

# Collection and analysis of data on the use of restraint and decisions concerning open-area seclusion in adult mental health care in 2012

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## Foreword

This report presents the results obtained from the mapping and analysis of administrative decisions on restraint and open-area seclusion in adult mental health care in 2012. This is the second time the Regional Centre for Research and Education in Forensic Psychiatry and Psychology for the South-Eastern Norway Regional Health Authority conducts this assignment on commission from the Norwegian Directorate of Health. The first time, corresponding data from 2009 were used, and the same method has been applied for both assignments.

The lack of an electronic reporting system that ensured complete sets of data on decisions on restraint and open-area seclusion rendered it necessary to use an alternative, highly resource-intensive manual method.

We would therefore like to thank the staff at all the health trusts and institutions in adult mental health care who undertook the demanding task of anonymising, copying and submitting to us all handwritten records of the use of restraint and open-area seclusion from 2012.

We would also like to thank all our project team members for assisting in the laborious work of coding all the data from records of the use of restraint and open-area seclusion into electronic databases and transferring the data to SPSS files for analysis.

*Oslo, December 17 2014*

Maria Knutzen  
Project Manager

## Summary

The Regional Centre for Research and Education in Forensic Psychiatry for the South-Eastern Norway Regional Health Authority was commissioned by the Directorate of Health to examine the use of restraint and open-area seclusion in adult mental health care in 2012. This report follows up a similar mapping in 2009. Given the lack of an electronic reporting system that ensures complete sets of data on administrative decisions on restraint and open-area seclusion, it was necessary to use a manual whereby anonymised copies were submitted of all handwritten records of the use of restraint and open-area seclusion from 2012. The data were then coded in a specially designed database before being transferred to SPSS for statistical analysis.

## Findings

### Patients

In 2012, administrative decisions on the use of restraint and open-area seclusion were issued for 2,602 patients receiving adult mental health care in Norway. This represented an increase in the number of patients of 7% from the 2009 mapping (n=170). Changes in the numbers of patients who received decisions on the different types of restraint and open-area seclusion between 2009 and 2012 were as follows:

- *Mechanical restraints*: an increase of 3.7% (n=42), from 1,107 to 1,065 patients.
- *Pharmacological restraint*: a decrease of 0.4% (n=3), from 712 to 709 patients.
- *Isolation*: an increase of 26.3% (n=30), from 114 to 144 patients.
- *Physical restraint*: an increase of 30.5% (n=175), from 574 to 749 patients.
- *Open-area seclusion*: an increase of 13% (n= 211), from 1,406 to 1,617 patients.

### Gender

The group of patients with most decisions (20+) comprised more women than men. The duration of decisions on mechanical restraints was longer for men than for women.

### Decisions

A total of 11,535 administrative decisions on the use of restraint and open-area seclusion were issued in 2012. This represented an increase of 5.4% (n= 596) from 2009 when 10,939 decisions were reported. The following changes from 2009 to 2012 were found in the number of decisions concerning the different forms of restraint and open-area seclusion:

- *Mechanical restraint*: a decrease of 586 (13.2%) decisions, from 4,426 to 3,840.
- *Pharmacological restraint*: a decrease of 390 (20.8%) decisions, from 1,875 to 1,485.
- *Isolation*: an increase of 302 (112%) decisions, from 269 to 571.
- *Physical restraint* : an increase of 617 (36.7%) decisions, from 1,680 to 2,297.
- *Open-area seclusion*: an increase of 629 (23.3%) decisions, from 2,689 to 3,318.

### Duration of decisions

The following changes were found in the median duration of decisions on restraint and open-area seclusion from 2009 to 2012:

- *Mechanical restraint*: a decrease from 3.25 hours in 2009 to 2.9 hours in 2012.
- *Isolation*: an increase from 0.53 hours to 1 hour.
- *Physical restraint* : an unchanged median period of duration of 0.17 hours.

- *Open-area seclusion*: an increase from 139.5 hours to 335.9 hours.

#### *Ward type (ward code)*

In 2012, acute psychiatric wards accounted for 74% of all patients who received decisions on restraint and open-area seclusion (70% in 2009), and 59% of all decisions (60% in 2009). The increase in the number of patients with decisions in acute psychiatric wards was significant.

#### *Health trusts/institutions*

The total number of patients with decisions on restraint and open-area seclusion, and the number of decisions varied between health trusts/institutions. Because this study did not control for factors that might explain these differences, we cannot draw any conclusions regarding the reasons for them.

## **Recommendations**

Based on the experiences gained from this mapping, we make the following recommendations:

- *That an electronic documentation system that will ensure reporting of complete data on restraint and open-area seclusion should be developed and implemented.*
- *In future mappings of the use of restraint and open-area seclusion, that reported data should be analysed in relation to relevant background data from the health trusts and institutions (such as the number of patients treated, the number of admissions, the size of catchment area). This will make it possible to compare differences in the use of restraint between institutions and health trusts.*

To ensure sound reporting practices, further requirements are recommended for certain aspects of documentation on the use of physical restraint and open-area seclusion:

- *That details be given on the position in which the patient is held during implementation of the decision (for example: prone position, supine position on the floor, arms held, seated on bed), number of staff participate (and their gender, where applicable) and in what way (how personnel use their bodies during implementation).*
- *That documentation of open-area seclusion decisions shows how decisions are implemented and what this entails for the patient.*

To ensure a common documentation practice, it is recommended that:

- *Clarification is reached on how long holding can last before a decision authorising physical restraint must be made.*
- *The use of mechanical restraint and physical restraint during the implementation of involuntary treatment either with medication or nutrition are deemed to be coercive measures, and that decisions must be entered in records of the use of restraint (Page 64 of the annotated edition of the Mental Health Care Act and the Mental Health Care Regulations).*

# 1 Introduction

Society has an overall responsibility for giving all groups of patients the right treatment at the right time. This is contingent on the continual updating of information about how different patient groups are safeguarded and treated. There is broad consensus that all use of restraint in mental health care raises issues relating to ethics, legality, human rights and treatment. Politicians and health care bureaucrats have repeatedly stressed the importance of reducing and quality-assuring the use of restraint in mental health care. In order to form sound opinions on reducing the use of restraint, one must first obtain reliable information about the existing quality and the prevalence of the use of restraint. Report No 10 (2012–2013) to the Storting (Parliament) *High Quality – Safe Services* gives the following description on page 25: ‘*The lack of basic data makes it challenging to monitor developments in the use of restraint in mental health care.*’ On this basis, the Regional Centre for Research and Education in Forensic Psychiatry and Psychology for the South-Eastern Norway Regional Health Authority was commissioned by the Directorate of Health to map the use of restraint and open-area seclusion in adult mental health care in 2012.

Restraints include: 1. belts, straps and clothing specially designed to prevent injury (mechanical restraint), 2. pharmacological restraint (short-acting medication), 3. isolation and 4. physical restraint (brief holding). Open-area seclusion is not a form of restraint, but rather a decision that entails keeping the patient fully or partially separated from other patients and from personnel not involved in the examination, treatment or care of the patient.

Several official reports have been published over the past 15–20 years concerning the use of restraint in mental health care, including Hatling & Krogen (1998) and Høyer & Drange (1991; 1994). The purpose of many of the reports published since the turn of the millennium has been to map the annual incidence of the use of coercive measures and, gradually, seclusion (see Bremnes, Hatling & Bjørngaard, 2008). However, methodology issues rendered it difficult to make reliable comparisons of the incidence figures in these reports for the years 2001, 2003, 2005, 2007 and 2009 (see Bjørkly et al., 2011 for further explanation). One of the objectives for mapping annual incidence as covered by the current report is to make it comparable with the findings of the previous report (Bjørkly et al., 2011). This means that we do not give a detailed description of findings from other previous reports. In Chapter 2 *Research into the use of restraint in adult mental health care* (page 12), we will:

- Give a brief summary of main elements from the research status described in the previous report (Bjørkly et al., 2011).
- Present the main findings from a literature review of international publications dealing with the use of restraint and open-area seclusion in the period 2011-2014.
- Provide an overview of Norwegian and Nordic research publications and official reports dealing with this topic.
- Describe the main findings from the previous report (Bjørkly et al., 2011).



## Legal authority

The Act relating to the Provision and Implementation of Mental Health Care (the Mental Health Care Act, 1999) and its Regulations govern all use of restraint in mental health care provision. The use of restraint (Section 4-8) and open-area seclusion (Section 4-3) dealt with in this report is warranted by Chapter 4 of the Mental Health Care Act and regulated by the Regulations of 16 December 2011 No 1258 concerning the Provision and Implementation of Mental Health Care etc. (the Mental Health Care Regulations), Chapter 3 Section 15-30.

### *Restraint*

Institutions must be approved to initiate and implement mental health care. Restraint may also be used on all admitted patients (voluntarily admitted patients, and patients placed under compulsory observation or compulsory mental health care).

*'Restraint shall only be used in respect of the patient when this is absolutely necessary to prevent him or her from injuring himself or herself or others, or to avert significant damage to buildings, clothing, furniture or other things. Restraint shall only be used when milder means have proved to be obviously futile or inadequate.'* (the Mental Health Care Act Section 4-8).

The Act goes on to describe which forms of restraint may be used:

- a. Mechanical restraint means belts and straps and clothing specially designed to prevent injury which hamper the patient's freedom of movement

*'Letter a): The provision permits the use of mechanical restraints. By this is meant devices that hamper the patient's freedom to move his/her arms and/or legs. The list of the various types of mechanical restraints (belts, straps and clothing specially designed to prevent injury) provides examples and is therefore not exhaustive.'* (Page 76 of Circular no IS-9/2012, the Mental Health Care Act and the Mental Health Care Regulations).

- b. Isolation. Detention for a short period of time behind a locked or closed door without a staff member present.

*'Letter b):*

*The inclusion not only of locked doors but also of "closed" doors means that decisions shall be made in emergency situations to keep a door between the patient and the staff closed by physical force, using a door wedge or similar device.'* (Page 76 of Circular no IS-9/2012, the Mental Health Care Act and the Mental Health Care Regulations).

- c. Pharmacological restraint. Single doses of medicines with a short-term effect for the purpose of calming or anaesthetizing the patient.

*'Letter c):*

*With respect to medication, justification of use will determine whether or not it is deemed to be restraint. The use of medication for treatment purposes without the patient's consent is regulated by the Mental Health Care Section 4-4. The term "short-term effect" means that the choice of medication and dosage must be based on the purpose of relieving acute anxiety. Long-acting medication may therefore not be used. The use of depot medication will generally not be allowed. When medicating it must nonetheless be correct to take into account what medication is expected to have a generally favourable effect on the patient's condition and it must be accepted that it may take time for that effect to disappear completely. On this basis, exceptions from the general rule must be allowed in special circumstances. For example, the use of*

*Cisordinol-Acutard must be accepted in cases where the responsible health care professional deems it likely that the duration of the acute risk prompting the need for restraint will be approximately the same as the effective time of this preparation (usually two to three days).’* (page 76 of Circular no IS-9/2012, the Mental Health Care Act and the Mental Health Care Regulations).

- d. Physical restraint. (Briefly holding the patient fast) (Section 4-8).

*‘Letter d):*

*The term “brief” has been added to emphasise that the use of this measure must not be sustained longer than strictly necessary; cf. Section 4-2.*

*This provision is not intended to cover any and all measures that involve a patient being held. It would take quite a lot for the measure to be deemed physical restraint in the legal sense. The provision only covers measures intended to prevent injury (cf. the first paragraph). In many situations, holding will be a natural part of patient care rather than a form of restraint; for example, when health care personnel embrace patients to reassure and comfort them. To the extent to which the main purpose of a measure is to provide care and to set boundaries (not to prevent injury), the measure is minimally intrusive and meets no resistance from the patient, the measure will fall outside the prevalence of this provision.*

*If the patient actively resists the measure orally and/or physically, this indicates that holding shall be deemed restraint in the legal sense. At the same time, a measure may in itself be so intrusive that it falls under the provision without the patient resisting, for example if a patient is held fast for a long time in order to prevent self-harm. On the other hand, situations where holding is less intrusive – for example where a patient is held by the arm and guided to his/her room without showing resistance – may fall outside the scope.’*

*‘Whether or not holding calls for an administrative decision must be determined on the basis of a concrete evaluation in which the key elements will be the purpose of the measure, how the patient reacts to the measure, how long it is sustained, and how intrusive it is.’* (pages 76–77 of Circular no IS-9/2012, the Mental Health Care Act and the Mental Health Care Regulations).

#### *Responsible decision-maker*

*‘The decision to use restraint shall as a rule be made by the responsible health care professional; cf. Section 1-4. The decision to use pharmacological restraint shall be made by a physician. However, an exception has been made to the general rule (in the Mental Health Care Regulations Section 25 second paragraph) whereby “the staff member in charge of the ward” may make decisions on the use of restraint when an acute situation renders immediate contact with the responsible health care professional impossible. The exception does not apply to measures concerning pharmacological restraint. Such decisions shall always be made by a physician.’* (Page 78 of Circular no IS-9/2012, the Mental Health Care Act and the Mental Health Care Regulations).

#### *Open-area seclusion*

Although the use of open-area seclusion has always been widespread in mental health care, it was not regulated as a coercive measure by law until 1999. «Open-area seclusion means that

*the patient is placed in a segregated (and locked) area together with staff members, but the patient is never isolated alone in a single locked room for seclusion”*(Stål Bjørkly 1995,p148) and is not deemed to be a form of restraint, but rather a measure that, according to the Mental Health Care Act, shall be justified by ‘reasons related to his or her treatment or in the interests of other patients’ (cf. the Mental Health Care Act Section 4-3).

