

VIOLENCE RISK SCREENING IN COMMUNITY CORRECTIONS*

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Research Summary:

Issues of safety and screening for potential violence are particularly salient in community correctional settings. These contexts require a risk assessment mechanism that can both classify offenders according to their risk of violent recidivism and be administered quickly and effectively by nonclinicians. Existing assessment instruments such as the LSI-R, PCL-R-2, VRAG, and HCR-20 are of limited utility in relation to predicting violence in community corrections. This research describes the creation and validation of the Violence Risk Screening Instrument that better meets the requirements of community corrections. Violent recidivism among men was best predicted by a three-item instrument consisting of Severe Violence, Domestic Violence, and Unstable Lifestyle.

Policy Implications:

Balancing the treatment and supervision needs of offenders with the task of ensuring public safety within a context of limited resources makes risk assessment and triage essential. Resource constraints mean that not all offenders can receive high levels of supervision; similarly, best practice research on responsivity suggests that only those offenders at higher risk will benefit from high levels of supervision (Andrews and Bonta, 1994). In the past two decades, the use of risk assessment instruments has brought greater objectivity to the process of classifying offenders into risk groups. However, a single risk assessment instrument cannot classify offenders according to all forms of risk. As supervision strategies become more precise and more focused on specific forms of risk, so too must the instruments that are used to derive the classification. The Violence Risk Screening Instrument proposed here is valuable insofar as it meets the requisite criteria for community corrections: It has demonstrable predictive utility, and it can be administered

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by line-level personnel. Furthermore, it allows community corrections agencies to conserve limited resources for offenders determined to be at greatest risk of jeopardizing public safety.

KEYWORDS: Community Corrections, Risk Screening, Violence Triage

Lost amid the often acrimonious theoretical debates over risk assessment are the realities of correctional practice. The use of the overly generic term “risk assessment” obscures the fact that the delivery of correctional services is a process, one comprising multiple decision points requiring different types of evaluations. At least in part, the undifferentiated application of risk assessment language reflects the competitive expansion of assessment instruments following the ascendance of structured approaches in the late 1980s. Instruments originally constructed for more limited objectives have increasingly been repackaged and remarketed as all-in-one tools, serving the correctional community with Swiss Army knife-like efficiency. Despite the proliferation of instruments, however, at least one aspect of correctional assessment remains underserved: the assessment of the risk of violent recidivism among those assigned to community supervision. In this context, risk assessment makes no pretense of predicting individual behavior, but is concerned with the classification of individuals into groups that are internally consistent (that is, groups in which members share similar characteristics) but are simultaneously characterized by distinct rates of violent offending. Community corrections, then, requires a screening instrument to sort offenders prior to making more detailed case management evaluations, a “triage” instrument that (1) can classify offenders according to their risk of violence recidivism and (2) can be administered quickly and without significant clinical expertise. The following describes the development of such a tool, the Multnomah County (OR) Violence Risk Screening Instrument.

BACKGROUND

To strengthen its evidence-based approach to offender supervision, the Multnomah County Department of Community Justice (DCJ) sought to develop and validate a risk assessment tool to identify those offenders entering community supervision who were at risk of committing a violent offense while under supervision. It is important to distinguish a risk assessment tool from a case management tool. A risk assessment tool is not intended to provide guidance for how to manage a particular case, but to classify the offender, thereby identifying the likelihood of the offender committing future violence. These are very different tasks; appropriate case management that ensures a level of supervision commensurate with

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the risk to public safety requires a great deal of information about an offender such as his or her history, behavior, attitude, and other dynamic factors. Classifying offenders into groups according to the likelihood of violent recidivism can be accomplished more expeditiously using a relatively limited set of data.

Wanting to screen offenders shortly after admission, the DCJ needed an instrument that could be administered upon intake or by a field probation/parole officer (PPO) with little personal knowledge of, or clinical interaction with, the offenders. Assessment at this stage has three requirements. First, it must be concise so that it can be completed quickly. Second, it must include items that are scorable even when the rater does not have a great deal of information about the offender. And third, it must not require the expertise of a trained clinician, as PPOs do not commonly possess this background. The purpose of this initial assessment is simply to triage cases into categories so that resource allocation decisions can be made fairly and sensibly. The use of a validated violence risk assessment instrument is essential to the best-practice notion of providing intensive (and expensive) assessment, surveillance, and treatment resources to those who are at highest risk of violent recidivism. A positive screen would trigger a series of steps designed to provide enhanced supervision such as case staffing with a supervisor, intensified case management, or a referral to a specialized caseload.

Currently, offenders with a propensity for violence are identified through a subjective process initiated by PPOs. Subjective methods relying on professional judgment remain the most commonly used methods to assess the potential for violence (Glover et al., 2002), far outstripping the use of actuarial risk scales (Bonta, 2002; Boothby and Clements, 2000). From the perspective of practitioners, subjective techniques are flexible and person-centered. Relevant information is broadly defined, and the method for collecting, recording, and communicating information has few constraints. The widespread popularity of subjective approaches and the various ideological and methodological debates about the validity of risk items may be at the root of staff resistance to objective instruments (Gendreau et al., 1996; Simourd, 2004). This reticence is disconcerting given that subjective methods are notoriously inaccurate and commonly result in inconsistent decisions across staff. Often the factors used in the subjective assessment do not have a statistical relationship to the actual risk of violence, and they may therefore lead to inaccurate decisions about who is likely or unlikely to commit future violence (Kroner and Mills, 2001; Grove and Meehl, 1996; Quinsey et al., 1998).

