DYNAMIC AND STATIC FACTORS ASSOCIATED WITH DISCHARGE DISPOSITIONS: THE NATIONAL TRAJECTORY PROJECT OF INDIVIDUALS FOUND NOT CRIMINALLY RESPONSIBLE ON ACCOUNT OF MENTAL DISORDER (NCRMD) IN CANADA

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ABSTRACT

The majority of individuals found not criminally responsible on account of mental disorder (NCRMD) in Canada spend some time in hospital before they are conditionally or absolutely (no conditions) discharged to the community by a legally mandated review board. By law, the decision to conditionally discharge an individual found NCRMD should be guided by the need to protect the public, the mental condition of the accused, and the other needs of the accused, especially regarding his/her community reintegration. At the time of this study, Canadian legislation and case law required that the review board disposition should be the "least onerous and least restrictive" possible for the accused. This means that, if there is no evidence that the person poses a significant risk to public safety, he/she must be released. However, the Canadian Criminal Code does not specify the criteria that must be considered when making this risk assessment. This leads to two questions. (1) What predicts review board dispositions? (2) To what extent do disposition determinations reflect evidence-based practices? The present study examined dynamic and static predictors of detention in custody, conditional discharge (CD), and absolute discharge (AD) dispositions among persons found NCRMD across the three largest provinces in Canada. The National Trajectory Project (NTP) examined men and women found NCRMD in British Columbia (BC), Québec (QC), and Ontario (ON) between May 2000 and April 2005, followed until December 2008. For the purposes of this study, individuals who had at least one hearing with a review board were extracted from the NTP dataset (N=1794: QC=1089, ON=483, BC=222). Over the course of the study, 6743 review board hearings were examined (QC=3505, ON= 2185, BC= 1053). Despite advances in the risk assessment field, presentation of a comprehensive structured risk assessment to the review board was not the norm. Yet our findings suggest that review boards were taking into account a combination of

empirically validated static and dynamic risk factors, as represented by the items of the HCR-20 risk assessment scheme. Particular attention was being paid to the behavior of the patient between hearings (e.g., violent acts, compliance with conditions). Severity of index offense was associated with review board decisions; though index severity is not related to recidivism, it is an important consideration in terms of public perceptions of the justice system and can be related to better established risk factors (i.e., criminal history and prior violence). Historical factors had more influence on the decision to detain someone, while clinical factors were more influential on an AD decision. Disposition stability was the most common trajectory, meaning that a patient with a prior CD disposition was most likely to receive another CD disposition at the next hearing. Static and dynamic risk factors found in the HCR-20 influenced review board determinations, although presentation of a complete structured risk assessment is the exception, not the norm. Results suggest that clinicians recommending less restrictive dispositions are more likely to include a comprehensive risk assessment with their recommendation. An alternative explanation is that, when there is no comprehensive assessment of risk, the review board tends to be more cautious and apply more restrictive dispositions. The practice seems to be contrary to the legislation at the time of the study, given that there should be a presumption that the patient is not a significant threat.

There appears to be dissension in the literature with regard to the rate of success among individuals on community discharge from hospital following a finding of insanity. Riordan, Haque, and Humphreys (2006) asserted that “Conditional discharge for restricted hospital order patients is by and large a successful process” (p. 31); whereas Bjørkly, Sandli, Moger, and Stang (2010) concluded that “Research on the fate of patients after discharge from maximum security psychiatric care is scarce. Nonetheless, results indicate that readmission and reconviction rates are unacceptably high” (p. 343). Our own research supports community reintegration of individuals found not criminally responsible on account of mental disorder (NCRMD, equivalent to being found not guilty by reason of insanity), demonstrating relatively low rates of any criminal recidivism (17%) and extremely low rates of recidivism for serious offenses against the person such as homicide, attempted homicide, or sexual assault (0.6%) (Charette et al., in press). Our findings reflected outcomes for individuals on both conditional discharge (CD, released from hospital with conditions, e.g., abstain from alcohol or other drugs, participate in treatment) and absolute discharge (AD, no conditions or any further legal restrictions).

Part of the discrepancy between findings regarding the success of community reintegration of individuals found NCRMD may be the yardstick by which ‘success’ upon return to the community is determined. For instance, some studies have examined return to hospital and revocation of CD, while others have used new charges or reconviction as the outcome of interest, and still others focus on violent reoffending. Moreover, firm conclusions are often thwarted by small sample sizes, insufficient duration of follow-up, or reliance on administrative records versus self-report (see Bjørkly et al., 2010). Commentators have also noted that analytical methods vary considerably across studies (Monson, Gunnin, Fogel, & Kyle, 2001).

The decision to detain or release an NCRMD accused is important because it reflects the delicate balance between the civil liberties of the mentally ill individual and the safety of the public (Fox, 2008),

as well as sensitivity to public perceptions of procedural justice (Davoren et al., 2012). When weighing public safety, the main concern is recidivism, especially violent offenses. Therefore, decision-making by review boards should be guided by empirically validated risk and protective factors for recidivism and specifically for violence, for which there is now a large and robust literature (e.g., Andrews, Bonta, & Wormith, 2006; Monahan et al., 2001; Otto & Douglas, 2010). The extent to which these risk factors drive review board decision-making, however, is relatively unexplored (Hilton & Simmons, 2001).

