

## BRIEF REPORTS

# Relative Efficacy of Criminological, Clinical, and Personality Measures of Future Risk of Offending in Mentally Disordered Offenders: A Comparative Study of HCR-20, PCL:SV, and OGRS

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The authors compared the ability of 3 commonly used measures of risk of future offending in a sample of 315 mentally disordered offenders discharged from a medium-secure unit in the United Kingdom. The authors explored whether the same criminogenic factors that predict recidivism in the general population also predict recidivism in mentally disordered offenders. The actuarial measure, using mainly criminological variables, provided the best prediction of recidivism compared with measures based on personality or clinical information, which provided no incremental validity over the actuarial measure. The authors suggest that for maximum efficacy clinical risk should be rated at a time of active symptoms rather than at discharge when symptoms are minimal.

Clinical judgment of future risk of offending is thought to be improved by the use of structured risk assessment tools within the clinical process (Fuller & Cowan, 1999; Litwack, 2001). These fall roughly into three classifications: (a) structured risk assessment guides, (b) personality assessment, and (c) actuarial methods. Each of these risk assessment methods varies across a number of different dimensions, namely content (e.g., mental disorder factors, specific forms of personality disorder such as psychopathy, and criminogenic variables), psychometric properties (e.g., whether normative data exist for different popula-

tions and whether clinical cutoffs can be applied), and amount of clinical skill and training necessary for one to be able to administer and score the test (varying from substantial to virtually nil).

Structured risk assessment guides (e.g., Historical, Clinical, and Risk Management Scales [HCR-20]; Webster, Douglas, Eaves, & Hart, 1997) aid the clinician to focus on risk factors that have been proven by research to have predictive value for future dangerousness. Such scales avoid specific cutoff scores for classification for high versus low risk status to encourage professional judgment as opposed to blind adherence to the overall score. Instead, they are used as an *aide memoire* for the clinician to ensure that all important risk factors are considered during the clinical evaluation and to encourage systematic data collection.

Personality evaluation within the field of violence risk assessment has been dominated by the Psychopathy Checklist and its variants (e.g., Hare Psychology Checklist—Revised [PCL-R]; Hare, 1991; Psychological Checklist: Screening Version [PCL:SV]; Hart, Cox, & Hare, 1995). Initially, this checklist was developed as a psychometric measure of a specific form of personality disorder, namely psychopathy (Cleckley, 1976). The PCL-R was not intended as a risk assessment tool but is often used for this because of its predictive accuracy for all types of offending (Hare, 2001; Hare, Clarke, Grann, & Thornton, 2000; Salekin, Rogers, & Sewell, 1996).

Actuarial risk assessment (e.g., Offender Group Reconviction Scale [OGRS]; Copas & Marshall, 1998) involves the calculation of risk on the basis of a combination of a small number of easily

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encoded variables. The variables are chosen because of a reliable empirical relationship between that variable and risk of offending. Many actuarial tools have been designed so that untrained, non-clinical personnel can code them quickly and easily so that risk evaluation can be cheap, efficient, and not dependent on clinical judgment with possible associated error and bias. The efficacy of actuarial measures at predicting reoffending in the general population (i.e., those not mentally disordered) is firmly established (Gendreau, Little, & Goggin, 1996). However, for mentally disordered offenders, such actuarial measures are rarely used. This is partly due to the strongly held philosophy within forensic psychiatric services that offending in mentally disordered patients is directly due to the symptoms of mental illness or personality disorder. Regardless of this belief, it is important to evaluate empirically whether the same criminogenic determinants of risk of offending apply within the mentally disordered population as is found within the general offending population. In a meta-analysis of both general and violent recidivism in mentally disordered offenders, Bonta, Law, and Hanson (1998) suggested that the major predictors of recidivism were the same in this population as in the nonmentally disordered population. Thus, criminal history variables were the best predictors, with clinical variables showing the smallest effect sizes.