*‘If a patient’s mental state or aggressive behavior during a stay in an institution makes open-area seclusion necessary, the responsible mental health professional may decide that the patient, for reasons related to his or her treatment or in the interests of other patients, shall be kept completely or partly segregated from fellow patients and from personnel who do not take part in the examination, treatment and care of the patient.’* (the Mental Health Care Act Section 4-3).

Open-area seclusion may not be used against the patient’s will if he or she has been voluntarily admitted, but it *‘must, however, be practised in such a way that patients under voluntary mental health care feel they have the possibility to ask to be discharged and leave the institution.’* (page 133 of Circular no IS-9/2012, the Mental Health Care Act and the Mental Health Care Regulations).

Open-area seclusion may be used for shorter periods without the need for an administrative decision. However,

*‘An administrative decision shall be made if open-area seclusion is maintained for more than 24 hours. If the patient is transferred to a closed unit or similar which entails a significant change in the patient’s surroundings or freedom of movement, an administrative decision shall be made if open-area seclusion is maintained for more than 12 hours. Decisions regarding open-area seclusion shall be recorded without undue delay. Decisions may only be made for up to two weeks at a time.’* (the Mental Health Care Act Section 4-3).

### *Registration of the use of restraint and open-area seclusion*

Wards are required to register information about the use of restraint in records approved by the Directorate of Health and Social Affairs (Section 10 *Registration of the use of restraint*, the Regulations concerning the use of restraint, 2000) (Section 9 of the Regulations concerning the use of open-area seclusion).

## **1.2 Mandate**

The mandate for the assignment was to map and analyse restraint and open-area seclusion in a similar way to the assignment from 2009.

*‘The mapping shall cover data from 2012 from all inpatient institutions in the mental health care service dealing with:*

- *restraint (mechanical restraint, pharmacological restraint, isolation and physical restraint)*
- *administrative decisions authorising open-area seclusion for more than 24/12 hours.’*

*‘Data shall be collected in a way that enables comparison with the results obtained from the previous mapping. A description shall be given of how the provider will organise the work to ensure data quality and comparability with previously collected data in terms of institutional structure and ward structure, completeness and quality of the material, and classification according to the laws that regulate the use of restraint in mental health care.’*

The underlying assumption was that the mapping in 2012 should be conducted using the same method as for the national mapping of restraint and open-area seclusion in 2009 (Bjørkly et al., 2011), which would provide a reliable basis for comparison (see page 17).

When it comes to operationalising the five measurement ranges – restraint (mechanical restraints, short-acting medication, isolation and brief holding) and open-area seclusion – we refer to our own review of the legal authority (see page 9).

*‘The tenderer is asked to describe its strategies for ensuring that all wards be included in the data supplied, and how it envisages dealing with any gaps in the data material.’*

In this context, reference is made to the preparation of a national overview of health trusts/institutions/wards/units in the mental health care service for adults 2012 (see page 17).

*‘As part of the work on quality assuring the data, the tenderer shall ensure that all institutions covered by the mapping receive written feedback on their figures/rates for relevant variables and on the level of use of the different forms of restraint and open-area seclusion compared with the national average.’*

*‘The data analyses shall include:*

- *The level in 2009 (number of administrative decisions and number of patients). The rates per 365 bed days for the hospitals, and the duration of restraint and administrative decisions on open-area seclusion at the national level (i.e. both hospitals and other institutions), by each individual hospital, broken down by ward type.’*
- *Trends from 2009 to 2012 in the use of the different forms of restraint and open-area seclusion for more than 24/12 hours.*

## 2 Research into the use of coercion in adult mental health care

The first descriptions of restraint used on people with mental illness go all the way back to antiquity (see for example Browne & Tooke, 1992). Already then, seclusion was used and, in extreme cases, mechanical restraints. The main intention was sensory deprivation in the form of limited contact with others, and the objective was to avoid deterioration of the person's mental state. This closely coincides with today's justification for using such forms of intervention. It is also interesting to note that, already then, there was an interest in finding optimal solutions for interior environments and architectural design.

For the sake of this overview, we have drawn a distinction between research papers in scientific journals, on the one hand, and books and official reports, on the other. Although we conducted a literature review, our presentation does not provide an exhaustive list of publications.

### 2.1 A brief summary of the key elements from the research status described in the previous report (Bjørkly et al., 2011)

The presentation of the research status was largely based on a review of recently published review articles analysing empirical research relevant to the areas of restraint and seclusion. This limitation was imposed because systematic reviews summarise findings from a large number of studies and therefore give a more stable and clear overview of the field of research. Two reviews were conducted.

Hamrin, Iennaco & Olsen (2009) reviewed studies that focused on the effect of ecological factors on violence, self-harm and other behaviour that legally can invoke the use of restraint in psychiatric institutions (referred to as 'aggressive behaviour' in the study). The main finding was that ecological factors such as the quality of unit culture and therapeutic relationships could either increase or reduce the incidence of such behaviour. Good therapeutic assessment and communication, clear patient engagement, availability, willingness to cooperate, and facilitation of training and development were the most important relational qualities among staff for the prevention of aggressive behaviour. The most important ward culture variables were meaningful activities, a stimulating ward environment, and good staffing levels.

The literature review in Gaskin, Elsom & Happels (2007) focused on the significance of service systems for the use of restraint and seclusion. They concluded that improved leadership, staff educational programmes and the establishment of specialist teams in the treatment units with expertise in handling escalating situations may reduce the use of restraint. Three other reviews were limited to the influence of either staff or patient characteristics on the use of coercion (Flannery, 2007; Gadon, Johnstone & Cooke, 2006; Jansen, Dassen & Jebbink, 2005). Attention was also drawn to an increase in number of studies that tested interventions for reducing the use of restraint resulting from prior intervention based on early recognition of warning signs of escalation towards aggressive behaviour (Abderhalden et al., 2008; Bjørkly, 2004; Flutters et al., 2010).

## **2.2 Main findings from a literature review of international publications dealing with the use of restraint and seclusion in the period 2011–2014**

This update search was conducted in Medline and PsycINFO, and covered the period from 2011 to August 2014. The goal was not to conduct an in-depth systematic review but rather to create an updated overview of the most important trends in international research literature since the publication of our previous report (Bjørkly et al., 2011). We found a total of 61 relevant articles: 25 articles in Medline and 36 articles in PsycINFO. Seven of them were duplicates. A review of our own article archive produced seven new articles. This made a total of 61 unique publications. Among these were two review articles, one dealing with the incidence and risk factors for the use of restraint (Beghi et al., 2013) and one dealing with staff and patient views of seclusion (van der Merwe, Muir-Cochrane, Jones, Tziggili & Bowers, 2013). The first review included 49 studies and found that the prevalence of the use of restraint varied between 3.8% and 20% in the different studies. These figures showed that the use of restraint had not decreased, despite attempts to reduce it. Nor was any change found in the characteristics of patients subjected to coercive measures: involuntarily admitted, male, of foreign origin and diagnosed with schizophrenia, or in the reasons for using restraint: attempts to escape, aggressive behaviour or the present of male health care personnel in the units in question (Beghi et al., 2013). After analysing the 39 empirical studies of experiences of seclusion, van der Merwe et al. (2013) found that patients experience seclusion as a distinctly negative experience, whereas staff emphasised the therapeutic effect and could not see how such wards could operate without seclusion. Both parties agreed on the need for improved staff-patient communication before, during and after seclusion episodes.

Our analyses of the other 59 articles showed that one-third dealt with clinical testing of interventions to improve or reduce the use of restraint and seclusion. This tendency is now far clearer than it was in the period prior to our previous report. Around one-quarter of the publications focused on justifications and/or patient characteristics that triggered the use of restraint or seclusion. Although many studies show replications of earlier findings, more recent studies show a growing tendency to stress the significance of active psychotic symptoms and characteristics of the interaction prior to the use of restraint (see for example Beghi et al., 2013 above and Simpson et al., 2014). We interpret this to indicate a shift towards a growing interest in the significance of dynamic and interactional factors in this context. Publications that focus on patients' experience also appear to be prominent now, but relatively speaking, these studies no longer hold the same position in the research literature that they once did. Other topics that we found in only a few publications were prevalence, testing of the use of forced medication (involuntary treatment) versus seclusion, and the physical and mental consequences for patients of restraint and seclusion.

## **2.3 An overview of recent Norwegian and Nordic research publications and official reports dealing with the use of restraint and seclusion**

### *Scientific articles concerning the use of restraint in psychiatric institutions for adults in Norway*

For many years, the mapping of restraint and seclusion in Norway has focused on the wide variations in prevalence between different regional health authorities and health trusts. In 2011, Wynn and colleagues published an article whose main purpose was to examine to what

degree acute psychiatric wards in different regions around the country showed the same type of behaviour and attitudes with respect to the use of restraint (Wynn, Kvalvik & Hynnekleiv, 2011). Staffs on the wards were asked to complete a questionnaire that contained, among other things, two fictional cases where the staff were asked to suggest the type of intervention. The results showed no significant differences between staff at individual or group level. Male staff and unskilled staff tended to choose more restrictive interventions, however.

In 2014, Knutzen and collaborators published an article dealing with the prevalence of the use of restraint on individual patients in acute psychiatric wards (Knutzen et al., 2014). Around three-quarters of patients had experienced one to two episodes involving restraint, 15.8% had experienced three to five such episodes, and 9.1% had experienced six or more episodes. The latter group was categorised as 'frequently restrained' and stood out from the other patients subjected to coercive measures by being younger, having longer inpatient stays and more frequent admissions. Eight of the 19 women in the frequently restrained group had a personality disorder.

In 2010, Husum and colleagues published an article in which she examined the degree to which the use of different forms of restraint in emergency psychiatric wards in Norway was associated with patient, staff or ward characteristics (Husum et al., 2010). Of the sample of patients who were admitted to different acute psychiatric wards, 35% had been committed. Of this group, 35% had been isolated, 10% had been subjected to mechanical restraints, 9% had been subjected to involuntary treatment with medication and 9% had been subjected to both isolation and mechanical restraints. This cross-sectional study showed significant differences between Norwegian acute psychiatric wards regarding the use of isolation and mechanical and involuntary treatment with medication. This could not be explained by differences in patient characteristics. Husum concludes that the ward characteristics may influence the use of coercive measures, and that future interventions to reduce its use should focus on organisational and structural factors.

#### *Scientific articles concerning the use of restraint in psychiatric institutions for adults in Denmark*

Bak et al. (2014) published an article in which they presented a study whose purpose was to identify measures that could prevent the use of mechanical restraint (Bak et al., 2014). Three preventive factors were significantly associated with a low incidence of mechanical restraints: retrospective review of episodes with restraints, patient involvement and no crowding in wards.

#### *Scientific articles concerning the use of restraint in psychiatric institutions for adults in Finland*

Putkonen et al. (2013) published an article dealing with reduced use of isolation and mechanical restraint on Finnish men suffering from schizophrenia and a history of violent behaviour (Putkonen et al., 2013). Using a cluster-randomised controlled trial, the study found that introducing a specific intervention reduced the use of restraint without increasing the level of violence in the ward.

Attempts that have been made to compare the prevalence of restraint and open-area seclusion in the Nordic countries have revealed different laws and inadequate registration procedures in the respective countries.

## Reports

In 2012, the Norwegian Knowledge Centre for the Health Services published a report titled *Interventions for reducing seclusion and restraint in mental health for adults* (Norwegian Knowledge Centre for the Health Services, Report No 9, 2012). The purpose of the report was to summarise research on the effect of interventions intended to reduce the use of coercive measures in mental health care. The following main findings were reported: Crisis plans may reduce the number of committed patients, but the quality of documentation was low. Systematic risk assessment of patients admitted to an acute psychiatric ward may reduce the use of restraint, but the quality of documentation was low. The report concludes that more research is needed to be able to draw more firm conclusions about the effect of interventions intended to reduce the use of coercive measures.

### 2.3 Main findings from the previous report (Bjørkly et al., 2011)

As explained earlier, we did not perform any comparisons with previous studies because the methodological conditions for making such comparisons were not met.

The report with findings from 2009 covered a total of 10,939 administrative decisions made concerning the use of restraint and open-area seclusion on 2,432 patients.

1. **Pharmacological restraints (short-acting medication):** 1,875 decisions involving 712 patients.
2. **Mechanical restraint:** 4,426 decisions involving 1,065 patients, with an average (median) duration of 3.25 hours per decision.
3. **Isolation:** 269 decisions involving 114 patients, with an average duration of 0.53 hours.
4. **Physical restraint:** 1,680 decisions involving 574 patients, with an average duration of 0.17 hours.
5. **Open-area seclusion:** 2,689 decisions involving 1,406 patients, with an average duration of 139.5 hours.
6. **Gender:** More decisions authorising the use of mechanical restraint were issued for women, but the average duration per decision was almost three times longer for men.
7. **Ward codes:** Acute psychiatric wards accounted for 60% of all decisions, and together with the forensic units, they accounted for 75% of all decisions on restraint and open-area seclusion.
8. **The health trusts:** wide variations in the use of restraint and open-area seclusion. Because our study did not control for factors that might explain these differences, we cannot draw any conclusions regarding the reasons for them.
9. **Data quality:** To ensure that all units issuing administrative decisions submit their data is time consuming. Different methods of registering the handwritten records rendered it necessary to develop procedures that ensured consistent coding of the data collected from the records concerning use of restraint and open-area seclusion.
10. **Time factor:** Comparison over time is complicated by changes to laws and corresponding changes to formal routines and procedures in clinical practice regarding the use of restraint. For example, physical restraint (holding) was introduced as a new type of restraint on 1 January 2007. Such a change can affect the use and incidence of other forms of restraint.



