

EVALUATING TRIBUNAL DECISIONS TO RELEASE OR DETAIN THOSE NOT
CRIMINALLY RESPONSIBLE ON ACCOUNT OF MENTAL DISORDER

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By

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ABSTRACT

Canadians adjudicated Not Criminally Responsible on Account of Mental Disorder (NCR) are detained in forensic psychiatric hospitals under a jurisdictional review board (RB) regulated by the Canadian Criminal Code. Research is limited on whether jurisdictional RB practices uphold the federally legislated balance between public safety and social reintegration. This research investigated whether federal law is applied consistently within the Alberta RB (ARB) system across three phases. Phase One tracked the trajectories and outcomes of NCR individuals through the ARB system, Phase Two determined the predictors of ARB decisions and whether they account for risk or legislatively relevant information, and Phase Three examined forensic risk assessment instruments and their utility to assist forensic decision-making. Instruments included the Level of Service – Case Management Inventory, Historical Clinical Risk Management 20 – Version 3, and the Revised Violence Risk Appraisal Guide. A retrospective archival longitudinal design was used to examine a NCR cohort ($n = 109$) that entered the ARB system between 2005 and 2010 and their respective hearings ($n = 327$).

Results demonstrated that the ARB aligned their operational and management practices with federal legislation, but unique deviations contributed to novel trajectories and outcomes under RB supervision compared to other provinces. Dispositions varied as a function of risk level and were informed by clinician recommendations. Although risk-relevant information was supplied to the ARB by forensic professionals, key criminogenic risk/need factors as defined by the LS/CMI were absent in most clinical reports. ARB decision-making, however, was still strongly predicted by risk and legislatively relevant information associated with general and violent recidivism. As time under ARB supervision passed and release likelihoods increased, the ARB progressively favoured dynamic over static factors germane to treatment change and risk management. Evidence supported the validity of the study instruments in the appraisal and management of recidivism, especially for violence.

Federal duties charged to jurisdictional RBs in the management of NCR populations demands an assiduous consideration of risk and legally relevant information. Forensic risk assessment instruments are reliable and valid aspects of traditional offender programming and the results suggested that they may assist with the appraisal and management of criminal risk anchored in evidence-based practice. Clinical and policy implications of this research for RBs and forensic professionals are discussed.

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DEDICATION

This dissertation is dedicated to my family and friends, but in particular, Danaë.

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Chapter 1: EVALUATING TRIBUNAL DECISIONS TO RELEASE OR DETAIN THOSE NOT CRIMINALLY RESPONSIBLE ON ACCOUNT OF MENTAL DISORDER

1.1 General Introduction

In Canada, individuals deemed Not Criminally Responsible on Account of Mental Disorder (NCR) are by and large detained in forensic psychiatric hospitals under the supervision of jurisdictional review boards (RBs). Although RBs follow federal legislation per the Canadian Criminal Code (CCC), they are jurisdictionally administered, and research is limited on whether local practices uphold the delicate balance between public safety and social reintegration. The decision-making practices of RBs shape the social, economic, healthcare, and criminal justice issues that uniquely impacts Canadian society and its NCR population.

The Canadian NCR population has a substantial social and economic impact on society despite being relatively small (Miladinovic & Lukassen, 2014). NCR verdicts have been on the rise since 1992 (Ferguson & Ogloff, 2011), with a non-linear rate of increase. Conservative estimates indicated rapid growth between 1992 and 2004 with 6,802 recorded cases (523 per year; Latimer & Lawrence, 2006), and slower growth between 2005 and 2012 with 1,908 recorded cases (272 per year; Miladinovic & Lukassen, 2014). In addition to population growth, almost a quarter of those found NCR spent over a decade under RB supervision (Crocker et al., 2011; Penney et al., 2013). Age-related health declines add to the needs of NCR individuals who already face complex legal and mental health concerns that require high-cost care and services (Robertson et al., 2015). In the United States, the estimated state cost for mentally disordered persons in conflict with the law reached almost 800 million USD (Robertson et al., 2015). Beyond the economic cost, NCR individuals encounter substantial boundaries to recovery that exact immeasurable strain on families (Livingston et al., 2016), victims (Quinn & Simpson, 2013), and service providers (Robertson et al., 2015). Limited knowledge and public misunderstandings about NCR populations have molded a serious public health and criminal justice issue that is understudied, underfunded, and unfairly stigmatized (Livingston et al., 2011; Steadman & Cocozza, 1978).

Valuable social and economic improvement hinges upon the optimization of RB decision-making and a better understanding of their idiosyncratic practices. Given the low recidivism rates among Canadian NCR populations, some evidence suggests that RBs reasonably meet public safety standards across select Canadian provinces (Charette et al., 2015; Crocker et

al., 2015b; Richer et al., 2018; Simpson et al., 2014; Whittemore, 2001); yet, this remains to be seen for understudied jurisdictions (Haag et al., 2016). Conversely, there is a need to determine whether public safety eclipses the civil liberties of incarcerated individuals with mental illnesses (Crocker et al., 2014) – especially after 2014 legislative amendments that imposed stricter decisions on public safety, delays in community rehabilitation, and greater involvement of victims in RB activities (Not Criminally Responsible Reform Act, 2014). If NCR patient rights are restricted without just cause, then a constitutional concern may emerge on the basis of disability inequality. Research on RB decision-making may also help explain trends in NCR population growth (e.g., increasing heterogeneity in criminal and clinical profiles, rates of increase) despite stable crime rates and court cases in Canada (Crocker et al., 2015c). With this information, decision-makers could benefit from data that informs forensic patient bed flow and associated economic costs. Long-term insight into RB decision-making practices may lead to unified standards of evaluation recommendations (e.g., inclusion of a forensic risk assessment) that optimize violence risk prediction accuracy and risk management strategies (Laniado, 2017). These questions and issues, however, remain unanswered due to a lack of systematic data on the unique RB practices across Canadian jurisdictions (Crocker et al., 2015a; Desmarais et al., 2008).

This dissertation was designed to contribute to the limited research on the interprovincial RB disparities in the application of the CCC. This involved an examination of the trajectories and outcomes of Canadian NCR individuals under one RB system, risk or legislatively relevant predictors of RB decision-making, and the validity and utility of forensic risk assessment instruments. Different abbreviations and terms have been used to describe individuals detained at forensic psychiatric hospitals due to the NCR status. These abbreviations or terms include NCR or NCRMD, insanity acquittees, or not guilty by reason of insanity. The term NCR will be used in this document for consistency.

1.2 The Not Criminally Responsible on Account of Mental Disorder Defense

Not Criminally Responsible on Account of Mental Disorder (NCR) is a legal verdict given to defendants who satisfies section 16 of the CCC (Criminal Code, 1985). Section 16 states that the criteria for an NCR finding requires: (1) That the accused was both suffering from, and acted as a result of, a mental disorder at the time of the crime, (2) that the mental illness rendered the accused incapable of appreciating the nature and quality of the act, or (3) knowing that it was

morally wrong. Although there are three branches to this law, the vast majority of NCR verdicts are based on the first and third tenets – typically as a result of delusionary beliefs that gave rise to a mistaken belief in the rightness of the individual’s action. When the NCR defense is used, the burden of proof is on the party that raised the defense to provide a standard of evidence at the ‘balance of probabilities’ (more probable than not), as opposed to ‘beyond reasonable doubt’ (closer to certainty). Following an NCR verdict, the individual can be discharged immediately by the courts, deferred for a disposition by a jurisdictional RB, or detained in a hospital setting.

The history of the NCR defense (also known as the insanity defense) evolved substantially since its first conception in England. According to Ferguson and Ogloff (2011), insanity was a legal term and defined as a disease of the mind. The most influential rulings in early NCR law can be traced back to three cases set in 19th century England. These included *R v. Hadfield* (1800), *R v. Oxford* (1840), and *R v. M’Naughten* (1843). *Hadfield* was the first known case where after a successful insanity defense, indeterminate detention at a psychiatric institution was ordered instead of an immediate release. *Oxford* enabled expert testimony to be entered into the court system but in the form of opinion, rather than factual, evidence. The most influential of the three cases, *M’Naughten* formed the foundation of contemporary NCR criteria in what was known as the M’Naughten Standard. The M’Naughten Standard has been viewed as a cognitive test of insanity due to its emphasis on the thought processes prior to the offense. There were three parts to this standard: (1) The defendant had a disease of the mind that resulted in a ‘defect of reason,’ and, as a result (2) the defendant did not understand the nature and quality of their act, or (3) the defendant did not know their action was ‘wrong.’

The CCC adopted the insanity defense from England and evolved its legal parameters through landmark cases and legislative reforms. In Canada, landmark NCR cases included *Chaulk v. The Queen* (1990), *R v. Swain* (1991), and *Winko v. British Columbia* (1999). *Chaulk* was a Supreme Court case that contested the definition of wrongfulness in a NCR defense as not strictly meaning legally wrong. The ruling was that an act contrary to law did not speak to the moral consciousness of an individual impaired by a mental disorder. In fact, a mental disorder may drive an individual to believe that an act contrary to law as morally justifiable in the case of a prophetic or divine order. As a result, *Chaulk* set precedence for a broader definition of wrongfulness that included the moral intentions behind an offense. The distinction between the legal and moral definitions of wrongfulness continue to impact contemporary legal cases. For

example, *R v. Shoeborn* (2017) found the defendant as deliberate and planned in the killing of his three children but determined he was NCR for 1st-degree murder. The logic in *Shoeborn* was that although he knew that murder was legally wrong, he, as a result of his mental disorder, believed that the murders were committed as the morally right action.

Shortly after *Chaulk, Swain* in 1991 raised the issue of Charter Rights infringement in relation to the indeterminate detention of those found NCR. The ruling was that indeed, the indeterminate detention of those NCR violated Sections 7 and 9 of the Canadian Charter of Rights and Freedoms (1982). Section 7 stated, “Everyone has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice,” whereas Section 9 stated, “Everyone has the right not to be arbitrarily detained or imprisoned.” *Swain* set in motion significant legislative changes to the CCC with the 1992 enactment of Bill C-30. Bill C-30 included several notable changes per Latimer and Lawrence (2006). First, quasi-judicial territorial or provincial RB were created to oversee the detention of NCR individuals in forensic psychiatric hospitals. Next, these independent tribunals and the court system were tasked with the duty to enact three legal rulings (i.e., dispositions): Detention in Custody in a Hospital, Conditional Discharge (living in the community with restrictions on liberty), and Absolute Discharge (released from RB supervision). In addition, courts or RBs could delegate management authority over to hospital administrators. Privileges may be granted, such as access to hospital grounds and the community, as a way to determine readiness for social reintegration and lower the overall restrictiveness of a disposition. Conditions may also be enacted, such as treatment orders, to ensure additional oversight during a disposition and to increase restrictiveness. These two mechanisms provide a means to facilitate the treatment aims of the patient while installing the necessary supervision protocols for public protection. Third, RBs were required to issue the least restrictive and onerous disposition under the mandate to protect the public and treat the person’s mental disorder for eventual social reintegration. Fourth, indeterminate detention of those NCR was abolished, and last, an annual review of NCR dispositions was mandated. In terms of the composition of RBs, it was stated that it must be chaired by either a judge or an individual qualified for judicial duties in addition to four other members – one of whom must be a licensed psychiatrist. In sum, much of Bill C-30 was dedicated to the creation and operation of inquisitorial RBs that provided a means to balance the needs of society (public safety) and those NCR (social reintegration).

After the creation of RBs in Bill C-30, the Supreme Court case *Winko* continued to revise upon the management of those NCR – specifically, dispositional standards evaluated by RBs. The ruling was that if an individual is not a significant threat to public safety (i.e., passes a standard of risk test), then the courts or RBs must enact an absolute discharge. The Supreme Court clarified that there should not be a presumption of dangerousness towards the accused, and that there must be clear evidence of a significant public safety risk prior to the enactment of a disposition. That is, uncertainty around level of risk was inadequate to warrant continued detention – even conditionally. Given the inquisitorial nature of RB responsibilities, however, RBs had the duty to seek information until they were no longer uncertain of risk. Between three landmark cases and Bill C-30 in under a decade, Canadian law witnessed substantial advances in the due process protections for those NCR against the backdrop of public safety needs.

In 2014, the CCC underwent legislative changes again with the enactment of Bill C-14 entitled the Not Criminally Responsible Reform Act (NCRRA, 2014). According to Goossens et al. (2018), the act was a response to sensationalized NCR cases led by victim advocacy efforts. The act was an attempt to (1) increase the emphasis on public safety during the enactment of NCR dispositions, (2) increase the rights and involvement of victims, and (3) develop a High-Risk Accused (HRA) designation in response to violent recidivism risk or index offense brutality. Of note, the HRA designation could be applied retroactively for those made NCR prior to Bill C-14 and currently under the RBs. Bill C-14 had several key implications for HRAs under the RBs; first, a novel debate emerged on whether RBs are required to issue the ‘least onerous and least restrictive’ disposition as this language has been removed. The topical issue being that despite the absence of ‘least onerous and least restrictive,’ a disposition not grounded in this language becomes unconstitutional. Second, RBs cannot enact conditional or absolute discharge decisions for HRAs – a power now granted to a superior court system. Additionally, HRAs are not permitted rehabilitative community access or escorted passes with the exception of medical and correctional treatment needs. Last, disposition reviews may be postponed for up to every three years instead of annually or biannually as required previous to the legislative changes. Bill C-14 has sparked considerable controversy on its societal merits and risks to the constitutional rights of NCR individuals (Grantham, 2014; Goossens et al., 2018).

1.3 Trajectories and Outcomes of NCR Individuals Under Canadian RB Systems

This section first explores the organizational framework of four provincial forensic mental health systems, and then reviews empirical research on the trajectories and outcomes of NCR individuals under Canadian RB systems.

1.3.1 Canadian Forensic Mental Health Systems

The organizational framework of forensic mental health systems differs across Canadian provinces. According to Crocker et al. (2015a), Quebec uses a combination of forensic psychiatric hospitals and over 50 mental health agencies with interregional services to assist interagency communication and training. The result of this system is that civil psychiatric hospitals without forensic specializations are tasked with the assessment and management of those NCR. Conversely, British Columbia (BC) has an integrated grid of forensic services named the Forensic Psychiatric Services Commission (FPSC) – a multi-site agency responsible for the administration and coordination of specialized clinical services at BC Forensic Psychiatric Hospital and six other regional clinics. The FPSC receives all court referred NCR matters from the initial point of assessment to treatment delivery for service continuity. Elsewhere, Ontario has a collection of 10 specialized adult forensic facilities that operate independently and receive NCR referrals from the courts. Although there is no formalized service that bridges these institutions, informal regional coordination occurs via agency director meetings. Crocker et al. (2015a) reported that Ontario represents a midway point between the forensic systems in Quebec (distributed network that includes non-forensic specialists) and BC (central, specialized, and coordinated by one agency). Last, according to Haag et al. (2016), NCR cases in Alberta receive assessment and treatment services by one of two specialized forensic facilities under the provincial health authority. These facilities receive court orders and oversee NCR cases from the initial point of assessment to subsequent treatment and management. Similar to Ontario, informal director meetings are used to coordinate services between the two forensic facilities.

1.3.2 Canadian Research on the Trajectories and Outcomes of NCR Individuals

Limited studies have tracked Canadian NCR individuals over the course of their RB supervision (Crocker et al., 2015c; Crocker et al., 2011, Latimer & Lawrence, 2006; Simpson et al., 2014), and existing research varies in their size, scope, and research aims. A Department of Justice study by Latimer and Lawrence (2006) aggregated government data across seven Canadian provinces for a high-level summary of trajectories and outcomes of NCR individuals between 1992 and 2004. Latimer and Lawrence (2006) was the first national study on Canadian

RBs, however, their aggregated data revealed little information on possible interprovincial disparities in the application of federal law. Nonetheless, their data illustrated patterns of operational practices and factors related to the enactment of dispositions and privileges/conditions. For example, they found that RB hearing attendees was comprised mostly of healthcare staff in keeping with the treatment mandates of the RB. Furthermore, Latimer and Lawrence (2006) found that NCR individuals stayed a minimum of six months under the RBs and that 60% were still under the RBs after five years. Length of RB supervision appeared to be associated with ancestry, gender, and index offense severity. Specifically, Indigenous individuals were not released in the first two years of supervision and were more likely to have spent at least 10 years under the RBs (70%) compared to non-Indigenous individuals (22%). Further, the likelihood of at least 10 years supervision was greater for males (26%) than females (6%). Last, individuals with sexual offenses were supervised for longer than those with violent offenses, whereas those with non-violent offenses were never supervised for longer than 10 years.

Latimer and Lawrence (2006) also examined the distribution of dispositions and privileges/conditions across RB hearings, and the specific factors associated with their changes. At the initial hearing, for instance, the most common disposition was detention (51%), followed by conditional discharge (35%), and absolute discharge (13%). Moreover, when a conditional discharge was enacted, the corresponding conditions commonly included orders to reside at specific locations (95%), take medication/treatment (73%), and to abstain from drugs and alcohol (52%). It was unclear, however, whether there was a defined stepwise process that individuals followed in acquiring privileges and conditions with each disposition – a factor relevant to forensic trajectories. Several factors were found to be associated with dispositions including index offense severity and legislative amendments. For instance, those with sexual offenses were more likely to have more conditions applied to their dispositions for closer RB surveillance/control. Further, those with non-violent index offenses were almost twice as likely to receive an absolute discharge compared to those with a violent index offense. With respect to legislative amendments, RBs responded to *Winko* by enacting less restrictive dispositions and conditions. For example, post-*Winko*, conditional and absolute discharge rates increased approximately 5% with a corresponding 10% decrease in detention decisions. These changes were accompanied by an increase in treatment compliance conditions and a decrease in technical violations, a sign of increased attention paid to patient treatment rights and rehabilitation.

Building upon the research by Latimer and Lawrence (2006), and to examine interprovincial RB disparities yet to be understood, the National Trajectory Project (NTP) investigated three Canadian provinces and their respective NCR management practices. Crocker et al. (2015b) sampled a cohort of 1800 NCR individuals between 2000 and 2008 in British Columbia ($n = 222$), Quebec ($n = 1094$), and Ontario ($n = 484$). Broadly, there was evidence of interprovincial disparities in RB operational practices, length of supervision and hospitalization, release likelihood, and factors associated with disposition outcomes. For differences in RB operational practices, for instance, Ontario had the highest number of annual reviews (68%) compared to Quebec (53%) and BC (51%). Furthermore, the average length of hearings was over twice as long in BC (120 minutes) than Quebec (51 minutes). BC also had significantly higher treatment team representation (e.g., psychiatrist, psychology staff, managers), a stark contrast to Ontario, where there was virtually no healthcare staff in attendance. As an example of different administrative disposition practices, the time required to enact a disposition varied across provinces from an average of eight days in Ontario to 43 days in Quebec. Given the extended time needed by RBs to deliberate on dispositions, those NCR in Quebec tended to be detained and left without a suitable disposition longer than other jurisdictions. This difference may have been accounted for by variations in release rates, as Quebec had the fastest release rate with 19% still under RB supervision after five years compared to Ontario at 58%. Each province also possessed unique practices when it came to conditions paired with dispositions. For instance, BC routinely specified a treatment recommendation across disposition outcomes, a rare practice observed in Ontario and Quebec.

To highlight some key differences found in factors associated with disposition outcomes, the presence of a clinician recommendation in expert reports was most common in Ontario (97%) and least likely in Quebec (83%). Release likelihoods generally declined with a longer criminal history, more severe index offense, and the presence of a psychotic disorder, however, the relative influence of these factors differed between provinces. For instance, severity of index offense decreased release odds between 2.1 to 3.6 times if it was serious crime against a person compared to other crimes. Furthermore, a psychotic disorder decreased release odds by 2.6 to 2.9 in BC but only 1.5 times in Quebec, whereas the presence of a mood disorder increased release odds by 2.4 times in Ontario. The impact of higher index offense and mental health severity on

decreasing release odds converged with findings from earlier studies (Crocker et al., 2011, Latimer & Lawrence, 2006).

In general, the results by Crocker et al. (2015b) raised questions on provincial supervision patterns in the management of NCR individuals as if they were found guilty and sentenced, instead of acquitted. Namely, determinations of public safety risk on the basis of index offense severity was ostensibly counter to *Winko*. Index offense severity is not an empirically supported recidivism risk factor, and by extension, not a factor that heightens public safety risk. From a scientific perspective, index offense severity may not satisfy or even be relevant to the significant public safety threat criteria defined by *Winko* as it does not speak to the probability of either minor or major harm required for disposition decisions. In fact, it may contradict the argument that justifies further detention – offense severity alone is equivocal evidence of public safety risk. Consequently, it may in theory better support a case for an absolute discharge given the absence of certainty it provides for future criminality. A key limitation of the seminal research by Crocker et al. (2015b) was that disposition correlates did not reveal how RBs formulated decisions using different sources of data such as expert reports/testimony, forensic risk assessment tools, treatment team recommendations, and RB hearing discussions. Still, the findings advanced knowledge of unique RB practices and the need for interprovincial partnerships in the application of federal law.

Complementing the findings by the NTP, a technical report by Simpson et al. (2014) provided an in-depth investigation of the Ontario RB system. The provincial NCR population was tracked across a 25-year period between 1987-2012 in part to understand the process of entry, progress, and discharge under the RB. The authors found differences in release rates over time in four cohorts across three NCR legislative changes (i.e., *Swain*, Bill C-30, *Winko*), which highlighted *intraprovincial* differences in the application of federal law to accompany research on *interprovincial* differences. For instance, at five years after the initial disposition, the 1987-1992 cohort had the slowest discharge rate (19%), followed by the 1993-1999 (24%) and 2006-2012 (27%) cohorts. The fastest discharge rate was the 2000-2005 cohort (44%) that followed the *Winko* decision, which suggested that the landmark case was promptly translated into RB practice. Furthermore, it was found that the presence of a personality disorder, comorbid substance use disorder, and more severe index offense consistently increased length of RB supervision – especially for sexual offenses (Seto et al., 2018) – in keeping with research on

other provinces and jurisdictions (Crocker et al., 2015c; Crocker et al., 2011, Latimer & Lawrence, 2006).