If a Canadian court finds an individual to be NCRMD, the accused will be (a) released without conditions or further legal restriction (i.e., absolutely discharged), (b) conditionally discharged (i.e., discharged with conditions), or (c) detained in hospital (i.e., in custody). Detention and CD decisions are reviewed at least annually by a legally mandated review board (for further details about review boards and the NCRMD system see Crocker et al., 2011).[1] In rendering their decisions, courts and review boards must take into account the need to protect the public, the mental condition of the accused, and other needs of the accused, especially regarding his/her community reintegration. Further, Canadian legislation (Criminal Code, 1992, s. 672.54) and case law (Winko v. British Columbia-Forensic Psychiatric Institute, 1999) require that the disposition should be the least onerous and least restrictive for the accused. Thus, if a review board decides to detain an individual in custody, it is presumed that they have evidence that the individual presents a significant risk to the public (i.e., "a real risk of physical or psychological harm to members of the public that is serious in the sense of going beyond the merely trifling or annoying") (Winko v. British Columbia – Forensic Psychiatric Institute, 1999). This means that, if there is no evidence that the person poses a significant risk, he/she must be released. However, the Canadian Criminal Code does not specify the criteria for making these determinations. This leads to the following questions. (a) What does the research suggest review boards should be considering, that is, what predicts success or failure of individuals found NCRMD upon their CD? (b) What does the research indicate is actually happening in practice, that is, what variables have been found to be associated with successful community reintegration during CDs? (c) What determines the decision to conditionally discharge or absolutely discharge an individual found NCRMD?

WHAT SHOULD REVIEW BOARDS CONSIDER WHEN DISPOSITION DECISIONS?

Given that the scope of the responsibility of the review board extends to both the needs of the individual and the safety of the public, one would expect that review boards are considering a wide range of both static and dynamic clinical, psychosocial, and criminal variables. In particular, Canadian law specifies that that detention requires clear and convincing evidence of "significant threat" to the public. Given the current state of the risk assessment and management literatures and the professional expectations for evidence-based practice, we would therefore expect review board decisions to be made on the basis of evidence (American Psychological Association, 2002; see also Fox, 2008) from validated risk assessment measures such as the HCR-20 or Violence Risk Appraisal Guide, or at least from evaluations of empirically validated static and dynamic risk factors such as antisocial personality, compliance with rules, and substance use (Andrews et al., 2006; Otto & Douglas, 2010; Webster, Haque, & Hucker, 2013).[2]

[1] The Canadian Government recently passed a bill known as the Not Criminally Responsible Reform Act, which was implemented in July 2014. The main changes are the introduction of a special designation of high risk accused for individuals who have committed very serious violent offenses, longer periods between hearings for this subgroup (every 3 years versus at least annually) and new criteria for discharge from the jurisdiction of review boards, which are responsible for the disposition of persons found NCRMD (An Act to amend the Criminal Code and the National Defence Act (mental disorder), 2013).

[2] It is beyond the scope of the present article, but there is a growing literature demonstrating the relevance of strengths to risk assessments as well (de Ruiter & Nicholls, 2011; Rogers, 2000; Webster et al., 2009).

Criminal Variables. Several studies have found that the nature of the index offense is correlated with the duration of detention for individuals found NCRMD (Braff, Arvanites, & Steadman, 1983; Harris, Rice, & Cormier, 1991; Silver, 1995). Research with both inmates and forensic patients has also consistently demonstrated that the number of previous crimes was a strong predictor of violent recidivism in a sample of mentally disordered offenders. Age at first criminal offense has also been associated with both recidivism (Webster et al., 1997) and CD decisions (Manguno-Mire et al., 2007). Finally, Monson and colleagues (2001) found that a prior criminal history was associated with a 2.25 times greater likelihood of revocation of CD. In sum, diverse approaches to examining criminal history consistently demonstrate the importance of prior crime and violence to the likelihood of individual's success upon returning to reside in the community after being found NCRMD convictions is positively correlated with recidivism (Quinsey, Harris, Rice, & Cormier, 1998), resulting in criminal history and prior violence being common variables in established violence risk assessment measures (e.g., HCR-20, Webster, Douglas, Eaves, & Hart, 1997). In the Callahan and Silver (1998b) study, participants with a prior criminal record were at greater risk of a revocation of their CD than those without a prior record. Lund et al. (2013) recently found that the number of previous violent

Psychosocial Variables. Discharge plans are related to the likelihood of success upon CD. A study from the UK, for example, concluded that patients living alone had a significantly higher chance of returning to hospital compared to individuals living with a significant other or roommate, or in supported housing (Riordan et al., 2006; see also Salem et al., in press).

Riordan et al. (2006) studied a cohort of patients on CD and found that individuals who did not have close social support were five times more likely to have their release revoked. That same study demonstrated that patients were four and a half times more likely to receive an AD (i.e., to progress from CD to AD) if they lived in supported housing. Chiringa, Robinson, and Clancy (2013) reported on a qualitative study that further emphasized the importance of housing and support. Many participants reported feeling lonely and in need of support; they also stated that the residences they were required to live in were substandard (Chiringa et al., 2013). Neighborhood of residence characteristics can also have implications for whether or not one maintains one's CD or is returned to hospital (Melnychuk, Verdun-Jones, & Brink, 2009). A study examining successful reintegration of female forensic patients found that, in addition to clinical variables such as medication and other treatment compliance, engagement in prosocial activities and supportive environments contributed significantly to positive outcomes

(Viljoen et al., 2011).