Conversely, a structured objective risk assessment process requires staff to consider an explicit set of risk factors that are defined, measured, and

recorded in a systematic way. They are developed with the intent of classifying an individual according to the likelihood of a specific outcome, for a specific population, within a specific time period. There are several objective instruments with a demonstrated ability to classify offenders according to their risk to commit future violence, several of which have focused on behavior in forensic or institutional settings. However, most of these instruments have requirements that make them impractical for use in the way the DCJ envisioned; that is, one that could be administered by nonclinical staff rather quickly, that uses information available at intake, and that would work within DCJ's framework of other assessment instruments.

STRUCTURED RISK ASSESSMENT INSTRUMENTS

There are several popular and widely used risk assessment instruments, including both the revised versions of the *Level of Service Inventory* (LSI-R; Andrews and Bonta, 1997) and Hare's *Psychopathy Checklist* (PCL-R-2; Hare, 2004), the *Violence Risk Appraisal Guide* (VRAG; Harris et al., 1993), and the *Historical, Clinical, and Risk Management* scheme (HCR-20; Webster et al., 1997). All have demonstrated predictive validity with regard to a wide range of outcomes (see Loza and Loza-Fanous, 2001; Bonta and Motiuk, 1992; Hart et al., 1994; Hemphill et al., 1998; Harris et al., 1993; Quinsey et al., 1998; Douglas and Webster, 1999; Webster et al., 2002). But they are of limited utility for that task at hand, that is, for evaluating the risk of violence in the early phase of community supervision.

Most notably, existing instruments suffer from two primary deficiencies: they are too long and cumbersome, and they require a level of expertise greater than may reasonably be expected of staff. The LSI-R, for example, comprises 54 items. Even the screening version (LSI-R:SV), with a reduced schedule of 8 items, takes at least 15 minutes to administer and requires a modicum of clinical knowledge. The time demands for the PCL-R-2 assessment are also formidable. The PCL-R-2 takes between 90 and 120 minutes to administer and another 60 minutes for collateral review (www.pearsonassessments.com/tests/hare.htm). The 12-item screening version of the PCL-R-2 still requires 45 minutes to complete and 30 minutes for collateral review. Moreover, the appropriate application of the PCL-R-2 requires a more advanced clinical background than that possessed by many PPOs. The *Manual for the Revised Psychopathy Checklist* (Hare, 2004) specifies that users should hold an advanced degree in the social, medical, or behavioral sciences (such as a Ph.D., Ed.D. or M.D.) and be registered with the local, state, or provincial body that regulates the assessment and diagnosis of mental disorder. Users should further have experience with forensic populations and must receive specialized training on the

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administration of the PCL-R-2. The compilation of suitable psychosocial histories required by VRAG takes approximately 2.5 person-days (www.mhcp-research.com/vragsum.htm), far in excess of the staff resources available for triage.

In short, currently available risk assessment instruments do not meet the criteria necessary for violence triage. This takes nothing away from these instruments. The LSI-R remains very useful as a case management tool, and the DCJ continues to use the PCL-R to determine whether an offender referred to its Specialized Supervision Team (SST) by a PPO should be accepted on the SST caseload and supervised more intensively. It is simply that a different tool is required for the type of intake screening envisioned here.

RESEARCH METHODOLOGY

INSTRUMENTATION

The pilot instrument developed by the DCJ was based on a review of relevant research, supplemented by discussion with DCJ psychologists and clinical supervisors. This research identified a general profile of those who are likely to commit violent acts: those exhibiting early-onset violence, frequent and severe violence, and psychopathic or severe personality disorders. Therefore, the pilot instrument includes a wide range of factors designed to tap into these issues, including various markers of an adult offender's behavior as a juvenile, information about the victim pool (e.g., intimates versus strangers), range of violence (mild to severe), contexts in which the behavior occurs, and the frequency of violent behavior. Several items also assess factors known to contribute to the propensity of violence, such as an unstable lifestyle, substance use, and mental health issues.

The first two items on the pilot instrument are designed to capture criminal and/or disruptive behavior before the age of 18. They reflect the general proposition that youthful misconduct may escalate into more serious adult behavior, and that juvenile aggression often presages adult violence. Developmental and life-course research has consistently established a close connection between juvenile and adult behavior. For example, the Cambridge Study in Delinquency Development indicates that there is a close relationship between juvenile delinquency and adult criminality (Farrington, 1983), and that men convicted at the youngest ages are more likely to become persistent offenders (Farrington and West, 1989; see also Wolfgang et al., 1987). In addition to general criminality, there is also evidence of a more specific link between youth and adult violence. Cohort data from both Denmark (Moffitt et al., 1989) and Sweden (Stattin and Magnusson, 1989) provide evidence that aggressive behavior is a consistent pattern in some men from early childhood, and that high ratings of

aggressiveness are characteristic of boys who later commit violent crimes. However, the potential risk factors for adult violence are not limited to official delinquency. A whole constellation of “troublesome” or “problematic” behavior in childhood and adolescence has also been implicated in later violence (Farrington and West, 1993; Harris et al., 1993). Hence, two items are included on the pilot instrument to adequately explore violent risk potential: *Juvenile Initiation of Violence* and *Early Onset of Delinquency*. The third item, *Gang Membership*, traverses the dimensions of juvenile delinquency and adult violence. According to the U.S. Department of Health and Human Services (2001), involvement with delinquent peers and gang membership are two of the most powerful predictors of violence. Gang affiliation has also been found to increase the frequency of violent behavior (Gordon et al., 2004), and being a gang member is a significant predictor of entry into adult corrections for delinquent adolescents (Benda et al., 2001).