To summarize, current research is in its infancy with regard to the trajectories and outcomes of Canadian NCR individuals under RB supervision. The most recent high-level summary was over a decade ago, and in-depth interprovincial examinations by recent studies have only reached three provinces in Canada. The evidence generally suggests that each jurisdiction possesses idiosyncratic NCR management approaches and that these practices may be partially influenced by the unique provincial forensic mental health systems. A key limitation to the data relates mainly to its breadth; most Canadian provinces continue to be understudied despite rich data from Quebec, Ontario, and BC. Thus, the research collectively points to the benefits of national collaboration in the application of federal law, and further examination of NCR trajectories and outcomes in understudied Canadian provinces.

1.4 Predictors of RB Decisions to Release or Detain NCR Individuals

To investigate RB decision-making, the following section reviews the empirical research on the decision-making correlates of Canadian RBs and clinician/treatment team recommendations.

Research on the predictors of Canadian RB decision-making began over two decades ago, but has only recently garnered renewed attention (Côté et al., 2012; Crocker et al., 2011; Crocker et al., 2014; Crocker et al., 2015c; Denomme et al., 2020; Hilton & Simmons, 2001; Hilton et al., 2016; Martin & Martin, 2016; McKee et al., 2007; Wilson et al., 2015; Wilson et al., 2016). Overall, there are empirical reasons to believe that RBs may inconsistently address criminogenic risks and needs or legislatively relevant factors for disposition and security determinations within and between jurisdictions. Examining earlier studies, research on the Ontario RB in the 2000s illustrated two different portraits of RB decisions in terms of the relative influence of risk-relevant information. Hilton and Simmons (2001) found that RBs largely considered risk unrelated information and that security management practices were largely unsystematic. Conversely, in a subsequent replication, McKee et al. (2007) found that although risk unrelated information was still considered by RBs, there was an increased emphasis in clinician recommendations on risk-relevant information and structured security management practices. In detail, Hilton and Simmons (2001) initially found that in their sample ($n = 187$), RB decisions to reduce security levels were strongly associated with clinician recommendations ($r =$

.84), which in order of strength was informed by institutional management difficulties, medication adherence, physical attractiveness, and index offense severity. Of note, physical attractiveness was rated on a 10-point scale using a recent photograph by raters familiar and unfamiliar to the patient. In other words, ratings were not provided by RB members or clinicians. Risk assessment instruments (e.g., Violence Risk Appraisal Guide; VRAG) were not related to either clinician recommendations or RB decisions in the 64% of hearings where they were used. Furthermore, detained or transferred patients did not have statistically different risk levels for violent recidivism. In the McKee et al. (2007) sample ($n = 104$), they replicated the finding that RB decisions were routinely informed by clinician recommendations but not violence risk factors. The notable difference, however, was that although clinician recommendations continued to be associated with risk unrelated information (i.e., medication noncompliance, attractiveness, expressed remorse, index offense severity, paranoid persecution), there was more weight placed on risk-relevant information than previously observed (i.e., VRAG; $r = .23$, Psychopathy Checklist – Revised (PCL-R); $r = .21$). Furthermore, RBs issued higher risk individuals with more restrictive dispositions as represented by higher VRAG scores. The general limitation of these two studies was that they did not examine sources of data that better revealed the intentions behind RB decisions, such as the details of the actual hearing and the rationale of disposition determinations.

To better understand RB practices between provinces, a prospective study by Côté et al. (2012) examined whether the Historical Clinical Risk Management-20 (HCR-20) informed Quebec RB decisions in a sample of NCR patients ($n = 96$) using both interview and file review. The authors found limited evidence of risk-relevant information considered by clinician reports, RB hearing discussions, and disposition rationale. Moreover, risk-relevant information identified by HCR-20 instruments were infrequently mentioned at hearings, such as Supervision Failure (H10; 41% of hearings). These results echoed earlier findings by Hilton and Simmons (2001) in Ontario and another Quebec study by Crocker et al. (2011) that found limited evidence for the translation of violence risk prediction research over to forensic clinical practice and RB decisions.

More recently, a series of three NTP studies expanded upon earlier research and provided a more nuanced understanding of RB decisions on the Canadian NCR population (Crocker et al., 2014; Wilson et al., 2015; Wilson et al., 2016). Broadly, results showed that RB decision-making

and clinician recommendations continued to be influenced by both risk unrelated and risk-relevant information in the presence of risk assessment instruments and that risk assessment instruments were infrequently used. Notably, the presence of a risk assessment instrument resulted in less restrictive RB decisions. This reinforced the idea that forensic professionals and RBs may benefit from the inclusion of risk assessment instruments in decision-making to offset risk overestimates driven by risk unrelated information such as index offense severity (Crocker et al., 2014; Wilson et al., 2015).

The first of three NTP studies was a national investigation on the static and dynamic predictors of RB dispositions among NCR individuals ($n = 6743$ RB hearings; $n = 1367$ NCR) across Ontario, Quebec, and BC between 2000 and 2005 (Crocker et al., 2014). The authors replicated previous findings that RB decisions considered risk unrelated information such as index offense severity, psychiatric history, gender, and diagnosis (Côté et al. 2012; Crocker et al., 2011; Hilton & Simmons, 2001; Latimer & Lawrence, 2006; McKee et al., 2007). In particular, results showed that the impact of index offense severity on RB decisions did not erode over time – the probability of detention was stable from admission to end of observation among individuals with more severe index offenses. Although Crocker et al. (2014) found that risk assessment instruments were not routinely provided at RB hearings (17%; $n = 1170$), disposition determinations were still informed by risk-relevant static (i.e., unchangeable risk factors) and dynamic (i.e., changeable risk factors) factors as captured by the HCR-20. Specifically, Historical items were more influential in detention and conditional discharge decisions, whereas Clinical items weighed prominently for absolute discharges. In other words, the relative influence of static versus dynamic variables reversed as time passed. Martin and Martin (2016) observed a similar finding in their Ontario NCR sample ($n = 291$) on treatment team recommendations to RBs for security management decisions. The authors reported that recommendations favored dynamic factors as individuals were cascaded down security levels. Lower overall risk as defined by the HCR-20 and remission of psychotic symptoms predicted a higher chance of transfer from medium to minimum security in keeping with legislated mandates on public safety and mental health. Treatment team recommendations that pertained to minimum security to community transfers, however, favored institutional conduct (i.e., elopement, aggression, substance use, and technical violations) over other risk-relevant information.

In the second of three NTP studies, Wilson et al. (2015) investigated the criminogenic risk and need factors considered by RB decisions and the specific impact of gender and index offense severity. The study replicated past findings on the strong concordance rate between clinician recommendations and RB outcomes (Hilton & Simmons, 2001; 2006; McKee et al., 2007). Results also showed that RB rationale and clinician reports considered risk-relevant (i.e., criminal history) and legislatively relevant (i.e., mental health, treatment adherence) factors as defined by HCR-20 items ($u = 7.4$), average HCR-20 subscale items ($H = 4.3$, $C = 2.4$, $R = .8$), and VRAG items ($u = 4.4$). Risk factors considered by RB decisions and clinical reports, however, differed based on gender and index offense severity despite evidence in support of similar criminogenic needs across genders (Bonta & Andrews, 2017), and the poor predictive performance of index offense severity alone (Yang et al., 2010) that in some cases may be inversely related to recidivism (Bonta et al., 1998). Specifically, Wilson et al. (2015) found that females more likely evoked considerations around Relationship Instability (H3), Impulsivity (C4), Stress (R5), and Martial status (VRAG), whereas males more likely evoked considerations around Substance Use (H5), Psychopathy (H7; VRAG), and Treatment Unresponsiveness (C5). Moreover, higher severity of index offenses led to decisions that selectively emphasized certain static factors (i.e., Previous Violence (H1), Young Age at First Violence (H2), Age at Index Offense (VRAG), and Sex of Victim (VRAG)) and dynamic factors (i.e., Relationship Instability (H3), Lack of Personal Support (R3), Stress (R5)), but not others (i.e., Prior Supervision Failures (H10), Non-Compliance with Remediation Attempts (R4)).

The third NTP extension examined the impact of rehospitalization during conditional discharge on factors considered by RB decisions (Wilson et al., 2016). Logistic regression models indicated that a higher chance of detention after conditional discharge was associated with longer psychiatric history, higher frequency of violent acts, and elevated scores on the HCR-20 Clinical subscale. If rehospitalization occurred during a conditional discharge, RBs selectively emphasized dynamic factors as shown by the unique association between the HCR-20 Clinical subscale and RB decisions thereafter. These results suggested that RBs became more sensitive to dynamic factors after release failures, which coincides with research on the utility of dynamic factors for risk assessment and management (Chu et al., 2013; Wilson et al., 2013). Wilson et al. (2016) concluded that in order to offset release failure, greater attention may be

placed on community supports and future plans as captured by the Risk Management subscale in the HCR-20.

Independent of the NTP, Hilton et al. (2016) examined the predictors of clinician recommendations and RB decisions in an Ontario sample of male NCR individuals ($n = 63$). The authors replicated earlier findings that Ontario RB decisions were influenced solely by clinician recommendations, and that clinician recommendations themselves were associated with both actuarial instruments (VRAG; AUC = .71) and Structured Professional Judgement (SPJ) instruments (HCR-20; $r = .26$) regardless of risk level (Hilton & Simmons, 2001; McKee et al., 2007). The chief difference between actuarial and SPJ tools is that actuarial tools provide a probabilistic risk estimate from an algorithm, whereas SPJ tools yield an ordinal risk estimate derived from clinical expertise. Consequently, RB disposition and security placement decisions for Ontario NCR individuals were found to be influenced by risk-relevant information, in keeping with more recent Canadian research trends (Crocker et al., 2014; Denomme et al., 2020; Martin & Martin, 2016; Wilson et al., 2015; Wilson et al., 2016) but not those further in the past (Côté et al., 2012; Crocker et al., 2011; Hilton & Simmons, 2001). Similarly, in the United States, research has also revealed that forensic tribunal decisions considered limited risk-relevant factors in the past (Callahan & Silver, 1998) compared to present (McDermott et al., 2008; Vitacco et al., 2014).

To summarize, the data is equivocal on whether Canadian RBs consider risk or legislatively relevant information due to the general absence of risk assessment instruments and risk-relevant information discussed in RB hearings, disposition rationale, and clinician recommendations. Nonetheless, recent NTP studies – aggregated interprovincial data – illustrate a pattern towards the increased translation of empirically supported risk factors into forensic practice and decision-making compared to past decades. A critical limitation of the current research on RB decisions pertains to its limited breadth across different Canadian provinces and shallow depth of analysis into interprovincial disparities on RB decision-making processes. Although recent study samples may be representative of the Canadian NCR population, idiosyncratic RB management practices and variations across forensic mental health systems may limit the generalizability of findings on RB decision-making across provinces. As such, there is a need for research on how RBs formulate decisions in the management of NCR individuals at the provincial level.

1.5 Forensic Risk Assessment Instruments and Utility to Inform RB Decision-Making

To investigate forensic risk assessment instruments and their utility to inform RB decisions, the following section elucidates the (1) theoretical tenets of criminogenic risk and need factors, (2) Risk Need Responsivity (RNR) model of offender assessment and treatment, and (3) research on the validity of the HCR-20, VRAG, and Level of Service family of tools.

1.5.1 Criminogenic risk and need factors and the Central Eight. Decades of research on human aggression have historically fallen into one of two theoretical traditions: social-cognitive and biosocial perspectives (Hogg & Cooper, 2007). Belonging to the former school of thought, Andrews and Bonta's (1998) General Personality and Cognitive Social Learning Theory of Crime (GPCSL) is a comprehensive empirically validated model on the causes and persistence of criminal conduct that informs approaches to estimate, lessen, and manage antisocial behaviour (Bonta & Andrews, 2017). There are two conceptual pillars to the GPCSL: Principles of learning and behaviour, and the Central Eight risk and need factors. Together, they form the basis of the applied counterpart of the GPCSL named the RNR model of offender assessment and treatment. The terms crime, criminal conduct, and antisocial behaviour are used interchangeably to reference illegal or otherwise criminal traits. In addition, the term social learning theory is occasionally referenced in place of the GPCSL to highlight its centrality to the discussion.

The GPCSL posits that all behaviour, including criminal conduct, is learned in a manner consistent with social learning theory and symbolic interactionism. With regard to social learning theory, Salisbury (2013) explained that the GPCSL is grounded in (1) radical behaviourism and (2) social modeling. Under radical behaviourism, principles of operant and classical conditioning propose that the mechanisms responsible for the acquisition and termination of behaviour revolve around stimuli, rewards, and costs (punishment). The GPCSL names rewards and costs associated with antecedents as 'signals' that elicit a subsequent response – rewards increase, and costs decrease the probability of a behaviour. The schedule of conditioning is named the 'density' of rewards and costs.

The GPCSL further integrates social modeling concepts that pertain to vicarious learning. According to Bandura (1975), aggressive behaviour can be learned through observation and imitation of aggression exhibited by models. In other words, a behaviour can be reinforced indirectly even if it is only seen to be rewarding for others. Bandura proposed four processes by which this type of learning occurs: (1) attention, (2) retention, (3) motivation, and (4)

reproduction. Attention is a pre-requisite of learning in that there must first be cognitive focus on the model (i.e., peer, parent, or authority figure) displaying the behaviour. Retention is the idea where a clear memory of the model behaviour must be acquired for the observer to recreate the act. Motivation refers to having a personally persuasive reason to engage in imitation, and reproduction references whether the observer has the confidence to emulate the behaviour. The idea of confidence refers to self-efficacy, defined as the level to which an individual believes they can both execute the behaviour and achieve the desired outcome. Self-efficacy serves a key function in social modeling because it both influences the probability that an aggressive act is imitated and explains the differences in behaviour across individuals and situations. A classic example used by Bandura is that a smaller child bullied for a toy may not retaliate if the aggressor appears stronger, but would more likely do so against a weaker target given a higher perceived probability of success. Finally, the perceived quality of the model based on features such as status and power are posited to mediate the level of influence imparted upon the observer.

The GPCSL builds upon the tenets of social learning theory to explain criminal conduct. According to Bonta and Andrews (2017), criminal conduct is under the strict control of antecedents and consequences that serve as gateways for rewards and costs. The antecedents and consequences of rewards and costs are either additive (introduced, increased) or subtractive (withdrawn, decreased) events. Sources of antecedents and consequences are threefold: (1) the actor, (2) other persons, and (3) the actual act. At the actor level, individuals mediate their criminal proclivities based on the strength of their cognitive abilities (i.e., self-control) and attitudes (i.e., prosocial, antisocial). At the interpersonal level, the mediation strength of others is determined by the relationship and structuring principles. The relationship principle postulates that respected, liked, and valued models hold greater interpersonal sway. The structuring principle posits that the direction of influence (prosocial vs. antisocial) imparted upon the observer depends upon the model's perspectives, attitudes, and behaviour. A meta-analysis by Lipsey (2009) reported the mean effect sizes on the influence of a positive relationship ($r = .34$; $k = 13$) and structure ($r = .27$; $k = 44$) across juvenile offender treatment programs. Last, the influence of the act itself on antecedents and consequences depends on the effects of classical conditioning – e.g., a physiological rush from drugs. The GPCSL recognizes that there are individual differences in sensitivity to rewards and costs, and that both the timing of and settings

where changes to these factors occur can influence behavioural outcomes. The GPCSL posits that each behavioural decision eschews an alternative behaviour. As choices accumulate over time, the behavioural scale is tipped either towards prosociality or antisociality as the density of rewards/costs of criminal/non-criminal behaviours unfold. Thus, a larger proportion of antisocial choices structures a balance of rewards and costs that leads to a greater probability of subsequent antisociality. Although rewards and costs are essential to behaviour, the GPCSL acknowledges that the availability and rules of delivery behind them are shaped by the backdrop of historical, geographic, cultural, and political-economic factors.

The GPCSL is grounded in symbolic interactionism, which is defined as the self-regulation of cognition. According to Salisbury (2013), symbolic interactionism highlights how humans, through self-awareness, can guide their own goal-oriented behaviour regardless of an environment of rewards and costs. Consequently, the GPCSL views people as being controlled mainly by cognitions such as attitudes, beliefs, and the memory of interpersonal experiences. This principle supports the agency of individuals to exercise control over their pursuits – self-determination does not come solely from external factors. This enables the GPCSL to hypothesize about aspects of offender cognitions that can influence and perpetuate criminal behaviour such as thought content (e.g., antisocial beliefs) and logic (e.g., neutralization, black and white thinking). For instance, a sexual offender's espousal of child pornography to meet personal needs (content; antisocial) may be maintained by an inability to consider other alternatives that achieve these goals (logic; black and white thinking).

Although the GPCSL recognizes that there are many pathways to criminal conduct, it proposes that offenders share similar underlying traits captured by the Central Eight risk and need factors – the conceptual antecedents to crime shaped by the principles of learning and behaviour. The Central Eight was conceived by theoretical and meta-analytic data on the correlates of criminal conduct. The premise is that the probability of offending increases as the number of Central Eight factors increase. According to Bonta and Andrews (2017), the Central Eight may be divided into the major four (first four), and minor four (last four) to illustrate the centrality to and traits of criminal conduct. The major four are antisocial traits (criminal history, antisocial attitudes, antisocial associates, and antisocial personality pattern) that are causal risk factors for criminal conduct. The minor four are lifestyle traits that include family/marital, school/work, substance abuse, and leisure/recreation. These are environmental factors that

directly impact criminal behaviour through opportunity, and indirectly via interaction with the major four. Despite the categorization of major and minor, there is debate on the validity of assuming that lifestyle factors are less proximal to criminal conduct than antisocial traits (Bonta & Andrews, 2017). What can be agreed upon, however, is that antisocial traits (i.e., procriminal attitudes and associations) yield large effect sizes in the prediction of criminal conduct among adults (Pratt et al., 2010) and youth (Grieger & Hosser, 2014). A meta-analysis by Bonta et al. (2014) found that the Central Eight had a significant association with general and violent recidivism among mentally disordered offenders (MDOs).

To summarize, the GPCSL posits that criminal behaviour is learned and thus under antecedent and consequence control. The theory is based on social learning theory (Bandura, 1975), which posits that behaviour is not only learned through direct conditioning but also indirectly by observation and imitation. Sources of rewards and costs are found across personal and interpersonal domains, and from the act itself. Variation in criminal conduct is explained by the distribution of reward and cost contingencies for prosocial and antisocial behaviours (Central Eight factors), which is molded by principles of learning and behaviour. The GPCSL acknowledges contextual factors that frame the sensitivity, delivery, and nature of cost and rewards – i.e., socio-politics, culture, history, and geography. Next, how the GPCSL theory is translated into practice using the RNR model is discussed.

1.5.2 RNR model of offender assessment and treatment. The GPCSL theory guides correctional services through the RNR model of offender assessment and treatment. The RNR model was first formalized in 1990 (Bonta & Andrews, 2017) and serves as the backbone of evidence-based correctional treatment internationally (Polaschek, 2012). Explained at length by Bonta and Andrews (2017), RNR consists of three stages that structures a comprehensive correctional plan: (1) *risk (who to treat)* – match offender risk level to the appropriate treatment dose; (2) *need (what to treat)* – target and track areas of criminogenic need for treatment, and (3) *responsivity (how to treat)* – use behavioural, social learning, and cognitive interventions to build skills and strategies that match the offender’s learning style/abilities and unique individual needs.

The principle of risk captures the ideas of who to treat and at what treatment dose. According to Olgoff and Davis (2004), there are two components to the risk principle: prediction and matching. To treat offenders effectively and dose appropriately, there must be a reliable approach to assess and predict offender risk level (i.e., recidivism probability). Prediction of

criminal conduct is performed by the identification of risk factors empirically related to recidivism. Risk factors are static, historical indices that do not change (e.g., criminal history), or dynamic, potentially changeable aspects of the offender (e.g., criminal attitudes). From longitudinal predictive validation studies, Bonta and Andrews (2017) developed the Level of Service risk assessment instruments based on the premise of the Central Eight criminogenic risk and need factors. The principle of risk secondarily involves the idea of matching, which aims to provide treatment intensity equal to the level of recidivism risk. Thus, offenders assessed to be at high-risk are given higher levels of treatment dose relative to a moderate or low risk offender. Conversely, low-risk offenders gain more rehabilitative success when screened out for lower treatment levels as low-risk offenders may increase in risk when placed among high-risk offenders in treatment (Bonta & Andrews, 2017).

The principle of need postulates that the reduction of recidivism risk is best accomplished by the treatment of criminogenic needs. According to Bonta and Andrews (2017), criminogenic needs are dynamic risk factors that can be modified to change the overall risk level. Global life-skill deficits commonly found among offenders (non-criminogenic) are different than traits known to predict recidivism (criminogenic). The RNR model does not restrict non-criminogenic treatment but posits that doing so would not reduce recidivism risk. Different offender subgroups may have specific criminogenic needs. For instance, although sexual offenders hold criminogenic needs that overlap with general offenders, they also possess unique dynamic risks for treatment. According to Hanson and Yates (2013), sexual offenders often have general antisocial traits such as lifestyle instability, antisocial peer influences, and conflict with other inmates. Sexual offenders, however, also have criminogenic traits such as deviant sexual interests, sexual preoccupations, and sexualized violence. The complex blend of both general and sexual criminogenic needs may be instantiated by the pedophilic online groups that create, encourage, and disseminate child pornography (i.e., North American Man/Boy Love Association). In this example, the presence of negative peer associates (general) and deviant sexual preferences (sexual) perpetuate and deepen each respective aspect of criminality.

