

# Using the HCR-20<sup>V3</sup> to Differentiate Insanity Acquittees Based on Opinions of Readiness for Transfer

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After adjudication by the courts that an individual is not criminally responsible for the offense committed, forensic psychiatrists/psychologists are tasked with evaluating an acquittees' ongoing risk of violence. These findings determine whether an acquittee is retained in a forensic hospital or transferred to a civil psychiatric setting or into the community. Better understanding of risk factors that affect decisions to retain or release acquittees from secure forensic facilities would increase clarity in decision-making, assist evaluators in identifying who may be successful outside of secure settings, and potentially assist in the development and implementation of targeted treatments to address risk factors before and after transfer. The current study evaluated which risk factors of the Historical-Clinical-Risk Management 20, Version 3 differentiated acquittees whom clinicians opined to have a dangerous mental disorder and required retention from those whom clinicians opined to be ready for transfer to a less secure setting. Results indicated that the Clinical and Risk Management scales predicted opinions regarding readiness for transfer, even after accounting for acts of violence in the hospital. These findings suggest clinicians are attuned to relevant and current risk factors in evaluations, rather than disproportionately focused on historical factors. Implications for practice and future research are discussed.

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Individuals who are adjudicated not guilty by reason of insanity (NGRI) are typically committed to forensic hospitals for psychiatric treatment.<sup>1</sup> NGRI acquittees often spend more time committed to a psychiatric facility than they would have served had they been convicted and imprisoned,<sup>2,3</sup> but many individuals reintegrate into society through “conditional

release.”<sup>4</sup> Conditional release serves as a mechanism for least restrictive behavior intervention in the community. It involves a step-down process where acquittees are most often transferred from a forensic psychiatric facility to a civil facility and then into the community.<sup>4</sup> The release of such individuals must be carefully considered, taking into account the individual freedom of the acquittee and the protection of general society.<sup>5</sup> After adjudication by the courts that an individual is not criminally responsible for the offense committed, forensic psychiatrists and psychologists are tasked with evaluating whether that acquittee poses an ongoing risk of violence (i.e., has a “dangerous mental disorder”, defined in New York as a mental illness that constitutes a physical danger to himself or others).<sup>6</sup> These findings determine whether the individual is retained in a forensic hospital or transferred to a civil psychiatric setting and eventually whether he is released into the community. In New York, once transferred to a civil facility, acquittees are typi-

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cally placed in secure, locked units, but over an indeterminate time, receiving increasing privileges and access to the community as their commitment continues.

There is a growing body of research about the decision-making process associated with granting a NGRI acquittee conditional release or transfer to a less secure setting.<sup>1,2,5,7-11</sup> However, much of this research focuses on individuals discharged from forensic hospitals directly into the community rather than from forensic to civil psychiatric hospitals, as is the focus in the current study. Research typically focuses on individual risk factors cited in forensic reports, rather than on a systematic review of the potential influence of all risk factors from risk assessment tools. Better identification of risk factors and a more developed understanding of the relationship between risk factors that affect release decisions would assist evaluators in identifying who may be successful in less secure settings and assist in more targeted treatment to address identified risk factors. Further, understanding risk at a factor level would provide further insight into decision-making about dangerousness. In addition, there is a practical need for such research; both forensic admissions and length of hospitalization for forensic patients are increasing.<sup>12</sup> Transfer to less secure settings serves as a useful mechanism by focusing resources on those individuals who present the greatest risk. When individuals can be managed in less secure settings, physical space and resources for individuals in need of closer supervision become available.

In the current study, we evaluated factors that differentiated those individuals who were considered ready for transfer from a forensic setting (i.e., no longer had a dangerous mental disorder) from those who were thought to require retention (i.e., continued to have a dangerous mental disorder). Factors potentially relevant to this determination were assessed with the Historical-Clinical-Risk Management 20 Version 3 (HCR-20<sup>V3</sup>),<sup>13</sup> the most recent edition of the HCR-20.<sup>14</sup> The HCR-20 is a structured clinical judgment risk assessment tool used in forensic assessments to determine risk of violence. It is frequently used in forensic settings,<sup>15</sup> and proponents advocate its utility in decisions regarding conditional release.<sup>16</sup>

## Evaluator Decision-Making

Unfortunately, there is little legal guidance, standardization, or consensus governing decision-making in regard to transfer decisions and conditional release.<sup>1,4</sup> Whereas evaluators of other psycholegal assessments, such as competency to stand trial, may use empirically validated measures that address a specified legal standard (e.g., the *Dusky* standard<sup>17</sup>), those involved in evaluations of conditional release typically do not use such measures.<sup>1</sup> Furthermore, when compared with other forensic evaluations such as competency to stand trial and criminal responsibility evaluations, conditional release readiness evaluations have the lowest inter-evaluator reliability and the lowest quality.<sup>18,19</sup> Nguyen and colleagues<sup>19</sup> examined evaluation report quality with a survey instrument based on nationally derived quality standards and found overall evaluation and report quality to be poor. In one study regarding evaluator agreement, evaluators disagreed between 50 and 60 percent of the time about transfer readiness,<sup>20</sup> whereas in another, evaluators disagreed in 22 percent of cases.<sup>11</sup>

To understand decision-making, Gowensmith *et al.*<sup>1</sup> surveyed evaluators tasked with determining conditional release readiness of NGRI acquittees. Evaluator beliefs about what to focus on in evaluations and methods of assessment used during these evaluations differed widely. Little more than half of evaluators reported using a formal forensic assessment measure in their evaluation, and the researchers proposed that, in addition to more thorough training in forensic assessment, evaluators' work would benefit from their using standardized evaluation protocols to decrease disagreements about transfer readiness. Taken together, these findings highlight the need for a better understanding of how standardized measures, such as the HCR-20<sup>V3</sup>, might aid conditional release evaluations and improve their quality and reliability.