## 3 Method

This section presents a review of the method used for mapping.

### 3.1 Mapping procedure

1. Prepare a national overview of all the health trusts and institutions and clinical wards and units providing mental health care for adults in 2012.
2. Establish points of contact in wards issuing administrative decisions and inform them of the method of collecting and transmitting data.
3. Receive, register and scan incoming data.
4. Establish a database and code the data.
5. Quality assures and analyse the data.
6. Prepare a report.

#### Preparation of a national overview of psychiatric health care for adults 2012

The preparation of a national overview of all the health trusts and institutions with pertaining clinical wards and units that provide mental health care for adults, and issue decisions on restraint and seclusion was to form the basis for the mapping of decisions on restraint and seclusion. The work can be divided into four separate processes. In practice, and for a number of reasons, there was considerable overlapping between them, partly because it proved time-consuming to find individuals who possessed the necessary overview of units issuing decisions on restraint and open-area seclusion.

We used two lists as our starting point:

- The Medlex list (bought from Lex publishing house; [helseadresser.no](http://helseadresser.no)) and
- The Norwegian Patient Registry (NPR) (a list of all wards/units providing mental health care that have been reported to the NPR by the health trusts; bought from NPR via [helsedirektoratet.no](http://helsedirektoratet.no)).

We also prepared an internet list based on information from the websites of each health trust, accessed in June and July 2013. In addition, we used the national overview we had prepared for the mapping of the 2009 data (Bjørkly et al., 2011).

The clinic management of each health trust received a list of their units and wards for adult mental health care, based on information obtained from the NPR list of 2012. In addition, the Medlex list and the internet list were combined into one document and distributed as a supplementary list. To ensure a complete overview, we asked each health trust to check and, where necessary, supplement the lists with more units/wards/district psychiatric centres (DPC) before returning them to us. We also asked for the names of individuals in the wards who we could contact and who would obtain and transmit data to us. In some cases, it was necessary to contact a ward, unit or DPC directly via email or phone in order to establish a point of contact.

## **Establishing points of contact in wards issuing administrative decisions and informing them about the method of collecting and transmitting data**

The points of contact in the wards received overviews by email of the units in their wards that issued administrative decisions on restraint and open-area seclusion in 2012. They were asked to complete the list with information about the ward type, occupancy rate per unit, inpatient care beds per unit and anonymised copies of records of the use of restraint and open-area seclusion from units that had made such decisions in 2012.

The list below gives a simplified point-by-point presentation of the process of preparing a national overview. The first three items cover the work involved in preparing a national overview of all the health trusts and institutions with clinical wards and units providing mental health care for adults in 2012. Item no 4 describes the final phase in the process: the reception, registration and scanning of incoming data. This will be elaborated on later.

1. Prepare a national overview of all health trusts/institutions with units approved for the use of restraint in 2012.
2. The clinic management in each health trust was contacted and received an overview of their wards issuing administrative decisions on restraint and open-area seclusion. Each clinic management was then asked to quality assure the overviews they received on units approved for the use of coercive measures in 2012.
3. Receipt of quality-assured overviews from the clinic management of each health trust/institution with wards/units approved for the use of restraint and overviews of each ward, including details regarding the number of beds and occupancy rate. This information was used to prepare the first draft of the above mentioned national overview of health trusts and institutions/wards with mental health care wards/units for adults in 2012.
4. Receive anonymised copies of handwritten records of the use of restraint and open-area seclusion, code data from these to the access database, systemise the information received and conclude the work on preparing a national list of health trusts/wards and units that made administrative decisions on restraint and open-area seclusion in 2012.

## **Reception, registration and scanning of incoming data**

Anonymised copies of the left-hand side of the records of the use of restraint open-area seclusion were received from all relevant wards with relevant units. Finally, the units/wards that had submitted these records were registered in a national overview of health trusts/institutions/wards with adult mental health care units that had made decisions on restraint and open-area seclusion in 2012. The submitted copies of records and pertinent forms containing details about the wards were archived in PDF format on a server to which only project members had access.

The copies of submitted records and pertinent forms containing details about the wards were numbered and scanned as follows:

- A copy of one page of a record represented data concerning a patient and was assigned a number (see data collection procedure, Annex 5). Any records containing multiple pages of data concerning the same patient were stapled together by the ward staff. These were numbered as follows: the first copy in the pile was assigned number 1, the next copy number 2, and so on. In cases where multiple decisions had been issued for a patient, the record sheets were stapled together and each sheet pertaining to a patient was numbered as follows: first patient: 1.1, 1., second patient: 2.1, 2.2, 2.4, and so on.

- The hard copies of the records and forms containing details about the wards were later used as data sources in connection with the coding of the decisions in the database (see the section below).

### Creating databases and coding of data

The data were coded into the same type of database used for the mapping in 2009. This was specially designed for registering the data on decisions on restraint and open-area seclusion included in the mapping.

- The names of all health trusts/institutions/wards were entered into the database manually. A unique code was assigned to each health trust/institution before the data were transmitted to the statistics data files (SPSS, version 8.0).
- Text field: the name/number assigned to each unit. Details about each unit were coded according to the Norwegian Board of Health Supervision's ward coding system for psychiatric institutions IK-44/89 (see Annex 1). These codes were used at ward level because one ward can contain units with different patient categories; for example, one and the same ward may contain secure units and emergency units.
- ID number per patient: A random number was generated by the database in question.
- ID code for each database: Each copy of the databases had its own ID code: DB1 (database 1), DB2 and so on. This was necessary because data were coded into multiple copies of the database. The ID number generated by each database for data on each patient was unique to each database.
- Unique patient ID: A combination of the ID number generated by the database into which a patient's data were coded and the ID code of the relevant database (DB1, DB2 etc.).
- Information about decisions on restraint and open-area seclusion: Date/time of when a decision was implemented and the date/time of when the measure discontinued type of restraint and patient gender.
- Text field for any comments from coders and/or from those who kept the records.

### *Coding of units and wards in data files*

The data for all decisions/episodes were extracted from the databases and transferred to statistics program files.

The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions (Circular No IK-44/89) was used in both the mapping for 2012 and the mapping for 2009. The coding system comprises the following ward codes: 61 = acute psychiatric ward, 62 = short-term care ward, 63 = intermediate care ward, 64 = long-term care ward, 65 = rehabilitation ward, 66 = forensic ward, 67 = psychogeriatric ward, 71 = ward for young schizophrenics (hereinafter referred to as first psychosis ward). In addition, inpatient institutions in district psychiatric centres (DPCs) were assigned a separate category in the same way as in the 2009 mapping (DPC inpatient wards = 80), and special care wards (code = 85) such as regional wards for eating disorders (RASP) and wards for people with development disabilities/autism.

### *Coding of data from records to database*

The project team members worked in pairs: one coder scanned the records and the other coded them into the database. Each pair of coders had their own copy of the database. Each time new data were entered, the database was saved with the current date so that the most recent date showed the most recently updated database. Representatives from the project team

were available to the coders at all times during the coding work. To coordinate the coding work as best as possible, the project team developed a template titled 'Procedure for coding data in the database'. In addition, the coders were given an introduction to laws and practical use of restraint and open-area seclusion. There were also taught key concepts used in the records.

As the data were coded, the database generated a random number for each patient. This number was entered on the hard copy of the record along with the coder's initials. The coder's initials and the numerical series of the generated numbers identifying data pertaining to individual patients were also entered on the form containing ward details in order to facilitate re-examination. This made it easy to trace the anonymised hard copies of the records of the use of restraint and open-area seclusion pertaining to each patient.

### **Scanning handwritten records of the use of restraint and open-area seclusion in connection with coding administrative decisions**

#### *Codeable data*

Here, reference is made to examples of how the records of restraint were completed (Annex 7).

- The process of 'scanning' the records was time-consuming because they were handwritten and because practices for keeping the records differed between wards and within one and the same record or ward. For example, this applied to entering the time when an administrative decision ceased to apply.
- Different terms are used for restraint: for example, mechanical restraint might be described as: belt, full restraint using belts, restraint bed, strapping, fully fixated or just letter a), which refers to 'a. mechanical restraints' in the list of different types of coercive measures entered at the top of the right-hand column in the record (Annex 7). The documentation of pharmacological restraint intended to have a sedative or anaesthetic effect was often entered along with the name of the medication, in accordance with the instructions for the record. Sometimes the name of the medication was written between documentation of other types of restraint or in the same column as another decision.
- The restraint records are designed in such a way that details about a patient for whom a decision on restraint has been issued extend over two pages in the record. The left-hand side of the record contains data documenting the decisions that are included in the mapping (see \*\*\*Annex 7a, b and c for the restraint records and Annex 7d for open-area seclusion records. Some data that were not included in the mapping are also documented; for example adjustments to and changes in the patient's body position during the implementation of an administrative decision concerning the use of mechanical restraint. The time of each change in the patient's body position must be recorded continuously, and each change must be recorded on a new line in the records. One has to read every single line and column in the records in order to find the specific form of restraint, decision and the time and date when each type of restraint starts and ends. The information on the right-hand side of the records contains details about who made the decision and put it into effect, as well as comments from the control commission. This information was not included in the mapping.

#### *Identifying administrative decisions*

Entries in records of the use of restraint and open-area seclusion are made by many different individuals in the course of a shift or a day. Because of requirements for continuous

documentation of restraint used over time (often mechanical), and where changes were made to the patient's body position and/or two types of restraint were used simultaneously, it was difficult to determine when restraint commenced and when it ended. In such cases, the records had to be scanned horizontally (all columns) and vertically (all lines) because the reporting of a decision could cover several pages in the records (see Annex 7, examples a and c in the record).

#### *Period of duration of administrative decisions on restraint and open area seclusion*

The registration of the duration of each measure applies to isolation, mechanical restraint, physical restraint and open-area seclusion. For the database to generate the duration, the time and date when a measure started and ended were coded in the database. These details proved not always to be fully documented in the records, however. Annex 7 shows examples of entering decisions in the restraint and open-area seclusion records.

#### **Data analysis**

Reports from the databases were connected so that we would create two types of data files: a data file where each line contained information about each individual decision, and a patient file consisting of one line for each patient for whom one or more decisions had been issued. The patient file summarised the following data on one line per patient: gender, total number of decision and number of each type of restraint and open-area seclusion, total duration of each measure, and health trust/ward code.

#### *Overcounting patient numbers*

As in the 2009 mapping, we only had access to anonymised data in this study. The method of data collection entailed the locally responsible point of contact in each ward stapling together all copies of the record sheets pertaining to each patient, across different wards/units, before the data were anonymised. This was done to ensure that all decisions were included in the mapping. Another reason was to reduce the probability of a patient being registered as a new patient (overcounting) in each unit in the ward in which that patient had been made subject to restraint and open-area seclusion. To estimate a potential overcount of patients within a health trust, patients for whom a decision had been issued on the use of restraint and open-area seclusion across different units/wards were counted in relation to the total number of patients. This mapping resulted in an estimated overcount of 10%.

#### *Indexes*

The occupancy rate is another corrective factor that was included in analyses and interpretations of incidence and changes over time. Adjusting the use of restraint using the number of beds gives a relatively unreliable measurement of prevalence. To obtain a more reliable measurement, we also corrected for the occupancy rate in the units that were analysed. This provided a more precise estimate of the incidence of restraint and open-area seclusion. For example: two units with 10 beds each and occupancy rates of 50% and 100%, respectively, both have 100 registered instances of open-area seclusion. An unadjusted comparison will show that the incidence rate is the same, but since the respective occupancy rates were 50% and 100%, the incidence of open-area seclusion per bed in the unit with an occupancy rate of 50% was twice as high as in the other unit.

In order to be able to compare different types of wards in terms of the frequency of restraint and open-area seclusion, we calculated indexes for each unit at each psychiatric institution. If one health trust/institution had multiple units with the same ward category, these units were treated as one ward category. This means that, in situations like these, we calculated the total

number of decisions, the total number of patients with decisions, and the total number of beds in these units.

Two indexes were used to adjust for occupancy rate: one index for decisions on restraint and open area seclusion (ITV) and one index for patients subjected to restraint and open-area seclusion (IP):

$$\text{ITV} = (\text{number of decisions}) / (\text{number of beds} \times \text{occupancy rate} / 100)$$

$$\text{IP} = (\text{number of patients}) / (\text{number of beds} \times \text{occupancy rate} / 100)$$

If the standard deviation for an index within a ward category is greater than the average, this can be interpreted to mean that the index varies considerably between the wards.

### **Statistical method**

For approximately normally distributed variables, the arithmetic mean was used as the measure of central tendency, while the median was used for skewed variables. The Mann-Whitney U test was used to compare two medians. The chi-square test was used to compare percentages. The statistical analyses were performed with the help of SPSS, version 18.0.