Mental Health Variables. Return to hospital often reflects a deterioration in the individual's mental health status (Bertman-Pate et al., 2004; Golding, Eaves, & Kowaz, 1989; Vitacco et al., 2011), a failure to comply with treatment (Bertman-Pate et al., 2004; Golding et al., 1989), and substance use (Bertman-Pate et al., 2004; Callahan & Silver, 1998b; Golding et al., 1989; Riordan et al., 2006). A recent study by Vitacco and colleagues (2011) on CD revocation among 76 female American insanity acquittees found that demographic, diagnostic, mental health, and criminal history characteristics were unrelated to conditional release outcomes (dichotomized to reflect successful maintenance of CD (68.4%) or return to hospital (31.6%) over a 24 month period). Short-term hospitalization was the only factor associated with revocation of conditional release. Most revocations were due to rule violations (n= 18). The authors concluded that, in the absence of any violent reoffending and low rates of non-violent criminal recidivism (n= 6), their results lend support to the utility of successfully managing insanity acquittees in the community. Reflecting on the finding that CD revocation was likely once mental health symptoms required a return to hospital, the authors recommended that treatment

providers take note of early warning signs and intervene early. This study demonstrated the importance of ensuring adequate services for higher risk individuals (consistent with the Risk–Need–Responsivity principles in correctional rehabilitation; Andrews et al., 2006), especially if a patient has already had a prior unsuccessful CD.

What do we know about the decision-making of review boards?

A review of research on tribunal decision-making suggests the following four conclusions. First, there is little evidence of consistency in the variables that are considered across studies; second, there is considerable variability in decision-making across settings and jurisdictions (Callahan & Silver, 1998a; Crocker et al., 2011; McDermott, Scott, et al., 2008; Silver, 1995). Third, the most salient variables in the disposition determinations sometimes have little empirical support; examples include characteristics such as physical attractiveness (Hilton & Simmons, 2001), whereas many empirically supported risk variables are overlooked (e.g., HCR-20 items; Côté, Crocker, Nicholls, & Seto, 2012; Crocker et al., 2011; Hilton & Simmons, 2001). Fourth, structured risk assessment tools are insufficiently integrated into forensic practice. For instance, Hilton and Simmons (2001) reported that the best predictor of review board decisions to release or detain forensic patients was the recommendation of the treatment team and, specifically, the senior clinician's testimony at the hearing. Yet the Violence Risk Appraisal Guide (VRAG) (Quinsey et al., 1998) did not influence clinical recommendations and was not associated with tribunal decisions, despite the fact that the VRAG report and score were often available on file and the measure was systematically integrated into clinical practice in that province.

The present study

Until recently, the application of actuarial assessment to forensic decision-making was considered unchartered territory (cf., Côté et al., 2012; Crocker et al., 2011; Hilton & Simmons, 2001). In Canada, disposition decisions have been found to be associated with both dynamic (Crocker et al., 2011) and static risk variables (McKee, Harris, & Rice, 2007). Although dynamic variables have been shown to be better suited to predict short-term outcomes of violence risk (see McDermott et al., 2008; McNiel et al., 2003), they can inform treatment planning and supervision (Braithwaite, Charette, Crocker, & Reyes, 2010; Desmarais, Wilson, Nicholls, & Brink, 2010; Webster et al., 2009; Webster, Martin, Nicholls, & Middleton, 2004). Callahan and Silver (1998a) concluded that research on the characteristics of persons conditionally discharged is

still sparse; this is particularly true in Canada. Research to date has been based on small samples or single jurisdictions.

The present study builds on our previous research (Crocker et al., 2011; Crocker, Charette, et al., in press) to further examine how dynamic and static variables predict disposition decisions for NCRMD individuals across the three largest provinces in Canada.

Methods

Data for this study were extracted from the National Trajectory Project (NTP), an archival longitudinal cohort study of individuals with a verdict of NCRMD in the three largest provinces in Canada: Québec (QC), Ontario (ON), and British Columbia (BC). The sample included individuals who entered the review board system between 1 May 2000 and 30 April 2005; full details of the sample selection procedures are provided by Crocker et al. (in press-a). Given that an individual could have had more than one NCRMD verdict over the study period, the first verdict during that time was deemed the index verdict. One province (QC) had a significantly higher number of NCRMD verdicts over the study period, and thus a regionally stratified random sample selection was applied and weights were assigned (Crocker et al., in press-a). For the purposes of this

study, individuals who had at least one hearing with a review board were extracted from the NTP dataset (N=1794).3 Over the course of the study, these individuals had

6743 review board hearings (QC=3505, ON=2185, and BC=1053), with an average of 3.69 hearings per individual (SD=2.32). Table 1 shows the description of the sample.

Table 1. Description of the sample

Potential predictors (*n*=1794 cases)	n/M	%/SD
Province		
Quebec	1089	60.7
Ontario	483	26.9
British Columbia	222	12.4
Age	36.5	12.4
Gender (women)	280	15.6
Severity of the index offence	4.7	1.2
Presence of psychiatric history	1219	68.0
Number of hearings	3.7	2.3
Dynamic variables (n=6743)		
Events occurred since the last hearing		
Violent act	962	14.3
Suicidal attempt or thoughts	213	3.2
Substance use	1465	21.7
Non-compliance with RB conditions	2060	30.6
Non-compliance with medication	1393	20.7
Diagnosis mentioned at the hearing		
Psychotic spectrum disorder	4723	70.0
Mood spectrum disorder	1064	15.8
Other Axis 1 diagnosis	1091	16.2
Substance use spectrum disorder	2505	37.1
Personality spectrum disorder	2049	30.4
Diagnosis not specified at the hearing	817	12.1
Number of HCR items mentioned at the hearing		
Historical items (out of 10)	5.0	2.1
Clinical items (out of 5)	1.7	1.3
Risk items (out of 5)	0.7	1.0
Use of structured risk assessment measure	1170	17.3

PROCEDURE

All case information was gathered through the review board files and coded from five years prior to the index verdict up to and including 31 December 2008. All data were coded and entered by trained research assistants across the three provinces with regular quality check meetings and the use of a secure blog to discuss questions about coding and come to a consensus about difficult cases. In Canada, official criminal records are not automatically transmitted to review boards (35% of the review board files contained the criminal record). Although RCMP criminal records were obtained by the NTP team, they were not considered in the present analysis because they were not available on the review board files and the focus of this study was on the factors associated with tribunal decision-making; we consider the factors associated with recidivism in separate papers (Charette et al., in press).