The aim of the current study was to compare the predictive efficacy of these three types of risk assessment methodology in mentally disordered offenders in the United Kingdom. We have chosen the most established guides in the area of structured risk, namely the HCR-20 and, in the area of personality, the PCL:SV. For the actuarial measure, we chose the OGRS because of its strong bias for criminogenic variables. The majority of our sample had a mental illness diagnosis, with only a minority being diagnosed with personality disorder.

## Method

### Design

The study was a prospective case-note analysis of patients discharged from an independent-sector, medium-secure facility in South Wales, United Kingdom. The dependent variables were (a) time elapsed since the person was released from the hospital to the time he or she was convicted, (b) the proportion of the sample who offended versus did not offend during the follow-up period, and (c) type of offense (serious vs. minor).

### Participants

A total of 346 patients were discharged from Llanarth Court Hospital, Gwent, South Wales, United Kingdom, between December 10, 1992, and our census date of December 31, 1999. Patients were admitted on the basis of having a serious mental illness, learning disability, or personality disorder and either having been convicted of a criminal offense ( $n = 254$ , 80.6%) or being thought to be at risk of committing such an offense ( $n = 61$ , 19.4%). Patients were excluded if any of the following applied: They resided in the hospital for less than 7 days ( $n = 4$ ), they died during their stay at the hospital ( $n = 2$ ), their files were missing ( $n = 19$ ), or their records of conviction from the United Kingdom Home Office were missing ( $n = 6$ ).

The final sample consisted of 315 patients (276 men, 39 women) with a mean age 30.8 years ( $SD = 9.62$  years, range = 17–70 years). Two

hundred and sixty-six (84.4%) patients were of Caucasian ethnic origin, 39 (12.4%) were of Black Caribbean or Black African origin, 4 (1.3%) were of Asian origin, 2 (0.6%) were of mixed ethnicity, and 4 (1.3%) were of unknown ethnicity. The mean length of stay within the medium-secure service was 270 days ( $SD = 314$  days, range = 3–1870 days).

Primary diagnosis was divided into affective disorder ( $n = 31$ , 9.8%), personality disorder ( $n = 53$ , 16.8%), schizophrenia or psychotic disorder ( $n = 155$ , 49.2%), drug induced psychosis ( $n = 20$ , 6.3%), mental retardation ( $n = 16$ , 5.1%), substance misuse disorder ( $n = 3$ , 1.0%), and "other" diagnoses (including anxiety disorder, developmental disorder, organic disorder, epilepsy, and multiple sclerosis;  $n = 10$ , 3.2%), with 27 (8.6%) patients of unknown diagnosis. Eighty-eight (27.9%) patients also had a secondary diagnosis. These were affective disorder ( $n = 6$ , 6.8%), personality disorder ( $n = 33$ , 37.5%), schizophrenia or psychotic disorder ( $n = 6$ , 6.8%), drug induced psychosis ( $n = 13$ , 14.8%), mental retardation ( $n = 17$ , 19.3%), substance misuse disorder ( $n = 8$ , 9.1%), and "other" diagnoses ( $n = 5$ , 5.7%). Diagnoses were made by a consultant psychiatrist on admission using International Classification of Diseases, Version 10 criteria (World Health Organization, 1992).

### Measures

The PCL:SV was used as we only had access to file information (Hart et al., 1995; Monahan et al., 2001). The PCL:SV has 12 items, each scored from 0 to 2 (range of scores = 0–24). The PCL:SV has two factors. Factor 1 measures selfish and callous personality and relates mainly to interpersonal and affective traits. Factor 2 measures socially deviant behavior and past criminality. PCL:SV ratings were conducted by two fully trained psychologists. The reliability of the PCL:SV ratings for the current study was uniformly high (PCL:SV:  $r = .98$ ; Factor 1:  $r = .96$ ; Factor 2:  $r = .95$ ).

