MAT Medicine Anthropology Theory

RESEARCH ARTICLES

# Data on the Mind

## How the Data on the Use of Force in Psychiatry Interacts with Professional Judgment

Klaus Hoeyer, Anne Hoeyen Munk and Sarah Wadmann

Received: 14 September 2023; Accepted: 12 August 2024; Published: 31 March 2025

## Abstract

Psychiatric clinicians and managers increasingly use data to monitor the use of force on psychiatric patients. In this study, we describe how Danish authorities simultaneously emphasise a need for close data monitoring and tell a story of failure: rather than reducing force, they claim that data monitoring of mechanical restraint has simply replaced this type of force with other types. We show here how the official narrative of failure is based on highly selective data practices. It inadequately conveys the efforts of the psychiatric staff, with potentially negative implications for the development of clinical judgment. While the authorities and many clinicians support continued data monitoring, we argue a need to rethink the role of data in relation to force and to better appreciate how data practices affect understandings of expertise. We base our analysis on policy papers and official reports on monitoring practices in Denmark, secondary analysis of data from these monitoring practices, as well as observations from and qualitative interviews with clinical managers, administrators and clinicians. By engaging these policies and practices, we point to a need for a new form of anthropological engagement with the data politics currently shaping psychiatric expertise.

## Keywords

Data, Clinical judgment, Psychiatry, Force, Expertise

*Medicine Anthropology Theory* 12 (1): 1–28; ISSN 2405691X; https://doi.org/10.17157/mat.12.1.9053

# Introduction

Throughout the Global North, psychiatric hospitals seek to reduce the use of physical force on patients; data monitoring is key to achieve this aim. ‘Force’ includes mechanical restraint, forced sedation, or physical restraint, and reduction of force relies on changes in professional norms and work practices. In this article, we explore how an emphasis on data monitoring interacts with the development of professional judgment, which is a central component of psychiatric expertise. Data monitoring implies that each incident is counted and that staff performance is evaluated based on the numbers thereby produced (Huckshorn 2004; Hirsch and Steinert 2019; Smith et al. 2023). Psychiatry deals with complex and multidimensional matters of the mind that are often notoriously difficult to capture with data (Martin 2021). Yet, those governing psychiatric institutions seem to have their own minds firmly focused on data. They increasingly rely on data to change professional conduct. This article explores the implications for the conditions under which a sense of professional judgment can develop and mature, if we understand judgment as an ability to weigh multiple potentially conflicting demands, values, and epistemic cues against each other in a workplace context.

Denmark has one of the most digitised and integrated data infrastructures in the world (Aanestad and Jensen 2011; Kierkegaard 2013). This allows for detailed centralised monitoring of clinical decisions (Winthereik, van der Ploeg and Berg 2007), and makes Denmark a particularly suitable place to study how aggregated numbers on force affect the development of clinical judgment and thereby psychiatric notions of expertise. With premier monitoring options at hand, one might expect to find in Denmark a fine example of how data practices can reduce the use of force. However, recent policy documents from the Danish national authorities present a peculiar narrative of failure: despite determined political goals relying on detailed data monitoring, it has apparently not been possible to reduce the use of force in psychiatry. Instead, the narrative goes, the focus on monitoring *one* type of force is said to have implied a substitution effect with increases in *other* types of force. The Danish Health Authority (Sundhedsstyrelsen, 2021, 5) thus concluded in 2021 that ‘in the past monitoring period, there has been a special focus on reduction of one type of force, i.e. mechanical restraint, which has partly succeeded, but concomitantly the use of physical restraint and forced medication has increased’.[1]

Other reports make the same observation (Sundhedsministeriet 2021; Sundhedsstyrelsen 2021) and the Rigsrevision (a parliamentary audit institution) surmised, ‘There are indications that a substitution has taken place from

---

[1] All translations of material from Danish to English are made by the authors.

mechanical restraint to other types of force' (Folketinget Statsrevisorerne and Rigsrevisionen 2021, 4, our translation). In his response to the report's criticism, even the minister of health agreed that there has been an unfortunate substitution of force (Sundhedsministeriet 2021). These reports contain a peculiar contradiction: they blame data monitoring for generating an effect of substitution (to comply with the monitored goal), and yet they call for intensified data monitoring to bring down the use of force.

Though the official political narrative about the use of force is one of failure, there is a clear sense among the clinical managers and staff working in psychiatric care that improvements have been made. Most clinicians talk about a major 'change in culture' so that force is avoided if possible. Even the minister of health concedes that 'the psychiatric field has significantly progressed' (2020, 1, our translation). It seems that very different perceptions can coexist, even within the ministry.

Faced by these contradictory accounts, we explore the politics involved in using data to reduce the use of force in psychiatry and how it impacts the development of professional judgment. We draw on critical data studies, literature on professional judgment, and anthropological studies of expertise, and base our analysis on policy papers, on secondary analysis of the data generated by the healthcare services, and on qualitative interviews with psychiatric clinicians, managers and data analysts. We show how the official narrative of failure might inadequately convey the actual developments in clinical practices, and illustrate how data monitoring affects expertise by both stimulating productive reflections and prompting staff to overrule their own best judgment.

These paradoxical effects relate to how data facilitates particular forms of governance (see also, Hoeyer 2023). People far from the daily practices of psychiatric care use data to draw authoritative conclusions about the current state of affairs in a mental health practice they have not themselves observed. However, while these administrators use data to document and address problems in psychiatry, few of them consider *data practices* worth studying in their own right. Similarly, clinicians and researchers use data, but rarely study data. In everyday work in psychiatry, data is the means of scrutiny, not the object of scrutiny. In this paper, we turn the gaze around. We look *at* data more so than *with* data (cf. Loukissas 2019).

In the following, we first describe our inspiration from theoretical conceptualisations, and then account for our methods and materials. The subsequent analysis takes place in four parts. First, we outline the process by which data came to hold such a prominent role in attempts to regulate the use of force in psychiatry in Denmark. Second, we provide an example of how the need for data and evidence is argued in key policy papers. Third, we show how other analyses of publicly available data might challenge the official political narrative of failure. Fourth, we reflect on the possible negative implications of using crude numbers of incidents of force when trying to govern staff. Finally, in the discussion, we discuss why data continues to hold such appeal and how this speaks to the ways in which data informs notions of expertise.

## Social scientific engagements with data, judgment, and expertise

In recent years, many healthcare organisations have experienced a data surge: everybody seems to want more data, on more people, and use them for more things (Hoeyer, 2023). Petersen has described how high expectations of increased efficiency and better collaboration fuel investments in data infrastructures—but also that such promises often flounder when they are to be realised in clinical practice (Petersen 2019). In relation to data initiatives in healthcare, Bossen and colleagues have pointed to the often demanding and manually laborious data work required to enable digitalisation despite policy claims of efficiency (Bossen, Chen and Pine 2019; Bossen et al. 2019). Hunt and colleagues have shown that an increasing emphasis on data generation can impact patient care negatively by redirecting attention to those aspects that are most easily measured (Hunt et al. 2017; Ruckenstein and Schüll 2017). Data is key to healthcare performance, for better and worse.

When used for monitoring purposes, data can increase systematic follow-ups, establish helpful overviews, and sometimes correct unfounded assumptions. However, data tends to focus attention on particular activities or processes within an organisation at the expense of other activities and processes (Espeland and Stevens 2008). This can incentivise health professionals in counterproductive ways. We will claim that it can also affect the development of clinical judgment and claims to expertise.

For health professionals, clinical judgment is at the heart of what counts as expertise (Feinstein 1994): clinical situations always involve an element of uncertainty, and each patient may demand something particular. To gain expertise is therefore also to train the sense of clinical judgment. In anthropological work, expertise is typically understood as a relational phenomenon: to be recognized as an expert is to be recognised as such by *somebody* (Carr 2010). While an individual can know all kinds of things in isolation, it is not possible to be an 'expert' all alone. In an introduction to a special issue on medical expertise, Hogle (2002) points out that the recognition of expertise is intimately linked with authority: 'medical expertise consists not only of technical or clinical learning, but also of the ability to establish and to maintain authority' (235). Hogle contends that an important task for anthropology is to explore the processes through which expertise becomes institutionalised and how this enables actors to establish and maintain authority in a particular field. Such processes may change over time as institutional arrangements change and new forms of knowledge production emerge (Navon and Eyal 2016). Mobilisation of data for monitoring purposes affects these processes, but how?