MEASURES

Five categories of data were collated for the NTP: (1) socio-demographic; (2) clinical (diagnoses); (3) criminality; (4) risk assessments presented at the review board hearings and behavior since the last hearing; (5) administrative review board processing information. All categories were collected for each hearing, for each individual (Crocker et al., in press-a).

Measures. Five categories of data were collated for the NTP: (1) socio-demographic; (2) clinical (diagnoses); (3) criminality; (4) risk assessments presented at the review board hearings and behavior since the last hearing; (5) administrative review board processing information. All categories were collected for each hearing, for each individual (Crocker et al., in press-a).

Socio-demographic Data. Socio-demographic information included age at index offense, gender, and province of residence. In the NTP, women represented 15.6% (n = 280) of the sample and men

84.4% (n = 1519) (Nicholls et al., 2014). The average age of participants was 36.53 (SD = 12.42).

Index Offense. The full description of the offense coding is provided by Crocker et al. (in press-a) and is based on the Uniform Crime Reporting Survey categories (Canadian Centre for Justice Statistics Policing Services Program, 2008). For the purposes of the current study, the severity of the index offense was considered (M= 4.65, SD= 1.24) using the Crime Severity Index, based on average length of sentencing by offense type (Wallace, Turner, Matarazzo, & Babyak, 2009). In the study sample, 6.9% of NCRMD accused had an index offense of causing or attempting to cause death, 2.3% for a sex offense, 26.5% for assaults, and 27.4% for threats and other offenses against the person.

Clinical Data. Clinical information included psychiatric diagnosis at each hearing along the following non-mutually exclusive categories: psychotic spectrum disorder, mood spectrum disorder, substance use disorder, personality disorder, other diagnosis, or no specified diagnosis at the hearing. Diagnosis at the time of the verdict was distributed as follows: 70.9% (n= 1268) had a psychotic spectrum disorder, 23.2% (n = 414) a mood disorder, 30.8% (n= 550) a substance use disorder, 10.6 % (n= 190) a personality disorder, and 5.9% (n= 106) other disorders (such as intellectual disability or organic disorders). Furthermore, nearly one-third of NCRMD accused had co-morbid substance use disorders with either a psychotic or mood disorder (28.9%, n = 516). A psychiatric history prior to the index verdict was found among 72.4% (n= 1051) of participants.

Risk Assessment. Given that studies have shown that review boards rely on expert testimony for decision making and that there is high agreement between clinicians' recommendations and review board decisions (Crocker, Charette, et al., in press; Hilton & Simmons, 2001), it is important to consider what information is presented at review board hearings. We considered whether a structured risk assessment tool was used and mentioned in the expert report. The clinicians mentioned using a risk assessment tool in 17.3% of hearings (n= 1170). Regardless of whether there was a specific tool used or not, many risk factors were explicitly mentioned in the expert reports.

The Historical Clinical Risk-20 (HCR-20) (Webster et al., 1997) was used as a template to code risk factors mentioned by clinicians in their reports to review boards and justifications of review board dispositions. The HCR-20 is a well-recognized, well-validated tool (Otto & Douglas, 2010). It is comprised of 10 items in the historical section (H), five items in the clinical section (C), and five items in the risk management section (R). For the present study, we coded whether each of the items from the HCR-20 (Webster et al., 1997) were mentioned as present in the expert reports to review boards and the disposition justifications of the review boards. Average inter-rater reliability coding for HCR-20 factors range from kappa coefficients of .67 (R factor) to .84 (H factor, Crocker et al., in press-a).

For the purposes of this study, the number of historical (M= 4.99; SD= 2.11), clinical (M=1.74; SD=1.32), and risk (M= 0.69; SD= 0.96) items mentioned as present in the expert report or in the review board disposition report for each hearing was coded.

Behavior Since Last Hearing. Behavior since last hearing was dichotomously coded as present or absent into the following categories: violence (n= 962, 14.3%), suicide attempts or ideation (n = 213, 3.2%), non-compliance with review board conditions (n = 2060, 30.6%), substance use (n= 1465, 21.7%), and non-compliance with medication (n= 1393, 20.7%). Each of these was coded for the expert reports and for review board disposition reports.

Contextual;Processing. Finally, contextual processing information for the current study was comprised of disposition at each hearing (i.e., detention, CD, or AD).

ANALYTIC STRATEGY

This study presents a multilevel design, wherein hearings are nested within individuals. As such, hearings are not independent of individual participants. To ensure that we did not violate the assumption of observation independence, a multinomial logistic regression predicting the review board disposition with a random effect at the individual level was favored, assisting in controlling for individual unobserved heterogeneity (Raudenbush, Johnson, & Sampson, 2003). No multicollinearity was observed in the model (variance inflation factor <.30).