The next set of risk factors is related to various aspects of violent conduct. The relationship between past and future violence has been enduring, irrespective of sampling diversity or methodology: “it appears that virtually any measure of past offending can be expected to predict future violence” (Klassen and O’Connor, 1994; see also Monahan, 1981). Because prior violence is multidimensional in its conditioning effects, several items are required for adequate assessment. The seriousness of past violent behavior, or *Severe Violence*, has long been regarded as among the most powerful predictors of violent recidivism (Thornberry and Jacoby, 1979). But severe violence is not a necessary condition for future violence. In fact, much of the past research on the correlates of violent recidivism does not differentiate among “levels” of violent behavior; rather, research has tended to support the more generalized finding that that violence begets more violence, considerations of severity notwithstanding (Lattimore et al., 1995; Hanson and Bussiere, 1998; Schwaner, 1998). To distinguish it from the severe violence indicator, the general violence factor is labeled *Any Incident of Minor Violence*. Finally, the frequency of prior violent behavior or *Frequent Violent Acts* has similarly been implicated in violent recidivism. The frequency of individual offending is an integral feature of criminal careers (Blumstein and Cohen, 1987), and the relationship between frequency measures such as the number of prior arrests and recidivism is robust.

Predictions of future violence need not be tied to past overt acts. *Threatened Violence* is often a precursor to the manifestation of violence. For example, the practice of threat assessment in relation to severe school violence is predicated on the notion that the popular image of students who suddenly “snap” and perpetrate serious acts of violence is inaccurate; targeted violence is not a spontaneous, unpredictable event but results

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from careful planning and deliberation (Cornell, 2004). Individuals considering workplace violence also commonly vocalize their intentions, either overtly or as veiled threats (Kelleher, 1997), and threatening behavior is routinely included in “profiles” or “warning signs” of potentially violent employees (Heskett, 1996). In short, threats increase the risk of subsequent violence (Meloy, 2002).

Thus far, the items linking violent behavior and recidivism have remained undifferentiated with regard to the particular circumstances of the violence. There are, however, two specific contexts of violence that merit further consideration. The first relates to *Institutional Violence*. Behavior during incarceration is, unsurprisingly, strongly associated with conduct following release. Parolees with records of threats and aggression during incarceration are significantly more likely to be rearrested for violence (Lattimore et al., 1995). The second context of special importance is *Domestic Violence*. Repetitive acts of violence are a distinguishing feature of domestic abuse (Mooney, 1999). There is some evidence that domestic violence results in greater injury and is more likely to be repeated than other forms of violence (Ferrante et al., 1996).

The items contained in the final section of the pilot instrument have all been found to contribute to violent behavior. As noted, considerable evidence suggests a connection between *Psychopathy* and violent recidivism (Corrado et al., 2004; Hemphill et al., 1998; Harris et al., 1991), with some studies concluding that the psychopathy construct is the strongest single predictor available (Harris et al., 2001). More generally, both *Personality Disorders* (Widiger and Trull, 1994; Hanson and Bussiere, 1998; Ullrich and Marneros, 2004) and *Mental Health* problems (Monahan, 1993; Harris et al., 1993) have been linked to repeated violent behavior. Substance abuse has also been found to demonstrate a strong effect on violent behavior (Pihl and Peterson, 1993; Swanson, 1994). More broadly, the probability of violent recidivism rises with what may be termed *Unstable Lifestyle*, including, for example, inconsistent work histories (Motiuk and Brown, 1996; Villeneuve and Quinsey, 1995) and difficulties maintaining relationships (Wright and Wright, 1992). In a similar vein, offenders who have failed on conditional release or have a *History of Parole/Probation Noncompliance* (Dempster and Hart, 2002; Schwaner, 2000; Harris et al., 1993) also present a greater risk of violent recidivism.

There is considerable empirical support for a link between suicidal behavior or *Suicidal Ideation* and violence (Plutchik and van Praag, 1997; Vermeiren et al., 2003). Among adolescents, suicidal ideation is one element of a syndrome of problem behaviors that also includes carrying a weapon (Orpinas, 1995; Woods et al., 1997), fighting (King et al., 2001; Sosin et al., 1995), and assaultive behavior (Cohen-Sandler, 1982; Walter et al., 1995). In comparison with research on suicide, the association

between violence and *Homicidal Ideation* is much less developed. Still, there is some indication that homicidal ideation may be part of the same behavioral syndrome (Brent et al., 1993; Korn et al., 1997). The connection between violent recidivism and either form of ideation remains unclear, but the potential for violence under these circumstances dictates that both be recognized as risk factors.

And, finally, perhaps in a nod to proponents of subjective assessments, a final item was included on the instrument to identify *Special Circumstances* that could suggest a propensity for violence. Designed to provide a forum for clinical judgment, the item is used to account for unique aspects of an offender's behavior or history that are not included among the other items. For example, a particularly sadistic act or a serious head injury with frontal lobe damage could be scored under this category.

SAMPLING

A retrospective sampling frame was identified that permitted the use of a three-year follow-up period. Between January 1, 2000 and June 30, 2000, 8,353¹ offenders were sentenced or released to community supervision in Multnomah County. The subsequent criminal records for each offender in the sampling frame were examined to determine who had been reconvicted of a violent offense within three-years of admission. (The list of offenses considered to be violent for the purposes of this study is available from the authors). A stratified sampling technique was used to ensure there were sufficient numbers of cases to construct two groups: those reconvicted of a violent offense and those not reconvicted of a violent offense. Separate analyses were intended for both men and women, so the sample was also stratified by gender to ensure sufficient sample sizes. However, among the women, only 66 of 2,035 admitted during the sampling time frame were convicted of a violent offense within three years, 6 for a felony and 60 for a misdemeanor. Because of these small numbers, the women were excluded from further analysis. Secondary analyses (not shown) suggested that predictive factors may vary between men and women. Unfortunately, more appropriate analyses cannot be conducted until more data become available.

