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# Improving the Clinical Practice of Violence Risk Assessment: Technology, Guidelines and Training

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# Improving the Clinical Practice of Violence Risk Assessment

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## *Technology, Guidelines, and Training*

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*Despite a long history of interest in, and criticism of, the ability of mental health professionals to assess and predict violence, there have been few efforts to develop or evaluate interventions to improve decision making in this area. This article provides a brief overview of recent research developments on violence risk. Drawing on these advances, 3 recommendations are outlined for improving the clinical practice of risk assessment: (a) to improve assessment technology, (b) to develop clinical practice guidelines, and (c) to develop training programs and curricula.*

**T**he prediction of violence is one of the most complex and controversial issues in behavioral science and law (Grisso & Appelbaum, 1992, 1993; Litwack, 1993; Poythress, 1992). Nevertheless, courts have continued to rely on mental health professionals for assistance in civil and criminal cases when determining facts involving potential dangerousness or risk for future violence (Melton, Petrila, Poythress, & Slobogin, 1987).

The importance of violence as a clinical issue, however, is not limited to mental health professionals who practice in the forensic arena, or even to those who work primarily with high-risk clients (Borum, Swartz, & Swanson, 1996). As public and private mental health systems are increasingly penetrated by various forms of managed care, patients' risk for committing violent behavior has become a critical balancing factor in attempts to contain costs and limit service utilization. Patients who are assessed as dangerous inevitably utilize high-cost services (e.g., inpatient hospitalization) and are vulnerable to system attempts at cost shifting (Petrila, 1995). In these circumstances, patients' risk for violence can become an issue in their ultimate exclusion from a benefit plan (e.g., because they rapidly exceed the benefit limit) or a ticket into an alternate public system.

Perhaps the most familiar reminders of violence in clinical practice have come from the sequelae of the California Supreme Court's decision in *Tarasoff v. Regents of the University of California* (1976), which created a duty for mental health professionals to protect third parties against patient violence. According to the court, this duty obtains "once a therapist does in fact determine, or

*under applicable professional standards* [italics added] reasonably should have determined that a patient poses a serious danger of violence to others" (Tarasoff, 1976, p. 345).

One of the key obstacles for clinicians who must fulfill this duty, and for mental health and managed care systems that must assess, manage, and communicate about persons at risk for violent behavior, is that no explicit national professional standards exist in psychology or other mental health disciplines for assessment and management of violence risk. Nor have there been many substantial attempts in this field to develop systematic training programs in risk assessment; to integrate this training into graduate education in professional psychology; or to evaluate how, or even whether, such training can improve clinicians' assessments and judgments. Furthermore, despite a long history of clinical and research interest in, and criticism of, clinicians' ability to predict violence, there have been few efforts to develop or evaluate interventions to improve decision making in this area.

This article covers two major domains relating to these issues. The first section provides a brief overview of recent research progress in risk assessment. This section includes an overview of studies on predictive ability (How accurate are mental health professionals' predictions of violent behavior among people with mental disorder?); the relationship between violence and mental disorder (Are people with mental disorder more likely to be violent than people without mental disorder?); base rates of vi-

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olent behavior (What is the prevalence of violent behavior among people with and without mental disorder?); and risk factors for violent behavior (Which individual, historical, clinical, and contextual factors are associated with, or statistically increase, the risk of violent behavior?). Advancing knowledge in these areas provides the foundation for improving clinical risk assessment practice.

The second section outlines three recommendations for improving the clinical practice of risk assessment among persons with mental disorder. These recommendations are (a) to improve assessment technology, (b) to develop clinical practice guidelines, and (c) to develop training programs and curricula. It is argued that professionals in psychology and other mental health disciplines should apply what they have learned from two generations of research (as discussed in the first section) in order (a) to develop and research new assessment tools and methods, (b) to establish clinical guidelines for their application, and (c) to train clinicians to practice according to these guidelines.

## Research Progress

### Research on Predictive Ability

Early research on the ability of mental health professionals to assess dangerousness in people with mental disorder produced less than encouraging results. In 1981, John Monahan did a comprehensive review of the few existing studies and concluded that

the "best" clinical research currently in existence indicates that *psychiatrists and psychologists are accurate in no more than one out of three predictions of violent behavior over a several-year period among institutionalized populations that had both committed violence in the past (and thus had a high base rate for it) and who were diagnosed as mentally ill.* (pp. 47, 49)

On the basis of a second generation of studies within the past 15 years, the current tenor of researchers in this area is somewhat more optimistic. Most suggest that mental health professionals have at least a modest ability to predict violence and that their predictions are significantly more accurate than chance (Lidz, Mulvey, & Gardner, 1993; Monahan & Steadman, 1994; Mossman, 1994; Otto, 1992; cf. Menzies & Webster, 1995). In a comprehensive review of the second-generation research, Otto (1992) concluded that "changing conceptions of dangerousness and advances in predictive techniques suggest that, rather than one in three predictions of long-term dangerousness being accurate, at least one in two short-term predictions are accurate" (p. 130). However, he also cautioned that "even under the best circumstances . . . mental health professionals will still make a considerable number of incorrect predictions with false positives being the most common type of error" (p. 128). Likewise, Mossman, in his reanalysis of 58 existing data sets on prediction of violence from the past two decades (including both first- and second-generation studies), concluded (a) that clinicians were able to distinguish violent from nonviolent patients with a "modest, better-than-chance level of accuracy"; (b) that predictive ability in the second-

generation studies appeared better than that in the first-generation studies; (c) that the accuracy of short-term predictions was not significantly different than the accuracy of long-term predictions; and (d) that past behavior was a robust predictor of future behavior (in some cases even better than clinical judgments or cross-validated actuarial techniques).

