity is at stake. According to Tronto (2013) solidarity can undermine power hierarchies and thus enable better care. In this sense, it is important to give patients a voice and to enter into dialogue. This means that, first of all, sufficient opportunity must be created to start this dialogue. When designing a democratic care relationship, it is important to give an equal voice to all stakeholders involved in the care process. These stakeholders include multiple disciplines from inpatient and outpatient care, patients and significant others. As mentioned above, the care coordination meeting in the HIC model is important means to include patients and other stakeholders to shape a democratic caring process in which mutual responsibilities are acknowledged. Secondly, involving peer experts in the care process helps to give a voice to patients. Peer experts have been trained to use their own experience with mental health conditions to help both patient and staff in increasing attentiveness to needs (Voskes, 2010; Gates & Akabas, 2007). Peer providers provide insights in line with the principles of respect, shared responsibility and mutual agreement of what is helpful to aid recovery (Mead & MacNeil, 2006). Due to a difference in hierarchical position, peer experts often have a better democratic position within the team than patients (Voskes, 2010; Gillard, Gibson, Holley, & Lucock, 2015). Chapter 7 shows, that although they are an important part of the HIC model, peer experts are often not yet present at HIC wards. This result is of extra relevance since patients indicated they do feel the need to speak to peer experts. It is important to respond to this need, and even more so to break through the power dynamics and thus offer the patient a better position in an inclusive care process.

Important stakeholders in the care process are relatives, or other significant others to patients admitted to an HIC ward. Relatives can provide assistance during 1-to-1 care and can promote the interests of patients. An example of a means to involve relatives is the provision of 'rooming-in', the opportunity for relatives to stay at the ward. To adequately work in the triad of patient, relatives and care providers, care for relatives is of equal importance. Chapter 6 shows that interventions aimed at both involving relatives and care for relatives have increasingly been implemented on HIC wards.

Reflection on the process of developing, implementing and investigating HIC from a care ethics perspective

Not only the HIC model, but also the process of development, implementation and investigation of HIC shows care ethical aspects. The five phases and corresponding values of Tronto (2013) can be recognized in the different steps that were taken to develop the HIC model:

The development of the HIC model started with an intensive search for the needs of stakeholders in the practice of acute psychiatry *(attentiveness)*. The development was done cooperatively with stakeholders working in practice, thereby creating a good overview of what was needed. *Responsibility* was taken by the initiators to actively create a new approach based on existing knowledge and to bring together the people who had the *competence* to translate this knowledge into a concrete and practical approach. Different disciplines were involved in the development of HIC, including psychiatrists, nurses, patients, representatives of family organizations, psychologists, managers and researchers. Much attention was paid to *responsiveness* in the process of development by organizing open meetings to ask for a response from a diverse group of stakeholders about the various parts of the model. This was repeated throughout various phases of the development process, which tested whether HIC actually met the needs of all stakeholders in mental healthcare. The meetings described in Chapter 2 focused on learning from and with each other. The last phase care distinguished by Tronto, *solidarity*, is clearly relevant. Support of all stakeholders was needed to make HIC a success. The drivers to change described in Chapter 3 show that HIC is seen as a joint endeavor that entails a strong impulse to work towards contact and collaboration.

In the development of the HIC model science and practice go hand in hand, working democratically towards a model that fits and works for practice. This process can be described as "co-creation". According to the principles of co-creation, scientists work together with social parties to create new knowledge that responds to current requests from practice (van de Mheen, 2019; Campbell, & Vanderhoven, 2016). Based on this approach, the social impact, defined as the contribution that the research makes to society, is increased (KNAW, 2018). In literature on co-creation, ten characteristics can be distinguished for the success of developments: *"1. a structured, long-term partnership; 2. equality and reciprocity between researchers, users and professionals; 3. mutual trust; 4. mutuality, both for science and for those in everyday practice; 5. personal contact, for co-creation is built on relationships; 6. blurring boundaries between those involved in research and their societal partners, which means that the academic world will lose a degree of control over the nature and direction of its research capacities; 7. knowledge exchange rather than knowledge transfer; 8. it concerns improvements to everyday practice and scientific output; 9. the research process is not linear, but is instead cyclic and iterative in nature – the process is key; 10. and co-creation takes time"* (van de Mheen, 2019, p. 16-17; Campbell & Vanderhoven, 2016). All these characteristics are visible in the development process of HIC, as well as the implementation, and in the research we preformed to monitor and support implementation. The research entailed a long-term intensive collaboration

and interaction between the researchers and the stakeholders at the institutions. The involvement of auditors in the CoP created a mutual process in which exchange of knowledge of practices was facilitated. As researchers we entered into a dialogue with participants. This will be explained further in the next section.

Combining qualitative and quantitative research methods to stimulate reflection

The purpose of our research on HIC was twofold. The first aim was to monitor the development, the implementation and the results of implementation of the HIC model. The second aim was to promote and support the implementation of HIC through research. The combination of these aims implied a combination of qualitative and quantitative research methods. An example of combining quantitative and qualitative methods in this study was the validation of the HIC monitor. In order to determine content validity, experiences with the instrument and the way in which the instrument corresponded with HIC vision and practice were examined in dialogue. Consequently, the instrument was improved making the instrument more suited to the needs healthcare professionals who used the instrument for quality improvement, as described in chapter 3. The quantitative methods entailed an analysis of audit scores on the HIC monitor. These scores provided a concrete account of the situation and developments in implementation of the HIC model. Elements of HIC that were well embedded in the care process and elements that proved less easy to implement were made transparent. The risk of using a fidelity scale such as the HIC monitor is that it will be merely seen as a "checklist" that must be completed in order to implement HIC. The value of the monitor, however, lies in its use to initiate contact between mental healthcare professionals, management, and researchers, and thus promote responsiveness. The audits resulted in quantitative scores, but the audit process itself and the focus groups that were organized by the researchers to discuss these results with the teams that received the audits were qualitative in nature. Audits ensured that there was regular contact between researchers and stakeholders, and findings from audits were fed back into dialogue with stakeholders so knowledge could be used immediately for further improvement of practices. This shows that the combination of quantitative and qualitative research is useful for both in-depth research and for practical improvement through reflection on development and implementation.

Care ethical research practices

The approach used in this study was interactive and dialogical. This is in line with the principles of responsive evaluation. In this methodology, researchers stimulate participants to reflect on the process, and to start a dialogue between participants

about the improvement of their practice (Abma, Molewijk & Widdershoven, 2009). The process rather that the outcome has the primary focus. Therefore, it is important that stakeholders feel involved throughout the process. In our research we strongly focused on collaboration. The HIC model was jointly developed and opportunities for stakeholder dialogues within institutions were organized. Furthermore, the implementation process was evaluated in participating institutions, including perspectives of stakeholders. Engagement of stakeholders in the research process promotes their intrinsic motivation to change practices (Abma, Voskes & Widdershoven, 2017; Greene, 1988; Shaw, Greene, & Mark, 1997). Care ethical values such as responsibility, responsiveness, and solidarity were visible in this process, for example in the use of Communities of Practices (CoP), as described in chapter 4 (Abma, 2006). In the CoP, auditors were active partners who worked together and shared knowledge and experiences. This resulted in an ambassador role for auditors within their organizations concerning this exchange of knowledge about HIC that extends beyond the scope of this research. The CoP was not limited to a project to start implementation HIC, but continues as a joint action for further development of HIC.

The role of the researchers

In responsive evaluation, the researchers play an active and interactive role throughout the study. This means that the researcher is a partner in the process and facilitates meetings and opportunities for participants to take part in dialogue to improve practice. The role of the researchers can be seen as that of change-agents (Mertens, 2009), focusing on both the process of the research, and on the organization and development of practice. In this particular study, the researchers organized multiple meetings, conferences and platform meetings with auditors and other stakeholders to exchange experiences and present research findings. Other activities were overseeing coordination of HIC audits and focus groups, participating as a member of a project group to develop new training and education for nurses working on HIC wards, and coordinating the HIC website. Thus, the researchers had an active role in providing information on the national developments regarding HIC and in generating a CoP that facilitated further implementation and evaluation of the HIC model. By adopting this participatory approach, a normative stance was taken towards HIC and the underlying aim of reducing coercion. This normativity underlines the importance to organize dialogue in an open way (Abma, Voskes & Widdershoven, 2017).

Strengths and limitations of the study

The studies in this thesis have several strengths and limitations.
A first strength is the large national scope of our study, in which 25 mental healthcare institutions participated. This number encompasses most large mental healthcare institutions in the Netherlands. This participation included involvement in the CoP, and provision of the coercive measures applied and registered into the Argus database. The availability of the large amount of data on the use of coercion within the institutions made it possible for us to investigate the correlation of these data with the implementation of HIC.

Another strength was the diversity and coherence in research methods in a mixed method design. The qualitative and quantitative research methods allowed to monitor as well as to support the implementation of HIC. These methods were also complementary to each other. For example, the audit scores on the HIC monitor showed the status of the implementation of HIC, but at the same time provided an opening for a discussion about good care and basic principles of HIC. Correspondingly, the use of qualitative research, including elements of responsive evaluation and action research, proved to be a good way to gain a better insight into the implementation process of HIC and to facilitate implementation. The involvement of professionals from mental healthcare institutions as active partners in both the development and the research into the implementation process of HIC is another strong point of this research. By forming a CoP, institutions became more actively involved, and both research and the implementation process could benefit from it. Through co-creation, healthcare professionals took the responsibility to adopt HIC and to actively work with it. This methodology has increased the social impact of HIC.

Another strength was the participatory nature of the study, which helped the implementation process by actively collaborating with healthcare professionals. During part of the study, the researcher also worked on a HIC ward as a psychologist, which helped to form a better picture of the complexity of acute psychiatric care, the context and the daily work with the HIC model. This function and knowledge was helpful in the interpretation of the data and ensured a better democratic position in entering into dialogue about good healthcare with stakeholders on the wards.

Our study also had limitations. In our study the perspectives of patients and relatives were represented by peer experts and family representatives in the development of the

HIC model. We measured the perceived quality of care by patients in our study, but did not assess how relatives perceived the quality of care on HIC wards. This can be seen as first limitation of our study. The involvement of both patients and relatives in the research process, for example as part of the CoP, might ensure all voices are heard and involved.

Moreover, our data on coercion was limited to 2014. Due to privacy reasons, no new Argus data are available after 2014. The availability of this data is necessary to investigate the long-term relationship between implementation of the HIC model and the use of coercive measures.

The final limitation of our study regards our normative stance towards the HIC model. Researchers often have an implicit normative vision about their research topic. While it can be a strong point that our normative vision was clearly explicit, it raises the question whether we were always open to opposing views or able to objectively interpret the data. Entering into dialogue, performing member checks and stimulating reflection on one's own position and on the research results are important elements that have been used to guarantee the quality of the interpretations.

Recommendations further development of HIC and future research

In the section below we present the recommendations for further development of the HIC model, implementation and other related practices and for future research.

Implications for the HIC model and practice

Further development of HIC

HIC is a consensus-based model that consists of both evidence-based and experience-based interventions. It is important that the HIC model remains sensitive to current practice needs. This implies that the model is not yet finished, and building blocks can be added. HIC must be further developed. In this further development it is necessary to ensure that all stakeholders are heard, and the experiences of what patients consider important for good quality of care must be included. The replacement of the Dutch Law on Special Admissions to Psychiatric Hospitals *(Wet bijzondere opnemingen in psychiatrische ziekenhuizen)* by the Dutch Law on Compulsory Mental Health Care *(Wet verplichte geestelijke gezondheidszorg)* makes this development even more relevant. This

new law makes outpatient services more complex and demands good cooperation between outpatient services and clinical wards. HIC provides an approach for cooperation, but the HIC model should be adjusted to the way this will take shape due to legal changes.

Audits

The use of the HIC monitor proved to be helpful to set goals for implementation and help guide the implementation process by means of audit scores. Continuation of the audits for quality improvement is essential, including the dialogue about the results. It is recommended that institutions set out to work on reflecting on practices including the implementation of HIC. The appointment of project members responsible for implementation of specific elements in the HIC model can help to ensure this process of reflection and evaluation takes place.

Registration of coercive measures

Insight into the number and duration of coercive measures is important. Since 1 January 2012, registration of coercive measures in the "Argus register" was made compulsory for all care providers in mental healthcare as a result of and changes to one of the regulations in the Special Admissions in Psychiatric Hospitals Act (Bopz Act, 1993). However, due to changes in privacy legislation, this data is no longer collected nationally. It is imperative that Argus registration becomes available for practice again, as institutions need data to better reflect on the use of coercive measures and to adjust policy.

HIC as a source of inspiration for other mental healthcare sectors

The content of the HIC model, the way it was developed, implemented and guided by research are relevant for other sectors, such as forensic mental healthcare and child and adolescent psychiatry. This is visible in for example the development of Forensic High and Intensive Care (FHIC). Inspiration was drawn from HIC, both in terms of content and process to create the FHIC model and to start research on its implementation. The focus on forensic psychiatry, however demanded that changes were made to the HIC model to increase the focus on safety in contact and to create an open institutional climate (de Leede et al., 2016). Through several expert meetings and research the HIC model was customized to fit the needs and demands of the forensic context in the Netherlands. Due to the recent increase of forensic patients on HIC wards due to the new legislation, good collaboration with the forensic field is important. Inspiration from the FHIC model can in turn be used to deal with forensic populations on regular HIC wards. Another example is the development of the Active Recovery Triad (ART)

model for long-term mental healthcare in the Netherlands (van Mierlo et al., 2016; Zomer et al., 2020). ART uses inspiration from HIC to shape the development and implementation process, and in research by means of responsive evaluation as part of the methodology. These developments indicate that several elements described in this study are of interest to other sectors in psychiatry, and perhaps also beyond the field of psychiatry and internationally.