## 4 Results

**Table 4.1: Patients with decisions on restraint/open-area seclusion, by gender and number of decisions, 2009 and 2012**

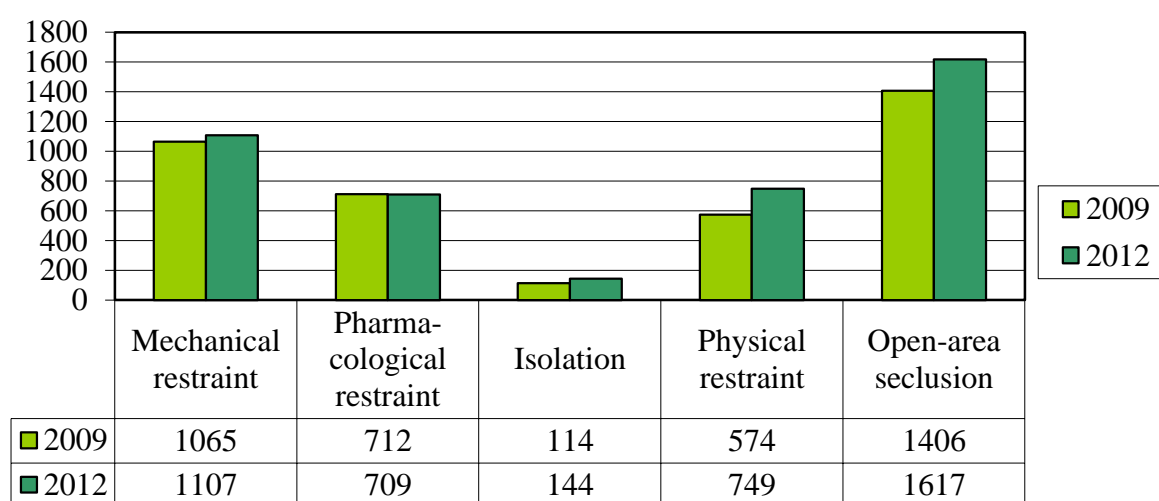
Number of patients subjected to restraint/seclusion by gender			Groups of patients by number of decisions (percentage)						
			1	2	3-4	5-9	10-19	20+	Total
2009	male	1200	42,9	21,3	17,3	11,9	4,4	2,2	100
2012	male	1386	43,1	19,6	17,8	11,9	5,1	2,5	100
2009	female	1093	41,4	18,9	18,2	11,0	6,3	4,1	100
2012	female	1195	42,2	19,4	14,6	14,1	5,4	4,4	100
2009	total	2432	42,3	20,3	17,6	11,2	5,5	3,1	100
2012	total	2602	42,7	19,5	16,3	13,0	5,3	3,3	100

2009: Insufficient information about gender: 139 patients

2012: Insufficient information about gender: 21 patients

Of all the patients for whom decisions were issued, patients with only one decision (authorising either a type of restraint or open-area seclusion) accounted for approximately 42% in both 2009 and 2012. Among the patients with the most decisions (20+), women accounted for a larger percentage than men in both 2009 and 2012.

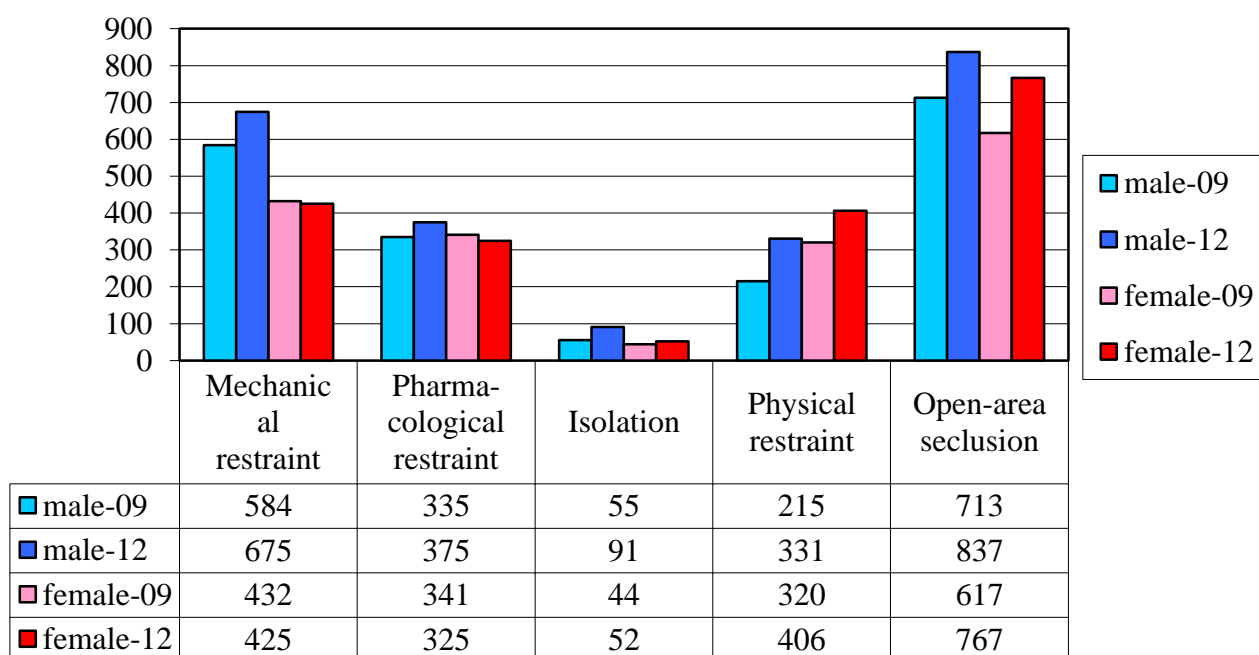
**Figure 4.1: Total number of patients with decisions on restraint/open-area seclusion, by decision type, 2009 and 2012**



From 2009 to 2012, an overall increase of 455 was found for patients with decisions on the use of mechanical restraint, pharmacological restraint, isolation, physical restraint or open-area seclusion. Eighty-five per cent of this increase concerned open-area seclusion (an

increase of 211 patients) and physical restraint (an increase of 175 patients). The number of patients with decisions on pharmacological restraint remained unchanged, while the number of patients with decisions on mechanical restraint and isolation increased by 42 and 30, respectively.

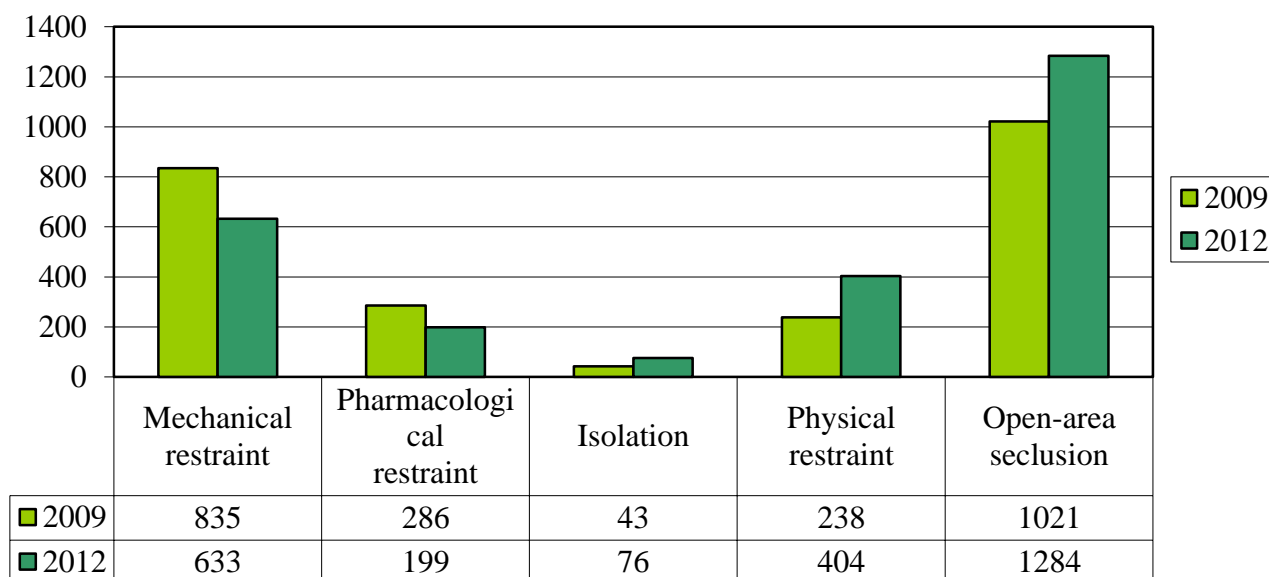
**Figure 4.2: Number of patients with decisions on restraint/open-area seclusion, by gender and decision type, 2009 and 2012**



The number of men with at least one decision concerning restraint (all types) and open-area seclusion appears to have increased from 2009 to 2012. The number of women with decisions on isolation, pharmacological restraint and open-area seclusion increased, while the number of women with decisions on mechanical restraint and pharmacological restraint fell slightly.

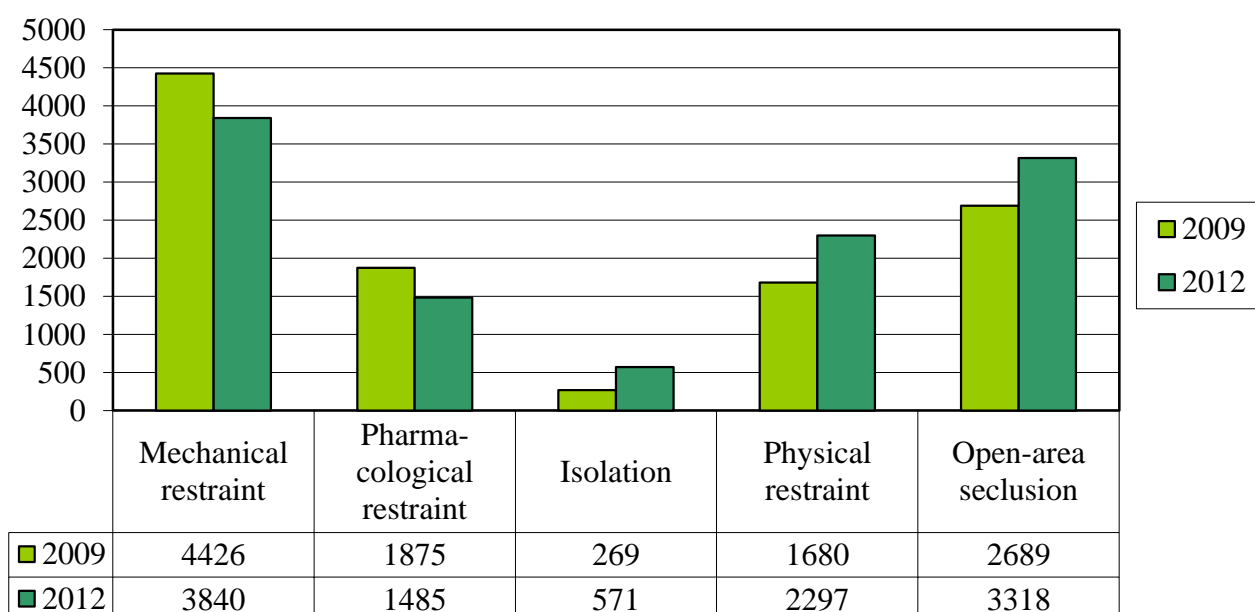


**Figure 4.3: Patients' first decisions on restraint/open-area seclusion, by decision type, 2009 and 2012**



To obtain information about the incidence of each type of restraint and open-area seclusion, each patient's first episodes in 2009 and 2012, respectively, were analysed. The findings indicate that a shift took place between 2009 and 2012 from mechanical restraint and pharmacological restraint to increased use of isolation, physical restraint and open-area seclusion.

**Figure 4.4: Total number of decisions on restraint/open-area seclusion, by decision type, 2009 and 2012**



The total number of decisions authorising the use of mechanical restraint and pharmacological restraint fell slightly between 2009 and 2012, by 586 and 390, respectively, and the number of decisions on isolation, physical restraint and open-area seclusion increased. The decrease in the use of mechanical restraint and pharmacological restraint corresponds to the increase in the use of physical restraint (by 617 decisions) and isolation (by 302 decisions). Figure 4.4 shows the same trend as the analysis of the patients' first episodes (see Figure 4.3).

**Table 4.2: Patients with decisions on mechanical restraint, by gender and number of decisions, 2009 and 2012**

Number of patients subjected to mechanical restraint			Groups of patients by number of decisions (percentage)						
			1	2	3-4	5-9	10-19	20+	Total
2009	male	584	61,2	18,7	9,2	7,6	1,6	1,6	100
2012	male	675	60,9	17,3	13,6	5,0	1,9	1,2	100
2009	female	432	48,9	14,9	14,9	11,9	5,1	4,3	100
2012	female	425	56,2	14,1	11,5	9,2	3,8	5,2	100
2009	total	1056	56,8	16,9	11,2	9,1	3,0	2,7	100
2012	total	1107	59,2	16,0	12,8	6,6	2,7	2,7	100

2009: Insufficient information about the gender of 49 patients

2012: Insufficient information about the gender of 7 patients

The majority of patients subjected to mechanical restraint, had one decision in 2009 and one in 2012. The proportion of women with the most decisions (20+) increased by 21% between 2009 and 2012, while the proportion of men with the most decisions decreased by 25%. In

2009, the percentage of women who had experienced 20 or more episodes of mechanical restraint was double that of men. In 2012, the number of women in this category was four times that of men.