## Factors Associated with Opinions of Dangerousness

In previous studies, 35 to 50 percent of acquittees released from forensic settings into less secure settings or into the community were recommitted because of re-arrest or re-hospitalization in periods ranging from 3 to 10 years.<sup>21,22</sup> In a more recent study evaluating recidivism over a 30-year period,

31.1 percent of conditionally released patients were recommitted, and of the total sample, 16% were rearrested after discharge of conditions.<sup>23</sup> Overall, dangerousness risk assessments are a vital component of evaluations conducted by forensic evaluators. The better evaluators are at identifying individuals who will be successful outside of secure facilities, the less likely NGRI acquittees at risk for reoffending are to be released.

### **Factors Associated With Decisions for Conditional Release**

Relatively little research has focused on identifying factors that differentiate NGRI acquittees released to less secure settings from those retained in secure hospitals. Further, available research has either occurred outside of the United States<sup>7,8</sup> or focused on releasing patients from secure facilities directly into the community,<sup>7,8</sup> as opposed to transferring them to civil psychiatric settings. Given that there is a lack of research specifically addressing transfer from forensic to civil settings, findings from analogous decision-making (i.e., from conditional release) research informs our current understanding of the decision process.

Callahan and Silver<sup>2</sup> investigated factors associated with conditional release directly into the community across four states. Whereas seriousness of offense and diagnosis were predictive of decisions in some of the states, these factors were not significant predictors in New York (the site of the current study). Rather, gender emerged as the most significant predictor: females were more likely than men to receive conditional release. In addition, white individuals, high school graduates, and those with no prior forensic hospitalizations were more likely to receive conditional release. In another study, Stredny and colleagues<sup>11</sup> found that, in contrast to existing research, seriousness of offense did not play a predictive role in frequency of recommendation for retention in a secure hospital.

Crocker *et al.*<sup>7</sup> examined psychosocial, criminologic, and violence risk factors associated with decisions of judicial review boards (i.e., administration responsible for overseeing decisions regarding individuals found not criminally responsible) to retain or release forensic patients in Canada. Factors associated with being retained in a secure facility included being male, having committed a severe index offense, and young age at the time of first violent offense.

Overall, the Clinical scale of the HCR-20 predicted retention, whereas the Historical and Risk Management scales were unrelated to transfer decisions. Crocker *et al.*<sup>8</sup> also investigated factors in review board decisions of conditional release and absolute release (release with no conditions) from a secure hospital setting into the community. Review boards appeared to consider behavior of the patient during hospitalization, including violent acts and compliance with treatment conditions. Poor compliance with review board conditions decreased chances of being absolutely discharged, and not complying with medications decreased chances of being conditionally discharged. Overall, Crocker and colleagues<sup>8</sup> found that general historical factors as well as the HCR-20 Historical scale did not play as important a role over time when compared with dynamic factors, including those captured by the Clinical scale, which were more frequently cited in decisions of absolute discharge. However, the presence of psychiatric history before the commission of the index offense and a more severe index offense were also associated with a reduced likelihood of conditional discharge.

Overall, several factors have been identified that appear to be associated with transfer decisions; however, there is little consistency across different studies. In addition, many of these factors pertain to decision-making in Canada or within settings that structure conditional release “step-down” differently from New York, the state of focus in the current study. Further, the focus of prior research has typically been on individual risk factors related to decision-making instead of on a systematic review of the potential influence of risk factors from accepted risk assessment tools.

### **Factors Associated With Success of Conditional Release**

Structured assessment tools have demonstrated usefulness in assessing readiness for transfer to a less secure setting. For example, some research identifies factors relevant to success of conditional release, inclusive of many factors found on the HCR-20.<sup>12,22,24–29</sup> However, the extent to which these factors alone or in combination inform assessments of risk is comparatively understudied.

Green and colleagues<sup>21</sup> assessed risk factors of the HCR-20 that were associated with recommitment to a forensic hospital within 10 years of transfer. Over-

all, higher scores on the Historical and Risk Management scales were associated with recommitment. However, total scores on the Clinical scale were not associated with elevated risk of recommitment, both when considered alone and when assessed in combination with the Historical and Risk Management scales. Specific items within the Historical scale were associated with, but were not predictive of recommitment, including lower scores on major mental illness and higher scores on prior supervision failure and substance use problems. Additional items such as negative attitudes and relationship problems were associated with recommitment. Overall, research suggests that structured assessments of risk can be helpful in determining outcomes on conditional release. Further research establishing how risk factors inform decisions about transfers and the best treatment for individuals with a dangerous mental disorder is warranted.