The principle of responsivity examines issues that could affect or limit treatment efficacy with the goal of optimizing intervention fit to reduce recidivism risk. According to Olgoff and Davis (2004), responsivity is grouped into two types, internal and external. Internal factors are concerned with treating criminogenic needs with an approach tailored to the offender's learning,

personality, and social style (general responsivity), while addressing the unique needs of each offender such as culture (specific responsivity). Bonta and Andrews (2017) supported interventions that use mechanisms of reinforcement, punishment, antecedent control, and modeling because they are key to cognitive social learning processes (general responsivity) – e.g., cognitive behavioural therapy. The responsivity principle views service providers as models that facilitate direct and indirect learning. Per the relationship principle, the treatment provider (model) must be warm, open, enthusiastic, and non-judgmental. Furthermore, the treatment provider must cultivate a therapeutic climate of collaboration and mutual respect to maximize interpersonal influence. External factors are peripheral treatment factors such as staff characteristics, institutional rules, and environmental support. Although some elements of responsivity may be non-criminogenic (e.g., anxiety, poor motivation, major mental illness), they become relevant to intervention when they mediate the offenders' ability to reach criminogenic treatment targets. Indeed, the most effective treatment programs incorporate strategic non-criminogenic goals to improve engagement. Responsivity is arguably the most important aspect of the RNR model. For example, Hanson et al. (2009) conducted a meta-analysis to determine the efficacy of RNR interventions to reduce sexual recidivism and found that responsivity was the strongest predictor of recidivism reduction.

1.5.3 Forensic risk assessment instruments and mentally disordered offenders.

Instruments specifically developed for forensic psychiatric settings and those used primarily in correctional settings hold ample empirical support to inform decisions relevant to public safety via recidivism risk appraisals and its management. Among the most commonly used tools are the HCR-20, VRAG, and Level of Service tools, however, there are many other validated forensic risk instruments as well. The HCR-20 is a 20-item risk instrument in the SPJ tradition that applies professional discretion to derive violence risk estimates based on a checklist of empirically supported static and dynamic risk factors – in principle, a marriage of clinical judgment and actuarial risk assessment schemes (Webster et al., 1997). The HCR-20 was developed with the strongest empirical correlates of recidivism across criminogenic, psychosocial and mental health domains; hence, the tool is not driven by theory. Divided into three subscales, the HCR-20 features 10 Historical items, five Clinical items, and five Risk Managements items. It requires the rater to determine the presence and relevance of each item to produce an ordinal risk estimate (i.e., low, medium, high) across final risk formulations relevant

to case conceptualization and risk management (i.e., Imminent Risk, Seriousness, Case Prioritization). The HCR-20 is presently in its third version (Historical Clinical Risk Management-20, Version 3; HCR-20^{V3}; Douglas et al., 2014), and has received substantial empirical support for its psychometric integrity across forensic psychiatric settings in Canada and internationally (see Douglas et al., 2017).

The VRAG is an actuarial risk instrument that provides a probabilistic estimate of future violence based on internal algorithms, item weights, and standard scores (Harris et al., 2015). The VRAG is atheoretical as the item pool was developed with the strongest empirically supported static risk factors. Based on individual scores, offenders are categorized into one of nine risk bins each with expected recidivism rates. Now in its second version (Violence Risk Appraisal Guide-Revised; VRAG-R; Rice et al., 2013), the VRAG was originally developed on a large sample of forensic psychiatric inpatients in Ontario (Harris et al., 1993) and has since garnered considerable empirical support for its psychometric properties in Canada (e.g., Rice et al., 2013; Olver & Sewall, 2018; see Harris et al., 2015) and internationally (e.g., Coid et al., 2009; Hastings et al., 2011; Snowden et al., 2010; Ho et al., 2009; Rosales & Rossegger, 2008). In a narrative review, Harris et al. (2015) reported the mean VRAG Receiver Operating Characteristic (ROC) scores across 13 independent studies on general recidivism ($u = .75$), and 26 independent studies on violent recidivism ($u = .72$).

The Level of Service family of tools are actuarial risk instruments that provide a probabilistic estimate of recidivism risk based on a set of static and dynamic items grounded in the Central Eight theory of criminal conduct (Bonta & Andrews, 2017). In its current version, the LS/CMI (Andrews et al., 2004) is divided into 11 sections that bridge the assessment and treatment of offenders using RNR principles; however, only the first section provides a risk estimate. There is substantial empirical support for the instrument across meta-analyses on varied offender groups and sociodemographics in the prediction of general, violent, and sexual recidivism (Campbell et al., 2009; Olver et al., 2014, Yang et al., 2010). Research specifically supports the predictive accuracy of LS tools with MDOs (e.g., Canales et al., 2014; Girard & Wormith, 2004; Olver & Kingston, 2019). Perhaps more importantly, research supports the predictive performance of the Central Eight theory with MDOs (Bonta et al., 2014). In detail, Bonta et al. (2014) conducted a meta-analysis ($k = 96$) to compare the predictive performance of clinical/psychopathological factors and the Central Eight theory. They found that clinical factors

were relatively poor predictors of recidivism (except antisocial personality disorder/psychopathy), and that compared to general offenders, MDOs were no more likely to reoffend generally ($r = .01$) or violently ($r = -.03$). With only six of the Central Eight factors shown to be predictive of recidivism due to research gaps, instruments that capture the full breadth of criminogenic risk and need factors were expected to perform suitably in risk estimations for MDOs (i.e., LS/CMI). Despite the broad scope of research on MDOs, studies have yet to examine the predictive properties of the LS/CMI and Central Eight theory specifically with an NCR population.

1.6 Purpose of the Current Research

A review of three research domains revealed that RBs have not been thoroughly examined across most Canadian jurisdictions. Although several understudied provinces would merit investigation, Alberta is uniquely positioned to support research on RBs given its extensive NCR database and string of studies that has progressed to a similar stage as the NTP was prior to their work on RBs. Furthermore, Alberta NCR studies have identified a need to understand RB decision-making practices, service usage of NCR individuals, and forensic risk instruments (Haag et al., 2016; Richer et al., 2018). This research determined whether federal law is applied consistently within the Alberta RB (ARB) system, assessed the implications of its application, and compared its practices to other Canadian provinces. The three phases of this dissertation had the following objectives: (1) Track the trajectories and outcomes of NCR individuals through the ARB system; (2) determine whether the predictors of ARB decisions are risk or legislatively relevant; and (3) evaluate forensic risk assessment instruments and their utility to inform RB decisions. Individuals that enter forensic psychiatric settings are systematically assessed and monitored from their initial point of contact to their eventual release or end of observation. Over time, these practices yield extensive archives with invaluable information to researchers. Electronic and hardcopy longitudinal data were collected on the Alberta NCR population that entered the ARB system between 2005 and 2010 until the end of 2015. This project integrated newly collected data with an extant database on Alberta NCR individuals (Haag et al., 2016; Richer et al., 2018). The three phases of this dissertation and their respective research questions and hypotheses are as follows.

1.6.1 Phase One: Trajectories and Outcomes of NCR Individuals Under the ARB.

An investigation of interprovincial disparities in the application of federal law first required an examination of the trajectories and outcomes of NCR individuals across Canadian RB systems. If RBs operate in synchrony with their provincial partners, then it follows that there should be little statistical deviation in how NCR individuals are processed while under RB supervision. The program of research currently at the helm of investigating Canadian NCR individuals is entitled the NTP (Crocker et al., 2015a). The NTP has amassed large longitudinal cohort samples of NCR individuals across three of Canada's largest RB systems (i.e., British Columbia, Ontario, Quebec) and have developed future research partnerships with other Canadian jurisdictions including Saskatchewan, Alberta, and Manitoba. The current project examined RB operations in Alberta and its interpretation/application of federal law.

1.6.1.1 Research questions/hypotheses

1.1. For NCR individuals, is length of detention associated with risk or legislatively based factors?

1.1.1. It is hypothesized that length of detention will be positively correlated with higher index offense severity, longer criminal history, and presence of a psychotic disorder.

1.2. What is the association between dispositions and their corresponding privileges (i.e., grounds, community pass, community accommodations)/conditions (i.e., treatment orders, no victim contact order) in terms of restrictiveness?

1.2.1. It is hypothesized that disposition status will be positively correlated with privileges, specifically, privileges will systematically become more liberal as dispositions become less restrictive.

1.3. How long do NCR individuals spend detained in custody versus living in the community while under warrant, and what is the likelihood of release (i.e., conditional discharge or absolute discharge)?

1.3.1. It is hypothesized that NCR individuals will proportionally spend more time detained in custody than released in the community between 2005 to 2015, and that the release hazard will decrease with a longer criminal history, higher index offense severity, and presence of a psychotic disorder.

1.4. What is the association between clinician recommendations and ARB decisions in assigning dispositions?

1.4.1. It is hypothesized that there will be a positive correlation between clinician recommendations and ARB decisions for dispositions enacted.

1.6.1.2 Phase Two: Predictors of ARB Decision-Making.

An investigation of interprovincial disparities in the application of federal law required insight into how RBs formulate decisions to release or detain those made NCR. Public safety criteria imply that violent recidivism is the primary concern when release decisions are made by RBs. It follows that empirically based forensic risk assessment instruments and criminogenic risk and need factors, in principle, should factor moderately into RB decisions – especially given the 2014 legislative amendments that prioritized public safety (NCRRA, 2014). RBs, however, are required to balance the constitutional rights of the NCR individual and public safety in an environment with social pressures such as the perception of the justice system and victim inclusion. Although research suggests that RBs routinely solicit the opinions of forensic professionals for disposition decisions (Crocker et al., 2014; Crocker et al., 2015b), evidence is equivocal on the degree that empirically based risk factors are translated into practice by clinicians and whether RB decisions actually consider these factors (Wilson et al., 2015). Conversely, it is equally unclear whether the civil liberties of detained patients are upheld by equal access or opportunities to mental health and/or correctional treatments for social reintegration. *Mazzei v. British Columbia* (2006) highlighted the authority and responsibility of RBs to ensure that treatment opportunities are provided via legal conditions binding to both the NCR individual and the treatment team for all treatment decisions except its imposition. Both the processes and outcomes of RB decision-making is relevant to an understanding of how federal legislation is applied.

The sum of the public safety and constitutional rights issues highlighted point to the need to evaluate whether criminogenic risk and need factors are considered by RBs. RBs uphold a responsibility to society and its citizens as shown by the laws that guide RB decision-making. Criminogenic risk and need factors contain the evidence needed to help answer these legal questions and the forensic services that they inform. For example, *Winko* set forth dispositional standards for RBs that eliminated the indeterminate and automatic detention of NCR individuals. In relation to *Winko*, criminogenic risk and need factors would assist with determinations of significant public safety risk by identifying the type of potential risk (i.e., general and violent recidivism) and certainty of risk (i.e., recidivism likelihood). Furthermore, criminogenic risk and

need factors inform recidivism curbing treatment protocols that ultimately supports the civil rights to treatment towards eventual social reintegration. The terms risk and legislatively relevant factors will reference throughout this document the criminogenic risk and need factors germane to RB decision-making.

1.6.1.2.1 Research questions/hypotheses

2.1 How often are forensic risk assessment instruments included in clinical reports to the ARB, and which are being used?

2.1.1. It is hypothesized that forensic risk assessment instruments will not be routinely incorporated into clinical reports to the ARB. When present, however, the HCR-20 will be the most commonly used instrument.

2.2 Is risk or legislatively (i.e., public safety and social reintegration) based information supplied to the ARB and do they factor into disposition decisions?

2.2.1. It is hypothesized that risk and legislatively (i.e., public safety and social reintegration) based information will be provided to the ARB and that this information will be positively correlated with ARB decisions as represented by the LS/CMI.

2.3 What is the predictive accuracy of LS/CMI total and subscale scores for ARB decisions?

2.3.1. It is hypothesized that there will be a significant association with moderate effect sizes among AUC and correlation indexes between LS/CMI scores and ARB decisions to release or detain.

1.6.1.3 Phase Three: Forensic Risk Assessment Instruments.

An examination of the empirical evidence in support of forensic risk assessment instruments is critical to understanding its role in decision-making practices. Legislated emphasis on public safety suggests that recidivism risk must be minimized in RB decisions that permit NCR individuals exposure to society. Forensic risk assessment instruments may aid in structured release determinations or providing appropriate risk level cut-offs prior to community access or security transfer. Over 30 years of forensic research have identified a set of theoretically and empirically supported recidivism risk factors that apply to all offender groups including MDOs (Bonta & Andrews, 2017). This research has been synthesized into instruments that may be used by forensic professionals to guide risk appraisals and its management. Parole boards, the focal gatekeeper in correctional settings, and the court systems, incorporate risk instruments into

decision-making practices (Guy et al., 2015). Although risk instruments have been developed specifically for forensic psychiatric settings such as the HCR-20 and VRAG, the Level of Service family of tools have yet to make the leap into routine forensic psychiatric practice despite being the most frequently used risk instrument in corrections and worldwide (Wormith, 2011). The addition of Level of Service risk instruments may help promote adherence to RNR principles in the healthcare and correctional services that MDOs use to reduce public safety risk (Robertson et al., 2015).

1.6.1.3.1 Research questions/hypotheses

3.1. What is the convergent validity of the LS/CMI, HCR-20^{V3}, and VRAG-R on an NCR population?

3.1.1. It is hypothesized that for convergent validity, a moderate to large positive correlation will be observed for the LS/CMI, HCR-20^{V3}, and VRAG-R between the total scores, and ordinal risk levels.

3.2 What is the predictive validity of the LS/CMI, HCR-20^{V3}, and VRAG-R on an NCR population?

3.2.1. It is hypothesized that for predictive validity, a statistically significant correlation and AUC with moderate effect size magnitudes will be observed for the LS/CMI, HCR-20^{V3}, and VRAG-R between the independent variables (total summed score, ordinal risk levels, subscales) and the recidivism outcome.

Chapter 2: METHOD

2.1 Participants

A cohort of 109 NCR individuals was sampled from an NCR population ($n = 114$) that entered the ARB system between 2005 and 2010. Participants were excluded if there was insufficient file information or if they were transferred to Alberta but spent under a year in the ARB system. The sample had a total of 327 nested hearings ($M = 7.96$, $SD = 3.21$) at the follow-up end time (December 31, 2015). Table 1 presents a summary of relevant demographic and mental health statistics. By and large, the descriptive characteristics of the current sample was similar to the one collected by NTP (Crocker et al. 2015). The sex composition was 86.2% male and 13.8% female. The average age was approximately 35 years, with males being slightly older than females. The sample was three-quarters White with the remainder composed of minority groups including African Canadian (8%), Asian (6%), Indigenous (4%), Middle Eastern (4%), and East Indian (5%). The sample had an average of three years of education, but approximately half had a high school diploma. Clinically, approximately 87% of the sample was diagnosed with a psychotic disorder.

Table 2.1

Descriptive Statistics: Summary of Relevant Demographic and Mental Health Variables

	M (SD) or <i>n</i> (%)
Age	35.95 (12.1)
Years of Education	3.39 (1.4)
<i>Sex</i>	
Male	94 (86.2%)
Female	15 (13.8%)
<i>Marital Status</i>	
Married	16 (14.7%)
Not Married	93 (85.3%)
<i>Ancestry</i>	
White	80 (73.4%)
African Canadian	9 (8.3%)
Asian	7 (6.4%)
Indigenous	4 (3.7%)
Middle East	4 (3.7%)
East Indian	5 (4.6%)
<i>Mental Health</i>	
Schizophrenia/Psychotic Disorder	95 (87.2%)
Substance/Alcohol Diagnosis	29 (26.6%)
Antisocial Personality Disorder	22 (20.2%)
Mood Disorder	40 (36.7%)

Note. *n* = 109.

2.2 Program Description

The ARB is the Provincial Board mandated by the CCC that oversees the custody and management of those made NCR in Alberta. As standard protocol, ARB hearings are generally held six-months following an NCR verdict and at 11-month intervals afterwards to allow time (i.e., one month) to enact ARB decisions. Clinical reports and expert testimonies are solicited by the ARB and provided mainly by forensic psychiatrists, but other professionals such as psychologists may be involved. Treatment team members also provide consultation and recommendations regarding the treatment progress and management of the NCR individual. Inpatient forensic assessment and treatment services are delivered at AHE and the Southern Alberta Forensic Psychiatry Centre. Outpatient services are delivered either at Forensic Assessment and Community Services or Forensic Assessment Outpatient Services. Services provided are multidisciplinary in nature and include teams of medical doctors, psychologists, nursing staff, occupational therapists, psychometrists, social workers, and recreational therapists. Treatment services provide a host of biological, psychological, and social interventions tailored to individual needs. These services may include individual and group counselling, pharmacotherapy, and recreational and occupational therapy. Ultimately, treatment services are geared towards the eventual and safe social reintegration of the NCR individual.

2.3 Materials

Study materials included three risk assessment instruments (i.e., HCR-20^{V3}, LS/CMI, VRAG-R), a data collection protocol, and the Crime Severity Index to operationalize index offense severity.

2.3.1 HCR-20 Version 3. The HCR-20^{V3} is a SPJ risk assessment instrument developed by Douglas et al. (2014) that is comprised of 20 empirically validated static and dynamic items associated with violence risk (Appendix A). The HCR-20 family of scales were designed to enhance professional judgement in the detection of factors that alter recidivism risk. The instrument is divided into three subscales: historical risk factors (10 items; e.g., violent attitudes), clinical factors that pertain to present risk (5 items; e.g., mental health), and risk management factors that affect future risk (5 items; e.g., stress and coping). Users determine the presence of each risk factor and weigh their relevance to the overall risk formulation. Ratings for each item are coded on a three-point ordinal scale for both the items (i.e., no, partially present, and yes) and the items' relevance (i.e., low, moderate, and high). A feature unique to SPJ instruments,

Summary Risk Ratings (SRRs) are coded by the user to synthesize risk-relevant information for case conceptualization, risk management, and the overall risk estimate. Trichotomous SRRs are coded on a three-point ordinal scale (i.e., low, moderate, and high) and include Case Prioritization/Future Violence, Serious Physical Harm, and Imminent Violence. Now in its third iteration, the HCR-20^{V3} does not yield a numeric risk estimate but has been studied by computing a total score out of 40 to investigate its predictive validity.

2.3.2 LS/CMI. The LS/CMI is a 43-item actuarial risk assessment instrument comprised of static and dynamic items that provide a probabilistic estimate for general recidivism, although the tool has been researched for violence risk as well (Andrews et al., 2004; Appendix B). There are 11 sections for determinations on risk factors, intervention targets, previous custodial sentences, and treatment responsivity/compliance issues. Only the first section of the LS/CMI provides an assessment of criminogenic risks and needs across the Central Eight domains: (1) criminal history (8 items); (2) education and employment (9 items); (3) family and marital (4 items); (4) leisure and recreation (2 items); (5) companions (4 items); (6) alcohol or drug problem (8 items); (7) antisocial attitudes (4 items), and; (8) antisocial pattern (4 items). Thirteen items are scored on a 4-point scale (which are then reduced to yes/no) with the remainder of the items scored on a binary response scale. The total summed score of the 43-items determines the numeric risk estimate and corresponding risk level across five categories to accompany the contribution of each criminogenic domain to the overall risk. Total scores span from 0 to 42 and informs five risk levels that range from Very Low (0-4), Low (5-10), Medium (11-19), High (20-29), and Very High (30-42).

2.3.3 VRAG-R. The VRAG-R is a 12-item actuarial risk assessment instrument derived from empirically supported static risk factors of violence (Rice et al., 2013; Appendix C). Currently in its second iteration, the revised version represents advancements in both predictive validity and usability as it united two previously separate risk instruments developed by the authors. The VRAG-R provides a probabilistic recidivism estimate based on item weights and recidivism norms for both community and institutional settings. Each item coded by the rater either increases or decreases the resultant total score. The total score is used to assign a case into one of nine bins, from lowest to highest risk, each with a corresponding probability of recidivism across time periods.

2.3.4 Data Collection Protocol. See Appendix D. A data collection protocol was used to collect information relevant to the LS/CMI, index offense severity, rehospitalization, institutional conduct, diagnoses, and RB hearings.

2.3.5 Crime Severity Index. See Appendix E. Index offense severity was operationalized by the Crime Severity Index developed by Statistics Canada (Wallace et al., 2009). The Crime Severity Index may be used to assess the relative seriousness of crime based on a weighting system developed from Canadian sentencing data. Weights assigned to each crime are proportional to sanctions administered to capture the relative difference between offenses. Thus, more serious crimes are assigned higher weights and less serious crimes are assigned lower weights.

2.5 Procedure

Ethical approval was acquired from both the Behavioural Research Ethics Board at the University of Saskatchewan (Beh ID No. 1177) and the Research Ethics Office at the University of Alberta (ID: MS6 Pro00048695). From the two institutions, permission was granted for the current program of research to implement the proposed methodology and use of hospital records. Operational approval from the provincial health authority, Alberta Health Services, was also received to access and work on site at AHE. Participant consent was not obtained as the current research was archival and did not involve direct human participation. The Research Ethics Board at the University of Alberta permits researchers to access archival information in Alberta per the *Health Information Act* (Government of Alberta, 2000):

(i) the proposed research is of sufficient importance that the public interest in the proposed research outweighs to a substantial degree the public interest in protecting the privacy of the individuals who are the subjects of the health information to be used in the research, (ii) the researcher is qualified to carry out the research, (iii) adequate safeguards will be in place at the time the research will be carried out to protect the privacy of the individuals who are the subjects of the health information to be used in the research and the confidentiality of that information, and (iv) obtaining the consents referred to in clause (a) is unreasonable, impractical or not feasible (pp. 36-37)

Data were independently collected from archived hospital records by the author, a clinical psychology graduate student, and a trained research assistant, a senior undergraduate student. This research also used previously collected data coded from archived hospital records

by psychologists, psychiatrists, graduate and undergraduate students, and residents. Confidentiality was maintained through password-protected file encryption and numerically deidentified cases. The research assistant was trained by the graduate student, who in turn received training from a Registered Doctoral Psychologist on the LS/CMI, VRAG-R, and HCR-20^{V3}. In training the research assistant, the first five cases were independently double coded by both coders and then reviewed immediately afterwards. Thereafter, every dispatched case was reviewed by the other coder to ensure proper scoring and completion. Routine consultation between the two coders and a Registered Doctoral Psychologist in Alberta resolved data collection issues and served as data checks. Data were collected on research phases three to one in that specific order to avoid contamination issues for LS/CMIs in the third research phase.