In part, the level of predictive accuracy improved as a result of advances in research methodology. For example, if a person is predicted to be violent and subsequently engages in violent behavior, but that behavior is not detected by researchers, the prediction erroneously appears to be a false-positive one. However, by using self-reports and collateral reports, and not relying solely on arrest records as a criterion for violent behavior, more violent events are identified, thereby reducing artificial false-positive predictions and improving overall rates of accuracy (Mulvey, Shaw, & Lidz, 1994). In addition, two key assumptions that previously were seen as causative of limited predictive accuracy have been challenged by recent research: (a) that there is no significant relationship between mental disorder and violence and (b) that base rates (prevalence) of violence are so low that it is almost impossible to predict.

### Relationship Between Mental Disorder and Violence

For many years, the conventional wisdom among social scientists maintained that no significant relationship existed between violence and mental illness, when other variables such as drug abuse, poverty, gender, age, and victimization were taken into account. Thus, by extension,

mental health professionals generally have been considered incapable of accurate predictions of future violence by the mentally ill—at least in part because there was assumed to be no relationship between that which mental health professionals knew (namely, how to diagnose mental disorder) and the predictions they were being asked to make (whether a person would be violent). (Appelbaum, 1994, p. 78)

However, recent research efforts, including two large-scale community epidemiologic surveys (Link, Andrews, & Cullen, 1992; Swanson, Holzer, Ganju, & Jono, 1990), and a second generation of studies that improved on the limitations of earlier research now suggest that "mental disorder may be a robust and significant risk factor for the occurrence of violence" (Monahan, 1992, p. 519; for reviews, see Appelbaum, 1994; Link & Stueve, 1995; Monahan, 1992, in press; Monahan & Steadman, 1994; Mulvey, 1994; Taylor, 1995).

### Base Rates of Violence

In the assessment of violence risk, the term *base rate* refers to the known prevalence of a specified type of violent behavior within a given population over a given time period. Because low base-rate (infrequent) conditions, by their very nature, are difficult to predict, much of the early research suggested that predictions of violence were

doomed to high rates of error because violent behavior was a rare event, even among persons with mental illness. However, current research has shown that base rates for violence are considerably higher than was previously believed.<sup>1</sup>

Early studies estimated base rates by examining rates of arrest for violent crime among people who had been discharged from psychiatric hospitals and found that these rates were fairly low, typically ranging from 2% to 5% over a one-year follow-up period (Hiday, 1992; Monahan & Steadman, 1994; Steadman, Cocozza, & Melick, 1978). However, more recently, investigators have expanded their research criterion measures and sources of information on violence. For example, a series of studies by Klassen and O'Connor (1988a, 1988b, 1988c, 1989) included in the criteria for violence, not only arrest but also rehospitalization for an act that would have resulted in arrest for a violent crime and found that approximately 25–30% of patients released into the community met this criterion within a one-year follow-up period. Similarly, pilot data from the MacArthur Risk Assessment Study (Steadman et al., 1994) showed that across three study sites, 27% of participants reported at least one violent event within a follow-up period of up to six months. The one site where the follow-up extended the full six months had a reported violence rate of 33%. It is also worth noting that these rates were calculated before data from official records were available, so the rates could actually be somewhat higher (Steadman et al., 1994).

Lidz et al. (1993) studied 714 patients who presented to a psychiatric emergency room and followed them in the community for six months. In that period, violence was reported in approximately 45% of the cases (53% in the cases predicted to be violent and 36% in the comparison group). The same trend also appears to hold for violent behavior in inpatient settings, where approximately 15–28% of people engage in some type of physically assaultive behavior, whereas as many as 40–50% engage in some type of broadly defined dangerous behavior, including threats and other physical acts (Otto, 1992).

Finally, although in the general population men have much higher rates of violent offending (higher base rates) than do women (Federal Bureau of Investigation, 1993; Maccoby & Jacklin, 1974; Wilson & Herrnstein, 1985), among people with mental disorder, men and women do not significantly differ in their base rates of violent behavior. Indeed, the rates are remarkably similar and in some cases are slightly higher for women (Lidz et al., 1993; Newhill, Mulvey, & Lidz, 1995; Steadman et al., 1994; Swanson, 1994), suggesting that similar levels of predictive accuracy could be attained across gender.

### **Research on Risk Factors for Violence**

In addition to advances in research on predictive accuracy, the base of scientific knowledge about risk factors for violent behavior has also grown tremendously over the past 15 years (Monahan & Steadman, 1994). Whereas studies of predictive ability focus on clinicians' rates of accuracy

in predicting violence, studies of risk factors focus on identifying the individual, historical, clinical, and contextual variables that are empirically associated with violent behavior.

As noted above, several features of this recent research contradict the findings of the early research, including findings on the relationships between violence and mental disorder and between violence and demographic variables. In addition, there is a critical body of research evolving on situational–environmental variables that influence aggression (Estroff & Zimmer, 1994; Estroff, Zimmer, Lachicotte, & Benoit, 1994; Goldstein, 1994). Substantial contributions along these lines are also expected to emerge from a third generation of studies arising from the MacArthur Risk Assessment Study, a large-scale, multisite, longitudinal study of approximately 1,000 people admitted to civil psychiatric hospitals (Steadman et al., 1994). This study is examining a wide range of risk factors within four domains: dispositional (e.g., demographic, personality, and cognitive variables); historical (e.g., social history, prior hospitalization and treatment compliance, and history of crime and violence); contextual (e.g., perceived stress, social support, and means for violence); and clinical (e.g., diagnosis, symptom patterns, functioning, and substance abuse). To the extent that such studies identify more accurate risk factors, this information should be used by clinicians to make more accurate, empirically based predictions of violence risk.