To ensure that analyses could be separated by offense severity, all men who had been convicted of a felony were selected (breakdowns for offense severity were not possible for the women due to the small number of women convicted of a felony-level offense). Of all 6,282 men admitted during the sampling frame, 93 were convicted of a felony within three years of admission. To ensure a sufficient sample size for the "violent" group, an additional 102 men who had been convicted of a misdemeanor

1. Gender was missing for 36 cases.

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were randomly selected, for a total “violent” sample size of 195 men. Doubling this figure, 390 men who were not reconvicted of a violent offense within three years of admission were randomly selected to form the comparison group. The total number of cases included in the sample was 585.

The sample size was sufficiently large to accommodate some attrition without compromising the integrity of the research design or the ability to conduct stable analyses. A significant number of cases were not available for coding—even more than was originally accounted for in the initial estimates of attrition. The retention rate was 66%. The primary reason that cases were not available for coding was the DCJ’s policy of destroying offender case files if there is no new arrest activity for two years after case closure. The retrospective nature of our sampling frame made cases in this study vulnerable to that policy. Fortunately, a comparison of the legal and demographic characteristics revealed no systematic differences between the populations of cases admitted to supervision between January 1 and June 30, 2000, those sampled, and those coded. Thus, the final samples included 385 men (33% of whom had been reconvicted for a subsequent violent offense).

DATA COLLECTION

A pilot instrument was completed for 385 cases, using information extracted from offender case files and information contained in various databases, including the Law Enforcement Data System, Oregon Judicial Information System, Juvenile Justice Information System, and the Department of Corrections.

The 385 instruments were completed by eight PPOs who offered to assist with the research project and were paid by the hour for their work. Prior to collecting any data, all coders were required to attend a seven-hour training session that included the purpose of the instrument, its development, and extended discussions of the operational definition of each item and where the information to score it could be found among the available resources. Two sample cases were scored as a group, followed by an additional sample case scored individually and used as the first measure of inter-rater reliability.² A list of all cases in the sample was submitted to DCJ and divided among the eight coders. Data were collected over a four-and-a-half month period between July and November 2004.

The key outcome variable for this study is reconviction for a violent offense (misdemeanor or felony) within three years of admission. This

2. The DCJ’s Research and Evaluation Unit conducted an inter-rater reliability study to ensure that items were interpreted and coded consistently across staff. The interclass correlation coefficient was 0.88.

time period is compatible with that used by the State of Oregon in various performance measures. Outcome data were requested and obtained from Multnomah County's data warehouse, the Decision Support System—Justice. These data included all arrests and convictions occurring within three years of the date of admission to community supervision. The offense category, specific Oregon Revised Statutes number, and offense level (misdemeanor or felony) were also provided.

FINDINGS

RISK FACTORS

Building an assessment instrument requires multiple levels of analysis. Descriptive statistics are useful for what they reveal about the distribution across potential risk factors. First, the utility of each item must be examined for its ability to distinguish groups of offenders. Second, items must have acceptable rates of scorability. Rates of “unknown” are essential to determining an item's utility. High rates of “unknown” would not necessarily disqualify an item, but they would signal a need for additional decisions to be made prior to including the item on the instrument (e.g., whether to commit DCJ resources to improving the availability of information in that area; how to encourage other agencies to share information, etc.). The distribution of cases across the 18 items is presented in Table 1.

These results suggest several things. First, the high rates of “unknown” on certain items limit their immediate usefulness on any sort of instrument. More specifically, for large proportions of the offender population, insufficient information is available to assess the following items: *Juvenile Initiation of Violence* (30%), *Early Onset of Delinquency* (40%), *Psychopathy* (43%), *Personality Disorder* (45%), and *Mental Health* (43%). These rates of essentially missing data are likely to remain unchanged unless DCJ enacts specific and ambitious procedures to improve the quality and availability of juvenile and mental health information for clients upon intake. Until records are automated and integrated across systems, improved availability is unlikely.

Supplemental analyses indicate that two of these items, *Juvenile Initiation of Violence* and *Early Onset of Delinquency*, are potentially powerful predictors of violent recidivism among men. In particular, the magnitude of the effect size for *Early Onset of Delinquency* suggests that it might be worth the extra effort to collect information relevant to this item. The relationship of the three mental health related items to violent reconviction is more uncertain and cannot be estimated without more complete data.