2.5.1 Phase One: Trajectories and Outcomes of NCR Individuals Under the ARB.

Individuals declared NCR between 2005 and 2010 were tracked through the ARB system to assess their trajectories and outcomes until the end of 2015 (December 31, 2015). This was achieved via file review and a longitudinal cohort design that examined both NCR individuals and the ARB. ARB hearings at three time points were sampled for each participant; namely, at the start, middle, and end of supervision or the study period. The second hearing sampled attempted to capture a notable change in disposition status (i.e., full warrant to a conditional discharge) or privilege. Two documents were the chief information sources for file review – ARB dispositions and clinical reports. The ARB produces dispositions that contain release conditions and privileges, treatment plans, decision-making rationale, and other legal details. Clinical reports written by the attending psychiatrist and/or psychologist provided an update on treatment progress and an assessment of recidivism risk.

Length of detention was determined by coding ARB dispositions for each case from the start of detention until absolute discharge or end of observation (December 31, 2015 or date of death, provincial transfer, or escape). This step revealed the proportion of NCR individuals under supervision over time and their corresponding disposition status, which allowed for an analysis on release probabilities while accounting for potential correlates (i.e., criminal history, diagnosis, and index offense severity). Diagnosis was coded (present/absent) across six categories for each ARB hearing to account for potential diagnostic evolution; categories included psychotic spectrum disorder, mood spectrum disorder, substance use disorder, personality disorder, other,

and no diagnosis. Diagnostic differences between professionals were resolved by using the diagnosis listed on the disposition.

Conditions and privileges assigned to each disposition were coded into eight categories: supervised and unsupervised grounds, passes to the community, permission to live in the community, abstain from drugs and alcohol, follow treatment recommendations, keep the peace, limit contact with the victim(s), and other. This step revealed the pattern of conditions and privileges allocated to each disposition.

For clinician–RB agreement, clinical reports were coded for their disposition recommendations, recommendations for conditions and privileges, and its restrictiveness relative to the actual RB decision (i.e., more restrictive, same, less restrictive). This step described the relationship between clinician recommendations and ARB decisions.

Individuals in attendance at each hearing were coded into one of 10 categories: the NCR accused, defense lawyer, crown prosecutor, psychiatrist, nursing staff, psychologist, other member of the clinical team, victim(s) of the accused, family of the accused, and others (e.g., students, members of the public). As well, changes to the ARB chair was monitored and coded. This step examined the interdisciplinary climate and social backdrop present at ARB hearings.

ARB hearing rationale was coded into the following seven categories: post-NCR verdict, annual disposition review, request of the NCR accused, request of the hospital/clinical team, request of the ARB, post-dual designation for those NCR for one offense but convicted for another offense, and post-hospitalization of initial seven days. This step investigated operational practices and patterns of evaluation when processing NCR individuals.

2.5.2 Phase Two: Predictors of ARB Decision-Making. For the second research phase, the study period, design, and data collection methods were identical to those used for Phase One.

Data were collected on the presence of a risk instrument in clinical reports provided to the ARB, the professional that used the instrument (i.e., psychologist, psychiatrist), and the instrument type and risk rating if present (e.g., HCR-20). Although the presence of a risk instrument was no guarantee of its application, it provided insight into the state of forensic research translation into field application.

The LS/CMI was used as a template to assess criminogenic risk and need factors considered by the clinical report, hearing discussion, and rationale for disposition outcomes. A content analysis of these documents revealed the relative influence of risk and legislatively based

information on ARB decisions and provided a portrait of risk-relevant information supplied to the ARB by forensic professionals.

Static and dynamic factors not captured by the LS/CMI were also collected. Static factors of interest included sociodemographic variables (i.e., gender, race), age at index offense, and index offense severity (Wallace et al., 2009). Dynamic factors of interest first included institutional conduct since the previous hearing, which fell into the following categories: (1) violence, (2) suicide attempts or ideation, (3) breach of RB conditions, (4) substance use, and (5) treatment non-compliance. Diagnoses have been considered dynamic in other studies (Crocker et al., 2015), as treatment teams may learn more about the psychopathology over time and demonstrate diagnostic evolution. Thus, diagnosis was examined as a dynamic factor using the identified diagnosis or diagnoses for each ARB disposition report.

The hearing number was coded for each participant based on the number of hearings since the NCR verdict (inclusive of the present hearing). This enabled an examination of the impact of time on risk determinations and ARB decisions.

2.5.3 Phase Three: Forensic Risk Assessment Instruments. The goal of Phase Three was to assess the psychometric properties of three forensic risk assessment instruments. Hospital records were retrospectively coded, blind to patient outcome, with the LS/CMI. Coders did not have access to the results of other risk instruments, as data on the HCR-20^{V3} and VRAG-R were extracted from an extant database. The sample and study period were identical to the previous research phases. Hospital records up to the end of 2010 were reviewed to complete the risk instruments. Completion of dynamic factors on the LS/CMI was subject to the comprehensiveness of file review information as interviews were not conducted. Some cases required prorated scores to account for insufficient file content. To this end, the procedure first considered the percentage of missing items to determine the necessity to prorate (4 or more missing items). If required, the mean score derived from completed items was used to substitute the missing item. The dependent variable examined was recidivism (i.e., yes/no) defined as a conviction post-release. Hospital readmission (yes/no), its rationale, and the date was collected and examined as an alternative outcome variable. Twenty-two randomly selected cases were double coded with the LS/CMI for inter-rater reliability.

2.6 Data Analytic Strategy

Data were compiled, processed and reported using the Statistical Package for the Social Sciences Version 23 (IBM Corp, 2010).

2.6.1 Phase One: Trajectories and Outcomes of NCR Individuals Under the ARB.

Pearson correlation coefficient measured the relationship between the length of detention and independent variables (index offense severity, criminal history, diagnoses at NCR verdict). Across sampled ARB hearings, descriptive statistics measured the privileges and conditions allocated to each disposition. Spearman rho measured the relationship between privileges and conditions, and dispositions in terms of restrictiveness – absolute discharges were not included as there would be no corresponding conditions. Kaplan-Meier survival analysis and a two-tailed *t*-test measured the proportion of individuals detained by year after the NCR verdict (until conditional or absolute discharge), and the proportion of time spent under detention versus in the community while under warrant. Cox proportional hazard regression models determined release hazards while examining criminal history, diagnosis at NCR verdict, and index offense severity. Spearman rho and Cohen kappa coefficient (guidelines by Cicchetti, 1994) measured the degree of clinician–RB agreement.

Two groups of adjunct analyses were conducted beyond the study hypotheses. First, descriptive statistics measured ARB operational characteristics (i.e., ARB attendees, reasons for hearing, ARB chair). Second, Kaplan-Meier survival analysis measured the proportion of individuals detained by year after the NCR verdict between individuals of White and Non-White ancestry. The Non-White ancestral group was heterogenous and included all minority groups that were not of White ancestry.

2.6.2 Phase Two: Predictors of ARB Decision-Making. Descriptive statistics measured the frequency and type of forensic risk assessment instruments used in clinical reports submitted to the ARB. For the content analysis, the frequency of LS/CMI items and subscales coded served as a proxy for risk relevant information considered and received by the ARB. Average LS/CMI item scores were calculated to provide an approximate risk score proportional to the number of items scored. In other words, average LS/CMI item scores were used instead of total scores to account for insufficient file information. Descriptive statistics measured the frequency of LS/CMI items coded and the average item scores computed for each case across sampled hearings. Spearman rho determined the relationship between average LS/CMI item scores and ARB disposition determinations. The Spearman rho analysis treated the outcome as

ordinal from lowest (i.e., full warrant) to highest (i.e., absolute discharge) ranks of autonomy. A ROC, point-biserial correlation coefficient and Spearman rho measured the predictive validity of LS/CMI total and subscale scores on dichotomous ARB decisions to release (i.e., conditional or absolute discharge) or detain. Risk relevant factors including the average LS/CMI item score, HCR-20^{V3}, and VRAG-R were included in the analysis along with other covariates of interest (i.e., index offense severity, diagnoses, ARB hearing number, previous disposition status, institutional conduct).

2.6.3 Phase Three: Forensic Risk Assessment Instruments. Intra-class correlation (ICC; two-way mixed; fixed raters, measures fixed, consistency agreement) measured inter-rater reliability for the LS/CMI. Different interpretive guidelines were considered (e.g., Fleiss, 1981; Landis & Koch, 1977) for inter-rater reliability. Cronbach reliability coefficient measured internal consistency across the three risk assessment instruments. For convergent validity, Pearson correlation coefficient measured the relationship between the total scores of the three risk assessment instruments, whereas Spearman rho measured the relationship between the ordinal risk ratings. For predictive validity, the relationship between the independent variables (i.e., total scores, ordinal risk levels, and subscales) and the dependent variable (i.e., recidivism) was measured with a ROC, Pearson correlation, and Spearman rho. The dependent variable was defined as either the presence or absence of a conviction. Rehospitalization due to a criminal offense was also pooled with convictions and examined as an outcome. Descriptive statistics and a Kaplan-Meier survival analysis examined the recidivism rates for participants at each LS/CMI risk level.

Chapter 3: RESULTS

A general limitation of the data was that the files reviewed were not always comprehensive despite efforts to vet cases based on adequate information. The methodological limitation inherent in file review is that it may not provide exact portraits of the phenomena examined. RB hearings, for instance, are data rich environments and the entirety of discussion content may not be accurately tracked within files. Although most files yielded ample data germane to the research objectives, there were inconsistencies in its depth and breadth. Consequently, the nature and quality of the available data impacted the analyses and conclusions of this research. Results are reported sequentially by each research phase below and organized by research objectives.

3.1 Phase One: Trajectories and Outcomes of NCR Individuals Under the ARB.

3.1.1 For NCR individuals, is length of detention associated with risk or legislatively based factors?

Pearson correlation coefficients were computed to provide an index of the association between length of detention in months and covariates of interest including index offense severity, criminal history, and diagnoses at NCR verdict. Consistent with hypothesis 1.1.1, results suggested that more severe index offenses and longer criminal histories were related to longer lengths of detention. Furthermore, the presence of a psychotic or personality disorder was related to longer length of detention, whereas the presence of a mood disorder was associated with shorter detention lengths. Indeed, there was a significant positive association between length of detention and index offense severity, $r(109) = .212, p = .027$, criminal history, $r(108) = .223, p = .02$, psychotic disorders, $r(109) = .212, p = .027$, and personality disorders, $r(109) = .246, p = .01$. There was also a significant negative association between length of detention and mood disorders, $r(109) = -.242, p = .011$. Substance use disorder was not significantly associated with length of detention. Overall, the above results suggested that length of detention was influenced by both risk related and unrelated information. As noted, index offense severity is not a predictor of recidivism but still correlated with custody length at an effect size commensurate with empirically supported predictors of crime such as criminal history.

3.1.2 What is the association between dispositions and their corresponding privileges in terms of restrictiveness?

Descriptive statistics and Spearman rho were conducted to examine the association between privileges, conditions, and dispositions allocated by the ARB. As anticipated by hypothesis 1.2.1, increasingly liberal privileges were assigned in the lead up to the first conditional discharge (Table 3.1). Findings may have highlighted a practice whereby privileges, conditions, and dispositions were gradually trialed out to facilitate social reintegration with oversight as treatment progress was observed. In general, dispositions may be tailored with the judicious use of privileges and conditions to address the unique public safety and rehabilitative considerations of each case. For instance, a treatment order condition created a more restrictive disposition order whereas community accommodation privileges enabled more freedom.

Results showed that the majority of NCR individuals began supervision under a full warrant with grounds privileges, $r(108) = -.76, p < .001$, and/or a pass into the community, $r(108) = -.24, p < .01$. As time under supervision increased, however, so did the proportion of individuals who were granted an approved community accommodation while under a full warrant (i.e., 15.3%, 71.2%, 81.4%). The ARB responded to the increased proportion of individuals in the community with a higher frequency of treatment orders to ensure adequate oversight. For instance, the proportion of treatment orders under a full warrant increased over time (i.e., 15.3%, 67.3%, 88.4%) as it did under a conditional discharge (i.e., 80%, 95.7%, 100%). Spearman rho analyses demonstrated that although the direction of this relationship was consistent across time, the strength of the association was the highest at the start of ARB supervision and waned as time passed. For example, there was a significant association between a conditional discharge and a treatment order in the first ARB hearing sampled, $r(108) = .46, p < .001$, and the second ARB hearing sampled, $r(99) = .36, p < .001$, but not the third, $r(69) = .22, p = .07$.

Table 3.1

Frequency and Correlations of Privileges and Conditions Assigned Under a Full Warrant and Conditional Discharge Across Sampled Review Board Hearings

Review Board Hearing Number	Privileges			Conditions	
	Grounds	Community Passes	Approved Community Accommodations	Limit Contact with Victim	Treatment Order
<i>First Hearing</i>					
Full warrant, <i>n</i> (%)	97 (99%)	87 (88.8%)	15 (15.3%)	16 (16.3%)	15 (15.3%)
Conditional discharge, <i>n</i> (%)	3 (30%)	6 (60%)	10 (100%)	3 (30%)	8 (80%)
<i>r_s</i>	-.76***	-.24**	.58***	.10	.46***
<i>Second Hearing</i>					
Full warrant, <i>n</i> (%)	46 (88.5%)	52 (100%)	37 (71.2%)	9 (17.3%)	35 (67.3%)
Conditional discharge, <i>n</i> (%)	3 (6.4%)	41 (87.2%)	47 (100%)	9 (19.1%)	45 (95.7%)
<i>r_s</i>	-.82***	-.27***	.40***	.02	.36***
<i>Third Hearing</i>					
Full warrant, <i>n</i> (%)	37 (86%)	43 (100%)	35 (81.4%)	5 (11.6%)	38 (88.4%)
Conditional discharge, <i>n</i> (%)	2 (7.7%)	25 (96.2%)	26 (100%)	5 (23.1%)	26 (100%)
<i>r_s</i>	-.77***	-.16	.28**	.15	.22

Note. ** $p < .01$. *** $p < .001$.

3.1.3 How long do NCR individuals spend detained in custody versus living in the community while under warrant, and what is the likelihood of release (i.e., conditional discharge or absolute discharge)?

A Kaplan-Meir survival analysis examined time spent under ARB supervision (Figure 3.1) and a two-tailed *t*-test procedure examined the proportion of time spent under detention versus in the community while under warrant (Figure 3.2). Descriptive statistics measured time in years between disposition changes while under supervision (Table 3.2). Varied sample sizes across disposition change scenarios reflected the unique pathways through the ARB system – e.g., not all individuals were released, whereas some were released soon after detention. Single Cox regression models, as opposed to a series of univariate computations, measured release probabilities given specific diagnostic and criminogenic factors for conditional discharge (Table 3.3) and absolute discharge (Table 3.4).

In the study period, 43 participants remained on a full warrant, 57 participants received a conditional discharge, and 40 participants received an absolute discharge. As anticipated (hypothesis 1.3.1), individuals spent an average of 3.19 years longer in the hospital ($M = 5.04$, $SD = 3.04$) than in the community ($M = 1.84$, $SD = 1.84$), a significant difference, $t = -16.87$, $p < .001$. After the first year following an NCR verdict, 83% of individuals were detained in a hospital pursuing treatment. This proportion declined to 71% after 3 years, 53% after 5 years, and 31% after 8 years. Approximately half of the sample was still under supervision after 10 years. There was mixed evidence for hypothesis 1.3.1, as only the presence of a psychotic disorder reduced the release probability and only for a conditional discharge. Indeed, Cox regression analysis revealed that the overall model comprised of the examined covariates did not significantly predict conditional discharge decisions. The presence of a psychotic disorder, however, was a significant predictor of conditional discharge and decreased the likelihood of release by 2.41 times. Conversely, the overall model comprised of the examined covariates significantly predicted absolute discharge decisions, however, no single variable was found to be a significant predictor. Notably, criminal history was a risk-relevant factor that did not emerge as a significant predictor of release decisions. This may have suggested that NCR individuals were not beholden to their static risk factors, but rather, evaluated on the basis of dynamic risk change for public safety risk and rehabilitation potential.

Table 3.2

Years Between Disposition Changes Under ARB Supervision

Disposition Change	<i>n</i>	Mean	SD
Time to any release (CD or AD)	109	5.04	3.04
Time to CD	102	5.48	3.02
Time to AD	102	5.90	2.90
Time between CD and AD	32	1.50	.89
Time directly to AD	9	1.79	2.22
Time between CD to AD or follow-up end	57	1.84	1.43

Note. CD = conditional discharge, AD = absolute discharge.

Proportion of People Under RB Supervision Over Time Following an NCR Verdict

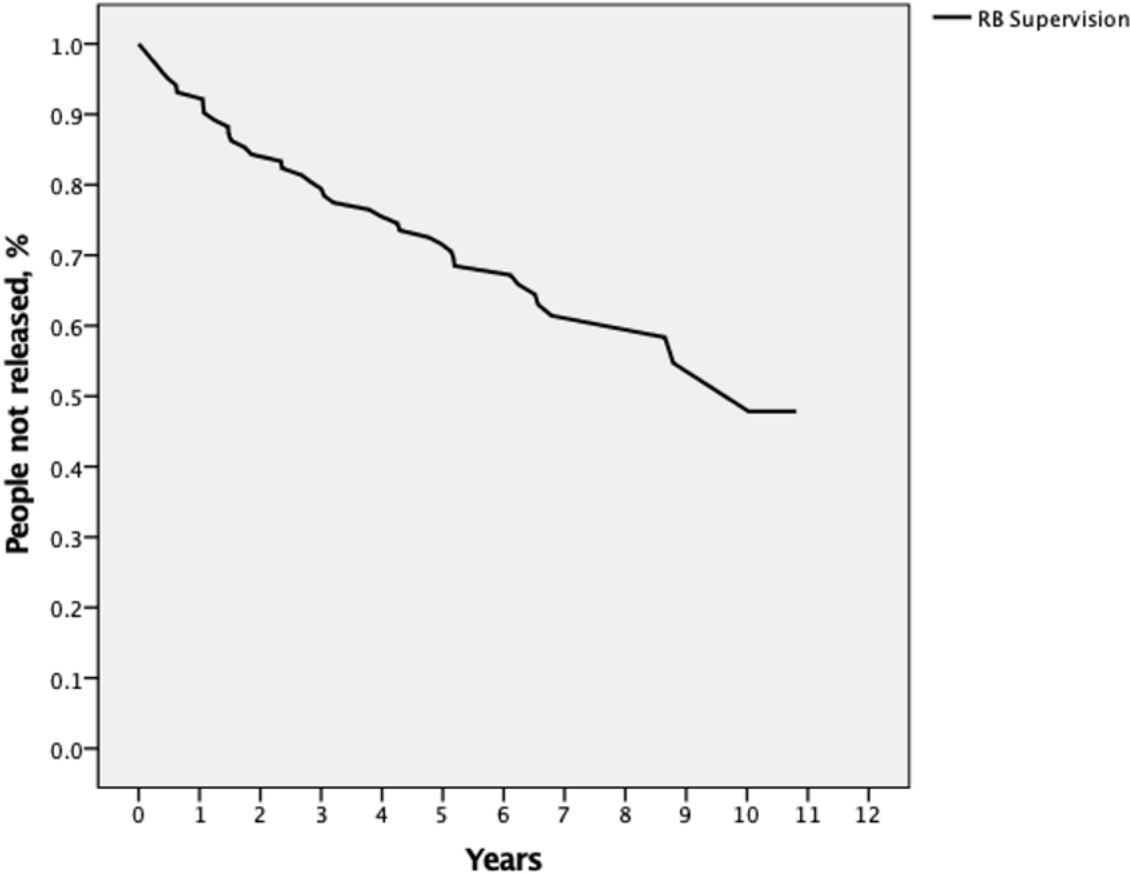


Figure 3.1

Proportion of People Under RB Supervision Over Time Following an NCR Verdict

Proportion of People Detained Over Time Following an NCR Verdict

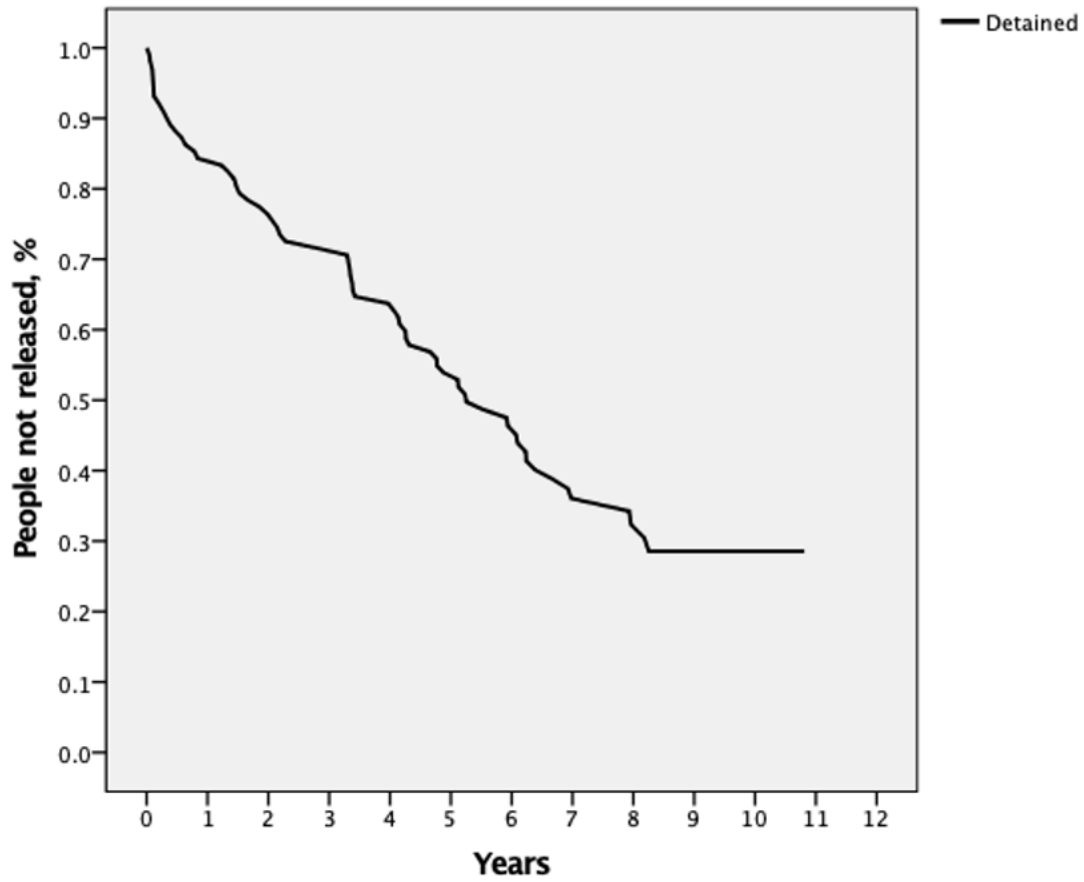


Figure 3.2

Proportion of People Detained Over Time Following an NCR Verdict

Table 3.3

Cox Regression Predicting Time Before Conditional Discharge from the Review Board