Data from the same individuals are also not temporally independent. To clarify, the previous decision of the review board will likely influence the next, inertia being the most probable outcome (i.e., a prior finding of custody being more likely to result in another custodial disposition). The previous decision is thus included in the modeling. To evaluate the variability of effects of the predictors across time, interaction effects between the sequence of the hearing (first hearing after index verdict, second hearing after index verdict, etc.) and predictor were tested. Linearity of the effect of time was not assumed, and a quadratic effect was added to the model as well as in the interaction coefficient. To illustrate interaction effects, the ratio of predicted probabilities was calculated for individuals over the mean as a function of individuals under the mean for continuous variables, and can be interpreted as an odds ratio between individuals with high and low values on the predictors.

RESULTS

Static Predictors. Table 2 presents the multinomial logistic regression model predicting review board decisions. To facilitate interpretation, the reference category is always the more restrictive disposition: positive coefficients indicate a greater likelihood of a less restrictive decision. As observed in our previous work (Crocker, Charette, et al., in press), there is a difference across provinces in review board dispositions. Ontario and BC review boards are less likely to grant CDs than QC.

Age at the index offense had no effect on disposition decisions. Women were more likely to receive an AD decision than a CD decision in comparison to men, but were no more or less likely to be detained. Psychiatric history before the index offense reduced the likelihood of being released from detention. The more severe the index offense, the less likely the accused was to receive a release decision. Although one might hypothesize that the effect of the severity of the index offense could attenuate over time, there was no significant interaction effect between the severity of the index offense and time. This means that the severity of the index offense was considered, to the same extent, throughout the duration of time the individual was under the purview of the review board. However, a longer follow-up period would be necessary to validate this trend.

Dynamic Predictors. Some characteristics that guide review board decisions vary with time. These variables were included as dynamic predictors in the model. Obviously, the more time passed, the more likely to the accused was to be released, but this effect lessened over time. If an individual was detained at the prior hearing, he or she was less likely than an individual who had been on CD to be released at the following hearing (see Table 1). In other words, disposition stability was the most common trajectory; if the prior finding was custody, the most likely outcome of the next hearing was another custodial disposition.

The results also indicate that the review boards considered the NCRMD accused's behaviors since their previous decision. The presence of a violent act since the previous hearing decreased the likelihood of being released on CD or AD. Non-compliance with review board conditions decreased the likelihood of receiving an AD. Non-compliance with medication decreased the likelihood of being conditionally discharged; however, it did not influence the likelihood of receiving an AD. The

Table 2. Multinomial Logistic Regression Predicting Decision of the Review Board

	Conditional discharge vs detention		Absolute discharge vs detention		Absolute discharge vs conditional discharge	
	Exp(b)	(95% CI)	Exp(b)	(95% CI)	Exp(b)	(95% CI)
Static predictors						
Province (QC as reference)						
Ontario	0.04	(0.03–0.05)***	0.18	(0.13–0.25)***	2.09	(1.60–2.74)***
British Columbia	0.61	(0.44–0.84)**	1.02	(0.68–1.52)	1.48	(1.13–1.93)**
Age at the index verdict	1.03	(0.94–1.13)	1.08	(0.97–1.20)	1.02	(0.96–1.09)
Gender (women)	1.18	(0.87–1.60)	1.33	(0.95–1.88)	1.27	(1.02–1.57)*
Severity of the index offense	0.75	(0.70–0.81)***	0.70	(0.64–0.78)***	0.86	(0.80–0.92)***
Psychiatric history (Y/N)	0.58	(0.46–0.74)***	0.58	(0.44–0.76)***	0.90	(0.76–1.06)
Dynamic predictors						
Behaviors since previous hearing						
Violent act	0.26	(0.20–0.34)***	0.22	(0.14–0.33)***	0.72	(0.51–1.00)*
Suicidal attempt or thoughts	0.65	(0.41–1.04)	0.76	(0.35–1.63)	0.82	(0.48–1.41)
Non-compliance with review board conditions	0.91	(0.69–1.20)	0.52	(0.34–0.77)**	0.67	(0.52–0.88)**
Substance use	1.28	(0.97–1.71)	1.18	(0.78–1.76)	1.24	(0.96–1.61)
Non-compliance with medication	0.53	(0.41–0.68)***	0.85	(0.59–1.22)	1.03	(0.81–1.32)
Diagnosis mentioned at hearing						
Psychotic spectrum	0.99	(0.69–1.42)	0.51	(0.34–0.78)**	0.59	(0.44–0.78)***
Mood spectrum	1.66	(1.15–2.40)**	0.90	(0.57–1.40)	0.79	(0.59–1.06)
Other Axis 1 diagnosis	0.66	(0.50–0.86)**	0.93	(0.66–1.32)	1.20	(0.94–1.54)
Substance use spectrum	1.02	(0.81–1.27)	1.14	(0.85–1.53)	0.97	(0.79–1.18)
Personality spectrum	0.74	(0.59–0.92)**	0.87	(0.65–1.18)	1.24	(1.01–1.53)*
Diagnosis not specified	0.75	(0.48–1.20)	0.46	(0.26–0.81)**	0.72	(0.51–1.02)
Use of structured risk assessment tool	1.43	(1.08–1.90)*	1.40	(0.95–2.07)	1.02	(0.75–1.40)
Number of HCR-20 items mentioned at hearing as present						
Historical items	0.77	(0.67–0.88)***	0.69	(0.58–0.82)***	0.82	(0.73–0.92)***
Clinical items	0.46	(0.41–0.52)***	0.33	(0.29–0.39)***	0.54	(0.49–0.60)***
Risk items	0.95	(0.87–1.04)	0.65	(0.56–0.76)***	0.63	(0.55–0.70)***
Sequence of hearing (time; ln)	2.91	(2.23–3.80)***	4.47	(2.99–6.68)***	1.47	(1.06–2.02)*
Sequence of hearing (time; ln; sq)	0.64	(0.49–0.84)**	0.30	(0.20–0.45)***	0.57	(0.42–0.77)***
Detained on previous hearing	0.11	(0.09–0.13)***	0.04	(0.03–0.06)***	0.38	(0.32–0.46)***
Interaction effects						
Pres. H×SequenceLN	0.60	(0.44–0.81)***	0.67	(0.44–1.02)	1.05	(0.80–1.38)
Pres H×SequenceLN2	2.02	(1.50–2.72)***	1.94	(1.26–2.98)**	1.01	(0.76–1.33)
Pres C×SequenceLN	0.82	(0.63–1.07)	0.74	(0.49–1.12)	0.73	(0.54–0.98)*
Pres C×SequenceLN2	1.06	(0.82–1.38)	1.23	(0.80–1.88)	1.34	(1.00–1.82)
Pres R×SequenceLN	1.42	(1.10–1.84)**	0.98	(0.64–1.50)	0.77	(0.53–1.13)
Pres R×SequenceLN2	0.72	(0.57–0.91)**	1.14	(0.78–1.66)	1.32	(0.91–1.91)