### **Improving Risk Assessment in Clinical Practice**

Despite substantive advances in knowledge about the risk for violent behavior among people with mental disorder, there have been virtually no systematic efforts to incorporate this information into a useful, empirically based framework for clinical assessment. Nor have many investigators focused on developing interventions to improve the accuracy (or the validity) of violence predictions or examining the ability of mental health professionals to reliably make such assessments. Because mental health professionals must continually make such determinations in the context of *Tarasoff* situations, level of care decisions, civil commitment, forensic evaluations, and so forth, these topics seem worthy of attention. As Webster, Eaves, Douglas, and Wintrup (1995) noted, “The great challenge in what remains of the 1990s is to integrate the almost separate worlds of research on the prediction of violence and the clinical practice of assessment. At present the two domains scarcely intersect” (p. v).

In seeking to advance and improve clinical decision making about people's risk for violent behavior, at least

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<sup>1</sup> It should be noted that most of the rates cited below were drawn from samples of persons who either were treated or seeking treatment. Although in many ways this is the most relevant comparison group for clinical risk assessment tasks, people may be “selected” into these groups because of the severity of their disorder or dangerous behavior. Thus, their rates of violent behavior may be higher than those for persons with mental disorder, generally.

three areas seem worthy of attention: (a) advancing risk assessment technology, (b) defining clinical practice guidelines, and (c) developing training programs and curricula. As professional advances are made in these areas, they will form a foundation for a research agenda to improve decision making in violence risk assessment.

### **Improving Risk Assessment Technology**

The use of standardized assessment instruments is an important element in efforts to improve the reliability and the validity of risk judgments and to enhance the clarity of risk communication. At a minimum, these devices can serve as a checklist for clinicians to ensure that essential areas of inquiry are recalled and evaluated. At best, they may be able to provide hard actuarial data on the probability of violence among people (and environments) with a given set of characteristics, circumstances, or both. As Schopp (1996, this issue) notes,

To the extent that developments in this research allow more precise statements of the probability of harmful conduct of specified types or severity in specified conditions, these probability statements provide decision makers with more useful information while remaining within the descriptive and explanatory expertise of psychologists. (p. 940)

Webster et al. (1995) outlined several requirements for an assessment instrument or scheme to be useful: accessibility (organized around a few important ideas commonly understood across disciplines), scientific integrity (rooted in what is already known), testability (defined precisely enough to permit testing of items), administrative feasibility (linked to established policies and practices), and efficiency (designed with time constraints in mind; p. vi).

The current medical literature suggests that using structured data-gathering methods can lead to a more comprehensive and a potentially less selective examination. For example, Houziaux and Lefebvre (1986) reviewed much of the literature on computer-assisted medical history taking, or computer-assisted anamnesis (CAA). They noted that "accuracy and reliability seem to have reached a very high level in all experiments" (Houziaux & Lefebvre, 1986, p. 138). They also found strong evidence to suggest that CAA produces more comprehensive and systematic data collection than that typically taken by physicians. Grossman, Barnett, and McGuire (1971) commented on the prevalence of confirmatory bias in medical decision making (selectively collecting and recording data that support initial hypotheses) and pointed to the advantages of CAA in eliminating this type of error.

Quaak, Westerman, and van Bommel (1987) compared computerized and traditional written patient histories. They found 40% more information in the computerized history, and the participating doctors found the diagnostic hypotheses from the computer history were more certain than those from the written interview. However, the doctors believed that the written interview better expressed the main complaints. In another study

by Lawrence, Clifford, and Taylor (1987), physicians' diagnostic accuracy rose from 51% to 69% with the use of a structured history form. Overall, the medical literature suggests that structured data-gathering methods facilitate more accurate and reliable judgments.

There have been several attempts to apply traditional psychological tests, such as the Minnesota Multiphasic Personality Inventory (e.g., Fraboni, Cooper, Reed, & Saltstone, 1990; Sloore, 1988) and the Rorschach (e.g., Hughes, Deville, Chalhoub, & Romboletti, 1992; Maitra, 1985), to the prediction of violence, and a few studies have attempted to construct brief self-report measures for this purpose (e.g., Dutton, 1995; Feinstein & Plutchik, 1990; Korn et al., 1992; Plutchik & van Praag, 1990). However, until recently, there have been few empirically based instruments designed to help structure the collection and the evaluation of relevant data as part of a comprehensive professional risk assessment (e.g., including information from interviews, records, and third parties). A few of these instruments with standardized scoring systems based on clinicians' ratings have been developed very recently, and a sample of them are briefly discussed below, not as an exhaustive review or critique but to raise awareness about some of the emerging attempts to improve risk assessment technology and to stimulate further research.

**Dangerous Behavior Rating Scheme.** The Dangerous Behavior Rating Scheme (DBRS; Webster & Menzies, 1993) represented perhaps the first systematic attempt to develop an instrument with known psychometric properties that could be used in clinical assessments of dangerousness. Twenty-two items (later reduced to 11), each rated on a seven-point Likert scale, were derived from Megargee's (1976) theoretical framework for assessing dangerousness and included such factors as anger, rage, tolerance, and guilt. Four global assessment measures of dangerousness to self and others at present and in the future were also added. Although after some preliminary work, the raters were able to achieve acceptable levels of interrater agreement on the items, the two-year follow-up validation yielded only modest correlations between DBRS items and ratings of subsequent dangerousness. Individual item correlations ranged from .06 to .32, and the aggregate factor score yielded a correlation of only .34 with dangerousness outcome measures. Even when optimal measures from the DBRS were used, the results of this semistructured instrument could account for only about 12% of the variance in follow-up dangerous behavior (Webster & Menzies, 1993).

In another study with longer longitudinal follow-up, the predictive ability of the DBRS appeared even weaker. Again, using optimal measures (aggregate factor scores) from the raters with the highest levels of validity, the instruments correlated with subsequent violence at only .16 after one year, .18 after three years, and .15 after six years (Menzies & Webster, 1995; Menzies, Webster, McMain, Staley, & Scaglione, 1994).