The introduction of digital documentation systems means that work leaves data traces, which provide managers with new means for assessing work performance (Moore 2018). Zuboff quickly realised that this affects the type of judgment people can exert in their everyday work: it makes alignment with performance goals into a form of 'symbolic work' that affects the primary work (Zuboff 1988). Digital documentation systems have therefore been observed as potentially reducing the space for professional judgment (Bovens and Zouridis 2002; Castel, 1991). Calculative techniques (such as benchmarks) can enable a form of 'government from a distance' (Rose 1999) because they make it possible to represent a practice in given ways and thereby steer action (Espeland and Stevens 2008). It affects who is involved in defining the proper course of action, making it possible to make authoritative claims about local practices from a distance.

In the following, we show how data monitoring of the use of force enables political and administrative decision-makers to make claims about the state of affairs in psychiatric care. It does so by mobilising claims to expertise that are not grounded in clinical experience and professional judgment. While we acknowledge that data can sometimes help build expertise when used to gain overviews and systematise work practices, we wish to suggest that in other instances data monitoring might instead undermine the development of clinical judgment.

One of the objectives of data monitoring is typically to correct biases in clinical perceptions and practices through systematic monitoring. It is the hope that this may improve judgment. Yet even systematically collected and valid data can be interpreted in problematic ways (Mau 2019). It is difficult to analyse data derived from complex and heterogeneous work practices (Lipworth et al. 2017), and the further from the site of production, the higher the risk of misunderstanding what data represents (Chan, Fowles and Weiner 2010; Leonelli 2016). This makes it even more important to explore how the increased emphasis on data monitoring affects the ability of psychiatric staff to exercise clinical judgment.

The potential for conflict in psychiatric care between local clinical judgment and data-informed knowledge-at-a-distance has been explored before in anthropology, critical data studies, and science and technology studies. Based on a study in Argentina, Lakoff studied tensions between local forms of knowing patients and disease and the kinds of knowledge that were acknowledged by international pharmaceutical companies (Lakoff 2005). Tensions can even arise within the same healthcare system. Pickersgill, for example, has explored the negotiations arising in US mental healthcare around initiatives that aim to transform conceptions of mental illnesses based on measurable biomarkers which can be at odds with clinical imperatives (Pickersgill 2019). These studies also show how data politics shape local notions of expertise by making the clinic ‘visible’ in new ways to the outside world.

In short, clinical expertise is intimately intertwined with the development of clinical judgment, and the processes for establishing expertise change over time in tandem with new institutional arrangements and techniques of knowledge production. Data monitoring provides one such technique in need of attention. Accordingly, we need to explore how the governmentally imposed data monitoring of force comes to form part of the psychiatric knowledge ecosystem and thereby shape the development of professional judgment and conceptions of expertise.

## Methods: How to explore psychiatric data practices?

To understand data practices relating to the use of force in psychiatry in Denmark, Sarah Wadmann and Klaus Hoeyer searched for reports and initiated meetings with managers from in-patient and out-patient psychiatric wards in the Capital Region. In Denmark, five regional authorities are responsible for the operation and funding of psychiatric and somatic care. The Capital Region constitutes one of these. In addition, policy documents outlining the strategies on the use of force were collected by systemically searching the homepages of the Ministry of Health, the Danish Health Authority, the five regional authorities, and the Danish Psychiatric Association. Together, we pursued the references to the literature made in those documents, and made complementary searches for clinical literature on the topic of force, in particular review articles.

We conducted interviews with two chief physicians, three clinical ward managers, four administrative employees working with data practices relating to this topic, two nurses with long-standing clinical as well as research experience with this topic, two centre managers, and one representative for the top management in one region. Sarah Wadmann also made observations of treatment and registration practices at two psychiatric wards. While we were keenly aware of the importance of patient experiences (Kontio et al. 2012), we did not include patients in this study to keep the focus on the implications of data monitoring for psychiatric expertise. Interviews were conducted in Danish; quotations from the interviews and from official texts in Danish were translated by the authors. This type of research is not subject to ethics committee approval in Denmark, but was registered with the data authorities.

Along with doing this empirical work, we were invited to give talks to health professionals working in psychiatry, and the feedback at these events in turn redirected our analytical attention. At this point we learned that a psychiatrist Anne Hoeyen Munk had carried out an unpublished study of the practices of force, and we teamed up to enable these insights both to inform our own analysis, and also to ensure that our anthropological interpretations resonated with the everyday experience of clinical staff.

The clear mismatch between the perception of clinicians experiencing efforts to reduce the use of force and the official narrative of failure made us ponder how data had been analysed. In Denmark, it is possible to access aggregate data from the hospital services where there is no risk of re-identification. By downloading and analysing such data with simple descriptive statistics (using Excel 2016), we gradually realised how many important analyses had not been done. The official political narrative about ‘substitution of force rather than reduction’ seemed to build on data analyses remarkably far from established epidemiological criteria for observational studies (Hill 1965). We quickly realised that the analyses presented by the national authorities could have been very different had they used a wider range of data and corrected for relevant fluctuations.

Based on this realisation we developed an analytically informed thematic coding (Madden 2010), separating the material into four sections that reflect four empirical questions:

1) How did data come to play such a prominent role in the governance of the psychiatric use of force in Denmark?
2) How is the need for data and evidence argued in key policy papers?
3) How might alternative interpretations of the data challenge the official political narrative of failure?
4) What might be the implications for clinical judgment of the current governmental representation of staff performance?

## How did data become so central for the governance of force?

When contemplating the role of data in contemporary governance, it is important first to acknowledge that attempts of regulating the use of force on people with mental illnesses have a long history. In Denmark, attempts to formally regulate these practices can be traced back to laws from the 17th century. These laws made it legal for family members to tie or lock up a ‘raving mad’ person (Møllerhøj 2021). Yet, along with the establishment of the so-called ‘lunatic asylums’ in Denmark in the mid-19th century, ideas of ‘no-restraint’ were adopted by leading psychiatrists, who promoted a reduction in the use of mechanical force (restraint chairs or straitjackets) (Ibid.). Data was not part of the governance model in this period.

With the institutionalisation of mental healthcare, the authority to make judgments about the use of force shifted from family members to the medical profession. This was codified when the first law on the hospitalisation of mentally ill people was adopted in 1938 (Møllerhøj 2021). Though their practices would not be considered progressive today, the profession wanted to reduce the use of force to a minimum. It was, however, still not subject to external data monitoring.

Centralised data monitoring is a more recent invention. It enables actors outside the psychiatric field to make authoritative claims about the use of force. Probably as a reaction to increased awareness of patient rights, a 1989 law revision made it mandatory for psychiatric staff to register the use of force. This marked a shift from broad framework regulation to more detailed documentation practices. From 1999, this data was gathered in a central register. Following a warning in 2002 from the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment about a potential breach of human rights in Danish psychiatric institutions, the use of mechanical restraint received increasing political attention and the reporting demands intensified (Berring, Bak and Hvidhjelm 2023).

A 2006 law revision further strengthened the documentation requirements of the staff (Møllerhøj 2021). In 2013–14, a political goal of a 50% reduction in the use of mechanical restraint by 2020 was defined by the Ministry of Health and Prevention and the regional authorities as part of the national budget negotiations. This sustained the emphasis on centralised counting. The political goal of a 50% reduction was followed up by so-called partnership agreements made between the ministry and the five regions, which effectively tied these political-administrative actors into accountability relationships that relied on data practices (Ministeriet for Sundhed og Forebyggelse 2014a–e). Further strengthening and extending these relationships, the politically defined goal was later entrenched as a measure of quality control in a national accreditation model, and from 2016 in a performance-management scheme called National Goals (Sundheds- og Ældreministeriet, KL, and Danske Regioner 2018). With each step, data on the use of force became enfolded in wider networks of governance tools.