**Table 4.3: Duration of decisions on mechanical restraint, 2009 and 2012**

Number of patients subjected to mechanical restraint		Number of episodes with duration	Duration (hour) of decisions with mechanical restraint in 2009 and 2012 (percentage)									
			0,01-0,49	0,50-0,99	1-1,99	2-4,99	5-9,99	10-19,99	20-49,99	50-99,99	100-408,99	409-
2009	1065	4200	3,0	9,5	21,1	27,5	16,6	14,2	5,3	1,7	0,9	0,2
2012	1107	3682	4,4	11,2	22,6	25,7	14,6	10,6	7,0	2,2	1,4	0,3

2009: Insufficient information about duration of 226 decisions

2012: Insufficient information about duration of 158 decisions

#### Median duration (hours) of the use of mechanical restraint

Year	Total	Male	Female
2009	3,3	6,0	2,3
2012	2,9	5,3	2,0

In 2012, men were subjected to mechanical restraint over longer periods than women (median: 5.3 hours for men compared with 2.0 hours for women, Mann-Whitney U test,  $p < 0.001$ ). The data showed no significant differences between 2009 and 2012 in the duration broken down by time intervals (hours). Just under 50% of the decisions lasted between one and five hours.

**Table 4.4: Patients with decisions on pharmacological restraint, by gender and number of decisions, 2009 and 2012**

Number of patients subjected to pharmacological restraint			Groups of patients by number of decisions (percentage)						
			1	2	3-4	5-9	10-19	20+	Total
2009	male	335	54,5	22,2	13,6	8,2	1,1	0,7	100
2012	male	375	66,7	17,9	8,8	5,3	1,3	0	100
2009	female	341	55,4	17,9	13,5	8,7	3,5	1,3	100
2012	female	325	51,7	18,8	17,2	9,8	2,2	0,3	100
2009	total	712	54,6	20,5	13,3	8,5	2,4	1,0	100
2012	total	709	59,7	18,2	12,7	7,5	1,8	0,1	100

2009: Insufficient information about the gender of 36 patients

2012: Insufficient information about the gender of nine patients

In 2009 and 2012, the majority of patients only received one decision on pharmacological restraint. More men than women had only one decision in 2012. Both in 2009 and 2012 overall, a larger proportion of women than men in the groups had ten or more decisions.

**Table 4.5: Patients with decisions on isolation, by gender and number of decisions, 2009 and 2012**

Number of patients subjected to isolation			Groups of patients by number of decisions (percentage)						
			1	2	3-4	5-9	10-19	20+	Total
2009	male	55	73,9	13	8,7	4,3	0	0	100
2012	male	91	63,7	9,9	11	6,6	6,6	2,2	100
2009	female	44	52,3	31,8	2,3	2,3	11,4	0	100
2012	female	52	61,5	9,6	5,8	9,6	7,7	5,8	100
2009	total	114	60,4	18,8	8,3	8,3	4,2	0	100
2012	total	144	63,2	9,7	9,0	7,6	6,9	3,5	100

2009: Insufficient information about the gender of 15 patients

2012: Insufficient information about the gender of 1 patient

In 2009 and 2012, the majority of patients only received one decision concerning isolation. The overall increase in the number of patients with decisions on isolation was 26%. The number of decisions involving men increased by 65%, while the corresponding number for women was 18%. In 2012, twice the number of patients had one or more decisions on isolation. Between 2009 and 2012, the percentage of patients with decisions on isolation lasting more than ten hours increased by 24%.

**Table 4.6: Duration of decisions on isolation, 2009 and 2012**

Number of patients		Number of decisions with duration	Duration (hour) of decisions with isolation in 2009 and 2012 (percentage)								
			0,01-0,49	0,50-0,99	1-1,99	2-4,99	5-9,99	10-19,99	20-49,99	50-99,99	100-408,99
2009	114	214	36,0	25,2	21,0	11,7	2,8	1,9	0,5	0,5	0,5
2012	144	497	24,9	18,3	25,8	17,5	9,3	2,4	1,6	0	0,2

2009: Insufficient information about duration of 55 decisions on isolation

2012: Insufficient information about duration of 74 decisions on isolation

### Median Duration (hours) of decisions on isolation

Year	Total	Male	Female
2009	0,5	0,6	0,5
2012	1	0,9	1

In 2009, 82% of decisions lasted less than two hours. In 2012, 67% of decisions lasted less than two hours. In 2012, women were isolated for significantly longer periods than men (median: 1.0 hours for women compared with 0.9 hours for men; Mann-Whitney U test,  $p < 0.003$ ). The greatest increase in patients in terms of duration was found within the 2 to 10-hour interval.

**Table 4.7: Patients with decisions on physical restraint by gender and number of decisions, 2009 and 2012**

Number of patients subjected to physical restraint			Groups of patients by number of decisions (percentage)						
			1	2	3-4	5-9	10-19	20+	Total
2009	male	215	63,1	16,2	10,6	7,8	1,7	0,6	100
2012	male	331	63,1	14,5	11,2	8,8	2,1	0,3	100
2009	female	320	56,7	16,4	11,9	9,6	2,7	2,4	100
2012	female	406	52,2	15,3	13,3	13,3	3,0	3,0	100
2009	total	574	57,6	16,9	11,4	9,3	3,0	1,7	100
2012	total	745	57,3	14,9	12,2	11,1	2,6	1,9	100

2009: Insufficient information about the gender of 39 patients

2012: Insufficient information about the gender of 8 patients

Both in 2009 and 2012, the majority of patients had only received one decision concerning physical restraint. The group of patients with most decisions (20+) contained significantly more women than men. Compared with 2009, the number of women in 2012 increased by 25% while the number of men decreased by 50% among patients with 20 or more decisions.

**Table 4.8: Duration of decisions on physical restraint, 2009 and 2012**

Number of patients subjected to physical restraint		Number of episodes with duration	Duration (hour) of decisions with physical restraint in 2009 and 2012 (percentage)						
			0,01-0,49	0,50-0,99	1-1,99	2-4,99	5-9,99	10-19,99	20-49,99
2009	574	1456	83,0	10,2	4,3	1,6	0,5	0,1	0,3
2012	745	1999	83,7	10,7	3,6	1,7	0,3	0	0

2009: Insufficient information about duration of 224 decisions

2012: Insufficient information about duration of 298 decisions

### Median duration (hours) of decisions on physical restraint

Year	Total	Male	Female
2009	0,17	0,14	0,17
2012	0,17	0,08	0,17

Both in 2009 and 2012, 83% of decisions authorising physical restraint lasted less than 30 minutes. In 2012, physical restraint lasted longer for women than for men (median: 0.17 hours for women compared with 0.08 hours for men; Mann-Whitney U test,  $p < 0.001$ ). A real decrease in duration was found for men between 2009 and 2012.

**Table 4.9: Patients with decisions on open-area seclusion, by gender and number of decisions, 2009 and 2012**

Number of patients subjected to open-area seclusion		Groups of patients by number of decisions (percentage)						
		1	2	3-4	5-9	10-19	20+	Total
Male 2009	715	66,1	17,6	9,7	5,0	1,2	0,5	100
Male 2012	837	63,3	17,1	12,5	5,0	1,2	0,8	100
Female 2009	617	63,7	17,2	12,2	5,0	1,8	0	100
Female 2012	767	60,8	21	11,2	5,2	1,4	0,4	100
Total 2009	1406	65,1	17,3	10,9	5,2	1,4	0,2	100
Total 2012	1617	62,2	18,9	11,9	5,1	1,3	0,6	100

2009: Insufficient information about the gender of 74 patients

2012: Insufficient information about the gender of 13 patients

The number of patients with decisions on open-area seclusion increased by 211 between 2009 and 2012. The percentage breakdown of patients by the number of decisions showed the same pattern in 2009 and 2012.

**Table 4.10: Duration of decisions on open-area seclusion, 2009 and 2012**

Number of patients Subjected to open-area seclusion		Number of decisions with duration	Duration (hour) of decisions with open-area seclusion, 2009 and 2012 (percentage)									
			0,01-0,49	0,50-0,99	1-1,99	2-4,99	5-9,99	10-19,99	20-49,99	50-99,99	100-408,99	409-
2009	1406	634	1,7	4,7	5,2	5,0	2,1	5,5	11,5	10,9	51,1	2,2
2012	1617	2270*	2,1	1,6	1,9	1,6	1,0	2,6	7,5	5,8	74,2	1,7

2009: Insufficient information about duration of 2,055 decisions

2012: Insufficient information about duration of 1,048 decisions

### Median duration of decisions on open-area seclusion

Year	Total	Male	Female
2009	139,5	96,0	174,95
2012	335,9*	336,0	312,0

The number of decisions stating no duration was halved between 2009 and 2012. The number of decisions stating a duration more than tripled between 2009 and 2012. In 2012, there was a notable increase in the number of decisions authorising open-area seclusion lasting more than 100 hours. This is reflected in a notable increase in the median duration between 2009 and 2012. This increase applies to both genders. In 2012, men were subjected to open-area seclusion for longer periods than women (336 hours for men compared with 312 hours for women, Mann-Whitney U test,  $p < 0.001$ ).

**Table 4.11: Index for adjusted average number of patients with decisions, 2009 and 2012, by ward code (average and standard deviation)**

Ward codes: The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89	2009		2012	
	Corrected mean	Standard deviation	Corrected mean	Standard deviation
Acute psychiatric ward (61)	3,53	3,1	3,69	1,98
Short-term care ward (62)	0,76	0,84	0,71	0,71
Intermediate care ward (63)	0,64	0,59	0,59	0,42
Long-term care ward (64)	0,58	0,59	0,27	0,16
Rehabilitation ward (65)	0,62	0,55	0,49	0,31
Forensic ward (66)	0,83	0,34	0,85	0,7
Psychogeriatric ward (67)	0,35	0,25	0,64	0,35
Ward for first-episode psychosis (71)	0,15	0,12	0,49	0,7
District psychiatric centre (DPC) (80)	0,31	0,35	0,51	0,65
Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU) (85)	1,45	0,93	0,22	0,24

Adjusted for the average number of patients who received decisions in each ward type.  
 $IP \text{ Index} = (\text{number of patients with decisions}) / (\text{number of beds} \times \text{occupancy rate}/100)$ , (the index is an adjustment for differences between ward types in terms of number of beds and occupancy rate).

Explanation of results in Table 4.11:

Example: The figure 3.69 (adjusted average) for emergency wards in 2012 means that, on average, the emergency wards issued decisions for 3.69 patients per occupied bed in 2012.

The most significant changes from 2009 to 2012 occurred in the wards for patients with first-

episode psychosis (71) and special care wards (85). These findings are difficult to interpret because the number of patients in these wards was low. Long-term care wards (64) appear to show a marked decrease in the number of patients with decisions, while psychogeriatric wards (67) appear to show a corresponding increase.

**Table 4.12: Index for adjusted average number of decisions in 2009 and 2012, by ward code (average and standard deviation for each ward type)**

Ward codes: The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89	ITV-2009		ITV-2012	
	Corrected mean	Standard deviation	Corrected mean	Standard deviation
Acute psychiatric ward (61)	13,7	9,9	12,1	5,4
Short-term care ward (62)	3,2	3,8	5,6	2,8
Intermediate care ward (63)	1,9	2,3	5,7	6,7
Long-term care ward (64)	4,5	5,2	2,2	2,4
Rehabilitation ward (65)	2,7	2,7	3,1	3,6
Forensic ward (66)	7,5	7,2	7,6	9,4
Psychogeriatric ward (67)	2,8	6,8	2,8	2,3
Ward for first-episode psychosis (71)	0,2	0,2	2,6	3,1
District psychiatric centre (DPC) (80)	1,0	1,1	1,7	2,3
Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU). (85)	8,1	3,4	0,6	0,8

The index is an adjustment for differences between ward types in terms of number of beds and occupancy rate. Based on  $ITV\ index = (number\ of\ decisions\ on\ restraint\ and\ open-area\ seclusion) / (number\ of\ beds \times occupancy\ rate / 100)$ .

Example: The figure 12.1 (adjusted average) for emergency wards in 2012 means that the emergency wards issued an average of 12.1 decisions per occupied bed in 2012. The most significant changes in the adjusted average from 2009 to 2012 were found in the ward codes 63, 64, 71 and 85.

#### *Comments on tables 4.11 and 4.12*

Comparing the indexes for the number of patients with decisions and the number of decisions for each ward type provides a clearer picture of the individual wards. Both in 2009 and 2012, the psychogeriatric wards showed an increase in the *number of patients with decisions* (index increased from 0.35 to 0.64), while the index for the *number of decisions* remained stable at 2.8. In simple terms, this means that once adjustments are made for the number of beds and occupancy rate, we find that a ward has more patients who received a decision, but fewer decisions per patient.