A number of factors may have limited the validity of this instrument, including the lack of a clear operational

definition for each item and the inclusion of items that intuitively and conceptually would appear to be relevant but that were not, in fact, empirically associated with violent behavior. Nevertheless, the idea of having a theoretically driven, reliably rated, semistructured interview for dangerousness assessment marked a conceptual advance for assessment technology.

**Violence Prediction Scheme.** The Violence Prediction Scheme<sup>2</sup> combines clinical and actuarial factors in a comprehensive scheme for assessing dangerousness and risk (Webster, Harris, Rice, Cormier, & Quinsey, 1994). The actuarial component is based on the Violence Risk Assessment Guide (VRAG), a 12-item tool that was empirically derived by using information gathered in comprehensive record reviews of a sample of 618 patients from a maximum security psychiatric hospital in Ontario, Canada (Harris, Rice, & Quinsey, 1993). The 12 variables include psychopathy; separation from parents by age 16 or younger; victim injury in index offense (negatively related); schizophrenia (diagnosed on the basis of criteria in the *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed. [DSM-III], American Psychiatric Association [APA], 1980; negatively related);<sup>3</sup> never married; elementary school maladjustment; female victim-index offense (negatively related); failure on prior conditional release; property offense history; age at index offense (negatively related); alcohol abuse history; and DSM-III personality disorder. With an average follow-up period of 81.5 months, the VRAG had a classification accuracy rate of about 75%.

To form the Violence Prediction Scheme, the VRAG was combined with a 10-item clinical scheme called the ASSESS-LIST (Webster & Polvi, 1995). This acronym stands for antecedent history, self-presentation, social and psychosocial adjustment, expectations and plans, symptoms, supervision, life factors, institutional management, sexual adjustment, and treatment progress.

It should be noted, however, that the VRAG actuarial formula was developed using a sample of persons with a prior history of significant violence, including at least one documented serious offense. Although Harris et al. (1993) anticipated that their "results will generalize both to mentally disordered offenders from other jurisdictions and to serious offenders in prison populations" (p. 331), at this time any generalization of their findings to other populations should be approached with caution.

**HCR-20.** The HCR-20 is an instrument-guide

designed for use in the assessment of risk for future violent behavior in criminal and psychiatric populations. Briefly, the first 10 items of the HCR-20 pertain to the *historical* [italics added], or static, variables of the individual being assessed (H Scale), the next five items reflect the current *clinical* [italics added], status and personality characteristics of the individual (C Scale), and the remaining five pertain to future *risk* [italics added] of violent behavior (R Scale). (Webster et al., 1995)

The items were chosen on the basis of a comprehensive review of the literature and the clinical wisdom of some experienced forensic clinicians.

Although it has a fairly clearly defined three-level scoring system for each item, similar to that of the Psychopathy Checklist-Revised (Hare, 1991), it currently cannot be considered a test in the formal sense. Data on its reliability and validity are very preliminary, so its primary value is as a checklist to prompt the examiner to cover or consider the major relevant areas of inquiry. It currently should be viewed as a research instrument.

The instrument is based on the HCR-20 Scheme (Webster et al., 1995), so it is grounded in a systematic model for assessing risk. In this model, the historical variables are accorded the greatest weight because they are actuarial factors that have empirically demonstrated importance in assessments of dangerousness and violence risk. The historical variables include previous violence, age at first violent offense, relationship stability, employment stability, alcohol or drug abuse, mental disorder, psychopathy, early maladjustment (at home and school), personality disorder, and prior release or detention failure. The items are clearly defined so that data on these variables can easily be collected and compiled by a trained assistant and would not necessarily require clinician time for the comprehensive record review. It is expected that these historical variables will be retrospectively coded primarily from medical, psychological, and legal files and records.

The second phase consists of data collection on five clinical variables: insight, attitude, symptomatology, stability, and treatability. Although for research purposes this information could be compiled by trained assistants, in a clinical evaluation these data on current mental status would need to be evaluated and rated by a qualified mental health professional on the basis of interviews, progress notes, psychological assessments, or similar sources.

The final phase includes an assessment of five risk variables: plan feasibility, access, support and supervision, compliance, and stress, each of which "pertain to existing circumstances in the community or to future situations that the individual may encounter upon release from in-

<sup>2</sup> More information about the Violence Prediction Scheme can be obtained from the Centre of Criminology, University of Toronto, John Robarts Library, Room 8001, 130 St. George Street, Toronto, Ontario M5S 1A1, Canada (telephone: 905/978-7124).

<sup>3</sup> The reader may note that in this model, a diagnosis of schizophrenia is negatively related to violence, whereas in McNiel and Binder's (1994) model, schizophrenia is positively related to violence. One explanation for this discrepancy (which also appears in other studies) lies in the difference between the sample populations. Specifically, the sample in Harris et al.'s (1993) study consisted of patients in a maximum security psychiatric hospital who had a documented history of serious violence, current criminal charges, and a high rate of personality disorders. In contrast, the sample in McNiel and Binder's study consisted of civil psychiatric patients in a university-based inpatient setting. The relative risk for schizophrenia operates differently in these two samples. When compared with a group of civil psychiatric patients, persons with schizophrenia may have a somewhat higher risk for violence. However, when compared with a group of incarcerated persons with a history of violence, criminal charges, and personality disorders, persons with schizophrenia may have a somewhat lower risk for violence. In that case, the lower risk would have nothing to do with schizophrenia per se but with the preponderance of positive risk factors in the comparison group.

stitutionalization" (Webster et al., 1995, p. 60). Like the historical variables, these data can be coded primarily from other assessments, such as social work, presentencing, or prerelease parole reports.