Covariates	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>p</i>	<i>HR</i>	<i>95% CI</i>
Criminal history	-0.04	0.04	0.98	0.32	0.96	0.90, 1.04
Index offense severity	0.00	0.00	0.09	0.77	1.00	1.00, 1.00
Diagnosis at NCRMD Verdict						
Psychosis spectrum disorder	-0.89	0.40	4.98	0.03	0.41	0.19, 0.90
Mood disorder	-0.65	0.44	2.17	0.14	0.52	0.22, 1.24
Substance use disorder	-0.91	0.30	0.09	0.76	0.91	0.50, 1.66
Personality disorder	-0.64	0.46	1.97	0.16	0.53	0.22, 1.29
<i>Overall model: $\chi^2(6) = 10.96, p = .09$</i>						

Table 3.4

Cox Regression Predicting Time Before Absolute Discharge from the Review Board

Covariates	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>p</i>	<i>HR</i>	<i>95% CI</i>
Criminal history	-0.10	0.06	2.83	0.09	0.90	0.80, 1.02
Index offense severity	0.00	0.00	3.63	0.06	1.00	1.00, 1.00
Diagnosis at NCRMD Verdict						
Psychosis spectrum disorder	-0.65	0.43	2.29	0.13	0.52	0.23, 1.21
Mood disorder	0.70	0.44	2.54	0.11	2.02	0.85, 4.80
Substance use disorder	-0.40	0.36	1.25	0.26	0.67	0.34, 1.35
Personality disorder	-1.17	0.76	2.38	0.12	0.31	0.07, 1.37
<i>Overall model: $\chi^2(6) = 27.77, p < .001$</i>						

3.1.4 What is the association between clinician recommendations and ARB decisions in assigning dispositions?

Cohen kappa coefficient and Spearman rho measured clinician–RB agreement for privileges, conditions, and dispositions assigned (Table 3.5). Based on the interpretive guidelines by Cichetti (1994) for Cohen’s kappa coefficient, .40, .40 to .59, .60 to .74 and .75 to 1.00 corresponded to poor, fair, good, and excellent levels of reliability, respectively. Consistent with hypothesis 1.4.1, there was fair to excellent agreement between clinician recommendations and ARB decisions on disposition outcomes across sampled hearings. The highest level of agreement was observed for the first hearing sampled, followed by the third and second hearing sampled. Although agreement was observed in large part between parties (i.e., 83.5%, 62.4%, 66.1%), in times of disagreement clinicians generally provided more restrictive recommendations (i.e., 11%, 22, 18.3%) relative to less restrictive recommendations (i.e., 2.8%, 6.4%, 6.4%). These results suggested that there was a shared perspective on how ARB supervision ought to begin, but as trajectories varied as a function of factors such as treatment progress, divergence in opinion on suitable dispositions emerged between clinicians and the ARB. Although this study could not explain the exact rationale for disagreement, the direction of disagreement by clinicians and the ARB suggest different possible explanations. One interpretation is that the ARB may have formed decisions that favoured rehabilitation and the least onerous disposition as legally required. Alternatively, clinicians may have been conservative by comparison due to a higher risk threshold that favoured public safety in decision-making.

Table 3.5

Agreement Between Clinician Recommendations and Review Board Outcomes Across Sampled

Review Board Hearings

Review Board Hearing Number	<i>r</i>	κ	More Restrictive, <i>n</i> (%)	Same, <i>n</i> (%)	Less Restrictive, <i>n</i> (%)
First Hearing	.77*	.76*	12 (11%)	91 (83.5%)	3 (2.8%)
Second Hearing	.72*	.58*	24 (22%)	68 (62.4%)	7 (6.4%)
Third Hearing	.81*	.61*	20 (18.3%)	72 (66.1%)	7 (6.4%)

Note. * $p < .01$.

3.1.5 Analyses Beyond Study Hypotheses

Beyond the study hypotheses, descriptive statistics measured the composition of RB hearings and RB hearing rationale to understand the operational practices of the ARB (Table 3.6). Results indicated that the first ARB hearing was primarily held in connection to a mandated hearing post-NCR verdict, which was then gradually replaced with legislated routine hearings as the rationale across subsequent ARB hearings. Of note, the ARB has a practice whereby hearings are held biannually following the first hearing rather than annually as federally legislated.

ARB hearings were consistently comprised of the NCR individual, defense counsel, crown, chair, attending psychiatrist, and clinical team. There was a gradual decrease in the presence of the defense counsel across hearings sampled, perhaps owed to the improved mental health stability and autonomy of the NCR individual from treatment progress. Victims attended a minority of ARB hearings, whereas the family of the NCR individual were present for over a quarter of the time. Although victims rarely attended hearings, it may not have been due to a lack of desire but rather an absence of information. Indeed, ARB hearings may not be advertised consistently which consequently creates challenges for those who wish to attend but are unable due to unawareness.

Proportion of individuals detained by year after the NCR verdict was compared between individuals of White ($n = 80$) and Non-White ($n = 29$) ancestry with a Kaplan-Meier survival analysis (Figure 3.3). There was a significant difference in length of detention between ancestral groups, $\chi^2(1) = 6.88, p = .009$. On average, individuals of White ancestry were detained in hospital for approximately 5 years prior to release, whereas individuals of Non-White ancestry were detained for almost 8 years – a substantial and significant difference of 3 years ($d = 4.23, p < .001$). Furthermore, individuals of Non-White ancestry had longer hospitalizations than those of White ancestry despite no substantive differences in other demographic or criminological traits (Table 3.7).

Table 3.6

*Frequency of Review Board Hearing Rationale and Participants Across Sampled Review Board**Hearings*

Covariates	First Hearing, <i>n</i> (%)	Second Hearing, <i>n</i> (%)	Third Hearing, <i>n</i> (%)
<i>Rationale</i>			
Post-NCR verdict	94 (86.2%)	0 (0%)	0 (0%)
Routine hearing	10 (9.2%)	94 (87%)	98 (98%)
Request of the patient	0 (0%)	2 (1.8%)	0 (0%)
Request of the treatment team	3 (2.8%)	5 (4.6%)	0 (0%)
Request of the Review Board	2 (1.8%)	7 (6.4%)	1 (1%)
<i>Participants</i>			
Chair	109 (100%)	108 (100%)	99 (100%)
NCR patient	109 (100%)	106 (98.1%)	99 (100%)
Defense counsel	106 (97.2%)	94 (87%)	78 (79%)
Crown	109 (100%)	108 (100%)	98 (90.7%)
Psychiatrist	109 (100%)	107 (99%)	99 (100%)
Clinical team	109 (100%)	108 (100%)	99 (100%)
Victims	3 (2.8%)	6 (5.5%)	2 (1.9%)
Family of the accused	27 (24.8%)	45 (41.6%)	32 (32.3%)
Others	9 (8.3%)	14 (13%)	18 (18%)

Proportion of Individuals Detained between White and Non-White Ancestral Groups

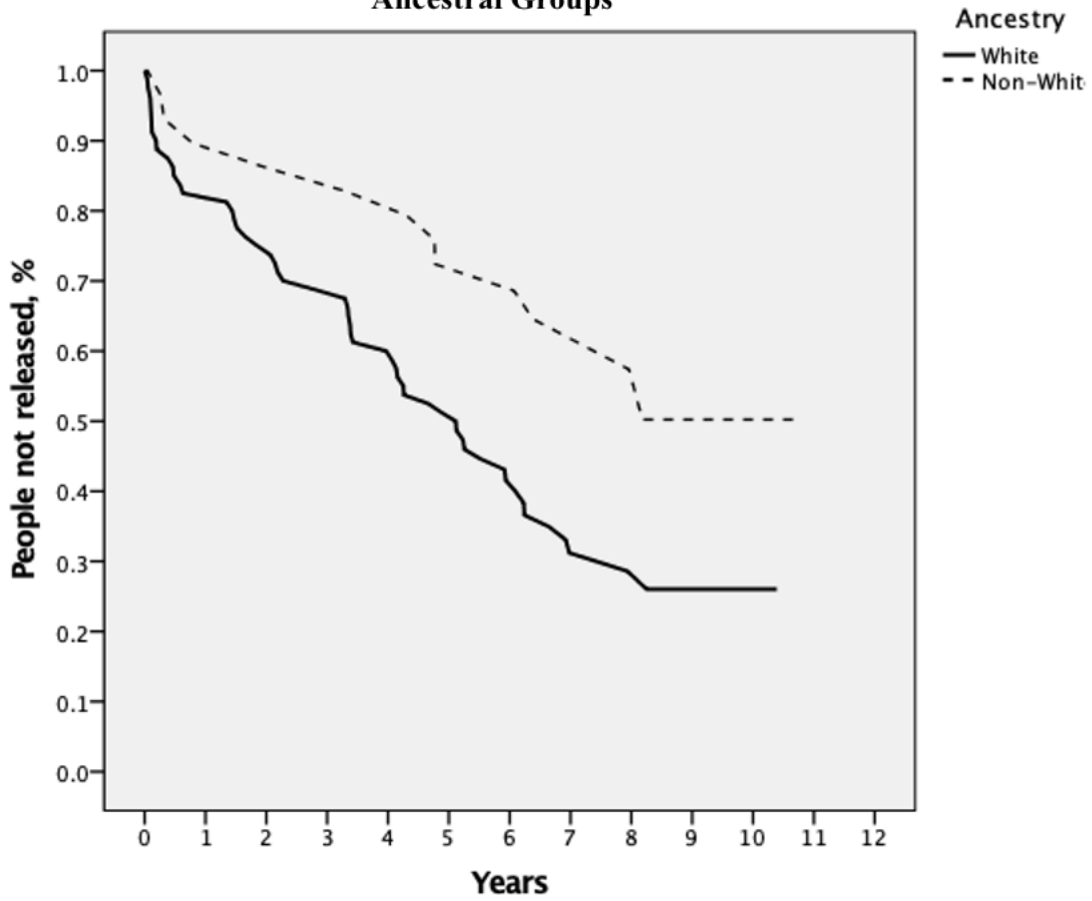


Figure 3.3

Proportion of Individuals Detained between White and Non-White Ancestral Groups

Table 3.7

*Comparison Between White and Non-White Ancestral Groups on Demographic, LS/CMI, and**Recidivism Characteristics*

Covariates	White M (SD) or <i>n</i> (%)	Non-White M (SD) or <i>n</i> (%)	<i>t</i> Tests and Chi-Squared Statistic
<i>Demographics</i>			
Age	37.14 (12.13)	32.66 (12.05)	<i>t</i> = 1.71
Years of Education	3.58 (1.49)	2.88 (1.07)	<i>t</i> = 2.69*
Male	67 (83.3%)	27 (93.1%)	$\chi^2(1) = 1.57$
Female	13 (16.3%)	2 (6.9%)	
Married	11 (13.8%)	5 (17.0%)	$\chi^2(1) = 1.695$
Not Married	69 (86.3%)	24 (83.8%)	
<i>LS/CMI Variables</i>			
General risk/need	14.44 (8.86)	16.18 (7.83)	<i>t</i> = -0.93
Criminal history	3.19 (2.18)	3.52 (2.26)	<i>t</i> = -0.69
Education and employment	2.63 (2.70)	3.41 (2.92)	<i>t</i> = -1.32
Family and marital	1.01 (1.04)	1.14 (1.03)	<i>t</i> = -0.56
Leisure and Recreation	0.49 (0.76)	0.34 (.70)	<i>t</i> = 0.92
Companions	2.31 (1.07)	2.62 (1.08)	<i>t</i> = -1.32
Alcohol and drugs	2.10 (2.30)	1.69 (2.00)	<i>t</i> = 0.85
Pro-Criminal attitudes	1.29 (1.57)	1.69 (1.39)	<i>t</i> = -1.22
Antisocial pattern	1.43 (1.41)	1.76 (1.35)	<i>t</i> = -1.10
<i>Recidivism Variables</i>			
General reoffense	0.11 (.318)	0.03 (.186)	<i>t</i> = 1.58
Violent reoffense	0.05 (.219)	0.03 (.186)	<i>t</i> = 0.34
<i>Index Offense</i>			
Severity	882.77 (1960.16)	1529 (2592.16)	<i>t</i> = -1.39

Note. **p* < .01.

3.2 Phase Two: Predictors of ARB Decision-Making.

3.2.1 How often are forensic risk assessment instruments included in clinical reports to the ARB, and which are being used?

Descriptive statistics measured the frequency and type of risk assessment instruments presented at ARB hearings and the instrument users (Table 3.8). Findings were counter to hypothesis 2.1.1, as risk assessments instruments were in fact routinely included in clinical reports submitted to the ARB. Risk assessment instruments, however, were not used at the same rate across sampled hearings. The frequency of usage increased across time points from 54% at the first ARB hearing, 79% at the second, and 92% at the third. Psychiatrists appeared to be the primary users of risk instruments, at least in the case of clinical reports submitted to the ARB. As anticipated, the HCR-20 family of scales were the favoured risk instruments among clinicians followed by the PCL-R and VRAG-R.

Forensic psychiatric hospitals tend to ascribe to the medical model philosophy, but psychiatrists are legally called upon to provide services that require specialized knowledge beyond biological mechanism in providing psychological risk assessments. Given that psychiatrists were the main risk instrument users, the findings suggested that psychologists rarely provided testimony or comprehensive risk assessments despite their extensive training on the use and interpretation of psychological measures. This may be considered a phenomenon unique to the forensic mental health system at least in Alberta, as the roles and responsibilities are the opposite in correctional settings – psychologists are deemed uniquely qualified to complete risk assessments and routinely testify on matters of public safety for parole boards. One explanation may be that psychiatrists are specifically recognized under NCR legislation as credible forensic experts, whereas psychologists fall under a broader category of other qualified forensic professionals and thus relied upon less for RB testimony.

Table 3.8

Frequency and Type of Forensic Risk Assessment Instrument Included in Clinical Reports to Review Board Across Sampled Review Board Hearings

Covariates	First Hearing, <i>n</i> (%)	Second Hearing, <i>n</i> (%)	Third Hearing, <i>n</i> (%)
<i>Instrument Presence</i>	59 (54%)	85 (79%)	91 (92%)
<i>User</i>			
Psychiatrist	54 (92%)	84 (99%)	90 (99%)
Psychologist	5 (8%)	1 (1%)	1 (1%)
<i>Risk Instrument</i>			
HCR-20 ^{V3}	52 (88%)	76 (89%)	90 (99%)
VRAG-R	19 (32%)	11 (13%)	8 (9%)
PCL-R	26 (44%)	18 (21%)	11 (12%)
SAVRY	1 (2%)	1 (1%)	0 (0%)
Static-99	1 (2%)	1 (1%)	1 (1%)
SARA	2 (3%)	0 (0%)	1 (1%)
SVR-20	0 (0%)	1 (1%)	1 (1%)
SAM	0 (0%)	0 (0%)	1 (1%)

Note. HCR-20^{V3} = Historical Clinical Risk Management 20 – Version 3. VRAG-R = Revised Violence Risk Appraisal Guide. PCL-R = Psychopathy Checklist-Revised. SAVRY = Structured Assessment of Violence Risk in Youth. SARA = Spousal Assault Risk Assessment Guide. SVR-20 = Sexual Violence Risk-20. SAM = Guidelines for Stalking Assessment and Management.

3.2.2. Is risk or legislatively (i.e., public safety and social reintegration) based information supplied to the ARB and do they factor into disposition decisions?

Descriptive statistics were used to measure the frequency of scorable LS/CMI items and average LS/CMI scores across sampled ARB hearings (Table 3.9). Pearson correlation provided an index of association between average LS/CMI scores and disposition outcomes (Table 3.12). Noted previously, the LS/CMI was used as a template to determine criminogenic risk/need factors provided to the ARB via clinical reports. The majority of LS/CMIs were not fully scorable due to insufficient information in clinical reports. As such, an average LS/CMI item score was computed to account for inconsistencies in the number of scorable LS/CMI items. There was an average of 25 scorable items with the second and third hearings featuring no fully completable LS/CMIs. In relation to hypothesis 2.2.1, one interpretation of the results was that the presence of scorable items provided some evidence to suggest that the ARB was supplied risk-relevant information for disposition determinations. Another interpretation is that critical risk factors were not supplied to the ARB given that half of LS/CMI items on average were not scoreable. It is unclear if gaps in risk-relevant information were addressed during ARB hearing discussions or whether they were missed altogether.

As anticipated (hypothesis 2.2.1), there were significant associations between average LS/CMI item scores and disposition outcomes across sampled hearings. For the first sampled ARB hearing, for example, there was a significant negative relationship between the average LS/CMI item score and the disposition granted that same hearing, $r(109) = -.25, p = .01$. This suggested that individuals rated as lower risk on the LS/CMI were generally assigned more liberal dispositions – i.e., conditional or absolute discharges. Alternatively, individuals rated as higher risk on the LS/CMI were generally assigned more restrictive dispositions – i.e., full warrant. Moreover, the magnitude of effect generally increased between average LS/CMI item scores and dispositions as time under ARB supervision passed. Release likelihoods increased over time along with recidivism opportunity; hence, reliance on empirically supported risk factors in decision-making became increasingly paramount. Average LS/CMI item scores were also associated with both preceding and subsequent dispositions across sampled ARB hearings, however, dispositions that corresponded to the same hearing tended to show the strongest relationship (Table 3.10). These data suggested that there was some continuity across time, or a “carry-over effect,” in risk-relevant information weighed for ARB decisions.

Table 3.9

Frequency of Scorable LS/CMI Items and the Average LS/CMI Item Scores across Sampled

Review Board Hearings

Review Board Hearing Number	Minimum	Maximum	M (SD)
<i>First Hearing</i>			
Items scored	8	43	24.24 (9.43)
Average item score	0.03	1	0.5 (0.23)
<i>Second Hearing</i>			
Items scored	0	42	25.91 (9.42)
Average item score	0	0.91	0.39 (0.21)
<i>Third Hearing</i>			
Items scored	0	42	25.99 (10.97)
Average item score	0.06	0.93	0.37 (0.19)

Table 3.10

Pearson Correlation Between Average LS/CMI Item Scores and Disposition Status

Average LS/CMI Item Score by Hearing	Absolute Discharge Decisions Across Sampled hearings		
	Discharge Time 1	Discharge Time 2	Discharge Time 3
<i>First Hearing Score</i>	-.23*	-.28**	-.38**
<i>Second Hearing Score</i>	-.24*	-.40**	-.38**
<i>Third Hearing Score</i>	-.12	-.26**	-.50**

Note. * $p < .05$. ** $p < .01$.

3.2.3 What is the predictive accuracy of LS/CMI total and subscale scores for ARB decisions?

ROC, point-biserial correlation, and Spearman rho analyses were conducted to examine the predictive performance of risk or legislatively relevant factors on ARB decision-making. AUC and correlation effect size magnitudes were interpreted using Rice and Harris' (2005) criteria with .56, .64, .71, representing small, medium and large effects, respectively. Results suggested that the ARB considered numerous factors for disposition determinations including risk-relevant information for criminal conduct, clinical and mental health factors, and treatment progress in the hospital (Tables 11-13). Overall, empirically supported risk factors were found to be predictive of ARB decision-making albeit not all to the same extent (i.e., not all risk factors predicted all hearings). Evidence also showed that the ARB may have identified and treated risk unrelated factors as less influential predictors (e.g., mental health diagnosis).

3.2.3.1 Criminogenic factors

Consistent with hypothesis 2.3.1, there were significant associations between LS/CMI total scores and ARB outcomes across sampled hearings. Similarly, average LS/CMI item scores computed for each hearing performed comparatively with total scores. Moreover, the number of LS/CMI subscales significantly associated with ARB dispositions increased across sampled hearings. This suggested that the ARB acquired and integrated more specific risk/need profiles over time. For instance, three subscales in the first hearing were significantly associated with release decisions (i.e., pro-criminal attitudes, antisocial orientation, and companions), whereas in the third hearing, this number doubled to six subscales. Moreover, pro-criminal attitudes, antisocial pattern, and companions (elements of the "Big Four") reliably emerged as significant predictors across sampled ARB hearings.