The HCR-20 (Version 2; Webster et al., 1997) measures 20 variables related to future risk of violence. The HCR-20 is divided into three subscales. The History subscale has 10 items related to a history of mental illness, psychopathy, personality disorder, and substance misuse. The Clinical subscale has 5 items relating to the current status of dynamic risk markers (lack of insight, negative attitudes, etc.). The Risk Management subscale has 5 items related to the individual's future social and treatment circumstances and their estimated reaction to these. Although not initially designed for this, the HCR-20 has been validated by a retrospective case-note design (Douglas & Webster, 1999). The current study's interrater reliability was high and consistent with previous research (HCR-20 total:  $r = .80$ ; History subscale:  $r = .92$ ; Clinical subscale:  $r = .90$ ; Risk Management subscale:  $r = .85$ ).

The OGRS (Copas & Marshall, 1998) is a criminogenic risk assessment tool based solely on an offender's history of offending and certain demographic variables (e.g., age and gender). The OGRS estimates the probability that offenders will be reconvicted within 2 years of release on the basis of six variables concerning the offender, (e.g., age, gender, and type of offense). Thus, the OGRS does not use any clinical judgment, and estimates of reliability of ratings are not necessary as all ratings are identical. An OGRS score cannot be calculated for people who do not have previous convictions. The OGRS does not include any assessment or weighting of mental health variables.

### Procedure

Ethical Committee approval was obtained from the Ethical Committee of the School of Psychology, Cardiff University. Participants were not asked to give informed consent for the study as the design was based solely on case-note review; data were made anonymous after collection.

Two psychologists completed all assessments by access to file-based information. All background psychiatric and mental health reports on the

patients were obtained as were full criminal record history, admission and discharge reports, social work and probation information, and nursing records. All convictions were obtained from the United Kingdom Home Office (2000) Offenders Index (a United Kingdom Government database of all convictions), both prior to admission to hospital and following discharge. Risk assessments were completed blind to outcome by the use of automatic "computer masking" of offenses following date of discharge.

## Results

The population statistics for the measures are displayed in Table 1. All 315 participants were followed up for a minimum of 2 years ( $M = 6.00$  years,  $SD = 1.77$  years, range = 2.06–8.81 years). The mean number of offenses in the follow-up period was 4.00 ( $SD = 10.19$ , range 0–88), and 63.5% of participants were not convicted of an offense during the follow-up period. The relationships among the measures are shown in Table 2. We conducted the following complementary analyses of the data to predict violent behavior.

### Survival Analysis

We conducted survival analysis (Kaplan & Meier, 1958) because the participants had different follow-up lengths. A disadvantage of survival analysis is that our continuous predictor variables (e.g., HCR-20) had to be split into discrete categories; thus, statistical power was lost, and we did not have the richness of a continuous variable.

Figure 1 shows the survival curves for each risk indicator. For the PCL:SV, the groups were defined by standard cutoffs (Hart et al., 1995). Scores of 12 or less were defined as low ( $n = 177$ ), scores of 13–17 were defined as medium ( $n = 44$ ), and scores of 18 or more were defined as high ( $n = 9$ ). For the HCR-20 and OGRS, there exist no accepted cutoffs for classification. We therefore trisected our sample into low, medium, and high according to the distribution of scores in this sample. For the HCR-20, scores of 16 or less were defined as low ( $n = 91$ ), scores of 17–22 were defined as medium ( $n = 85$ ), and

Table 1  
Descriptive Statistics for the Sample on the Risk Assessment Tools

Risk assessment tool	<i>n</i>	<i>M</i>	<i>SD</i>	Range
PCL:SV	230	8.25	5.18	0–20
Factor 1	221	3.79	3.79	0–11
Factor 2	244	4.50	2.83	0–12
HCR-20	274	19.90	7.02	0–36
History	284	11.39	3.97	0–20
Clinical	275	3.77	2.42	0–10
Risk Management	272	4.68	2.63	0–10
OGRS	212	0.494	0.289	0.025–0.994

*Note.* All measures could not be calculated for all patients because of limited information in the case files. The Offender Group Reconviction Scale (OGRS) score can be calculated only for people with previous convictions. Sixty patients did not have convictions prior to admission to the hospital, and these formed a "never" group in the analysis. PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales.