These governance initiatives all depended on data that psychiatric staff are obliged to register and report. It is on the basis of this data that the Ministry of Health, Rigsrevisionen, and others base their narrative of failure. The centralised data analyses are also fed back to the psychiatric wards, where they are displayed at dashboards during weekly meetings in which the staff are encouraged to reflect on their performance relative to the national target and other units. Within hospital organisations, the monitoring activity is thus directly linked to efforts to foster change. Gradually, data has become an instrument of governance that shapes what psychiatrists must respond to, document, and defend. Data thereby comes to shape the conditions under which psychiatrists exercise clinical judgment.

## How is the need for data argued in key policy papers?

The five partnership agreements setting up the goal of a 50% reduction in the use of force are key policy papers and worth a closer read (Ministeriet for Sundhed og Forebyggelse, 2014a–e). They can help us understand what counts as evidence and expertise in relation to the use of force, not least because the agreements used a contract template that required the Regions to fill in 'existing knowledge' about the use of force and the 'evidence-based methods' they intended to use. Usually, in somatic areas, evidence-based medicine indicates a form of knowledge that is widely shared by a medical specialty. Therefore, it is interesting to see that each of the five Regions filled in something different as 'existing knowledge'. Rather than evidence of the type found in the Cochrane Library, they list more sketchy sources. One agreement simply pointed to a government paper stating the *ambition* of using less force in psychiatry. Seemingly, the goal in this way served as evidence for itself. Another Region mentioned the same report, in addition to two other reports—but each of these three reports listed *different* methods to reduce the use of force. Apparently, they did not find the same 'evidence'. Yet another Region listed PowerPoint slides and webinars as its evidence base counting as 'existing knowledge'. Webinars are relatively far down the ladder of the classical medical evidence hierarchy. Across the five partnership agreements (Ministeriet for Sundhed og Forebyggelse 2014a–e), it is difficult to locate many of the references used as evidence. Just one Region refers to a peer-reviewed journal article (namely, Huckshorn 2004), which itself contains several references that we could not locate. In short, 'existing knowledge' in these agreements is very far from what is typically understood as acceptable medical evidence.

In the agreements, the documents referred to as 'evidence' tend to begin with political statements about human rights (Smith et al. 2008; Hirsch and Steinert 2019; Huckshorn 2004). These documents justify the agreements' political ambitions. If the medical literature is often criticised by social scientists for falsely presenting itself as 'value neutral', psychiatric knowledge about the use of force is unapologetically political. Indeed, the main argument in the papers relates to the need for reduction (a political ambition), not the means (insights into what works in clinical practice).

Evidence is spoken about in other ways, though, namely in terms of the need to document reduction. Contemporary psychiatry seems eager to embrace data for documentation purposes. Several sources emphasise six key strategies developed in the US, one of which is the increased use of data: ‘The first step in data use is to identify a baseline for facility S/R [seclusion and restraint] use so performance improvement goals can be set, S/R use can be monitored over time, and progress (or lack thereof) can be tracked’ (Huckshorn 2004, 29). Other articles also tend to emphasise the need for data in order to enact change (Huckshorn 2004; Hirsch and Steinert 2019; Berring, Bak and Hvidhjelm 2023).

In this tradition, data is a tool for *doing*, not just *knowing*. However, if this emphasis on doing rather than knowing was once a productive move in American pragmatism (Dewey 1929), it has here been reworked in quite different ways to make claims of expertise serve governmental aims. It is as a consequence of being seen as ‘evidence’ that data becomes a resource to affect change. This perception can be encountered also beyond the policy documents. Indeed, one clinical ward manager said: ‘With data the ward gets their performance in black and white—the staff cannot argue against data.’ A chief physician similarly said about force: ‘It is extremely measurable, right?’ In practice, however, data can usually be interpreted in multiple ways, and as we shall see, this is most certainly also the case for the use of force.

## How might other data analyses challenge the political narrative?

The dominant narrative about failed attempts to reduce the use of force rests on data practices that hide as much as they reveal. In this section, we show why the official narrative of a failure to reduce the use of force has little backing. We give three reasons for this:

1) the use of absolute measures in government statistics does not take into account how the patient population in the psychiatric wards may differ across wards and change over time;
2) the use of overall, unadjusted measures fails to take into account differences in the context of care (such as understaffing and variance in the patient population);
3) changes in what counts as force and how it is registered are not reflected in the political interpretation of data.

As we develop these three points in the following, we encounter a particular irony: we need to use data from the health services to make our point, while we also argue that such data fails to act as transparent representations of the state of affairs. Our ambition, however, is not to deliver a singular ‘true’ analysis, but to illustrate that many stories can be told about the use of force with the same data. We present alternative data narratives to warn against simplistic and monopolised data uses and, in particular, to warn against the use of absolute numbers in the governance of complex and volatile health phenomena.

### ***Absolute numbers do not take into account changes in the patient population***

In international research, it is common to register force per number of patient days in hospital (e.g., Smith et al. 2015). In contrast, Danish government reports use absolute numbers to monitor how often people have been subjected to force and of which types (each episode counted). Such numbers are not adjusted to take into account the number of patient days in hospital. If the patient population changes over time, absolute numbers do not say much about how well the staff fare in reducing the frequency of force per patient. A stable number of mechanical restraints can be regarded as a major achievement if the number of patients admitted to psychiatric care increases over time, or if patients with conditions associated with a higher risk of aggressive or self-harming behaviour come to constitute a larger share of the patients in psychiatric wards.

According to the national umbrella organisation for the five Regions, the number of psychiatric patients has increased considerably in the monitored period (Danske Regioner 2018). Further, the composition of the patient population in psychiatric wards has changed. For example, more people are entering the wards on a non-voluntary basis, which is a parameter associated with a higher risk of force also during hospitalisation (Beck et al. 2008; Korkeila et al. 2002). In an interesting academic analysis of developments in the regulation and use of force in Danish psychiatric care, Berring and colleagues (2023) show that the prevalence of force episodes during hospitalisation has actually decreased over time if the official figures are adjusted for increases in the number of involuntary admissions (Berring, Bak and Hvidhjelm 2023). Involuntary admission is, of course, also a type of force, but it is outside the control of clinical managers and staff at the psychiatric wards. Adjusting for shifting patterns in drug use would also be relevant for understanding the use of force, though we have not identified data allowing us to do that.

If the absolute numbers on the use of force are to convey a clear image of staff performance, the psychiatric composition of the patient population would have to be stable too. However, official data sources suggest that the prevalence of various psychiatric diagnoses on the wards fluctuate over time (see Fig. 1).[2] Though diagnostic codes are not transparent representations of the patient population, the

---

[2] The category ‘Other diagnoses’, which is increasing rapidly, is multi-morbidity and reflects a political ambition of ensuring better treatment of somatic illnesses in psychiatric patients, which has implied a push towards registering somatic disease. It illustrates how competing political agendas can influence registration practices.

graph does indicate major fluctuations. The absolute numbers ought to be understood in light of such fluctuations.