Network Psychiatry

It is difficult to change the entire psychiatric system in which different inpatient and outpatient services are delivered. Due to the reduction of clinical beds, the concentration of patients with severe psychiatric symptoms who are admitted to the HIC is visible. In the HIC model, it is important to keep admissions as short as possible. To ensure this, HIC focuses on good cooperation with outpatient teams, such as FACT and IHT teams. Good coordination of care also benefits the continuity of care for patients with severe mental illness. This can be seen as an argument in favor of the development of "Network psychiatry", a model for the delivery of integrated care to people with complex psychiatric disorders (Mulder et al., 2020). This model, aims at reducing fragmentation of care and increases stepped-care. Admission to a HIC is seen as an ultimate step in the care process.

Implications for research

Integrating qualitative and quantitative research methods

The integrated combination of qualitative and quantitative research methods in this study proved to be fruitful. The implementation process was made visible due to the audit results, and further clarified in interviews. This indicates that this integrated design can be used as good method for implementation research. The quantitative data on quality of care and use of coercion also gave insights into the effects of HIC. The use of a CoP proved to be of value in this methodology. Exchange of knowledge and experience is important to foster implementation. A CoP is a good method in this regard to ensure that this the responsibility is taken to initiate this exchange. In our study, the participants of the CoP (auditors) were also used as active and participatory research partners in data collection. The CoP consisted mainly of nurses, psychiatrists, quality officers and managers. The perspective of patients and significant others were lacking in this regard. For follow-up research and continuation of the audits, lessons can be learned from the way in which the CoPs are organized for FHIC and ART. Here, (family) peer part of the CoP as auditors, which makes sure attention to the perspective of patients and relatives is paid.

Answering to needs from practice

Our study showed that institutions are succeeding to further implement the HIC model, but also indicated institutions experience difficulties in maintaining this development and occasionally score lower on the HIC monitor then they previously did. This implies that the implementation and safeguarding of the HIC model requires continuous attention, which in turn requires research and monitoring of further developments. Barriers to the implementation of the HIC model that were encountered in this study included shortage of staff and resistance to change while under pressure to care for a population of high complexity, and using as little coercion as possible. Future research should gain more insight into the perceived safety at the HIC, and of the motives of HIC professionals to work at an HIC ward. Also, it is important to gain insight into complex situations on HIC wards that currently still cause for the use of coercive measures (Gerritsen et al., 2020). Research on this topic could gain insight into how to deal with these situations for the development of new best practices. These best practices can provide concrete input for the further development of HIC.

CONCLUSION

The HIC model has brought about major changes in the organization of Dutch mental healthcare. The close cooperation with stakeholders in practice during the development and implementation of the HIC model has resulted in an innovative, comprehensive and feasible approach. In terms of content, HIC is in line with practical needs and developments in current psychiatric practice, such as the need to reduce coercion reflected in the drivers of change identified in this study. HIC contributes to the quality of care at acute psychiatric wards by providing multiple strategies on the level of culture, structure and practice. The integration of strategies makes the HIC model highly relevant for good quality care in acute psychiatry. The results from this study can serve as an incentive and further guidance for institutions to further improve mental healthcare.

The theory of care ethics provides a framework which makes explicit the underlying values of the HIC model. Crucial values like attentiveness, responsiveness and solidarity are reflected in HIC care, as well as in the implementation process. Also in our research, which combined qualitative and quantitative methods in an integrated way, ethics of care served as a basis for cooperation with stakeholders in jointly improving care practices. This implies that fostering the quality of mental healthcare requires not just the implementation of new ways of working, but also the improvement of practice from an ethical perspective.

REFERENCES

Abma, T. A. (2006). Evaluation and communities as practice. Psychiatry as a case example. *Evaluation, 13*(1), 32–48.

Abma, T. A., Molewijk, B., & Widdershoven, G. A. M. (2009). Good care in ongoing dialogue. Improving the quality of care through moral deliberation and responsive evaluation. *Health Care Analysis, 17(3)*, 217-35.

Abma, T. A., Voskes, Y., & Widdershoven, G. A. M. (2017). Participatory bioethics and its social impact: the case of coercion reduction in psychiatry. *Bioethics, 31*, 144–152.

Almvik, R., Woods, P., & Rasmussen, K. (2000). The Brøset Violence Checklist sensitivity, specificity, and interrater reliability. *Journal of Interpersonal Violence, 15,* 1284-1296.

Buchanan, D., Fitzgerald, L., Ketley, D., Gollop, R., Jones, J. L., Saint Lamont, S., … Whitby, E. (2005). No going back: A review of the literature on sustaining organizational change. *International Journal of Management Reviews, 7*(3), 189–205.

Campbell, H. J., & Vanderhoven, D. (2016). *Knowledge that matters: Realising the potential of co-production.* Manchester: N8 Research Partnership.

Delespaul, P., Milo, M., Schalken, F., Boevink, W., & Os, J. (2016). Goede GGZ! *Nieuwe concepten, aangepaste taal en betere organisatie,* Springer.

Farrelly, S, Brown, G, Rose, D, Doherty, E, Henderson, RC, Birchwood, M., … & Thornicroft, G. (2014). What service users with psychotic disorders want in a mental health crisis or relapse: thematic analysis of joint crisis plans. *Social Psychiatry and Psychiatric Epidemiology, 49*(10), 1609–17.

Farrelly, S., Lester, H., Rose, D., Birchwood, M., Marshall, M., Waheed, W., … & Thornicroft, G. (2015). Improving therapeutic relationships: joint Crisis Planning for individuals with psychotic disorders. *Qualitative Health Research, 25*(12), 1637-47.

Gates, L.B. & Akabas, S. (2007). Developing strategies to integrate peer providers into the staff of mental health agencies. *Administration and Policy in Mental Health and Mental Health Services Research, 34*(3), 293-306.

Gerritsen, S., Widdershoven, G.A.M., Ham, A.J. van der., Melle, A.L. van, Kemper, M., & Voskes, Y. (2020). Dealing with care disruption in high and Intensive Care wards: From difficult patients to difficult situations. *International Journal of Mental Health Nursing.*

Gillard, S., Gibson, S. L., Holley, J., & Lucock, M. (2015). Developing a change model for peer worker interventions in mental health services: A qualitative research study. *Epidemiology and Psychiatric Sciences, 24*(05), 435–445.

Greene, J.C. (1988). Stakeholder participation and utilization program evaluation. *Evaluation Review, 12*(2): 91–116;

Henderson, C., Flood, C., Leese, M., Thornicroft, G., Sutherby, K. & Szmukler, G. (2004). Effect of joint crisis plans on use of compulsory treatment in psychiatry: a single blind randomized controlled trail. *British Medical Journal, 329*-136.

Hoekstra, T., Lendemeijer, H.H.G.M. & Jansen, M.G.M.J. (2004). Seclusion: The inside story. *Journal of Psychiatric and Mental Health Nursing, 11*, 276–283.

Huckshorn, K. A. (2004). Reducing seclusion restraint in mental health use settings: Core strategies for prevention. *Journal of Psychosocial Nursing and Mental Health Services, 42*(9), 22-33.

KNAW. (2018). Maatschappelijke impact in kaart. [Royal Dutch Academy of Science (KNAW). An identification of the social impact]. Amsterdam, KNAW.

Kotter, J.P. (1995). Leading change: why transformation efforts fail. *Harvard Business Review, 73*, 59–67.

de Leede, P., van der Helm, P. & Voskes, Y. (2017). *Werkboek Fhic. High en Intensive Care*

vanuit forensisch perspectief. Utrecht: KFZ.

Loorbach, D. (2007). *Transition management: new mode of governance for sustainable development*. International Books, Utrecht, The Netherlands.

Mead, S. & MacNeil, C. (2006). Peer Support: What Makes It Unique? *International Journal of Psychosocial Rehabilitation, 10*(2), 29-37.

Mertens, D. (2009). *Transformative research and evaluation*. New York, London. Guilford Press.

van de Mheen, D. (2019). *"The art of co-creation": Knowledge that matters!* Tilburg University.

van Mierlo, T., van der Meer, L., Voskes, Y., Berkvens, B., Stavenuiter, B., & van Weeghel, J. (2016). *De kunst van ART. Werkboek Active Recovery Triad*. Utrecht: De Tijdstroom.

Molewijk, B., Verkerk, M., Milius, H., Widdershoven, G. A.M. (2008). Implementing moral case deliberation in a psychiatric hospital: process and outcome. *Medicine, Health Care and Philosophy, 11*(1), 43–56.

Mulder, N., van Weeghel, J., Delespaul, P., Bovenberg, F., Berkvens, B., Leemnan, E., Kroon, H., van Mierlo, T., & Kienhorst, G. (2020). *Netwerkpsychiatrie: Samenwerken aan herstel en gezondheid.* Boom uitgevers Amsterdam.

Noorthoorn, E. O., Lepping, P., Janssen, W., Hoogendoorn, A, Nijman, H. L. I. , Widdershoven, G. A. M., & Steinert, T. (2015). One-year incidence and prevalence of seclusion: Dutch findings in an international perspective. *Social Psychiatry and Psychiatric Epidemiology, 50*(12), 1857-69.

Nugteren, W., van der Zalm, Y., Hafsteinsdóttir, T. B., van der Venne, C., Kool, N., & van Meijel, B. (2016). Experiences of Patients in Acute and Closed Psychiatric Wards: A Systematic Review. *Perspectives in Psychiatric Care, 52*, 292–300.

Van de Sande, R. R. W., Hellendoorn, E. M., Roosenschoon, B. J., Noorthoorn, E. O., Nijman, H. L. I., van der Staak, C. P. F, & Mulder, C. L. (2009). De CrisisMonitor. Het signaleren van agressie en het voorkomen van separatie. *Maandblad Geestelijke Volksgezondheid, 64*(6), 540-550.

van de Sande, R. R. W., Nijman, H. L., Noorthoorn, E. O., Wierdsma, A. I., Hellendoorn, E., van der Staak, C., & Mulder, C. L., (2011). Aggression and seclusion on acute psychiatric wards: effect of short-term risk assessment. *British Journal of Psychiatry, 199*, 473–8.

Shaw, I., Greene, J. C., & Mark, M. M. (Eds.) (2006). *The SAGE Handbook of Evaluation.* SAGE.

Szmukler, G. (1999). Ethics in community psychiatry. Australian and New Zealand *Journal of Psychiatry, 33*(3), 328-338.

Theodoridou, A., Schlatter, F., Ajdacic, V., Rössler, W., & Jäger, M. (2012). Therapeutic relationship in the context of perceived coercion in a psychiatric population. *Psychiatry Research, 200*(2), 939-944.

Thornicroft, G., Farrelly, S., Szmukler, G., Birchwood, M., Waheed, W., Flach, C., . . . Marshall, M. (2013). Clinical outcomes of joint crisis plans to reduce compulsory treatment for people with psychosis: A randomised controlled trial. *The Lancet, 381*, 1634–1641.

Tronto, J. (1993). Moral boundaries. A political argument for an ethic of care. New York/ London: Routledge.

Tronto, J. (2013). *Caring Democracy. Markets, equality and justice.* New York: New York university press.

VanderNagel, J.E.L., Tuts, K.P., Hoekstra, T. & Noorthoorn, E.O. (2009). Seclusion: The perspective of nurses. *International Journal of Law and Psychiatry, 32*, 408-412.

Van Veldhuizen, R., Polhuis, D., Bähler, M., Mulder, N., Kroon, H. (2015) *Handboek (Flexible) ACT. Herstelondersteunende zorg en behandeling in de eigen omgeving voor mensen met ernstig psychiatrische aandoeningen*. Tweede druk. De Tijdstroom.

Voskes, Y. (2010). Ervaringsdeskundige in de geestelijke gezondheidszorg: bondgenoot of bruggenbouwer? In: T. Abma, M. Visse, B. Molewijk, & G. Widdershoven (Eds). *Reflectie en participatie in zorg* (pp. 171-189). Utrecht: Boom/Lemma.

Voskes, Y., Kemper, M., Landeweer, E. G. M., & Widdershoven, G. A. M. (2013). Preventing seclusion in psychiatry: A care ethics perspective on the first five minutes at admission. *Nursing Ethics. 21*(7), 766-73.

Woodward, S., Berry, K., & Bucci, S. (2017). A systematic review of factors associated with service user satisfaction with psychiatric inpatient services. *Journal of Psychiatric Research, 92*, 81-93.

Zomer, L. J. C., Voskes Y, van Weeghel, J., Widdershoven, G. A. M., van Mierlo, T. F. M. M., Berkvens, BS, ... & van der Meer, L. (2020). The Active Recovery Triad Model: A New Approach in Dutch Long-Term Mental Health Care. *Frontiers in Psychiatry, 11*.