Table 1 also indicates that some items have relatively low base rates for positive responses. The factors relating to *Institutional Violence*, *Homicidal Ideation*, *Suicidal Ideation*, or *Special Circumstances* are each present in

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TABLE 1. INTERPERSONAL VIOLENCE RISK FACTORS

Factor		N	%	Factor		N	%
Juvenile Initiation of Violence	No	198	51.4	Psychopathy	No	216	56.1
	Yes	72	18.7		Yes	5	1.3
	U/K	115	29.9		U/K	164	42.6
Early Onset of Delinquency	No	200	51.9	Personality Disorder	No	193	50.1
	Yes	30	7.8		Yes	20	5.2
	U/K	155	40.3		U/K	172	44.7
Gang Membership	No	290	75.3	Mental Health Problems	No	198	51.4
	Yes	53	13.8		Yes	20	5.2
	U/K	42	10.9		U/K	167	43.4
Minor Violence	No	154	40.0	Alcohol/Drug Problems	No	67	17.4
	Yes	230	59.7		Yes	303	78.7
	U/K	1	0.3		U/K	15	3.9
Severe Violence	No	168	43.6	Unstable Lifestyle	No	137	35.6
	Yes	216	56.1		Yes	230	59.7
	U/K	1	0.3		U/K	18	4.7
Threatened Violence	No	293	76.1	History of Parole/Probation	No	128	33.2
	Yes	55	14.3		Yes	255	66.2
	U/K	37	9.6		U/K	2	0.5
Institutional Violence	No	339	88.1	Homicidal Ideation	No	334	86.8
	Yes	27	7.0		Yes	26	6.8
	U/K	19	4.9		U/K	25	6.5
Domestic Violence	No	203	52.7	Suicidal Ideation	No	332	86.2
	Yes	173	44.9		Yes	30	7.8
	U/K	9	2.3		U/K	23	6.0
Frequent Violence Acts	No	265	68.8	Special Circumstances	No	350	90.9
	Yes	118	30.6		Yes	29	7.5
	U/K	2	0.5		U/K	6	1.6

less than 10% of cases. Low base rates do not necessary disqualify an item from consideration, but they (low base rates) may account for why these items demonstrated some of the least powerful associations with violent recidivism (see Table 2).

The remaining items are characterized by a considerable range of incidence. At the lower end of the spectrum, few offenders are likely to have *threatened violence* (14.3%) or belonged to a *gang* (13.8%). Conversely, large majorities of offenders have histories of *noncompliance with parole and/or probation* (66.2%) and have experienced *problems with drugs and/or alcohol* (78.7%).

RISK FACTORS AND VIOLENT RECIDIVISM

The bivariate relationships between each of the items with sufficient data (i.e., with low rates of “unknown”) and reconviction for a violent offense (violent recidivism) are displayed in Table 2. It is immediately evident that almost all of the items are, by themselves, important predictors of violent recidivism. With the exception of *Suicidal Ideation*, a man who scores “Yes” on any given item is significantly more likely to have been

TABLE 2. BIVARIATE RELATIONSHIPS BETWEEN INTERPERSONAL VIOLENCE RISK FACTORS AND VIOLENT RECIDIVISM

		Not Reconvicted		Reconvicted		χ^2 Exp(B)
		N	%	N	%	
Gang Membership	No	208	71.7	82	28.3	14.31**
	Yes	24	45.3	29	54.7	3.07
Minor Violence	No	123	79.9	31	20.1	19.46**
	Yes	134	58.3	96	41.7	2.84
Severe Violence	No	148	88.1	20	11.9	60.46**
	Yes	109	50.5	107	49.5	7.26
Threatened Violence	No	215	73.4	78	26.6	14.82**
	Yes	26	47.3	29	52.7	3.07
Institutional Violence	No	240	70.8	99	29.2	13.17**
	Yes	10	37.0	17	63.0	4.12
Domestic Violence	No	161	79.3	42	20.7	30.15**
	Yes	91	52.6	82	47.4	3.45
Frequent Violence Acts	No	200	75.5	65	24.5	27.30**
	Yes	57	48.3	61	51.7	3.29
Alcohol/Drug Problems	No	56	83.6	11	16.4	10.44**
	Yes	191	63.0	112	37.0	2.99
Unstable Lifestyle	No	113	82.5	24	17.5	25.11**
	Yes	131	57.0	99	43.0	3.56
History of Parole/Probation Noncompliance	No	105	82.0	23	18.0	19.41**
	Yes	152	59.6	103	40.4	3.09
Homicidal Ideation	No	241	72.2	93	27.8	10.23*
	Yes	11	42.3	15	57.7	3.53
Suicidal Ideation	No	233	70.2	99	29.8	0.61
	Yes	19	63.3	11	36.7	1.36
Special Circumstances	No	241	68.9	109	31.1	3.58*
	Yes	15	51.7	14	48.3	2.06

* $p < 0.05$; ** $p < 0.001$.

reconvicted of a violent offense. Moreover, many of the associated effect sizes are quite large. For example, the coefficient (Exp B) for *Severe Violence* (7.26) indicates that the probability of becoming a violent recidivist is more than seven times greater for a male offender with a positive score on this factor. The strong relationship between each of the risk factors and violent recidivism confirms that the mechanisms at work in this sample are consistent with those that have been noted in other jurisdictions and validates the inclusion of these factors in the modeling process.

MODELING RISK POTENTIAL

The multivariate analysis begins by considering all factors shown to have a significant bivariate relationship to the outcome variable (i.e., reconviction for a violent offense within three years). This analysis imposes the additional condition that each factor can have no more than 5% of cases marked "unknown," thereby ensuring relevance to the largest

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sector of the population. A total of nine factors are included. The results of the logistic regression analysis are shown in Table 3.

TABLE 3. MULTIVARIATE LOGISTIC REGRESSION

Factor	Exp(<i>B</i>)	Wald
Minor Violence	1.29	0.52
Severe Violence	4.65	20.68*
Institutional Violence	2.32	2.59
Domestic Violence	2.05	5.04*
Frequent Violence	0.79	0.47
Alcohol/Drug Use	1.30	0.40
Unstable Lifestyle	2.31	6.11*
History of Noncompliance	1.22	0.36
Special Consideration	1.50	0.64

* $p < 0.05$. Wald for Constant = 43.40, $p < 0.001$.