### **Use of the HCR-20 in Evaluator Decision-Making**

Despite recognition of the fallibility of decision-making unaided by structured assessment tools,<sup>30,31</sup> the literature suggests that standardized methods are greatly underused, likely as a result of the additional time and resources required.<sup>9,32–35</sup> In addition, when evaluators use standardized methods, they often neglect to incorporate the findings explicitly into reports of transfer decisions. For example, Wilson *et al.*<sup>35</sup> found that, even when evaluators used the HCR-20, fewer than half of the items were described in either the forensic expert reports or review board reasons for disposition.

Version 2 of the HCR-20 has been widely used within conditional release research demonstrating predictive validity that is comparable to that of other assessment approaches in this area.<sup>16</sup> Version 3 of the HCR-20 was developed to enhance decision-making and includes features such as relevance of risk factors to overall consideration of violence risk that are especially pertinent to release decision-making. It follows that this tool would strongly guide assessment of readiness for transfer from forensic to civil settings.

In the *Matter of George L*, 85 N.Y.2d 295 (1995),<sup>36</sup> the New York State Court of Appeals determined criteria for assessing dangerousness to include considerations of the need for medication to control violent tendencies, recent occurrence of the

index offense, and prior relapses into violent behavior. In addition, since 1997, the New York State Office of Mental Health requires that New York evaluators use the HCR-20 in dangerousness evaluations,<sup>12</sup> to assist in the evaluation of criteria specified by the courts in *George L*.

### **Current Study**

In the current study, we investigated risk factors that differentiated NGRI acquittees deemed to be ready for transfer to civil hospitals from those considered to be dangerous, to have mental illness, and to require ongoing retention in a secure psychiatric facility. Multiple individuals are involved in the evaluation process regarding release; however, the judge makes the final decision. In the current study, we focused on the opinions reached by the independent evaluators within the hospital.

We also assessed the incremental predictive role of the HCR-20<sup>V3</sup> over recent acts of violence in the hospital, severity of the index offense, and recommitment status in predicting findings of dangerousness and opinions about retention versus transfer. Length of hospitalization alone was not expected to predict decisions for transfer<sup>12</sup>; rather, individuals who had been recommitted from the community or a civil setting to the forensic hospital were predicted to be less likely to be judged ready for release from the secure hospital.<sup>2</sup> Severity of index offense was expected to predict opinions regarding transfer, such that individuals with more severe index offenses (including murder, attempted murder, and assault) would be less likely to be deemed ready to be transferred to a less secure setting.<sup>7,11</sup> Violence within the hospital setting was expected to predict decisions regarding transfer such that individuals who had committed violent acts in the hospital since the date of the preceding evaluation (between 3 and 31 months; see Procedure section below) would be less likely to receive recommendations of readiness for transfer.<sup>8</sup> Finally, HCR-20<sup>V3</sup> Clinical and Risk Management scales (i.e., dynamic factors) were expected to predict opinions to transfer over the aforementioned factors.<sup>5,8,10</sup> The Historical scale of the HCR-20<sup>V3</sup> (i.e., static factors) was not hypothesized to predict decisions to transfer, in light of recent research that has shown the Clinical and Risk Management scales are predictive of such decisions.<sup>7</sup>

**Methods**

**Sample**

The current study included 140 individuals adjudicated NGRI and committed to a secure forensic psychiatric hospital in New York between 1985 and 2014. As the year 1997 marks the point at which New York State Office of Mental Health began requiring the use of the HCR-20 in biannual evaluations of dangerousness, the study used dangerousness evaluations between 1997 and 2014. All patients hospitalized during this period were included in the study; patients were excluded only if a dangerousness report could not be obtained.

Patients ranged in age from 21 to 83 years (mean (M) 47.86; standard deviation (SD) 13.23) at the time of the evaluation coded for this study (see Procedure section). A majority of the patients were male ( $n = 114$ ; 81.4%) and identified as an ethnic minority; 61 (43.6%) were African American/Black, 26 (18.6%) were Hispanic/Latino, 4 (2.9%) were Asian, and 14 (10.0%) were coded as other. A majority of the sample ( $n = 96$ ; 68.6%) reported no marital history. Reports indicated that less than half of the patients ( $n = 64$ ; 45.7%) reported that they graduated from high school or obtained their high school equivalency diplomas. The majority ( $n = 99$ ; 70.8%) had a diagnosis of a psychotic disorder. The vast majority ( $n = 106$ ; 75.7%) had been adjudicated NGRI for violent crimes, and the most common charge was murder/deliberate homicide/manslaughter ( $n = 48$ ; 34.3%). Most individuals ( $n = 94$ ; 67.1%) had at least one prior arrest before the commission of the index offense. The time between the index offense and date of evaluation coded in this study ranged from 13 to 497 months (M, 176.20; SD, 126.77). Slightly more than one quarter of patients ( $n = 37$ ; 26.4%) were at the hospital on recommitment status (i.e., they had been found not dangerous, but were subsequently rehospitalized). Green and colleagues,<sup>21</sup> in their study of factors affecting recommitment, included a partially overlapping sample; however, for most cases, a more recent evaluation was available and therefore coded in the current study. See Table 1 for full demographic, clinical, and criminal variables.