Webster and colleagues (Douglas, Webster, Eaves, Wintrup, & Hart, 1996) have recently begun three projects to investigate the psychometric properties of the HCR-20. Preliminary data, although limited, appear promising. In a retrospective study of 72 Canadian maximum security federal inmates, significant correlations were found between both the H and C Scales of the HCR-20 and scores on the VRAG (Harris et al., 1993), the Psychopathy Checklist-Revised (Hare, 1991), and the number of previous charges for violent offenses.<sup>4</sup> It also appears likely that the items can be reliably coded (Douglas et al., 1996).<sup>5</sup>

The promise of this instrument lies in its foundation on a conceptual model or scheme for assessing dangerousness and risk; its basis in the empirical literature; its operationally defined coding system allowing for increased reliability; and its practical use, as evidenced in its brevity and allowance for time-consuming data collection to be done by trained assistants. The field eagerly awaits new data on this instrument as well as other instruments that it may inspire.

**Spousal Assault Risk Assessment Guide.** The Spousal Assault Risk Assessment Guide (SARA)<sup>6</sup> is a 20-item clinical checklist of risk factors for spousal assault (Kropp, Hart, Webster, & Eaves, 1994). In contrast to the HCR-20, it is designed for a more narrowly specified population and type of violence. However, like the HCR-20, it is brief, based in the empirical literature, and has an operationally defined three-level scoring scheme. Scoring criteria for each item are prefaced by an explicit rationale for its inclusion in the instrument, with references to the professional literature that support its relevance. The SARA was not designed to be a formal test; rather, it was constructed to be used as a clinical guide for assessing the risk of future violence in men arrested for spousal assault. In this way, it may enhance the comprehensiveness of the evaluation and ensure that the proper (empirically established) and relevant factors are considered and assessed.

The SARA has four main sections. The criminal history section includes items relating to past assault of family members, past assault of strangers or acquaintances, and past violation of conditional release or community supervision. The section on psychosocial adjustment includes items relating to recent relationship problems; recent employment problems; victim of and/or witness to family violence as a child or adolescent; recent substance abuse/dependence; recent suicidal or homicidal ideation/intent; recent psychotic and/or manic symptoms; and personality disorder with anger, impulsivity, or behavioral instability. The section covering spousal assault history includes the following items: past physical assault; past sexual assault/sexual jealousy; past use of weapons, and/or credible threats of death; recent escalation in frequency or severity of assault; past violation of "no con-

tact" orders; extreme minimization or denial of spousal assault history; and attitudes that support or condone spousal assault. The final section consists of three items relating to the alleged (current) offense: severe and/or sexual assault; use of weapons, and/or credible threats of death; and violation of "no contact" order. After all four sections are completed, the clinician is prompted to make a "summary risk rating" (low, moderate, or high) of imminent risk of violence toward a partner and imminent risk of violence toward others.

The preliminary data for the SARA are encouraging. In a retrospective study of 50 court-referred spousal assaulters (25 reoffenders and 25 nonreoffenders), the interrater reliability for the sum of items was .92, and the reliability for the SARA-informed risk rating was .80. Concerning the potential validity of the SARA, it is interesting to note that neither the sum of items nor the number of positive items was related to reoffending. The therapists' clinical risk ratings (not based on the SARA) were also not related to reoffending outcomes; however, the SARA-informed summary risk ratings were strongly related to reoffending. Indeed, spousal assaulters with SARA ratings of high risk were five and one-half times more likely to reoffend than were those with ratings of low or moderate risk (Kropp, Whittemore, Hart, Webster, & Eaves, 1996).

Kropp et al. (1994) recommend that for clinical or forensic decision-making purposes, persons who use the SARA should, at a minimum, have expertise in individual assessment and in the area of spousal assault. However, other individuals may use the SARA for education, consultation (e.g., use by a lawyer in cross-examination), or evaluative research.

Future research on each of these instruments should assess their psychometric characteristics, including internal consistency, factor structure, temporal stability of items, interrater reliability of scoring or coding by trained assistants and by professionals, length of time required for a protocol to be scored, concurrent validity (i.e., relationships between individual items and other existing scales that measure similar constructs), and predictive validity (e.g., relationships between individual items or total scores and measures of subsequent violent behavior).

### **Actuarial Methods in Risk Assessment**

In addition to the first generation of assessment instruments currently emerging, efforts are underway to develop actuarial decision tools for specified populations. Actu-

<sup>4</sup> HCR-20 items pertaining to psychopathy and previous violence were removed from each of the two latter analyses, respectively, to avoid artificially inflating correlations. More information about the HCR-20 Scheme can be obtained from Christopher Webster, Department of Psychology, Simon Fraser University, Burnaby, British Columbia, V5A 1S6 Canada (telephone: 604/291-3354).

<sup>5</sup> On a random subset of 10 files, the average correlation between two raters for the H and C Scales was .795.

<sup>6</sup> More information about the Spousal Assault Risk Assessment Guide can be obtained from The British Columbia Institute on Family Violence, Suite 290, 601 West Cordova, Vancouver, British Columbia V6B 1G1, Canada (telephone: 604/669-7055).

arial methods or formulas are based exclusively on empirically established relationships between the variables and the criterion, and a substantial body of research has suggested that in almost all tasks actuarial formulas predict as well as or better than clinical judgments (Borum, Otto, & Golding, 1993; Dawes, Faust, & Meehl, 1989; Garb, 1994; Meehl, 1970). Thus, their application to the assessment of dangerousness and risk appears to hold substantial promise for improving predictive accuracy (Brizer & Crowner, 1989; Monahan, 1981, 1988, 1996).

During the past several years, a number of researchers have attempted to develop actuarial aids for assessing the risk of violence using multivariable statistical methods such as logistic regression and discriminant function analysis (e.g., Convit, Jaeger, Lin, Meisner, & Volavka, 1988; Klassen & O'Connor, 1989; McNeil, Binder, & Greenfield, 1988). On the basis of the research conducted to date, actuarial methods for predicting violence appear to result in predictions whose accuracy exceeds chance (see Otto, 1992, for a review) and that are slightly more accurate than clinical predictions exceeding a one-year time frame (Mossman, 1994).