Although this model correctly predicts reconviction in 74% of sampled cases, similar rates of accuracy could be achieved using fewer factors. Of the nine factors included, only three were found to be significant. In general, the more parsimonious model is the one recommended, because including additional factors delivers negligible improvements in accuracy but increases workload in terms of scoring an instrument with additional items. The final model includes only those items found to be significant predictors through the previous multivariate analysis. These three factors predicted recidivism correctly in 72% of cases. In other words, reducing the number of items by six resulted in a loss of only 2% in overall accuracy. The predictive power of the reduced model was estimated using the area under the curve (AUC) of a receiver operating characteristic (ROC) analysis. The AUC of ROC was 0.77 (95% CI: 0.72–0.82), indicating that the model predicted violent recidivism significantly better than random. The results of the logistic regression analysis using only these three factors in the model are presented in Table 4.

TABLE 4. REDUCED MULTIVARIATE LOGISTIC REGRESSION

Factor	Exp(<i>B</i>)	Wald
Severe Violence	4.68	27.02*
Domestic Violence	2.33	10.68*
Unstable Lifestyle	2.54	10.65*

* $p < 0.05$. Wald for Constant = 69.16, $p < 0.001$.

That the three items remain significant in the reduced model invites speculation that these items each tap a unique dimension of violent recidivism. It seems plausible, for example, that where violence is concerned, it

is *Severe Violence* that is the decisive consideration: *Minor Violence*, *Institutional Violence*, and *Frequent Violence* may be more fruitfully considered as epiphenomenal. The exception to this general rule-of-thumb is *Domestic Violence*, which appears to present as a distinct aspect of violent behavior. It also seems reasonable to posit that, in addition to violence, generally erratic or self-destructive behavior is a key facet of violent recidivism, and that such inconsistency is best typified by the indicator for *Unstable Lifestyle*. The “unique dimension” supposition is further buttressed by the correlation matrix in Table 5, which indicates relatively low substantive levels of association between the three items, as well as the exceptionally robust nature of the results. Supplemental analyses indicate that none of the items excluded from the reduced model were able to re-enter the model: The addition of a fourth item, any fourth item, was always inconsequential. The three foundational factors always remain determinative.

TABLE 5. CORRELATION MATRIX FOR REDUCED MODEL VARIABLES

Number Referred for Further Action (%)	Severe Violence	Domestic Violence	Unstable Lifestyle
Severe Violence			
Domestic Violence	0.337*		
Unstable Lifestyle	0.236*	0.161*	

* $p < 0.05$.

DISCUSSION

In addition to its role as a decision-making instrument, the Violence Risk Assessment Instrument has the secondary benefit of compelling the staff to delve into the offender's records and to become intimately familiar with the facts of that offender's history. Although committed to a short and practical tool, the members of the DCJ Violence Committee wanted to preserve this secondary benefit when possible. Committee members were particularly interested in ways to encourage PPOs to examine the juvenile behavior of offenders on their caseloads. Two such items were tested in this study: *Early Onset of Delinquent Behavior* and *Juvenile Violence*. As discussed, the high rates of “unknown” for these factors limited their usefulness in the analysis; however, they both appeared to be promising in terms of their bivariate relationship to the outcome variable, with *Early Onset* being the stronger of the two.

As a result, two options were presented to the Committee for discussion. The first included the three items with significant multivariate

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relationships to violent recidivism (*Severe Violence*, *Domestic Violence*, and *Unstable Lifestyle*). The second included these three items and *Early Onset*. The choice between these two instruments depended not only on the strength of the underlying analysis, but also on a variety of other considerations:

- Workload: The number of people with a positive screen for which new procedures must be implemented
- Accuracy: The rate of accurate “predictions”
- Public safety: The rate of false negatives (i.e., negative screen but offender commits future violence)
- Liberty: The rate of false positives (i.e., positive screen, but no violence occurs).

A set of scoring “cutoffs” was developed to help the Committee choose the model that had the best balance among these interests. Using the data collected to develop the instrument, a series of hypotheticals were constructed to inform the selection of a scoring convention for the instrument. As shown, different decision rules were tested by determining the number of offenders who would have met the identified criteria and by playing out the scenario using the individual’s known recidivism status. Obviously, practice will differ from the hypothetical in that those who are referred will receive more intensive supervision that may, in fact, prevent the predicted violent recidivism. However, this strategy evaluates the instrument options using actual data and compares the consequences of the different scenarios.

Assuming that each item is worth one point, Option #1 (the three-item instrument) has three possible scenarios: 1 point or more points equals a positive screen that triggers further action, 2 or more points triggers further action, or three points triggers further action. This first scenario is described in depth to illustrate the various consequences of the decision.

A total of 359 offenders had a “known” response for all three items (i.e., there were no “unknowns” marked). Figure 1 illustrates that, if a score of 1 or more indicated a positive screen, a total of 291 offenders would have been referred for further action (an 81% referral rate). The shaded diagonals indicated those cases for which an appropriate referral decision would have been made: 118 offenders (33%) who later committed a violent offense would have been referred for further action and 66 offenders (18%) who did not recidivate would not have been referred for further action. Combined, this represents an overall accuracy rate of 51%.

The unshaded diagonals provide information about the types of errors involved. Two offenders who committed a violent offense would not have been referred for further action (0.5% rate of “false negatives”), whereas 173 offenders who did not commit future violence would have been

FIGURE 1. ILLUSTRATION OF HYPOTHETICAL SCORING

		Refer for further action	
		Yes	No
Behavior	<i>Commits Violent Offense</i>	118 33%	2 0.6%
	<i>Does Not Commit Violent Offense</i>	173 48%	66 18%

referred for further action (48% rate of “false positives”). In this scenario, although the DCJ has a very small risk of liability (less than 1%), it must figure out how to refer, screen, and intensify supervision for the 291 offenders with positive screens.