**Procedure**

The research protocol was approved by the Institutional Review Boards at the Nathan Kline Institute

**Table 1** Demographic, Clinical, and Criminal Variables of Patients

Variables	N	%
Demographic variables		
Gender		
Males	114	81.4
Females	26	18.6
Race		
Black	61	43.6
Caucasian	31	22.1
Hispanic	26	18.6
Asian	4	2.9
Other	14	10.0
Not reported	4	2.9
Marital status		
Never married	96	68.6
Married	13	9.3
Divorced/separated	24	17.1
Widowed	5	3.6
Not reported	2	1.4
Years of education		
Did not graduate/obtain GED	62	44.1
Graduated high school/obtained GED	67	25.7
Completed some college	17	12.1
Completed 4-years of college	7	5.0
Attended graduate school	4	2.8
Not reported	14	0.8
Clinical variables at the time of coded evaluation		
Psychotic disorder	99	70.8
Mood disorder	22	16.1
Other disorder	13	9.4
Criminal history and NGRI variables		
At least one prior arrest	94	67.1
NGRI offense charge		
Murder/manslaughter	48	34.3
Attempted murder/attempted manslaughter	35	25.0
Aggravated assault or other assault	20	14.3
Arson	10	7.1
Robbery	6	4.3
Other crimes	21	15.0
Recommitted patients	37	26.4

N = 140.

(Orangeburg, NY) and Fairleigh Dickinson University. After being adjudicated NGRI in New York, individuals are evaluated by two examiners to determine whether they had a dangerous mental disorder. Those found to have such a condition are committed to a secure forensic facility where they remain until they are determined to no longer have such a disorder (under CPL 330<sup>6</sup>). Each patient is reviewed by clinical staff and an independent evaluator, and the case is reviewed by the New York State Office of Mental Health, Division of Forensic Services, at a minimum every two years. After review and evaluation, a hearing is held before a judge, who then determines whether a patient continues to have a dangerous mental disorder. When a patient is determined to no longer have the disorder, he is trans-

ferred to a less secure setting (usually a civil psychiatric facility).<sup>12</sup> Among patients in the current study, 57 (40.7%) were determined by an evaluator working alone (independent of the treatment team) to be no longer dangerous and therefore ready for transfer; 83 patients (59.3%) were opined to require retention.

Independent evaluators used the HCR-20 to conduct these evaluations and prepare comprehensive reports (i.e., dangerousness evaluations). In the current study, the most recent dangerousness evaluations available were retrospectively coded for research purposes according to the HCR-20<sup>V3</sup>. Retrospective coding was necessary to answer the research questions, because although evaluators in New York State use the HCR-20 in their evaluations, they do not always include a comprehensive description of all HCR-20<sup>V3</sup> risk factors in their reports. Instead, they usually identify and highlight the most salient risk factors. For individuals who were transferred, the report written before transfer was coded. In addition to these dangerousness evaluations, patients' hospital incident reports were coded for demographic information and acts of violence (i.e., acts of physical, property, verbal, and sexual aggression) during the period since the prior evaluation.

## Measures

### HCR20<sup>V3</sup>

The HCR-20<sup>V3</sup> includes several changes from the previous version.<sup>13,37</sup> Whereas raters continue to rate risk factors based on their presence (not present, possibly/partially present, or definitely present), Version 3 also requires them to consider the relevance of each risk item (low, moderate, or high) to an individual's propensity to commit violence in the future.<sup>16</sup> For a more thorough discussion of what makes a risk factor relevant to risk of violence, readers are directed to the HCR-20<sup>V3</sup> manual.<sup>37</sup> Version 3 also includes sub-items and indicators for each risk factor to help raters determine presence and relevance of the factors; indicators provide raters with examples of how items may present in a given individual. Some of the risk factors were revised in Version 3. For example, Historical Item 2: Violence at a Young Age, focused in Version 2 on the age at which an individual first committed a violent act. In Version 3, this risk factor has been incorporated into Historical Item 1: Violence, which considers violent acts that an individual may have committed at different developmental periods in his life. Subitems for this risk factor allow