**Table 4.13: Number of decisions on restraint and open-area seclusion, by ward code and decision type, 2009 and 2012**

Ward codes: The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89	Mechanical restraint		Pharmacological restraint		Isolation		Physical restraint		Open-area seclusion		Total	
	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012	2009	2012
Acute psychiatric ward (61)	2890	2340	1272	1111	127	253	778	1251	1523	1860	6590	6826
Short-term care ward (62)	73	256	24	38	2	11	51	132	107	167	257	609
General psychiatric ward (60)								1		9		10
Intermediate care ward (63)	141	109	66	43	36	210	101	132	258	130	602	624
Long-term care ward (64)	373	91	37	8	4	0	100	44	125	111	639	255
Rehabilitation ward (65)	57	144	21	17	11	0	64	160	96	127	249	448
Forensic ward (66)	841	748	139	116	57	46	301	245	377	500	1715	1659
Psychogeriatric ward (67)	35	87	218	61	18	44	127	112	38	203	436	508
Ward for first-episode psychosis (71)	0	9	0	12	0	0	3	37	7	46	10	105
District psychiatric centre (DPC) (80)	13	52	80	45	13	6	87	157	111	90	304	352
Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU) (85)	2	2	18	0	1	0	66	24	38	0	125	26
Substance abuse ward										13		13
Missing ward code	1	2	0	33	0	1	2	2	9	62	12	100
Total number of decisions	4426	3840	1875	1484	269	571	1680	2297	2689	3318	10939	11535

In 2009, acute psychiatric wards and secure wards accounted for a total of 75.9% of all decisions. This proportion did not change significantly in 2012 (73.5%).

**Table 4.14: Patients with decisions on restraint and open-area seclusion by ward code, 2009 and 2012**

Ward codes: The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89	2009		2012	
	Number of patients n (%)	Average number of decisions per patient	Number of patients n (%)	Average number of decisions per patient
Acute psychiatric ward (61)	1707 (70,2)	3,9	<i>P</i> <0.001 1936 (74,4)	3,5
General psychiatric ward (60) Short-term care ward (62) Intermediate care ward (63)	241 (9,9)	7,6	<i>P</i> <0.001 144 (5,6)	8,6
Long-term care ward (64)	62 (2,5)	10,3	<i>P</i> <0.001 26 (1,0)	9,8
Rehabilitation ward (65)	60 (2,5)	4,2	<i>P</i> =0.94 65 (2,5)	6,9
Forensic ward) (66)	174 (7,2)	9,9	<i>P</i> =0.55 168 (6,5)	9,8
Psychogeriatric ward (67)	70 (2,9)	6,2	<i>P</i> =0.092 97 (3,7)	5,2
Ward for first-episode psychosis (71)	7 (0,3)	1,4	<i>P</i> <0.001 37 (1,4)	2,8
District psychiatric centre (DPC) (80)	85 (3,5)	3,6	<i>P</i> =0.82 88 (3,4)	4
Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU) (85) Substance abuse ward	19 (0,8)	6,6	<i>P</i> =0.098 11 (0,5)	1,3
Missing ward code	7 (0,3)		30 (1,2)	
Total number of patients	2432 (100)		2602 (100)	
Increase in number of patients from 2009 to 2012			170 (7%)	

Overall, the number of patients who received at least one decision on restraint and open-area seclusion increased by 7% between 2009 and 2012 (n=170). There were significant increases in the percentage of patients with decisions in acute psychiatric wards (61) between 2009 and 2012 (from 70.2% to 74.4%, chi-square test,  $p < 0.001$ ) and in first-episode psychosis wards (71) (from 0.3% to 1.4%, chi-square test,  $p < 0.001$ ). There were significant decreases in the percentage of patients with decisions in general psychiatric wards, intermediate care wards and short-term care wards (60, 62 and 63, respectively) between 2009 and 2012 (from 9.9% to

5.6%, chi-square test,  $p < 0.001$ ) and in long-term care wards (64) (from 2.5% to 1.0%, chi-square test,  $p < 0.001$ ).

**Table 4.15: Decisions on restraint and open-area seclusion, by ward code, 2009 and 2012**

Ward codes: The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89	2009	2012
	Decisions n (%)	Decisions n (%)
Acute psychiatric ward (61)	6590 (60,2)	6826 (59,2)
General psychiatric ward (60)		10
Short-term care ward (62)	909 (7,8)	609 = 1243 (10,8)
Intermediate care ward (63)		624
Long-term care ward (64)	639 (5,8)	255 (2,2)
Rehabilitation ward (65)	249 (2,3)	448 (3,9)
Forensic ward) (66)	1715 (15,7)	1659 (14,4)
Psychogeriatric ward (67)	436 (4,0)	508 (4,4)
Ward for first-episode psychosis) (71)	10 (0,1)	105 (0,9)
District psychiatric centre (DPC) (80)	304 (2,8)	352 (3,0)
Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU) (85) Substance abuse ward	185 (1,1)	39 (0,3)
Missing ward code	12 (0,1)	100 (0,9)
Total number of decisions	10939 (100)	11535 (100)
Increase in number of decisions from 2009 to 2012		596 (5,4%)

Overall, the number of decisions increased by 5.4% ( $n = 596$ ) between 2009 and 2012. The number of decisions decreased in long-term care wards (64), secure wards (66) and special care wards (85), while the number of decisions increased in acute psychiatric wards (61), general psychiatric wards (60), short-term care wards (62), intermediate care wards (63), rehabilitation wards (65), psychogeriatric wards (67), first-episode psychosis wards (71) and district psychiatric centres (80).

**Table 4.16: Duration of decisions on restraint (isolation, physical restraint and mechanical restraint), by ward code, 2009 and 2012**

Ward codes: The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89	2009	2012
	Hours (%)	Hours (%)
Acute psychiatric ward (61)	31568 (69,1)	26539 (57,7)
Short-term care ward (62)	1165 (2,6)	1918 (4,1)
Intermediate care ward (63)		2028 (4,4)
Long-term care ward (64)	1720 (3,8)	241 (0,5)
Rehabilitation ward (65)	1102 (2,4)	2077 (4,5)
Forensic ward (66)	9439 (20,7)	12753 (27,7)*
Psychogeriatric ward (67)	383 (0,8)	219 (0,5)
Ward for first-episode psychosis (71)	2 (0)	30 (0,1)
District psychiatric centre (DPC) (80)	71 (0,2)	179 (0,4)
Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU). (85)	17 (0)	5 (0)
Missing ward code	189 (0,4)	29 (0,1)
<b>Total duration (hours) of decisions</b>	<b>45656 (100)</b>	<b>46012 (100)</b>

\*One patient was excluded from this estimate due to the long duration of the decision (8,808 hours)

Overall, the increase in the duration of restraints was 0.7% (n= 356 hours). There was an overall decrease in duration in three ward types: acute psychiatric wards (61), long-term care wards (64) and psychogeriatric wards (67). The remaining ward categories showed an increase in total duration: short-term care wards (62), intermediate care wards (63), rehabilitation wards (65), forensic wards (66), district psychiatric wards (80) and first-episode psychosis wards (71).

## 5 Conclusions, main findings, limitations and recommendations

### 5.1 Main findings in 2012

(Figures in brackets denote findings from 2009)

1. **Total number of decisions:** A total of 11,535 administrative decisions (10,939) concerning the use of restraint and open-area seclusion were issued. This represents an increase of 5.4% in the number of decisions issued between 2009 and 2012.
2. **Total number of patients:** Decisions authorising the use of restraint or open-area seclusion were issued for 2,602 (2,432) patients. This represents an increase of 7% from 2009.
3. **Duration of decisions on restraint:** The total duration of decisions on restraints was 46,012 hours (45,656). This represents an increase in duration of 0.7% from 2009.
4. **Pharmacological restraint:** A total of 1,485 (1,875) decisions on pharmacological restraint were issued for 709 (712) patients. This represents a decrease in the number of decisions of 20.8%, and no change in the number of patients since 2009.
5. **Mechanical restraint:** A total of 3,840 (4,426) decisions on mechanical restraint were issued for 1,107 (1,065) patients, with an average (median) duration of 2.9 (3.3) hours per decision. This represents a decrease of 13.2% in the number of decisions on mechanical restraint and a 3.9% increase in the number of patients since 2009.
6. **Isolation:** 571 (269) decisions on isolation were issued for 144 (114) patients. The average duration of isolation was 1 (0.5) hours. This represents an increase of 112.3% in the number of decisions on isolation and a 26.3% increase in the number of patients.
7. **Physical restraint:** 2,297 (1,680) decisions on physical restraint were issued for 749 (574) patients, with an average duration of 0.17 (0.17) hours. This represents an increase of 36.7% in the number of decisions on physical restraint and a 30.5% increase in the number of patients.
8. **Open-area seclusion:** 3,318 (2,689) decisions were issued for 1,617 (1,406) patients. This represents an increase of 23.4% in the number of decisions and a 15% increase in the number of patients. The average duration of decisions was 335.9 (139.5) hours. In 2012, it was a significantly higher number of decisions on open-area seclusion stating a period of duration (31.8% of decisions lacked details regarding the duration in 2012, compared with 75.4% in 2009).
9. **Type of restraint/open-area seclusion:** Between 2009 and 2012, we found an increase in the number of patients who were subjected to restraint (apart from pharmacological restraint) and open-area seclusion. An analysis of the first decisions issued for each individual patient (either by type of restraint or open-area seclusion) in 2009 and in 2012 shows a shift in use from mechanical restraints and pharmacological restraint to isolation, physical restraint and open-area seclusion.
10. **Gender:** The number of men increased for all types of restraint and for open-area seclusion. There was an increase in the number of women with decisions on isolation, physical restraint and open-area seclusion. Simultaneously, somewhat fewer women got decisions on mechanical restraint and pharmacological restraint

(7 and 16 patients, respectively). Both in 2009 and 2012, there were more women than men in the category of patients who had more than 20 decisions concerning restraint.

11. **Ward codes:** The acute psychiatric wards accounted for 59% (60%) of all decisions on restraint and open-area seclusion, and together with forensic wards, they accounted for 74% (75%) of all decisions authorising the use of restraint and open-area seclusion. This represents a significant increase in the percentage of patients in acute psychiatric wards ( $p < 0.001$ ) with decisions, compared with the total number of patients with decisions.
12. **The health trusts:** There are wide variations in the number of patients with decisions and in decisions on restraint and open-area seclusion. Because our study did not control for factors that might explain these differences, we cannot draw any conclusions regarding the reasons for them.

## 5.2 Methodological challenges and limitations for deductions and conclusions

### Reliable and valid annual overviews of reported use of coercive measures and seclusion

There were considerable methodological challenges associated with obtaining reliable and valid annual overviews of reported use of restraint and open-area seclusion. The main challenge was to obtain complete data in the sense that the findings objectively reflected reality. This required:

- An accurate overview of units, wards, hospitals and health trusts.
- Reliable procedures for ensuring that all units in the overview submitted data or verified that they did not use restraint or open-area seclusion in the period in question.
- Reliable procedures for processing incoming data:
  - Coding of data
  - Control of data quality after they were entered in the statistics files (data cleansing)
  - Relevant statistical analyses.
- Empirical verification of the deductions made regarding incidence and trends.

A weakness in one or more of these conditions would reduce the scientific quality in such a way as to raise justifiable doubts about the validity of the described findings and conclusions. It is therefore decisive that the methods applied are transparent and accurately described. Accurate reporting of any inadequate incoming data is particularly important in this context?.

### Comparing the use of coercion between health trusts/institutions

One challenge is associated with which organisational level should be analysed. This is particularly relevant when comparing different units, wards and hospitals. One condition for being able to compare units of analysis that are assumed to be similar is that they are in fact comparable.

Two hospitals of the same size may have different functional areas: while one hospital may focus on functions and patients where the use of coercive measures is likely, the opposite may be the case for another hospital. A comparison must necessarily be moderated accordingly. Moreover, hospitals and wards change function over time. This complicates comparisons made over time. An increase or decrease in the use of restraint may be explained by one ward being assigned new functions or being relieved of others. If such changes in areas of

responsibility are not taken into account, there is a risk of drawing an incorrect conclusion that changes in the use of restraint are due to or reflect changes in a unit's professional profile or culture. Even within one and the same unit, there may be alternative explanations for a notable increase or decrease in the use of restraint. In a forensic unit with eight beds, or in an acute psychiatric unit with 14 beds, one new patient may account for a substantial and justifiable increase in the use of restraint.

***Recommendation: The data reported in future mappings of restraint and open-area seclusion should be analysed in relation to relevant background data from the health trusts and institutions (such as the number of patients treated, the number of admissions, and size of catchment area). Such analyses may render it possible to compare differences in use between institutions and health trusts.***

### Organisational-level analysis

The term 'ward code' is interpreted in the same way as in the mapping in 2009 with the help of the Norwegian Board of Health Supervision's coding system for psychiatric institutions (Circular No IK-44/89; see Annex 1).

Due to continual structural changes in mental health care services for adults, such comparisons based on institutional structures and ward structure are complicated. Functions are moved from one ward or hospital to another, or units are merged with others or change their function without changing their name, etc. Moreover, new designations have come into use that creates confusion as to which functions a unit actually has. One such example is the definition of a former forensic unit (*sikkerhetspost*) to 'reinforced rehabilitation unit' (*forsterket rehabiliteringspost*) where forensic psychiatric patients are treated alongside other long-term patients. However, the main problem lies at ward level because over time, a ward may cover highly diverse types and numbers of units. There are also examples of sharing or transferring functions between hospitals. This makes comparisons at ward level and hospital level highly complicated. Performing comparisons at unit level seem to be relatively reliable, provided that measurements at this level are available and that functions in the unit in question have not changed since the previous mapping.

**It is recommended that the ward coding system for psychiatric institutions be updated in line with new developments in the organisation of mental health care services, and an updated, national overview of units/wards approved for the use of restraint should be created.** Such a national overview of health trusts and institutions providing mental health care for adults with decisions on restraint and open-area seclusion could ensure complete reporting by all relevant units providing adult mental health care.