Table 2  
Correlations Among the Scores on the Risk Assessment Tools

Risk assessment tool	HCR-20	History	Clinical	Risk Management	OGRS
PCL:SV	.78***	.67***	.67***	.43***	.35***
Factor 1	.64***	.47***	.65***	.36***	.16
Factor 2	.74***	.71***	.48***	.40***	.51***
HCR-20	—	—	—	—	.30***
History	—	—	—	—	.33***
Clinical	—	—	—	—	.02
Risk Management	—	—	—	—	.20**

*Note.* Dashes indicate correlations within a tool that were not calculated. HCR-20 = Historical, Clinical, and Risk Management Scales; OGRS = Offender Group Reconviction Scale; PCL:SV = Psychopathy Checklist: Screening Version.

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

scores of 23 or more were defined as high ( $n = 98$ ). For the OGRS we trisected those with a valid score into low ( $<0.29$ ,  $n = 70$ ), medium (0.291–0.665;  $n = 71$ ), and high ( $>0.666$ ;  $n = 71$ ). It is not possible to calculate an OGRS score if an individual has never previously offended. We therefore created a fourth group (termed *never*) that corresponded to those patients with no previous offending history ( $n = 60$ ).

Table 3 shows the percentage of patients from each group who offended along with the significance of the Mantel–Cox log-rank. All three measures led to significant results with respect to offending outcome. However, it is clear that the OGRS is the best predictor of reoffending.

Figure 1 shows that nearly all offending behavior (87%) occurred within 1,000 days of discharge (approximately 3 years). From our sample, 92.5% either had been at liberty without conviction for over 3 years or had been reconvicted. We therefore judged that we could ignore differential follow-up times in all further analyses.

### Analysis of Variance Comparing Risk Predictor Scores for Offenders Versus Nonoffenders

We divided the participants into an offender and a nonoffender group and compared scores on the measures (see Table 4). We also calculated the effect size (Cohen, 1988) to aid comparison between measures in terms of effectiveness in discriminating offenders from nonoffenders. The OGRS produced a very large effect size (1.28) that was over twice the effect size of either of the other risk measures.

### Receiving Operating Characteristic (ROC) Analysis

Signal detection theory is a succinct and informative way of describing the predictive value of a tool (Mossman, 1994), as it takes account of differing incident base rates and that some risk assessment tools (e.g., PCL:SV) have many possible values that could be used as the cutoff point for making predictions. Figure 2 shows the ROC curves for the three measures. Associated statistics are shown in Table 5. Consistent with the previous analyses, all three measures were highly associated with offending outcome, with the OGRS having the greatest area under the curve (AUC; see