Despite the advantages of actuarial methods, they often are not used in clinical practice because their complexity makes them impractical (Gardner, Lidz, Mulvey, & Shaw, 1996). A few recent investigations have attempted to develop actuarial aids that can be more easily applied and that might be clinically useful. Three studies illustrate these more recent efforts.

**Sexual offenders.** Quinsey, Rice, and Harris, 1995 reanalyzed follow-up data on 178 known sex offenders (rapists and child molesters) who were assessed at a maximum security psychiatric facility. The offenders were followed for an average of 59 months. Using findings from previous research, Quinsey et al. selected a series of variables related to demographic, psychiatric, criminal history, sexual misbehavior, and sexual preference characteristics that were entered into a series of regression analyses to predict sexual reconviction or violence recidivism. Because such multiple regression formulas are known to predict much less accurately when applied on a cross-validation sample (due to shrinkage), they used a statistical method developed by Nuffield (1982) to reduce this attenuation.

By this technique, predictor variables are selected according to their univariate relationship with the outcome variable. In the prediction equation, each variable is assigned a positive or negative integer value that depends both upon the subject's score on that variable and on the overall magnitude between that predictor variable and the outcome. (Quinsey et al., 1995, p. 97)

Through this strategy, they developed the Recidivism Prediction Instrument. Scores from this scale correlated .45 with reconviction for a sexual offense and .46 with violence recidivism. When Nuffield's method was applied using all variables that were significant in the multivariate models, the results yielded a 72% rate of accurate classification (with 42% relative improvement over chance)

for violence failure and a 77% rate of accurate classification (with 44% relative improvement over chance) for sexual reconvictions. Quinsey et al. (1995) advised that the strategy they proposed for use of such information is not simply to use it as another piece of information in a clinical appraisal of risk but rather to use it "to anchor clinical judgment by having the clinician start with an actuarial estimate of risk and then to alter it by examining dynamic variables, such as treatment outcome, treatment intensity, and supervision quality" (p. 100).

**Psychiatric inpatients.** Recognizing that most previously developed actuarial formulas were impractical for use in routine clinical practice, McNeil and Binder (1994) developed a brief actuarial screening tool to aid in the assessment of patients' potential for violence upon admission to an inpatient unit. The screening checklist consists of five items: (a) history of physical attacks or fear-inducing behavior in the two weeks prior to admission; (b) absence of suicidal behavior (attempts, gestures, or threats) in the two weeks prior to admission; (c) diagnosis of schizophrenia or mania; (d) male gender; and (e) currently married or living together. Each positive item is assigned a one-point value. Receiver operating characteristic analysis was applied to a calibration sample of 238 patients who had been committed to derive an optimal cutting score of three points. A score of three or higher was considered high risk, whereas a score of two or lower was deemed to be low risk. These cutting scores were used to apply the checklist to a validation sample of 338 patients, resulting in a total predictive value (overall correct classification) of 65%, with a 28% relative improvement over chance in distinguishing which patients would display any type of aggressive behavior (e.g., attacks or fear-inducing behavior) on the ward. Although to some these results may appear modest, McNeil and Binder (1994) noted that the checklist performed better than most studies of clinical judgment in assessing violence risk (p. 585). Theoretically, of course, actuarial tools predict with perfect reliability when there is no measurement error and when the cutting scores are consistently applied. Perhaps the greatest contribution of this checklist is that it demonstrates the potential for developing brief, simple, easy-to-use actuarial methods that have utility in evaluating patients' risk of violence.

**Community violence by persons with mental disorders.** Gardner et al. (1996) used sophisticated statistical methodology to produce a simple, user-friendly actuarial tool to identify persons with mental disorder who are at risk for frequent incidents of physically violent behavior (laying hands on another with intent to harm, using a weapon, or threatening with a weapon) in the community.

On the basis of an actuarial method (classification and regression-tree algorithm), Gardner et al. (1996) constructed a hierarchical decision tree with four yes-no questions that classify the patient into one of five categories; each category has a predicted rate of violence reported in units of incidents per month. The four questions are as follows: (a) Is the Brief Symptom Inventory-Hos-



tility Scale score greater than two? (b) Are there more than three prior violent acts? (c) Is age less than 18? and (d) Is the patient a heavy drug user?

This regression tree generally performed as well as (similar sensitivity and specificity) a negative binomial regression model using an almost identical array of variables. Although the area under the receiver operating curve could not be plotted to assess the quality of the regression tree, the negative binomial regression model enclosed 70.8% of the area under the curve, which is very consistent with Mossman's (1994) report of 71.3% for previous actuarial predictors of patient violence. Thus, this simple regression tree was able to classify patients about as well as more complex actuarial formulas based on multivariable statistical models. However, in light of its current limitations, Gardner et al. (1996) "do not recommend these procedures for routine clinical use" (p. 47).

Nevertheless, the regression-tree approach does represent another methodological advance in developing actuarial methods for use in clinical settings. And, like McNiel and Binder's (1994) screening checklist, the empirically based decision-tree method is brief, practical, and easily understood and applied in clinical practice.

### **Defining Clinical Practice Guidelines**

There has been a recent trend in the medical profession to develop clinical practice guidelines to aid practitioners in the diagnosis and treatment of several common but significant medical problems. These diverse guidelines have come from insurers, managed care organizations, regulatory agencies, scientific groups, and professional associations. The Agency for Health Care Policy and Research has developed a series of these guidelines as part of a systematic effort to enhance the quality, the appropriateness, and the effectiveness of health care services. In the mental health arena, APA has assembled a steering committee on practice guidelines and has already issued guidelines for substance abuse (APA, 1995b), psychiatric evaluation of adults (APA, 1995a), bipolar disorder (APA, 1994), major depressive disorder in adults (APA, 1993b), and eating disorders (APA, 1993a).