In relation to hypothesis 2.3.1, there was mixed evidence for expected effect size magnitudes for predictors of ARB decisions. AUCs and correlations generally yielded moderate to large effect sizes that exceeded chance probability in estimating decisions to release or detain using the risk instruments. For example, results showed that the HCR-20^{V3} and VRAG-R total scores were significant predictors with moderate to large effect size magnitudes, especially for the first hearing sampled. Despite these promising results, there were a minority of LS/CMI subscales that performed closer to chance level such as family and marital (AUC = .49-.58). This suggested that risk factors were not uniformly considered by the ARB and that there were

overlooked areas of risk relevant information that may have assisted with risk appraisal and its management.

Index offense severity was not significantly associated with dispositions despite being a correlate of detention length as found in Phase One. In other words, higher severity of index offense led to longer periods of custody but did not influence disposition status. It is unclear the reasons behind this paradoxical finding, as longer detentions should theoretically require a higher proportion of full warrant determinations. It is possible that index offense severity is a proxy for a collection of unexamined factors that weighed upon longer detention lengths.

3.2.3.2 Diagnoses, ARB factors, and institutional conduct

Diagnoses were generally poor predictors of dispositions for the first and second hearing sampled, however, personality disorders and the catch-all ‘other psychopathology’ category surfaced as significant predictors in the third hearing sampled. The reason may be that personality disorders were a proxy variable for antisociality, a risk-relevant factor and robust predictor of ARB decisions as discussed earlier. Conversely, the ‘other psychopathology’ category may have represented intractable conditions such as developmental disorders or cognitive disabilities that cap rehabilitative potential. Given the chronicity and severity of these types of mental health difficulties, the ARB may have been unable to enact release decisions due to poor rehabilitative projections and a lack of services that appropriately manage these conditions within the hospital or the community. Consequently, these NCR individuals may have been detained for reasons other than public safety risk. Due to the coding strategy, this study could not parse out different diagnoses within the ‘other psychopathology’ category for further investigation.

Broadly, institutional conduct was more germane to the second and third hearing sampled given that the first hearing had limited inpatient observation time available to inform RB decisions. Institutional violence, substance use, breach of conditions, and treatment non-compliance were all statistically significant correlates of ARB decisions following the first hearing sampled. Among these predictors, however, institutional violence produced the highest AUC values with a moderate effect size.

In terms of ARB factors, previous disposition status outperformed all predictors of interest in the third hearing sampled, $AUC = .89$, $r_s(99) = .68$, $p < .01$, but not for earlier hearings. This suggested that release decisions followed more liberal dispositions, which may

speaking to the stepwise approach that the ARB used to titrate levels of autonomy as noted in Phase One. Alternatively, given the influence of the previous disposition over the one being determined, it is also possible that the rate of change to dispositions slowed throughout the course of hospitalization resulting in inertia (i.e., full warrant leads to subsequent full warrants).

Table 3.11

Receiver Operator Characteristic Coefficients (AUCs) and Point-Biserial Correlations for the Study Instruments on the First Review Board Disposition Sampled

Covariates	AUCs	r_{pb}
<i>Criminological Factors</i>		
LS/CMI		
General risk/need	.76* [0.62, 0.90]	-.32**
Criminal history	.59 [0.42, 0.75]	-.18
Education/employment	.66 [0.47, 0.84]	-.21*
Family/marital	.49 [0.30, 0.69]	-.10
Leisure/recreation	.48 [0.24, 0.72]	.04
Companions	.74* [0.60, 0.89]	-.32**
Alcohol and drugs	.70 [0.49, 0.90]	-.15
Pro-criminal attitudes	.80** [0.69, 0.91]	-.31**
Antisocial patterns	.83** [0.73, 0.93]	-.32**
Average LS/CMI item score	.73* [0.52, 0.94]	-.23*
VRAG-R total score	.74* [0.58, 0.89]	-.24*
HCR-20 ^{V3} total score	.87*** [0.75, 0.98]	-.43**
Index offense severity	.56 [0.40, 0.73]	-.12
<i>Diagnoses</i>		
Psychotic spectrum disorder	.48 [0.26, 0.69]	-.14
Mood spectrum disorder	.58 [0.39, 0.78]	.02
Substance use disorder	.51 [0.29, 0.73]	.02
Personality disorder	.63 [0.45, 0.80]	-.17
Other	.38 [0.15, 0.61]	.15
<i>Review Board Factors</i>		
Previous disposition	--	--
Hearing number	.42 [0.18, 0.65]	.17
<i>Institutional Conduct</i>		
Violence	.56 [0.36, 0.76]	-.11
Suicidal ideation or intent	.53 [0.32, 0.74]	-.08
Breach of conditions	.53 [0.32, 0.74]	-.08
Substance use disorder	.51 [0.29, 0.73]	-.05
Treatment non-compliance	.54 [0.34, 0.75]	-.11

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.12

*Receiver Operator Characteristic Coefficients (AUCs) and Spearman Correlations for the Study**Instruments on the Second Review Board Disposition Sampled*

Covariates	AUCs	r_s
<i>Criminological Factors</i>		
LS/CMI		
General risk/need	.71*** [0.61, 0.82]	-.44**
Criminal history	.64* [0.52, 0.75]	-.31**
Education/employment	.64* [0.53, 0.75]	-.31**
Family/marital	.57 [0.45, 0.68]	-.19*
Leisure/recreation	.56 [0.44, 0.68]	-.07
Companions	.72*** [0.62, 0.82]	-.44**
Alcohol and drugs	.52 [0.41, 0.64]	-.13
Pro-criminal attitudes	.69*** [0.59, 0.80]	-.40**
Antisocial patterns	.74*** [0.64, 0.85]	-.45**
Average LS/CMI item score	.69** [0.57, 0.79]	-.40**
VRAG-R total score	.64* [0.53, 0.75]	-.29**
HCR-20 ^{V3} total score	.72*** [0.62, 0.82]	-.48**
Index offense severity	.52 [0.40, 0.64]	-.07
<i>Diagnoses</i>		
Psychotic spectrum disorder	.46 [0.34, 0.58]	.07
Mood spectrum disorder	.45 [0.33, 0.56]	.14
Substance use disorder	.48 [0.37, 0.60]	-.05
Personality disorder	.53 [0.41, 0.64]	-.14
Other	.58 [0.47, 0.70]	-.20*
<i>Review Board Factors</i>		
Previous disposition	.58 [0.46, 0.69]	.38**
Hearing number	.49 [0.37, 0.61]	-.17
<i>Institutional Conduct</i>		
Violence	.66** [0.55, 0.77]	-.42**
Suicidal ideation or intent	.54 [0.43, 0.66]	-.20*
Breach of conditions	.62* [0.50, 0.73]	-.31**
Substance use disorder	.61 [0.50, 0.73]	-.30**
Treatment non-compliance	.58 [0.47, 0.70]	-.29**

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.13

*Receiver Operator Characteristic Coefficients (AUCs) and Spearman Correlations for the Study**Instruments on the Third Review Board Disposition Sampled*

Covariates	AUCs	r_s
<i>Criminological Factors</i>		
LS/CMI		
General risk/need	.73*** [0.63, 0.84]	-.56**
Criminal history	.59 [0.47, 0.71]	-.21*
Education/employment	.67** [0.56, 0.78]	-.45**
Family/marital	.58 [0.46, 0.70]	-.25*
Leisure/recreation	.66* [0.54, 0.77]	-.34**
Companions	.65* [0.54, 0.77]	-.42**
Alcohol and drugs	.56 [0.44, 0.68]	-.22*
Pro-criminal attitudes	.73*** [0.62, 0.84]	-.47**
Antisocial patterns	.74*** [0.64, 0.85]	-.55**
Average LS/CMI item score	.72*** [0.62, 0.83]	-.38**
VRAG-R total score	.60 [0.48, 0.72]	-.26**
HCR-20 ^{V3} total score	.71*** [0.61, 0.82]	-.46**
Index offense severity	.55 [0.43, 0.67]	-.03
<i>Diagnoses</i>		
Psychotic spectrum disorder	.53 [0.41, 0.65]	-.13
Mood spectrum disorder	.44 [0.33, 0.56]	.10
Substance use disorder	.48 [0.36, 0.60]	-.002
Personality disorder	.62* [0.51, 0.74]	-.24*
Other	.60 [0.49, 0.72]	-.27**
<i>Review Board Factors</i>		
Previous disposition	.85*** [0.77, 0.94]	.68**
Hearing number	.64* [0.53, 0.75]	-.38**
<i>Institutional Conduct</i>		
Violence	.62* [0.50, 0.74]	-.33**
Suicidal ideation or intent	.52 [0.40, 0.65]	-.15
Breach of conditions	.60 [0.48, 0.72]	-.26**
Substance use disorder	.56 [0.43, 0.68]	-.19
Treatment non-compliance	.60 [0.48, 0.72]	-.30**

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

3.3 Phase Three: Forensic Risk Assessment Instruments

It is key to note that given the low recidivism base rates of the current sample, findings that lacked statistical significance were anticipated and thus a focus was placed on effect size magnitudes. Low recidivism rates may have reflected both the criminological profiles of the sample and conservative ARB practices that restricted community access until public safety risk was well managed. Overall, the distribution of scores among study instruments suggested that the sample was medium risk. Average LS/CMI total scores fell at the medium risk level according to the coding criteria, whereas the average VRAG-R total score fell at the 43rd percentile (Bin 4) as reported in the official scoring manual. HCR-20^{V3} subscale scores were comparable to those reported in the HCR-20^{V3} research bibliography by the instrument authors (Douglas et al., 2014). Descriptive statistics for mean scores and standard deviations are presented in Table 3.14.

3.3.1 Recidivism Base Rate

Noted previously, recidivism base rates were relatively low in the study sample. There were 10 general recidivist (9.17%) and five violent recidivists (4.59%) defined as reconvictions. There were 26 (23.85%) general recidivists and seven (6.42%) violent recidivists defined as rehospitalizations. Consequently, low recidivism base rates reduced the statistical power to detect an effect and the types of analyses compatible with the data. There were variable follow-up times with an average of approximately eight years ($M = 7.80$ years, $SD = 2.24$ years). Follow-up began at the earliest unsupervised privilege and ceased at recidivism, or for non-recidivists, at the time of outcome data collection or mortality. Comparing the current sample to the NTP (Charette et al. 2015), general recidivism rates in Alberta were similar to BC (9.5%) and ON (9.3%), but not QC (21.5%). This suggested that low recidivism rates may be common among some Canadian NCR populations, especially compared to a general offender population (34%; Johnson & Grant, 2000) and MDOs (70%; Villeneuve & Quincey, 1995).

Table 3.14

Descriptive Statistics: Means and Standard Deviations for the Study Instrument Scores

Risk Instrument	M (SD)
HCR-20 ^{V3} Total	23.18 (8.39)
HCR-20 ^{V3} Historical	11.93 (3.99)
HCR-20 ^{V3} Clinical	4.30 (3.03)
HCR-20 ^{V3} Risk Management	4.81 (2.92)
VRAG-R Total	-6.12 (18.81)
LS/CMI Total	14.90 (8.59)
LS/CMI Criminal History	3.28 (2.20)
LS/CMI Education/Employment	2.83 (2.77)
LS/CMI Family/Marital	1.05 (1.03)
LS/CMI Leisure/Recreation	.45 (7.36)
LS/CMI Companions	2.39 (1.08)
LS/CMI Alcohol/Drugs	1.99 (2.22)
LS/CMI Pro-Criminal Attitude	1.39 (1.53)
LS/CMI Antisocial Patterns	1.51 (1.40)

3.3.2 Reliability

For interrater reliability, ICCs were computed for the LS/CMI on 22 (20%) randomly selected cases. An ICC of .99 suggested that there was strong agreement between raters on the LS/CMI for Phase Three, and also provided evidence of interrater reliability for Phase Two LS/CMIs coded for ARB decision-making. Interrater reliability was not determined for the VRAG-R and HCR-20^{V3} as data for these instruments were collected from an extant database. There was adequate internal consistency across study instruments as shown by a Cronbach Alpha coefficient above .70 (Nunnally & Bernstein, 1978) for the LS/CMI (.99), VRAG-R (.82), and HCR-20^{V3} (.87).

3.3.3. Convergent Validity

Pearson and Spearman correlations were computed to determine convergent validity for total scores and ordinal risk levels (Table 3.18) across study instruments. As anticipated (hypothesis 3.1.1), medium to large positive correlations were observed across study instruments for both the total scores and ordinal risk levels. The LS/CMI had the strongest association with the VRAG-R, $r(109) = .72, p < .001$, whereas the HCR-20^{V3} had the strongest association with the LS/CMI, $r(102) = .66, p < .001$. Furthermore, the correlation between LS/CMI and HCR-20^{V3} domain scores generally demonstrated significant moderate to strong effect size magnitudes (Table 3.15). Similarly, there were significant positive associations between ordinal risk levels among the study instruments (Table 3.16). The LS/CMI again had the strongest association with the VRAG-R, $r_s(109) = .70, p < .001$, whereas the HCR-20^{V3} showed stronger associations with its own SRRs. These results suggested that study instruments evidenced strong concordance in the measurement of a common latent risk construct.

Table 3.15

Pearson Correlation between LS/CMI and HCR-20^{V3} Domain Scores

	HCR-20 ^{V3} Domain Scores		
	Historical	Clinical	Risk Management
<i>LS/CMI Domain Scores</i>			
Criminal history	.63**	.32**	.34**
Education/employment	.37**	.39**	.38**
Family/marital	.16	.20*	.23*
Leisure/recreation	.07	.16	.14
Companions	.41**	.41**	.47**
Alcohol and drugs	.46**	.22*	.24*
Pro-criminal attitudes	.39**	.48**	.44**
Antisocial patterns	.57**	.47**	.46**

Note. * $p < .05$. ** $p < .01$.

Table 3.16

Spearman Correlation among Ordinal Risk Levels of Study Instruments

	LS/CMI	VRAG-R	HCR-20 Case Prioritization	HCR-20 Serious Physical Harm	HCR-20 Imminent Violence
LS/CMI		.70***	.52***	.44***	.43***
VRAG-R			.46***	.42***	.39***
HCR-20 Case Prioritization				.61***	.71***
HCR-20 Serious Physical Harm					.61***

Note. *** $p < .001$.

3.3.4 Predictive Validity

ROCs, point-biserial and Spearman correlations, descriptive statistics, and Kaplan-Meier survival curves were computed to examine the predictive validity of the study instruments (Table 3.17). Mixed evidence was found for hypothesis 3.2.1, as study instruments produced moderate to large effect size magnitudes but did not uniformly yield statistical significance for both general and violent recidivism. For general recidivism, only the LS/CMI total score evidenced statistically significant AUC (.70) and correlation (.24) metrics among instrument total scores. At the LS/CMI subscale level, significant AUCs with large effect sizes were observed for criminal history (.73), pro-criminal attitudes (.71), and antisocial attitudes (.70). Family and marital produced AUCs with a medium effect size, whereas small effects were observed for the remaining subscales including education and employment, leisure and recreation, and alcohol and drugs. Despite the absence of statistical significance, medium AUC magnitudes were still observed for general recidivism for the VRAG-R (.66) and HCR-20^{V3} (.68). As such, these results demonstrated that the instruments still performed well above chance probability in the identification of recidivists and non-recidivists.

For violent recidivism, total scores across study instruments yielded comparable performance indexes with large effects (AUCs = .70-.81) observed for the LS/CMI, HCR-20^{V3}, and VRAG-R. Given that the HCR-20^{V3} and VRAG-R risk instruments were purpose-built for violent recidivism, it was not unexpected that the observed predictive performance would exceed that of general recidivism. For ordinal risk levels, HCR-20^{V3} SRRs (Case Prioritization, Serious Physical Harm, and Imminent Violence) also evinced large predictive effect magnitudes (AUCs = .83-.90). The pooled reconviction and rehospitalization outcome did not produce notable differences in predictive performance across the study instruments for either general or violent recidivism.

Survival analysis of the LS/CMI illustrated a clear pattern of reoffending that corresponded to risk level for general recidivism (Figure 3.4) and violent recidivism (Figure 3.5). The high-risk group possessed the steepest survival curve with a 10% recidivism rate after three years. Conversely, the very low risk group produced a flat survival curve with no instances of recidivism for the entire follow-up period. Log rank pairwise comparisons illustrated a significant difference in survival distributions between LS/CMI risk levels for violent recidivism, but not general recidivism (Table 3.19). In general, observed rates of recidivism defined as

reconvictions increased as a function of risk level. Table 3.18 illustrated absolute general and violent recidivism rates by LS/CMI risk level. Taken as a whole, evidence supported the predictive validity of study instruments for Canadian NCR populations especially in the prediction of violent recidivism.

Table 3.17

*Receiver Operator Characteristic Coefficients (AUCs) and Point-Biserial Correlations for**General and Violent Recidivism across Study Instruments*

Total and Subscale Scores	General Recidivism		Violent Recidivism	
	AUCs	r_{pb}	AUCs	r_{pb}
<i>LS/CMI</i>				
General risk/need	.70* [0.53, 0.86]	.24**	.81*[0.71, 0.93]	.26*
Criminal history	.73* [0.58, 0.88]	.25**	.88** [0.79, 0.97]	.31**
Education/employment	.52 [0.35, 0.69]	.02	.58 [0.37, 0.79]	.05
Family/marital	.66 [0.49, 0.83]	.20*	.67 [0.49, 0.85]	.12
Leisure/recreation	.55 [0.36, 0.75]	.07	.67 [0.41, 0.94]	.17
Companions	.64 [0.43, 0.84]	.15	.76* [0.54, 0.98]	.21*
Alcohol and drugs	.58 [0.38, 0.78]	.16	.51 [0.25, 0.78]	.04
Pro-criminal attitudes	.71* [0.53, 0.90]	.25**	.91** [0.84, 0.98]	.35**
Antisocial patterns	.70* [0.54, 0.86]	.23*	.83** [0.71, 0.96]	.27**
<i>VRAG-R</i>	.66 [0.48, 0.83]	.16	.79*[0.66, 0.93]	.22*
<i>HCR-20^{V3}</i>				
Case prioritization	.66 [0.47, 0.84]	.17	.90**[0.83, 0.97]	.31**
Serious physical harm	.57 [0.37, 0.78]	.08	.84**[0.70, 0.98]	.25**
Imminent violence	.68 [0.49, 0.88]	.22*	.83*[0.60, 1]	.29**

Note. * $p < .05$. ** $p < .01$.