Summary

Samenvatting
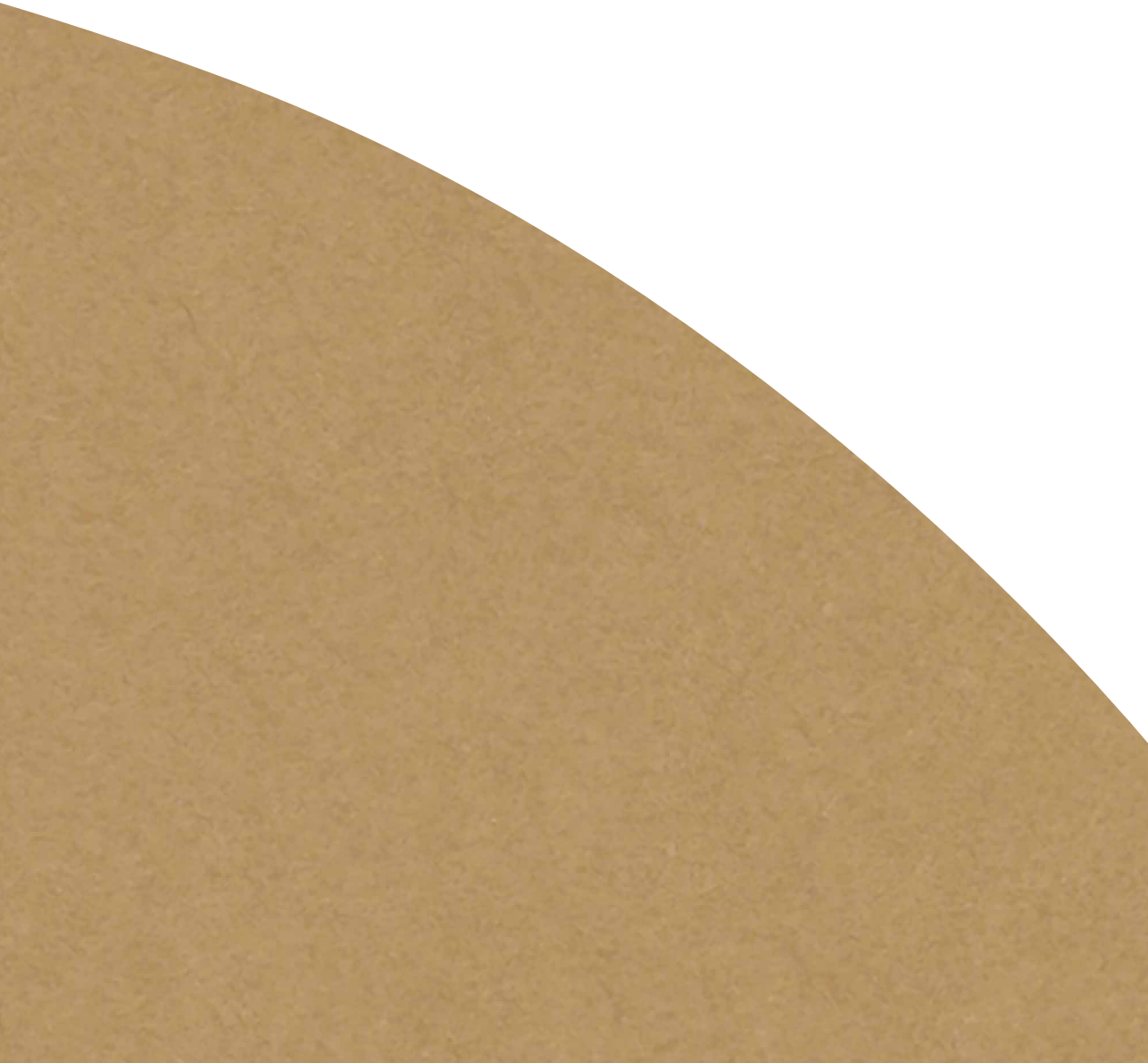
SUMMARY

The central aim of this thesis is to investigate the development, implementation, and effects of the High and Intensive Care (HIC) model on the quality of care and the use of coercive measures in acute mental healthcare in the Netherlands. The HIC model aims to create a national approach for high quality inpatient care. Central to the HIC model is to work proactively to reduce the use of coercive measures, to foster contact between professionals, patient and family, and to improve cooperation between outpatient care and the clinic. In the general introduction **(Chapter 1)**, the developments in mental healthcare and efforts to improve clinical practice that led to the development of the HIC model are described.

Around the turn of the century, concerns about the use of coercive measures, specifically seclusion, increased in the Netherlands. While no therapeutic effect for the use of seclusion is proven, and studies show negative consequences of seclusion for patients and care professionals, it was still common practice in the Netherlands. In 2001, quality criteria were developed and implemented by twelve mental healthcare institutions to improve practice regarding seclusion. From 2006, the Dutch government started funding projects to reduce seclusion in support of the goal formulated by the Dutch branch organization for mental healthcare (GGZ Nederland) to reduce seclusion by 10 percent yearly. By 2007, a total of 34 mental healthcare institutions participated in the nationwide programme. To provide reliable data on coercion to evaluate the use of coercive measures, six mental healthcare institutions developed a new registration method of coercive measures, called "Argus". In 2009, a network of institutions initiated a project to develop standards for High Care to improve the general standard of care on acute closed psychiatric wards. Around the same period, the Dutch branch organization for mental healthcare took the initiative to develop norms for Intensive Care. These norms however, were criticized for a lack of attention for the reduction of coercion on these wards, which stressed the need to further develop Intensive Care. A combined approach was needed.

This need increased in 2012 because of the introduction of a policy to reduce the number of clinical beds by one third. This caused increased pressure on the remaining beds and need for better standards for inpatient care. At the same time, the projects to reduce coercion ended, yielding insufficient results. Institutions differed greatly in their use of coercive measures and choice of best practices and evidence based practices. A new national standard in which principles from the recovery approach and care ethical values were taken into account was needed to strive for good quality care and to further

reduce coercion. In 2012, consensus was sought by experts of various disciplines and backgrounds in combining evidence -and experience based practices and insights from the former nationwide programme to develop the comprehensive High and Intensive Care (HIC) model. In 2013, a book describing the full HIC model was presented, including a model fidelity scale; the HIC monitor.

This thesis seeks to evaluate the HIC model. The main research question of the thesis is:

"What is the relevance of HIC for mental healthcare, and in particular for the quality of care and the reduction of coercion?"

This thesis contains three parts: development, implementation, and effects. The first part (development) examines the question how the HIC model was developed and what the most important elements of the HIC model are (chapter 2). Moreover, the question how to measure compliance to the HIC model is addressed (chapter 3). The second part (implementation) focuses on the question to what degree the HIC model is implemented by mental healthcare institutions throughout the Netherlands. Also, the facilitators and barriers in the implementation process are investigated (chapter 4 and 5). In the final part (effects), the question what the effects of implementation of the HIC model are on the quality of care and on the use of coercive measures is studied (chapters 6, 7 and 8).

PART 1: development

The first part starts with **Chapter 2**, in which the development and content of the HIC model are described. The HIC model is a result of a bottom-up process including professionals, user organizations, management, and patient and family representatives. A first proposal for the model was made based on a literature study and data from interviews and focus groups in 26 mental healthcare institutions. In three two-day expert meetings with participants from fifteen mental healthcare institutions in the Netherlands, the proposal was discussed, and the model was refined. The HIC model aims to reduce coercion by focusing on contact and cooperation between staff, patients, and family. Five core elements of high and intensive care (HIC) include: (1) preventing seclusion by means of a stepped-care principle; (2) a six-step process of admission, treatment, and care; (3) combining medical and recovery approaches; (4) combining professional and experiential knowledge; and (5) providing a healing environment. The HIC model differs from the organization of psychiatric intensive care units (PICU's) in other countries, in that it focuses on collaboration with outpatient care, establishing contact between staff, patients, and relatives, and minimizing coercion.

Chapter 3 describes a mixed-method validation study of a scale to measure compliance to the HIC model, the HIC monitor. The HIC monitor was developed to provide insight into the degree of implementation of the HIC model for research purposes and as a tool to facilitate the implementation of the model. In order for the HIC monitor to be valuable, validation of the instrument was needed. To assess the psychometric properties of the HIC monitor, 37 audits were held on closed inpatient wards at 20 mental healthcare institutions in the Netherlands. Findings show that the HIC monitor has a reasonably good inter-rater reliability and satisfactory content and construct validity. The study revealed the HIC monitor to be a useful tool for assessing the level of compliance to the HIC model on acute psychiatric wards for research purposes. Moreover, it can be used for quality assessment and improvement by providing guidance for institutions during the implementation process.

PART 2: implementation

In the second part of this thesis, the implementation process of the HIC model is studied using qualitative research methods.

In **chapter 4**, the drivers of change motivating mental healthcare professionals to embrace the HIC model are described, as well as facilitators and barriers for implementation of the model. For this study, 41 semi-structured interviews with different stakeholders were held on 29 closed acute admission wards for adult psychiatric patients of 21 mental healthcare institutions in the Netherlands. Findings reveal three major drivers of change: the HIC model offers a combination of existing interventions in one overall approach to reduce coercion, it focuses on contact and cooperation, and it aligns with recovery oriented care.

While these drivers of change provide motivation to implement HIC, actually adopting new working routines requires the change of deeply rooted cultures and of ward structures. Attention for barriers and facilitators may help to steer the implementation process in the desired direction. Chapter 4 therefore also presents the most important facilitators and barriers to the implementation process of HIC, and discusses them in terms of culture, structure and practice. The findings indicate that implementation of HIC within institutions primarily focused on changes in culture and practice. Facilitators in these domains, such as good leadership, involvement of staff in setting implementation goals, celebration of successes, and training and reflection were perceived to be effective. Barriers included resistance to change, time pressure, and lack of knowledge. On the level of structure, barriers were more persistent. Implementation of HIC may not always be prioritized in budgets and organizational plans, while for HIC to be successful budget and resources need to be allocated.

In **chapter 5**, the lessons learned and perceived effects of a Community of Practice (CoP) of auditors are explored. To support the implementation of both the HIC model and the Forensic High and Intensive Care (FHIC) model, a care model similar to HIC aimed at forensic psychiatry, two Communities of Practice were formed. The CoPs consisted of care professionals, including mental health nurses, psychiatrists, and managers. A core aspect of the CoPs was that care professionals performed audits in all participating healthcare institutions. Data for this study were collected through focus groups with participants in the CoPs, focus groups with teams implementing HIC or FHIC, and observations by the researchers. The study showed that it is important to create an ambassador role for CoP participants, and to organize concrete activities to promote the exchange of knowledge. Also, it is important to ensure a multidisciplinary composition of the CoPs to cultivate exchange of expertise between disciplines, and to foster shared responsibility in the institutions to promote sustainability of implementation. Regarding perceived effects, the CoPs were regarded as providing support of HIC and FHIC implementation, forming the basis of a national movement, and fostering further development of the HIC and FHIC model. The audits were seen as an important vehicle to activate the CoP, and stimulated the implementation of HIC and FHIC.

PART 3: effects

In the third and final part, the effects of different levels of implementation of the HIC model on the quality of care and on the use of coercive measures are studied.

In **chapter 6**, the results of audits held in participating mental healthcare institutions in the Netherlands are presented to illustrate the developments in the degree of implementation of the HIC model over a period of five years (2014 to 2019). During these five years, audits took place in two rounds at acute closed admission wards in the Netherlands. In the audits, the HIC monitor was used. Results show that scores on the HIC monitor increased over time, especially in terms of vision, hospitality and facilities. However, a third of the participating wards scored lower on the HIC monitor in the second audit compared to the first audit. From the progress in the implementation of the HIC model we can conclude that the implementation of HIC has gained momentum. Securing implementation however, proves to be difficult. Complicating factors are the national shortage of staff and lack of supportive data on the use of coercive measures. Based on the first round of audits, chapter 6 also describes the effects of the implementation on reduction of coercion. This is further elaborated in chapter 8.

Chapter 7 presents and compares two measures of quality of care on HIC wards: the scores on the HIC monitor and a measure of the perceived quality of care by service users, the KWAZOP-questionnaire *(Kwaliteit van zorg op gesloten psychiatrische opname afdelingen)*. Both the HIC monitor and the KWAZOP provide insight into important aspects of quality of care and highlight a number of elements that can be improved. Chapter 7 also studies associations between the HIC monitor and the KWAZOP scores. The analysis shows that a better compliance with the HIC model is not associated with more satisfaction of patients concerning quality of care. Both instruments measure different aspects of quality of care, and can be used together to get a full picture of quality of care and to improve practice.

Chapter 8 investigates the association between compliance to the HIC model and use of coercive measures. Data on seclusion and forced medication was collected using the Argus rating scale. The association between HIC monitor scores and the use of seclusion and forced medication was analyzed, corrected for patient characteristics. Results showed that wards having a relatively high HIC monitor total score, indicating a high level of implementation of the model as compared to wards scoring lower on the monitor, had lower seclusion hours per admission hours. This implies that implementation of the HIC model contributes to the reduction of seclusion at acute closed psychiatric wards. Moreover, findings show that wards that scored high on the HIC monitor also showed low rates of forced medication, indicating that substitution of seclusion by forced medication did not occur.

This thesis ends with a general discussion **(chapter 9)**, in which the research questions are answered and a reflection on the findings is given from an care ethical perspective. This reflection focuses on two questions: 1. How can HIC be viewed from a care ethics perspective? 2. How can the process of development, implementation and research be interpreted from a care ethics perspective?

Five care ethical values (attentiveness, responsibility, competence, responsiveness, and solidarity) can be recognized in the core elements of the HIC model. Prevention of coercion requires attentiveness to the needs of patients, responsibility and competence in order to act adequately in a timely manner and cooperation between all parties involved. These requirements can be captured in three culture changes in the HIC model that embody a care ethical approach: 1) *from control to contact,* indicating a change in culture on HIC wards, replacing controlling ways of working by a focus on making contact with patients and significant others; 2) *from reactive to proactive,* implying a focus on a pro-active attitude and working methods to prevent the development of

crisis and aggression on the ward; and 3) *from (in)dependence to solidarity,* emphasizing the importance of collaboration between inpatient and outpatient care, and democratic involvement of patients and significant others in the care process.