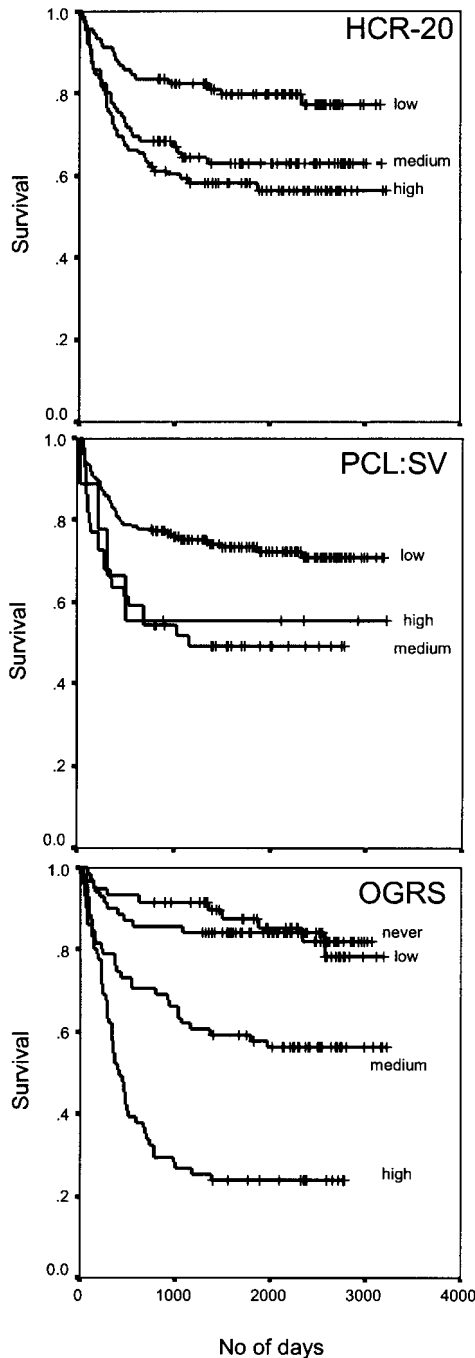


Figure 1. The probability that a person had not reoffended (i.e., they had survived) is plotted as a function of the number of days since discharge. For each of the risk assessment tools, we have split the groups into low, medium, and high scorers (see the text for details). HCR-20 = Historical, Clinical, and Risk Management Scales; PCL:SV = Psychopathy Checklist: Screening Version; OGRS = Offender Group Reconviction Scale.

Figure 2). Inspection of the respective subscales shows that Factor 2 of the PCL:SV was significantly associated with offending whereas Factor 1 was not. For the HCR-20 subscales, History and Risk Management were associated with offending, whereas Clinical was not.

### Nature of the Offense: Minor Versus Serious

Obviously, when practicing risk assessment, one must be able to predict not only who is likely to offend but also the nature of the offense. For this reason, we clustered offenses as serious (including murder, grievous bodily harm, kidnap, robbery, rape, indecent assault, and incest) or less serious (henceforth termed *minor*; e.g., actual bodily harm, indecent exposure, burglary, fraud, drug offenses, and motoring offenses). These offense clusters were ascertained by clinical judgment. Only ROC analysis was used because of the following reasons: (a) Our previous results show a highly consistent pattern of results across the different analyses, and (b) because fewer patients committed serious offenses (17.7%) as compared with minor offenses (31.0%), we needed an analysis that is insensitive to changes in base rate (Mossman, 1994). Table 5 shows the calculated AUCs for each of the predictor variables for both serious and minor offenses. As can be seen, the pattern of results for both serious and minor offenses is similar to the overall offense classification. Further, the utility of all scales was higher for minor offenses than it was for serious offenses. As AUCs are independent of base rates this is not due to more people committing minor offenses as compared with serious offenses. For serious offenses, only Factor 2 of the PCL:SV and the OGRS now reach significance.

### Diagnosis

Although the majority of patients (67%) in our sample had a mental illness, it is possible that the minority of patients with other diagnoses drove the results. We therefore repeated our ROC calculations after dividing our patients into a group with mental illnesses, a group with personality disorders, and a group with "other" diagnoses (including mental retardation, developmental disorder, and physical diagnosis). The results (see Table 6) show that the AUCs for the mental illness group are similar to the overall population, as are those of the "other" group (although several are no longer statistically significant as the lower number of patients when split into these groups reduces the statistical sensitivity and thus increases the possibility of a Type II error). It is interesting to note that all three measures had lower prediction rates for the personality disorder group (only the OGRS was significantly useful). Further data are needed for us to explore the efficacy of risk prediction instruments for offenders with personality disorders more thoroughly.

### Logistic Regression

The above analyses clearly show OGRS as the best predictor of offending. We therefore used logistic regression to see if any of the other variables could add incremental validity to the model in addition to OGRS. We added each of the variables to the model using a forced-entry method. As shown in Table 7, no other variable was able to make an additional significant contribution to the model.