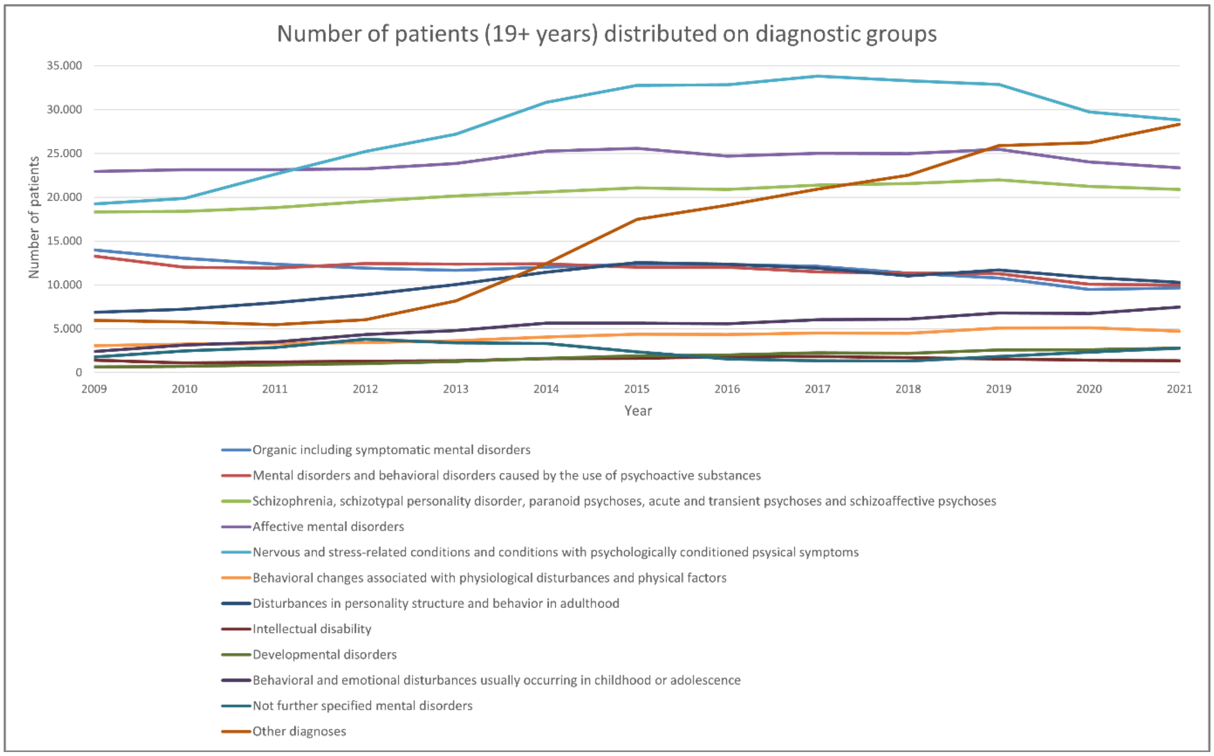

**Figure 1:** The official data on developments in diagnostic categories (2009–21). Visualisation of data from Sundhedsdatastyrelsen 2024.

The likelihood of experiencing force varies among patients with different diagnoses (Lykke, Austin and Metz 2008). For example, it has been documented by psychiatric researchers that patients with a double diagnosis of addiction and psychiatric disease have a higher risk of being subject to the use of force than other psychiatric in-patients (Lykke, Austin and Metz 2008). Addiction prior to hospitalisation is not something the staff can affect. Nevertheless, such insights do not inform the data analyses that underpin the official political narrative about how well the psychiatric wards perform on the goal of lowering the use of force.

### *Absolute numbers fail to take into account the context of care*

When interviewing experienced clinical staff in psychiatric wards, they pointed to additional factors that can also affect the likelihood of using force, in particular staffing and shifts in the composition of patients including more contextual factors such as housing opportunities for vulnerable patient groups. In particular, they think it matters how many staff are on duty and whether these are regular staff, or perhaps new or substitute staff with limited understanding of local practices. With understaffing, it is more challenging to provide alternatives to force. Understaffing is a continual problem in Danish psychiatry (Toft 2022), and the Regions note that the increase in patients happens at a faster pace than the increase in staff (Danske Regioner 2018). Lack of staff can also influence waiting times and accessibility of psychiatric care for patients. It implies a risk that mental illnesses may become more severe before patients get help. Data on the waiting time for psychiatric treatment does suggest increasing problems in recent years (Bech and Martensen 2022). This might help explain the rise in involuntary admissions, which are associated with increased likelihood of force during hospital stays.

The ministry is aware of staff shortages. In a 2018 report, they note that the total number of specialist physicians in psychiatry was reduced between the years 2010 and 2016, while the number of hospital admissions increased and the length of adult stays decreased (Ældreministeriet 2018, 27–31). When we downloaded more recent staff statistics (accessible from the regional authorities), we noticed a tendency for more physicians to be working part time. Together, this signals a lowering of specialist capacity. Another striking tendency was that the number of staff at individual units fluctuated markedly. This makes comparisons difficult and suggests that temporary local understaffing can be a problem that the aggregate numbers do not reveal. If there were detailed analyses correlating the number of staff per patient for individual treatment units at given points in time with the prevalence of force at each unit, this might provide more meaningful results for those seeking to understand what happened in concrete episodes of force than the aggregate numbers that are currently reported. However, such analyses do not inform the official political narrative—which underscores how omissions and data-analytical absences can be as important as the analyses that are being performed (Geissler 2013).

Other factors that may influence the use of force is the socioeconomic background and ethnicity of patients. An epidemiological study from Denmark has shown that psychiatric patients with ethnic minority backgrounds (which the study defines as being born abroad or having parents born abroad) are more likely to be subjected to force (Holmer, Andersen and Juul 2020). It is, however, not legal to register ethnicity in the clinical record, so this is not monitored in daily practices. Omissions matter; they can be as politically informative as what is carefully registered.

### ***Changes in what counts as force and how it is registered***

As mentioned above, the definition of force has changed in regulations and so have registration practices (Møllerhøj 2021). In its more detailed reports, the Danish Health Authority actually does note that registration practices *have* changed in the monitoring periods, and that the absolute numbers on force therefore cannot be compared over time (Sundhedsstyrelsen 2021). This caveat, however, did not make it into the shorter and more widely distributed policy reports. One of the significant changes in the registration of force is that the definition of restraint time periods has shifted several times. What in one period has been counted as one episode of restraint can in another be registered as several shorter episodes. Furthermore, psychiatric researchers Lene Berring and Jacob Hvidhjelm, who have worked extensively with initiatives to reduce the use of force in Denmark (Berring and Østergaard 2022; Berring, Bak and Hvidhjelm 2023), noted in a conversation with us that registration practices were probably less precise before the partnership agreements came into effect in 2014. Before 2014, only the most severe type of force (mechanical restraint) would typically be registered even if other types of force were used also (e.g., forced sedation or physical restraint). Gradually, as the focus on reducing the use of force increased, clinicians came to record all types of force separately—even if this might not be legally required.[3] If this is the case, the apparent increase in other types of force, which is central to the official narrative of substitution, could be partly explained.

Furthermore, some registrations of force are not related to the psychiatric staff at all: if a patient is subjected to mechanical restraint at a *somatic* ward, it will be registered as use of force at the *psychiatric* ward even if the patient never enters this ward (as described with the documentation of variables on the registry's homepage). This reflects an administrative requirement to register patients at a psychiatric ward if the use of mechanical restraint is needed during somatic treatment, because there is no legal mandate to use this type of force in somatic care. Accordingly, such data says little about the performance of the psychiatric staff in relation to the goal of reducing force. In the authoritative reports used at the political level, absolute numbers nevertheless tell an absolute story.

The technical infrastructure for data registration also matters for the possibilities to interpret data on force. Data formats shape the political power of data (Koopman 2019). The use of force is registered in a digital system that operates separately from the electronic health record. This effectively decouples the data on force from information about the context where the use of force took place. In effect, the individual act of force cannot be interpreted in relation to information about, for example, diagnoses or drug abuse. From a clinical point of view, such circumstances constitute important information because they provide clues to what might be done to prevent certain types of incidents. In debriefing sessions, contextual factors that are seen as important for the use of force by staff are typically discussed. Yet, clinical managers and administrative data analysts are left without resources to explore this more systematically—and thereby use data

---

[3] See documentation of variables at Sundhedsdatastyrelsen 2016.

productively to develop their sense of professional judgment—because the data reporting on force is set up in systems of their own with bare numbers and no context.

In sum, data can give rise to many different stories, and none of them can claim definitive superiority. Knowledge about the use of force remains murky, indefinite, and contingent. It is not 'black and white' as some observers were suggesting above. Though we have to settle for shades of grey, it appears obvious that the dominant narrative about a substitution of force is highly uncertain. Such a narrative is, moreover, not without dangers.

## What might be the implications of using absolute numbers?

Using absolute, unadjusted numbers to assess the performance of psychiatric wards is not merely an epistemic issue of misrepresentation—it has potential political, clinical and humanistic implications. We now turn to these implications.