Note: If every coefficient is significant and in the same direction, then it influences every discharge disposition (conditional or absolute); if only column 1 is significant, it only influences CD, not AD; if columns 2 and 3 are significant, and in the same direction, it influences absolute but not CD.

presence of substance use since the last hearing did not reduce the likelihood of being released.

Our results suggest that, as the treatment team learns more about the patient over time, there could be some evolution in the diagnosis (Braithwaite, Laferrière, Charette, & Crocker, 2011). The diagnosis was therefore considered as a dynamic rather than static predictor. Having a diagnosis in the psychotic spectrum decreased the likelihood of receiving an AD from the review board. However, having a mood spectrum disorder increased the likelihood of receiving a CD over detention. Substance use disorders were not taken into consideration in the decision-making of the review board. On the other hand, mention of a personality disorder had an inconsistent effect: personality disorder decreased the likelihood of a CD over detention, but increased the likelihood of receiving an AD over a CD. However, a diagnosis of personality disorder was not consistently mentioned

at all hearings for the same individual, which might explain these inconsistencies. Also, in some expert reports, no diagnosis was mentioned; this was found to reduce the likelihood of receiving an AD over detention.

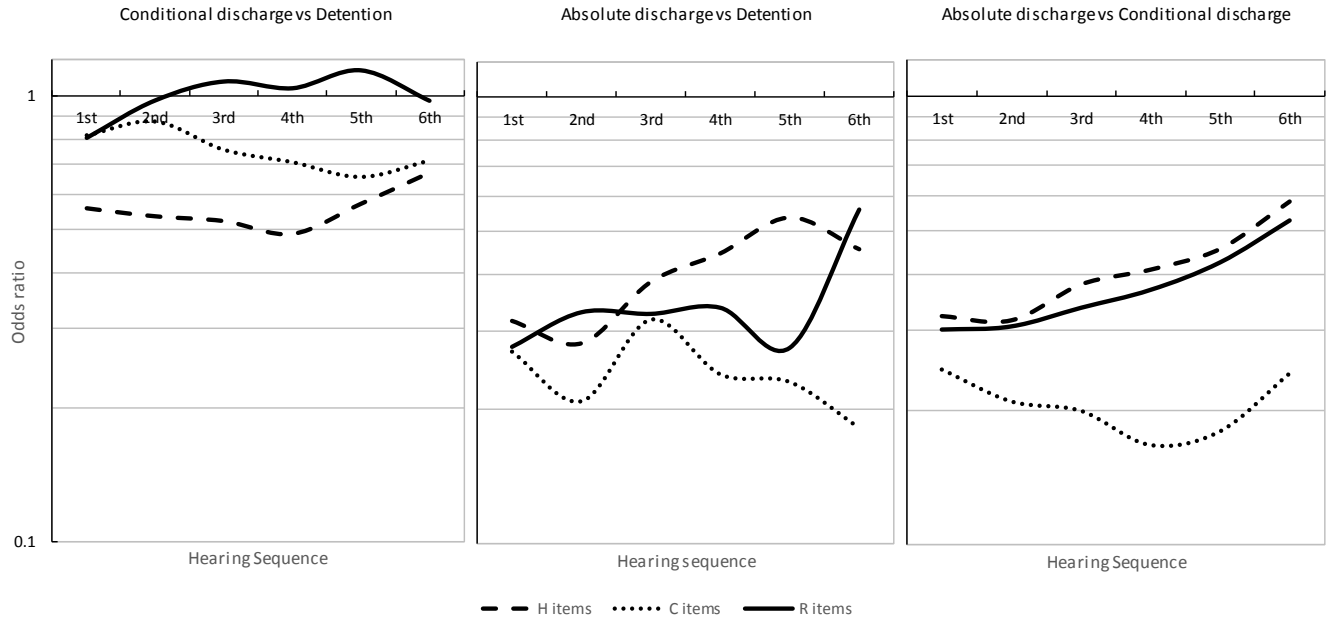
Effect of Risk over Time. A structured risk assessment tool was presented at a minority of review board hearings