Also in the different steps that were taken to develop, implement and study the HIC model, care ethical values can be recognized. The HIC model was "co-created" in a democratic fashion, and the research process entailed a long-term intensive collaboration and interaction between the researchers and the stakeholders in the institutions. The combination of qualitative and quantitative research methods fostered both in-depth research and implementation of HIC. The researchers had an active participatory role in providing information on national developments regarding HIC and in generating a CoP that facilitated further implementation and evaluation of the HIC model.

This chapter also reflects on methodological issues, and presents recommendations for further development and implementation of the HIC model and for future research. Recommendations for the HIC model first entail that the HIC model must be further developed to remain sensitive to current practice needs, and to include all stakeholders in the development process. Moreover, it is recommended that audits are continued for quality improvement and to stimulate reflection on practices. A further recommendation concerns the registration of coercive measures, indicating that Argus registration should become available for research and benchmarking again. Last, it is recommended that the HIC model, and the way it was developed, implemented and investigated can be used as a source of inspiration for other mental healthcare sectors. Moreover, investment in "Network psychiatry" is needed to support coordination of care, in which admission to a HIC should be seen as an ultimate step in the stepped-care process.

Regarding recommendations for research, the integration of qualitative and quantitative research methods in this study proved to be fruitful for implementation research. Future research should gain more insight into the perceived safety at the HIC, the motives of HIC professionals to work at an HIC ward, and complex situations on these wards that are currently still cause for the use of coercive measures. This can provide input for the further development of HIC.

In conclusion, the HIC model has brought about major changes in the organization of Dutch mental healthcare. HIC is in line with the needs in psychiatric practice, especially the need to reduce coercion. The close cooperation with stakeholders in practice has resulted

in an innovative, comprehensive and feasible approach. Fostering the quality of mental healthcare requires not just the implementation of new ways of working, but also the improvement of practice from an ethical perspective. The integration of strategies makes the HIC model highly relevant for good quality care in acute psychiatry.

SAMENVATTING

Dit proefschrift beschrijft de ontwikkeling, implementatie en effecten van het High en Intensive Care- model (HIC-model) op de kwaliteit van zorg en het gebruik van vrijheidsbeperkende maatregelen in de acute geestelijke gezondheidszorg in Nederland (GGZ). Het HIC-model is een nieuwe landelijke aanpak voor hoogwaardige intramurale zorg. In het HIC-model staat proactief werken centraal om het gebruik van vrijheidsbeperkende maatregelen te verminderen en de samenwerking tussen ambulante zorg en de kliniek te verbeteren.

In de algemene inleiding **(Hoofdstuk 1)** worden de ontwikkelingen in de GGZ om de klinische praktijk te verbeteren beschreven die hebben geleid tot de ontwikkeling van het HIC-model. Rond de eeuwwisseling nam in Nederland de aandacht voor het gebruik van vrijheidsbeperkende maatregelen toe, met in het bijzonder aandacht voor separatie. Ondanks dat er geen wetenschappelijk bewijs is voor therapeutisch effecten van separatie en verschillende studies de negatieve gevolgen van separatie voor patiënten en zorgprofessionals aantonen, was separatie toch een veel toegepaste vrijheidsbeperkende interventie. In 2001 werden kwaliteitscriteria ontwikkeld en geïmplementeerd in twaalf ggz-instellingen om de kwaliteit van de zorg rond separaties te verbeteren. Ter ondersteuning van het doel van de Nederlandse brancheorganisatie voor de geestelijke gezondheidszorg (GGZ Nederland) om separatie jaarlijks met tien procent te verminderen, verleende de Nederlandse overheid in 2006 financiering voor projecten bij instellingen. In 2007 namen in totaal 34 ggz-instellingen deel aan dit landelijke programma. In deze periode ontwikkelden zes ggz-instellingen een nieuwe registratiemethode voor vrijheidsbeperkende maatregelen, genaamd "Argus", waarmee betrouwbare gegevens over dwang konden worden verzameld en het gebruik van vrijheidsbeperkende maatregelen geëvalueerd kon worden. Om de algemene zorgstandaard op gesloten afdelingen voor acute psychiatrie te verbeteren startte een aantal instellingen in 2009 een project ter ontwikkeling van criteria voor High Care. Rond dezelfde periode nam GGZ Nederland het initiatief om veldnormen voor Intensive Care te ontwikkelen. Een gebrek aan aandacht voor het verminderen van dwang zorgde voor kritiek op deze veldnormen, hetgeen de noodzaak benadrukte om Intensive Care verder te ontwikkelen. Een gecombineerde aanpak was nodig.

De behoefte aan een gecombineerde aanpak nam verder toe in 2012 vanwege het beleid om het aantal klinische bedden met een derde te verminderen. Dit veroorzaakte een verhoogde druk op de resterende bedden en vergrootte de behoefte aan

betere standaarden voor intramurale zorg. Tegelijkertijd eindigden de projecten om dwang te reduceren zonder dat het beoogde resultaat was gerealiseerd. Instellingen verschilden onderling sterk in de toepassing van vrijheidsbeperkende maatregelen en in de keuze voor interventies die ingezet werden om dwang te reduceren. Een nieuwe landelijke standaard voor de kliniek was nodig waarin uitgangspunten vanuit herstelondersteunende zorg en zorgethische waarden werden meegenomen om kwalitatief goede zorg na te streven en dwang verder te verminderen. In 2012 kwamen experts van verschillende disciplines en achtergronden bijeen en werd consensus gezocht in de combinatie van best en evidence based practices en andere inzichten uit de dwangreductieprojecten. Deze expertmeetings, afgewisseld met platformbijeenkomsten waar veel professionals uit ggz-instellingen aanwezig waren, resulteerde in het High en Intensive Care (HIC)-model. In 2013 werd een boek gepresenteerd waarin het HIC-model werd beschreven, inclusief een modelgetrouwheidsschaal; de HIC-monitor.

Dit proefschrift beoogt het HIC-model te evalueren. De centrale onderzoeksvraag van het proefschrift is:
"Wat is de relevantie van HIC voor de geestelijke gezondheidszorg en in het bijzonder voor de kwaliteit van zorg en de vermindering van dwang?"

Dit proefschrift bestaat uit drie delen: ontwikkeling, implementatie en effecten. Het eerste deel (ontwikkeling) gaat in op de vraag hoe het HIC-model werd ontwikkeld en wat de belangrijkste elementen van HIC zijn (hoofdstuk 2). Bovendien komt de vraag aan de orde hoe implementatie kan worden gemeten (hoofdstuk 3). Het tweede deel (implementatie) richt zich op de vraag in hoeverre het HIC-model wordt geïmplementeerd door ggz-instellingen in Nederland en wat de bevorderende en belemmerende factoren zijn in dit implementatieproces (hoofdstuk 4 en 5). In het laatste deel (effecten) worden de effecten van de implementatie van het HIC-model op de kwaliteit van zorg en op het gebruik van vrijheidsbeperkende interventies onderzocht (hoofdstukken 6, 7 en 8).

DEEL 1: ontwikkeling

Het eerste deel begint in **Hoofdstuk 2** met een beschrijving van de ontwikkeling en inhoud van het HIC-model. Het HIC-model is het resultaat van een bottom-up proces met professionals, gebruikersorganisaties, management en vertegenwoordigers van patiënten en naasten. Een eerste voorstel voor het model werd gedaan op basis van literatuuronderzoek en gegevens uit interviews en focusgroepen bij 26 ggz-instellingen. Vervolgens werd het voorstel voor het model in drie tweedaagse expertmeetings met deelnemers van vijftien ggz-instellingen en in een aantal platformbijeenkosten

besproken en aangescherpt. Het HIC-model beoogt dwang te reduceren door de focus te leggen op contact en samenwerking tussen zorgprofessionals, patiënten en naasten. De vijf belangrijkste kernelementen van HIC zijn: (1) het voorkomen van separatie door middel van een stap-voor-stap benadering, ook wel stepped care-principe genoemd; (2) een proces van opname, behandeling en zorg in zes stappen; (3) het combineren van het medische model en herstelondersteunende zorg; (4) het combineren van professionele -en ervaringskennis; en (5) het creëren van een helende omgeving. Het HIC-model verschilt van de, in andere landen al reeds bestaande, psychiatrische intensive care units (PICU's) doordat het zich richt op samenwerking met ambulante zorg, contact tussen zorgprofessionals, patiënten en naasten en het voorkomen van dwang.

In **Hoofdstuk 3** wordt aan de hand van verschillende methoden de HIC-monitor gevalideerd. De HIC-monitor is ontwikkeld om inzicht te geven in de mate van implementatie van het HIC-model voor onderzoeksdoeleinden en voor ggz-instellingen als ondersteuning bij de implementatie van het model. Om de HIC-monitor van waarde te laten zijn, was validatie van het instrument nodig. Voor de beoordeling van de psychometrische eigenschappen van de HIC-monitor werden 37 audits gehouden op acute gesloten afdelingen bij 20 ggz-instellingen in Nederland. Uit de bevindingen blijkt dat de HIC-monitor een redelijk goede interbeoordelaarsbetrouwbaarheid heeft en voldoende inhouds -en constructvaliditeit. Uit het onderzoek blijkt tevens dat de HIC-monitor een goed instrument is om implementatie van het HIC-model op gesloten afdelingen voor acute psychiatrie te beoordelen voor onderzoeksdoeleinden. Bovendien kan het worden gebruikt voor kwaliteitsdoeleinden bij instellingen om verbeterprocessen omtrent de implementatie van het HIC model te begeleiden.

DEEL 2: implementatie

In het tweede deel van dit proefschrift wordt het implementatieproces van het HIC-model bestudeerd met behulp van kwalitatieve onderzoeksmethoden.

In **Hoofdstuk 4** worden de ervaren motiverende factoren voor verandering van professionals en bevorderende en belemmerende factoren voor de implementatie in kaart gebracht. Voor dit onderzoek zijn 41 semi-gestructureerde interviews gehouden met verschillende belanghebbenden op 29 gesloten afdelingen voor acute psychiatrie van 21 ggz-instellingen in Nederland. Uit de bevindingen komen drie belangrijke drijfveren voor verandering naar voren: het HIC-model biedt een combinatie van bestaande interventies in één totaalaanpak om dwang te verminderen, HIC richt zich op contact en samenwerking en HIC sluit aan op herstelondersteunende zorg.

Hoewel deze drijfveren voor verandering motiveren om HIC te implementeren, vereist het daadwerkelijk aannemen van nieuwe werkroutines ook aanpassingen in de cultuur en structuur van afdelingen. Inzicht in belemmerende en bevorderende factoren kan helpen om het implementatieproces te bevorderen. Hoofdstuk 4 presenteert daarom de belangrijkste belemmerende en bevorderende factoren voor het implementatieproces van het HIC-model, en bespreekt deze in termen van cultuur, structuur en werkwijzen. De bevindingen wijzen erop dat implementatie van HIC binnen instellingen voornamelijk gericht was op aanpassingen in cultuur en werkwijzen. Bevorderende factoren, waaronder goed leiderschap, het betrekken van zorgprofessionals bij het stellen van implementatiedoelen, het vieren van successen en training en reflectie, werden als effectief ervaren. Tevens werden belemmerende factoren zoals weerstand tegen verandering, tijdsdruk en gebrek aan kennis geïdentificeerd. Op het niveau van structuur zijn de belemmeringen hardnekkig. Hiervoor is het beschikbaar stellen van budget en middelen noodzakelijk. Om HIC succesvol te kunnen implementeren is ondersteuning op dit vlak van belang.

Hoofdstuk 5 onderzoekt de meerwaarde en de effecten van het implementeren van innovaties in de zorg via een lerend netwerk van zorgprofessionals, waaronder verpleegkundigen, psychiaters en managers. Deze aanpak is kenmerkend voor de implementatie van het HIC-model en van het Forensisch High en Intensive Care-model (FHIC-model), een met HIC vergelijkbaar model gericht op de forensische psychiatrie. Een kernactiviteit van beide lerende netwerken was dat zorgprofessionals audits uitvoerden bij alle deelnemende instellingen. Data voor deze studie werden verzameld door middel van focusgroepen met deelnemers van de lerende netwerken, focusgroepen met teams die bezig waren met de implementatie van het HIC- of FHIC-model en observaties door de onderzoekers. Uit het onderzoek komt naar voren dat het van belang is om een ambassadeursrol voor deelnemers van het netwerk te creëren en om concrete activiteiten te organiseren om op deze wijze een actieve uitwisseling van kennis te bevorderen. Daarnaast is het belangrijk om te zorgen voor een multidisciplinaire samenstelling van het lerend netwerk, zodat de expertise van verschillende disciplines wordt samengebracht, en om gedeelde verantwoordelijkheid binnen de instelling en daarmee duurzaamheid van implementatie te bevorderen. Als effect van de lerende netwerken werd steun voor de implementatie van het HIC- en FHIC-model genoemd. Daarnaast zorgden de lerende netwerken voor een landelijke verspreiding van het HIC -en FHIC-model en werd de verdere doorontwikkeling ervan gefaciliteerd. De audits werden gezien als een belangrijk middel om het lerend netwerk te activeren en de implementatie van HIC –en FHIC te stimuleren.

DEEL3: effecten

In het derde en laatste deel worden de effecten van verschillende implementatieniveaus van het HIC-model op de kwaliteit van zorg en op het gebruik van vrijheidsbeperkende maatregelen bestudeerd.