The most prominent negative implication of crude data use in governance is typically known in literature on performance-based management as 'gaming': people play the system to get better numbers because they are better rewarded for good data than good practice (Wadmann et al. 2013). In one interview, a chief physician expressed annoyance when commenting on stories about the transfer to other units of patients at increased risk of requiring the use of force, in order to 'get better statistics'. The physician took a clear stance against such practices, and said that it was something she would never do herself: 'I think mechanical restraint is awful, and I go very far to keep numbers down, but I would never transfer a patient to another unit to avoid it [being registered in my unit]. If it is needed, I just have to accept it. That's how it is.'

This physician clearly disapproves of gaming practices, but concedes that gaming is possible and happens. Metrics thereby introduce an element of suspicion and doubt about the motives of others. The emphasis on 'good data' and 'keeping numbers down' generates such concerns. One of the reasons staff might want to transfer a patient who is likely to encounter force is that individual units are benchmarked against each other. One clinical ward manager complained about such practices of comparison:

> I can't use these comparisons for anything. This other unit just has a totally different group of patients. Patients with a better network, higher education level, a totally different social network and strength ( . . . ). I don't want to be compared to [them] because it's just some very different conditions and patients they've got.

The ward manager expresses frustration over crude comparisons that do not reflect the conditions under which the clinical work is carried out. In the view of this manager, such comparisons do not support learning that can make a real difference to patients and staff. Rather, such comparisons are experienced as an attack on her professional judgment.

To reduce force is not easy. It involves increased risk of violence for the staff and other patients. So not being recognised—or seeing the wrong people getting the recognition—can potentially affect staff motivation negatively. It is worth noticing that benchmarking between units is at odds with the core strategies of force reduction from the US, which is otherwise referred to by Danish policy papers as inspiration. In the original American source from the National Association of State Mental Health Program Directors (Huckshorn 2006), it is stated that aggregated data at the system level is not the way forward. Rather, it is important to monitor practices at unit level and take into account daily circumstances. The aim is supposed to be:

> To reduce the use of S/R by using data in an empirical, non-punitive, manner. Includes using data to analyze characteristics of facility usage by unit, shift day, and staff member; identifying facility baseline; setting improvement goals and comparatively monitoring use over time in all care areas, units and/or state system's like facilities. (7)

Though this American programme is referred to as the evidence behind the adopted approach in Denmark, the actual practice of governance in Denmark is very different.

Recognition of staff experience is important not only because it can affect motivation, but also because the use of force in psychiatry is inextricably linked with potentially severe risks for the staff and other patients (e.g., experiences of violence or sexual harassment). One clinical ward manager said:

> There are some consequences [associated with the aim of reducing force], of course, because the staff can feel unsafe. If we cannot use mechanical restraint with big, strong, psychotic 'Frederik', who by the way has trained [in] martial sports his entire life . . . well, then I can feel unsafe.

Anne Hoeyen Munk has investigated stated reasons for mechanical restraint at one ward. Based on a local review of medical records from 2019–21, she found that of 91 events, 85 were to prevent dangerous behaviour. Though this is, of course, an ambiguous category, it illustrates that mechanical restraint can be seen by the staff as the lesser of two evils. Professional judgment is all about balancing interests when faced with dilemmas, and the use of force is entrenched in these dilemmas. However, the 'less-is-better' logic expressed in the political goals can suppress professional deliberation of these dilemmas. It is a missed opportunity for developing professional judgment.

It was the impression of some of the psychiatric staff we spoke with that the increased focus on reducing mechanical restraint came with consequences in the form of staff sick leave and even cases of post-traumatic stress disorder (PTSD). Top managers conversely pointed out that reductions in the use of force can also reduce the risk of staff injury. However, staff reactions (such as sick leave or PTSD) to the use and non-use of force are rarely monitored in the Danish health services, and the implications unknown.

In addition to concerns about risk to staff and other patients, not all clinicians were convinced that the use of mechanical restraint is always damaging for the subject of force. For example, a clinical ward manager who explained how force was a matter of balancing risks, expressed that in some instances, the implicit hierarchy of force (mechanical restraint being presented as worse than physical force and sedation) was simply wrong:

> Imagine that you are a 22-year-old girl who has been sexually abused your entire life. Then you are admitted [to hospital] because you have taken some drugs and gone wildly psychotic—and then six people place themselves on top of you [to keep you down]. Would you like that? No, I don't think so. But we can't use mechanical restraint.

The ward manager explains here how clinical judgment risks being overruled because of the political focus on reducing mechanical restraint. In this instance, the political narrative of substitution seems to be correct, and a grave implication of data monitoring. Such concerns were echoed by clinicians who found the use of physical force much more transgressive than mechanical restraint, both for patients and staff. Since 2016, staff have been supposed to explore patient preferences for different types of force should the need occur, but several of the clinicians we spoke with referred to this requirement as challenging. Furthermore, some remarked that alternative practices can develop that do not formally count as force but cannot be considered voluntary either (e.g., physically blocking a door instead of locking it).

There is no clear-cut answer to the 'right' level of force. Several of the staff members interviewed were inspired by results from Pennsylvania, where mechanical restraint was abandoned altogether in 2015 (Smith et al. 2023). However, most stated that a total abandonment of force will never be feasible or even desirable. A chief physician went as far as saying that the relatively strict regulation on forced anti-psychotic treatment in Denmark compared to other Nordic and European countries might lead some patients to be under-treated:

> It might sound very controversial, but the rules for giving forced anti-psychotic medication in Denmark are really tight, and it is probably the cause of relative under-treatment in the acute phases of some severe mental diseases. Or it can mean that patients with recurrent psychoses easily drop out of treatment and get lost—and then they only reenter if they react aggressively in society, or are affected by drugs and in a really bad condition. ( . . . ) I think you might be able to argue for somewhat easier access to using forced anti-psychotic medication for seriously ill psychiatric patients who don't realise how ill they are.

What we see in these reflections is that there is no consensus on the 'right' use of force. The political monitoring of force based on absolute data nevertheless risks suppressing the development of professional judgment. This is not necessarily in the best interest of patients.

Finally, when policy instruments focus attention on measurable aspects, there is a risk of overlooking other important aspects of clinical practice that cannot be easily datafied—such as the tacit knowledge and tactile competences that are integral to the de-escalation of conflict. Some of the psychiatric staff pointed to the intersubjective qualities of the first meeting with the patient as key to the whole stay at the ward, including the risk of force. Attempts have been made to study the effect of enhanced focus on these initial meetings through randomised clinical trials (Øhlenschlæger et al. 2008), without success. Still, the ability to de-escalate conflict probably relates to an interpersonal sensitivity as well as to clinical experience. This form of expertise also needs nurturing. The binary counting of force/no force does little to support learning about what might be done differently. The intersubjective abilities are often referred to as 'ward culture'. Yet such an overarching reference to 'culture' turns it into just another meta-actor that does not explain much about the practices and types of knowledge that can change the use of force.

Has the data-informed governance of force really failed in reducing the use of force, as the official narrative from the authorities suggests? It depends on what counts as failure. In an interview with two local managers, one said, 'You might say that we have had a culture change. And indeed we have.'

Sarah Wadmann asked, 'Did the political goals contribute to that?' and they both immediately replied, 'Yes!'

One added, 'After it became a political demand, we worked more systematically with it.'

Among the clinical staff, there is little doubt that they are much more reluctant to use force. Data has focused their attention. As tools of governance, data exerts symbolic authority and guides actions and perceptions of good care. Data comes to shape the development of professional judgment, and thereby what counts as psychiatric expertise.

## Discussion and conclusion

We have illustrated the many challenges associated with the use of data monitoring of force, and yet everybody seems to agree that data is needed to bring down the use of force. Why this embrace of data? Perhaps part of the lure of data stems from the ways in which it can make diffuse matters appear more tangible and thus actionable. It introduces systematic overviews, where the tumult of everyday practices stir confusion. Data can facilitate systematic and consistent documentation, where the recollection of the mind is too coloured by political objectives, frustration, or fear. However, data might also be helpful for people far from the clinic and in ways that are less beneficial for the clinical encounter. From the perspective of politicians, it seems that data comes in handy in simplifying complex problems. Rather than solving the problems that generate a need for force, one could say that data can help cut the problems down to size. We have shown how data monitoring policies allow politicians and authorities to set targets while leaving it up to local managers and staff to figure out how to actually meet them.