**Table 2** Inter-Rater Reliability for Items and Scales of the HCR-20<sup>V3</sup>

Scale and Item	ICC	95% CI
Historical ( <i>N</i> = 74 paired ratings)		
H1. Violence	1.00	1.00–1.00
H2. Other antisocial behavior	0.85**	0.77–0.91
H3. Relationships	0.52*	0.23–0.70
H4. Employment	0.59**	0.34–0.74
H5. Substance abuse	0.95**	0.91–0.97
H6. Major mental illness	0.83**	0.73–0.89
H7. Personality disorder	0.92**	0.88–0.95
H8. Traumatic experiences	0.80**	0.69–0.88
H9. Violent attitudes	0.50*	0.21–0.69
H10. Treatment or supervision response	0.81**	0.69–0.88
Historical Total	0.87**	0.79–0.92
Clinical ( <i>N</i> = 74 paired ratings)		
C1. Insight	0.92**	0.88–0.95
C2. Violent ideation or intent	0.62**	0.40–0.76
C3. Symptoms of major mental disorder	0.86**	0.78–0.91
C4. Instability	0.79**	0.67–0.87
C5. Treatment or supervision response	0.84**	0.75–0.90
Clinical Total	0.88**	0.81–0.92
Risk Management ( <i>N</i> = 74 paired ratings)		
R1. Professional services and plans	0.76**	0.61–0.85
R2. Living situations	0.60**	0.36–0.75
R3. Personal support	0.74**	0.59–0.84
R4. Treatment or supervision response	0.79**	0.66–0.87
R5. Stress and coping	0.62**	0.39–0.76
Risk Management Total	0.87**	0.79–0.92

\*  $p < .01$ ; \*\*  $p < .001$ .

raters to determine presence of violence as a child, an adolescent, and an adult. Consistent with the previous version, raters use structured professional judgment to evaluate an examinee's likelihood of violence. Thus, evaluatees are rated as having a low, moderate, or high risk of violence. Consistent with some research of archival design,<sup>7,38</sup> summary risk ratings were not made in this study. Research demonstrates concurrent validity and strong correlations between Versions 2 and 3, as well as strong interrater reliability for Version 3, both in regard to presence of risk factors and summary risk ratings.<sup>39</sup>

Raters either received training on the HCR-20<sup>V3</sup> directly from one of the measure's authors or from experienced raters who had themselves been trained by the measure's author. In the current study, 74 (51.7%) randomly selected cases were coded by two raters to assess interrater reliability. Reliability was generally high across all scales and items (Table 2). The Interclass Correlation Coefficients (ICCs) of the scale scores were equivalent with or higher than the median ICCs reported across 12 to 14 studies of the HCR-20 conducted in forensic settings.<sup>40</sup> Means for the Historical, Clinical, and Risk Management

**Table 3** Means and Comparisons of HCR-20<sup>V3</sup> Items and Scale Scores by Evaluator Opinion Status

Scale and Item	Transfer (n = 57) M	Retain (n = 83) M	p	Cohen's d
<b>Historical</b>				
H1. Violence	1.98	2.00	0.32	1.43
H2. Other antisocial behavior	0.91	1.16	0.12	0.28
H3. Relationships	1.65	1.81	0.09	0.31
H4. Employment	1.04	1.34	<0.05	0.44
H5. Substance abuse	1.44	1.64	0.15	0.25
H6. Major mental illness	1.95	1.94	0.88	-0.04
H7. Personality disorder	1.14	1.24	0.50	0.12
H8. Traumatic experiences	1.49	1.64	0.20	0.23
H9. Violent attitudes	0.57	0.86	<0.05	0.37
H10. Treatment or supervision response	1.66	1.81	0.14	0.28
Historical Total	13.70	15.37	<0.01	0.57
<b>Clinical</b>				
C1. Insight	0.65	1.72	<.001	1.70
C2. Violent ideation or intent	0.04	0.42	<.001	0.74
C3. Symptoms of major mental disorder	0.59	1.37	<.001	1.09
C4. Instability	0.34	1.02	<.001	0.94
C5. Treatment or supervision response	0.34	1.42	<.001	1.76
Clinical Total	1.95	5.96	<.001	1.90
<b>Risk Management</b>				
R1. Professional services and plans	0.49	1.65	<.001	1.87
R2. Living situations	1.02	1.80	<.001	1.28
R3. Personal support	0.98	1.63	<.001	0.98
R4. Treatment or supervision response	0.84	1.72	<.001	1.68
R5. Stress and coping	0.93	1.73	<.001	1.45
Risk Management Total	4.25	8.53	<.001	1.97

items and scale scores by opinion are included in Table 3.

**Start Outcome Scale**

The Start Outcome Scale<sup>41</sup> (SOS) was used to assess violence in the period preceding the coded evaluation (M, 15.64; SD, 6.31 months; range, 3–31). Violence, determined by the HCR-20<sup>V3</sup> definition of violence, included acts of physical, property, verbal, and sexual aggression. The SOS comprises several problem behaviors and prompts an evaluator to rate incidents by severity. Problem behaviors such as threatening others with violence (verbal aggression), destroying property (aggression against property); making threatening gestures, striking, pushing, kicking, and punching (physical aggression); or sexually assaulting or touching someone without consent (sexual aggression) were considered acts of violence captured in the current study. Ultimately, acts of violence were coded dichotomously as present or not present, regardless of frequency, to remain consistent with the HCR-20<sup>V3</sup>, which assess risk of acts of violence, rather than frequency of violence. Further, previous research suggests that of those who perpetrate aggression, most commit single acts.<sup>42</sup>

**Data Analysis**

This study investigated predictive validity of the HCR-20<sup>V3</sup> over potential covariates. Chi-square analyses were conducted to assess the relationship between hypothesized, dichotomous covariates, including status as a readmitted patient, severity of index offense (i.e., murder/attempted murder, manslaughter/attempted manslaughter, and assault considered more severe), violence versus nonviolence during the evaluation period, and release recommendation. (Cramér's V, a number between 0 and 1 that indicates how strongly (1) or weakly (0) two variables are associated, was used as a post hoc test and is an effect size measurement.) Covariates that were significant were included in logistic regression analyses along with the three HCR-20<sup>V3</sup> scales (total presence score for each scale) controlling for length of time since the index offense to assess the prediction of opinions of retention versus transfer. Despite the large range, length of time since the last evaluation was not controlled for, as it was not significantly related to violence in the hospital.