In **Hoofdstuk 6** worden de ontwikkeling van de implementatie en de effecten op reductie van dwang beschreven. Op basis van de resultaten van twee rondes van audits bij de deelnemende ggz-instellingen in Nederland wordt de ontwikkeling in de implementatie van het HIC-model gedurende een periode van vijf jaar (2014 tot en met 2018) beschreven. Bij de audits is gebruik gemaakt van de HIC-monitor. Resultaten laten zien dat scores op de HIC-monitor in de loop van de tijd zijn gestegen, vooral op het gebied van visie, gastvrijheid en faciliteiten. Een derde van de afdelingen scoorde echter lager in de tweede audit ten opzichte van de eerste audit. Uit de stijging van de scores op de HIC–monitor kunnen we opmaken dat de implementatie van het HIC-model voorspoedig verloopt. Het borgen van de implementatie blijkt echter een uitdaging. Hierbij spelen nationale personeelstekorten en afwezigheid van cijfers over het gebruik van vrijheidsbeperkende maatregelen parten. Op basis van de eerste ronde van audits worden de effecten van implementatie van het HIC-model op reductie van dwang beschreven. Dit wordt verder uitgewerkt in hoofdstuk 8.

Hoofdstuk 7 presenteert en vergelijkt twee maatstaven voor de kwaliteit van zorg op HIC afdelingen: de scores op de HIC-monitor en een meting van de ervaren kwaliteit van zorg door patiënten aan de hand van de "Kwaliteit van zorg op gesloten psychiatrische opname afdelingen-vragenlijst" (de KWAZOP). Zowel de HIC monitor als de KWAZOP bieden inzicht in de kwaliteit van zorg. De beoordeling van de kwaliteit van zorg met behulp van de HIC-monitor en de KWAZOP brengen verschillende elementen aan het licht die verbeterd kunnen worden. Hoofdstuk 7 bestudeert eveneens de verbanden tussen de scores van de HIC-monitor en die van de KWAZOP. Deze analyse toont aan dat er geen verband is tussen kwaliteitsverbetering via een verdere implementatie van het HIC-model en toename van kwaliteit van zorg die tot uitdrukking komt in een grotere tevredenheid van patiënten. Om deze reden is het belangrijk om meerdere instrumenten te gebruiken om inzichten in kwaliteit van zorg te krijgen en verbetering van kwaliteit van zorg vanuit meerdere perspectieven te bevorderen.

Hoofdstuk 8 gaat in op het verband tussen de implementatie van het HIC-model en het gebruik van vrijheidsbeperkende maatregelen. Data over separatie en gedwongen medicatie werden verzameld met behulp van de Argus-registraties. Bij de analyse van

het verband tussen HIC-monitor scores en het gebruik van separaties en gedwongen medicatie werd gecorrigeerd voor de invloed van patiëntkenmerken. Afdelingen met een relatief hoge HIC-monitor totaalscore, wat duidt op een hoog implementatieniveau van het model, hadden een lager aantal uren separatie per uren opname in vergelijking met afdelingen die lager scoorden op de HIC-monitor. Dit duidt erop dat implementatie van het HIC-model bijdraagt aan het verminderen van separatie op gesloten afdelingen voor acute psychiatrie. Bovendien laten de bevindingen zien dat afdelingen die hoog scoorden op de HIC-monitor ook minder gebruik maakten van gedwongen medicatie, wat erop wijst dat substitutie van separatie door gedwongen medicatie niet heeft plaatsgevonden.

Dit proefschrift sluit af met een algemene discussie **(Hoofdstuk 9)**, waarin de onderzoeksvragen worden beantwoord en een reflectie op de bevindingen wordt gegeven vanuit een zorgethisch perspectief. Deze reflectie richt zich op twee vragen: 1. Hoe kan HIC worden bekeken vanuit een zorgethisch perspectief? 2. Hoe kan het proces van ontwikkeling, implementatie en onderzoek worden geïnterpreteerd vanuit een zorgethisch perspectief?

De vijf zorgethische waarden (aandacht, verantwoordelijkheid, competentie, responsiviteit en solidariteit) zijn terug te vinden in de kernelementen van het HIC-model. Het voorkomen van dwang vereist aandacht voor de behoeften van patiënten, verantwoordelijkheid en competentie om adequaat en tijdig te kunnen handelen en samenwerking tussen alle betrokken partijen. Dit stelt eisen aan de zorg, die kunnen worden samengevat in drie cultuurveranderingen die zichtbaar zijn in het HIC-model en die een zorgethische benadering belichamen: 1) *van controle naar contact,* wat aangeeft dat op HIC-afdelingen een beheersmatige manieren van werken wordt vervangen door interventies gericht op het maken van contact met patiënten en naasten; 2) *van reactief naar proactief,* wat betekent dat het HIC-model zich richt op een proactieve houding en werkwijzen om de ontwikkeling van crisis en agressie op de afdeling te voorkomen; en 3) *van (on)afhankelijkheid naar solidariteit,* met de nadruk op het belang van samenwerking tussen intramurale en ambulante zorg en het betrekken van patiënten en naasten bij het zorgproces.

Ook in de verschillende stappen die zijn genomen om het HIC-model te ontwikkelen, implementeren en bestuderen zijn zorgethische waarden te herkennen. De co-creatie tijdens de ontwikkeling van het HIC-model en het onderzoek behelsde een langdurige intensieve samenwerking en interactie tussen de onderzoekers en de belanghebbenden

bij de instellingen. De combinatie van kwalitatieve en kwantitatieve onderzoeksmethoden bevorderde zowel het onderzoek als de implementatie van HIC. De onderzoekers speelden een actieve participerende rol bij het verstrekken van informatie over de nationale ontwikkelingen rond HIC en bij de vorming van een lerend netwerk dat de verdere implementatie en evaluatie van het HIC-model mogelijk maakte.

Dit hoofdstuk reflecteert ook op methodologische kwesties en doet aanbevelingen voor de verdere ontwikkeling en implementatie van het HIC-model en voor toekomstig onderzoek. Ten eerste houden aanbevelingen voor het HIC-model en de implementatie in dat het HIC-model verder dient te worden doorontwikkeld. Hierbij is het belangrijk om alle belanghebbenden te betrekken. Bovendien wordt aanbevolen om de audits voort te zetten om de reflectie op de praktijk te stimuleren en zodoende de kwaliteit van zorg verder te verbeteren. Een andere aanbeveling betreft de registratie van vrijheidsbeperkende maatregelen. Het is noodzakelijk dat de Argus-registratie weer beschikbaar komt voor onderzoek en benchmarking. Verdere aanbevelingen zijn dat het HIC-model en de gezamenlijke wijze waarop het model is ontwikkeld, geïmplementeerd en onderzocht als inspiratiebron kunnen dienen voor andere (ggz-)sectoren en voor de investering in 'Netwerkpsychiatrie' ter ondersteuning van de coördinatie van de zorg, waarbij opname op een HIC als ultieme stap in het stepped care-proces kan worden gezien.

Wat betreft aanbevelingen voor onderzoek bleek de geïntegreerde combinatie van kwalitatieve en kwantitatieve onderzoeksmethoden in deze studie vruchtbaar te zijn voor het uitvoeren van implementatieonderzoek. Toekomstig onderzoek moet meer inzicht geven in de ervaren veiligheid op de HIC, in de motieven van HIC-professionals om op een HIC-afdeling te werken, en in complexe situaties op dit soort afdelingen die nu nog aanleiding geven tot het gebruik van vrijheidsbeperkende maatregelen. Dit kan mogelijk input leveren voor de verdere doorontwikkeling van HIC.

Geconcludeerd wordt dat het HIC-model voor grote veranderingen in de organisatie van de Nederlandse GGZ heeft gezorgd. HIC sluit aan bij de behoeften en ontwikkelingen in de praktijk, in het bijzonder de noodzaak om dwang te reduceren. De nauwe samenwerking met belanghebbenden in de praktijk heeft geresulteerd in een innovatieve, integrale en haalbare aanpak. Het bevorderen van de kwaliteit van de geestelijke gezondheidszorg vereist niet alleen de implementatie van nieuwe manieren van werken, maar ook het verbeteren van de praktijk vanuit ethisch perspectief. De integratie van diverse strategieën maakt het HIC-model zeer relevant voor kwalitatief goede zorg in de acute psychiatrie.

HIC Monitor

Team structure

Criterion	Score 1	2	3	4	5
1a. Caseload: day shift 7 nurses per 20 beds	3 nurses or less per 20 beds	4 nurses per 20 beds	5 nurses per 20 beds	6 nurses per 20 beds	7 nurses per 20 beds
1a. Caseload: evening shift 7 nurses per 20 beds	3 nurses or less per 20 beds	4 nurses per 20 beds	5 nurses per 20 beds	6 nurses per 20 beds	7 nurses per 20 beds
1a. Caseload: night shift 5 nurses per 20 beds	1 nurs per 20 beds	2 nurses per 20 beds	3 nurses per 20 beds	4 nurses per 20 beds	5 nurses per 20 beds
2. Stepped care 1-to-1 care by nurses is possible at any time of the day / week (24 hours)	no stepped 1-to-1 care	stepped-care is possible at daytime on weekdays	stepped-care is possible at daytime on weekdays and on the weekend	stepped-care is possible at day and nighttime on weekdays and at daytime on the weekend	stepped care is possible at any time of the day / week (24 hours a day)
3. Nurses/ Social workers At least 70% of nursing staff are graduate nurses or graduate social workers	Less than 40% of nursing staff are graduate nurses or graduate social workers	40%-49% of nursing staff are graduate nurses or graduate social workers	0%-59% of nursing staff are graduate nurses or graduate social workers	60%-69% of nursing staff are graduate nurses or graduate social workers	More than 70% of nursing staff are graduate nurses or graduate social workers
4. Psychiatrist 2 FTE (full-time equivalent) psychiatrist position is available for direct patient care on a ward with 20 beds. 1 FTE resident hours counts as half a psychiatrist position. Of the total 2 FTE psychiatrist position, at least 1.5 FTE should be filled by the psychiatrist	1 FTE psychiatrist position is available	1.25 FTE psychiatrist position is available. At least 1 FTE of these hours are filled by the psychiatrist	There is 1.5 FTE psychiatrist position is available. At least 1 FTE of these hours are filled by the psychiatrist	There is 1.75 FTE psychiatrist position is available. At least 1.5 FTE of these hours are filled by the psychiatrist	There is 2 FTE or more psychiatrist position is available. At least 1.5 FTE of these hours are filled by the psychiatrist
5. Psychologist 1 FTE health care or clinical psychologist on the ward per 20 beds	0-0.24 FTE health care or clinical psychologist is available	0.25-0.49 FTE health care or clinical psychologist is available	0.5-0.74 FTE health care or clinical psychologist is available	0.75-0.99 FTE health care or clinical psychologist is available	1 FTE or more health care or clinical psychologist is available

6. Nurse Practitioner (BIG-registered) 1 FTE registered nurse practitioner on the ward per 20 beds	0.24 or less FTE registered nurse practitioner is available	0.25-0.49 FTE registered nurse practitioner is available	0.5-0.74 FTE registered nurse practitioner is available	0.75-0.99 FTE registered nurse practitioner is available	1 FTE registered nurse practitioner is available
7. Addiction experts 0.6 FTE addiction expert is available per 20 beds. The addiction expert has followed at least 1 year of specific training or has experience in addiction care. This addiction expert must also receive annual additional training	0.2 or less FTE addiction expert is available	0.3 FTE addiction expert is available	0.4 FTE addiction experts is available	0.5 FTE addiction experts is available	0.6 FTE addiction experts is available per 20 beds
8. Peer (or family) experts 2 FTE peer (or family) experts per 20 beds	0 - 0.4 FTE peer (or family) expert is available	0.5 - 0.9 FTE peer (or family) expert is available	1 -1.4 FTE peer (or family) expert is available	1.5 - 1.9 FTE peer (or family) expert is available	2 FTE or more peer (or family) expert is available
9. Activity supervisors 1.4 FTE activity supervisor is available per 20 beds	0 - 0.4 FTE activity supervisor is available per 20 beds	0.5 – 0.7 FTE activity supervisor is available	0.8 - 1 FTE activity supervisor is available	1.1 – 1.3 FTE activity supervisor is available	1.4 FTE activity supervisor is available
10. (Psychomotor) physiotherapist At least 0.6 FTE (psychomotor) therapist per 20 beds	no (psychomotor) therapist is available	0.1 – 0.2 FTE (psychomotor) therapist is available per 20 beds	0.3 – 0.4 FTE (psychomotor) therapist is available per 20 beds	0.5 FTE (psychomotor) therapist is available per 20 beds	At least 0.6 FTE (psychomotor) therapist is available per 20 beds
11. Supervisor A supervisor, meeting the following criteria: ▶ He/she delivers 8 out of 36 hours direct care patients care as a team member ▶ He/she actively monitors the model fidelity of the ward and monitors outcomes from, for example, Argus, KWAZOP, safety reports and production figures ▶ He/she must be present at least 3x a week at the digital whiteboard meetings and at the treatment plan meetings	There is / no supervisor	There is a supervisor, but he/she does not meet the criteria	The supervisor meets one criterion	The supervisor meets two of the criteria	The supervisor meets all criteria