In general, these guidelines are developed by panels of experts from diverse disciplines on the basis of systematic reviews of the relevant literature, with some also soliciting input from professional and consumer organizations and individuals. Drafts of the proposed guidelines are subjected to peer review and are circulated among practitioners in the field to gauge their conceptual and operational utility. Typically, the guidelines explicitly acknowledge that they provide only a basic guide for assessment and management of the condition and that even the few fundamental principles outlined will not apply to or be appropriate for every patient or case. It is also expected that they will be revised over time on the basis of new empirical knowledge, evaluations, and critiques. Nevertheless, these practice guidelines represent a significant attempt to operationalize some scientifically grounded principles for the assessment and treatment of

certain conditions based on professional consensus (Clinton, McCormick, & Bestemun, 1994).

It should be noted that most of these practice policies being proposed are guidelines rather than standards. In summarizing the distinction made by Eddy (1990), Appelbaum (1992) noted that "standards define procedures that must be followed in all cases; they can be formulated only when indications for evaluation or treatment are unambiguous. Guidelines, used when greater flexibility is needed, allow modification to meet the needs of individual patients" (p. 341).

Of course, to consider applying this technology to the assessment and management of violence risk is a somewhat different matter. On the one hand, although some people with mental disorders do engage in violent behavior, violence per se is not a psychological or a medical condition. On the other hand, mental health professionals are routinely required to assess and manage violence risk in clinical practice (e.g., *Tarasoff*-like situations) and must make these judgments in accord with applicable professional standards, despite the fact that no explicit national standards exist. It seems that the emerging body of scientific knowledge on violence risk assessment has advanced sufficiently to allow professional consensus on some core issues that could lead to some clearly articulated practice guidelines for assessing and managing people with mental disorder who may be at risk for violence (see Webster et al., 1995, for an example of some general principles for violence prediction).

According to principles of tort liability, clinicians are not held accountable for the accuracy (or the inaccuracy) of the decision per se; rather, they are judged by whether the decision was reasonably made. That is, did the clinician gather the information that most clinicians would consider relevant to assessing violence risk, and on the basis of that information, would most clinicians have arrived at a similar conclusion? Appelbaum (1985) noted that in *Tarasoff*-like cases,

the requirement that therapists protect victims not only when they know of potential dangerousness but when, according to professional standards, they *should know* of it is probably too stringent, given the limits of current abilities to predict dangerousness and the absence of professional standards for this task. (p. 429)

Thus, developing explicit practice guidelines would seem to be directly relevant to help clinicians answer these questions, fulfill their duty to protect, and practice more effectively.

Petrila (1995) recently recommended that

providers who become or anticipate becoming responsible for the care of individuals who may be at risk for civil commitment or who may present a risk to self or others should consider adopting formal risk-assessment protocols so that the risk-assessment process is standard and consistent for all patients and clinicians. . . . Standardized protocols may provide some protection from malpractice claims alleging that a practitioner negligently discharged a patient committed as dangerous by enabling the practitioner to argue that the risk assessment decision was

made in accordance with the best available professional knowledge. . . . Such a protocol may be useful in treatment as well; the best available research on risk assessment suggests that situational and environmental factors are as relevant to dangerous behaviors as they are to treatment. (pp. 1047-1048)

However, if any guidelines are to be successful, it is essential that they reflect "*the minimal standards necessary for competent professional practice* and not the ideals to which an organization [or clinician] would aspire if it had unlimited resources" (Monahan, 1993, p. 247). Setting excessively high standards would serve only to increase, rather than decrease, clinicians' liability.

Poythress (1990) and Monahan (1993) have advocated for clinical guidelines, in the form of clearly defined policies and procedures, for making decisions to release individuals from institutional settings. Poythress even suggested that prerelease records should include a specific form or document that addresses the patient's potential for violence. These policies and guidelines direct the clinician to conduct a systematic inquiry and analysis about violence risk and help to structure and standardize the clinical risk assessment process.

Appelbaum (1985) proposed a three-stage model for dealing with potentially violent patients in *Tarasoff*-like situations. He suggested that clinicians must (a) gather relevant data and make a determination of dangerousness of risk, (b) select a course of action that has a reasonable likelihood of protecting potential victims, and (c) implement the selected course of action. These three stages also form a conceptual framework for the development of clinical guidelines. First, on the basis of the current research literature, it seems likely that substantial consensus could be reached about the core data that clinicians should reasonably attempt to gather and consider to make a professionally adequate determination of risk (Appelbaum, 1985; Borum et al., 1996; Givelber, Bowers, & Blicht, 1984; Monahan, 1981, 1993; Monahan & Steadman, 1994; Mulvey & Lidz, 1984; Tardiff, 1991). The use of clinical checklists or specialized assessment instruments such as those described above could also be helpful in this regard.

Obviously, operationalizing the decisional tasks is somewhat more difficult. There is less empirical guidance about how to systematically integrate relevant information to arrive at a probabilistic decision about risk or about which interventions (courses of action) have proven most effective for persons determined to be dangerous. Most decision-making models are clinically or conceptually based (Appelbaum & Gutheil, 1991; Monahan, 1981; Mulvey & Lidz, 1995; Truscott, Evans, & Mansell, 1995). Nevertheless, the general acceptance of a model, or of certain principles for decision making, would be useful to clinicians in guiding their judgments of dangerousness. The decisional model may be modified as future research emerges showing how these judgments can be made most reliably as well as the impact of varying interventions designed to protect potential victims.