**Results**

Prior recommitment to the hospital was not associated with evaluators' opinions regarding readiness

## Using HCR-20<sup>V3</sup> to Differentiate Opinions on Transfer

**Table 4** Regression Model of Significant Covariates and Evaluator Opinions Regarding Transfer Versus Retention

	$\chi^2$	df	p	Nagelkerke R <sup>2</sup>
	98.29	5	<.001	0.69
Predictors	B	SE	p	Exp(B)
Constant	-6.63	1.88	<.001	0.001
Months Since the Index Offense	0.00	0.003	0.98	1.00
Violence in the Hospital	-1.81	0.82	0.03	0.16
HCR-20 <sup>V3</sup> Historical Total	0.14	0.11	0.20	1.15
HCR-20 <sup>V3</sup> Clinical Total	0.61	0.17	<.001	1.83
HCR-20 <sup>V3</sup> Risk Management Total	0.48	0.15	.001	1.62

Violence in the hospital refers to acts that took place since the previous evaluation of dangerousness ( $M = 15.64$ ;  $SD = 6.31$  months). Exp(B) is the odds ratio for the predictor and indicates how likely an outcome is to occur.

for transfer ( $\chi^2_{(1, n = 140)} = 0.001, p = .98$ ; Cramér's  $V = .002$ ). In addition, severity of charge was not associated with evaluator opinion ( $\chi^2_{(1, n = 140)} = 0.11, p = .74$ ; Cramér's  $V = .03$ ). However, violence in the hospital prior to evaluation was significantly associated with evaluators' opinions regarding readiness for transfer ( $\chi^2_{(1, n = 140)} = 4.40; p = .04$ ; Cramér's  $V = .18$ ). Overall, 32.9 percent of patients had engaged in at least one violent incident since their last evaluation. Of those patients ( $n = 46$ ), 71.7 percent were opined to be dangerous and in need of retention, whereas only 28.3 percent were opined not dangerous and recommended for transfer.

A logistic regression analysis (Table 4) was conducted to assess the predictive utility of the HCR-20<sup>V3</sup> scales over violence in the hospital in the preceding review period. Overall, the model was significant ( $\chi^2 = 98.28, p < .001$ ; Nagelkerke  $R^2 = 0.69$ ). Almost 90 percent of opinions were predicted by the combination of these variables (90.4% for opinions to retain and 85.2% for opinions to transfer). Controlling for time since the index offense, the Clinical scale ( $p < .001$ ; Exp(B) = 1.83), Risk Management scale ( $p = .01$ ; Exp(B) = 1.62), and vio-

lence in the hospital ( $p = .03$ ; Exp(B) = .16) significantly contributed to the model. With each one-point increase in the Clinical scale, the odds of an opinion of transfer decreased by 1.83. In addition, with each one-point increase in the Risk Management scale, the odds of an opinion of transfer decreased by 1.62.

Although the finding for violence in the hospital was significant as expected, it predicted in an unexpected direction, likely due to a suppression effect. Specifically, when violence in the hospital is entered into the model with the HCR-20<sup>V3</sup> scales, it appears as if this variable increased the likelihood of opinions of transfer. Results suggest that the variables underlying violence overlap with the Clinical and Risk Management scales (potentially, for example, insight into dangerousness, behavioral instability, and treatment compliance/responsiveness). Components of violence that have not been accounted for in the Clinical and Risk Management scales, such as external factors like transitions on the patient's ward or presence of other volatile patients, may negatively predict opinions about transfer. Exploratory analyses did not identify an interaction effect between the combination of Clinical and Risk Management scales and violence. Further, when logistic regression analyses included only the HCR-20<sup>V3</sup> scales, results remained consistent, supporting the findings that the Clinical and Risk Management scales are strongly associated with such opinions. Table 5 demonstrates the correlations between factors included in the logistic regression model. Although all factors correlated significantly, multicollinearity was not present.

### Discussion

We investigated the incremental predictive utility of the HCR-20<sup>V3</sup> over recent acts of violence in the hospital, severity of index offense, and recommitment status in predicting evaluators' opinions regarding dangerousness and readiness for transfer

**Table 5** Correlations between Predictor Variables

	Months Since the Index Offense	Violence in the Hospital	HCR-20 <sup>V3</sup> Historical Total	HCR-20 <sup>V3</sup> Clinical Total	HCR-20 <sup>V3</sup> Risk Management Total
Months Since the Index Offense	-	.23**	.41**	.30**	.25**
Violence in the Hospital		-	.22**	.41**	.31**
HCR-20 <sup>V3</sup> Historical Total			-	.32**	.30**
HCR-20 <sup>V3</sup> Clinical Total				-	.76**
HCR-20 <sup>V3</sup> Risk Management Total					-

\*\*  $p < .001$ .

among NGRI acquittees. Results demonstrated that the Clinical and Risk Management scales of the HCR-20<sup>V3</sup>, comprising dynamic risk factors, along with recent violence in the hospital, were predictive of release decisions. Other factors such as severity of index offense and recommitment status were not predictive of opinions regarding dangerousness. In addition, the Historical scale of the HCR-20<sup>V3</sup>, including static factors (e.g., history of violence and substance abuse), was not predictive of opinions regarding release.