11. Meewerkend voorman Voldoet aan de volgende criteria: ▶ Hij/zij levert 8 van de 36 uur directe hulpverlening aan patiënten als teamlid ▶ Hij/zij bewaakt actief de modelgetrouwheid van de afdeling en bewaakt uitkomsten uit bijvoorbeeld Argus, KWAZOP, veiligheidsmeldingen en productiecijfers ▶ Hij/zij moet minimaaper week aanwezig zijn bij het digibord-overleg en bij behandelplanbesprekingen	There is / no supervisor	There is a supervisor, but he/she does not meet the criteria	The supervisor meets one criterion	The supervisor meets two of the criteria	The supervisor meets all criteria
12. Other disciplines The following disciplines are available to the patient upon indication: ▶ Social work ▶ Pastoral caregiver ▶ Legal assistance / patient advocate ▶ Somatic specialist ▶ Addiction physician	One or fewer disciplines are available to all patients	Two disciplines are available to all patients	Three disciplines are available to all patients	Four disciplines are available to all patients	All disciplines are available to all patients
13. Work experience Professionals have at least two years of experience with patients with Severe Mental Illness (SMI) (acute clinical psychiatry, crisis services, FACT)	0%-19% of employees have at least two years of experience with SMI patients	20%-39% of employees have at least two years of experience with SMI patients	40%-59% of employees have at least two years of experience with SMI patients	60%-79% of employees have at least two years of experience with SMI patients	80%-100% of employees have at least two years of experience with ESMI patients
14. Staff vacancies No unfilled vacancies (for all disciplines) for the past 12 months	More than 50 % of vacancies have been unfilled	36 – 50 % of vacancies have been unfilled	21 – 35 % of vacancies have been unfilled	6 – 20 % of vacancies have been unfilled	Less then 5 % of vacancies have been unfilled

Team processes

Criterion	Score 1	2	3	4	5
15. Vision The team has a clearly described recovery-oriented vision based on the HIC model, which is communicated to external partners	The team has no vision as described		There is a vision, but it is not translated into practice		The team has vision based on the HIC model. Team members work according to this vision
16. Hospitality The "first five minutes method" is used as a standard. This entails: ▶ The checklist for the first five minutes of admission is followed (good preparation for admission, good reception, introduction of rules) ▶ At the start of shifts, patient preferences are considered as much as possible when allocating patients to nurses ▶ At the start of the shift, team members take the initiative to contact patients ▶ The team is able to deviate from existing protocols if the situation requires it	The team approach does not meet any criteria	The team approach meets one criterium	The team approach does meets two criterium	The team approach does meets three criterium	The team approach does meets all criteria
17. Presence ▶ During the day, at least two nurses/social workers are continuously present and approachable in the group ▶ Offices of practitioners are located on the ward	The team approach does not meet any criteria		The team approach meets one criterium		The team approach meets all criteria

18. Treatment/care style Treatment and care are based on evidence and experience-based theoretical models. The team is aware of the patient's personal recovery process and applies the characteristics of recovery-oriented care. The team is constantly focused on healthy parts and the possibilities and capacities of the patient. The team uses the admission as part of a more comprehensive process in the recovery process	Team members are not familiar with theoretical models and recovery-oriented care	The treatment/care style depends on each individual team member. There is no joint vision based on theoretical models and recovery-oriented care	The team is familiar with theoretical models and recovery-oriented care, but this is not applied consistently in treatment and care	The team is familiar with theoretical models and recovery-oriented care, and team members apply these consistently in treatment and care	Treatment and care style is evidently based on theoretical models and recovery-oriented care. The team discusses treatment issues and has the capacity for self-reflection
19a. Care coordination meeting (CCM): At admission Upon admission, a CCM meeting takes place within 24 hours in which the reason, purpose and time schedule of the admission at the HIC are determined. At least the patient, the practitioner of the clinic, relatives and the outpatient practitioner are present during the CCM	There is no CCM within 24 hours of admission	The CCM takes place within 24 hours of admission for less than 25% of patients	The CCM takes place within 24 hours of admission for less than 25 – 49 % of patients	The CCM takes place within 24 hours of admission for less than 50 – 74 % of patients	The CCM takes place within 24 hours of admission for less than 75 – 100 % of patients
19b. Care coordination meeting (CCM): every 3 weeks A CCM meeting takes place every 3 weeks in which treatment goals are evaluated	None of the patients have a CCM every 3 weeks	A CCM is performed every 3 weeks for less than 25% of patients	A CCM is performed every 3 weeks for 25 – 49 % of patients	A CCM is performed every 3 weeks for 50 – 74 % of patients	A CCM is performed every 3 weeks in less than 75 – 100 % of patients
19c. Care coordination meeting (CCM): At discharge A CCM meeting takes place at discharge	None of the patients have a CCM at discharge	A CCM is performed at discharge for less than 25% of patients	A CCM is performed at discharge for 25 – 49 % of patients	A CCM is performed at discharge for 50 - 74 % of patients	A CCM is performed at discharge for 75 - 100 % of patients

20. Treatment plan A treatment plan is available within 24 hours of admission. This treatment plan can be accessed by the patient at all times	None of the patients has a treatment plan within 24 hours of admission	Less than 25% of patients have access to the treatment plan within 24 hours of admission	25 – 49 % of patients have access to the treatment plan within 24 hours of admission	50%-74% of patients have access to the treatment plan within 24 hours of admission	75%-100% of patients have access to the treatment plan within 24 hours of admission
21. Digital whiteboard (Digiboard) The digiboard meets the following criteria: ▶ There is an electronic digiboard present ▶ The digiboard is functional in a meeting area, it contains relevant data and is linked to the electronic patient files ▶ The digiboard is used according to a fixed procedure ▶ The team processes are noted down on the digiboard ▶ In principle all team members working that day are present during the daily digiboard meeting ▶ The digiboard is updated daily	No use is made of a digiboard	The digiboard meets one or two criteria	The digiboard meets three or four criteria	The digiboard meets five criteria	The digiboard meets all criteria
22. Duration of admission The stay at the HIC has a maximum duration of 3 weeks and can be extended 2x if necessary after evaluation by the treatment team	The standards for length of stay and extension are not adhered to for any of the patients	The standards for length of stay and extension are adhered to for less than 25% of patients	The standards for length of stay and extension are adhered to for less than 25 – 49 % of patients	The standards for length of stay and extension are adhered to for less than 50 – 74 % of patients	The standards for length of stay and extension are adhered to for less than 75 – 100 % of patients

	None of the criteria are met	One of the criteria is met	All criteria are met
23a. Care process in the ICU The stay in the ICU is based on the following criteria: ▶ The stay in the ICU has a maximum duration of 3 days, with the possibility of 2x extension after consultation with an internal consultation team ▶ The psychiatrist has face-to-face contact with the patient at least once a day (7 days a week)	None of the criteria are met	One of the criteria is met	All criteria are met
23b. Care processes in HSR The stay in the HSR meets the following criteria: ▶ The stay in the HSR has a maximum duration of 1 day. To extend this, consultation of an internal consultation team is required ▶ The psychiatrist has face-to-face contact at least twice a day (7 days a week)	None of the criteria are met	One of the criteria is met	All criteria are met

Diagnosis, treatment, and treatment interventions

Criterion	Score 1	2	3	4	5
24. Guideliness Work is demonstrably based on the coercion reduction guideline and on the suicide prevention guideline	The team does not work according to these guidelines		The team demonstrably works with at least one of the guidelines		The team demonstrably works with both guidelines
25. First diagnosis The first diagnosis (psychiatric picture and crisis) must be completed within one hour after admission, after consultation with the referring party and family members (triad)	None of the conversations take place in the triad within one hour of admission	Less than 25% of all conversations take place in the triad within one hour of admission	25 – 49 % of all conversations take place in the triad within one hour of admission	50 – 74 % of all conversations take place in the triad within one hour of admission	75 – 100 % of all conversations take place in the triad within one hour of admission
26a. Further diagnosis Within 24 hours of admission, a heteroanamnesis is performed by the practitioner or nurse practitioner	For none of the patients a heteroanamnesis is performed within 24 hours of admission	For less than 25% of patients a heteroamnesis is performed within 24 hours of admission	For 25 – 49 % of patients a heteroamnesis is performed within 24 hours of admission	For 50 – 74 % of patients a heteroamnesis is performed within 24 hours of admission	For 75 – 100 % of patients a heteroamnesis is performed within 24 hours of admission
26b. Further diagnosis A general somatic examination is performed within 24 hours of admission (both lab screening and physical examination)	No overall somatic examination is performed within 24 hours of admission for any of the patients	A general somatic examination is performed within 24 hours of admission for less than 25 % of patients	A general somatic examination is performed within 24 hours of admission for 25 – 49 % of patients	A general somatic examination is performed within 24 hours of admission for 50 – 74 % of patients	A general somatic examination is performed within 24 hours of admission in less than 75 – 100 % of patients
27. Risk assessment Risk assessment instruments are used on a daily basis (eg BVC, the Kennedy Axis V, SDAS)	No tools are used for risk assessment	1 instrument is used, but not on a daily basis	1 instrument is used on a daily basis	Several instruments are used, but not on a daily basis	Several instruments are used on a daily basis

28. Conflict control and personal safety Best practices regarding conflict management and personal safety are used, such as negotiation techniques, de-escalation techniques and holding. There are regular trainings and an annual refresher course for the whole team	No best practices methodologies are used		The best practices are used, but no complete further training takes place		The best practices are used. A training for the whole team takes place yearly
29a. Medication policy The following criteria are met: ▶ There is a protocoled medication policy based on the most up-to-date insights / guidelines ▶ The choice for medication is made in consultation with the patient ▶ There is continuous attention (monitoring) for the effects and side effects of medication ▶ Structural explanation is given about the effects and side effects of medication	The medication policy does not meet any of the criteria	The medication policy meets one of the criteria	The medication policy meets two of the criteria	The medication policy meets three of the criteria	The medication policy meets all criteria
29b. Early and acute medication A protocol-based policy is followed on the administration of early and acute medication based on the most up-to-date insights/ guidelines. The use of early and acute medication is discussed with the patient	No protocol-based policy is followed in the administration of early and acute medication		The administration of early and acute medication takes place according to a protocol-based policy. However, evaluation with the patient does not always take place		The administration of early and acute medication takes place according to a protocol-based policy. The administration of early and acute medication is always discussed with the patient

	Insufficient attention	Addiction care meets one of the criteria	Addiction care meets two of the criteria	Addiction care meets three of the criteria	Addiction care meets all criteria
30. Addiction care Addiction treatment on a HIC consists of: ▶ Addiction treatment is included in the treatment plan (diagnosis, interventions, goals) ▶ Addiction treatment is integrated. There is combined attention for (the interactions between) psychiatric and addiction problems in accordance with "Integrated Dual Disorder Treatment" (IDDT) ▶ Multidisciplinary guidelines are followed (for example, MDR opiate addiction, MDR alcohol addiction) ▶ Addiction problems are mapped by means of screening/assessment (for example by means of MATE, Subjective withdrawal scale, Objective withdrawal scale, Clinical withdrawal scale)	Insufficient attention is paid to addiction treatment. None of the criteria are met	Addiction care meets one of the criteria	Addiction care meets two of the criteria	Addiction care meets three of the criteria	Addiction care meets all criteria
31. Structural information Information about rights, obligations, legislation and clinical symptoms is provided at the HIC in a structural manner	There is no structural information about these components		Structural information is provided on a number of components		Structural information is provided on all components
32. Daily activities Activities are available to clients at the all times	There is no program	During weekdays there is a program for parts of the day	During weekdays is a daytime program	During the week there is a daytime program, and an evening program	During the week, as well as in the weekend, there is a daytime program, and an evening program

Diagnosis, treatment, and treatment interventions

Criterion	Score 1	2	3	4	5
33. Family interventions ▶ Significant others are received in hospitable manner ▶ Significant others are actively involved in the care process ▶ Education and support for significant others is available ▶ Rooming-in on the ward is possible for significant others	Little or no attention is paid to the involvement of significant others	One criterion is met	Two criteria are met	Three criteria are met	All criteria are met

Organization of care

Criterion	Score 1	2	3	4	5
34. Admission and discharge criteria There are clear inclusion and exclusion criteria for both admission and discharge on the HIC and placement in the ICU	There are no inclusion and exclusion criteria		There are inclusion and exclusion criteria, but these are not applied structurally		There are clear criteria that are applied structurally
35. Waiting list There is no waiting list and there is always an empty bed available on the ward	There is a waiting list (longer than 3 weeks)	There is a waiting list of a maximum of 3 weeks	There is a waiting list of a maximum of 2 weeks	There is a waiting list of a maximum of 1 week	There is no waiting list
36. Transition The transition from the HIC back to outpatient care meets the following criteria: ▶ The first appointment with an outpatient practitioner must be realized within 1 week after discharge ▶ A first meeting with an outpatient practitioner takes place during the stay on the HIC ▶ A report is available within two weeks after discharge ▶ During the entire stay, preparational work is done to facilitate discharge ▶ All patients have a crisis prevention plan upon discharge	No criteria or one of the criteria are met	Two of the criteria are met	Three of the criteria are met	Four of the criteria are met	All criteria are met