### Discussion

All three measures showed predictive utility for offending behavior following discharge from a medium-secure psychiatric facility in a primarily mentally ill cohort. Total scores for PCL:SV

Table 3  
*Percentage of Patients Who Committed an Offense Following Discharge for Each Risk Predictor*

Risk assessment tool	Risk predictor group				Mantel–Cox statistic	
	Never	Low	Medium	High	Log-rank	<i>p</i>
PCL:SV		27.1	50.0	44.4	10.70 <sup>a</sup>	< .005
<i>n</i>		177	44	9		
HCR-20		20.9	36.5	42.9	10.76 <sup>b</sup>	< .005
<i>n</i>		91	85	98		
OGRS	15.0	17.1	43.7	76.1	83.78 <sup>c</sup>	< .0001
<i>n</i>	60	70	71	71		

*Note.* The Offender Group Reconviction Scale (OGRS) scores also included a “never” group, corresponding to those patients who had never previously offended. PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales.

<sup>a</sup> *df* = 2. <sup>b</sup> *df* = 2. <sup>c</sup> *df* = 3.

and HCR-20 appeared to be approximately equivalent in their predictive abilities, producing moderate effect sizes. Consideration of the subscales shows that Factor 2 of the PCL:SV (antisocial behavior) was highly significant whereas Factor 1 (interpersonal and affective traits) was not. The subscales of History and Risk Management of the HCR-20 were moderate predictors, but performance of the Clinical subscale did not exceed chance. In comparison, the purely criminological scale (OGRS) showed outstanding and consistent ability in identifying those patients who were going to offend. This pattern of results held for both serious and minor reoffenses, but all scales had better predictive ability for minor offending behavior.

Although the PCL:SV performed moderately well, its efficacy was not as high as in previous studies (Hare, 2001). This is probably due to a small range of scores. The majority of our sample (77%) had scores in the low range of the PCL:SV, whereas only 3.9% had scores in the high range. Any scale in which the scores are concentrated at one end of the range suffers from the effect of reduced variance and therefore reduced statistical sensitivity. Our population resided in a medium-secure psychiatric facility that does not accept highly dangerous patients. Therefore, although the PCL:SV was only a moderate predictor in this study, it may well prove better in facilities in which greater variation of scores would allow a more sensitive test. Despite this limitation,

Table 4  
*Mean Scores for the Risk Variables for the Offender and Nonoffender Groups*

Risk assessment tool	Nonoffender	Offender	<i>F</i>	<i>dfs</i>	Effect size ( <i>d'</i> )
PCL:SV					
<i>M</i>	7.36	10.12		1, 228	0.54
<i>SE</i>	5.12	4.82	15.16***		
Factor 1					
<i>M</i>	3.55	4.32		1, 219	0.25
<i>SE</i>	3.04	3.13	2.96		
Factor 2					
<i>M</i>	3.83	5.80		1, 242	0.70
<i>SE</i>	2.80	2.42	29.48***		
HCR-20					
<i>M</i>	19.07	21.54		1, 272	0.35
<i>SE</i>	7.05	6.70	7.76**		
History					
<i>M</i>	10.84	12.36		1, 282	0.38
<i>SE</i>	3.96	3.82	9.89**		
Clinical					
<i>M</i>	3.85	3.64		1, 273	−0.08
<i>SE</i>	2.47	2.35	0.45		
Risk Management					
<i>M</i>	4.29	5.45		1, 270	0.41
<i>SE</i>	2.45	2.81	12.29**		
OGRS					
<i>M</i>	0.350	0.666		1, 210	1.28
<i>SE</i>	0.240	0.247	89.01***		

*Note.* PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales; OGRS = Offender Group Reconviction Scale.

\*\* *p* < .01. \*\*\* *p* < .001.