It is important to acknowledge there are no quick fixes to the problems that lead to use of force in psychiatry. Many of the causes of the situations where force is used have no known solutions—or the potential solutions are not within the control of the health services. For example, safe housing conditions and better treatment options for drug users may potentially reduce involuntary admissions (associated with higher risk of force). It is, however, beyond the hospital management to do anything about housing and drug policy, and yet it is the healthcare system that is being asked to reduce force. It is monitored on its performance and blamed when the use of force is not reduced. Similarly, shortages and high turnover of staff, inadequate training, and lack of organisational continuity are all factors that practitioners point to as key elements leading to the use of force, and there are no simple solutions to these problems. In such situations, however, data helps politicians by substituting ‘unmanageable’ problems with easier ones.

What are the potential implications for clinical care of this simplified and data-focused policy approach? Beyond the risk of simple substitution of force, as suggested by the official narrative (whether true or false), we wish to highlight that data monitoring may suppress adequate development of clinical judgement. When the doctors above say they ‘can’t use mechanical restraint’ in instances where they find it most appropriate, then this type of data politics seems to affect their judgment. The use of force is steeped in dilemmas, and clinicians need to have room for discussing these dilemmas. In such instances, the quantitative logic of ‘keeping numbers down’ is not always helpful. Some psychiatrists also experience the official narrative about failure as unfair—especially when their health and safety (and that of other patients) can also be at stake.

Still, it is important to acknowledge that without data, psychiatric staff and management stand no chance of knowing how the use of force develops either. Data remains key to understanding local patterns. Note however that most of the problematic data interpretations described above emerge with inappropriate aggregation and analysis; that is, when data is used at a distance to control rather than inform clinical action. When used with care and in the hands of those who need to learn from practice, data can sustain, and not undermine, humanistic ideals by way of making reduction of force a priority.

We also wish to emphasise that though we criticise the official narrative of failure and the implications of this type of data politics, we do not assume ill intentions. We believe that the politicians who set the target of a reduction of 50% wished to stimulate a more humanistic practice. This target, however, has required the ministry of health, the authorities and Rigsrevisionen, by way of legal mandate, to tune in on just this specific goal. The top management of the psychiatric services of course seek to facilitate the most meaningful data practices for the practitioners, but it happens within the confines of the legal mandate and the available data standards. Clinicians similarly seek to balance the data demands with their best clinical judgment as far as possible. It is not the intentions that should be blamed. What we see, however, is a dominant logic of measurement in line with what has been described by Espeland and Stevens (2008), which in our case ends up undermining the goal it was said to support because aggregation of crude data creates incentives to overrule local understandings. It is a task for critical analysis to unravel the data knot and to facilitate new ways of setting—and reaching—laudable goals and suggest new ways to monitor their achievement. Ways that do not depend upon absolute numbers, but give way to more context-specific and adjusted analytics.[4]

Data on force remains a tool of governance. This tool conjures authority and communicates the necessity to act. When the political monitoring of performance privileges the quantifiable and what can be known at a distance (Dean 2010; Rose 1999), the anthropological critique must remain aware of the local and what escapes datafication (Adams, Burke, and Whitmarsh 2014). Anthropology is well

---

[4] We did team up with leading psychiatrists to present such an alternative monitoring plan (Wadmann et al. 2024). However, it goes beyond this article to detail these suggestions, which are specific to their national context.

positioned to help articulate tacit knowledge and tactile competences. Anthropology is good at giving voice to intangible matters of the mind and unspoken experiences of the body. In this analysis, however, we have sought to question the data politics not simply by moving ‘beyond the data’ to tacit and tactile forms of knowledge. Instead, we have engaged the actual data. We have used sensibilities acquired through interviews and ethnographic observations to interrogate the ways data is analysed and used. There is in this move a perhaps controversial proposition: for anthropology to intervene in data politics in productive ways, we suggest a need to analyse also the data that orients the understandings of our informants. To do this, we might as anthropologists have to also work with formats and genres that are unusual in contemporary ethnographic practices. We might even have to get used to seeing data visualisations like Figure 1 in otherwise qualitative ethnographic journals.

The anthropology of data is already a thriving field (Douglas-Jones, Walford and Seaver 2021; Adams 2016; Merry 2016). When anthropologists study data practices, they often powerfully criticise the reductions involved in datafication. While the type of data monitoring we have studied is problematic and does involve reductions, we can now admit that it is not in the sense we originally thought. Before making this study, Klaus Hoeyer and Sarah Wadmann had been repeating the narrative of substitution of force as a sort of fact. It simply fitted so well with our preconceptions about the unwarranted consequences of too strict data monitoring: goal fixation. It was only by moving closer to the data that we realised that the problem is not simply one of ‘substitution of force’ in order to reach the set target of reduction. Rather, the problem is how data monitoring hampers the conditions for developing and exercising clinical judgment as a key element of psychiatric expertise. Professional judgment is at the core of clinical expertise and it needs nurturing. Careful data analysis nurtures judgment. This is why we propose that an engaged anthropology of expertise needs to explore also the means through which judgement and expertise are negotiated. In many cases, anthropologists might need to engage the data. We hope this paper can serve as an inspiration for such engagements.

## Authorship statement

Klaus Hoeyer, Anne Hoeyen Munk and Sarah Wadmann are the sole authors of this article.

## Ethics statement

According to Danish law, it is not possible to apply for ethical approval from the official research ethics committees, as they assess only biomedical research. The project has been carried out in accordance with the Danish Social Science Research Council's guidelines on research ethics and registered with the data authorities in Denmark and approved by the ethics committee of the European Research Council. All informants have approved the use of quotes in this article and we have omitted personal identifiers to secure confidentiality.

## Acknowledgements

The authors wish to thank student assistant Emilie Funch Nielsen who helped produce Figure 1. Further, the article has benefitted from valuable input from Lene Berring, Jacob Hvidhjelm, and anonymous interlocutors in the field as well as the reviewers in this journal. The study was enabled by funding from the European Union through the European Research Council (ERC) (grant agreement number 682110 and grant agreement number 101096999). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Council Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

## About the authors

*Klaus Hoeyer* is professor of Medical Science and Technology Studies at the Centre for Medical STS, University of Copenhagen. His research focuses on the links between policy, practice and experience in medical research and clinical practice, with a particular focus on data practices.

*Anne Hoeyen Munk* is a senior consultant in psychiatry at the Psychiatric Hospital in Ballerup, Denmark.

*Sarah Wadmann* is a senior researcher at the Danish Center for Social Science Research – VIVE. Her work mainly focuses on healthcare governance and organisation. Recent topics include healthcare digitalisation, precision medicine and priority setting in healthcare.

# References

Aanestad, Margunn, and Tina Blegind Jensen. 2011. 'Building Nation-Wide Information Infrastructures in Healthcare Through Modular Implementation Strategies.' *Journal of Strategic Information Systems* 20 (2): 161–76. https://doi.org/10.1016/j.jsis.2011.03.006.

Adams, Vincanne. 2016. 'Introduction.' In *Metrics: What Counts in Global Health*, edited by Vincanne Adams, 1–17. Durham, NC: Duke University Press.

Adams, Vincanne, Nancy J. Burke, and Ian Whitmarsh. 2014. 'Slow Research: Thoughts for a Movement in Global Health.' *Medical Anthropology* 33 (3): 179–7. https://doi.org/10.1080/01459740.2013.858335.

Bech, Trine Hørlyck, and Mette Mohr Martensen. 2022. 'Patienter må stå i kø over et år: Psykiaternes ventetider hamrer i vejret.' 11 August, *DR*. https://www.dr.dk/nyheder/indland/patienter-maa-staa-i-koe-over-et-aar-psykiaternes-ventetider-hamrer-i-vejret.