Monitoring

Criterion	Score 1	2	3	4	5
37. Routine Outcome Monitoring (ROM). A ROM is performed for all admitted patients upon arrival (within 24 hours), at discharge and at least once every three weeks	ROM is collected for <20% of patients	ROM is collected for 20 – 39 % of patients	ROM is collected for 40 – 59 % of patients	ROM is collected for 60 – 79 % of patients	ROM is collected for at least 80% of patients
38. Use of ROM results The multidisciplinary team uses the outcomes of the ROM (outpatient and inpatient ROM) and translates this into both individual treatment policy and team policy to improve care	The multidisciplinary team has no ROM	The multidisciplinary team has a ROM without feedback to team members	The multidisciplinary team uses the ROM and translates this into the individual treatment policy or into the team policy	The multidisciplinary team uses the ROM and translates this into both the individual treatment policy and the team policy	The multidisciplinary team uses the ROM structurally when evaluating the team's performance, which leads to adjustments at team level and uses the ROM as a standard part of every CCM
39. HIC improvement cycle The project leader/team leader/manager monitors the ward's process and use the data to improve the program. The monitoring of this process takes place according to a standard approach based on performance indicators. The PDCA cycle is used for improvement and has a cycle of four times a year	The process is not monitored	The process is monitored informally at least annually	During the process, the data is collected and fed back to the team, but this does not lead to adjustment	During the process, the data is collected and fed back to the team. Data is used to improve the program	Standardized and comprehensive monitoring is done at least every 4 months and is used to improve the program. The PDCA cycle is followed in the process

Professionalization

Criterion	Score 1	2	3	4	5
40. Reflection All team members participate in intervision or (group) supervision (such as moral case deliberation) at least 6x2 hours per year	0%-19% of the team members take part in intervision or (group) supervision at least 6x2 hours per year	20%-39% of the team members take part in intervision or (group) supervision at least 6x2 hours per year	40%-59% of the team members take part in intervision or (group) supervision at least 6x2 hours per year	60%-79% of the team members take part in intervision or (group) supervision at least 6x2 hours per year	80%-100% of the team members take part in intervision or (group) supervision at least 6x2 hours per year
41. Training All team members receive additional annual training (at least 4 half-days of at least 3 hours) regarding the following components: ▶ Legislation ▶ Recovery – oriented care ▶ Conversation techniques (eg triad conversation) ▶ Physical and verbal de-escalating techniques / early risk assessment ▶ Family interventions ▶ Safety ▶ Working methodically ▶ Reduction of coercion ▶ Psychopathology ▶ Somatic aspects (psychotropic drugs) ▶ Suicide prevention ▶ Observation techniques	The multidisciplinary team does not receive annual additional training in any of the areas mentioned	The multidisciplinary team receives additional annual training in 1, 2 or 3 of the components	The multidisciplinary team receives additional annual training in 4, 5, 6, or 7 of the components	The multidisciplinary team receives additional annual training in 8, 9, 10 or 11 of the components	The multidisciplinary team receives additional annual training in all components

42. Knowledge of Intensive Home Treatment (IHT) / outpatient treatment Team members are aware of the working methods of outpatient treatment teams and tailor their approach to these working methods	There is little knowledge of outpatient working methods and the team does not demonstrably establish a relationship with outpatient treatment processes		Knowledge about outpatient treatment in the team depends on the individual employee. The relationship to the outpatient treatment process is also varied		The team is fully aware of the working method of the outpatient team. The treatment is tailored to the outpatient treatment process
43. Team spirit Team spirit meets the following criteria: ▶ Positive team atmosphere (excellent, pleasant, warm) ▶ Cohesion (mutual support and involvement) ▶ Shared vision (agreement on methods and objectives) ▶ Innovation (team is enthusiastic, motivated and decisive)	None of the points scored positively.	The team scores positively on 1 point	The team scores positively on 2 points	The team scores positively on 3 points	The team scores positively on all points.

Legislation

Criterion	Score 1	2	3	4	5
44. Law on Compulsory Mental Healthcare (Wvggz) The team has a clear policy with regard to the implementation of the law and implements it unambiguously and following the PDCA cycle	The team does not have a policy regarding the law on compulsory mental healthcare	The team does have a policy regarding the law on compulsory mental healthcare, but it is not used	The team does have a policy regarding the law on compulsory mental healthcare, but it is not used unambiguously	The team does have a policy regarding the law on compulsory mental healthcare, and uses it well.	The team does have a policy regarding the law on compulsory mental healthcare, and uses it well. The team has recent knowledge. The procedure is regularly evaluated and adjusted

Healing environment

Criterion	Score 1	2	3	4	5
45. Healing environment (HE) An instrument (eg OAZIS) is used to test and improve the degree of HE	Little or no attention is paid to the living environment	The team is familiar with the principles of HE. This is not yet visible in practice	The environment is adequate, but there is no specific policy aimed at HE	Healing environment is a structural point of attention, but no testing takes place	Healing environment is a structural point of attention and the team is regularly tested on this
46a. HC: private room which can be locked by patients The HC has its private rooms with shower and toilet which can be locked by patients	No				Yes
46b. HC: comfort room The HC has a comfort room	No				Yes
46c. HC: variety of meeting spaces There is variety of meeting spaces at the HC	No				Yes
46d. HC: outside space The HC has sufficient outside space	No				Yes
46e. HC: family room The HC has a room for family	No				Yes
46f. HC: time-out/emergency bed The HC has a Time-out / emergency bed for a maximum of 24 hours (for crisis services)	No				Yes
46g. HC: open desks/working stations The HC has an open desk or workstation	No				Yes
46h. HC: domotics On the HC ward IT support is available	No				Yes

47. The IC The IC meets the following criteria: ▸ It is a specially designed unit provided with a number of ICUs and HSRs ▸ It concerns a physical space, integrated within the HIC where the team itself offers 1-on-1 guidance (continuity of care) ▸ There is an enclosed garden ▸ There is enough space for different purposes and activities ▸ The ambulance entrance provides access to a consultation room in the ICU	The IC meets 0 or 1 of the criteria	The IC meets 2 of the criteria	The IC meets 3 of the criteria	The IC meets 4 of the criteria	The IC meets all criteria
48. ICU-area The ICU meets the following criteria: ▸ There are individual rooms ▸ There is a sitting and sleeping area plus sanitary facilities ▸ In case of several ICUs, these are not connected to one another ▸ The patient can control the use of (day) light, temperature and media	The IC meets none of the criteria	The IC meets 1 of the criteria	The IC meets 2 of the criteria	The IC meets 3 of the criteria	The IC meets all criteria
49. The High Security Room (HSR) The HSR meets the following criteria: ▸ The room can be locked ▸ There is a toilet with hand basin available ▸ There is a touchscreen, which allows the patient to keep in touch with the team ▸ The patient can control the use of (day) light, temperature and media ▸ Connected to the HSR a designated area with sanitary facilities is available	There is no HSR as described	The HSR meets 1 of the criteria	The HSR meets 2 of the criteria	The HSR meets 3 or 4 of the criteria	The HSR meets all criteria

Safety

Criterion	Score 1	2	3	4	5
50. Safety Management system The HIC is embedded in a safety management system in which structural reports, analyses and improvement actions are anchored	There is no safety management system	Incident reports depend on individual employees	There is a safety management system, but it is not used properly	There is a safety management system. Reports are made on a structural basis, but there are no analyses or improvement actions	There is a safety management system in which structural reporting is done. The analyses are used for continuous quality improvement regarding safety

Evaluation of coercive measures

Criterion	Score 1	2	3	4	5
51a. Evaluation of coercion Each coercive measure is demonstrably evaluated with the team and within the institution. The results of these evaluations are demonstrably used to adjust / improve the policy of the institution with regard to coercive measures	Evaluation at an individual level is lacking	Coercive measures are evaluated 25% –75% of the time	Coercive measures are evaluated in more than 75% of the cases. However, no policy for improvement follows from this	Coercive measures are demonstrably evaluated in 100% of the cases. The results are however not systematically used for improvement	All coercive measures are evaluated. The results of these evaluations are demonstrably used to adjust / improve the policy of the institution with regard to coercive measures
51b. Evaluation of coercion Each coercive measure is demonstrably evaluated with the patient and with relatives	Coercive measures are not evaluated with the patient or with relatives	Evaluation of coercive measures with the patient varies. Relatives are not involved in the evaluation of coercion	Evaluation of seclusion always takes place with patients. Evaluation of other coercive measures with the patient varies. Family members are not structurally involved in these evaluations	Evaluation of all forms of coercion take place with the patient. Relatives are not structurally involved in the evaluation of coercive measures	All forms of coercion are evaluated with both the patient and the family
52. Registration of and feedback on coercion (Argus) The registration of coercive measures (Argus) is fed back to the team at least monthly on the ward and used to evaluate and adjust the course of action	Feedback on coercion is not given	Feedback on coercion is given each six months	Feedback on coercion is given every quarter	Feedback on coercion is given on a monthly basis	Feedback on coercion is given on a monthly basis and findings are used to evaluate and adjust the teams' course of action

Dankwoord
About the Author
List of Publications

DANKWOORD

Goede zorg draait om aandacht en contact. Dat concludeer ik uit mijn onderzoek naar het HIC-model waarin zorgethische waarden en contact centraal staan. Ook heb ik dit zelf tijdens mijn promotietraject ondervonden. Een ervaring die het belang van investering in deze waarden benadrukt en mij verder heeft gemotiveerd dit proefschrift af te ronden. Mijn ervaring speelde zich niet af in de setting waar mijn proefschrift op focust, de acute psychiatrie, maar in een Frans ziekenhuis in Grenoble. Hier belandde ik na een skiongeluk met een ernstige multipele breuk in mijn linkerarm. Het ziekenhuis was ooit in de jaren 60, toen het werd gebouwd voor de olympische spelen, een state-of-the-art ziekenhuis geweest. Aandacht voor de omgeving en onderhoud ontbrak echter zichtbaar, al met al was het er inmiddels een vrij aftandse boel. Aandacht vanuit het personeel voor de persoonlijke situatie van patiënten ontbrak eveneens. Zo werd mijn nachtkastje met water aangeschoven aan mijn niet te bewegen linkerkant en kreeg ik bij wijze van maaltijd een ongepelde sinaasappel. Informatie over verdere behandeling bleef uit, personeel had geen tijd voor een gesprek, artsen besloten top-down het behandelplan, verpleegkundigen waren hier niet van op de hoogte en ik werd met ontbloot bovenlijf 'vergeten' op een brancard op de gang naast een drukke wachtkamer. Des te meer indruk maakte het toen een verpleegkundige van de gipskamer aan mij vroeg hoe het ging en een arm om mij heensloeg toen ze aanvoelde dat ik die wel kon gebruiken. Een klein gebaar, maar dit moment van oprechte aandacht en contact raakte mij. Deze ervaring heeft mij nog meer doen realiseren dat een visie op aandacht en contact van groot belang is om goede zorg te leveren. Deze Franse verpleegkundige wil ik graag bedanken, niet alleen voor de persoonlijke aandacht op dat moment, maar ook voor het inzicht dat ze mij hierdoor heeft geboden.

Dit proefschrift is mede tot stand gekomen dankzij de steun van collega's, familie en vrienden. Gedurende de afgelopen jaren hebben jullie mij onder meer inspiratie, steun, liefde en gezelligheid geboden, waarvoor veel dank. Met het risico dat ik hiermee mensen tekort doe, wil ik een aantal mensen expliciet bedanken voor wat ze voor mij in het traject van de totstandkoming van mijn proefschrift hebben betekend.

Ten eerste wil ik mijn co-promotor en promotoren bedanken. Yolande, je hebt mij de kans geboden het onderzoek in te gaan en ik viel met mijn neus in de boter toen je net op zoek bleek naar iemand die het onderzoek naar HIC zou kunnen doen toen ik mijn stage had afgerond. Gelukkig klikte het direct tussen ons en konden we samen optrekken in de missie naar dwangreductie. Vanaf het begin ben je met je oprechte

betrokkenheid, bevlogenheid, humor en aanstekend enthousiasme een voorbeeld voor mij geweest. Ik heb grote bewondering voor je creativiteit om te verbinden en daarbij vooral niet te vergeten van het proces te genieten. We hebben samen ook veel plezier gehad en soms ontstonden bij het doorzakken de beste ideeën!

Guy, je bent van vele markten thuis en ik heb met bewondering gekeken naar hoe snel je tussen onderwerpen kan schakelen. Je scherpe feedback heeft alle stukken beter gemaakt. Dank ook voor je persoonlijke aandacht en betrokkenheid, je humor en voor je gezelligheid.

Niels, dank voor je inhoudelijk sterke analyses, je geduld en de fijne samenwerking. Je inzet in het verbinden en ontwikkelen binnen de ggz is bewonderingswaardig.

Mijn proefschrift was niet mogelijk geweest zonder mijn mede Duckstad-bewoners van metamedica (inmiddels 'ethiek, recht en humaniora'). Donald (Yolande) en Oom Dagobert (Guy), jullie vervullen hier uiteraard een glansrijke rol in. Bijzonder veel dank aan de neefjes kwek en kwak (ervanuit gaande dat ikzelf als eerste van de drie promovendi binnen ethiek en psychiatrie tot 'kwik' ben gedoopt). Sylvia, in jou vond ik niet alleen een sparringspartner, maar ook konden we goed samen de hort op en ons hart luchten als het even niet mee zat. Je weet alles zo knap te combineren en weet daarbij altijd tijd te vinden om voor anderen klaar te staan. Je eigen proefschrift is nu ook zo goed als afgerond, die fles champagne moeten we maar snel soldaat maken! En die avontuurlijke glibbertocht op een berg in Noorwegen is wat mij betreft ook voor herhaling vatbaar! Lieke, ook met jou is het altijd goed samenwerken, brainstormen, spelletjes spelen, biertjes drinken en nog veel meer. Evie, je frisse blik is verhelderend, ik ben blij dat je ons team bent komen versterken. Dank ook voor het meedenken over het 'origami' idee. Lia, toen ik net bij metamedica kwam werken ging ik met jou voor het eerst op pad om 'veldwerk' te doen. Je hebt mij niet alleen op weg geholpen, maar ook met de laatste loodjes over de streep getrokken. Mariëlle, wat ben ik blij dat we je binnen ethiek en psychiatrie hebben mogen adopteren! In dit warme team heb ik mij altijd gesteund en geïnspireerd gevoeld. Dank ook voor het 'pittige peperpakket' dat Sylvia mij zo lief namens jullie allen als verrassing bracht om mij op te peppen om de laatste loodjes af te kunnen ronden. Jullie pittige foto's hebben goed als motivational wall gediend, dank hiervoor. Zonder jullie was het mij niet gelukt.