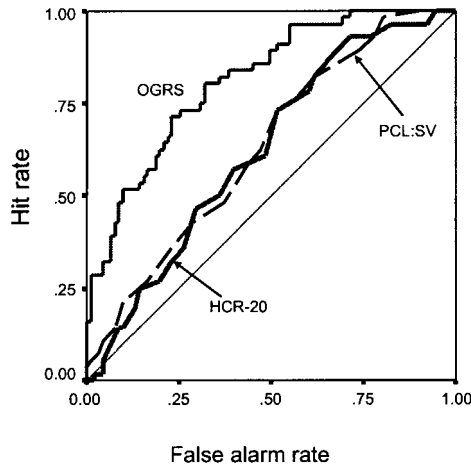


Figure 2. Receiver operating characteristic (ROC) for the three measures. ROC plots the proportion of people correctly predicted as showing the target behavior (true positive or hit rate) against the proportion of people incorrectly predicted to show violent behavior (false positive or false alarm rate) for each level of the scale. To quantify the ROC, we calculated the area under the curve (AUC). If the scale has no predictive value, the hit rate rises at the same rate as the false alarm rate and the AUC will equal .5. If the scale is a perfect predictor, then the hit rate will reach 1.0 before there are any false alarms, and the AUC will equal 1.0. We calculated AUCs and their significance using a nonparametric distribution assumption via SPSS 11.0.1, and they are presented in Table 5. OGRS = Offender Group Reconviction Scale; PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales.

we found that Factor 2 of the PCL:SV proved to be a consistently better predictor than Factor 1. This replicates previous studies both in a population with mental illness from the United Kingdom (Gray et al., 2003) and in other studies from around the world (Belfrage, Fransson, & Strand, 2000; Grann, Langstrom, Tengstrom, & Kullgren, 1999; Salekin et al., 1996).

The HCR-20 was designed as a predictor of violent offending. It has never previously been identified as a measure of risk of general criminal offending. Thus, the HCR-20 may have use

Table 5  
Area Under the Curve for the Risk Predictors for All, Serious, and Minor Offenses

Risk assessment tool	All offenses	Serious offenses	Minor offenses
PCL:SV	.66***	.58	.61*
Factor 1	.57	.53	.55
Factor 2	.72**	.66**	.68***
HCR-20	.61**	.56	.63**
History	.62**	.57	.63**
Clinical	.48	.47	.49
Risk Management	.62**	.56	.62**
OGRS	.81***	.71***	.83***

Note. PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales; OGRS = Offender Group Reconviction Scale.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 6  
Area Under the Curve for the Risk Predictors for Offenses After Discharge, Divided by Diagnosis

Risk assessment tool	Mental illness	Personality disorder	Other
PCL:SV	.65**	.55	.71
<i>n</i>	148	45	21
Factor 1	.55	.52	.60
<i>n</i>	140	44	21
Factor 2	.72**	.60	.77
<i>n</i>	160	45	22
HCR-20	.64	.53	.61
<i>n</i>	183	46	25
History	.66**	.47	.59
<i>n</i>	188	50	25
Clinical	.45	.52	.44
<i>n</i>	182	48	25
Risk Management	.66**	.53	.54
<i>n</i>	182	46	24
OGRS	.80***	.75**	.85*
<i>n</i>	140	41	15

Note. Mental illness included both psychosis and affective disorders; personality disorder included antisocial, borderline, and other personality disorders; other included mental retardation, developmental disorder, and physical diagnosis. PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales; OGRS = Offender Group Reconviction Scale.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

outside its initial design. Although the HCR-20 had moderate efficacy, it was striking that the Clinical subscale did not predict at above-chance levels in this primarily mentally ill population. Although some previous studies have found a similar result (Douglas, Ogloff, Nicholls, & Grant, 1999; Douglas & Webster, 1999), others found the Clinical subscale to be highly predictive for both patients with mental illness (Gray et al., 2003) and patients with personality disorders (Belfrage et al., 2000). How can we explain these discrepant results? Douglas and Webster (1999) argued that Clinical subscores based only on case notes in retrospective designs may be unreliable. Another possible explanation is that both Gray et al. (2003) and Belfrage et al. (2000) used an assessment of institutional vio-