(17.3%, n = 1170). The likelihood of CD was higher when a structured risk assessment tool was presented. Even if risk assessment tools were not systematically used, important risk factors were mentioned during the hearing. The mention of more historical and clinical risk factors from the HCR-20 during the hearing predicted a lower likelihood of CD or AD. Risk management items were only found to decrease the likelihood of AD, but they were so rarely mentioned that the power to detect an effect was limited. These effects were not constant across time. Figure 1 presents variations for historical, clinical, and risk management HCR-20 items. The vertical axis indicates a ratio of the probability of receiving a decision for cases where there were more items than average compared with cases where there were fewer items than average (see Table 2). The lower the line, the more important the effect. In the left part of Figure 1, we see that risk management items have no effect on the decision to conditionally release someone in comparison to detaining him/her. Historical items have the greatest effect. However, the longer the time that passes, the weaker this effect. Clinical items have little impact for the first hearings, but their effect tends to increase with time. The number of HCR-20 items mentioned had little impact on the decision of conditional release over detention.

For both graphs predicting AD (center and right), the patterns are very similar, wherein clinical items have more effect than historical or risk management items. Similar to the first graph on the left, the two graphs predicting an AD show an increase of the influence of clinical items on decision-making over time and a decrease in the influence of historical items. Risk management items had more influence on predicting decisions of AD however, this influence tends to decrease with time.

In summary, historical items are more likely to be considered in CD decisions, while clinical items are more commonly considered for AD decisions. Historical items tend to have less importance the more time passes, while clinical items take more importance over time.

Figure 1. Interaction effects between number of HCR-20 risk items mentioned as present during the hearing and time. H items, historical items; C items, clinical items; R items, risk items of the HCR-20 (Webster et al. 1997)



DISCUSSION

Integration of Structured Risk Assessments into Forensic Practice. Despite more than 30 years of research demonstrating the superiority of structured and empirically validated violence risk assessment tools over unstructured clinical judgments, risk assessment measures have not been systematically integrated into clinical forensic practice (Côté et al., 2012; Crocker et al., 2011; Hilton & Simmons, 2001; McDermott, Scott, et al., 2008). McDermott and colleagues

(2008) found that, although measures such as the PLC-R and HCR-20 have been available since 1980 and 1995, respectively, they were used in very few instances in their study of insanity acquittees. Six to ten years later, we again found the use of a structured risk assessment tool to be the exception, not the rule. Although complete risk assessment measures were not often included in the expert reports, HCR-20 items were consistently mentioned and, when they were, the results suggest that review boards used them to render and justify their disposition decisions (Wilson et al., 2014).

In the present study, the presence of a structured risk assessment was associated with a greater likelihood of a CD. It is possible that clinicians are more likely to report a comprehensive risk assessment based on an empirically validated measure in order to provide additional rationale when they are recommending a less restrictive disposition

(i.e., greater community access requires additional rationale). It might also be the case that, where clinicians and review board are in agreement, there is no need for a full risk assessment when there is no expectation that the accused will be discharged. An alternative explanation is that, when structured risk assessment tools are reported in the experts' reports, the review boards tend to use more restrictive dispositions, perhaps opting for caution as a means of ensuring public safety. If this second interpretation turns out to be correct, structured risk evaluation should be promoted to avoid unnecessary detention.

The Influence of Static and Dynamic Factors in Release Decisions. In addition to the idiosyncratic practices of release decision-making by review boards across jurisdictions (see also Callahan & Silver, 1998b; Wilson et al., 2014), a number of static and dynamic factors are also clearly associated with the probabilities of CD and AD over time and are examined here with the literature on recidivism patterns among mentally ill offenders. Furthermore, results are discussed in light of risk assessment practices in the context of the current Canadian legislation.

As others have found (Callahan & Silver, 1998b), women were more likely than their male counterparts to receive an AD disposition, but in our study this did not hold for CD dispositions above and beyond other controlled factors. This is somewhat similar to the findings of Callahan and Silver (1998b), who reported that gender was not consistently associated with CD decisions across jurisdictions. Again, in line with some previous research, compliance with medication (McDermott, Scott, et al., 2008) since the previous hearing was found to be associated with CD. This is consistent with studies showing compliance with medication to be associated with positive outcomes on CD (Viljoen et al., 2011). All other factors being equal, non-compliance with review board conditions was strongly associated with decreased probability of AD, indicating that the review board and clinical teams are either conducting a step-down process and testing the capacity of individuals to follow rules and/or simply attending to risk on an ongoing basis, because non-compliance with rules is a risk factor for recidivism.

Even though some studies examined diagnosis more generally (Callahan & Silver, 1998a; Hayes, Kemp, Large, & Nielssen, 2014), we analyzed diagnosis at each hearing over time and found that maintaining a psychotic spectrum disorder decreased the likelihood of an AD. McDermott, Quanbeck, et al. (2008) reported that risk of violence, treatment response, and substance use were the most important variables when clinicians were making conditional release decisions.

Consistent with the conclusions of McDermott, Quanbeck, et al. (2008), we found that violent behavior since the last hearing significantly decreased the likelihood of any form of release.

This study demonstrated that static factors carry more weight in decision-making early on, but, as the clinical team gets to know the patient, more dynamic factors are considered. Although prospective research is needed to examine this issue more thoroughly with recidivism, a preliminary consideration of this finding would suggest this might be somewhat counterintuitive if one considers, for instance, that dynamic variables are considered most relevant to short-term assessments and static and historical variables would be expected to be more informative for longer-term periods (i.e., their predictive validity would last for longer durations). Moreover, dynamic variables lend themselves to treatment and risk management (Webster et al., 2009; Wilson et al., 2013), which is more relevant to a CD determination when the individual is still receiving treatment and supervision.