Table 3.18

Absolute Recidivism Rates by LS/CMI Risk Level for General and Violent Recidivism

LS/CMI Risk Level	Sample <i>n</i>	General Recidivism <i>n</i> (%)	Violent Recidivism <i>n</i> (%)
Very Low	10	0 (0%)	0 (0%)
Low	35	2 (5.7%)	0 (0%)
Medium	27	1 (3.7%)	0 (0%)
High	30	5 (16.7%)	4 (13.3%)
Very High	7	2 (28.6%)	1 (14.3%)
Total	109	10 (9.2%)	5 (4.6%)

Table 3.19

Log Rank Chi-Squared Values for Pairwise Comparisons of Recidivism Survival Curves

	Chi-Square	df	<i>p</i>
General Recidivism	8.31	4	.08
Violent Recidivism	10.74	4	.03

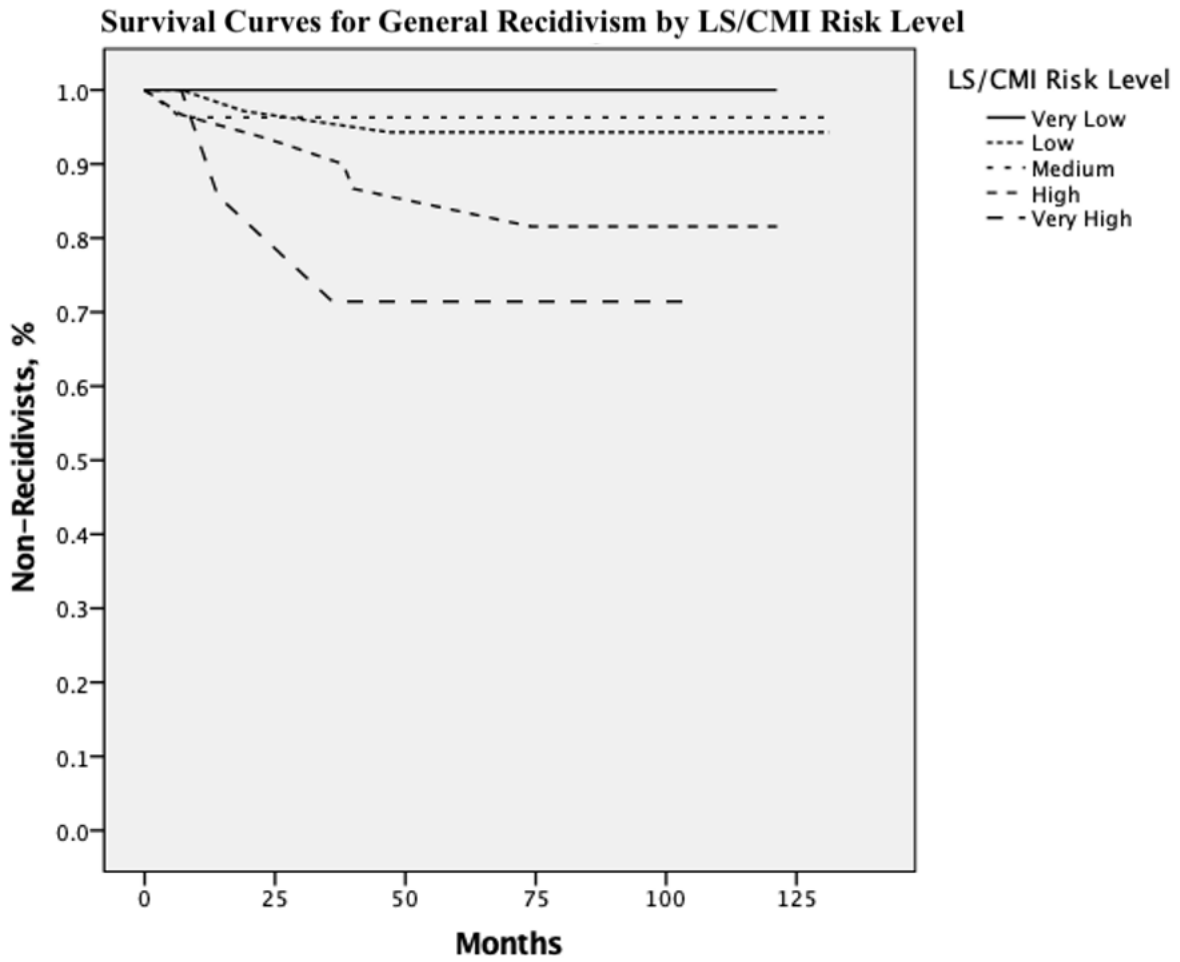


Figure 3.4

Survival Curves for General Recidivism by LS/CMI Risk Level

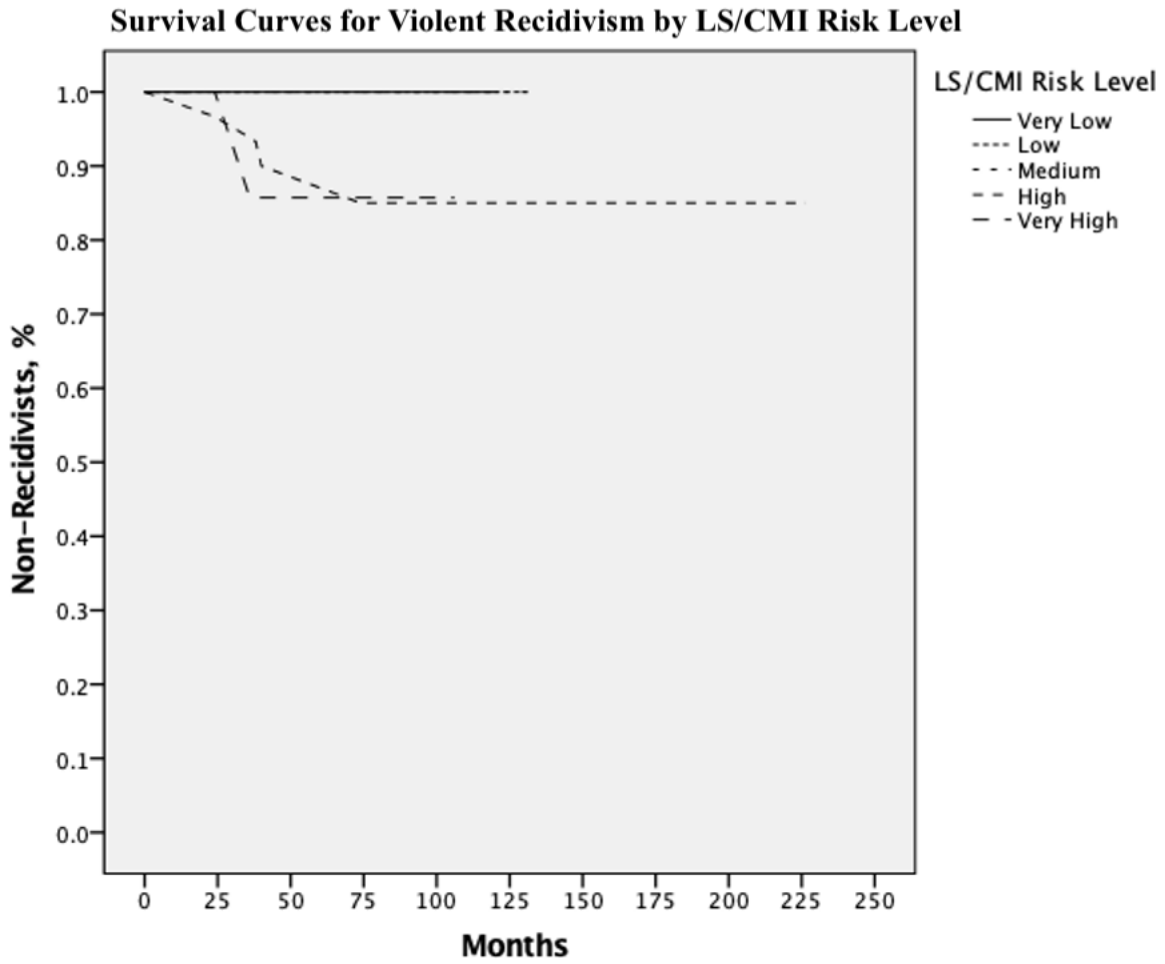


Figure 3.5

Survival Curves for Violent Recidivism by LS/CMI Risk Level

Chapter 4: DISCUSSION

4.1 Overview

The primary aim of this research was to determine whether the RB system in Alberta fulfilled its federal mandate to oversee those NCR, examine the implications of its practices, and to compare them with other provinces. Research on NCR populations is limited compared to the rest of forensic literature, and is especially the case with Canadian RB practices and forensic risk assessment instruments with MDOs. The delicate balance between the protection of public safety and the need for offender reintegration is the central task of all tribunals that oversee custody. To assist forensic mental health systems, forensic professionals, and tribunal decision-making, the current research examined the process by which NCR individuals moved through a provincial RB system and if RB stewardship was aligned with its federal responsibilities. Further, it was a goal of this research to understand how risk or legislatively relevant information entered RB decisions, and whether risk instruments may assist with fair and empirically based release and security management practices.

Participants were a cohort of 109 individuals deemed NCR between 2005 and 2010 that were followed-up until the end of 2015. There were 327 nested ARB hearings sampled throughout ARB supervision for each case. This study employed a retrospective longitudinal design that used archived hospital records to achieve the overarching research aim across three phases. The sample was measured at moderate risk to reoffend with a relatively low base rate of recidivism compared to a general offender population. The demographic and criminological features of the sample were consistent with research on the Canadian NCR population (Crocker et al., 2015b; Latimer & Lawrence, 2006) and study instruments including the VRAG-R (Rice et al., 2013), HCR-20^{V3} (Douglas et al., 2014), and LS/CMI (Andrews et al., 2004). There were some key differences in the development samples used for the study instruments compared to the current sample. For instance, the current research used an entirely NCR sample that featured high rates of psychotic disorders and lengthy psychiatric histories. Although the VRAG-R and HCR-20^{V3} have been validated on forensic psychiatric populations with some composition of NCR participants, research on the LS/CMI with MDOs did not appear to have the same level of exposure. Still, research findings on study instruments may be generalizable to other Canadian forensic psychiatric settings. Given that only one province was examined, however,

generalizability of results to other provinces and internationally may be reduced on RB trajectories, outcomes, and decision-making.

4.2 Phase One: Trajectories and Outcomes of NCR Individuals Under the ARB.

Overall, it was discovered that the ARB aligned their practices with federal legislation but also deviated in unique ways compared to provincial partners. Length of detention was associated with both risk/legislatively relevant and irrelevant information as previously found (Crocker et al., 2014; Crocker et al., 2015c; Crocker et al., 2011; Latimer & Lawrence, 2006). For instance, higher index offense severity, longer criminal history, and the presence of a psychotic disorder were linked with longer hospitalization. This may speak to an aspirational adherence to federal mandates in decision-making practices that were latently influenced by factors such as the social perception of justice (Wilson et al., 2015), victim advocacy (Goossens et al., 2018), and decision-making biases (Denomme et al., 2020; Hilton & Simmons, 2001). Results also showed that the ARB system systematically titrated autonomy through privileges and conditions paired with dispositions to gauge readiness for social reintegration and public safety risk. The distribution of privileges and conditions assigned by the ARB shared similarities and discrepancies with British Columbia (BC), Quebec, and Ontario (Crocker et al., 2015c). In keeping with other provincial RBs, NCR individuals in Alberta typically initiated RB supervision with grounds or community access privileges and progressed to community accommodations as they demonstrated therapeutic progress and reductions in public safety risk. As for specific interprovincial comparisons, enacting community accommodations under a full warrant was a ARB practice shared by the Ontario RB (ORB) but not others. Conversely, the sparing use of restrained victim contact was similar only to Quebec RB (QRB) practices. Additionally, routine weapons restrictions in Alberta was a practice common to the BC RB but not other provinces.

Although release rates from detention were not linear, NCR individuals in Alberta were gradually transitioned into the community over time with approximately half of the sample still under ARB supervision after 10 years. Furthermore, NCR individuals spent the majority of their warrant under ARB supervision detained instead of in the community. Comparing current findings to those by Crocker et al. (2015c), detention length under the ARB mirrored those in Ontario after one-year (ORB = 90%; ARB = 83%), but resembled those in BC after five-years (BC RB = 47%; ARB = 53%). Supervision rates in Alberta were similar to Ontario after one-

year (ORB = 92%; ARB = 93%) but not after five-years (ORB = 53%; ARB = 70%). Notably, the proportion of individuals under ARB supervision after five-years was the highest among provinces examined. Together, results suggested that Alberta possessed distinct management practices that shaped the trajectories and outcomes of NCR individuals, and showcased conservative practices that resembled those in Ontario after the first year of oversight. After five years, however, Alberta demonstrated a focus on community rehabilitation similar to BC but uniquely extended time under supervision to the longest duration observed among provinces. Further to ARB practices, there was a difference in detention length between individuals of White and Non-White ancestry as the White group spent an average of three less years detained despite no between group differences in demographic and criminological profiles. The reasons were unclear behind these results; however, latent decision-making biases may have entered determinations of dangerousness (Garb, 1997). It may also be relevant to note that ancestry can be a proxy for systemic barriers to recovery such as low socioeconomic status, fewer monetary and social resources, and immigration status. These factors were not explicitly explored in the current study but may offer some possible rationale for the findings.

From an operational standpoint, evidence supported the ARB in their interpretation and application of federal law in keeping with research on Canadian RBs (Latimer & Lawrence, 2006). The ARB was attuned to their responsibility to oversee mental health treatment, as individuals with psychotic disorders were less likely to be released than those with mood disorders. These results converged with research by Crocker et al. (2015b), and highlights how psychotic disorders may be a proxy for higher mental health severity or chronicity. Consistent with other studies (Crocker et al., 2015c; Hilton & Simmons, 2001; Hilton et al., 2016; Latimer & Lawrence, 2006; McKee et al., 2007), there was strong agreement between clinician and ARB recommendations which illustrated the reliance of the ARB on the expertise of specialized forensic psychiatric service providers. Alberta had the lowest percentage of agreement after the first hearing (62.4% to 66%) compared to other provinces (83.5% to 92%) and higher rates of restrictive clinician recommendations (11% to 22%) than other provinces (6.9%). As expected, the ARB also had a composition of attendees and rationale for their hearings consistent with federally mandated practices. There were key differences noted from the findings by Crocker et al. (2015c), as the interdisciplinary climate of ARB hearings resembled those in BC but not Ontario and Quebec. Furthermore, the ARB uniquely had the highest rates of family and victim

attendance relative to other provinces. The rationale for calling ARB hearings also differed from other provinces in that they occurred primarily due to a post-NCR verdict (86.2%) or federally mandated annual hearing (93%). The next highest number of hearings due to a post-NCR verdict was in Quebec with 33.7%, whereas for the annual hearing rationale in Ontario was the next highest at 67.7%. Overall, results suggested that the ARB possessed idiosyncratic operational practices from other provinces despite some overlap, and that it tended to hold a more conservative approach or higher risk threshold in the management of most NCR cases.

4.3 Phase Two: Predictors of ARB Decision-Making.

Results showed that the predictors of ARB decision-making were largely consistent with federal mandates to uphold public safety while facilitating social reintegration. Risk instruments were present at ARB hearings albeit not uniformly as the frequency of usage increased throughout supervision (54% to 92%), with the HCR-20 scales being the most commonly used tools. The prevalence of risk instruments available at ARB hearings exceeded other provinces examined by the NTP (17%; Crocker et al., 2014), and independent investigations in Ontario (e.g., 71%; Hilton et al., 2016). This finding suggested that forensic professionals in Alberta potentially espoused the use of risk instruments in clinical practice to a greater extent than other Canadian provinces examined.

Although risk and legislatively relevant information was supplied to the ARB for disposition determinations via clinical reports, several risk factors germane to public safety were absent. Given that only half of the LS/CMI item pool was scorable, mixed evidence was reported from this study on the risk-relevant content provided to the ARB. These findings converged with previous research that found under half of the HCR-20 and VRAG item pools considered in clinical reports submitted to RBs (Hilton & Simmons, 2001; Wilson et al., 2015). Others have found large discrepancies between risk factors identified by risk instruments and factors that actually predicted clinician recommendations (Côté et al., 2012). As such, the current data highlighted a possible disconnect between the consideration of risk factors and the communication of such information by forensic professionals. From there, however, another issue arises where risk information communicated by forensic professionals may not always be understood and applied as intended (Batastini et al., 2018, Batastini et al., 2019). For instance, Batastini et al. (2019) found that the format of risk communication changed the perceived likelihood of recidivism. Specifically, numeric methods of risk communication lowered

perceived risk compared to categorical (e.g., low risk) and action-oriented (e.g., identification of treatment targets) formats, but were still higher than the original risk level reported by the expert. RBs rely on expert testimony on recidivism risk (Crocker et al., 2014), and the recommendations formulated by forensic professionals are key to the process of how risk-relevant information ultimately arrive or are translated to RBs (Martin & Martin, 2016). Due to the limitations of file review, it was unclear whether missed risk factors in clinical reports were addressed at ARB hearings during testimony. Results still provided evidence, however, of a potential gap between empirically supported risk factors and the integration of this knowledge into clinical practice.

Current results provided evidence that uniquely supported the ARB in enacting evidence-based disposition decisions. Despite apparent gaps in risk-relevant information supplied to the ARB, dispositions were systematically informed by criminal risk level as those at higher risk were assigned more restrictive outcomes and those at lower risk were assigned more liberal outcomes. In other words, detained and released individuals differed in risk levels identified by risk instruments in keeping with recent studies (Crocker et al., 2014; Hilton et al., 2016), but not earlier research (Hilton & Simmons 2001; McKee et al., 2008). These data offered one explanation on the low recidivism rates observed in Alberta – the ARB formulated evidence-based decisions for a group of moderate risk offenders that were conservative by comparison to other provinces in service of public safety.

As anticipated, predictors of ARB decision-making included risk/legislatively relevant information on criminal conduct, clinical and mental health factors, and treatment progress in the hospital. Criminogenic risk and need factors represented by LS/CMI subscales and total score predicted the dispositions of sampled ARB hearings. Specifically, pro-criminal attitudes, antisocial pattern, and antisocial companions consistently emerged as decision-making predictors with moderate to large effect size magnitudes. The HCR-20^{V3} and VRAG-R were also predictors of ARB decision-making, which together demonstrated convergence among risk instruments on the static and dynamic risk factors considered by the ARB in line with studies on other provinces (Crocker et al., 2014; Hilton et al., 2016; Wilson et al., 2016). Combined with other study results, the critical conclusion was that the best predictors of ARB decision-making included factors that produced the largest AUC values in the prediction of general and violent recidivism. Several static factors were exceptions to this finding, as the LS/CMI criminal history subscale was a predictor of general (AUC = .73) and violent (AUC = .88) recidivism, but not to the same extent

for ARB decision-making (AUC = .59-.64). A similar pattern was noted for the VRAG-R in terms of the discrepancy between the predictive performance for recidivism versus decision-making.

Although static factors such as those represented by the VRAG-R and LS/CMI criminal history subscale predicted ARB dispositions, dynamic factors such as violent institutional conduct and the LS/CMI education and employment subscale yielded larger AUC magnitudes of effect. Dynamic factors became increasingly influential to ARB decisions as time under supervision passed and release likelihoods increased (Crocker et al., 2014), which suggested that the ARB revised dispositions in accordance with treatment changes and risk level adjustments. Further, increased RB sensitivity to dynamic factors may also have showcased the desire for a window of risk estimation closer to the present as opposed to long-term. As dynamic factors increased in emphasis, static factors diminished in predictive performance for ARB decision-making as illustrated by the gradual reduction in VRAG-R AUCs across sampled hearings. Index offense severity and diagnoses were not predictors of ARB decisions counter to other studies (Crocker et al., 2014; Hilton & Simmons, 2001; Wilson et al., 2015), which combined with the focus on dynamic factors, further demonstrated that ARB dispositions were informed by both rehabilitation potential and empirically supported risk factors. As defined by the LS/CMI, mental health variables are not relevant to criminogenic risk and need. Other tools such as the HCR-20^{V3}, however, integrate psychiatric information into risk formulations. There is debate on the risk-relevance of mental disorders, but it may at least be considered a key responsivity factor per the RNR model to improve treatment engagement toward risk management.

A distinct decision-making challenge for RBs is in the management of NCR individuals with intractable mental health concerns such as developmental disorders and cognitive disabilities. These cases sometimes require RBs to block or extend time to release due to the scarcity of specialized community services critical to risk management. For instance, individuals with profound cognitive disabilities may be ready for community reintegration but hospitalized for years due to long wait times for services contingent on funding or availability. In these cases, RBs and clinicians may be required to advocate to different levels of government and organizations for appropriate assistance to help those with independence difficulties. Further, the absence of specialized hospital resources and facilities that address the needs of those with cognitive disabilities results in a strain on other hospital services ill equipped to provide

appropriate care – sometimes at the cost of rehabilitative success for NCR individuals. These challenges illustrate the practical barriers that RBs may encounter when executing their legislated demands. These barriers also offer an explanation aside from bias as to why RBs may detain individuals past the point when they would otherwise receive a conditional or absolute discharge when risk is managed. Despite these exceptional cases, the overall body of evidence showed promise in the ability of the ARB to identify relevant and irrelevant risk factors and make decisions grounded in information theoretically and empirically relevant to public safety risk and the charter rights of NCR individuals.

4.4 Phase Three: Forensic Risk Assessment Instruments.

Results demonstrated strong interrater reliability for the LS/CMI and strong convergent validity among study instruments, especially between the LS/CMI and VRAG-R. All study instruments yielded strong predictive magnitudes at the total score level for violent recidivism with the LS/CMI holding the highest AUC value (.81). LS/CMI total score may have been driven in part by the performance of the pro-criminal attitudes and criminal history subscales. For ordinal risk levels, HCR-20^{V3} SRRs predicted both general and violent recidivism with Case Prioritization being the strongest predictor (AUC = .90). For general recidivism, study instruments produced lower AUC magnitudes relative to violent recidivism as only the LS/CMI total score emerged as a significant predictor. As discussed previously, low base rates may have hindered the statistical power to detect an effect. Still, AUC metrics for both total and ordinal risk levels suggested that study instruments discriminated above chance probability between recidivist and non-recidivists for general recidivism.

Moderate to large predictive magnitudes observed among study instruments were comparable to other research that examined their discrimination properties for general offenders and MDOs. For instance, the current findings for both general and violent recidivism coincided with results from recent studies on the VRAG-R and HCR-20^{V3} on MDOs (Hogan & Olver, 2019) and a mixed-sample meta-analysis on the LS/CMI with 124 samples and 130,833 offenders (Olver et al., 2014). Notably, larger AUCs for HCR-20^{V3} SRRs in the prediction of violent recidivism were found in the current research compared to those by Hogan and Olver (2019) on a similar sample. In general, the current study supported the predictive validity of the HCR-20^{V3} with strong statistical metrics that exceeded those from the development sample (Douglas et al., 2014). For the VRAG-R, AUCs for general (.66) and violent (.79) recidivism

were largely consistent with results from a systematic review (Harris et al., 2015) and outperformed the development study by Rice et al. (2013) for violent recidivism (.75). For the LS/CMI, the current research also found larger AUCs for general and violent recidivism than those reported by a recent study by Olver and Kingston (2018) on MDOs.

With regard to calibration properties, the current study found a rate of general recidivism for the High and Very High risk group that was approximately one-third of the LS/CMI normative sample (Andrews et al., 2004) and half that of the MDO correctional sample by Olver and Kingston (2018). The Medium risk group from the current research also recidivated at a substantially lower rate compared to the above samples, whereas the Very Low and Low risk groups were generally on par. For violent recidivism, recidivism rates from the current study largely converged with those reported by Olver and Kingston (2018). One difference was that there were no recidivists in the Very Low to Medium risk group from the current research, whereas for Olver and Kingston (2018) rates fell between 2.4-5.4%, respectively.

The general pattern of results supported the application of risk instruments in the appraisal and management of recidivism with predictive magnitudes commensurate to studies from instrument authors in some cases. By extension, these data supported the utility of risk instruments as a part of evidence-and-legally based decision-making for forensic professionals and tribunals alike. One applied problem as identified by this research may be the linkage between the consideration and communication of relevant risk factors by forensic professionals. As found in Phase Two, risk instruments were routinely present at ARB hearings; yet, risk-factors were inconsistently identified in clinical reports supplied to the ARB. A possible explanation may be that comprehensive risk assessments are time intensive and forensic professionals are given insufficient time or notice to deliver these services. Risk assessments then compete with other clinical demands, which lead to risk instruments being appended to a clinical report without a systematic analysis or narrative of risk factors germane to a risk appraisal. Alternatively, the use of a risk instrument without an appropriate written interpretation may have elucidated a broader forensic training issue in need of competency benchmarks or continued education. From a policy standpoint as suggested by others (Wilson et al., 2015), it may be reiterated that guidelines on structured risk assessments relevant to treatment planning and public safety may bolster evidence-based and optimized decision-making for RBs and forensic professionals.