A more general approach has been suggested by those attempting to define a standard of care for managing

people at risk for suicide in inpatient settings (Bongar, Maris, Berman, Litman, & Silverman, 1993; Silverman, Berman, Bongar, Litman, & Maris, 1994). Recognizing the diversity in contexts and clinical situations, as well as the need for guiding principles not to be overly specific and hence restrictive, these experts have proposed that standards of care be based on broad categories of action to which a clinician must attend. "Hence, standards are categories of actions that must be performed in order to provide the minimum standard of care in the assessment, treatment and management [of the patient]" (Silverman et al., 1994, p. 154). They have constructed these broad categories around two key tort principles used to establish negligence: foreseeability (reasonable anticipation that harm or injury is likely to result from certain acts or omissions) and causation (the act by which an effect is produced; Black, 1991).

It may be that these categories of action could be integrated with categories of risk, such as those proposed by Monahan and Steadman (1996, this issue). For the purpose of developing clinical practice guidelines, these categories might correspond to specific "critical action thresholds" (Monahan & Steadman, 1996; Wernly, 1994). Reaching these thresholds would indicate that consideration of various inquisitive prescriptions (i.e., the need to gather additional information) or therapeutic prescriptions (i.e., therapeutic interventions designed to reduce the risk of harm) may be warranted (Monahan & Steadman, 1996; Schopp, 1996).

Regardless of the approach chosen, there will be many obstacles to developing clinical guidelines for risk assessment practice. Clinicians must routinely assess violence potential and make related management decisions in psychiatric emergency services, civil psychiatric hospitals, forensic evaluation and treatment settings, and even outpatient private practice offices. There is tremendous diversity among the varying circumstances in which such judgments may be required, and there are notable logistic limitations in making these judgments within a clinical or an organizational context. Different settings may require information about different types of risk, or they may have varying time frames for prediction of the relevant behavior. Different risk assessment tasks require different types of decisions and vary in their critical action thresholds. Although expert consensus may be reached about optimal assessment practices, the exigency in certain clinical situations may require decisions to be made with a degree of immediacy that would limit the comprehensiveness of an examination. Thus, it may be that separate (or more specified) guidelines need to be developed for different settings or assessment tasks.

### **Developing Training Programs and Curricula**

Despite the fact that most mental health professionals encounter situations requiring them to make decisions about the risk of violence posed by their clients, it is currently unclear whether their professions are adequately training them to handle these situations. Although there are no existing studies examining the extent of graduate

training in assessment and management of violence risk, one survey found that only 40% of all graduate programs in clinical psychology offered any formal training in the study of suicide—a high-risk area that is even more clearly defined in the purview of mental health (Bongar & Har-matz, 1989).

Monahan (1993) suggested that

four tasks form the basis of any professionally adequate risk assessment: The clinician must be educated about what information to gather regarding risk, must gather it, must use this information to estimate risk, and, if the clinician is not the ultimate decision maker, must communicate the information and estimate to those who are responsible for making clinical decisions. (p. 242)

One of Monahan's primary guidelines for "risk containment" is to be sure that clinicians are educated about the basic concepts and current findings in risk assessment research. He even recommended that larger facilities designate a "risk educator" to keep track of current research in this area and to conduct periodic training updates.

Education and training are certainly sensible recommendations; however, there are currently few clearly articulated training models or curricula for violence risk assessment and management in psychology, and there are no requirements in professional accreditation that these issues be addressed. It might be worthwhile for psychology to take the lead in this effort by assembling multidisciplinary teams or panels to work on models for training mental health practitioners in the study of violence and applications to clinical practice. Comprehensive models would need to account for core content areas of knowledge, frameworks for clinical decision making, and guidelines for supervision and consultation. Lomax (1986) proposed one such comprehensive model for training psychiatric residents in key aspects of suicide. He emphasized the need for presentation of relevant didactic material early in the training, with the development of clinical skills occurring primarily in the course of supervised experience. This attention to developing knowledge as well as skills seems particularly well-founded, given that there is evidence to suggest that mere knowledge of relevant risk factors may not be sufficient to allow a clinician to respond appropriately and effectively to high-risk patients in actual practice (Inman, Bascue, Kahn, & Shaw, 1984). A final recommendation from Lomax is that training programs should build in requirements for minimal practice competencies and develop ways to assess them.

Different models may be developed for various mental health disciplines or for varying levels of mental health training. For psychology, one option would be to define the assessment and management of violence risk as a proficiency area in accord with the American Psychological Association's emerging efforts to define specialty areas of competence in professional psychology. A broader and potentially more useful approach would be to develop a recommended curriculum for graduate training programs to incorporate into existing courses or to develop as a

separate seminar. The didactic part of the curriculum could flow easily from the clinical care guidelines outlined above, with core components consisting of education about risk factors, decision making, management strategies, and approaches to handling the categories of action. Beginning training at this level would probably allow for the best integration of didactic material with supervised experience.

In addition, as Monahan (1993) suggested, because the body of research knowledge is developing so rapidly, continuing-education programs are also important to maintaining competence, particularly for clinicians working with high-risk populations (e.g., forensic settings, acute psychiatric facilities, and substance abuse populations). Future research efforts could also be directed toward evaluating the efficacy of such training programs by examining their impact on the reliability and the accuracy of clinicians' assessments of violence risk.

## Conclusion

The assessment and the management of violence risk are critical issues, not just for psychologists and psychiatrists in forensic settings but for all practicing clinicians. Despite a long-standing controversy about the ability of mental health professionals to predict violence, the courts continue to rely on them for advice on these issues and in many cases have imposed on them a legal duty to take action when they know or should know that a patient poses a risk of serious danger to others.

Given the ethical and legal obligations to appropriately assess and manage persons at risk for violence, more attention in each of the mental health disciplines needs to be given to improving technology and instrumentation to aid in these assessments, defining clinical practice guidelines, and training professionals in these critical tasks. Recent advances in research have laid the foundation for progress in each of these areas and have set the stage for an important research and policy agenda, contributing to the goal of improving clinical care and enhancing the validity of risk assessment in clinical practice.

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