Review boards must find a way to preserve the delicate balance between public safety and the individual rights and freedoms of accused mentally ill individuals. They are also regularly faced with media attention resulting from high profile cases and the associated scrutiny of the public perception of justice. The severity of the index offense has consistently been found to be a significant predictor of review board decision-making (Callahan & Silver, 1998a; Crocker et al., 2011; Hilton & Simmons, 2001; Silver, 1995; Vincent, 1999), and this study is no exception. Specifically, the more severe the index offense, the more likely the accused was to be detained in custody. What was particularly unique about this variable was that the finding remained consistent across time. Yet meta-analyses demonstrate that index offense severity is not associated with recidivism among mentally ill offenders (Bonta, Blais, & Wilson, 2014; Bonta, Law, & Hanson, 1998). The relevance of the index offense might reflect the fact that review boards are under public pressure, particularly in high profile cases. It is noteworthy that criminal recidivism rates, using official criminal records, in this sample were relatively low (17%) over a three-year follow-up period and that there were significant inter-jurisdictional differences (Charette et al., in press). Of particular interest, individuals who had committed a more serious index offense leading to an NCRMD verdict were the least likely to reoffend. At the same time, our results (Charette et al., submitted) and others (Bonta et al., 1998) have found that one of the most important factors associated with recidivism is the extent of previous criminal history. However, criminal records are not systematically integrated into the review board files, and the extent to which a full criminal history is described in expert reports for annual hearings was not coded. It is thus unknown to what degree criminal history is systematically considered in disposition decisions.

Behavior between hearings has been found to be associated with increased likelihood of detention (Hilton & Simmons, 2001). In the current study, this was evidenced with violence and non-compliance with review board conditions since last hearing. Several studies have concluded that substance misuse and substance use disorders are associated with the likelihood of failure among insanity acquittees discharged to the community (Bertman-Pate et al., 2004; Callahan & Silver, 1998a; Golding et al., 1989; Riordan et al., 2006). Substance misuse is also a cardinal risk factor in the general offending literature (e.g., the Big Four and Central Eight in the Risk–Need– Responsivity Model, Andrews et al., 2006) and it is consistently found on structured risk assessment tools (e.g., HCR-20, Douglas, Hart, Webster, & Belfrage, 2013; Webster et al., 1997). Nearly one in three of the NCRMD accused in this study had a co-morbid substance use disorder with either a psychotic or mood disorder (28.9%, n= 516) and nearly an equivalent proportion had engaged in substance use

(n = 1465, 21.7%) ‘since the prior hearing’. Unlike the findings of the study by McDermott, Quanbeck, et al. (2008), a diagnosis of substance use was not associated with disposition determinations in the present study. Also, unlike the findings of the previous studies (see also Callahan & Silver, 1998a,

1998b; Lund et al., 2013; Monson et al., 2001; Riordan et al., 2006; Tellefsen et al., 1992), substance misuse since the last hearing had no effect on the review board decision. Substance misuse is an important variable to be monitoring as it increases the likelihood of being involved in serious incidents and hospital readmission post-conditional discharge (Riordan et al., 2006).

Strengths and Limitations. Given this was an archival study, results are limited to the availability of information transcribed in the review board files. Some information discussed during review board hearings may not have been captured in files. Also, our study addressed files from 2000 to 2005; therefore, practices may have changed in recent years (e.g., as young mental health professionals enter the field we would expect to see shifts in practice reflecting research developments). Furthermore, there are differences across jurisdictions in the comprehensiveness of available information in the files (Crocker et al., in press-b). We also did not consider the specific HCR-20 items in the prediction model for dispositions, but rather the number of factors that were mentioned.

However, this study does provide an overview of processing of individuals through the forensic system and a baseline to which future legislative, policy, or practice changes can be compared. Outcomes were not examined as a function of variations in the types of facility (e.g., forensic hospital, civil hospital, psychiatric unit of a general hospital) although prior research (McDermott, Scott, et al., 2008) suggests that the integration of applicable assessments might increase with growing specialization. This will be a particularly important area of continued inquiry in Canada given that forensic psychiatry was recently recognized as a subspecialty by the College of Physicians and Surgeons.

CONCLUSION

Future studies need to look into the kinds of risk factor and strength raised by the clinicians for review board decision-making above and beyond the number of factors presented. Comparing recidivism data from hearings when there is or is not a structured risk assessment measure integrated into the expert's report will further enlighten the utility of structured risk assessment methods in the processing of individuals found NCRMD. As noted by McDermott, Scott, et al., 2008, there is rarely any specific guidance provided regarding what information should be included in a recommendation to review boards or mental health tribunals for continued detention.

There is an opportunity for forensic mental health clinicians and researchers to develop national and international guidelines as the demand for forensic services is continually increasing (Jansman-Hart et al., 2011). Consistent with prior research (McDermott, Scott, et al., 2008), the present results indicate that forensic services are slowly beginning to adopt structured risk assessment measures. In the continuing attempt to find an appropriate balance between the safety of the public, the rights and freedoms of individuals found NCRMD, and procedural justice in our criminal justice system, future research will need to address whether there is an overestimation of risk and thus unnecessary detention. It is hoped that, with an increased integration of evidence-based risk assessment and management practices across forensic mental health services, this balance will be more confidently attained.

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