Table 7  
Summary of Logistic Regression Analysis Predicting Violence for the Three Measurements and Their Subscales

Risk assessment tool	<i>B</i>	<i>SE B</i>	Estimated odds ratio ( $\beta$ )
OGRS	4.14	0.90	62.65***
PCL:SV	0.01	0.54	1.00
Factor 1	0.09	0.56	1.09
Factor 2	0.14	0.54	1.15
HCR-20	0.24	0.40	1.27
History	-0.35	0.42	0.70
Clinical	-0.39	0.43	0.67
Risk Management	-0.05	0.38	0.96

Note. OGRS = Offender Group Reconviction Scale; PCL:SV = Psychopathy Checklist: Screening Version; HCR-20 = Historical, Clinical, and Risk Management Scales.  
\*\*\*  $p < .001$ .

lence for in-patients, whereas the present study and that of Douglas et al. (1999) examined reconvictions following release. Finally, and in our opinion most important, is the time at which the rating of the Clinical subscale is made. In our previous study (Gray et al., 2003), we scored the Clinical items within 2 weeks of admission, at which time the patients were often severely symptomatic. In the present study, we scored the Clinical items at the time of discharge from hospital (as recommended), at which time mental state is presumably improved and stable, with limited symptoms remaining (otherwise discharge would not have occurred). If it is the symptoms of mental disorder that cause offending behavior (which is accepted lore within mental health services for mentally disordered offenders), then it does not make sense to attempt to code such an item when patients are asymptomatic. Thus, at the time of discharge, few symptoms will be present, but if the patient relapses after release, then it will presumably be the severity and type of symptoms when he or she was ill that are associated with offending behavior. We now suggest that it would be valuable to compare efficacy of risk prediction of the Clinical subscale rated at two separate time points: during a time of active symptomatology (preferably "worst ever symptoms") and at the time of discharge (when patients are as well as they are likely to get). Studies by our research group are currently investigating this issue.

The simple measure of criminogenic risk (OGRS), developed in a large sample of offenders without mental disorders from the United Kingdom, was found to have outstanding predictive ability in our sample of patients with mental disorders. Although this may seem surprising as the OGRS includes no measure of mental disorder, it is in line with previous experimental studies (e.g., Gardner, Lidz, Mulvey, & Shaw, 1996) and with a meta-analysis of the literature on predictors of general and violent recidivism in mentally disordered offenders (Bonta et al., 1998). Indeed, some of the variables that were shown by Bonta et al.'s (1998) analysis to individually have the greatest effect sizes (e.g., age, gender, type of offense, and criminal history) are combined in the OGRS. Further, our regression analysis suggests that taking other measures (e.g., PCL:SV or HCR-20) does not provide incremental validity over the contribution of this actuarial measure.

The philosophy of secure facilities for patients with mental health problems is that a large proportion of offending behavior in this group is related to the symptomatology of the mental disorder. Clinicians who provide services for mentally disordered offenders often believe that if they adequately treat the symptoms of mental disorder, then the risk of offending will be significantly reduced or even eliminated. Our findings suggest that this focus on mental-illness factors within forensic mental health services may be partially mistaken and that the same determinants of risk of offending apply in the mentally disordered population as in the general offender population. This does not mean, of course, that mental health factors are not at least partially predictive in the mentally disordered population: Indeed, in our previous study (Gray et al., 2003), we found that the Clinical subscale of the HCR-20 had very good predictive properties, and the present study may have failed to find any use for clinical measures as the patients were scored at a time of little or no symptomatology. What it means, however, is that a

focus purely on mental health factors misses a vital source of information that is highly predictive of reoffending.

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