Ook was ik natuurlijk nergens zonder Patricia (mag ik oma Duck zeggen?) en Manal. Naast de zeer waardevolle praktische ondersteuning in het plannen en organiseren van

meetings, bijeenkomsten en onderwijs, wil ik jullie ook bedanken dat bij jullie altijd 'het krukje' vrij was om mijn hart te kunnen luchten, voor persoonlijke aandacht, gezellige en smakelijke wandelingetjes naar het slagertje, en uiteraard de nodige kledinginspiratie van Patricia. Dank dat je het aandurfde aan te pappen met nog een 'van Melle'...

Ook mijn andere metamedica collega's wil ik van harte bedanken. Een aantal 'minimedica' collega's wil ik in het bijzonder danken. Miriam, het samen schrijven op je boot en in het bos gaf weer energie om door te gaan en ik vind het knap en dapper dat het je zelf ook is gelukt je proefschrift af te ronden! Charlotte, hopelijk hebben we snel weer tijd voor fit-girl praktijken. Malene, Janine, Anne, Giulia en Krishma: ook met jullie heb ik veel meegemaakt tijdens mijn promotietraject in het werk, onderwijs, afdelingsuitjes en bij congresavonturen, waarvoor veel dank!

Ik ben dankbaar dat ik bij metamedica de kans heb gekregen om naast de focus op HIC ook meer ethische verdieping te zoeken, onder andere doordat ik de gelegenheid kreeg de training tot gespreksleider moreel beraad te volgen. De uitvoering van moreel beraad-sessies bracht mij op momenten naar interessante locaties zoals de gevangenis en forensische instellingen. Deze momenten van reflectie op de zorg, de omstandigheden bij deze locaties maar vooral ook de denkwijzen die daar het handelen stuurden hebben mij nog meer doen inzien hoezeer het van belang is uit te gaan van zorgethische waarden om goede zorg te bieden. De projecten waar ik naast het HIC onderzoek op heb kunnen richten, zoals onder andere de ontwikkeling van FHIC, ART en ambulante dwang in het kader van de Wvggz hebben ook in dat opzicht mijn horizon verbreed. Ook ben ik dankbaar dat ik mijn BKO heb kunnen behalen en ook met studenten heb kunnen sparren over goede zorg.

Ook buiten metamedica heb ik met vele inspirerende mensen mogen samenwerken. Allereerst wil ik de bestuursleden van Stichting HIC bedanken. Tom, Bram, Frits en Bouke (en uiteraard Yolande en Niels ook in deze context), dank voor jullie inzet en energie om van HIC een bijzonder waardevolle ontwikkeling te maken en voor jullie bereidheid het onderzoek aan mij toe te vertrouwen. Jurgen, dank dat je je dapper met mij wilde buigen over de HIC-monitor en de grote puzzel van het plannen van de audits, een taak die later Martijn van je overnam. Martijn, je hebt mij toen ik mijn afstudeerstage bij je mocht lopen geïntroduceerd in het onderwerp van dwangreductie en het terugdringen van separatie. Hierin was je al een groot voorbeeld voor mij om het lef te hebben 'out-of-the-box' en nóg veel verder te denken. Gelukkig konden we de afgelopen jaren samen blijven werken en ik hoop dat we dat nog een tijd kunnen blijven doen. Bijzonder is dat ik nu het stokje

als coördinator dwangpreventie van je heb mogen overnemen, inspirerende schoenen om te vullen! Bouke, naast je inzet voor Stichting HIC wil ik je ook bedanken voor de kans om de inzichten die ik tijdens het werken aan dit proefschrift heb opgedaan in de praktijk te kunnen brengen bij GGZ inGeest. Dank ook aan Benjamin voor de bijzondere kans om dit te doen. Stijn, we zijn goed op weg en ik heb er vertrouwen in dat we samen veel voor elkaar gaan krijgen!

Ook wil ik alle HIC-auditoren bedanken met wie ik de afgelopen jaren heb mogen samenwerken. Dank ook aan alle werknemers van de ggz-instellingen die ik voor dit onderzoek heb mogen bezoeken. De afgelopen jaren ben ik bij bijna alle ggz-instellingen langs geweest. Dank voor de openhartigheid in interviews en focusgroepen.

Eric, dank voor je oeverloze inzet om de argus data beschikbaar en geanalyseerd te krijgen, je doorzettingsvermogen is bewonderingswaardig. Roland, dank voor je inspiratie en verdieping in de Safewards, de HIC-opleiding is bij jou in goede handen. Yolanda, dank voor de fijne samenwerking en snelle en enthousiaste reacties. Riekie, ook dank aan jou voor je frisse blik op de methodologie en je bereidheid altijd even mee te denken.

Tijdens mijn promotietraject heb ik ook de kans gekregen in de praktijk op een acute gesloten afdeling te werken als psycholoog bij GGZ Breburg. Sandra, het begon allemaal toen ik met je op avontuur naar Oslo kon om voor een enigszins teleurstellend gezelschap van 3 man de HIC methodiek en het onderzoek te presenteren. Hoewel de presentatie dus wat tegenviel, was het Olso avontuur dat zeker niet en resulteerde het zelfs in een mooie verdere samenwerking. Je bood mij de kans een jaar het team van de HIC Tilburg versterken en zo ook ervaring op te kunnen doen met het werken volgens de HIC methodiek. Dit is voor het schrijven en reflecteren op mijn onderzoek veel betekenend geweest. In het bijzonder wil ik op de afdeling ook Yvette, Niels (Bouwhuis), Eveline en Alwin bedanken.

Het congres in Oslo is niet de enige keer geweest dat ik Noorwegen heb mogen bezoeken tijdens mijn promotietraject. Ook kreeg ik de kans om kort fellowship in Oslo te doen en een aantal Noorse gesloten afdelingen te bezoeken. Elleke, dank voor de introductie in de Noorse gebruiken, voor het sparren en gezelligheid daar. In Noorwegen wil ik in het bijzonder ook Tonje en Marit bedanken: Tusen Takk!

Wat mij betreft gaan we er gewoon mee door! Volgens mij valt er in Leiden ook heel goed te dansen...

Lieve papa en mama, dank voor jullie steun, liefde, geduld en gezelligheid. Jullie staan voor mij altijd klaar, ik mocht vorig jaar zelfs weer even bij jullie wonen. Een bijzonder en heel waardevolle ervaring die ik eigenlijk, ondanks de omstandigheden, niet had willen missen. Papa, ik ben trots dat ook jouw boek en levenswerk nu bij de drukker ligt. Met je zorgvuldigheid en doorzettingsvermogen ben je voor mij een groot voorbeeld en ik vind het bijzonder dat ik ook een kleine rol heb mogen spelen in vormgeving van je boek. Twee boeken in één jaar, wie had dat gedacht? Ik ben trots op je.

David, wat ben ik blij met jou als broer. Samen hebben we mooie avonturen beleefd, in de laatste jaren ook samen in China en Tanzania. Het is dat ik denk dat je de beste huisarts ooit zal worden, maar stiekem hoop ik nog steeds dat je toch voor de psychiatrie kiest. Met jouw zorgzaamheid en humor is iedereen beter uit en dat kan de ggz wel gebruiken.

Lieve opa, de schrijfretraite gevuld gezellige wandelingen én bourgondische beloningen heeft mij een flinke boost gegeven. Toen ik even uit de running was heeft deze voor mij betekend dat ik de focus en het plezier in het schrijven terugvond. Graag had ik deze week herhaald, maar door Corona zat het er niet in. Graag kom ik dan maar ook nog een keer gewoon voor de gezelligheid logeren. Jammer dat oma mijn proefschrift niet meer heeft kunnen zien, ik weet dat ze het graag had willen vasthouden en mooi uitgedost bij de promotie had willen zijn. Ookal ben je er niet meer om dit te lezen, heb ook jij lieve oma, een belangrijke rol gespeeld in mijn leven en mij gemotiveerd door te zetten. Dank je wel!

Het laatste woord richt ik aan Pieter. Je stak mij een hart onder de riem wanneer ik het nodig had om de laatste loodjes af te kunnen ronden. Dank voor je bemoedigende woorden en liefdevolle powerknuffels. Met jou erbij komt alles goed.

ABOUT THE AUTHOR

Laura van Melle was born on June 30th, 1989 in Amsterdam, the Netherlands. After graduating from high school at the Montessori Lyceum Amsterdam in 2007 she started her study of psychology at the University of Amsterdam in 2008. During the last year of her master's programme clinical health psychology, she did an internship at GGZ inGeest, a mental health care hospital in the Amsterdam region. Her master's thesis focused on the contributing factors to long term seclusion, and on patient characteristics and differences between acute closed wards and long-term admission wards. After graduating in 2013, she continued to work on this topic at the Department of Medical Humanities at the VU University Medical Center (now called the Department of Ethics, Right and Humanities at the Amsterdam UMC, location VU University Medical Center). In 2015 she started her PhD on High and Intensive Care in psychiatry. She combined her research with teaching activities in medical ethics and academic skills, primarily for the school of Medical Sciences of the VU University Medical Center. Alongside her PhD and research work, in 2016-2017 she also worked as a psychologist at GGZ Breburg, a mental healthcare hospital in the south of the Netherlands. In 2019 and 2020 she also worked as a researcher at the Ruhr University Bochum in Germany. Currently, she still works at the department of Ethics, Right and Humanities as a researcher and since 2020 as a coordinator of the coercion reduction programme at GGZ inGeest.

LIST OF PUBLICATIONS

Gerritsen, S., Widdershoven, G.A.M., Ham, A.J. van der., Melle, A.L. van, Kemper, M., & Voskes, Y. (2020). Dealing with care disruption in high and Intensive Care wards: From difficult patients to difficult situations. *International Journal of Mental Health Nursing, 30*(1), 317-325.

van Melle, A.L., Edelbroek, H., Voskes, Y., & Widdershoven, G.A.M. (2017). New developments around coercion in the Netherlands: A care ethics perspective. In Gather J, Henking T, Nossek A, Vollmann J (eds.). *Beneficial coercion in psychiatry? Foundations and challenges*. (pp. 193-201). Münster: mentis.

van Melle, A.L., S. Gerritsen, L. Zomer, E. O. Noorthoorn, C.L. Mulder, G.A.M. Widdershoven, Y. Voskes (2021). High en Intensive Care als een volgende stap in dwangreductie. *Tijdschrift voor Psychiatrie, 63*(5). (translated from Dutch).

van Melle, A.L., van der Ham, A.J., Widdershoven, G.A.M., & Voskes, Y. (2021). Implementation of High and Intensive Care (HIC) in the Netherlands: a Process Evaluation. *Psychiatric Quarterly.* doi: 10.1007/s11126-021-09906-x

van Melle, A.L., Noorthoorn, E.O., Widdershoven, G.A.M., Mulder, C. L., & Voskes, Y. (2020). Does high and intensive care reduce coercion? Association of HIC model fidelity to seclusion use in the Netherlands. *BMC Psychiatry*, 20:469.

van Melle, A.L., Voskes, Y., de Vet, H.C.W., van der Meijs, J., Mulder, C.L., & Widdershoven, G.A.M. (2019). High and Intensive Care in Psychiatry: Validating the HIC Monitor as a Tool for Assessing the Quality of Psychiatric Intensive Care Units. *Administration and Policy in Mental Health and Mental Health Services Research, 46*(1), 43–46.

Scholten, M., van Melle, L., & Widdershoven, G. (2021). Self-binding directives under the new Dutch Law on Compulsory Mental Health Care: An analysis of the current framework and a proposal for legal reform. *International Journal of Law and Psychiatry,* 101699.

Voskes, Y., van Melle, A. L., Widdershoven, G. A. M., van Mierlo, A. F. M. M., Bovenberg, F. J. M., Mulder, C. L. (2021). High and Intensive Care in Psychiatry: A New Model for Inpatient Care. *Psychiatric Services.* doi: 10.1176/appi.ps.201800440

origami [awr-i-gah-mee]

The Japanese art of folding paper into new attractive shapes.

noun, plural **o·ri·ga·mis**

▸ A limited number of folds are used in origami, but through the combination of these, complex designs are a possibility.

Around the turn of the century, concerns about the use of coercive measures, specifically seclusion, in acute mental healthcare increased in the Netherlands. Evidence and experience-based practices and insights from nationwide programmes aimed at the reduction of coercive measures were combined into a new comprehensive model: the High and Intensive Care (HIC) model. This thesis focusses on the development, implementation, and effects of the HIC model on the quality of care and the use of coercive measures in acute mental healthcare in the Netherlands. As with the art of origami, in which paper may not be cut but only folded, the formation of the HIC model resulted in something that transcended the sum of its parts. The HIC model has taken a flight in recent years, symbolized by the crane bird representing transformation, good health, wisdom, and reflection. The integration of strategies makes the HIC model highly relevant for good quality care in acute psychiatry.