The proportion of offenders referred for further action reported in these analyses does not accurately represent the proportion of all offenders on the general caseload that DCJ should expect to refer once the instrument is implemented. Recall that the research sample was devised to include large numbers of offenders who were later reconvicted of violence. Thus, these referral rates likely overestimate the actual proportion of offenders on the general caseload who would earn each score. In other words, the actual referral rates are likely to be lower than those observed here.

TABLE 6. COMPARISONS OF SCORING CONVENTIONS

Decision Rule	Number Referred for Further Action (%)	% Correct	% False Negative	% False Positive
Three-Item Instrument (Option #1)				
Score 1+	291 (81%)	51	0.6	48
Score 2+	208 (58%)	67	5.0	29
Score 3	90 (25%)	72	18.0	10
Four-Item Instrument (Option #2)				
Score 1+	172 (80%)	47	0.0	54
Score 2+	117 (54%)	66	3.0	31
Score 3+	54 (25%)	77	12.0	11
Score 4	22 (10%)	79	19.0	2

Table 6 compares the referral rate, accuracy, and rates of false positives and false negatives for the various possible scoring conventions for Option #1 (three-item instrument). This table highlights several patterns. As the scoring convention becomes more stringent (e.g., must score 3 to be

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referred for further action), the number of referrals decreases and the percentage of “correct predictions” increases. However, because fewer people qualify for a referral (i.e., they are not classified as a risk for future violence), there are more false negatives that may jeopardize public safety. Conversely, when fewer offenders are referred for further action (i.e., classified as a risk for future violence and supervised accordingly), there are fewer false positives and, therefore, less of a concern about the inappropriate deprivation of offenders’ liberty.

A similar table was constructed for Option #2, the four-item instrument. A total of 215 offenders were included in the analysis. The results for these options suggest various pros and cons for each of these two instruments. The three-item instrument has the benefit of being tested on a larger number of offenders. Multivariate analysis uses only those cases for which each factor has a known response. Because of the large number of cases in which the *Early Onset* item was marked “unknown,” fewer cases were used in that analysis. Furthermore, given that there have been no significant changes in policy or procedure, it is likely that the *Early Onset* item will continue to result in high rates of “unknown” once implemented. These unknowns will introduce “noise” into the scoring of the instrument if the *Early Onset* item is marked “unknown” and the offender is on the borderline of meeting the referral criteria. For example, if the Committee decided that a score of 2 or more points equaled a positive screen, and an offender received one point for *Severe Violence*, no points for *Domestic Violence* or *Unstable Lifestyle*, and received an “unknown” for *Early Onset*, he would not be referred for further action. However, it is possible that the “unknown” would have been a “yes” if the information were available, which would mean the offender should have been referred for further action.

Given these advantages and disadvantages, it was recommended that the DCJ adopt the three-item instrument. It was further suggested that the *Early Onset* item could be added as a *non-scoring item* if the Committee remained interested in the secondary benefits of including an item related to juvenile history. The purpose of this addition would be to track improvements in the rates of “unknown” over time and to compel the staff to begin assessing this information. If the rates of “unknown” decrease to a manageable level, the data will exist to conduct a revalidation to determine whether the item has a significant relationship to the outcome variable. If so, the violence risk assessment instrument could be revised to include it. The Committee accepted this recommendation and decided to set the threshold for a positive screen at three points, meaning that the offender must receive a “yes” on all three items to be referred for further action. Offenders scoring one or two points will also receive increased attention from the field PPO, but the intensity of intervention will not

increase as substantially. If the field PPO later determines that the risk of violence requires additional intervention, the offender can be referred for further action through another mechanism. Those referred for further action either through the screening process or another mechanism undergo an extensive assessment process and clinical interview. If this assessment corroborates the screening result, offenders are placed on a specialized caseload featuring very high-intensity supervision and treatment services.

RECOMMENDATIONS

Table 7 compares the scoring options. The choice between them requires tradeoffs and is a decision that only the DCJ, in consultation with its public safety partners, can make. However, the characteristics of the sample, the features of the data, and the analytic process do lend themselves to a set of recommendations. It was recommended that the DCJ implement the three-item instrument composed of *Severe Violence*, *Domestic Violence*, and *Unstable Lifestyle*. It was further suggested that *Early Onset of Delinquent Behavior* be included as an additional *nonscoring* item. This addition has multiple benefits. It will (1) permit an assessment of improvements in the availability of information over time; (2) encourage PPOs to attend to the juvenile histories of offenders on their caseloads; and (3) serve as a data collection mechanism for future revalidation efforts. With regard to scoring, the comparison advocates for using three points as the threshold for a case to be referred for further action. This threshold creates a manageable workload and demonstrates the highest rate of accuracy when tested on the sample. Although the rate of false negatives is not insignificant (18%), it is balanced against a rate of false positives that is much more appropriate than the 2-point threshold (10% versus 29%). Most importantly, supervision of those offenders scoring 2 points *does* increase commensurate with the risk posed, albeit not as significantly as those who are referred for future action and later transferred to the specialized caseload.