### Data quality

#### Overcounting of patients

The same method was used in this mapping of restraint and open-area seclusion as in that conducted in 2009. This time, a specific control of potential overcounting of patients was conducted, which estimated 10% of the patients (see page 21). This does not affect the number of decisions. Whether the estimated 10% overcount of the number of patients applies to all health trusts depends on organisational conditions such as the length of stay in each ward (special treatment services) and the progression of the patient flow in each health trust.

### *Documentation of decisions in places other than the prescribed records*

It appears that the mapping was not complete because two health trusts used the Distributed Information Patient System (DIPS) to document the use of open-area seclusion and restraint. DIPS is part of the electronic patient records and therefore constitutes a data source other than the restraint records. In one health trust, it involved eight patients with an undetermined number of decisions on open-area seclusion. In another health trust it involved 39 patients with 89 decisions (concerning both restraint and open-area seclusion).

### ***It is recommended that an electronic documentation system be developed and implemented.***

Preparatory work for such a reorganisation has already been done, and this could form the basis for further cooperation between IT staff and clinicians (*EPJ standard:*

*Tvangsprotokoller i psykisk helsevern. Kravspesifikasjon og teknisk standard. KITH rapport 02/07*) ('EPR Standard: Use-of-restraint records in mental health care. Requirements specification and technical standard. Norwegian Centre for Informatics in Health and Social Care, Report No 02/07'). The development of a common, national electronic patient records system in this area would produce several results:

- Patients would not be counted multiple times in mappings of the use of restraint and open-area seclusion.
- Documentation of restraint could be obtained from the same data source.
- Such a system would generate continuous reports to aid day-to-day operations.
- It would provide easier access to control commissions and other supervisory authorities.
- It would improve data quality and, thereby, research quality.

### **What the mapping of decisions on restraint and open-area seclusion does not tell us**

The mapping and analyses were based on reported information taken from records. While performing the mapping work, we reflected on the quality of the documentation of decisions on restraint and open-area seclusion.

The following section outlines some areas that, in our opinion, could be improved. Further requirements for documentation of certain aspects of coercive measures and open-area seclusion could provide more detailed information about initiating and implementing restraint and open-area seclusion.

### *Distinguishing between decisions and episodes of restraint*

An administrative decision concerning the use of restraint must be made by the responsible health care professional and recorded in a designated document that does not make up part of the restraint record. The decision is scanned and then stored in the patient's electronic patient record (a copy may be entered in the restraint record). Can a decision concerning mechanical restraints cover multiple episodes? Under this interpretation, a decision concerning restraint could be interpreted as multiple episodes of restraint in the restraint record. This can be illustrated as follows: If a decision concerning restraint is made at, for example, 16.00, and any continuous periods of mechanical restraints are entered in the record (each lasting for a limited time period and, for example, over a period of some hours ahead in time), these periods would, under this interpretation, be regarded as episodes of restraint under a decision concerning restraint.

In the records of restraint, the term *vedtak* ('administrative decision') is used. Therefore, no distinction was made in this mapping between an episode and a decision, and under this



interpretation, all ‘episodes’ were therefore identified as decisions. However, if the decisions entered in the patient journals were used as a data source for the use of restraint, such an interpretation would result in a lower number of decisions on restraint.

The issue of whether a decision in a record is a ‘new period’ or a ‘new episode’ is discussed on page 78 of the annotated edition of the Mental Health Care Act and the Mental Health Care Regulations, Circular No IS-9/2012:

*‘The fifth paragraph second sentence stipulates that the decision must be recorded without delay, meaning as soon as possible.’*

*‘There may have been a question of how frequently decisions should be made if restraint must be used continuously for a long period, for example two to four times in a 24-hour period. How frequently decisions on restraint should be made in such situations must be assessed in each individual case. Elements in such assessments may then be whether it was a case of a “new period” or whether the restraint was only suddenly terminated in connection with, for example, a need to use the toilet.’*

***It is recommended that the relationship between an episode and a decision is clarified, in order to ensure a common understanding and documentation of decisions authorising the use of restraint.***

#### *How physical restraint is practised*

The mandate for mapping restraint was to map the number of decisions and the number of patients who had been subjected to physical restraint. It was not to collect further details about how physical restraint was practised. Physical restraint was defined as restraint in 2007, but it had long been used in many areas of mental health care. It is worth noting that the information in the records of restraint says nothing about how the decision was initiated and implemented. The documentation says that a decision was made and initiated (*‘holding’*, *‘brief holding’*). The documentation provides no details about how physical restraint was implemented in practice or how many from the staff were involved. Nor does it say anything about whether consideration was given to which method of implementation would be least intrusive (see quotation below) or to the gender of the personnel who are to implement the measure. This is discussed on page 41 of the annotated edition of the Mental Health Care Act and the Mental Health Care Regulations, Circular No IS-9/2012.

*‘The measure must be implemented in the least intrusive manner possible. What is deemed to be the least intrusive manner must be assessed in each case for each patient? For example, for some patients, physical restraint should only be carried out by staff of the same gender as the patient. Likewise, it is conceivable that holding patients who have been subjected to sexual assault should to be avoided.’*

We know from practice and publications that there are many different ways of implementing the use of physical restraint. Here are some examples:

- the patient is placed in the lateral position, with personnel holding the patient’s arms and legs.
- the patient is seated on the edge of the bed while personnel sit on either side of the patient and hold the patient’s arms.
- the patient may be placed face-down on the floor, with two or more personnel lying on top/holding the patient down. The latter example has proven to pose a high level of risk. Fatalities have been reported as a result of this type of intervention (Ball, 2005). In a similar case in Norway, however, the patient survived because the individual concerned received CPR in time (Nissen et al., 2012).

***It is recommended that further requirements be developed for documenting the use of physical restraint so that information is provided about the position in which the patient should be held during implementation of the decision (for example: prone position, supine position on the floor, arms held, seated on the bed), how many staff participate (and their gender, where applicable) and in what way (how personnel use their bodies during the use of physical restraint).***

#### *Stipulating the time aspect of when holding becomes a coercive measure*

Experience from practice shows that different understandings prevail of how long holds must last in order to be deemed a physical restraint requiring an administrative decision. Some professional communities have stipulated that a hold must last a given number of minutes before it can be deemed as physical restraint, whereas others deem holding as physical restraint regardless of duration. These conflicting understandings of when a hold becomes physical restraint has implications for how physical restraint is documented because the use of holding in two different wards will be recorded as different numbers of decisions when restraint are reported.

***It is recommended that it be clarified how long holds must last in order to require an administrative decisions.***

#### *Use of restraint in connection with implementing other types of coercive measures*

One example is whether different holds should be deemed restraint or should have no implications for whether or not the use of different holds is documented. It is known that personnel use different types of holds when administering different types of involuntary treatment such as force-feeding or forced medication. The question of whether holds are deemed to be restraint has implications for whether the use of holding is documented. Different interpretations lead to different reporting practices and potential under-reporting of the use of physical restraint. This is clarified on page 64 of the annotated edition of the Mental Health Care Act and the Mental Health Care Regulations (Circular No IS-9/2012), as follows: ‘If, when administering the involuntary treatment, it becomes necessary to exercise coercion (physical/mechanical restraint), an administrative decision must be made to this effect (Section 4-8).’ This clarification does not appear to be widely known in clinical practice.

***It is recommended that this clarification be made known to the professional communities.***

#### *Consequence of measures concerning open-area seclusion*

The way decisions authorising open-area seclusion are documented in the open-area seclusion records provides no details about the content of such measures or about what restrictions they impose on the patient’s day-to-day life. The documentation contained in the records is sparse, and the following phrase often appears in the column describing the measure: ‘segregated unit’. We know from clinical practice that both organisational and architectural conditions in wards/units can vary considerably. This can apply to conditions such as regulating and tightening control of the patient’s day-to-day activities, the architectural design of a segregated unit, the number of patients, the composition of patients or how contact with staff is organised (how long personnel are present each time).

***It is recommended that guidelines be developed for documenting how open-area seclusion should be implemented so that the decision clearly states what it entails for the patient.***

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## *Annex 1*

### *Ward coding system*

#### **The Norwegian Board of Health Supervision's ward coding system for psychiatric institutions, Circular No IK-44/89**

##### *6 Psychiatric wards*

- 60 General psychiatric ward
- 61 Acute psychiatric ward
- 62 Short-term care ward
- 63 Intermediate care ward
- 64 Long-term care ward
- 65 Rehabilitation ward
- 66 Forensic ward
- 67 Psychogeriatric ward
- 68 Neurosis ward
- 69 Local code, where applicable

##### *7 Other psychiatric wards*

- 71 Ward for young schizophrenics (referred to as the ward for first-episode psychosis)
- 72 Psychosomatic ward
- 73 Ward for substance abusers ('Greenhouse')
- 74 Local code, where applicable
- 75 Children and adolescent psychiatric ward
- 76 Child psychiatric ward
- 77 Adolescent ward
- 78 Family ward
- 79 Psychiatric nursing home

#### **8 Other hospital wards (defined by the Regional Centre for Research and Education in Forensic Psychiatry and Psychology for the South-Eastern Norway Regional Health Authority)**

- 80 District psychiatric centre (DPC)
- 85 Other: Regional ward for eating disorders (RASP), Ward for people with development disabilities/autism (PPU).

## Annex 2

Basic data for the number of decisions on coercive measures and seclusion, and the numbers of patients with decisions in 2012, by health trust/institution

Health trust/institution	Number of patients with decisions	Number of decisions
Østfold Hospital health trust	137	424
Akershus University Hospital health trust	313	1136
Oslo University Hospital health trust	174	1083
Diakonhjemmet Hospital health trust	85	177
Lovisenberg Diaconal Hospital health trust	150	531
Vestre Viken Hospital health trust	157	745
Telemark Hospital health trust	85	243
Vestfold Hospital health trust	135	401
Innlandet Hospital health trust	200	679
Sørlandet Hospital health trust	111*	380
Stavanger University Hospital health trust	286	2259
Fonna Hospital health trust	111	405
Bergen Hospital health trust	204	1272
Førde Hospital health trust	32	145
Møre and Romsdal Hospital health trust	95	326
Nord-Trøndelag Hospital health trust	42	182
St. Olav's Hospital health trust	117	620
Nordland Hospital health trust	70	204
University Hospital of Northern Norway health trust	94* *	309
Other institutions: Furukollen psychiatric centre Skjelfoss psychiatric centre	4	14
<b>Total</b>	<b>2602</b>	<b>11535</b>

\* Under-reporting of 8 patients due to documentation in DIPS

\*\*Under-reported data on 39 patients due to documentation in DIPS

### Comments:

If it is to be possible to compare the use of restraint and open-area seclusion between different health trusts/institutions, they must be comparable. Several conditions make it impossible to compare the absolute statistics submitted by the health trusts/institutions regarding the numbers of decisions and the numbers of patients with decisions without making reservations.

Two hospitals of the same size may have different functional areas. While one hospital may focus on functions and patients where the use of restraint and open-area seclusion is likely, the opposite may apply to another hospital. A comparison must necessarily be moderated accordingly. Moreover, hospitals and wards change function over time. This complicates comparisons made over time. An increase or decrease in the use of restraint and open-area seclusion can be explained by one ward being assigned new functions or being relieved of others. If such changes in areas of responsibility are not taken into account, there is a risk of drawing an incorrect conclusion that changes in the use of restraint and open area seclusion are due to or reflect changes in a unit's professional profile or culture. Even within one and the same unit, there may be alternative explanations for a notable increase or decrease in the use of restraint and open area seclusion.

De regionale helseforetakene

Deres ref.:  
Vår ref.: 10/7525-4  
Saksbehandler: Anne Solberg  
Dato: 17.09.2013

### **Orientering om innsamling og analyse av data fra 2012 om bruk av tvangsmidler og skjerming i det psykiske helsevernet for voksne**

I 2009 gjennomførte Kompetansesenteret en systematisk gjennomgang av rapporterte institusjons- og pasientdata om tvangsbruk, vedtak om skjerming og tvangsbehandling. Helsedirektoratet har igjen inngått kontrakt med Kompetansesenter for sikkerhets-, fengsels- og rettspsykiatri for Helseregion Sør-Øst om innsamling og analyse av data om bruk av tvangsmidler og vedtak om skjerming i alle døgninstitusjoner i det psykiske helsevernet for voksne i 2012. Hensikten er å kunne følge utviklingen på dette feltet både nasjonalt, regionalt og lokalt.

Data om bruk av tvang i det psykiske helsevernet samles inn rutinemessig inn av ulike aktører. En systematisk gjennomgang av rapporterte institusjons- og pasientdata om tvangsbruk, vedtak om skjerming og tvangsbehandling i 2009, viste at pasientdata for tvangsmiddelbruk var svært mangelfulle. Det samme gjaldt innrapporterte data til Statistisk sentralbyrå. Kontroll av pasientdata for vedtak om skjerming samsvarte relativt godt med rapportering i andre kilder. Avvikene på institusjonsnivå ble likevel vurdert å være for store til at de nasjonale tallene ble publisert (Bremnes og Jensberg 2009).

Det er et uttalt politisk mål å redusere og kvalitetssikre bruken av tvang i de psykiske helsetjenestene. De regionale helseforetakene har iverksatt handlingsplaner for å begrense og kvalitetssikre bruken av tvang i det psykiske helsevernet, og i Nasjonal strategi for økt frivillighet og bedre kvalitet i de psykiske helsetjenester (2012-2015) er det en rekke tiltak som skal føre til samme mål.