The findings in this study are consistent with some prior research indicating the influential role of dynamic factors in release decisions.<sup>8</sup> For example, previous research has indicated that compliance with medication, a factor found on both the Clinical and Risk Management Scales, is associated with decisions to release insanity acquittees. In addition, our finding of violence in the hospital as significantly related to release decisions is supported by previous research. Violence independently predicted retention, consistent with the conceptualization of current dangerousness in *George L*<sup>36</sup> and prior research.<sup>8,30</sup> However, a suppression effect emerged when violence was combined with scales from the HCR-20<sup>V3</sup>, a measure that exclusively focuses on individual risk factors. The finding that engagement in violent acts may decrease the likelihood of retention raises the possibility that factors distinct from those captured in the Clinical and Risk Management scales are associated with risk of violence and, correspondingly, with transfer opinions. This proposal is supported by previous research that asserts that situational factors play a role in violence.<sup>43,44</sup> Whereas some research has generally focused on individual risk factors for violence (e.g., insight into dangerousness), other research suggests that factors such as the physical environment, resources, and availability of staff may place a role in institutional aggression.<sup>43,44</sup> Results suggest that use of the HCR-20<sup>V3</sup> significantly adds clarity to decision-making regarding release. However, in assessing risk of violence, additional factors are likely to be of relevance. Research into understanding the interaction between environmental factors and individual risk factors is comparatively understudied and is of great importance in the current context where the decision is focused on whether an individual can be managed outside of a secure facility.

Our findings also indicate that evaluators may place greater weight on current dangerousness and associated dynamic risk factors, as opposed to static factors. Specifically, the results of the current study showed that static factors, including severity of index offense, recommitment status, and the Historical scale of the HCR-20<sup>V3</sup> did not predict opinions of readiness for release. These results contradict previous findings that suggest that these factors have played a role in decision-making.<sup>2,8,30</sup> The contradictory findings may be a reflection of the fact that patients in this study were released to a civil facility instead of to the community. Thus, it may be that, when the decision is to release to less secure (but still highly monitored) settings, evaluators focus more on dynamic than static historical factors. Further, the state of New York requires evaluators to use the HCR-20 in dangerousness evaluations. So, although there is no reason to believe that those who conducted the evaluations used in the current study have different training from that of other evaluators, the required use of the HCR-20 may have explicitly guided evaluators to consider dynamic factors. Further, this is one of only a few studies to find that severity of index offense was not related to decisions for release. This may be an important consideration for evaluators to factor into decision-making surrounding release, especially given that research suggests that severity of offense is not related to recidivism among offenders with mental illness.<sup>45</sup> In the current study, 34.3% of the sample had committed murder/manslaughter, 25.0% attempted murder/manslaughter, and 14.3% assault. Thus, despite the finding that the much of the sample committed violent offenses, it appears that recent and future anticipated functioning was more informative in decisions about risk made through release opinions.

It is important to note that other intangible factors not coded in the HCR-20<sup>V3</sup> may play a role in decision-making. Although seriousness of offense may not have affected decisions in this study, other offense characteristics that were not captured may play a role. For example, the nature of the victims of crimes, the notoriety of specific offenders and their offenses, the community in which the crime occurred, the degree of public outcry, and recent offenses committed by mentally disordered offenders may also influence decisions.

If in consideration of readiness for transfer, evaluators increasingly rely on dynamic factors in deci-

sion-making (as this study suggests), important clinical implications relating to treatment of dangerous individuals with mental illness will follow. If treatment targeting dynamic risk factors is successful in reducing an individual's perceived dangerousness such that the patient can be transferred to a civil setting, those factors should be prioritized in treatment. Setting such priorities may require clinicians to reframe their thinking about which items should be targeted in treatment. While evaluators tend to agree that past violence is an important consideration in conditional release evaluations,<sup>1</sup> there tends to be little agreement beyond that. Results of the current study suggest Clinical and Risk Management factors may be just as, if not more important to consider.

Whereas historical factors may form baseline decisions about the setting in which an acquittee will be placed after adjudication, dynamic factors may be of greater relevance for transfer decision-making. Some research suggests that dynamic factors have assisted in maintaining an individual's success while in the community. For example, Callahan and Silver<sup>2</sup> found that individuals who were married tended to be more successful after release. Further, Riordan *et al.*<sup>46</sup> found that individuals were nearly five times more likely to move from conditional discharge to absolute discharge when they had supportive housing. Factors such as these are related to Risk Management items on the HCR-20<sup>V3</sup> (i.e., personal support and living situation). It may be helpful for clinicians to emphasize these factors in treatment. For example, treatment groups could focus on interpersonal functioning, and social workers may be able to assist with early planning for housing before transfer. Targeting diverse risk factors, such as the ones described above, encourages the use of treatment teams and collaborative effort among multiple disciplines to decrease risk. If treatment teams target these concerns while individuals are hospitalized, it could translate to more success on conditional release, and in turn, decrease the rate of recommitments.