Nearly all objective classification instruments include some provision for overriding the decision that is suggested by the scored total. Overrides can either be mandatory (e.g., local legislation requiring certain offenders to be supervised in a certain way) or may be discretionary (e.g., subjective assessments that certain facts should be interpreted as more or less severe). When the option to override the instrument is made available, care should be taken to limit the acceptable reasons for override so that the objectivity of the validated instrument is not compromised by subjective judgments. The use of overrides should always be carefully tracked to ensure their use is not excessive or, conversely, to ensure that offenders

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TABLE 7. COMPARISON OF CUT-POINTS FOR THREE-ITEM INSTRUMENT

Instrument	Workload		Accuracy		Public Safety		Liberty	
	2+ cutoff	3 cutoff	2+ cutoff	3 cutoff	2+ cutoff	3 cutoff	2+ cutoff	3 cutoff
Male Three-Item	LARGER number of offenders referred for further action	SMALLER number of offenders referred for further action	LESS accurate (correctly predicted recidivism status for 67% of offenders in sample)	MORE accurate (correctly predicted recidivism status for 72% of offenders in sample)	FEWER false negatives (5% of those not referred recidivated)	MORE false negatives (18% of those not referred recidivated)	MORE false positives (29% of those referred did not recidivate)	FEWER false positives (10% of those referred did not recidivate)
• Severe Violence	Domestic Violence	Unstable Lifestyle						

with unique warning signs are referred for further evaluation as appropriate.

A detailed *User's Manual* is also required. The manual should explain: the procedures surrounding the use of the instrument; to whom it should be applied; the exact meaning of each item and how to score it; which offenses are to be scored on each factor; how to use overrides; and what actions are triggered by each score on the scale. This manual should be distributed to all staff responsible for completing the instrument or taking action based on its results and should be supported by staff training to ensure its proper application.

Finally, the level of *inter-rater reliability* should be assessed periodically by having a subset of cases scored by a second rater to determine congruence with the initial scoring. This will ensure that the scoring is based on objective, verifiable information and that all items are being interpreted and scored consistently across staff. Inter-rater reliability is essential to maintaining both a valid instrument and confidence in the community correctional system.

EARLY IMPLEMENTATION RESULTS

The three-item instrument (with *Early Onset* as a nonscoring item) was converted to an electronic format and implemented in June 2005. The electronic format ensures internal consistency in scoring by making it impossible to select incompatible features within a single item (e.g., scoring the Severe Violence item “no,” but using drop-down menus to identify specific offenses of conviction). Help menus that explain the parameters and intent of each item are available, along with potential sources of information. Furthermore, the automation permits the easy compilation of management reports for use in auditing compliance in completing the forms, taking the action suggested by the score, the rates of “unknown” for each item, and the rate of overrides.

In terms of a decision rule, the DCJ requires offenders scoring zero points to be continued on standard supervision. Cases scoring the maximum (three points) require a mandatory staffing with the Unit Supervisor to construct additional supervision strategies or make a referral to the DCJ “Special Supervision Team” for offenders at very high risk for violence. Areas of concern are to be noted for cases scoring between one and the maximum, and a staffing with the Unit Supervisor is optional. An override mechanism entitled “Special Conditions” was added to the instrument to permit the option to staff offenders with lower scores. These scoring thresholds were determined based on the predicted rates of false positives/false negatives from the research, as well as a realization that lower thresholds could result in a significant increase in the number of

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referrals to the “Special Supervision Team” that could not be managed under current staffing levels.

Since the instruments were implemented in June 2005, a total of 985 offenders were assessed. This number represents only 57% of the total number of offenders eligible for assessment, a proportion that has been targeted for improvement. Most offenders were scored on the instrument within three days of their admission to supervision, and most of the instruments (75%) were completed by the intake officer prior to the offender being assigned to a specific caseload.

TABLE 8. DISTRIBUTION ACROSS SCORES FOR INITIAL COHORT OF OFFENDERS

Score	(%)
0	10.3
1	27.5
2	36.3
3	25.9
4	n/a

Source: Churchill (2005).

Across the initial cohort, approximately 26% of offenders scored at the threshold requiring immediate action (see Table 8). Only 10% scored zero points on the instrument, indicating no areas of concern. The proportion of offenders referred for immediate action closely approximated that estimated by the research. The stability of this trend over time will be important to monitor so that workload adjustments can be made if necessary.

The DCJ also undertook a series of focus groups with PPOs and supervisors to identify barriers to implementation. Although the DCJ has yet to realize 100% compliance in terms of completing the instrument for all offenders, compliance rates have recently increased via careful caseload auditing by Unit Supervisors. The use of the instrument has also resulted in PPOs conducting more in-depth review of information contained in case files for offenders on their caseloads. Belief in the value of the instrument is not yet widespread, as is typical of early implementation efforts that compete with other priorities and challenges surrounding workload.

Two key areas in need of improvement were identified. First, the availability of Unit Supervisors to conduct staffing has been somewhat limited in some field offices. Furthermore, when these case staffings do occur, greater variety and creativity in crafting supervision strategies responsive to the identified risk level are needed. Simply achieving high rates of compliance in scoring the instrument is only the first step; the subsequent qualitative changes to supervision are what will result in enhanced public

safety. Second, even when supplementary supervision strategies are identified, the necessary supporting resources (e.g., alcohol and drug treatment and anger management programs) have insufficient capacity to respond to the volume of referrals. Not only must the range of alternative strategies be expanded, but also additional resources to provide these services must be identified.

The DCJ, with its commitment to using evidence-based practices and making data-driven operational decisions, is clearly at the forefront of the trend toward objective decision making. Its continued commitment to providing the resources necessary for proper implementation will permit a future assessment of the extent to which the violence triage tool served the overall purpose of improved public safety.

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