Beck, Niels C., Christine Durrett, Jill Stinson, James Coleman, Paul Stuve, and Anthony Menditto. 2008. 'Trajectories of Seclusion and Restraint Use at a State Psychiatric Hospital.' *Psychiatric Services* 59: 1027–32. https://doi.org/10.1176/ps.2008.59.9.1027.

Berring, Lene Lauge, Jesper Bak, and Jacob Christian Hvidhjelm. 2023. 'National Strategies to Reduce the Use of Coercive Measures in Psychiatry in Denmark: A Review of Two Decades of Initiatives.' *Issues in Mental Health Nursing* 44 (1): 35–47. https://doi.org/10.1080/01612840.2022.2089788.

Berring, Lene Lauge, and Lise Bachmann Østergaard. 2022. 'Forandringsprocesser i psykiatrien: Et etnografisk feltstudie af deeskaleringsimplementering.' *Klinisk Sygepleje* 36 (2): 73–92. https://doi.org/10.18261/ks.36.2.2.

Bossen, Claus, Yunan Chen, and Kathleen H. Pine. 2019. 'The Emergence of New Data Work Occupations in Healthcare: The Case of Medical Scribes.' *International Journal of Medical Informatics* 123: 76–83. https://doi.org/10.1016/j.ijmedinf.2019.01.001.

Bossen, Claus, Kathleen H. Pine, Federico Cabitza, Gunnar Ellingsen, and Enrico Maria Piras. 2019. 'Data Work in Healthcare: An Introduction.' *Health Informatics Journal* 25 (3): 465–74. https://doi.org/10.1177/1460458219864730.

Bovens, Mark, and Stavros Zouridis. 2002. 'From Street-Level to System-Level Bureaucracies: How Information and Communication Technology Is Transforming Administrative Discretion and Constitutional Control.' *Public Administration Review* 62 (2): 174–84. https://doi.org/10.1111/0033-3352.00168.

Carr, E. Summerson. 2010. 'Enactments of Expertise.' *Annual Review of Anthropology* 39: 17–32. https://doi.org/10.1146/annurev.anthro.012809.104948.

Castel, Robert. 1991. 'From dangerousness to risk.' in Graham Burchell, Colin Gordon and Peter Miller (eds.). 281-298. *The Foucault Effect: Studies in Governmentality* (The University of Chicago Press: Chicago).

Chan, Kitty S., Jinnet B. Fowles, and Jonathan P. Weiner. 2010. 'Electronic Health Records and the Reliability and Validity of Quality Measures: A Review of the Literature.' *Medical Care Research and Review* 67: 503–27. https://doi.org/10.1177/1077558709359007.

Danske Regioner. 2018. *Mental Sundhed: Bedre behandling til mennesker med svær psykisk sygdom*. Copenhagen: Danske Regioner.

Dean, Mitchell. 2010. *Governmentality: Power and Rule in Modern Society*. London: SAGE Publications Ltd.

Dewey, John. 1929. *The Quest for Certainty: A Study of the Relation of Knowledge and Action*. New York, NY: Capricorn Books. G. P. Putnam's Sons.

Douglas-Jones, Rachel, Antonia Walford, and Nick Seaver. 2021. 'Introduction: Towards an Anthropology of Data.' *Journal of the Royal Anthropological Institute* 27 (S1): 9–25. https://doi.org/10.1111/1467-9655.13477.

Espeland, Wendy Nelson, and Mitchell L. Stevens. 2008. 'A Sociology of Quantification.' *European Journal of Sociology* 49 (3): 401–36. https://doi.org/10.1017/S0003975609000150.

Feinstein, Alvan R. 1994. 'Clinical Judgement Revisited: The Distraction of Quantitative Models.' *Annals of Internal Medicine* 120 (9): 799–805. https://doi.org/10.7326/0003-4819-120-9-199405010-00012.

Folketinget Statsrevisorerne, and Rigsrevisionen. 2021. *Rigsrevisionens beretning afgivet til Folketinget med Statsrevisorernes bemærkninger: Indsatsen for at nedbringe brug af tvang i psykiatrien*. Copenhagen: Statsrevisorerne.

Geissler, P.W. 2013. 'Public Secrets in Public Health: Knowing Not to Know While Making Scientific Knowledge.' *American Ethnologist* 40: 13–34. https://doi.org/10.1111/amet.12002.

Hill, Austin Bradford. 1965. 'The Environment and Disease: Association or Causation?' *Proceedings of the Royal Society of London* 58 (5): 295–300. https://doi.org/10.1177/0035 91576505800503.

Hirsch, Sophie, and Tilman Steinert. 2019. 'Measures to Avoid Coercion in Psychiatry and Their Efficiancy.' *Deutsches Ärzteblatt International* 116 (19): 336–43. https://doi.org/10.3238/arztebl.2019.0336.

Hoeyer, Klaus. 2023. *Data Paradoxes: The Politics of Intensified Data Sourcing in Contemporary Healthcare* (MIT Press: Cambridge, Massachusetts).

Hogle, Linda F. 2002. 'Introduction: Jurisdictions of Authority and Expertise in Science and Medicine.' *Medical Anthropology* 21 (3–4): 231–46. https://doi.org/10.1080/01459740214076.

Holmer, Sarah Kajander, Lisbeth Garly Andersen, and Sidsel Engmann Juul. 2020. *Etnicitet og tvang i psykiatrien: Øget brug af tvang overfor etniske minoriteter*. Copenhagen: Institut for Menneskerettigheder.

Huckshorn, Kevin Ann. 2004. 'Reducing Seclusion & Restraint Use in Mental Health Settings: Core Strategies for Prevention.' *Journal of Psychosocial Nursing* 42 (9): 22–33. https://doi.org/10.3928/02793695-20040901-05.

Huckshorn, Kevin Ann. 2006. *Six Core Strategies for Reducing Seclusion and Restraint Use*. Alexandria, VA: National Association of State Mental Health Program Directors.

Hunt, Linda M., Hannah S. Bell, Allison M. Baker, and Heather A. Howard. 2017. 'Electronic Health Records and the Disappearing Patient.' *Medical Anthropology Quarterly* 31 (3): 403–21. https://doi.org/10.1111/maq.12375.

Kierkegaard, Patrick. 2013. 'eHealth in Denmark: A Case Study.' *Journal of Medical Systems* 37: 1–10. https://doi.org/10.1007/s10916-013-9991-y.

Kontio, Raija, Grigori Joffe, Hanna Putkonen, Lauri Kuosmanen, Kimmo Hane, Matti Holi, and Maritta Välimäki. 2012. 'Seclusion and Restraint in Psychiatry: Patients' Experiences and Practical Suggestions on How to Improve Practices and Use Alternatives.' *Perspectives in Psychiatric Care* 48 (1): 16–24. https://doi.org/10.1111/j.1744-6163.2010.00301.x.

Koopman, Colin. 2019. *How We Became Our Data: A Genealogy of the Informational Person*. Chicago, IL: University of Chicago Press.

Korkeila, Jyrki A., Carita Tuohimäki, Riitakerttu Kaltiala-Heino, Ville Lehtinen, and Matti Joukamaa. 2002. 'Predicting Use of Coercive Measures in Finland.' *Nordic Journal of Psychiatry* 56 (5): 339–45. https://doi.org/10.1080/080394802760322105.

Lakoff, Andrew. 2005. *Pharmaceutical Reason: Knowledge and Value in Global Psychiatry*. Cambridge: Cambridge University Press.

Leonelli, Sabina. 2016. *Data-Centric Biology: A Philosophical Study.* Chicago, IL: University of Chicago Press.

Lipworth, Wendy, Paul H. Mason, Ian Kerridge, and John P. A. Ioannidis. 2017. 'Ethics and Epistemiology in Big Data Research.' *Bioethical Inquiry* 14: 489–500. https://doi.org/10.1007/s11673-017-9771-3.

Loukissas, Yanni Alexander. 2019. *All Data Are Local: Thinking Critically in a Data-Driven Society.* Cambridge, MA: MIT Press.