4.5 Strengths and Limitations

There were some noteworthy strengths of the current research. First, this endeavor represented one of few independent investigations of Canadian RBs in the literature and the first to examine this issue in Alberta. As such, a valuable contribution is made on the state of forensic research translation into field application, decision-making, and policy in Canada. Second, this study used a large sample that was five participants short of a population cohort. Consequently, this research presented a panel of findings resistant to sampling error that may have yielded greater accuracy in results. Third, this study added to the paucity of validation research on the HCR-20^{V3}, VRAG-R, and LS/CMI on Canadian NCR populations. In particular, the current study is the first to examine the validity of the LS/CMI with an entirely NCR sample to extend its evidence base and applicability beyond heterogenous MDO samples.

Potential limitations were also identified in this research. First, archival methodology may not have captured data relevant to analyses and conclusions. For example, risk-relevant information discussed during RB hearings were not always tracked within files which reduced insight into areas such as data gathering techniques employed by RBs and forensic testimony. Furthermore, risk instruments were scored exclusively with file review information which precluded valuable clinical interview and collateral data sources that may have influenced scores and instrument validity. It is important to note that risk instruments are only one aspect of a fulsome risk assessment and may not have reflected the final risk formulation. Moreover, protective factors were not considered by the current research and may have impinged on RB decision-making. Second, as discussed earlier, this study examined one jurisdiction and thus the generalizability of results to other Canadian RBs may be reduced given idiosyncratic RB practices. Consequently, RB decision-making may be a phenomenon that requires careful replication across jurisdictions to accurately conclude whether federal mandates are fulfilled across Canada. Third, forensic mental health systems, the Canadian NCR population, and Canadian legislation may have changed since the time period investigated in this research and thus the findings may not have represented current practices. Indeed, 2014 amendments to the CCC that prioritized public safety over social reintegration may have influenced RB decision-making in a conservative direction, but this has yet to be determined. Fourth, only select RB hearings were sampled for the study rather than exhaustively investigated. Although it is anticipated that sampled hearings provided an adequate depiction of RB activities, sampling

error may have influenced the data quality and conclusions derived in this research. Last, the sample characteristics may not be similar to all offender groups, which limited the generalizability of the findings. For instance, the sample had a disproportionately low number of females in the sample which precluded analyses on the influence of sex as a variable – especially in RB decision-making.

4.6 Future Directions

Although this research added to our understanding of RB systems and forensic risk assessment instruments, it has also defined a range of areas for future study. For instance, research has yet to examine how RBs *intentionally* synthesize information given the absence of interview and survey data on RB members themselves. Another area for future study revolves around recidivism criteria. Rehospitalizations may mask possible charges or convictions for individuals made NCR during community rehabilitation, hence, lowering detection rates of recidivism based on traditional criteria. Continued work on reliable definitions of recidivism may prove fruitful for forensic research on the predictive validity of risk factors, efficacy of correctional intervention, and optimal forensic decision-making practices that dampen violence risk.

Future research may consider an investigation of RB decision-making in understudied provinces given that interprovincial disparities in RB practices may limit the generalizability of current research. Future investigations would also profit from an examination of discussion content in RB hearings and the deliberation process thereafter. This extension would provide a richer portrait of RB decision-making and address limitations inherent in file review methodology such as incomplete information. RB perceptions of risk assessment instruments and clinical recommendations also merits investigation as it may reveal gaps in understanding on the utility of forensic psychological research and identify opportunities for knowledge translation. The current research found a difference in detention length between ancestral groups, but reasons were unclear behind this finding as there were no statistically significant differences in other demographic or criminological factors. As such, future studies may examine latent RB decision-making biases around perceived dangerousness (e.g., Garb, 1997; Hilton & Simmons, 2001), barriers to successful rehabilitation (e.g., Salem et al., 2015; 2016), and other socio-psychological factors not identified in this study. For instance, mental health severity and access to healthcare or legal resources are factors that may help explain detention length differences

aside from bias. In the future, the influence of ancestry on detention length may also be readily examined in other researched provinces given the extensive NTP database. Further study on the impact of rehospitalization on RB decision-making would provide insight into how risk thresholds are revised after release failure and its subsequent effect on trajectories under RB supervision. As others have found (Wilson et al., 2016), dynamic factors such as the Clinical subscale in the HCR-20 were emphasized for rehospitalized patients compared to successfully reintegrated individuals.

The incremental validity of risk factors on RB decisions, and their implications, is also an area of further study to understand the relative weights and risk thresholds that RBs follow. Future studies may also examine actual recidivism rates compared to theoretical recidivism rates with specific risk cut-offs as studied by McKee et al. (2007). By extension, research on the utility of structured release guidelines may assist decision-makers with the difficult task of integrating risk relevant information with their federal responsibilities. Given the emphasis on social rehabilitation in federal law, it is also important to evaluate how interventions that target criminogenic needs are delivered in the management and reduction of risk. The rehabilitative drive behind RBs is observed in dispositions that assign treatment conditions, however, the extent to which this applies beyond traditional pharmacotherapy or mental health treatment is unclear. Future studies may examine the ties between risk-relevant information and the security management practices of treatment teams. As security level often dictates access to privileges and services relevant to rehabilitation, research on security transfer decisions may reveal how forensic professionals consider risk-relevant information in balancing individual welfare and institutional safety. The implications of these security transfer decisions may bear upon RB decisions on privileges, conditions, and dispositions.

Other research areas that require further examination include the predictive validity of risk assessment instruments with inpatient aggression across varied follow-up times and to determine optimal assessment intervals as suggested by Hogan and Olver (2019). The current research supported the predictive validity of the HCR-20^{V3}, VRAG-R, and LS/CMI with an NCR sample, however, more research is needed to establish the link between changes in dynamic risk factors and recidivism. Incremental validity analyses of varied risk instruments and risk factors may also prove fruitful to assist with the risk appraisal and management of NCR populations. As

research on risk assessment instruments continues to grow, the position may strengthen behind its utility to inform forensic decision-making practices.

4.7 Conclusions

The custody and management of NCR populations are administered independently across jurisdictions despite being federally legislated, and research is limited on how RBs vary in their efforts to balance public safety and social reintegration across cases, settings, and provinces. Evaluating the balance of public safety risk and social reintegration needs is a substantial undertaking, but improvements in RB decision-making and forensic risk assessment instruments means optimized correctional/mental health programming, resource allocation, and ultimately, the reduction of recidivism risk. Results suggested that ARB practices were largely aligned with their legislated mandate, however, there were also deviations that highlighted the influence of risk unrelated information in decision-making. Evidence supported the predictive validity of risk assessment instruments, especially for violence, and its utility to guide risk appraisals and its management. Further research is required on RB decision-making practices across understudied provinces, risk related and unrelated predictors of RB decision-making, and the psychometric properties of risk assessment instruments with Canadian NCR populations. The current research endeavored to assist local and national efforts that plan, coordinate, and deliver evidence-and-legislatively informed forensic mental health services. The formation of policies that promote adherence to structured risk assessments may further assist RBs and forensic professionals to offset public safety risk and promote the social reintegration of those NCR.

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Appendix A

Historical Clinical Risk Management - Version 3 Items (HCR-20^{V3}; Douglas, Hart, Webster, & Belfrage, 2011).

Historical Scale
H1. Violence
H2. Other antisocial behavior
H3. Relationships
H4. Employment
H5. Substance use
H6. Major mental disorder
H7. Personality disorder
H8. Traumatic experiences
H9. Violent attitudes
H10. Treatment or supervision response
Clinical Scale
C1. Insight
C2. Violent ideation or intent
C3. Symptoms of major mental disorder
C4. Instability
C5. Treatment or supervision response
Risk management scale
R1. Professional services and plans
R2. Living situation
R3. Personal support
R4. Treatment or supervision response
R5. Stress or coping

Appendix B

Level of Service – Case Management Inventory Items (LS/CMI; Andrews, Bonta, & Wormith, 2004)

Criminal History
1. Any prior youth dispositions (number ___) or adult convictions (number ___)?
2. Two or more prior youth/adult dispositions/convictions?
3. Three or more prior youth/adult dispositions/convictions?
4. Three or more present offences (number ___)?
5. Arrested or charged under age 16?
6. Ever incarcerated upon conviction?
7. Ever punished for institutional misconduct or a behavior report (number ___)?
8. Charge laid, probation breached, or parole suspended during prior community supervision?
Education/Employment
9. Currently unemployed?
10. Frequently unemployed?
11. Never employed for a full year?
12. Less than regular grade 10 or equivalent?
13. Less than regular grade 12 or equivalent?
14. Suspended or expelled at least once.
15. Participation/performance.
16. Peer interactions.
17. Authority interaction.
Family/Marital
18. Dissatisfaction with marital or equivalent situation.
19. Nonrewarding, parental.
20. Nonrewarding, other relatives.
21. Criminal-family/spouse.
Leisure/Recreation
22. Absence of recent participation in an organized activity.
23. Could make better use of time.
Companions
24. Some criminal acquaintances.
25. Some criminal friends.
26. Few anticriminal acquaintances.
27. Few anticriminal friends.
Alcohol/Drug Problem
28. Alcohol problem, ever.
29. Drug problem, ever.
30. Alcohol problem, currently.
31. Drug problem, currently.
32. Law violations.
33. Marital/family.

34. School/work.
35. Medical or other clinical indicators?
Procriminal Attitude/Orientation
36. Supportive of crime.
37. Unfavorable toward convention.
38. Poor toward sentence/offense.
39. Poor, toward supervision/treatment.
Antisocial Pattern
40. Specialized assessment for antisocial pattern.
41. Early and diverse antisocial behavior.
42. Criminal attitude.
43. Pattern of generalized trouble.

Appendix C

Revised Violence Risk Appraisal Guide Items (VRAG-R; Rice, Harris, & Lang, 2013)

1. Lived with both biological parents to age 16
2. Elementary school maladjustment (up to and including grade 8)
3. History of alcohol and drug problems
4. Marital status (heterosexual relationships only) at time of index offense
5. Cormier-Lang score for nonviolent convictions and charges prior to index
6. Failure on conditional release
7. Age at index offense
8. Cormier-Lang score for violent for convictions and charges prior to index
9. Number of prior admissions (of one day or more) to correctional institutions (youth detention, jail, any correctional facility) for offenses prior to the index offense
10. Conduct disorder indicators (before age 15)
11. Sex offending (considering entire history including index offense, and all offenses for which there is convincing evidence whether resulting in charges/convictions or not)
12. Antisociality

Appendix D

Data Collection Protocol

Patient: _____

Index offense severity: _____

Review Board hearing number: _____

Total Review Board hearings: _____

Risk assessment measure			
1. Presence	<i>yes</i>	<i>no</i>	
2. User	<i>Psychiatrist</i>	<i>Psychologist</i>	<i>Other</i> _____
3. Instrument	HCR-20	VRAG	<i>Other</i> _____
4. Instrument risk ratings (low, med, high)			
Institutional conduct (frequency)			
1. Violence (date, type)			
2. Suicide attempts or ideation			
3. Breach of RB conditions			
4. Substance use			
5. Treatment non-compliance			
Disposition conditions (check those that apply)			
1. supervised and unsupervised grounds		Disposition, year: _____ Notes:	
2. passes to the community			
3. permission to live in the community			
4. abstain from drugs and alcohol			
5. follow treatment recommendations			
6. keep the peace			
7. limit contact with the victim(s)			
8. other			
Diagnosis (check for those that apply)			
1. psychotic spectrum disorder		Notes:	
2. mood spectrum disorder			
3. substance use disorder			

4. personality disorder				
5. other				
6. no diagnosis				
RB Hearing participants (check for those that apply)				
1. NCR accused		Notes:		
2. Defense lawyer				
3. crown prosecutor				
4. psychiatrist				
5. nursing staff				
6. psychologist				
7. other member of the clinical team				
8. victim(s) of the accused				
9. family of the accused				
10. others				
11. Chair? (name _____)				
Reasons for hearing (check for those that apply)				
1. post-NCR verdict				
2. annual disposition review				
3. request of the NCR accused				
4. request of the hospital/clinical team				
5. request of the RB				
6. post-dual designation for those NCR for 1 offense but convicted for another offense				
7. post-hospitalization of initial 7 days				
Clinician recommendations				
1. Disposition recommendations	<i>Detain</i>	<i>Conditional discharge</i>	<i>Absolute discharge</i>	<i>Absent</i>
2. Recommendations for conditions	<i>(Track above)</i>			
3. Restrictiveness relative to the actual RB decision	<i>More restrictive</i>	<i>Same</i>	<i>Less restrictive</i>	
Rehospitalization				
1. Dates				
2. Reasons				

Appendix E

Crime Severity Index (Wallace, Turner, Matarazzo, & Babyak, 2009)

Code	Offence	Weight
1110	Murder 1st degree	7041.75
1120	Murder 2nd degree	7041.75
1130	Manslaughter	1821.56
1140	Infanticide	23.43
1150	Criminal negligence causing death	688.15
1160	Other related violations causing death	61.92
1210	Attempted murder	1411.01
1220	Conspire to commit murder	611.13
1310	Sexual assault - level 3	1047.22
1320	Sexual assault - level 2	678.35
1330	Sexual assault - level 1	210.98
1340	Other sexual violations	296.11
1345	Sexual interference	210.98
1350	Invitation to sexual touching	210.98
1355	Sexual exploitation	210.98
1360	Incest	678.35
1365	Corrupting Morals of a Child	294.62
1370	Luring a person under 18 via computer	171.87
1375	Anal intercourse	210.98
1380	Bestiality - commit/compel/incite	210.98
1385	Voyeurism	85.52
1410	Assault - level 3	404.88
1420	Assault - level 2	77.38
1430	Assault - level 1	23.43
1440	Unlawfully causing bodily harm	142.88
1450	Discharge firearm with intent	988.26
1455	Using firearm/immitation in commission of off	267.43
1457	Pointing a firearm	194.01
1460	Assault against peace/public officer	41.55
1470	Criminal negligence causing bodily harm	398.61
1475	Trap Likely to or Causing Bodily Harm	398.61
1480	Assaults - other	58.31
1510	Kidnapping	477.42
1520	Hostage-taking	1278.01
1525	Trafficking in persons	1278.01
1530	Abduction under 14, not parent/guardian	161.77
1540	Abduction under 16	66.64
1545	Removal of children from Canada	66.64

1550	Abduction under 14 contravening custody order	23.86
1560	Abduction under 14, by parent/guardian	124.98
1610	Robbery	583.32
1620	Extortion	229.22
1621	Intimidation justice system participant or a	66.52
1622	Intimidation - Other	66.52
1625	Criminal harassment	45.36
1626	Harassing phone calls	17.34
1627	Uttering threat to person	46.39
1628	Explosives causing death/bodily harm	477.68
1629	Arson - disregard for human life	321.94
1630	Other violent violations	143.40
2110	Arson	144.85
2120	Break and enter	186.99
2121	Break and enter - firearms	186.99
2130	Theft over \$5,000	139.45
2131	Theft over \$5,000 of a motor vehicle	84.44
2132	Theft over \$5,000 from a motor vehicle	139.45
2133	Theft over \$5,000 - shoplifting	139.45
2140	Theft under \$5,000	37.41
2141	Theft under \$5,000 of a motor vehicle	84.44
2142	Theft under \$5,000 from a motor vehicle	37.41
2143	Theft under \$5,000 - shoplifting	37.41
2150	Possess stolen property	77.31
2160	Fraud	108.74
2170	Mischief - general	29.73
2172	Mischief over \$5000	29.73
2174	Mischief \$5000 or under	29.73
2176	Mischief to relig property motivated by hate	29.73
3110	Prostitution - bawdy house	10.19
3115	Prostitution < 18 - living off the avails	395.74
3120	Prostitution - procuring	273.50
3125	Prostitution - Obtains/Communicates < 18	208.60
3130	Prostitution - other	5.80
3210	Betting house	1.16
3220	Gaming house	1.16
3230	Other violations rel: gaming/betting	2.33
3310	Offensive weapons: explosives	126.51
3320	Offensive weapons: prohibited	48.13
3330	Offensive weapons: restricted	48.13
3340	Firearm transfers/serial numbers	48.13
3350	Offensive weapons - other	48.13
3365	Weapons trafficking	265.12
3370	Weapons possession contrary to order	180.07

3375	Weapons possession	88.41
3380	Unauthorized importing/exporting of weapons	144.27
3390	Firearms documentation/administration	204.61
3395	Firearms - unsafe storage	44.08
3410	Fail to comply with order	24.30
3420	Counterfeiting currency	68.51
3430	Disturb the Peace	8.92
3440	Escape/Helps to escape from lawful custody	59.23
3450	Indecent acts	24.41
3455	Child pornography - production/distribution	160.21
3460	Corrupting Morals	359.39
3470	Obstruct public/peace officer	28.81
3480	Prisoner unlawfully at large	39.13
3490	Trespass at night	21.82
3510	Fail to appear	15.86
3520	Breach of probation	33.29
3540	Uttering threats against property/animals	29.33
3550	Advocating Genocide	115.91
3560	Public Incitement of Hatred	29.33
3700	Unauthorized recording of a movie	49.06
3710	Offences against public order	50.26
3711	Terrorism - Property or service for terrorist activity	50.26
3712	Terrorism - freezing of property, disclosure, audit	50.26
3713	Terrorism - participate in activity of terrorist group	50.26
3714	Terrorism - facilitate terrorist activity	66.52
3715	Terrorism - commission/Instr. to carry out terrorist act	143.73
3716	Terrorism - harbour or conceal terrorist	50.26
3717	Terrorism - hoax	143.73
3720	Firearms and other offensive weapons	44.08
3730	Off. against the admin. of law and justice	48.38
3740	Sexual off., publ. morals & disorderly conduct	246.07
3750	Invasion of privacy	41.77
3760	Disorderly houses, gaming and betting	50.44
3770	Offences against the person and reputation	66.22
3780	Offences against rights of property	185.49
3790	Fraudulent transactions re: contracts/trade	109.29
3810	Wilful/Forbidden acts in respect of property	15.80
3820	Offences relating to currency	265.45
3825	Proceeds of crime (CC)	362.48
3830	Attempts, conspiracies, accessories	214.98

3840	Criminal organization - instruct offence for	642.50
3841	Criminal organization - commit offence for	485.88
3842	Criminal organization - participate in activities of	349.48
3890	Other Criminal Code	137.18
4110	Heroin - possession	10.67
4120	Cocaine - possession	10.67
4130	Other CDSA - possession	10.98
4140	Cannabis - possession	6.71
4150	Possession - Crystal Meth (Methamphetamines)	10.67
4160	Possession - Methylenedioxamphetamine (Ecstasy)	10.67
4210	Heroin - trafficking	136.04
4220	Cocaine - trafficking	136.04
4230	Other CDSA - trafficking	138.88
4240	Cannabis - trafficking	52.82
4250	Crystal Meth (Methamphetamines) - trafficking	136.04
4260	Ecstasy (Methylenedioxamphetamine) - traffick	173.37
4310	Heroin - importation and exportation	92.86
4320	Cocaine - importation and exportation	92.86
4330	Other CDSA - importation and exportation	92.86
4340	Cannabis - importation and exportation	92.86
4350	Crystal Meth - importation and exportation	92.86
4360	Ecstasy - importation and exportation	173.37
4410	Heroin - production	128.79
4420	Cocaine - production	128.79
4430	Other CDSA - production	128.79
4440	Cannabis - production	10.67
4450	Production - Crystal Meth (Methamphetamines)	128.79
4460	Ecstasy (Methylenedioxamphetamine) - Producti	173.37
4825	Proceeds of crime (CDSA)	173.37
5120	Restricted drugs - possession	10.98
5210	Controlled drugs - trafficking	138.88
5220	Restricted drugs - trafficking	138.88
6100	Bankruptcy Act	2.67
6150	Income Tax Act	2.67
6200	Canada Shipping Act	6.70
6250	Public Health Act	83.04
6300	Customs Act	13.77
6350	Competition Act	13.77

6400	Excise Act	10.76
6450	Youth Criminal Justice Act	23.53
6500	Immigration and Refugee Protection Act	41.79
6550	Firearms Act	30.49
6560	National Defence Act	36.92
6900	Other Federal Statutes	83.04
9110	Dangerous operation - causing death	248.33
9120	Dangerous operation - causing bodily harm	153.62
9130	Dangerous operation vehicle,vessel,aircraft	88.89
9131	Dangerous op. evading police - causing death	640.28
9132	Dang. op. evading police - causing bod. harm	497.47
9133	Dang. op. of motor vehicle evading police	124.61
9210	Impaired operation - causing death	636.31
9215	Impaired operation (drugs) - causing death	636.31
9220	Impaired operation - causing bodily harm	187.37
9225	Impaired operation (drugs) - causing bodily harm	187.37
9230	Impaired operation vehicle,vessel,aircraft	13.44
9235	Impaired operation (drugs) vehicle,vessel,aircraft	13.44
9240	Impaired op. failure to provide breath sample	22.75
9245	Failure to comply or refusal (drugs)	22.75
9250	Impaired op. failure to provide blood sample	33.19
9255	Failure to provide blood sample (drugs)	33.19
9310	Failure to stop or remain (Fed.)	61.60
9320	Driving while prohibited (Fed.)	58.29
9330	Other Criminal Code traffic violations (Fed.)	52.25
9410	Street racing - death - criminal negligence	640.28
9420	Street racing - negligence - bodily harm	316.05
9430	Street racing - dangerous operation - death	640.28
9440	Street racing - dangerous operation - bodily harm	316.05
9450	Street racing - dangerous operation of motor vehicle	23.95