Det er en forutsetning for utviklings- og kvalitetsarbeid som skal redusere bruken av tvang og tvangsmidler at en kjenner omfanget av tvangsbruk både nasjonalt og ved egen avdeling og institusjon, slik at en har mulighet til å kunne sammenligne seg med andre. For å kunne følge utviklingen i årene fremover, er det derfor viktig at alle avdelinger og institusjoner leverer komplette data innenfor de fristene som er satt. Som en del av arbeidet med å kvalitetssikre data vil Kompetansesenteret gi alle institusjoner som omfattes av kartleggingen skriftlig tilbakemelding med institusjonens sumtall / rater for aktuelle variabler, samt nivå for bruk av de ulike tvangsmidlene og skjerming i forhold til landsgjennomsnittet.

#### **Helsedirektoratet - Divisjon spesialisthelsetjenester**

Avdeling psykisk helsevern og rus  
Anne Solberg, tlf.: 24163280

Postboks 7000 St. Olavs plass, 0130 Oslo • Besøksadresse: Universitetsgata 2, Oslo • Tlf.: 810 20 050  
Faks: 24 16 30 01 • Org.nr.: 983 544 622 • postmottak@helsedir.no • www.helsedirektoratet.no



Vi ber de regionale helseforetakene om å bistå Kompetansesenteret med de opplysningene de etterspør i forbindelse med dette oppdraget.

Vi også be om at klinikkledelsen kvalitetssikrer at den vedlagte avdelingsoversikten de blir tilsendt er i overensstemmelse med klinikkens organisering i 2012.

På forhånd takk for samarbeidet!

Vennlig hilsen

Gitte Huus e.f.  
avdelingsdirektør

Anne Solberg  
seniorrådgiver

Kopi:  
Kompetansesenter for sikkerhets-, fengsels- og rettspsykiatri for Helseregion Sør-Øst



Klinikk psykisk helse og avhengighet  
Avdeling for psykisk helse, nasjonale og regionale funksjoner  
Kompetansesenter for sikkerhets-, fengsels- og rettspsykiatri for  
Helseregion Sør-Øst

Til klinikkledelsen

Oslo, 01.11.2013

— **Nasjonal kartlegging av tvangsmiddelbruk og skjermingsvedtak i det psykiske helsevern for voksne i 2012**

Hesledirektoratet har gitt Kompetansesenter for sikkerhets-, fengsels- og rettspsykiatri for Helse Sør-Øst i oppdrag å samle inn og kartlegge tvangsmiddelbruk og skjermingsvedtak i det psykiske helsevern for voksne i 2012. Følgende data skal samles inn:

- Tvangsmiddelepisoder: Dato / klokkeslett for oppstart og avslutning av den enkelte tvangsmiddelepisode og type tvangsmiddel.
- Skjermingsvedtak over 24/12 timer: Dato / klokkeslett for oppstart og avslutning av den enkelte skjermingsepisode og type skjermingsmetode.

Innsamling av data gjøres ved å kopiere venstre side av tvangsmiddel- og skjermingsprotokollene for 2012, som inneholder all informasjon som skal innhentes. Pasientinformasjonen øverst på kopien klippes bort slik at dataene blir anonyme. Kun pasientens kjønn samt navnet på enheten/posten skal påføres kopien av protokollen.

Klinikkledelsen bes om å utpeke en person, gjerne en merkantil ansatt, som på vegne av hver seksjon/avdeling kan ta ansvar for innsamlingen av data. Vedkommende vil få tilsendt utfyllende beskrivelse av oppgavene knyttet til datainnsamlingen, samt et skjema for utfylling av seksjon/avdelingsinformasjon.

Vi ber med dette om følgende opplysninger fra klinikkledelsen:

- **Navn på kontaktperson.**
- **Telefonnummer til kontaktperson.**
- **E-postadresse til kontaktperson.**
- **Helseforetakets navn.**
- **Avdelingenes/seksjonenes navn slik de var i 2012. Vi henviser til den vedlagte oversikten over helseforetakets avdelinger og underliggende enheter/poster.**

Svar sendes per e-post til: [tvang2012@kompetanse-senteret.no](mailto:tvang2012@kompetanse-senteret.no) senest innen 14 dager etter mottatt brev.

Kontakt oss dersom det skulle være spørsmål eller uklarheter.

Maria Knutzen	95 47 44 91
Astrid Furre	41 44 19 60
Martin Bjørnstad	95 45 64 27

På forhånd takk for hjelpen.

Med vennlig hilsen



Harald Aulie  
Konstituert leder  
Kompetansesenter for sikkerhets-,  
fengsels og rettspsykiatri  
for Helseregion Sør-Øst



Maria Knutzen  
Prosjektleder

Til avdelingskontaktene

Oslo, 12.11.2013

**Beskrivelse av fremgangsmåte for:**

**a) Innhenting av data fra tvangsmiddel- og skjermingsprotokoller for 2012**

- Finn fram alle tvangsmiddel- og skjermingsprotokollene for 2012 på hver enhet/post på din avdeling. NB! Tvangsbehandling med medikamenter inngår **ikke** i innsamlingen, så denne protokollen skal **ikke** kopieres.
- Kopier venstresiden i tvangsmiddel- og skjermingsprotokollen **og sjekk at dato helt til venstre i protokollen kommer med på kopien**. Dette er svært viktig for å få korrekt varighet på hver enkelt tvangsmiddel- og skjermingsepisode.
- **Skriv navnet på enhetens/posten** på alle de kopierte venstresidene av protokollene. Noen av de kopierte protokollene vil også kunne inneholde tvangsmiddelepisoder fra 2011 fordi man ikke nødvendigvis begynner på ny side i tvangsmiddelprotokollen ved årsskiftet. Disse vil ikke bli tatt med i kartleggingen vår.
- Sorter kopiene fra alle enheter/poster den enkelte pasient har vedtak fra. Dette er nødvendig fordi noen pasienter kan ha fra flere enheter i løpet av 2012.
- Merk samtlige kopier av protokollene med pasientens kjønn (M = mann, K = kvinne). Er det tvil om pasientens kjønn kan dette sjekkes via pasientens personnummer. Tredje siffer i personnummeret angir kjønn: kvinner har partall (0-2-4-6-8), menn har oddetall (1-3-5-7-9).
- Anonymisering av opplysningene gjøres på følgende måte (jf. Helsepersonelloven § 21 om taushetsplikt): **Stift** sammen alle kopiene av protokollene som tilhører én og samme pasient, **ikke bruk binders**. Klipp bort og makuler den øvre delen hvor pasientens navn og personnummer er oppført. Klipp også bort navn på ansatte eller annen informasjon som ikke vedkommer kartleggingen.

- Sjekk at kopiene er leselige og at datoene for vedtakene er fullstendige (dag/mnd/år).  
Legg de stiftede kopiene i en konvolutt sammen med skjemaet om avdelingsopplysninger.

#### b) Utfylling av skjema for avdelingsopplysninger

- Avdelingsopplysningene fra 2012 på vedlagt Excel-ark er utarbeidet av oss basert på den kvalitetssikrede informasjonen vi har mottatt (dersom det mot formodning forekommer feil, vennligst rett opp dette).
- Fyll inn / korrigjer på angitte nummererte kolonner på avdelingsopplysningsskjema;
  1. Avdelingstype (jf. Vedlagte dokument «avdelingskodeverk»).
  2. Spesifikasjon av post/enhet med spesialfunksjoner (jf. Vedlagte dokument «avdelingskodeverk»).
  3. Antall døgnplasser/senger pr. 31.12-2012.
  4. Beleggsprosent i 2012.
  5. Har tvangsmiddelbruk forekommet på den enkelte enhet/post? *Ja eller Nei.*
  6. Har enheten/posten fattet vedtak om bruk av skjerming over 12/24 timer? *Ja eller Nei.*
  7. Summen av antallet **pasienter** med skjermings- og tvangsmiddelvedtak på enheten/posten. Dette gjøres ved å telle antall pasienter som har én eller flere kopierte sider fra tvangsmiddel/skjermingsprotokollene.

Dersom noe er uklart, ikke nøl med å kontakte oss på følgende telefonnumre:

Maria Knutzen: 95 47 44 91,  
Martin Bjørnstad: 95 45 64 27  
Astrid Furre: 41 44 19 60

Eller epost: [tvang2012@kompetanse-senteret.no](mailto:tvang2012@kompetanse-senteret.no)

Kopiene av tvangsmiddel- og skjermingsprotokollene og skjema med avdelingsopplysninger sendes **senest 14 dager etter mottatt brev**, til:

Prosjektmedarbeider Martin Bjørnstad  
Oslo universitetssykehus HF, Ullevål  
Klinikk psykisk helse og avhengighet  
Avdeling for psykisk helse, nasjonale og regionale funksjoner  
Kompetansesenter for sikkerhets-, fengsels- og rettspsykiatri for Helseregion Sør-Øst  
Pb. 4959 Nydalen  
0424 Oslo

### TUSEN TAKK FOR HJELPEN

Med vennlig hilsen



Harald Aulie  
Konstituert leder  
Kompetansesenter for sikkerhets-,  
fengsels- og rettspsykiatri  
for Helseregion Sør-Øst



Maria Knutzen  
Prosjektleder

Avdelingsopplysninger 2012  
Innsamling og analyse av data om bruk av tvangsmidler og vedtak om skjerming i det psykiske helsevernet for voksne 2012.

HF / Avdelingsnavn / Navn og mail til avdelingskontakt her

	1) Avdelingstype (brukt ved rapportering til SSB og NPR)	2) Spesifikasjon av post/enhet med spesial- funksjoner	3) antall døgnplasser pr 31.12.12	4) Beleggs- prosent i 2012	5) Tvangs- middelbruk (kryss av på "ja" / "nei")	6) Skjerming (kryss av på "ja" / "nei")	7) Antall pasienter med vedtak
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Annex 7

Restraint protocol				
Date	Initiation, date, hour	Termination, date, hour	Patients "article-status" (voluntary or restraint)	Decisions: a. Mechanical restraint (specify type) b. Isolation c. Pharmacological restraint (drug, dose and administration) d. Physical restraint
01/10 2012	09.40 am		§ 3.2	C. Zyprexa inj 10 mg x 1 i.m D. Physical restraint approx. 30 - 35 min all together
01/10 - 12	04.00 pm		§ 3.2	a. 5 pt. belt bed d Physical restraint in bed
02/10 - 12	09.30 pm	09.45 pm	§ 3.2	4 point fixation - left arm released
02/10 - 12	09.45 pm	3.10 - 12 10:30 am	§ 3.2	3 point fixation - right leg released
03.10 - 12	10.30 am		§ 3.2	released
04.10 - 12	approx. 11.00 am	approx. 01:00 pm	§ 3.3	d) repeated physical restraint
27.01-12	10.15 am		3.3	a) Belt bed
27.01-12	01.15 pm			> diagonal release 01.15 pm
27.01-12	27.01 11:15 am			c) Stesolid 10 mg I.M
27.01-12	11.15 am			c) Haldol 10 mg I.M
27/1-12	02.20 pm	wrong note, 08:25 pm		a) belt
27/1-12	03.45 pm			Diagonal release 03.45 pm
27/1-12	10.10 pm			Both legs released
27/1-12	10.45 pm			Both arms released
27/1-12	11.35 pm			Released from belt, stomach
28/1-12	00.20 am	00.20 am		Completely released from belts
27/1-12	08.45 pm			c) Stesolid 10 mg I.M
27/1-12	08.45 pm			c) Haldol 10 mg I.M

**Duration of two different types of restraints when these are recorded in parallel (same boot time) in the restraint protocol**

There were episodes where physical restraint and isolation or mechanical restraint, were documented on the same line and column for decisions. Thus, it was not possible to know when the decision on physical restraint ended and the decision on isolation or mechanical restraint was initiated. In such cases, the decision on physical restraint was encoded with missing termination (see example 1a above).



**Duration of decisions on physical restraint without timespan in the restraint protocol**

Several episodes of physical restraint were reported with only one time entry. In the rubric for type of restraint several episodes of physical restraint could be described. Timespan could be a total of, for example, one hour. In these cases, the time of initiation and termination for the individual episode do not appear, and the duration of the decision can therefore not be calculated in the database (see example 1b above).

**Open-area seclusion protocol**

Date	Initiation, date, hour	Terminated,, date, hour	Patients "article-status" (voluntary or restraint)	The measure involves (Relative to the patient's freedom of movement and access to things / media)
23/3-12	23/3-12	6/4-12	restraint	Open-area seclusion
03/4-12	6/4-12	20/4-12	restraint	—————    —————.
23/4-12	20/4-12	4/5-12	restraint	—————    —————.
3/5-12	4/5-12	18/5-12	restraint	—————    —————.
18/5-12	18/5-12	1/6-12	restraint	—————    —————.
1/6-12	1/6-12	15/6-12	restraint	—————    —————.

**Duration of decisions on open-area seclusion in the protocols**

The above example of the open-area seclusion protocol, shows an open-area seclusion decision with missing timespan (time and date). The next open-area seclusion decision on the following line in the protocol was made 14 days later. This case consistently lacked termination dates, however the next decision was consistently made 14 days after the prior decision. In such cases, we decided to interpret the new decision date as the termination date for the previous decision.

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