In addition to the need to target dynamic factors in treatment, this research highlights a need for appropriate training in the use of the HCR-20<sup>V3</sup> to encourage consistent, structured decision-making. Current findings suggest that decision-making should focus on factors that can be addressed through treatment or on factors that might serve as protective factors against violence risk. Past research has suggested that assessments focusing only on risk

may result in "lopsided assessments" that disproportionately focus on deficits.<sup>47</sup> Evaluators who are better trained to incorporate dynamic factors into risk assessment, including improvements made by patients between evaluations, as well as relative strengths of patients, may better identify those patients who will be successful on conditional release.

Despite these findings, there continues to be a disconnect between decision-making and outcomes regarding the success of transferred NGRI acquittees. For example, Green and colleagues,<sup>21</sup> using an overlapping sample similar to that included in the current study, found that factors on the Historical scale of the HCR-20<sup>V3</sup> predicted recommitments, whereas the current results suggest that dynamic factors are more likely to influence opinions regarding readiness for transfer. Recommitments to forensic settings do not necessarily signify that individuals engaged in violent acts. For example, Green *et al.* reported that individuals were also recommitment as a result of non-compliance with treatment, re-arrest, or drug and alcohol use, among other factors. It is important for future research to understand how to translate findings from the Clinical and Risk Management scales into interventions that will decrease future risk. Further, current findings highlight the need for improved communication between evaluators who make release recommendations and clinicians who treat patients once they have been transferred to civil psychiatric settings. Research has shown that even when evaluators use structured risk assessment tools in decision-making, they often do not clearly highlight the findings in their conditional release reports.<sup>35</sup> This restricts the information that is shared with treatment providers in less secure settings regarding individual patients and limits what clinicians can target through intervention.

### **Limitations and Future Directions**

The current study took place in New York, and therefore the definitions and procedures discussed in this article are specific to the management process used in that state. The findings may not generalize to other states that follow different conditional release procedures. The current study was limited by reliance on the evaluators' reports, which may not fully capture information that would have informed ratings for HCR-20<sup>V3</sup> items. In addition, we did not use the overall ratings of structured professional judgment or the relevance ratings and instead fo-

cused on the total presence scores for the Historical, Clinical, and Risk Management scales. Future research should examine the predictive utility of the overall structured professional judgment and relevance ratings in regard to decision-making.

Additional study should also focus on the role of the HCR-20<sup>V3</sup> in conceptualizations of risk among those adjudicated NGRI. There is also a need for more research on external factors that influence decisions related to release. Factors such as ward climate, public sentiments, media coverage, and resources may also influence decisions.

In addition, researchers should continue to investigate factors that influence conditional release decision-making, especially in diverse populations. In the current study, 71.1 percent of the sample identified as ethnic minorities. Prior studies have demonstrated that race affects transfer decisions, with Caucasians more frequently conditionally released than African Americans, at least in New York.<sup>2</sup> It is possible that findings would differ in a sample with various racial and ethnic characteristics.

Moreover, the current study focused solely on evaluators' opinion of readiness for transfer from a forensic setting. Whereas research does not specifically speak to concordance rates between evaluators and final judicial decisions, prior work suggests that evaluators demonstrate disagreement throughout every aspect of the conditional release evaluation process.<sup>1</sup> Therefore, it is possible that the opinions reached by the evaluators in this study may have differed from the final outcomes in some situations. Although disagreement occurs between evaluators on the final opinion regarding readiness, where such disagreement happens or at what frequency it occurs remains an empirical question. Additional studies might attempt to determine whether specific factors on the HCR-20<sup>V3</sup> are related to discrepancies.

## Conclusion

The current study offers support for use of the HCR-20<sup>V3</sup> in evaluating readiness for transfer from forensic to civil settings. Results support this assertion, as the HCR-20<sup>V3</sup> distinguished between individuals deemed ready for release versus retention even above factors such as violence in the hospital. Prior research has demonstrated the need for more standardized evaluation protocols in release decisions. Crocker *et al.*<sup>8</sup> suggested that clinicians are more likely to depend on a validated measure of risk

when recommending less restrictive conditions. In addition, the use of structured risk assessments may be useful in improving consensus in evaluator decision-making.<sup>1</sup> McKee *et al.*,<sup>10</sup> also found inconsistencies between the factors that evaluators said they used and felt were important and factors that were actually related to their decision-making. Their results suggest that evaluators are unaware that the factors that they believe to be important are unrelated to release decisions. As the current research demonstrates the utility of the HCR-20<sup>V3</sup> and its' ability to distinguish between opinions of retention and release, use of the HCR-20<sup>V3</sup> may aid in more consistent, structured decision-making.

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