Lykke, Jørn, Stephen F. Austin, and Mørch Mille Metz. 2008. 'Kognitiv miljøterapi og tvang i behandling af dobbeltdiagnose.' *Ugeskrift for Læger* 170 (5): 339–43. http://ugeskriftet.dk/videnskab/kognitiv-miljoterapi-og-tvang-i-behandling-af-dobbeltdiagnose.

Madden, Raymond. 2010. *Being Ethnographic. A Guide to the Theory and Practice of Ethnography*. London: Sage.

Martin, Emily. 2021. *Experiments of the Mind: From the Cognitive Psychology Lab to the World of Facebook and Twitter*. Princeton, NJ: Princeton University Press.

Mau, Steffen. 2019. *The Metric Society: On the Quantification of the Social*. Cambridge: Polity Press.

Merry, Sally Engle. 2016. *The Seductions of Quantification: Measuring Human Rights, Gender Violence, and Sex Trafficking*. Chicago, IL: University of Chicago Press.

Ministeriet for Sundhed og Forebyggelse. 2014a. *Partnerskabsaftale mellem Region Hovedstaden og Ministeriet for Sundhed og Forebyggelse*. Copenhagen: Ministeriet for Sundhed og Forebyggelse.

Ministeriet for Sundhed og Forebyggelse. 2014b. *Partnerskabsaftale mellem Region Midtjylland og Ministeriet for Sundhed og Forebyggelse*. Copenhagen: Ministeriet for Sundhed og Forebyggelse.

Ministeriet for Sundhed og Forebyggelse. 2014c. *Partnerskabsaftale mellem Region Nordjylland og Ministeriet for Sundhed og Forebyggelse.* Copenhagen: Ministeriet for Sundhed og Forebyggelse.

Ministeriet for Sundhed og Forebyggelse. 2014d. *Partnerskabsaftale mellem Region Sjælland og Ministeriet for Sundhed og Forebyggelse*. Copenhagen: Ministeriet for Sundhed og Forebyggelse.

Ministeriet for Sundhed og Forebyggelse. 2014e. *Partnerskabsaftale mellem Region Syddanmark og Ministeriet for Sundhed og Forebyggelse*. Copenhagen: Ministeriet for Sundhed og Forebyggelse.

Moore, Phoebe V. 2018. *The Quantified Self in Precarity: Work, Technology and What Counts*. New York, NY: Routledge.

Møllerhøj, Jette. 2021. 'Fra bindegal til uanbringelig: forståelser og reguleringer af psykiatrisk tvang i et historisk perspektiv.' *Tidsskrif for Forskning i Sygdom og Samfund* 18 (34): 23–45. https://doi.org/10.7146/tfss.v18i34.127166.

Navon, Daniel, and Gil Eyal. 2016. 'Looping Genomes: Diagnostic Change and the Genetic Makeup of the Autism Population.' *American Journal of Sociology* 121 (5): 1416–71. https://doi.org/10.1086/684201.

Øhlenschlæger, Johan, Merete Nordentoft, Anne Thorup, et al. 2008. 'Effect of Integrated Treatment on the Use of Coercive Measures in First-Episode Schizophrenia-Spectrum Disorder. A Randomized Clinical Trial.' *International Journal of Law and Psychiatry* 31 (1): 72–6. https://doi.org/10.1016/j.ijlp.2007.11.003.

Petersen, Alan. 2019. *Digital Health and Technological Promise: A Sociological Inquiry*. Routledge: London.

Pickersgill, Martyn. 2019. 'Psychiatry and the Sociology of Novelty: Negotiating the US National Institute of Mental Health "Research Domain Criteria" (RDoC).' *Science, Technology & Human Values* 44 (4): 612–33. https://doi.org/10.1177/0162243919841693.

Rigsrevisionen. 2023. *Rigsrevisionens notat om beretning om indsatsen for at nedbringe brug af tvang i psykiatrien*. Copenhagen: Rigsrevisionen.

Rose, Nikolas. 1999. *Powers of Freedom: Reframing Political Thought*. Cambridge: Cambridge University Press.

Ruckenstein, Minna, and Natasha Dow Schüll. 2017. 'The Datafication of Health.' *Annual Review of Anthropology* 46: 261–78. https://doi.org/10.1146/annurev-anthro-102116-041244.

Smith, Gregory M., Aidan Altenor, Roberta J. Altenor, et al. 2023. 'Effects of Ending the Use of Seclusion and Mechanical Restraint in the Pennsylvania State Hospital System, 2011-2020.' *Psychiatric Services* 74 (2): 173–81. https://doi.org/10.1176/appi.ps.202200004.

Smith, Gregory M., Donna M. Ashbridge, Robert H. Davis, and William Steinmetz. 2015. 'Correlation Between Reduction of Seclusion and Restraint and Assaults by Patients in Pennsylvania's State Hospitals.' *Psychiatric Services* 66 (3): 303–9. https://doi.org/10.1176/appi.ps.201400185.

Smith, Gregory M., Robert H. Davis, Aidan Altenor, et al. 2008. 'Psychiatric Use of Unscheduled Medications in the Pennsylvania State Hospital System: Effects of Discontinuing the Use of P.R.N. Orders.' *Community Mental Health Journal* 44 (4): 261–70. https://doi.org/10.1007/s10597-008-9126-y.

Sundheds- og Ældreministeriet. 2018. *Indblik i psykiatrien på tværs af regioner og kommuner*. Copenhagen: Sundheds- og Ældreministeriet.

Sundheds- og Ældreministeriet, KL, and Danske Regioner. 2018. *Nationale mål for sundhedsvæsenet*. Copenhagen: Sundheds- og Ældreministeriet.

Sundhedsdatastyrelsen. 2016. 'Dokumentation af registre.' 18 November, eSundhed. https://www.esundhed.dk/Dokumentation/DocumentationExtended?id=27.

Sundhedsdatastyrelsen. 2024. 'Nøgletal for sygehusvæsenet og praksisområdet.' 8 August, eSundhed. https://www.esundhed.dk/Emner/Patienter-og-sygehuse/Noegletal-for-sygehusvaesenet-og-praksisomraadet#tabpanel4B38CDB03BD94738AD1ECF2098C36FE7.

Sundhedsministeriet. 2021. *Sundhedsministerens redegørelse til Statsrevisorerne vedr. beretning nr. 11/2020 om indsatsen for at nedbringe brug af tvang i psykiatrien*. Copenhagen: Sundhedsministeren.

Sundhedsstyrelsen. 2021. *Monitorering af tvang i psykiatrien – Opgørelse for perioden 1. juli 2020 – 30. juni 2021*. Copenhagen: Sundhedsstyrelsen.

Toft, Ole Nikolaj Møbjerg. 2022. 'Mulig aftale tirsdag: Se udkastet til forliget om tiårsplanen for psykiatrien.' 26 September, *Altinget*. https://www.altinget.dk/social/artikel/se-udkast-til-forliget-om-10-aarsplanen-for-psykiatrien.

Wadmann S, Johansen S, Lind A, Birk HO & Hoeyer KL. 2013. Analytical perspectives on performance-based management: an outline of theoretical assumptions in the existing literature. *Health Economics Policy and Law*, 8(4):511-527.

Wadmann, S., Munk, A.H., Høyer, K., Høgh, L., Hageman, I., Bjørklund, L. & Krantz, M.F. Syv eksperter: Her er fire gode råd til arbejdet med ny psykiatriaftale. *Altinget* *sundhed*, 12.1.2024. https://www.altinget.dk/sundhed/artikel/syv-eksperter-her-er-fire-gode-raad-til-arbejdet-med-ny-psykiatriaftale

Winthereik, Brit Ross, Irma van der Ploeg, and Marc Berg. 2007. 'The Electronic Patient Record as a Meaningful Audit Tool: Accountability and Autonomy in General Practitioner Work.' *Science, Technology, & Human Values* 32 (1): 6–25. https://doi.org/10.1177/0162243906293884.

Zuboff, Shoshana. 1988. *In the Age of the Smart Machine: The Future of Work and Power*. New York, NY: Basis Books.